

Planning Commission

Aaron Popejoy, Chairperson
Jorge A. Perez, Vice-Chairperson
Sergio Lopez, Commissioner
Ashley Bertussi, Commissioner
Andy Alvarez, Commissioner
Ramiro Urias, Commissioner
Jeffrey Chan, Commissioner



City Attorney
Elizabeth Martyn

Commission Secretary
Angel Hernandez

<http://cityofelcentro.org/>

AGENDA

CITY OF EL CENTRO PLANNING COMMISSION

**City Hall
Council Chambers
1275 Main Street
El Centro, CA 92243**

TUESDAY, DECEMBER 10, 2024 AT 5:30 PM

Any member of the public attending in person and wishing to make a comment is asked to complete a speaker slip and follow the "Notice to the Public" instructions below. Alternatively, any member of the public is invited to submit public comments in advance of the meeting to be answered at the meeting. Please email your questions to ecplanning@cityofelcentro.org or call (760) 337-4545. The public may participate and make public comments via the following Zoom link:

<https://us06web.zoom.us/j/88123461709?pwd=N53pqPhBGO1nOKasS5iafzYxOP88ix.1>

Optional dial-in number:
Meeting ID: **881 2346 1709** Passcode: **195382**

Public comments via zoom are subject to the same time limits as those in person.

NOTICE TO THE PUBLIC

This is a public meeting. If there is a matter on the agenda on which you wish to be heard, please come forward to the microphone; address yourself to the commission, stating your name and address for the record. Persons wishing to address the Commission are not required to identify themselves (Gov't Code § 54953.3); however, this information assists the Chairperson by ensuring that all persons wishing to address the Commission are recognized and it assists the Commission's Secretary in preparing meeting minutes. The Chairperson reserves the right to place a time limit on each person asking to be heard. If you wish to address the Commission concerning any other matter within the Commission's jurisdiction, you may do so during the public comment portion of the agenda.

*** Any information provided on the "Speaker Slip" is voluntary and will be public record.**

CALL TO ORDER:

ROLL CALL

CONSENT AGENDA

Consent agenda items are approved by one motion. Commissioners or members of the public may pull consent items to be considered separately at a time determined by the Chairperson.

1. Planning Commission Minutes for November 12, 2024 Meeting

PUBLIC HEARINGS

2. **Public hearing for the purpose of considering a recommendation regarding an amendment to the Willow Bend Tentative Subdivision Map.**

The proposed Willow Bend subdivision project involves the development of 120 single-family residential units on a 38-acre site pre-zoned R-1 Single-Family Residential and designated as Low-Density Residential in the City of El Centro's General Plan. The project includes the construction of supporting infrastructure, such as a central park, retention basin, and roadway improvements, all in compliance with applicable City development standards and mitigation measures outlined in the 2007 Final Environmental Impact Report (EIR).

Presentation: Andrea Montano, Associate Planner

Recommendation:

Recommend to the City Council the proposed amendment to the Willowbend Tentative Subdivision Map.

NEW BUSINESS

3. Discussion and any necessary action regarding attendance of Cal Cities Planning Commissioner's Academy

NON-ACTION INFORMATION ITEMS

4. Community Development Department Monthly Report

PUBLIC COMMENTS

ADJOURNMENT

Materials related to an item on this Agenda submitted to the Commission after distribution of the agenda packet will be available for public inspection at the Community Development Department-Planning & Zoning Division located at 1275 W. Main Street, El Centro, California during normal business hours.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, you should contact the Community Development Department-Planning & Zoning Division at (760) 337-4545. Notification of at least 72 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to this meeting.



PLANNING COMMISSION

City Hall
1275 W. Main Street
El Centro, CA 92243
SCHEDULED

Item: 1.

Meeting: 12/10/2024 5:30 PM
Department: Community Development
Category: Action Item
Prepared by: Poleth Lopez, Staff
Assistant

PLANNING COMMISSION MINUTES FOR NOVEMBER 12, 2024 MEETING

ATTACHMENTS:

1. 11-12-2024 Planning Commission Minutes

MINUTES OF THE EL CENTRO PLANNING COMMISSION
TUESDAY, NOVEMBER 12, 2024

PLANNING COMMISSION

AARON POPEJOY, CHAIRPERSON
JORGE A. PEREZ, VICE-CHAIRPERSON
SERGIO LOPEZ, COMMISSIONER
ASHLEY BERTUSSI, COMMISSIONER
ANDY ALVAREZ, COMMISSIONER
RAMIRO URIAS, COMMISSIONER

CALL TO ORDER:

The El Centro Planning Commission convened in a regular session at City Hall Council Chambers, 1275 W. Main Street, El Centro, California at 5:30 PM.

Chairperson Aaron Popejoy presided over the meeting.

ROLL CALL

PRESENT:

Chairperson, Aaron Popejoy
Vice-Chairperson, Jorge Perez
Commissioner, Andy Alvarez
Commissioner, Sergio Lopez
Commissioner, Ashley Bertussi

ABSENT:

Commissioner, Ramiro Urias

CONSENT AGENDA

Consent agenda items are approved by one motion. Commissioners or members of the public may pull consent items to be considered separately at a time determined by the Chairperson.

1. Planning Commission Minutes for September 10, 2024

Vice-Chairperson Perez moved to approve the September 10, 2024 minutes, seconded by Commissioner Alvarez.

Voting Yes: Commissioner Alvarez, Commissioner Lopez, Vice-Chairperson Perez, Commissioner Bertussi, Commissioner Popejoy

Voting No: None

Abstaining: None

2. Planning Commission Minutes for October 3, 2024

Commissioner Bertussi moved to approve the October 3, 2024 minutes, seconded by Vice-Chairperson Perez.

Voting Yes: Commissioner Alvarez, Vice-Chairperson Perez, Commissioner Bertussi, Chairperson Popejoy

Voting No: None

Abstaining: Commissioner Lopez

NEW BUSINESS

3. Discussion and any necessary action regarding appointment of the Planning Commission Chairperson to serve for the term ending October 2025.

Commissioner Sergio Lopez recommended and moved to appoint Vice-Chairperson Perez, as the new Chairperson for the 2025 term. Chairperson Aaron Popejoy seconded the motion.

Voting Yes: Commissioner Alvarez, Commissioner Lopez, Vice-Chairperson Perez, Commissioner Bertussi, Chairperson Popejoy

Voting No: None

Abstaining: None

4. Discussion and any necessary action regarding appointment of the Planning Commission Vice-Chairperson to serve for the term ending October 2025.

Chairperson Popejoy made a motion to appoint Commissioner Bertussi as the new Vice-Chairperson for 2025. Vice-Chairperson, Jorge Perez seconded the motion.

Voting Yes: Commissioner Alvarez, Commissioner Lopez, Vice-Chairperson Perez, Commissioner Bertussi, Commissioner Popejoy

Voting No: None

Abstaining: None

NON-ACTION INFORMATION ITEMS

5. Community Development Department Monthly Report

Associate Planner, Andrea Montañó extended an invitation to the Planning Commissioners to attend the Imperial Avenue Complete Streets Plan Community Workshop. The workshop will be held at the El Centro Library on Thursday, November 14, 2024.

PUBLIC COMMENTS

No Public Comments were obtained.

ADJOURNMENT

The meeting was adjourned at 5:40 P.M.



PLANNING COMMISSION

City Hall
1275 W. Main Street
El Centro, CA 92243

SCHEDULED

Item: 2.

Meeting: 12/10/2024 5:30 PM
Department: Community Development
Category: Resolution
Prepared by: Angel Hernandez,
Director of Community Development

PUBLIC HEARING FOR THE PURPOSE OF CONSIDERING A RECOMMENDATION REGARDING AN AMENDMENT TO THE WILLOW BEND TENTATIVE SUBDIVISION MAP.

Project #: Willow Bend Tentative Subdivision Map	Location: West of South 4th Street (Highway 86) and 630 feet south of Horne Road; APN 054-370-012
Applicant: Martin D. Coyne	Project Type: Subdivision
Staff Planner: Andrea Montaña	Proposed Use: 120 Unit Residential Subdivision

PROJECT SUMMARY

The Willow Bend Subdivision project proposes the development of 120 single-family residential units on a 38-acre site designated as Low-Density Residential in the City of El Centro General Plan and pre-zoned R-1 Single-Family Residential. The project was originally approved in 2007 through the City's adoption of a Final Environmental Impact Report (EIR) and associated entitlements, which included 131 residential units, a park, and a retention basin. The current proposal modifies the original plan by reducing the total number of units to 120, incorporating a centrally located 1.37-acre park, adjusting the retention basin to 1.5 acres, and amending the original conditions of approval to align with updated project requirements and traffic analysis findings. The project is also subject to an addendum to the original EIR to address minor technical updates and ensure compliance with the California Environmental Quality Act (CEQA).

Proposed infrastructure improvements include connections to existing sewer lines and roadway enhancements, such as a right-turn in/right-turn out configuration at Willow Bend Drive and a widened segment of SR-86 along the project frontage. An alternative configuration for the intersection at SR-86 and Countryside Drive, subject to Caltrans' approval of the Intersection Control Evaluation (ICE) Study, will be implemented prior to the issuance of the 60th certificate of occupancy. The amendments to the original conditions reflect updated traffic conditions and eliminate unnecessary requirements, ensuring that all improvements remain consistent with City standards and mitigation measures outlined in the 2007 EIR. The project would require annexation to the City of El Centro, which is subject to approval by the Imperial County Local Agency Formation Commission (LAFCo).

STAFF RECOMMENDATION: Recommend to the City Council the proposed amendments to the Willow Bend Tentative Subdivision Map.

SITE INFORMATION

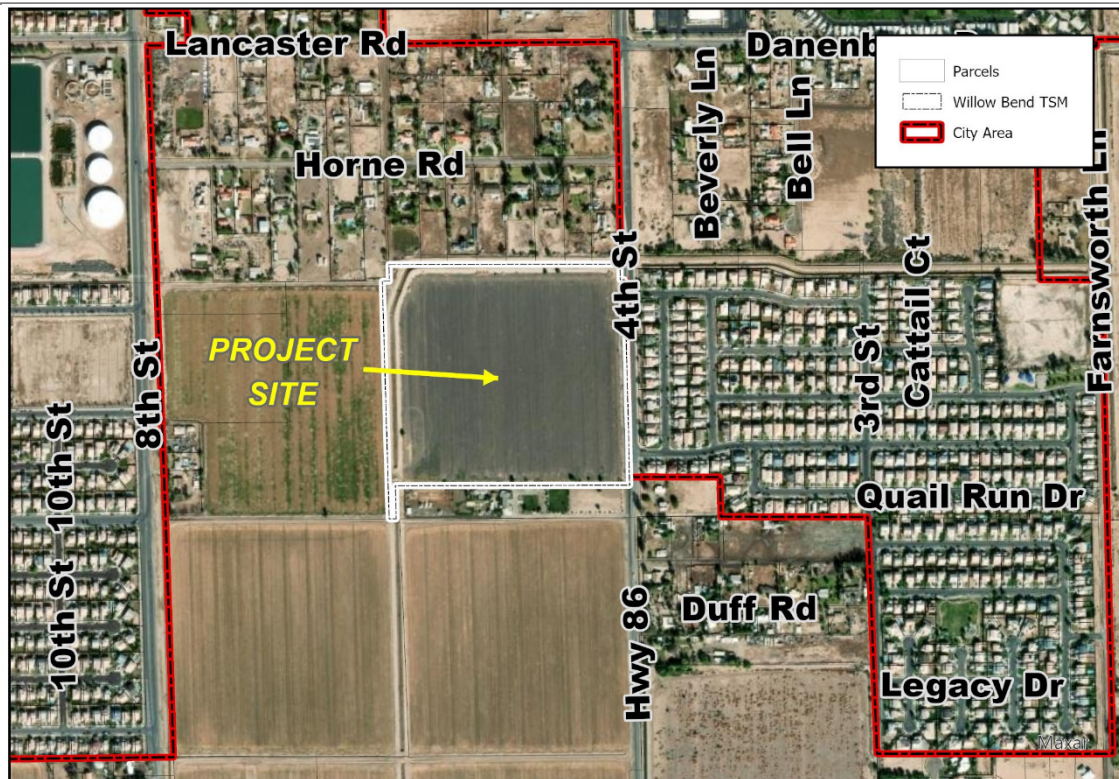
An application was submitted by Martin D. Coyne to amend the existing Tentative Subdivision Map (TSM) and associated entitlements for the Willow Bend subdivision, originally approved in 2007 under the City of El Centro Zone Change 05-05 and Tentative

Subdivision Map Final Environmental Impact Report (EIR) (SCH# 2005101128) (See Attachment A- Proposed Amendments). The proposed amendments involve modifications to the approved subdivision layout and project design, necessitating an Addendum to the 2007 Final EIR in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (See Attachment B- Final EIR).

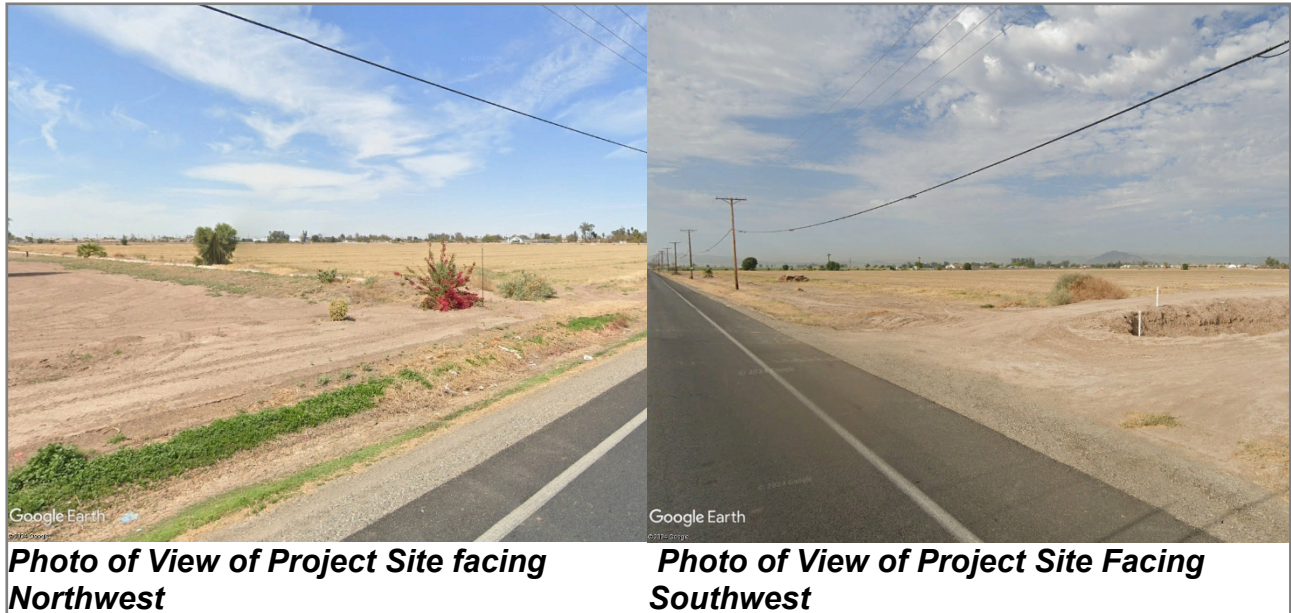
The Addendum (See Attachment C- EIR Addendum) evaluates the environmental effects of the proposed amendments, including the reduction in the total number of residential units from 131 to 120, incorporation of a centrally located 1.37-acre park, and a reduction of the retention basin size from 3.02 acres to 1.452 acres (See Attachment D- Tentative Subdivision Map). These revisions are designed to better accommodate project objectives while maintaining consistency with CEQA requirements. The project site, comprising approximately 38 acres, is located north of McCabe Road, east of South Clark Road, and west of State Route 86 (SR-86) within the southern portion of the City of El Centro. The site is currently utilized for agricultural purposes and is adjacent to residential developments to the north and east and agricultural land to the west and south.

In accordance with Section 15164 of the State CEQA Guidelines, an addendum is appropriate as the proposed changes represent minor technical adjustments and do not introduce any new or substantially more severe environmental impacts than those identified in the certified 2007 Final EIR.

Site Area	Building Area	Current Zoning	General Plan
38 Acres	120 Single Family Units	Pre-Zoned to R-1	Low Density Residential



Project Location Map

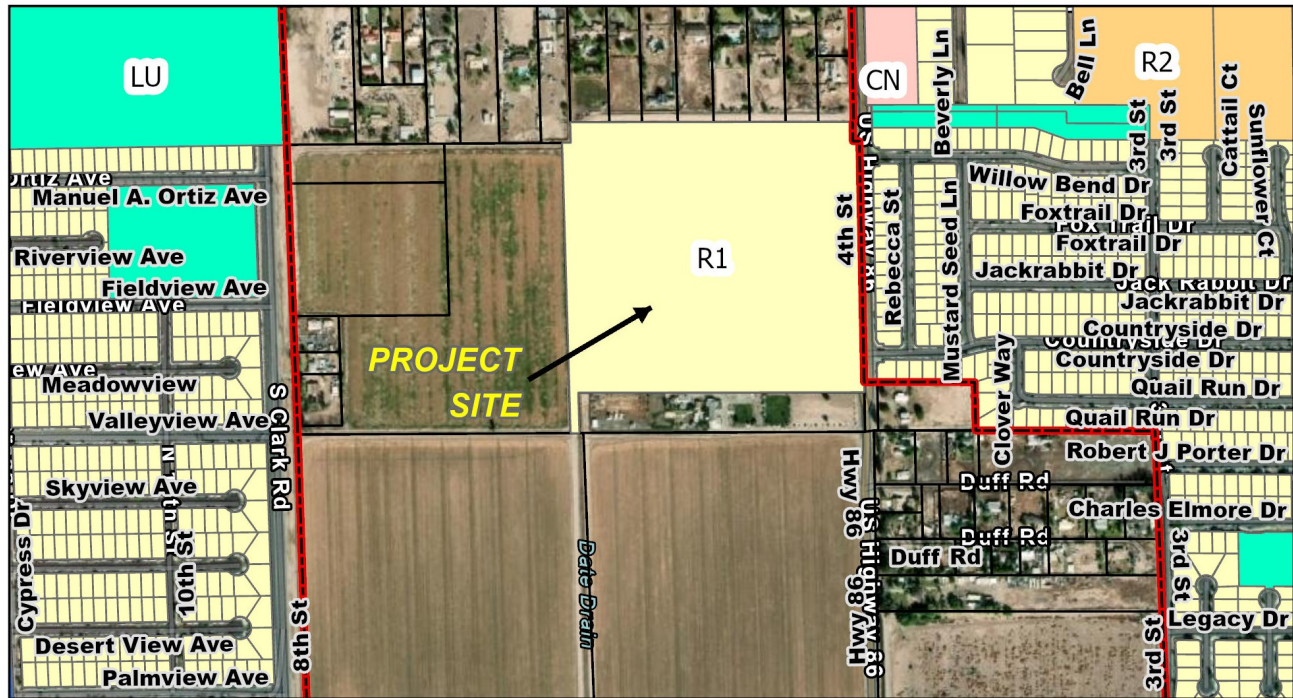


LAND USE REVIEW

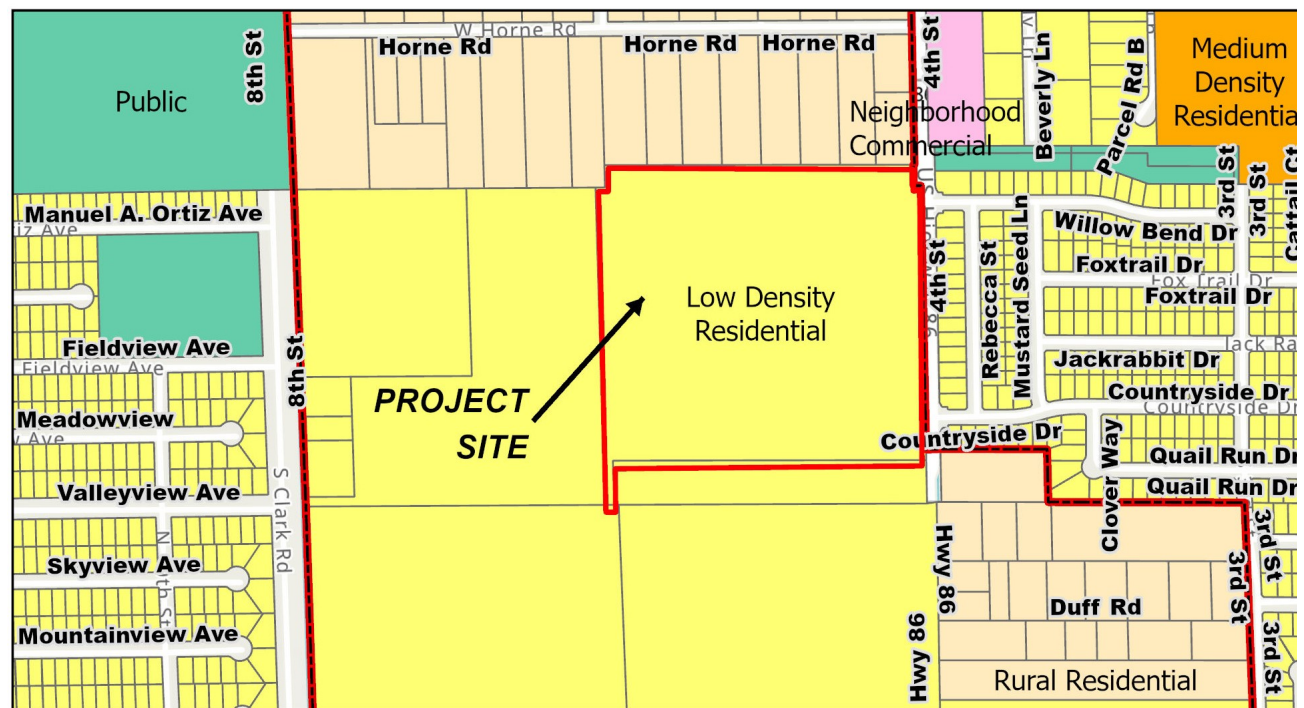
The subject property is designated as Low-Density Residential under the General Plan and pre-zoned R-1 Single-Family Residential, which permits the development of detached single-family residences at densities consistent with the proposed modifications. The reduction in the number of residential units from 131 to 120 and the inclusion of a 1.37-acre central park comply with the density and land use objectives for the site and enhance the project's alignment with the City's goals for quality residential development.

The amended Tentative Subdivision Map (TSM) remains compatible with adjacent land uses. The project site is situated within a transitional area between agricultural uses to the west and south and established residential neighborhoods to the north and east. This spatial arrangement ensures that the proposed development integrates harmoniously with the surrounding environment. The addition of the central park and the reduced size of the retention basin (from 3.02 acres to 1.452 acres) optimizes land use while maintaining compliance with the City's open space and stormwater management standards.

The City has determined that the proposed amendments are consistent with applicable land use policies and development regulations. The modifications further reduce the intensity of potential environmental impacts, as evidenced by the reduction in residential density, and remain within the thresholds identified in the 2007 Final Environmental Impact Report (EIR). The revised project advances the City's objectives of promoting sustainable, livable, and well-integrated residential communities while adhering to the legal and policy framework governing land use within the City of El Centro.



Proposed Zoning Map



General Plan Land Use Map

COMPARISON OF SURROUNDING PROPERTIES

Vicinity	Land Use Designation	Zoning	Current use
Subject Property	Low Density Residential	Pre-Zoned to R-1 Single Family Residential	Agricultural Land
North	Rural Residential	Not in City Limits	Single Family Homes
East	Low Density Residential	R-1 Single Family Residential	Single Family Homes
South	Low Density Residential	Not in City Limits	Agricultural Land
West	Low Density Residential	Not in City Limits	Agricultural Land in Preliminary Annexation Process

ANALYSIS

Utilities

The 2007 Final Environmental Impact Report (EIR) identified potentially significant impacts on fire and police services due to increased demand, potentially affecting response times and staffing ratios. Mitigation measures PSU 5.8-1 and PSU 5.8-2 were included to require the applicant to enter into agreements addressing these operational impacts. Other public services, including schools, libraries, parks, recreation, and utilities, were determined to have less-than-significant impacts. Telecommunications impacts were addressed with mitigation measure T 5.8-1, ensuring no significant effects on the Imperial Valley Telecommunications Authority.

The proposed project, comprising 120 single-family homes, will not require new or expanded public services or facilities and remains subject to the mitigation measures established in the Final EIR. Utilities will be extended from existing connections, including water service from the Imperial Irrigation District (IID) and sewer from existing lines. As the proposed lots were included in the 2007 Final EIR, no new or substantially increased impacts are anticipated. The project complies with all applicable mitigation measures, ensuring consistency with the original environmental analysis and avoiding the creation of new or more severe impacts.

The proposed Willow Bend subdivision includes comprehensive water infrastructure improvements designed to meet the project's demands while adhering to the City of El Centro Water Master Plan and accommodating future developments in the surrounding area. The project will install a 12-inch water line along Willow Bend Drive and 6th Street, sized to support the subdivision's domestic and fire flow requirements as well as the anticipated needs of a future subdivision to the west. Additionally, the infrastructure will include an 8-inch water line along Foxtrail Drive, Jackrabbit Drive, and Carl Street to ensure efficient water distribution within the development.

Water connections will tie into the existing infrastructure along 4th Street (State Route 86), allowing the project to integrate seamlessly into the City's water supply system. These improvements align with the City's Water Master Plan, ensuring sufficient capacity,

reliability, and consistency with long-term planning objectives. The proposed water infrastructure supports the City's goals for sustainable growth and efficient resource management while maintaining compliance with applicable standards and regulations.

The proposed sewer infrastructure improvements for the Willow Bend subdivision are designed to comply with the City of El Centro Sewer Master Plan and adequately address the wastewater management needs of the project and future development in the area. The project will incorporate 8-inch sewer lines along Countryside Drive, 6th Street, Jackrabbit Drive, Willow Bend Drive, and Foxtrail Drive to provide efficient wastewater collection and conveyance within the subdivision. Furthermore, a 15-inch sewer line will be constructed along Carl Street to ensure adequate capacity for the project and to support anticipated regional growth.

These improvements will connect to the City's existing wastewater system and are designed in accordance with the standards and specifications outlined in the City's Sewer Master Plan. The proposed sewer infrastructure is intended to ensure compliance with applicable regulatory requirements, maintain sufficient capacity for current and future demands, and align with the City's goals for sustainable and efficient utility infrastructure development.

Transportation and Circulation

Access to the subdivision will be provided by two entrances from 4th Street (SR-86). 4th Street is classified as a four-lane arterial roadway in the Mobility Element of the General Plan. Countryside Drive will provide full access to the subdivision, allowing full turning movements for vehicles entering and exiting the project site. Willow Bend Drive will provide limited access with turning movements restricted to right-in/right-out movements only. All interior roadways, except Countryside Drive, will be designed as local roadways. Countryside Drive is designated as a two-lane arterial and will eventually provide east-west connectivity between 4th Street and 8th Street. Improvements to Countryside Drive include maintaining two travel lanes, parking lanes, a landscaped parkway, and a crossing over the Date Drain bounding the site to the west.

A Traffic Impact Study (TIS) was conducted in July 2006 for the 2007 Final Environmental Impact Report (EIR) by Katz, Okitsu & Associates, which identified no significant transportation or traffic impacts but included nine conditions of approval to address nearby intersections and roadway segments. These conditions required fair-share contributions or construction of improvements such as roadway widening, turn lanes, and signalization. In 2024, a subsequent review by LLG reevaluated these conditions based on updated traffic forecasts and near-term operating conditions.

The updated analysis concluded that several of the original conditions, including payments of fair-share fees for roadway widening, additional turn lanes, and signalization at various SR-86 intersections, were unnecessary due to acceptable levels of service under near-term conditions. Specific improvements, such as the widening of SR-86 between I-8 and Wake Avenue, additional lanes at the SR-86/I-8 ramps, and various turn lane modifications, were deemed unnecessary. Further improvements include the widening of 4th Street (SR-86) along the project frontage and modifications at the intersections of SR-86 and Countryside Drive and Willow Bend Drive. Improvements to the intersection of 4th Street (SR-86) and Countryside Drive will occur before the issuance of the 60th certificate of occupancy, with all conditioned improvements limited to the project frontage. The

associated Intersection Control Evaluation (ICE) also includes analysis of work extending 1,460 linear feet south of the project site, which exceeds the project's bounds and will be tied to the future development of the southern property.

The ICE Study for SR-86/Countryside Drive, based on 2045 traffic forecasts, identified both a roundabout and an all-way stop as feasible configurations, replacing the condition requiring a traffic signal, pending review and approval by Caltrans at a later date. The revised recommendations ensure that necessary improvements align with current and projected traffic needs, maintain compliance with applicable standards, and avoid imposing excessive or redundant mitigation measures. The modifications to the conditions of approval do not introduce new or more severe traffic impacts than those identified in the 2007 Final EIR, ensuring the project remains consistent with the City's and Caltrans' traffic and safety objectives. (See Attachment E - ICE Study)

Aesthetics

The proposed amendments to the Willow Bend subdivision enhance the project's aesthetic integration with the surrounding environment through the inclusion of a 1.37-acre centrally located park, which provides visual relief and serves as a unifying design element. The reduction in residential density from 131 to 120 units achieves a more open spatial arrangement consistent with the low-density residential character prescribed by the General Plan. The updated subdivision layout ensures compatibility with adjacent land uses, maintaining a cohesive visual transition between residential and agricultural areas. The incorporation of landscaping, streetscape enhancements, and retention basin design complies with the City's development standards. This includes requiring landscaping along frontages of 4th Street, and street side yards of the subdivision. Maintenance will be conducted as part of a Landscape and Lighting Maintenance District that will be established for the site. Wrought iron fencing will also be installed along the street frontages of the proposed retention basin.

Building and Safety

The proposed amendments to the Willow Bend subdivision will comply with all applicable provisions of the current California Building Code (CBC) to ensure the safety and structural integrity of all residential units and site improvements. Building designs and construction methods will be reviewed and approved by the City's Building and Safety Division to verify compliance with fire safety, seismic, and accessibility standards. Necessary roadway improvements, including connectivity to 8th Street via Countryside Drive, will be implemented in coordination with the future development of the adjacent subdivision to the west. All proposed infrastructure and site modifications will adhere to CBC requirements and the City's development regulations to safeguard public health, safety, and welfare.

Neighborhood Compatibility

The proposed Willow Bend subdivision amendments will ensure compatibility with surrounding residential land uses by maintaining a consistent low-density character and incorporating design elements that blend seamlessly with adjacent neighborhoods. The project will feature meandering sidewalks and landscaping that match the aesthetic and functional design of the existing subdivision to the east, creating a cohesive streetscape and enhancing pedestrian connectivity throughout the area.

PUBLIC NOTICING & ENVIRONMENTAL REVIEW

Public Noticing

This project requires a public hearing to make a recommendation to the City Council. A public hearing notice was published in the Imperial Valley Press, a newspaper of general circulation, and mailed to all property owners within a 500 foot radius on November 29, 2024.

Environmental Review

The original Environmental Impact Report for this project was approved on February 7, 2007. The amendment to the 2007 Willow Bend Project necessitated an addendum to the original Environmental Impact Report which does not require recirculation of the report. As such this project has been deemed by the Planning Director to be in compliance with CEQA requirements.

FINDINGS

In considering approval of the amendments to the Willow Bend Subdivision, Planning Commission shall refer to the required findings found in the City's Subdivision Ordinance:

1. The proposed map is consistent with the City's General Plan.

The proposed Willow Bend subdivision is consistent with the City of El Centro General Plan, as it aligns with the Low-Density Residential designation by developing single-family homes at an appropriate density while incorporating open space and recreational amenities. The project also supports the General Plan's goals for orderly growth, infrastructure connectivity, and compatibility with surrounding land uses, ensuring cohesive and sustainable community development.

2. The design or improvement of the proposed subdivision is consistent with the General Plan.

The design and improvements of the proposed Willow Bend subdivision are consistent with the City of El Centro General Plan by incorporating a central park, meandering sidewalks, and landscaped streetscapes that align with the plan's emphasis on creating livable and visually cohesive residential neighborhoods.

3. The site is physically suitable for the type of development.

The 38-acre site is relatively flat and currently in agricultural use, with no known topographical, geological, or environmental constraints that would preclude the construction of single-family homes. Additionally, the site's proximity to existing infrastructure, including water, sewer, and road connections, ensures its capacity to support the proposed residential development in compliance with City standards and General Plan policies.

4. The site is physically suitable for the proposed density of development.

The Willow Bend subdivision is designed with a density consistent with the Low-Density Residential designation in the City of El Centro General Plan and the site's R-1 Single-Family Residential zoning. The proposed reduction to 120 single-family units further ensures compatibility with the surrounding land uses and infrastructure capacity, maintaining the appropriate balance between housing development and open space to align with the City's vision for orderly and sustainable growth.

5. The design of the subdivision of the proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

The project site is currently in agricultural use and is surrounded by residential and agricultural development, with no identified sensitive habitats or species within the project area. The environmental analysis conducted in the 2007 Final Environmental Impact Report (EIR) determined that potential impacts to biological resources were less than significant, and the proposed amendments do not introduce new or more severe impacts. Compliance with applicable mitigation measures and regulatory requirements further ensures the protection of environmental resources.

6. That the design of the subdivision or type of improvements is not likely to cause serious public health problems.

The project complies with the City of El Centro's General Plan, zoning regulations, and the current California Building Code, ensuring that infrastructure, utilities, and residential construction meet all safety and health standards. Additionally, the 2007 Final Environmental Impact Report (EIR) concluded that the project would not result in significant public health impacts, and the proposed amendments do not introduce new or increased risks.

7. The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision.

The design of the subdivision and the proposed improvements will not conflict with easements acquired by the public at large for access or use of property within the proposed subdivision. All public easements for utilities, drainage, and access have been incorporated into the subdivision's design to ensure continuity and compliance with applicable regulations. The project will maintain existing public rights-of-way and provide necessary roadway improvements, such as connections to SR-86 and Countryside Drive, to support public access and circulation consistent with City standards and the 2007 Final Environmental Impact Report (EIR).

NEXT STEPS

The item is proposed to continue to the City Council of the City of El Centro on January 21, 2025. Following the City Council's approval of the project, the next procedural step involves submitting the proposal to the Imperial Local Agency Formation Commission (ICLAFCO) for consideration. ICLAFCO will evaluate the proposal in accordance with the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, which includes assessing factors such as the project's alignment with the city's Sphere of Influence, the provision of municipal services, and the preservation of agricultural lands. Upon ICLAFCO's approval, the final step entails filing the necessary documentation with the State of California to formalize the jurisdictional changes. This process ensures that the proposed development complies with all statutory requirements and facilitates the orderly formation of local governmental agencies. Following that, additional actions required prior to the development will be the City review and approval of the final map for permits, encroachment permits, grading permits, and building permits for individual homes.

RECOMMENDATION & OPTIONS

RECOMMENDATION

The Planning Department staff recommends that the proposed amendments to the project

be forwarded to the City Council with a recommendation for approval. (Attachment F- Resolution)

OPTIONS

1. Motion to recommend approval of the amendments to the Willow Bend Tentative Subdivision Map subject to the adoption of the required findings for the proposal; or
2. Motion to recommend denial of amendments to the Willow Bend Tentative Subdivision Map to the adoption of the required findings against the proposal; or
3. Motion to continue the hearing for further study.

ATTACHMENTS:

1. Attachment A- Amendment to Conditions of Approval
2. Attachment B- EIR
3. Attachment C- Tentative Subdivision Map
4. Attachment D- Addendum to the EIR
5. Attachment E- ICE Study
6. Attachment F- Resolution

Willow Bend Dr. & 4th St (State Hwy 86)

El Centro, CA 92243

11/22/2024

Final Conditions of Approval for Willow Bend Subdivision

1. The project shall include the development of a maximum of 120 single-family residential lots with an average minimum lot size of 6,000 square feet.
2. Building permits shall not be issued for any construction related to the project until verification from the elementary and high school districts is received, certifying that the State mandated school impact mitigation fees have been paid or addressed as otherwise provided or authorized by law.
3. Removed
4. Removed
5. Removed
6. Removed
7. Removed
8. Removed
9. Removed
10. Prior to the recording of the first final map, the applicant shall complete or provide security for the widening of Highway 86 (4th Street) to a four-lane right-of-way width along the project frontage prior to recording of the first final map.

The widening, including any required deceleration and acceleration lanes north and south of the development frontage, shall be completed prior to the issuance of the 60th certificate of occupancy, as determined by the approved Caltrans ICE Study or other Caltrans requirements.

The No. 2 southbound lane shall merge into the No. 1 southbound lane such that the Countryside Drive and Highway 86 intersection transitions to a single southbound lane at the intersection.

11. Removed

12. Prior to the issuance of the 1st certificate of occupancy, and contingent upon approval by Caltrans, the applicant shall complete improvements to the intersection at Highway 86(4th Street) and Countryside Drive to provide full directional access to the development. Final intersection improvements shall be designed and constructed in accordance with the results of the Caltrans Intersection Control Evaluation (ICE) and shall be completed no later than the issuance of the 60th certificate of occupancy, or as determined by the approved Caltrans ICE Study.
13. Prior to the issuance of a grading permit, the applicant shall provide construction contracts to the Community Development Director that specify that all construction equipment shall be equipped with mufflers and other suitable noise attenuation devices.
14. Prior to the issuance of a grading permit, the applicant shall notify residents within 100 feet of the project's site regarding the construction schedule of the proposed project. All notices shall indicate the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.
15. Prior to issuance of a grading permit, the applicant shall erect a sign, legible at a distance of 50 feet, posted at the construction site. The sign shall indicate the dates and durations of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.
16. The applicant agrees to pay standard Police and Fire Impact fees as part of building permit issuance unless deferred as approved by the City of El Centro.
17. Access to the Date Drain by the public shall be secured with a four-foot high three rail wood fence along the western project site boundary. Fencing shall be installed prior to the completion of Grass Street/6th Street. The applicant shall coordinate with the Imperial Irrigation District for maintenance access requirements.
18. Prior to the issuance of the first certificate of occupancy, a trunk sewer line shall be installed on Carl Street to connect to the existing lift station at Highway 86 (4th Street)

and Willow Bend Drive. The trunk sewer line may be constructed within the right-of-way within the development (Carl Street) or adjacent to Highway 86 (4th Street). The Countryside Drive sewer line shall be sized and placed to allow connection from the development at the west. The developer shall be reimbursed for any additional costs incurred due to upsizing by the development to the west."

19. A six (6) foot high solid decorative block/masonry wall shall be provided along the western Highway 86 right-of-way line (eastern boundary of lots 1-14) and along the property lines abutting the park (eastern boundary of lots 81 and 70 and western boundary of lots 80 and 71). A vinyl or composite fencing shall be installed along the southern project boundary (southern boundary of lots 14-31 and western boundary of lot 31).
20. The proposed stormwater retention basin for the project site shall be developed in accordance with the City's design standard for retention basins. This requires a wrought iron fence with pilasters along the perimeter of the basin abutting and visible from the public right of way.
21. Prior to the issuance of the thirteenth certificate of occupancy, the applicant shall establish a Lighting and Landscape Maintenance District (LLMD) for the project. The LLMD shall pay for the maintenance of any lighting, landscaping, park, and recreation facilities, including graffiti abatement, within the public right-of-way, IID easement, retention basin and the park.
22. Prior to the grading permit, the applicant and the City of El Centro shall be required to conduct a preconstruction survey no more than 30 days prior to ground disturbing activity to ensure that owl burrows have not become established within the impact area. Should a burrowing owl move into the area prior to construction then mitigation should consist of passive relocation within a one-way door to avoid direct impacts to any burrowing owl on site. Passive relocation should be conducted during the non-breeding season (Sep.1-Jan.31) to ensure active nests are not lost as results of owl exclusion. The methodology for owl relocation should follow the guidelines set forth in the CDFG Staff Report on Burrowing Owl Mitigation.
23. In the event of the discovery of buried cultural resources, project activities in the vicinity of the resources shall be temporarily halted. A qualified archaeologist shall be consulted to assess the significance of the resource and to provide proper management recommendations (e.g., resource avoidance or data recovery excavation).

24. Prior to issuance of building permit and during construction, if human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resource Code Section 5097.98. The County Coroner shall be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner shall notify the NAHC, which determine and notify and Most Likely Descendent (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD may recommend scientific removal and nondestructive analysis of human and items associated with Native American burials.
25. The project shall be required to comply with regional rules, including the ICAPCD Rule VIII - Fugitive Dust Rules as well as ICAPCD CEQA Handbook Measures for Construction equipment and Fugitive PM₁₀ control, that assist in reducing short-term air pollutant emissions. Applicable dust suppression techniques are summarized below. Implementation of these dust suppression technique will reduce the fugitive dust generation (and thus the PM 10 component).
26. The applicant shall be responsible for any costs associated with right-of-way acquisition for the purposes of ingress or egress to the project site along Willow Bend Drive and Countryside Drive, if necessary to accommodate required off-site improvements.
27. Prior to the approval of the final subdivision map, grading plan, or permit issuance, a site-specific retention basin design shall be conducted by a registered civil engineer and submitted for review and approval by the City.
28. The construction of Countryside Drive crossing over the IID Date Drain must be completed prior to the issuance of the 80th certificate of occupancy. The threshold for this condition may be extended prior to the issuance of the 100th certificate of occupancy if circumstances beyond the applicants control occur that delay this improvement, as approved by the City Engineer and the Community Development Director.

The road crossing shall consist of two travel lanes, with no parking lanes, and shall include curb, gutter, and sidewalks on each side. City participation on all costs related to the IID drain construction and Countryside Drive improvements will be three hundred twenty-five thousand dollars, through a reimbursement agreement between city and applicant.

29. The applicant shall construct or provide security for a 1.3-acre improved park. The park shall include a multi-use grass field, park lighting, hard surface court, multi-use path, picnic, and playground area. The park is to be completed prior to 50% of the certificates of occupancy are issued. The developer shall provide park renderings and construction plans and cost estimates to the City of El Centro for review prior to filing of the first final map. Park development impact fees shall be waived by the City if park costs are higher than the subdivisions' park development impact fees to the satisfaction of the Community Development Director.
30. The project shall provide the minimum building setbacks in accordance with the R1-Single Family Residential Zone development standards.
31. Prior to the issuance of the first certificate of occupancy of each phase of development, all street dedications and off-site improvements (curb, gutter, sidewalk, and paving) for each phase shall be provided in accordance with the City's Subdivision Ordinance.
32. Utilities shall be provided in accordance with the City's Master Water/Sewer Plan. The applicant may enter into reimbursement agreement with the City for any oversizing of water or sewer lines that may be required.
33. Prior to the issuance of the certificate of occupancy of each residence, the applicant shall provide a minimum of one tree within the parkway strip on Countryside Drive only and one tree within the front yard landscaped area per lot. Said trees shall be selected from the City's list and consist of variety of trees. The remaining lots shall provide two trees in the front yard.
34. Prior to the issuance of each building permit, the applicant shall pay the appropriate development impact and sewer and water capacity fees unless deferred to prior to the issuance of a certificate of occupancy in compliance with Ordinance 21-03 and subject to the approval of the City Manager. Payment must clear prior to the issuance of a certificate of occupancy.
35. Fire hydrants markers and water mains shall be provided in accordance with the Fire Department's specifications. Fire hydrants shall be on a looped water system. Any combustible construction shall not begin until a fire hydrant is in service within 150 feet of construction activity. Applicant shall provide a phasing plan to the Engineering Division showing compliance with this condition prior to the issuance of the certificate of compliance.
36. Grading and drainage plans shall be submitted to the City for review and approval prior to the approval of the final map.

37. The project shall comply with all applicable provisions of the California Code of Regulations Title 24 (ADA).
38. The developer shall work directly with IID to obtain an encroachment permit for project related improvements on IID system facilities.
39. Pursuant to Section 66474.9 of the California Government Code, the applicant shall defend, indemnify, and hold harmless the City of El Centro, its agents, officers and employees to attack, set aside, void, or annul, the approval of the Planning Commission concerning the tentative subdivision map, which action is brought within the time period provided for in California Government Code Section 66499.37. However, the City of El Centro shall promptly notify the applicant/subdivider of any claim, action or proceeding and that the City shall cooperate fully in defense.
40. Except as specified herein, all conditions applicable to a final map phase, as determined by the City Engineer, shall be met before its last certificate of occupancy is issued unless otherwise noted.
41. Applicable offsite improvements shall be completed or secured to the satisfaction of the City Engineer prior to the recordation of each final map.
42. Removed
43. Removed
44. Public landscaping improvements shall be installed along the northern side of Willow Bend Drive, West side of Carl Street, South of lot 13, North side of Lot 1, and West and East side of Grass (6th) Street in the side yards of the noted locations and homes. Public landscaping improvements shall be included in the lighting and landscape maintenance district.
45. A school bus loading area shall be installed in front of the park area, unless otherwise determined by the school districts that the location would be unfeasible for a school bus loading area.

**Draft Environmental Impact Report
for
City of El Centro
Zone Change 05-05 and
Tentative Subdivision Map (Willow Bend)
State Clearinghouse Number: 2005101128**

Prepared for:

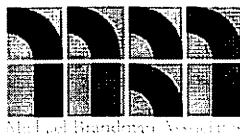
City of El Centro
Planning Department
1275 Main Street
El Centro, CA 92243

Contact: Oliver Alvarado, Planning Director

Prepared by:

Michael Brandman Associates
Michael Brandman Associates
220 Commerce, Suite 200
Irvine, CA 92602

Contact: Kara E. Palm, Project Manager



August 9, 2006

Table of Contents

Section 1: Introduction	1-1
1.1 - Purpose of the EIR	1-1
1.2 - Scope of the EIR	1-2
1.3 - EIR Focus and Effects Found Not To Be Significant	1-3
1.4 - Components of the EIR Analysis	1-3
1.5 - Project Sponsors and Contact Persons	1-4
1.6 - Incorporation by Reference	1-4
1.7 - Review of the Draft EIR.....	1-4
Section 2: Executive Summary	2-1
2.1 - Proposed Project.....	2-1
2.2 - Areas of Controversy/Issues To Be Resolved	2-1
2.3 - Significant Unavoidable Adverse Environmental Effects	2-2
2.4 - Summary of Alternatives	2-3
2.5 - Mitigation Monitoring Program	2-4
2.6 - Summary of Significant Environmental Impacts and Mitigation Measures	2-4
Section 3: Project Description	3-1
3.1 - Project Location.....	3-1
3.2 - Project Characteristics	3-1
3.3 - Project Objectives	3-1
3.4 - Intended Use of this EIR, Responsible Agencies, and Approvals Needed.....	3-5
Section 4: General Description of Environmental Setting	4-1
Section 5: Project Impacts	5.1-1
5.1 - Agricultural Resources	5.1-1
5.2 - Air Quality	5.2-1
5.3 - Biological Resources.....	5.3-1
5.4 - Cultural Resources.....	5.4-1
5.5 - Geology and Soils	5.5-1
5.6 - Hazards and Hazardous Materials.....	5.6-1
5.7 - Noise	5.7-1
5.8 - Public Services and Utilities	5.8-1
5.9 - Transportation and Traffic	5.9-1
Section 6: Cumulative Impacts	6-1
6.1 - CEQA Requirements.....	6-1
6.2 - Cumulative Impact Setting	6-1
6.3 - Cumulative Impact Analysis	6-2
6.4 - Conclusions.....	6-17
Section 7: Alternatives to the Proposed Project.....	7-1
7.1 - No Project/No Development Alternative.....	7-2
7.2 - No Project/Development in Accordance with the Existing Zoning Alternative	7-4
7.3 - Alternative Site Alternative (Alternative Considered and Rejected).....	7-8
7.4 - Environmentally Superior Alternative	7-8
Section 8: Other CEQA Considerations.....	8-1
8.1 - Significant Unavoidable Impacts	8-1
8.2 - Growth Inducing Impacts.....	8-2
8.3 - Irreversible and Irretrievable Commitment of Resource	8-2

Section 9: Organizations and Persons Consulted.....	9-1
9.1 - Public Agencies	9-1
Section 10: Report Preparation Personnel.....	10-1
10.1 - EIR Preparation Personnel	10-1
Section 11: References	11-1
 Appendix A: Initial Study / Notice of Preparation and Responses	
Appendix B: LESA Model	
Appendix C: Air Quality Study	
Appendix D: Biological Field Notes	
Appendix E: Cultural Resources Assessment	
Appendix F: Geotechnical Study	
Appendix G: Hazardous Materials Assessments	
Appendix H: Noise Assessment	
Appendix I: Traffic Impact Study	

List of Tables

Table 2-1: Summary of Project Impacts and Mitigation Measures.....	2-6
Table 5.1-1: Agricultural Land Use Summary (2004).....	5.1-3
Table 5.1-2: Conversion of Important Farmland (2004).....	5.1-4
Table 5.1-3: Soils Summary	5.1-5
Table 5.1-4: Final LESA Score Calculation	5.1-5
Table 5.1-5: Surrounding Agricultural Uses	5.1-6
Table 5.2-1: Ambient Air Quality Standards	5.2-3
Table 5.2-2: Air Quality Monitoring Summary	5.2-6
Table 5.2-3: Short-term Construction Emissions.....	5.2-9
Table 5.2-4: Long-Term Emissions (Summer)	5.2-10
Table 5.2-5: Long-Term Emissions (Winter)	5.2-10
Table 5.2-6: Mitigated Short-term Construction Emissions	5.2-14
Table 5.3-1: Special Status Plant and Animal Species Identified in CNDDDB.....	5.3-7
Table 5.5-1: Projected Maximum Peak Ground Acceleration at the Project Site.....	5.5-1
Table 5.6-1: Project Area Database Search.....	5.6-5
Table 5.7-1: Examples of A-Weighted Sound Levels.....	5.7-2
Table 5.7-2: Existing Noise Conditions	5.7-3
Table 5.7-3: Noise Impacts from Proposed Project (Leq)	5.7-7
Table 5.8-1: Fire Station Summary.....	5.8-2
Table 5.8-2: Response Time Summary.....	5.8-2
Table 5.8-3: Estimated Alarm Calls	5.8-3
Table 5.8-4: Police Department Calls for Service	5.8-4
Table 5.8-5: FBI Crime Index	5.8-5
Table 5.8-6: Average Police Department Response Times	5.8-5
Table 5.8-7: McCabe Elementary School Summary	5.8-7
Table 5.8-8: High School Summary.....	5.8-7
Table 5.8-9: Anticipated Enrollment Growth and Facilities Needs	5.8-8
Table 5.8-10: Student Generation Estimate	5.8-8
Table 5.8-11: Student Generation Estimate	5.8-9
Table 5.8-12: Park Summary.....	5.8-11
Table 5.8-13: Existing and Future Parkland Needs.....	5.8-12
Table 5.8-14: Parkland Required.....	5.8-13
Table 5.8-15: Potable Water Consumption	5.8-14
Table 5.8-16: Wastewater Generation	5.8-16
Table 5.8-17: Landfill Summary.....	5.8-17
Table 5.8-18: El Centro Solid Waste Diversion Rates.....	5.8-18

Table of Contents

Table 5.8-19: Construction Waste Generation.....	5.8-18
Table 5.8-20: Operational Waste Generation	5.8-19
Table 5.8-21: Energy Consumption	5.8-21
Table 5.9-1: Circulation System Performance Criteria	5.9-2
Table 5.9-2: Level of Service Criteria for Signalized Intersections	5.9-5
Table 5.9-3: Level of Service Criteria for Unsignalized Intersections	5.9-6
Table 5.9-4: Level of Service Criteria for Roadway Segments	5.9-6
Table 5.9-5: Existing Unsignalized and Signalized Intersections Levels of Service.....	5.9-7
Table 5.9-6: Existing Roadway Segment Capacity.....	5.9-8
Table 5.9-7: Intersection Significance Criteria'	5.9-8
Table 5.9-8: Roadway Segment Significance Criteria	5.9-9
Table 5.9-9: Project Trip Generation.....	5.9-10
Table 5.9-10: Intersection Level of Service for Year 2008.....	5.9-10
Table 5.9-11: Year 2008 Roadway Segment Capacity.....	5.9-13
Table 6-1: Cumulative Project List	6-1
Table 6-2: Comparison of Year 2025 California Air Resources Board Projections and Project Emissions	6-4
Table 6-3: Cumulative Noise Levels	6-7
Table 6-4: Mitigated Future Year Traffic Noise	6-8
Table 6-5: Intersection Level of Service for Near-term Conditions	6-10
Table 6-6: Roadway Segment Capacity for Near-term	6-12
Table 6-7: Horizon Year 2025 Roadway Segment Conditions	6-16

List of Exhibits

Exhibit 3-1: Regional Location Map.....3-3

Exhibit 3-2: Local Vicinity Map.....3-5

Exhibit 3-3: Site Plan3-7

Exhibit 4-1: Surrounding Land Use Map4-3

Exhibit 5.3-1: Sensitive Species Location Map5.3-5

Exhibit 5.7-1: Noise Receptor Locations5.7-5

Exhibit 5.9-1: Project Study Area.....5.9-3

Exhibit 5.9-2: Project Trip Distribution5.9-11

SECTION 1: INTRODUCTION

1.1 - Purpose of the EIR

This Draft Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the development of the Willow Bend project, which includes an annexation to the City of El Centro and residential subdivision of 131 single-family residences. The City of El Centro is the lead agency for the preparation of the EIR. This document is a project EIR and has been prepared in conformance with CEQA, California Public Resources Code Section 2100 et seq; the California CEQA guidelines (California Code of Regulation, Title 14, Section 15000 et seq.); and the rules, regulations, and procedures for implementing CEQA as adopted by the City of El Centro.

This Draft EIR is intended to serve as an informational document for the public agency decision-makers and the public regarding the objectives and components of the proposed project. This document will address the potentially significant adverse environmental impacts that may be associated with the planning, construction, or operation of the project, as well as identify appropriate feasible mitigation measures and alternatives that may be adopted to reduce or eliminate these impacts. This EIR considers a series of actions that are needed to achieve development of the proposed project. The actions currently being requested include approval of the following project components, a zone change, an annexation, and a tentative tract map. Additional approvals (i.e., grading permits and building permits) will be needed. In addition to the City, other public agencies (i.e., responsible and trustee agencies) will also use the information in the EIR in their decision-making process as well as additional information that may be presented during the CEQA process. A more detailed discussion of the potential project approvals is provided in this EIR's Section 3.4, Intended Use of this EIR, Responsible Agencies, and Approvals Needed.

This EIR is the primary reference document for the formulation and implementation of a mitigation monitoring program for the proposed project. Environmental impacts cannot always be mitigated to a level that is considered to be less than significant. In accordance with Section 15093(b) of the State CEQA Guidelines, if a lead agency approves a project that has significant impacts that are not substantially mitigated (i.e. significant unavoidable impacts), the agency shall state in writing the specific reasons for approving the project, based on the final CEQA documents and any other information in the public record for the project. This is termed, per Section 15093 of the state CEQA Guidelines, a statement of overriding considerations.

The intent of this project EIR is to provide a comprehensive single environmental document that will allow the City of El Centro to carry out the proposed project. This EIR provides a reasonably anticipated scope of the project. This EIR will also be used to determine whether subsequent environmental documentation will be required. Subsequent actions on the project site may include,

but not limited to, the consideration of conditional use permits, grading permits, and building permits. The lead agency can approve subsequent actions without additional environmental documentation unless as otherwise required by Public Resources Code Section 21166, and the state CEQA Guidelines Sections 15162 and 15163.

1.2 - Scope of the EIR

The EIR will address the potential environmental effects of the proposed project. The scope of the EIR includes issues identified by the City of El Centro during the preparation of the Initial Study (IS) and Notice of Preparation (NOP) for the proposed project, and issues raised by agencies and the general public in response to the IS/NOP, as described below.

1.2.1 - Environmental Procedures

This document analyzes the environmental effects of the project to the degree of specificity appropriate to the current proposed actions, as required by Section 15146 of the state CEQA Guidelines. This analysis considers the series of actions associated with the various discretionary actions required for project implementation to determine the associated short-term and long-term effects. This EIR discusses both the direct and indirect impacts of this project, as well as the cumulative impacts associated with planned and foreseeable future development within the project area as identified in Section 6, Cumulative Impacts, of this EIR.

CEQA requires the preparation of an objective, full disclosure document, to inform agency decision-makers and the public of the direct and indirect environmental effects of the proposed action; provide mitigation measures to reduce or eliminate potential adverse effects; and identify and evaluate reasonable alternatives to the proposed project.

1.2.2 - Scoping Process

In compliance with State CEQA Guidelines, the City of El Centro has taken steps to maximize opportunities to participate in the environmental process. During the preparation of the Draft EIR, an effort was made to contact various federal, state, regional, and local governmental agencies and other interested parties to solicit comments and inform the public of the proposed project. This included the distribution of the IS/NOP on October 27, 2005. The project was described, potential environmental effects associated with the project implementation were identified, and agencies and the public were invited to review and comment on the NOP. The close of the NOP review period was November 25, 2005. The IS/NOP and comment letters received during the NOP review period are included in Appendix A of this EIR.

Agencies, organizations, and interested parties who did not respond to the NOP request for comments, or did provide other comments during the preparation of the Draft EIR currently have the opportunity to comment during the 45-day public review period on the Draft EIR.

1.3 - EIR Focus and Effects Found Not To Be Significant

Based on the findings of the IS/NOP, a determination was made that an EIR is required to address the potentially significant environmental effects, including the cumulative effects of the proposed project. The scope of the EIR includes issues identified by the City of El Centro during the preparation of the IS/NOP for the proposed project, as well as environmental issues raised by agencies and the general public in response to the IS/NOP. The following are the issues addressed in this EIR:

- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Noise
- Public Services and Utilities
- Transportation and Traffic

As discussed in the IS/NOP (Appendix A of this EIR) the environmental issues that were determined not to be significantly affected by the proposed project and therefore, do not require evaluation in the document, per section 15063(c) of the State CEQA Guidelines, are as follows:

- Aesthetics
- Hydrology/Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing

1.4 - Components of the EIR Analysis

The analysis of each environmental category within Section 5, Existing Conditions, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation, of this EIR is organized into the following subsections:

- **Existing Conditions:** describes the physical conditions that exist at this time and which may influence or affect the issue under investigation.
- **Project Impacts:** describes the potential environmental changes to the existing physical conditions that may occur if the proposed project is implemented.
- **Mitigation Measures:** are those specific measures that may be required of the project by the decision-makers in order to (1) avoid an impact, (2) minimize an impact, (3) rectify an impact

by restoration, (4) reduce or eliminate an impact over time by preservation and maintenance operations, or (5) compensate for the impact by replacing or providing substitute resources or environment.

- **Level of Significance After Mitigation:** discusses whether the project and the project's contribution to cumulative impacts can be reduced to levels that are considered less than significant.

In addition, Section 6, Cumulative Impacts, describes the potential environmental changes to the existing physical conditions that may occur with the proposed project, together with anticipated growth in the vicinity of the project site.

1.5 - Project Sponsors and Contact Persons

The City of El Centro is the lead agency in the preparation of the EIR. Development Design & Engineering, Inc. is the project sponsor. Michael Brandman Associates is the environmental consultant for the project. Preparers of this EIR are provided in Section 10. Key contact persons are as follows:

Lead Agency.....	City of El Centro Planning Department Oliver Alvarado, Planning Director 1275 Main Street El Centro, CA 92243
Project Applicant.....	Development Design & Engineering, Inc. 1122 State Street, Suite D El Centro, CA 92243
Environmental Consultant.....	Michael Brandman Associates Kara Palm, Project Manager 220 Commerce, Suite 200 Irvine, CA 92602

1.6 - Incorporation by Reference

In addition to the project technical studies, a number of other environmental documents and technical studies were consulted to aid in the preparation of this EIR, including the City's General Plan. These documents are referenced in Section 11, References, and are on file and available for review at the City of El Centro Planning Department.

1.7 - Review of the Draft EIR

This Draft EIR was distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in

accordance with Public Resources Code 21092(b)(3). The Notice of Completion of the Draft EIR was also distributed as required by CEQA. During the 45-day public review period, the EIR, including technical appendices, is available for review at the City of El Centro, Planning Department, 1275 Main Street, El Centro, California, 92243.

Written comments on the Draft EIR should be addressed to:

City of El Centro
Planning Department
Oliver Alvarado, Planning Director
1275 Main Street
El Centro, CA 92243

Upon completion of the 45-day review public review period, written responses to all significant environmental issues raised will be prepared and available for review at least 10 days prior to the public hearing before the El Centro City Council at which the certification of the Final EIR will be considered. These environmental comments and their responses will be included as part of the environmental record for consideration by decision-makers for the project.

SECTION 2: EXECUTIVE SUMMARY

2.1 - Proposed Project

The proposed project is the development of a single-family residential community that includes the subdivision of 38 acres of farmland to provide for 131 single-family residential lots, a 3.02-acre retention basin, and a 1.67 acre park. Project implementation includes a zone change from County zoning, General Agriculture/Urban Overlay (A2U) to City zoning Single Family Residential (R-1). It is the intent of the City of El Centro to annex the project site into the City's incorporated boundaries. Project implementation will also require the extension and/or upgrade of public services and utilities and the internal circulation system. Primary access to the project is proposed via 4th Street (SR-86) along two access drives (Willow Bend Drive and Countryside Drive).

In addition to the required changes to the City's Municipal Code, the proposed project will also require the following City approvals: zone change, annexation, tentative subdivision maps, grading permits, and building permits. The project will also require approvals from LAFCO (annexation) and the Imperial Irrigation District (retention basin and storm water measures).

2.2 - Areas of Controversy/Issues To Be Resolved

The potential areas of controversy and issues to be resolved through the EIR process are derived from the Initial Study/Notice of Preparation (Appendix A) and responses thereto. These areas are summarized as follows:

- The project site is currently vacant and has been historically used for agriculture production. The project site contains Soils of Statewide Importance, and accordingly, the project site is considered to contain Farmland of Statewide Importance. Project implementation will result in the conversion of designated farmland to non-agricultural land uses. (see Section 5.1, Agricultural Resources).
- The proposed project will have air quality impacts in the short-term during the mass grading of the site and the construction of the residential units and associated infrastructure and in the long-term as vehicular traffic increases in the project area. In addition the proposed project will need to be examined for consistency with the Air Quality Management Plan (see Section 5.2, Air Quality).
- The project site is currently vacant and has been historically used for agriculture production. The project site provides marginal habitat or foraging area for burrowing owls, a species of concern, which is known to occur in the project area. The project site also may contain habitat for nesting birds (see Section 5.3, Biological Resources).

- The project site consists of undeveloped farmland. While past agricultural activities resulted in ground disturbance that would have potentially destroyed any archeological or paleontological resources, no record search or cultural survey has been performed to identify the presence or lack thereof of cultural resources. Project implementation will involve earth moving activities that could potentially destroy any unknown resources (see Section 5.4, Cultural Resources).
- The project site is located in an area that is seismically active and may experience primary and secondary seismic activity. The site may be subject to geological constraints including but not limited to, groundshaking, liquefaction and expansive soils (see Section 5.5, Geology and Soils).
- Historically the project site was used for agricultural production, which included the application of herbicides and pesticides. Implementation of the proposed project will involve grading and other construction related activities that have the potential to unearth yet unknown hazardous materials and/or waste. Once operational, the project will increase the use of common household hazardous wastes in the project area (see Section 5.6, Hazards and Hazardous Materials).
- The proposed project will result in the generation of noise in the short-term during construction and in the long term as vehicular traffic increases in the project area (see Section 5.7, Noise).
- Project implementation will result in the conversion of undeveloped land to residential land uses, which will increase the demand for public services within the project area and the need for infrastructure to be extended to the project site (see Section 5.8, Public Services and Utilities).
- The proposed project will introduce 1,333 daily vehicle trips to the project area circulation system, of which 101 trips will be during the AM peak hour and 137 will be during the PM peak hour. (see Section 5.9, Transportation and Traffic).

2.3 - Significant Unavoidable Adverse Environmental Effects

Section 15126.2(b) of the State CEQA Guidelines requires an EIR to, “describe any significant impacts, including those which can be reduced but not mitigated to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect should be described.”

Section 5, Environmental Setting, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation and Section 6, Cumulative Impacts, of this EIR, provides an evaluation of the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts to a less than significant level where feasible. With the implementation of the mitigation measures proposed, no significant unavoidable project-related or cumulative impacts will occur, with the exception of impacts to agricultural resources and air quality as discussed below:

- Project implementation will result in the conversion of this agricultural land to urban uses, which would constitute a significant loss of Farmland of Statewide Importance. Potential impacts in this regard are significant and unavoidable under CEQA. No mitigation is available to reduce this significant impact to a level of less than significant.
- The Imperial County population projections for year 2010 used in the Attainment Plan and PM-10 Plan for the City of El Centro assumes land use designations in the General Plan and includes build-out of the site. The project site under the current County General Plan land use designation would accommodate approximately only 2 dwelling units per parcel. The proposed project includes the development of 131 single-family residential dwelling units. Clearly the proposed project would result in a higher density, and more vehicle trips and vehicle miles traveled than what was anticipated in the Attainment Plan and PM-10 Plan. Because the project will result in more people and more traffic than what was considered in the plan, the project is not consistent with the Attainment Plan and PM-10 Plan, and therefore would create a significant impact in this regard. No mitigation is available to reduce this significant impact to less than significant.

2.4 - Summary of Alternatives

Section 15126.6 of the CEQA Guidelines state that “An EIR shall include a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” In addition, in CEQA Guidelines Section 15126.6(e), indicates that if other future uses of the land are predictable, such uses should be discussed as possible no-project conditions and the project should be compared to them. Section 7, Alternatives, of this draft EIR provides descriptions and analysis of each alternative in adequate detail to allow the decision-maker to decide whether or not an alternative should be adopted in lieu of the proposed project. The alternatives evaluated in the following draft EIR include the following:

- No Project/No Development Alternative; and
- No Project/Development In Accordance with Existing Zoning Designation.

Additionally, an Alternative Site Alternative was initially considered for analysis within this Draft EIR; however after further consideration, it was determined that this alternative would not be feasible. Specifically, an examination of available parcels of land that could support the proposed project indicated that the inventory of available parcels consisted of agricultural lands and lands designated for agricultural land uses. Therefore, similar to the proposed project, the implementation of an Alternative Site Alternative would result in the conversion of agricultural lands and would not be consistent with the Air Quality Management Plan thus, an Alternative Site Alternative would not eliminate a significant unavoidable project impact. Additionally, while CEQA Guidelines do not require that an alternative meet the project objectives and may to some degree impede attainment of

project objectives, there was no suitable alternative site that could avoid a project-related significant unavoidable impacts and partially meet the project objectives.

2.4.1 - No Project/No Development Alternative

Under the No Project/No Development Alternative (No Project Alternative), the entire project site would remain unchanged and no new development would occur onsite. In general, the Willow Bend project site would continue to exist as undeveloped land and the project site would not be annexed into the City of El Centro.

2.4.2 - No Project/Development in Accordance with Existing Zoning Alternative

The No Project/Development in Accordance with Existing Zoning Alternative (Zoning Alternative) would result in the development of the project site under the existing zoning designation. Similar to the No Project Alternative, under this alternative scenario, the project would not be annexed into the City of El Centro. Currently the project site is zoned by Imperial County as General Agriculture/Urban Overlay (A2U). Under this designation, agricultural land uses are allowed. The density permitted is one dwelling unit per 40 acre parcel. Therefore, under the current County zoning designation, the 38-acre project would preclude residential development but allow agricultural production and associated activities.

2.5 - Mitigation Monitoring Program

CEQA requires public agencies to set up monitoring report programs for ensuring compliance with those mitigation measures adopted as conditions of approval in order to mitigate or avoid significant environmental effects as identified in the EIR. A mitigation monitoring program, incorporating the mitigation measures set forth in this document, will be adopted at the time of certification of the EIR.

2.6 - Summary of Significant Environmental Impacts and Mitigation Measures

Table 2-1 summarizes the potential environmental effects of the proposed project, the recommended mitigation measures, and the level of significance after mitigation. Impacts that are noted in the summary as “significant” after mitigation will require the adoption of a statement of overriding considerations, if the project is approved as proposed (CEQA Section 15903).

Impacts of the project are classified as (1) Less than Significant (adverse effects that are not substantial according to CEQA or adverse effects that have been mitigated to levels that are considered less than significant or (2) Significant and Unavoidable (substantial changes in the environment that cannot be avoided even with feasible mitigation). Mitigation measures are listed, when feasible for each impact. The EIR also identifies other effects, which are either not considered significant or are beneficial effects of the proposed project; such effects are not the focus of the following summary. The reader is referred to the full text of this EIR for a description of the

environmental effects of the proposed project and feasible mitigation measures recommended to reduce these effects to a level considered less than significant.

Table 2-1: Summary of Project Impacts and Mitigation Measures

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 5.1 - Agricultural Resources		
Project implementation will result in the conversion of Farmland of Statewide Importance.	There are no feasible mitigation measures.	Significant and unavoidable.
Section 5.2 - Air Quality		
Onsite construction emissions generated during construction principally consist of exhaust emissions (NO _x , SO _x , CO, VOC, and PM ₁₀) from heavy-duty construction equipment operation and fugitive dust (PM ₁₀) from disturbed soil.	AQ 5.2-1. During construction of the proposed improvements, all construction equipment will be properly maintained at an offsite location and includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction. AQ 5.2-2. During construction of the proposed improvements, all construction equipment will be fueled with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use in off-road equipment). AQ 5.2-3. To the maximum extent feasible, use diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines. AQ-5.2.4. Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction site and provide temporary traffic control (i.e. flag person) during demolition debris transport and other construction related truck hauling activities. AQ 5.2-5. During construction of the proposed improvements, construction equipment will not idle on site for more than 10 minutes. AQ 5.2-6. During construction of the proposed improvements, the project applicant will provide onsite meals to construction workers by arranging a lunch wagon to visit the construction site during work breaks including the lunch break. This will improve air quality by reducing traffic created by construction workers. AQ 5.2-7. During construction of the proposed improvements, the project applicant will provide onsite electrical hook ups for electric construction tools, such as saws, drills and compressors, to eliminate the need for diesel powered electric generators.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	AQ 5.2-8. Prior to construction of the proposed improvements, the project proponent will provide a Dust Control Plan that will describe the application of standard best management practices to control dust during construction. Best management practices will include application of water on disturbed soils a minimum of two times per day, covering haul vehicles, replanting disturbed areas as soon as practical, restricting vehicle speeds on unpaved roads to 15 mph, sweeping street access points at the end of each day, and other measures, as deemed appropriate to the site, to control fugitive dust. The Fugitive Dust Control Plan shall be submitted to the City and the Imperial County Air Pollution Control District for approval and approved prior to construction. AQ 5.2-9. During construction of the proposed improvements, only low volatility paints and coatings as defined in Imperial County APCD Rule 424 shall be used. All paints shall be applied using either high volume, low pressure (HVL) spray equipment or by hand application.	
The proposed project is not consistent with the AQMP	No mitigation is available.	Significant and unavoidable.
Section 5.3 - Biological Resources		
Burrowing owls would be adversely impacted on a short-term basis during construction activities to underground the onsite drains.	BR 5.3-1. Additional focused survey shall be conducted to more conclusively determine the number of owls occupying the project site and a 500-foot buffer. Focused surveys shall follow accepted burrowing owl protocol, which includes a nesting season survey. During the nesting season survey, four site visits are conducted between April 15 and July 15. Surveys shall be conducted from two hours before sunset to one hour after, or from one hour before to two hours after sunrise. BR 5.3-2. A burrowing owl preconstruction survey shall be completed no sooner than 30 days prior to commencement of construction. BR 5.3-3. Burrowing owls inside the project site shall be actively relocated prior to construction activity in order to avoid direct impacts of burrow destruction. Once all burrows on the project site are confirmed to be absent of owls, they shall be systematically collapsed. Where possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	BR 5.3-4. No construction-related disturbance shall occur within 50 m., approx. 160 ft., of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m., approx. 250 ft., during the breeding season of February 1 through August 31. BR 5.3-5. If feasible, 6.5 acres of foraging habitat for each pair of burrowing owl would be preserved in a conservation easement and managed to promote burrowing owl use of the site. This habitat shall be adjacent to the project site but at least 50 meters from the impact area. The displaced owls would be encouraged to occupy this conserved area by actively relocating them to natural or artificial burrows. One alternate natural or artificial burrow should be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. Conservation of agricultural lands to the west or south of the project site would be the only appropriate options under this mitigation measure. BR 5.3-6. If Mitigation Measure BR 5.3-5 is not feasible, this mitigation measure is required. Off-site replacement of burrowing owl habitat shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable burrowing owl habitat. One alternate natural or artificial burrow shall be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. The off-site replacement of suitable burrowing owl habitat shall follow one of the following scenarios: 1. Replacement of occupied habitat with off-site occupied habitat: 9.75 acres per pair or single bird. 2. Replacement of occupied habitat with off-site suitable unoccupied habitat: 19.5 acres per pair or single bird.	
In the long-term, due to increased recreational use of the berms by humans and pets, harassment of owls will occur. Also, the conversion of burrowing owl foraging, dispersing, and nesting habitat will be impacted.	BR 5.3-7. An educational flyer shall be developed that informs new residences that off-road activity is not permitted on the surrounding berms. In addition, pets shall be on leashes if walked on berms. The flyer shall also make new residents aware of burrowing owls, their biology, how and why they are sensitive, and their benefits to insect and rodent control.	Less than significant.
The proposed project contains suitable nesting bird habitat. If actively nesting birds are present during	BR 5.3-8. The removal of vegetation, ground disturbance, or elimination of other potential nesting habitat should be conducted outside of avian	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
construction, they will be disturbed by construction activities.	nesting season (February through August). This is particularly true for construction during the undergroundment of the drains as burrowing owls were confirmed as present and are likely resident breeders. If construction occurs during the avian nesting season, a pre-construction nesting bird survey shall be conducted seven days prior to any ground disturbing activities. If birds are found to be nesting inside the impact area, construction will need to be postponed until a no-construction buffer, 250 feet for passerines and 500 feet for raptors, is established. Construction inside the buffer could commence once a qualified biologist determines that the nest is no longer active.	
Section 5.4 - Cultural Resources		
<i>Cultural Resources</i> The records search and field survey results revealed that there a low potential exists for impacts to prehistoric cultural resources. However, there is always the potential for undiscovered resources to be uncovered.	CR 5.4-1. In the event that human remains are uncovered, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Imperial County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, then the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or CR 5.4-2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or on the property in a location not subject to further subsurface disturbance: • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. • The descendant identified fails to make a recommendation; or • The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the landowner.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
<i>Paleontological Resources</i> There is a high probability that the project site contains significant paleontological resources, at a depth of eight feet or greater below ground surface.	CR 5.4-3. Prior to any clearing and grubbing and/or earthmoving activities on the project area, a qualified Project Paleontologist retained by the Proponent and approved by the City shall review the approved development and construction plans. The paleontologist shall participate in a pre-construction project meeting with the development staff to ensure an understanding of the mitigation measures required during construction. CR 5.4-4. Paleontologic monitoring of any shall be conducted by a qualified monitor, under direct guidance of a Project Paleontologist. Earthmoving in areas of the parcel where previously undisturbed sediments will be buried but not otherwise disturbed will not be monitored. Monitoring shall begin once earthmoving reaches 8 feet below the original ground surface. Non-virgin soils need not be monitored. CR 5.4-5. If too few fossil remains are found after 50 percent of earthmoving is complete, monitoring can be reduced or discontinued in those areas at the project paleontologist's direction. If fossil remains are found during monitoring, up to 6,000 pounds of fossiliferous sediments will be recovered from the fossil site and processed to allow for the recovery of smaller fossil remains. The total weight of all processed samples from the fossil-bearing rock unit will not exceed 6,000 pounds at any one site. CR 5.4-6. If fossil remains are found, the Project Paleontologist shall develop a storage agreement with a museum repository acceptable within the City to allow for the permanent storage and maintenance of any fossil remains recovered in the Project Site as a result of the mitigation program, and for the archiving of associated specimen data and corresponding geologic and geographic site data. Any recovered fossil remains will be prepared to the point of identification and identified to the lowest taxonomic level possible by knowledgeable paleontologists. The remains then shall be curated (assigned and labeled with museum repository fossil specimen numbers and corresponding fossil site numbers, as appropriate; placed in specimen trays and, if necessary, vials with completed specimen data cards) and catalogued. Associated specimen data and corresponding geologic and geographic site data will be archived (specimen and site numbers and corresponding data entered into appropriate museum repository catalogs and computerized data bases) at the museum repository by a laboratory technician. The remains then will be accessioned into the	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	museum repository fossil collection, where they will be permanently stored and maintained. The associated specimen and site data shall be made available for future study by qualified investigators. CR 5.4-7. A final report of findings shall be prepared by the Project Paleontologist for submission to the City, and the museum repository following accessioning of the specimens into the museum repository fossil collection. The report shall describe parcel geology/stratigraphy, summarize field and laboratory methods used, include a faunal list and an inventory of curated/catalogued fossil specimens, evaluate the scientific importance of the specimens, and discuss the relationship of any newly recorded fossil site in the parcel to relevant fossil sites previously recorded from other areas.	
Section 5.5 - Geology and Soils		
The project site is within the vicinity of numerous active faults and will likely experience moderate to strong ground motion from earthquakes in the region.	GS 5.5-1. Prior to the issuance of grading permits, LandMark Consultants, Inc., or other qualified engineering geologist approved by the City of El Centro shall review and approve all grading plans and earthwork operation plans in relation to the Recommendations set forth in Section 4 of the Geotechnical Study (Appendix F of this DEIR). GS 5.5-2. LandMark Consultants, Inc. or other qualified engineering geologist approved by the City of El Centro shall be provided with a forty-eight hours advance notice in order to be present at the site during all earthwork activities related to the excavation, tree root removal, stripping, backfill, and compacting and filling of the site and to perform periodic compaction tests. GS 5.5-5. Prior to the issuance of grading permits, the project applicant is recommended to include in the structural designs the following foundation improvements to reduce the potential effects of liquefaction induced settlements by making the structures more able to withstand differential settlement. • Reinforced foundations that use grade-beam footings to tie floor slabs and isolated columns to continuous footings (conventional or stiffened post-tensioned); • Structural flat-plate mats, either conventionally reinforced or tied with post-tensioned tendons.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
The results of the testing soils for expansive properties indicated that earthwork operations can be expected to encounter expansive soils with expansion indexes in the range of medium to high. Thus, there is the potential for soils at the site to have a high potential for expansion.	Please refer to mitigation measures GS 5.5-1, 5.5-2, and 5.5-5. GS 5.5-3. Prior to the issuance of grading permits, the project applicant shall include one of the following foundation systems and remediation schemes to reduce the potential for expansive soils to less than significant. • Waffle-slabs supported on a system of drilled piers anchored below the zone of moisture change; • Moisture conditioning subgrade soils to a minimum of 5% above optimum moisture (ASTM D1557) for the full range in depth of surface soils; • Design of foundations that are resistant to shrink/swell forces of silt/clay soil; • Excavation of existing materials and replacement by non-expansive soils; • Reinforcement in footings and slabs. Flexural and shear stresses in slabs should be computed by determining the differential swell for the center lift and edge lift conditions using design procedures recommended by the Post-Tensioning Institute. The differential swell should be used to compute the maximum shear stresses and flexural stresses in floor slabs and flatwork. Use edge moisture variation distance (em) of six feet and three feet for the center lift and edge lift conditions, respectively; and • Provide Post-tensioned, free floating slabs-on-grade. GS 5.5-6. Provide positive free drainage away from the structure and make every effort possible to prevent subgrade saturation by measures such as: • containing all landscaping in sealed planters, sealing all construction joints with an elastomeric compound, providing the building with eave gutters and downspouts; and • routing all drainage impinging upon the site from off-site sources as well as drainage generated on the site away from the proposed residential structures.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
There is groundwater at a level of eight feet below ground surface. Soils encountered below three feet have the potential to pump groundwater under heavy construction wheel loads because of the silty conditions in the near surface soils have the tendency to support layers of groundwater.	GS 5.5-4. Base line collectors (6-8 inches in diameter) along the north side of the project site shall be crushed in place and trench backfill compacted (85-90%). The 4-inch lateral pipeline drains shall be plugged at street crossings. GS 5.5-5. Light earthmoving equipment (i.e., 613 and/or 623 Earthmovers) shall be used on the project site during construction activities to reduce the potential for groundwater pumping. GS 5.5-6. Provide positive free drainage away from the structure and make every effort possible to prevent subgrade saturation by measures such as: • containing all landscaping in sealed planters, sealing all construction joints with an elastomeric compound, providing the building with eave gutters and downspouts; and • routing all drainage impinging upon the site from off-site sources as well as drainage generated on the site away from the proposed residential structures.	Less than Significant.
Section 5.6 - Hazards and Hazardous Materials		
Remnants of past activities and debris are located on the project site.	HM 5.6-1. Prior to any earth moving activities on the project site, debris consisting of a wood pallet, dry brush, Styrofoam, cardboard and automobile tires found at the northern portions of the project site shall be removed and properly disposed.	Less than significant.
Pesticide residue (DDE) exists in the project site soils below current threshold (action) limits.	HM 5.6-2. Prior to the issuance of a grading permit, the project applicant shall coordinate with DTSC to review and approve the results of the pesticide scan. DTSC shall provide written verification that no further action is required in relation to the presence of DDE in near surface soils. If DTSC determines that the soils exceed the acceptable limits the soils shall be remediated and/or properly disposed of per DTSC requirements.	Less than significant.
Section 5.7 - Noise		
Activities involved in construction of the project would generate noise levels in the range of 80 dBA to 87 dBA.	N 5.7-1. Prior to the issuance of grading permits, the grading plans shall state that all gas and diesel power equipment shall be properly muffled and maintained. Construction activities should be limited to the hours and days permitted by the City of El Centro.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 5.8 - Public Services and Utilities		
The project's construction would generate approximately 920 tons of construction debris. This would be significant short-term solid waste impact.	PSU 5.8-1. At the time building permits are sought, the project applicant shall demonstrate to the satisfaction of the City of El Centro Public Works Department that a certified construction and demolition recycler has been retained and a Waste Management Plan has been prepared for the construction phase of the proposed project.	Less than significant.
Section 5.9 - Transportation and Traffic		
With the implementation of the proposed project all intersections and roadway segments will operate at an acceptable LOS.	No mitigation is required.	Less than significant.
Section 6 - Cumulative Impacts		
<i>Agricultural Resources</i> The proposed project will result in the conversion of Farmlands of Statewide Importance. Similar projects will result in the conversion of designated farmlands and/or lands zoned for agricultural land uses. This is considered a significant and unavoidable cumulative impact.	No mitigation is available.	Significant and unavoidable.
There is substantial development in the project area and in the Salton Sea Air Basin. Much of this new development was not contemplated in the populations of the 1991 Attainment Plan and the 1993 PM ₁₀ Plan. These new development projects have the potential to increase the emissions of the basin. The project area is not attainment for ozone, CO, or PM ₁₀ . Operational emissions of ROG, NO _x (Ozone precursor pollutants) CO, and PM ₁₀ from the proposed project will incrementally contribute to a significant cumulative effect because the project emissions combined with emissions from all other projects in the Salton Sea Air Basin will be cumulatively considerable air quality impacts with regard to these pollutants.	No mitigation is available	Significant and unavoidable.

Impacts	Mitigation Measures	Level of Significance After Mitigation
<i>Biological Resources</i> Implementation of the proposed project, in conjunction with future developments as identified earlier in this section would contribute to the ongoing loss of open space in the region, resulting in a decline of habitat for burrowing owls and nesting birds. .	Please see mitigation measures BR 5.3-1 through BR 5.3-8 in Section 5.3, Biological Resources, of this EIR.	Less than significant.
<i>Cultural Resources</i> Like the proposed project, cumulative projects may result in the disturbance of soils at a depth of 8 feet or greater below ground level, which, could contain paleontological resources.	Please see mitigation measures CR 5.4-1 through BR 5.4-7, in Section 5.4, Cultural Resources, of this EIR.	Less than significant.
<i>Noise</i> Onsite locations will exceed El Centro's acceptability criterion of 60 dB L_{eq} within the outdoor activity areas.	N 6-1. A 6-foot high sound wall should be constructed along the project site. The sound wall must be continuous and constructed of a dense material such as masonry blocks or stucco on both sides of a wood/steel frame. N .6-2. Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors may remain closed for the required acoustical insulation.	Less than significant.
<i>Transportation and Traffic</i> <i>Near-Term Scenario</i> <i>Intersections</i> Seven of the eight study area intersections under the near-term conditions will experience a significant cumulative impact. The addition of project traffic will cumulatively contribute to the degradation of these intersections resulting in an operational LOS E or worse. These intersections are: • State Route 86 and West McCabe Road (AM - LOS F, PM - LOS F) • State Route 86 and Horne Road (PM - LOS F) • State Route 86 and Willow Bend Drive (Project Access) (PM - LOS F) • State Route 86 and Countryside Drive (Project	The following roadway improvements are recommended to improve the operation of the impacted locations. The City Engineer shall make the determination of whether the payment of proportionate share or installation of the improvements is required. This shall be completed at the time of project approval. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for all cumulatively impacted locations. As these roadway network improvements effect intersections and roadways under Jurisdiction of the State of California Department of Transportation (Caltrans) along State Route 86, the following improvements are in accordance with the Memorandum of Understanding (MOU) regarding State Route 86 between Caltrans and the City of El Centro. These improvements adhere to the guidelines as established within the MOU and mitigate all intersections and roadway segments to a LOS D or better.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Access) (PM - LOS F) - State Route 86 and Interstate 8 Westbound Ramp (PM - LOS F) - State Route 86 and Interstate 8 Eastbound Ramp (PM - LOS F) - State Route 86 and Wake Avenue (PM - LOS E)	<i>Intersections</i> TT 6-1. State Route 86 and Interstate 8 Westbound Ramp - The project applicant should contribute a fair share (4.9%) towards the construction of a westbound right-turn lane and a second northbound left-turn lane. LOS before/after mitigation: F/D. TT 6-2. State Route 86 and Interstate 8 Eastbound Ramp - The project applicant should contribute a fair share (4.6 %) towards the construction of two eastbound right-turn lanes and a second southbound left-turn lane. LOS before/after mitigation: F/D. TT 6-3. State Route 86 and Wake Avenue - The project applicant should contribute a fair share (4.7%) towards the construction of a second eastbound left-turn lane. LOS before/after mitigation: E/D. TT 6-4. State Route 86 and Horne Road - The project applicant should contribute a fair share (10.6%) towards the signalization of the intersection. LOS before/after mitigation: F/B. TT 6-5. State Route 86 and Willow Bend Drive - The project applicant should contribute a fair share (13.8%) towards the construction of a right turn in/right turn out island from the project driveway. LOS before/after mitigation: F/C. TT 6-6. State Route 86 and Countryside Drive - The project applicant should contribute a fair share (9.0%) towards the signalization of the intersection. LOS before/after mitigation: F/A. TT 6-7. State Route 86 and West McCabe Road - The project applicant should contribute a fair share (1.5%) towards the signalization of the intersection including the provision of dedicated eastbound and westbound left-turn pockets. LOS before/after mitigation: F/C.	
<i>Roadway Segments</i> Two of the five roadway segments under the near-term conditions will be significantly impacted by cumulative projects that include the proposed project. The addition of project traffic will cumulatively contribute to the degradation of these roadway segments resulting in an operational LOS E or worse. These roadway segments are:	<i>Roadway Segments</i> TT 6.8. State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps - The project applicant should contribute a fair share (5.6 %) towards the widening of SR 86 between Wake Avenue and I-8 to six lanes. LOS before/after mitigation: E/B. TT 6-9. State Route 86 - McCabe Road to Project Access - The project applicant should contribute a fair share (2.7%) towards the widening of SR 86 between McCabe Road and Project Access to four lanes, including the	Less than Significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
- State Route 86 - McCabe Road to Project Access (South of Horne Road) (LOS E) - State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps (LOS E)	widening of SR 86 to four lanes along the project frontage. LOS before/after mitigation: E/A.	
<i>Horizon Year 2025 Scenario</i> The proposed project will contribute to a significant cumulative roadway segment impact along SR 86 between Danenberg Drive and Wake Avenue.	TT 6-10. SR-86 between Danenberg Drive and Wake Avenue - The project applicant shall contribute a fair share (5.7%) towards the widening of the SR-86 between Danenberg Drive and Wake Avenue to four lanes. It should be noted that the City Engineer shall make the determination whether the payment of the proportionate share or installation of the improvements is required. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for a cumulatively impacted locations.	Less than significant.

SECTION 3: PROJECT DESCRIPTION

3.1 - Project Location

The project site is located in the County of Imperial, within the Sphere of Influence of the City of El Centro, California (Exhibit 3-1). The 38-acre project site is located east, south, and west of the City of El Centro jurisdictional boundaries, approximately 0.9 mile south of Interstate (I) 8 in Tract 83, of Township 16 South, Range 14 East, of the United States Geological Survey El Centro 7.5-minute topographic. Specifically, the proposed project site is situated north of McCabe Road, east of 8th Street, west of 4th Street (State Route [SR] 86) (Exhibit 3-2)

3.2 - Project Characteristics

The proposed project is the development of a single-family residential community on approximately 38 acres. The project includes the subdivision of 38 acres of farmland to provide for 131 single-family residential lots, a 3.02-acre retention basin, and 1.67-acre park (Exhibit 3-3). Project site access is via SR-86 and two project access drives (Willow Bend Drive and Countryside Drive).

3.3 - Project Objectives

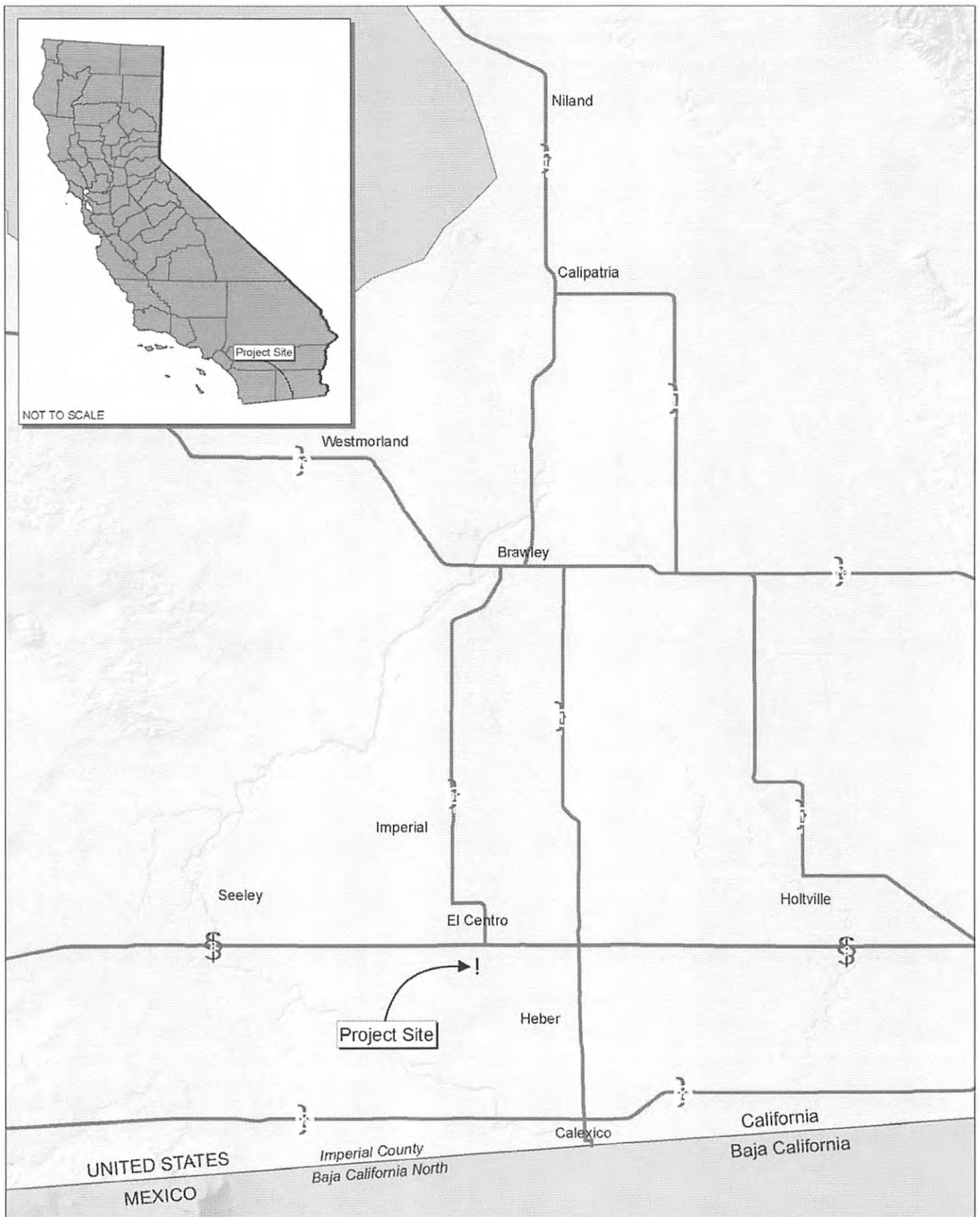
The project objectives are:

- Supply single-family housing to meet the growth projections of the City of El Centro contiguous to similar development within the City's Sphere-of-Influence;
- Locate development to meet anticipated growth in areas of relatively lesser environmental sensitivity, accommodating growth while balancing environmental considerations;
- Provide public infrastructure improvements for the orderly expansion of urban development; and
- Locate housing adjacent to major highway arterials (SR-86) and with convenient access to Interstate 8 to promote efficient traffic flows and minimize traffic demands on local and collector streets.

3.4 - Intended Use of this EIR, Responsible Agencies, and Approvals Needed

This EIR is being used by the City of El Centro to assess the potential environmental impacts that may arise in connection with the actions related to the implementation of the proposed project. The City of El Centro is the lead agency for the proposed project and the project approvals. Discretionary approvals include the following:

- **Zone Change** - The project applicant is required to obtain approval of a zone change on 38 acres from County zoning General Agriculture/Urban Overlay (A2U) to City zoning Single-Family Residential (R-1) prior to subsequent approvals.
- **Annexation** - The project applicant is requesting that the 38-acre project site within the City of El Centro's Sphere of Influence be annexed into the City's jurisdictional boundaries.



Source: Census 2000 Data, The CaSIL, TOPO, MBA GIS 2006.



Michael Brandman Associates

27990002 • 08/2006 | 3-1_regional.mxd

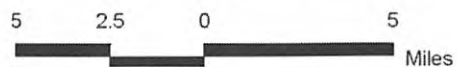


Exhibit 3-1 Regional Location Map

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR



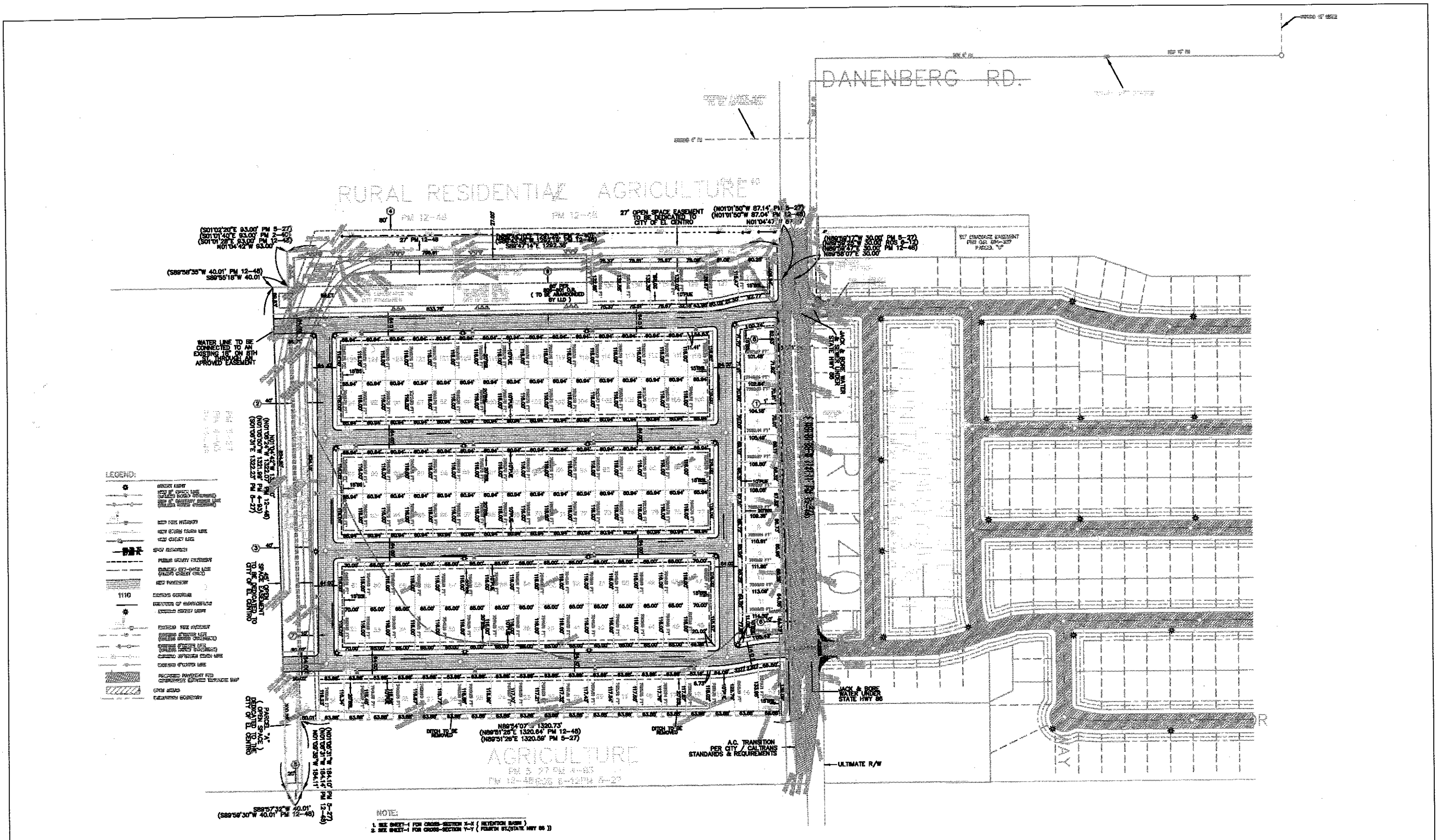
Exhibit 3-2 Local Vicinity Map

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR

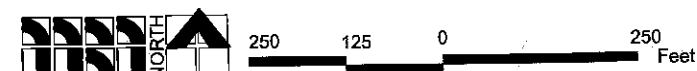
Source: Thomas Guide Digital Edition, 2004.



Michael Brandman Associates
27990002 • 08/2006 | 3-2_local_vicinity.cdr



Source: Development Design & Engineering, Inc., June 2006.



Michael Brandman Associates

27990002 • 08/2006 | 3-3_site_plan.cdr

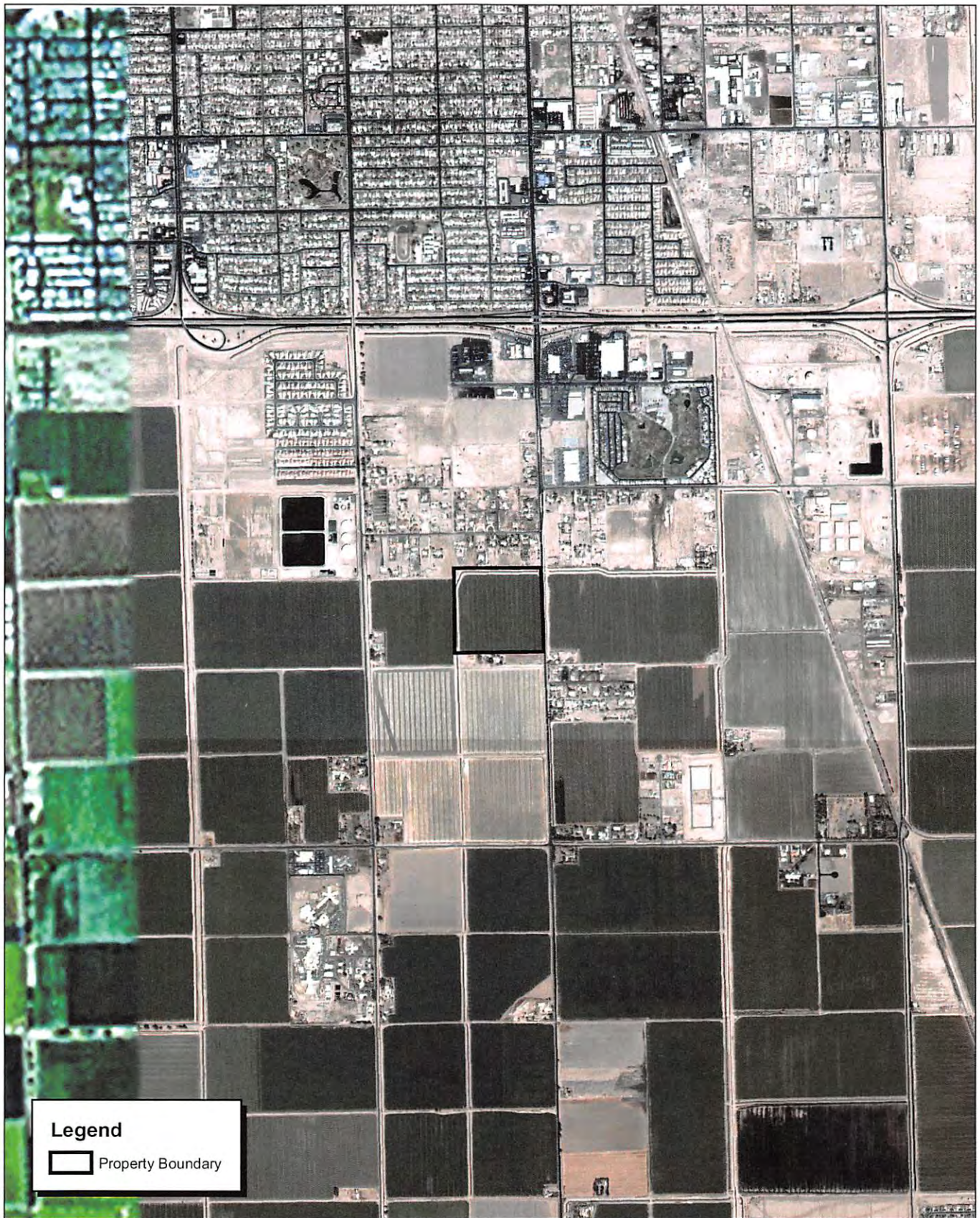
Exhibit 3-3 Site Plan

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR

SECTION 4: GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING

The 38-acre project site is located east, south, and west of the City of El Centro jurisdictional boundaries, approximately 0.9 mile south of Interstate 8 (I-8) in Tract 83, of at Township 16 South, Range 14 East, of the United States Geological Survey El Centro 7.5-minute topographic. Specifically, the proposed project site is situated north of McCabe Road, east of 8th Street, west of 4th Street (State Route [SR] -86).

The project site is undeveloped land that historically supported agricultural resources. The land uses surrounding the project site include agriculture, single-family dwelling units, and public facility land uses. In particular, urban development is approaching the project site from the north, east, and west. As is visible in Exhibit 4-1, surrounding land uses include single-family subdivisions and agricultural land uses. The City's potable water plant is located one-quarter mile east of the project site and Heber Elementary School is located three-quarters of a mile southeast of the project site.



Source: Google Earth Pro! 2005.



Michael Brandman Associates

27990002 • 08/2006 | 4-1_land_use.mxd



Exhibit 4-1 Surrounding Land Use Map

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR

SECTION 5: PROJECT IMPACTS

5.1 - Agricultural Resources

Michael Brandman Associates prepared a Land Evaluation and Site Assessment (LESA) (see Appendix B) farmland model, the findings of which are summarized herein. Impacts to surrounding agricultural uses were analyzed using the City of El Centro General Plan, the County of Imperial General Plan, and the County of Imperial Zoning Ordinance. Additional information contained in this section was provided by the Imperial County Land Use Conversion reports, prepared by the California Department of Conservation (1997-2005) and the California Statistical Abstract 2004, prepared by the California Department of Finance (January 2005).

5.1.1 - Existing Conditions

Regulatory Conditions

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to continue farmland mapping efforts initiated in 1975 by the Soil Conservation Service, since renamed Natural Resources Conservation Service (NRCS), of the U.S. Department of Agriculture. Since 1980, the State of California has assisted the NRCS with completing its mapping in the state. The FMMP was created within the California Department of Conservation to carry on the mapping activity on a continuing basis and with a greater level of detail.

The Important Farmland Maps produced under the FMMP identify five farmland categories: prime farmland, unique farmland, farmland of statewide importance, farmland of local importance, and grazing land. Each of these categories is summarized below, as excerpted from *A Guide to the Farmland Mapping and Monitoring Program (1994)*, prepared by the California Department of Conservation.

- **Prime Farmland:** Land with the best combination of physical and chemical features able to sustain the long-term production of agricultural crops. These lands have the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- **Unique Farmland:** Land of less quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climactic zones in California.
- **Farmland of Statewide Importance:** Land similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.
- **Farmland of Local Importance:** Land of importance in the local agricultural economy, as determined by each county's Board of Supervisors and a local advisory committee. Farmland of local importance in the Imperial Valley includes all farmable land not meeting the

definitions of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. This includes land that is or has been used for irrigated pasture, dry land farming, confined livestock or dairy facilities, aquaculture, poultry facilities, and dry grazing. This designation also includes soils previously designated by soil characteristics as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance that has since become idle.

- **Grazing Land:** Areas covered by vegetation, both natural and cultivated, that is suited to the grazing of livestock.

Williamson Act

The California Land Conservation Act of 1965 (Williamson Act) enables private landowners to enter into contracts with local governments to restrict specific parcels of land for agricultural use. The Williamson Act was adopted to provide agricultural landowners on the urban fringe, who were under pressure to convert their lands to urban use, with a financially viable alternative to conversion. Under the Williamson Act, agricultural landowners can receive property tax assessments that are much lower than other landowners are because the assessments are based on generated agricultural income rather than on market (i.e., development) potential. In return, the landowners enter into contracts committing to maintain their lands for agricultural use. Approximately one-half of the state's agricultural lands, approximately 16 million acres, are subject to Williamson Act contracts.

The minimum term for a Williamson Act contract is ten years, with automatic renewal at the end of each term. At that time, contracts can be terminated by the landowner or local government, which initiates the process of "non-renewal." If a property is designated for contract non-renewal, property tax rates gradually increase during the remainder of the contract term until they reach market (i.e., non-restricted) levels. Williamson Act contracts can also be cancelled without completing the non-renewal process. Contract cancellation, however, involves a comprehensive review and approval process and the payment of fees by the landowner equal to 12 percent of the full market value of the property.

Right-to-Farm Ordinance

To ensure the continued viability of agricultural production and the preservation of agricultural land, the County Board of Supervisors approved the "Right-to-Farm" Ordinance in 1990. All owners of property located within 0.25-mile of agricultural land are advised that their property's proximity to farm operations may subject them to discomfort or inconveniences associated with noise, odors, light, fumes, dust, smoke, insects, chemicals, operation of machinery, etc. The notification further advises the owner that living in an active agricultural area requires acceptance of farm related annoyances as long as the operations are in conformance with existing laws and regulations and accepted customs and standards.

Physical Conditions

The Imperial Valley is characterized by a mild climate that allows year-round agricultural production of a wide variety of commodities. The soils found in the geographic subregion are the result of centuries of deposits by the Colorado River and, as a result, are naturally saline. Agricultural production is made possible only through the delivery of irrigation water from the Colorado River, and the availability of the Salton Sea as a repository for agricultural drainage.

Agricultural Economy

Agriculture is the primary economic activity in Imperial County. Leading commodities produced in Imperial County include cattle, alfalfa, lettuce, carrots, and onions. Agricultural commodities generated more than \$1 billion for the County's farmers in 2003 and represented the 11th largest county agricultural economy in the State.

Agricultural Land Use

Table 5.1-1 summarizes the agricultural land uses in Imperial County as of 2004, the most recent year available. As identified in Table 5.1-1, important farmland currently accounts for 53 percent of the County area.

Table 5.1-1: Agricultural Land Use Summary (2004)

Land Use	2004 (acres)	% of Total Area
Prime Farmland	196,927	19.1%
Unique Farmland	2,132	0.2%
Farmland of Statewide Importance	313,218	30.5%
Farmland of Local Importance	33,333	3.2%
Important Farmland Subtotal	545,610	53.0%
Urbanized	26,357	2.6%
Other	455,697	44.3%
Water	903	0.1%
Total Land Area	1,028,567	100.0%

Source: California Department of Conservation. Imperial County 2002-2004 Land Use Conversion. 2005.

The loss of agriculture to urbanization is occurring at a steady pace in Imperial County. Between 1994 and 2004, the California Department of Conservation estimated that more than 4,000 acres of important farmland land were converted to urban uses in Imperial County.

Table 5.1-2: Conversion of Important Farmland (2004)

Agricultural Land Use	Acres Converted to Urban Uses					
	1994 - 1996	1996 - 1998	1998 - 2000	2000 - 2002	2002 - 2004	Total
Prime Farmland	206	78	54	375	473	1,186
Unique Farmland	0	0	0	0	29	29
Farmland of Statewide Importance	215	180	226	405	1,019	2,045
Farmland of Local Importance	35	164	22	234	464	919
Important Farmland Total	456	422	302	1,014	1,985	4,179
Source: California Department of Conservation. Imperial County 1994-1996, 1996-1998, 1998-2000, 2000-2002, 2002-2004 Land Use Conversion. 2005.						

Site Conditions

Currently, the project site is undeveloped and supports ruderal vegetation. The Date Drainage Channel forms the northern and western boundaries of the project site.

Soils

A soils map of the project site published by the California Department of Conservation indicates that the followings soils are present on the project site:

- Imperial silty clay, wet
- Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slope

Both soils are designated as Soils of Statewide Importance by the Farmland Mapping and Monitoring Program (FMMP).

5.1.2 - Project Impacts**Thresholds of Significance**

Appendix G of the CEQA Guidelines indicates that a project would result in a significant agricultural resources impact if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.

Impacts

Farmland Conversion

The project site contains Soils of Statewide Importance, and accordingly, the project site is considered to contain Farmland of Statewide Importance. Table 5.1-3 summarizes each type of soil present on the project site and its corresponding farmland designation. Note that the area analyzed is 37.9 acres and includes areas that are not a part of the proposed project.

Table 5.1-3: Soils Summary

Soil	Farmland Designation	Area (acres)	Percent of Project Site
114 - Imperial silty clay, wet	Farmland of Statewide Importance	1.6	4.2
115 - Imperial-Glenbar silty clay loams, wet, 0 to 2% slopes	Farmland of Statewide Importance	36.3	95.8
		37.9	100.0
Source: California Department of Conservation. Soil Mapping Program. 2005.			

The information presented in Table 5.1-3 was inputted into the LESA model to determine the significance of the loss of this farmland. Listed below are the factors used in the LESA model:

- **Soils:** 100 percent of the 37.9-acre site contains Farmland of Statewide Importance.
- **Acreage:** A total of 37.9 acres of farmland will be converted to urban uses.
- **Water Availability:** Irrigated production is feasible in drought and non-drought years; however, physical and economic restrictions are present during drought years. This is a conservative estimate.
- **Surrounding Land Uses:** Agriculture accounts for approximately 65 to 69 percent of the surrounding land uses. For the purposes of this analysis, it was estimated that 45 to 49 percent of this surrounding agricultural land is designated as protected agricultural resource land. This is a conservative estimate.

Table 5.1-4 summarizes the individual Land Evaluation and Site Assessment (LESA) scores. The sum of both scores is the Final LESA Score.

Table 5.1-4: Final LESA Score Calculation

Land Evaluation Score	Site Assessment Score	Final LESA Score
34.00	32.25	66.25
Source: Michael Brandman Associates. November 14, 2005.		

The LESA threshold criteria indicate that this score is considered significant unless either the Land Evaluation or the Site Assessment score is less than 20 points. In this instance, neither score is less than 20 points. Therefore, the conversion of this agricultural land to urban uses would constitute a significant loss of Prime Farmland or Farmland of Statewide Importance. Potential impacts in this regard would be significant and unavoidable under CEQA. No mitigation is available to reduce this potential impact to a level of less than significant.

Williamson Act Contracts

The Imperial County Assessor's Office indicates that no active Williamson Act contracts encumber the project site. This condition precludes the possibility of a conflict with a Williamson Act contract. Therefore, no impacts to lands regulated by the Williamson Act would occur.

Compatibility with Surrounding Agricultural Uses

Surrounding Land Use Designations

The project site is within unincorporated Imperial County, but within the El Centro Sphere of Influence. The City of El Centro General Plan designates the site for low density residential. The County of Imperial General Plan land use map designates the project site for future urban development and the Zoning Ordinance designates the site as Agriculture/Urban Overlay. The County's land use and zoning designations reflect the City's ultimate intent to annex this land into its limits and convert it to urban uses. The project site is proposed to be annexed into the City of El Centro and re-zoned Single-Family Residential.

The areas immediately north and east of the project site are within the El Centro city limit and are composed of residential uses, while the areas immediately west and south of the project site are in unincorporated Imperial County and contain agricultural uses. A summary of the agricultural parcels that surround the project site and their corresponding County of Imperial land use and zoning designations are summarized below in Table 5.1-5. Note that the project site is part of the agricultural parcel to the west (APN 054-370-11).

Table 5.1-5: Surrounding Agricultural Uses

Assessor's Parcel Number	Relationship to Project Site	County of Imperial General Plan Land Use Designation	County of Imperial Zoning Designation	City of El Centro General Plan Land Use Designation
054-370-11	Adjacent to west side of project site (parcel also includes project site)	Urban Area	Agriculture/Urban Overlay	Low Density Residential
054-380-17	Adjacent to south side of project site	Urban Area	Agriculture	Low Density Residential
APN = Assessor's Parcel Number Source: County of Imperial Building and Planning Division. November 17, 2005; City of El Centro General Plan. Figure LU-1 (Land Use Policy Map). 2004				

Both of the above listed parcels are within the El Centro Sphere of Influence and are designated for urban uses by the County of Imperial General Plan and the City of El Centro General Plan. The proposed project would not be incompatible with the agricultural uses to the west and south of the project site because the County and City adopted land use plans anticipate the annexation of those parcels into the City of El Centro and their ultimate conversion to urban uses. Moreover, the eventual conversion of these lands to urban uses has already been analyzed in the environmental impact report for each respective general plan, and potential impacts have already been disclosed and mitigated where feasible. Therefore, impacts in this regard would be less than significant.

Incompatible Uses

The proposed project could create compatibility conflicts between future project residents and existing agricultural uses to the west and south of the project site. The provisions of the County's Right-to-Farm Ordinance require that project residents be notified of the existence of ongoing agricultural operations within 0.25-mile of the project and exempt agricultural land owners from nuisance lawsuits. Ensuring that future residents are notified about surrounding agricultural operations would reduce potential impacts to a level of less than significant.

Premature Conversion of Agricultural Lands

Imperial County LAFCO regulates the conversion of agricultural land to urban uses by virtue of its authority to approve or deny annexations of unincorporated areas into incorporated cities. To determine if agricultural land is being prematurely converted to urban uses, LAFCO has specific threshold criteria it uses to evaluate individual annexation applications. Below is discussion of the proposed project's consistency with LAFCO agricultural conversion criteria:

The east side of the project site is immediately adjacent to the City of El Centro limits and urban uses within the city limits. This satisfies LAFCO requirements for contiguousness with existing or planned urban development.

The project site is within a Tier II Growth Area, as defined by the City of El Centro General Plan. There are three Tiers, I, II, and III, and their designation reflects the availability of infrastructure to support urban development. Tier I is the "Current Service Area;" Tier II is the "Planned Urban Service Area;" and Tier III is the "Future Urban Service Area." As the project site is in Tier II, it contains land adjacent to the city limits, but contains limited infrastructure. Note that the General Plan states that the Tier Growth Areas numbering system reflects the infrastructure necessary to serve planned development and is not intended to be a sequence of future development. Regardless, the proposed project is consistent with the Urban Service Plan of the City of El Centro.

Finally, the project site is expected to be developed within the next five years because insufficient available land of similar acreage to the project site exists within the El Centro city limits. The absence of developable land of this size within the limits of the City of El Centro and the demand for

new housing creates the reasonable expectation that the project site will be converted to urban uses within the next five years. This condition satisfies the last two LAFCO requirements.

In summary, the project site meets LAFCO criteria to be converted from agricultural use to urban use. Impacts would be less than significant in this regard.

5.1.3 - Mitigation Measures

There are no available mitigation measures to reduce impacts to Farmlands of Statewide Importance.

5.1.4 - Level of Significance After Mitigation

Project implementation will result in significant and unavoidable impacts to agricultural resources.

5.2 - Air Quality

This section analyzes the potential air quality impacts that would result from construction and operation of the proposed project. This analysis provides a discussion of existing climate conditions, criteria air pollutants, ambient air quality standards and air quality regulations. Air quality modeling was completed to address short-term air quality impacts during construction and long-term impacts associated with traffic and stationary emission sources in the project area. The air quality modeling and air pollutant calculations are based on appropriate methodologies established by the Imperial County Air Pollution Control Board's (APCD) "CEQA Air Quality Handbook (2005)" and the California Air Resources Board (CARB) for evaluation of air quality impacts in CEQA documents.

5.2.1 - Existing Conditions

Regulatory Conditions

Ambient Air Quality Standards

Imperial County APCD, the CARB, and the United States Environmental Protection Agency (USEPA) have established air quality significance levels. Both CARB and USEPA have established air quality standards which are designed to protect those that are most sensitive to air pollution. They include individuals susceptible to respiratory distress such as asthmatics, the young, the elderly, and others with pre-existing health conditions that may be affected by higher levels of pollutant concentrations. Healthy adults can tolerate occasional exposure to air pollutants concentrations above these minimum standards without adverse effects, however, unhealthful response can occur at levels that are only marginally above these standards.

The National Ambient Air Quality Standards (NAAQS) were established by the Federal Clean Air Act of 1970 and identified six "criteria" pollutants. These pollutants were identified by medical evidence that was available at the time and the NAAQS were established based on that evidence. The State of California has adopted the same six pollutants as criteria pollutants, however, has different standards. The six criteria air pollutants as well as reactive organic gases and their descriptions are as follows:

- **Carbon Monoxide (CO):** A colorless, odorless toxic gas produced by incomplete combustion of carbon-containing fuels (e.g. gasoline or diesel fuel). CO levels tend to be highest during the winter months, when the meteorological conditions favor the accumulation of the pollutants.
- **Ozone (O₃):** A photochemical oxidant that is formed when reactive organic gases (ROG) and oxides of nitrogen (NO_x) (both byproducts of internal combustion engines) react in the presence of ultraviolet sunlight. Ozone is a very energetic combination of three oxygen atoms that, when it comes into contact with a surface, releases its force as chemical energy. When this happens to biological systems (i.e., the respiratory tract), this energy can cause damage to

sensitive tissues in the upper and lower airways. The conditions within the region are ideal for accumulating O₃.

- **Oxides of Nitrogen (NO_x):** The two important forms of nitrogen oxide in air pollution are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is from as a byproduct of fuel combustion and quickly reacts with oxygen to form NO₂. NO_x is a mixture of NO and NO₂ in the atmosphere. The major concern with NO_x emissions is mainly due to their contribution to the formation of O₃ and particulate matter.
- **Reactive Organic Gases (ROGs):** Gaseous emissions that react with oxides of nitrogen to form ozone. ROGs are not listed as criteria pollutants, and therefore, there are no state or federal ambient air quality standards them. Though there is no direct standard for ROGs, they are regulated because they are involved in chemical reactions that contribute to the formation of ozone. In addition, ROGs contribute to higher PM₁₀ concentrations and lower visibility levels. Health effects can occur from exposures to high concentrations of ROGs, in particular, reduced oxygen uptake.
- **Sulfur Dioxide (SO₂):** Sulfur Dioxide is a colorless, pungent gas formed by the combustion of sulfur containing fossil fuels. SO₂ is a precursor to sulfate and PM₁₀. Exposure to sulfur dioxide, especially sensitive populations, can result in irritation of existing cardiovascular disease and respiratory illness. Symptoms include wheezing, shortness of breath and chest tightness, especially during exercise, and by people with asthma.
- **Lead (Pb):** Lead concentrations have not exceeded state or federal standards in the region since 1982. Lead can accumulate in bone, soft tissue, and blood and can damage the kidneys, liver, and nervous system, and can result in learning disabilities, seizures, and death.
- **Suspended Particulate Matter (PM₁₀ and PM_{2.5}):** PM₁₀ refers to particulate matter that is 10 microns or less in diameter (1 micron is one-millionth of a meter). PM_{2.5} refers to particulate matter that is 2.5 microns or less in diameter. Particulate matter arises from sources such as road dust, diesel soot, erosion of soil, combustion particles (ashes and soot), and tire and brake abrasion. Breathing particulate matter can cause or aggravate problems associated to asthma, can increase coughing and cause breathing to be difficult or painful. Breathing particulate matter has been associated to chronic bronchitis, and decreases lung function.

Because California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 5.2-1.

Table 5.2-1: Ambient Air Quality Standards

Air Pollutant	California Standards	Federal Standards	
	Concentration	Primary (>)	Secondary (>)
Ozone	0.09 ppm, 1-hr. avg. > 0.07 ppm, 8-hr. avg. > ^a	0.12 ppm, 1-hr. avg. 0.08 ppm, 8-hr. avg.	0.12 ppm, 1-hr. avg. 0.08 ppm, 8-hr. avg.
Carbon Monoxide	9.0 ppm, 8-hr. avg. > ^b 20 ppm, 1-hr. avg. >	9 ppm, 8-hr. avg. ^c 35 ppm, 1-hr. avg. >	9 ppm, 8-hr. avg. 35 ppm, 1-hr. avg. >
Nitrogen Dioxide	0.25 ppm, 1-hr. avg. > ^d	0.053 ppm, annual avg. ^e	0.053 ppm, annual avg. ^f
Sulfur Dioxide	0.05 ppm, 24-hr. avg. >=with ozone >=0.10 ppm, 1-hr. avg. or TSP >= 100 ug/m ³ , 24-hr. avg. 0.25 ppm, 1-hr. avg. > ^f	0.03 ppm, annual avg. 0.14 ppm, 24-hr. avg.	0.50 ppm, 3-hr. avg.
Suspended Particulate Matter (PM ₁₀)	30 ug/m ³ , annual geometric mean > 50 ug/m ³ , 24-hr. avg. > ^g	50 ug/m ³ , annual ^h arithmetic mean 150 ug/m ³ , 24-hr. avg.	50 ug/m ³ , annual ^h arithmetic mean 150 ug/m ³ , 24-hr. avg.
Fine Particulate Matter (PM _{2.5})	12 ug/m ³ , annual geometric mean >	15 ug/m ³ , annual ⁱ arithmetic mean 65 ug/m ³ , 24-hr. avg.	15 ug/m ³ , annual ⁱ arithmetic mean 65 ug/m ³ , 24-hr. avg.
Sulfates	25 ug/m ³ , 24-hr. avg. >=		
Lead	1.5 ug/m ³ , 30-day avg. >=	1.5 ug/m ³ , calendar quarter	1.5 ug/m ³ , calendar quarter
Hydrogen Sulfide	0.03 ppm, 1-hr. avg. >=	No Federal Standard	No Federal Standard
Vinyl Chloride	0.010 ppm, 24-hr. avg. >=	No Federal Standard	No Federal Standard
Visibility Reducing Particles	In sufficient amount to reduce the visual range to less than 10 miles at relative humidity less than 70%, 8-hr. avg. (9am- 5pm) ^j	No Federal Standard	No Federal Standard

^a Effective January 2006. Standard originally by the CARB on April 28, 2005.

^b Effective December 15, 1982. The standards were previously 10 ppm, 12-hour average and 40 ppm, 1-hour average.

^c Effective September 13, 1985, standard changed from > 10 mg/m³ (>= 9.3 ppm) to > 9ppm (>= 9.5 ppm).

^d Effective March 9, 1987, standard changed from >= .25 ppm to > .25 ppm.

^e Effective July 1, 1985, standard changed from > 100 ug/m³ (> .0532 ppm) to > .053ppm (> .0534 ppm).

^f Effective October 5, 1984. The standard was previously .5 ppm, 1-hour average.

^g Effective August 19, 1983. The standards were previously 60 ug/m³ TSP, annual geo. mean, and 100 ug/m³ TSP, 24-hour average.

^h Effective July 1, 1987. The standards were previously: Primary- Annual geometric mean TSP > 75 ug/m³, and a 24-hour average TSP > 260 ug/m³. Secondary- Annual geometric mean TSP > 60 ug/m³, and a 24-hour average TSP > 150 ug/m³.

ⁱ Effective July 18, 1997. The U.S. Supreme Court upheld this standard in February 2001.

^j Effective October 18, 1989. The standard was previously "In sufficient amount to reduce the prevailing visibility to less than 10 miles at relative humidity less than 70%, 1 observation", and was based on human observation rather than instrumental measurement.

Source: California Air Resources Board.

Physical Conditions

The project site is located in the sphere of influence for the City of El Centro in Imperial County and within the Salton Sea Air Basin (SSAB). The SSAB consists of the southeast portion of Riverside County, and all of Imperial County. The Imperial County portion of the SSAB extends over 4,597 square miles, bordered by Mexico to the south, Riverside County to the north, San Diego County on the west, and the State of Arizona to the east. The SSAB is a north/south facing trough consisting of a very flat valley surrounded by the Peninsular range to the west; the Chocolate, Orocopia, and Cargo Muchaco Mountains to the east; and the Banning Pass to the north. Most of the Salton Sea Trough is below sea level, and is generally an arid desert region with agricultural land uses located north and south of the Salton Sea.

Regionally, the large-scale sinking and warming of air in the semi-permanent subtropical high-pressure cell controls local wind patterns within the SSAB. Local area wind statistics indicate prevailing winds are from the west-northwest through southwest with a secondary flow maximum from the east-southeast also evident. The area occasionally experiences high winds speeds exceeding 21 knots, which occur most frequently in April and May. On an annual basis, strong winds (>21 knots) are observed 0.6 percent of the time, with an average annual wind speed of 6.74 knots.

The semi-permanent high-pressure cell blocks out most mid-latitude storms except in the winter when the high-pressure zone is weakest. The coastal Peninsular range to the west prevents the intrusion and influence of any cool, damp marine air. The combination of the subsiding air, protective mountains and distance from the Pacific Ocean all combine to severely limit precipitation. Rainfall is highly variable with precipitation from a single heavy storm often times exceeding the entire annual total during a later drought year condition. Humidity is low throughout the year, ranging from 28 percent in the summer to 52 percent in the winter.

Regional and local air quality within the SSAB is affected by topography and the atmospheric inversions. The mountains surrounding the Salton Sea trough are natural barriers to the dispersion of air contaminants. The SSAB experiences surface inversions almost every day of the year. The presence of the subtropical high-pressure cell can cause the air mass aloft to sink. As the air descends, compressional heating warms it to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, can act as a nearly impenetrable lid to the vertical mixing of pollutants. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for long periods of time causing air stagnation and the buildup of pollutants to occur. The highest ozone concentrations are often associated with the presence of this type of inversion.

The Imperial County APCD has air quality monitoring stations in Niland, Brawley, Westmorland, El Centro and three stations in Calexico. The monitoring stations measure the levels for the various air pollutants that are used to define ambient air quality. The monitoring station in El Centro is located

on 9th Street north of Interstate 8 approximately one mile northwest of the project site and best reflects conditions at the project site.

The most recent published data for the project area is presented in Table 5.2-2. Table 5.2-2 reflects data taken at the El Centro Monitoring Station. This data shows that the baseline air quality conditions in the project area include occasional events of unhealthful air. Even so, the frequency of smog alerts has dropped significantly in the last decade. The greatest recognized air quality problems in the SSAB are ozone and PM₁₀. In 1996, approximately twelve percent of the days (44 days) experienced a violation of the state hourly ozone standard. However, ozone levels have dropped significantly in the last few years with less than one percent of the days (4 days) experiencing a violation of the state hourly ozone standard in 2005.

Although the overall air quality in project area is improving, one exception is the ambient concentrations of PM₁₀. Over the last decade the State air quality standard for PM₁₀ has been consistently exceeded in the area, and the Federal standard has been exceeded in every year except 2004 since monitoring began in the project area.

The sources contributing to particulate matter pollution include road dust, windblown dust, agriculture, construction, fireplaces and wood burning stoves, and vehicle exhaust. Specifically, Imperial County APCD data indicates the largest component of PM₁₀ particles in the SSAB comes from road and windblown dust. The next highest component of PM₁₀ pollution in the project area comes from nitrate (NO₃) particulates. Nitrates produced by photochemical reactions of NO from vehicles basin-wide react with ammonium produced from dairies and grazing cattle to form ammonium nitrate particles, adding to a unique air quality problem in the area.

The last notable constituent is PM_{2.5}. The primary source of PM_{2.5} is elemental carbon. Unlike the constituents of particulates described above, elemental carbon is primarily the result of vehicle exhaust. The 1997 Federal standards for PM_{2.5} (annual arithmetic mean of 15 µg/m³ and 24-hour average of 65 µg/m³) was upheld by the U.S. Supreme Court in February 2001. Imperial County APCD monitoring data shows the area has not exceeded either the federal annual standards since Imperial County APCD began monitoring PM_{2.5} in 1999. The project area has exceeded the 24-hour standard for PM_{2.5} on one day in 2004.

Table 5.2-2: Air Quality Monitoring Summary

Air Pollutant	Most Stringent Air Quality Standards	Year			Meet Standard?
		2003	2004	2005	
		Maximum Concentration & days exceeding standard	Maximum Concentration & days exceeding standard	Maximum Concentration & days exceeding standard	
Ozone (O ₃)					
1 Hour	0.09 ppm ^a	0.130 ppm (19 days)	0.096 ppm (1 day)	0.122 ppm (8 days)	No
8 Hours	0.08 ppm ^b	0.092 ppm (8 days)	.0080 ppm (0 days)	.0097 ppm (5 days)	No
Carbon Monoxide (CO)					
8 Hours	9.0 ppm ^a	2.38 ppm (0 days)	ND	ND	Yes
Nitrogen Dioxide (No ₂)					
Annual Arithmetic Mean	0.053 ppm ^b	0.012 ppm (0 days)	0.013 ppm (0 days)	0.011 ppm (0 days)	Yes
1 Hour	0.25 ppm ^a	0.071 ppm (0 days)	0.067 ppm (0 days)	0.065 ppm (0 days)	Yes
Sulfur Dioxide (So ₂)					
Annual Arithmetic Mean	0.030 ppm ^b	ND	ND	ND	Yes
24 Hours	0.04 ppm ^a	0.001 (0%)	0.0031 (0%)	0.002 (0%)	Yes
Suspended Particulate Matter (Pm ₁₀)					
Annual Arithmetic Mean	20 µg/m ³ ^a	48.6 µg/m ³	49 µg/m ³	49 µg/m ³	No
24 Hours	50 µg/m ³ ^a	180 µg/m ³ (25 days)	135 µg/m ³ (7 days)	62 µg/m ³ (3 days)	No
Fine Suspended Particulate Matter (PM _{2.5})					
Annual Arithmetic Mean	12 µg/m ³ ^a	9.2 µg/m ³	9.7	ND	Yes
24 Hours	65 µg/m ³ ^b	26.0 µg/m ³ (0 days)	74.26 µg/m ³ (1 day)	21.8 µg/m ³ (0 days)	No
Abbreviations: ppm: parts per million; µg/m ³ : micrograms per cubic meter; ND: No Data					
^a California state standard used					
^b Federal standard used					
Note: Measurements are the maximum concentrations; numbers in parenthesis refer to the number of sampling days per year that the ambient concentration exceeded the most stringent standard.					
Source: CARB, November 2005.					

5.2.2 - Project Impacts

Emissions that can adversely affect air quality originate from various activities. A project generates emissions both during the period of its construction and through ongoing daily operations. During construction of the proposed project, emissions will be generated by onsite construction equipment, offsite vehicles used to deliver supplies, and by construction workers commuting to and from the construction site. Once residential units are occupied emissions are generated by the ongoing daily activities associated with the residential units of the proposed project. Long-term daily operations and activities of the proposed project include air quality emissions resulting from the use of natural gas within the residential units, gasoline driven landscape equipment, and commuting traffic. Thresholds of significance based upon air quality criteria including the state and federal AAQS need to be established to evaluate project related impacts.

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant air quality impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or protected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Based on the EIR scoping process as described in Section 1.0, it was determined that this project could result in potentially significant impacts to air quality as a result of project development. The State CEQA Guidelines define a significant effect on the environment as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” In order to determine whether or not the proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of emissions generated and their impacts on factors that affect air quality. To accomplish this determination of significance, the Imperial County APCD has established air pollution thresholds against which a proposed project can be evaluated and assist lead agencies in determining whether or not the proposed project is potentially significant.

While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to § 15064(b) of the State CEQA Guidelines, the Imperial County APCD

recommends that the following air pollution thresholds be used by the lead agencies in determining whether the proposed project could result in a significant impact. If the lead agency finds that the proposed project has the potential to exceed these air pollution thresholds, the project should be considered significant. These thresholds have been defined by the Imperial County APCD for the Imperial County portion of the SSAB based on scientific data the Imperial County APCD has obtained and factual data within the federal and state Clean Air Acts. Since the project is located within the Imperial County and current air quality in the project area is typical of the air basin as a whole, these thresholds are considered valid and reasonable. Each of these threshold factors is discussed below.

Thresholds for Emissions Related to Construction Activities

The Imperial County APCD's approach to CEQA analysis of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than producing a detailed evaluation of the emissions. The Imperial County APCD does require EIR's to quantify emissions from construction activities, but mitigation measures should be proposed for these activities. Section 7.1 of the Imperial County APCD's "CEQA Air Quality Handbook" provides a set of standard and discretionary mitigation measures for construction equipment and fugitive dust emissions controls during construction activities. Implementation of the mitigation measures described in Section 7.1 of the Imperial County APCD's "CEQA Air Quality Handbook" will result in a less than significant impact.

Thresholds for Emissions Related to Operation of the Project

Specific criteria for determining whether the potential air quality impacts of a project are significant are set forth in the Imperial County APCD "CEQA Air Quality Handbook." The criteria for these emissions thresholds include, compliance with the State and National air quality standards and conformity with the existing Air Quality Implementation Plans for Imperial County. The daily operational emissions "significance" thresholds are:

- 55 pounds per day of NO_x;
- 55 pounds per day of ROC;
- 550 pounds per day of CO; and
- 150 pounds per day of SO_x or PM₁₀.

Emissions resulting from the operation of the proposed project may also be considered significant if a CO hotspot analysis determines that project-generated emissions cause a localized violation of the state CO 1-hour standard of 20 parts per million (ppm), state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9.5 ppm.

Project Generated Short-term Construction Emissions

Construction-related emissions can be distinguished as either onsite or offsite. Onsite emissions generated during construction principally consist of exhaust emissions (NO_x, SO_x, CO, VOC, and

PM₁₀) from heavy-duty construction equipment operation and fugitive dust (PM₁₀) from disturbed soil. Offsite emissions during the construction phase normally consist of exhaust emissions and entrained paved road dust (PM₁₀) from worker commute trips, and material delivery trips to and from the construction site.

Short-term emissions were evaluated with the URBEMIS 2002 computer program. The model divided construction into two distinct phases: (1) site grading; and (2) the construction period when the remainder of the project construction takes place. Site grading will take approximately 70 workdays (3.2 months). The total construction period is projected to occur over a two year, 5 month period. The results of these evaluations are summarized in Table 5.2-3.

Table 5.2-3: Short-term Construction Emissions

Source	ROG (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO _x (lbs/day)	PM ₁₀ (lbs/day)
Site Grading Activities	27.0	213.36	199.05	0.01	104.88
Construction Period 2006: Building Construction Activities	165.17	233.94	235.38	>0.01	10.84
Construction Period 2007: Final Building Construction Activities	165.09	223.67	241.77	0.02	9.96
Asphalt Paving Activities	13.52	83.22	97.16	0.02	3.07
Threshold of Significance	Implementation of Mitigation Measures shown in Section 7.1 of the Imperial County APCD's "CEQA Air Quality Handbook."				
Source: Michael Brandman Associates, July 2006.					

Without mitigation measures all construction emissions are considered a significant impact. The URBEMIS Output reports found in Appendix C have a comprehensive review of construction emissions.

Project Generated Long-term Operational Emissions

Long-term operational emissions for the proposed development are considered for project build-out. Emission sources consist of mobile emissions and stationary emissions. Mobile emissions estimates are derived from motor vehicle traffic. Stationary emissions estimates are derived from the consumption of natural gas and consumer products, as well as emissions resulting from landscape maintenance. Long-term emissions were evaluated with the URBEMIS 2002 for Windows computer program. Table 5.2-4 and Table 5.2-5, presents the estimated daily total emissions at project build out.

Table 5.2-4: Long-Term Emissions (Summer)

Source	ROG (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO _x (lbs/day)	PM ₁₀ (lbs/day)
Mobile Source Emissions	14.21	26.44	185.61	0.12	20.86
Natural Gas Consumption	0.12	1.58	0.67	—	—
Landscape Equipment Emissions	0.63	0.02	4.39	0.04	0.02
Consumer Products	6.16	—	—	—	—
Architectural Coatings	4.29	—	—	—	—
Total Emissions:	25.41	28.04	190.67	0.16	20.88
Thresholds of Significance (lbs/day)	55	55	550	150	150
Significant Impact ?	NO	NO	NO	NO	NO
Source: Michael Brandman Associates, July 2006.					

Table 5.2-5: Long-Term Emissions (Winter)

Source	ROG (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO _x (lbs/day)	PM ₁₀ (lbs/day)
Mobile Source Emissions	18.88	32.91	228.52	0.12	21.69
Natural Gas Consumption	0.13	1.64	0.70	—	—
Fireplace Emissions	4.50	1.57	36.00	0.12	5.89
Consumer Products	6.41	—	—	—	—
Architectural Coatings	4.46	—	—	—	—
Total Emissions:	34.38	36.12	265.22	0.24	27.58
Thresholds of Significance (lbs/day)	55	55	550	150	150
Significant Impact?	NO	NO	NO	NO	NO
Source: Michael Brandman Associates, July 2006.					

Since composite long-term emissions as a result of the project are below the Imperial County APCD thresholds for significance, long-term impacts as a result of this project are less than significant.

CO Hotspot Analysis

Carbon Monoxide (CO) is a localized problem requiring additional analysis beyond total project emissions quantification. Projects with sensitive receptors or projects that could negatively impact levels of service (LOS) of existing roads need to use the California Department of Transportation Carbon Monoxide Protocol (hereafter referred to as the CO protocol) to determine the potential to create a CO hot spot. A CO hot spot is a localized concentration of CO that is above the State or Federal 1-hour or 8-hour ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles.

The CO protocol requires projects that are likely to worsen air quality at signalized intersections having a LOS E or F to conduct a detailed analysis. Since the project specific traffic study shows that with mitigation, all study intersections operate at LOS D (see Section 5.9) or better, traffic conditions are satisfied and no further analysis is necessary. No CO Hotspots are anticipated as a result of the proposed project and localized CO impacts are less than significant.

Odor Impacts

The proposed project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site during construction of the project. However, these emissions would rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Further criteria for evaluation odor impacts are found in Table 3 of the Imperial County APCD's "CEQA Air Quality Handbook." That criteria screens out projects as having odor impacts if the proposed project is 1 mile or greater distance to wastewater treatment plants, landfills, composting stations, feedlots, asphalt batching plants, painting/coating operations (including auto body shops), or rendering plants. The project site is approximately ¼ mile north of a horse stable. The Imperial County APCD was contacted and a request made to obtain any odor complaints lodged in the project area. The Imperial County APCD indicates that no odor complaints were submitted for the project area in the last year. Recognizing the lack of odor complaints in the project area for existing odor sources, and the quantity and dispersion of the odor emanating pollutants generated on the project site during construction, the project will not subject a substantial number of people to objectionable odors.

Air Quality Attainment Plans Project Consistency Analysis

The Imperial County Air Quality Attainment Plan (Attainment Plan) and the State Implementation Plan for PM₁₀ in the Imperial Valley (PM₁₀ Plan) contain performance standards and emissions reduction targets necessary to attain the state and federal AAQS. According to the CARB's transportation performance standards, the rate of growth in vehicle miles traveled (VMT) and trips should be held to the rate of population growth. Compliance with this performance standard for residential projects is one way suggested by the CARB to show compliance with the attainment plans and is assessed by determining the population, vehicle trips generated (VT) and VMT for the project at build-out year and comparing that to the disaggregated population, VT and VMT for the project area. If the total VMT generated by the proposed project at project build-out year is at or below the disaggregated total VMT for the project site assumed in the Attainment Plan and PM₁₀ Plan, then the proposed project is consistent with the Attainment Plan and PM₁₀ Plan.

The URBEMIS 2002 model assigns trip generation and miles traveled for particular land uses.

The Imperial County population projections for year 2010 used in the Attainment Plan and PM₁₀ Plan for the City of El Centro assumes land use designations in the General Plan and includes build-out of the site. The project site under the current County General Plan land use designation (A-2) would accommodate approximately only 1 dwelling unit (based on the 1 unit per 40 acres). The proposed project accommodates a maximum of 126 single-family residential dwelling units. Clearly the

proposed project would result in a higher density, and more vehicle trips and vehicle miles traveled than what was anticipated in the Attainment Plan and PM₁₀ Plan. Because the project will result in more people and more traffic than what was considered in the plan, the project is not consistent with the Attainment Plan and PM₁₀ Plan, and therefore would create a significant impact in this regard.

5.2.3 - Mitigation Measures

Long-term emissions once the residential units are occupied were found to be less than significant without mitigation, and therefore, do not require mitigation. However, without mitigation short-term emissions during grading and construction of the proposed project would be a significant impact. In an effort to reduce exhaust and fugitive dust emissions related to grading and construction activities, a range of mitigation measures found in Section 7.1 of the Imperial County APCD "CEQA Air Quality Handbook," were considered and integrated into the proposed project. The mitigation Measures are as follows:

- AQ 5.2-1** *Timing and Tuning.* During construction of the proposed improvements, all construction equipment will be properly maintained at an offsite location and includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction.
- AQ 5.2-2** *Diesel Fuel.* During construction of the proposed improvements, all construction equipment will be fueled with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use in off-road equipment).
- AQ 5.2-3** *Construction Equipment.* To the maximum extent feasible, use diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- AQ 5.2-4** *Traffic Control Plan.* Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction site and provide temporary traffic control (i.e. flag person) during demolition debris transport and other construction related truck hauling activities.
- AQ 5.2-5** *Idling Restrictions.* During construction of the proposed improvements, construction equipment will not idle on site for more than 10 minutes.
- AQ 5.2-6** *Provide Onsite Meals.* During construction of the proposed improvements, the project applicant will provide on-site meals to construction workers by arranging a lunch wagon to visit the construction site during work breaks including the lunch break. This will improve air quality by reducing traffic created by construction workers.

- AQ 5.2-7** *Temporary Construction Power.* During construction of the proposed improvements, the project applicant will provide on-site electrical hook ups for electric construction tools, such as saws, drills and compressors, to eliminate the need for diesel powered electric generators.
- AQ 5.2-8** *Fugitive Dust Control Plan.* Prior to construction of the proposed improvements, the project proponent will provide a Dust Control Plan that will describe the application of standard best management practices to control dust during construction. Best management practices will include application of water on disturbed soils a minimum of two times per day, covering haul vehicles, replanting disturbed areas as soon as practical, restricting vehicle speeds on unpaved roads to 15 mph, sweeping street access points at the end of each day, and other measures, as deemed appropriate to the site, to control fugitive dust. The Fugitive Dust Control Plan shall be submitted to the City for approval and approved prior to construction.
- AQ 5.2-9** *High Volume-Low Pressure Spray Equipment or Hand Application.* During construction of the proposed improvements, only low volatility paints and coatings as defined in Imperial County APCD Rule 424 shall be used. All paints shall be applied using either high volume, low pressure (HVLP) spray equipment or by hand application.

5.2.4 - Level of Significance After Mitigation

Long-term emissions once the residential units are occupied were found to be below the thresholds and therefore, less than significant without mitigation, and therefore, do not require further evaluation. The project will not be consistent with the Attainment Plan and PM₁₀ Plan, however, and will therefore create a significant impact in that regard.

Without mitigation short-term emissions during grading and construction of the proposed project would be a significant impact. Incorporation of mitigation measures AQ 5.2-1 through AQ 5.2-9 will reduce project related emissions during construction of the proposed project. Table 5.2-6 shows the quantified emissions that would result from grading and construction of the proposed project with implementation of mitigation measures AQ 5.2-1 through AQ 5.2-9

Table 5.2-6: Mitigated Short-term Construction Emissions

Source	ROG (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	SO _x (lbs/day)	PM ₁₀ (lbs/day)
Site Grading Activities	24.32	192.06	179.52	0.01	23.08
Construction Period 2006: Building Construction Activities	53.46	52.08	70.84	>0.01	2.46
Construction Period 2007: Final Building Construction Activities	53.38	50.18	71.04	0.01	1.96
Asphalt Paving Activities	12.34	75.31	87.55	0.02	3.05
Threshold of Significance	Implementation of Mitigation Measures shown in Section 7.1 of the Imperial County APCD's "CEQA Air Quality Handbook."				
Above Threshold?	NO	NO	NO	NO	NO
Source: Michael Brandman Associates, July 2006.					

With mitigation project generated air quality impacts related to construction activities are less than significant.

5.3 - Biological Resources

Michael Brandman Associates (MBA) conducted a field survey and a literature review, including a query of the California Natural Diversity Database (CNDDDB) in November 2005. The survey area included the project site and a 500-foot buffer around the perimeter. The CNDDDB Geographic Information System (GIS) database was utilized, together with ArcGIS software, to determine sensitive species located within a five-mile radius of the project site. The field notes from the field survey and the results of the CNDDDB are provided in Appendix C of this EIR.

5.3.1 - Existing Conditions

Regulatory Conditions

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act (FESA) that provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The FESA defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is a species that is likely to become endangered in the foreseeable future. A “proposed” species is one that has been officially proposed by USFWS for addition to the federal threatened and endangered species list.

Section 9 of the FESA prohibits “take” of threatened or endangered species. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. The presence of any federally threatened or endangered species that are in a project area generally imposes severe constraints on development, particularly if development would result in “take” of the species or its habitat. Under the regulations of the FESA, the USFWS may authorize “take” when it is incidental to, but not the purpose of, an otherwise lawful act.

California Endangered Species Act

The California Department of Fish and Game (CDFG) administers the California Endangered Species Act (CESA). The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

Section 3503 and 3511 of California Fish and Game Code

The CDFG administers the California Fish and Game Code (Code). There are particular sections of the Code that are applicable to natural resource management. For example, section 3503 of the Code states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3511

of the Code lists fully-protected bird species, where the CDFG is unable to authorize the issuance of permits or licenses to take these species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union.

Section 404 of the Federal Clean Water Act

Section 404 of the federal Clean Water Act (CWA), which is administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredge and fill material into waters of the United States. USACE has established a series of nationwide permits that authorize certain activities in waters of the U.S., provided that a proposed activity can demonstrate compliance with standard conditions. Normally, USACE requires an individual permit for an activity that will affect an area equal to or in excess of 0.3 acre of waters of the United States. Projects that result in impacts to less than 0.3 acre can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.3 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Section 1600 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of the CDFG pursuant to Sections 1600 through 1603 of the Code, requiring preparation of a Streambed Alteration Agreement. Under the Code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Included are watercourses with surface or subsurface flows that support or have supported riparian vegetation. CDFG also has jurisdiction within altered or artificial waterways based on the value of those waterways to fish and wildlife, and also has jurisdiction over dry washes that carry water ephemerally during storm events.

Section 401 of the Federal Clean Water Act

Section 401 of the federal CWA requires that "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act." Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the Regional Water Quality Control Board (RWQCB).

Porter-Cologne Water Quality Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, with any region that could affect the water of the state” (water code 13260(a)), pursuant to provisions of the State Porter-Cologne Water Quality Act. “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (water code 13050 (e)).

Physical Conditions

Vegetation

The project site is relatively flat at an elevation of approximately 40 feet above mean sea level. The site is currently undeveloped and contains one plant community, ruderal, which covers the entire survey study area. The site was once used for agriculture, but it appears to now be fallow. The plant species located on the project site included non-native grasses and Russian thistle species (*Salsola species*). This is not considered a sensitive plant community although it would provide foraging opportunities for several sensitive raptor species, including burrowing owl (*Athene cunicularia*).

The project site lies adjacent to an unvegetated berm associated with Imperial Irrigation District’s (IID) agricultural canals and drains. The drain occurs along the western and northern portions of the project site. These unvegetated berms, where burrows occur, provide nesting sites and cover for burrowing owls.

Wildlife

The project site supports several wildlife species, some of which were observed during the field survey conducted by MBA. Wildlife observations made during the survey were dominated by avian species. Common bird species observed in the survey area included:

- Great-tailed grackle (*Quiscalus mexicanus*)
- European starling (*Sturnus vulgaris*)
- White-crowned sparrow (*Zonotrichia leucophrys*)
- Western meadowlark (*Sturnella neglecta*)
- Black-necked stilt (*Himantopus mexicanus*)
- Yellow-rumped warbler (*Dendroica coronata*)
- American kestrel (*Falco sparverius*)
- Snowy egret (*Egretta thula*)
- Savannah sparrow (*Passerculus sandwichensis*)
- Black phoebe (*Sayornis nigricans*)
- Say’s phoebe (*Sayornis saya*)

Sensitive Biological Resources

Sensitive biological resources include those that have been afforded special status and/or recognition by federal and state resource agencies, as well as other organizations, because of concern for their

continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Sensitive Plant Communities

No sensitive plant communities are present on the project site.

Sensitive Plant Species

One special status plant species, Abram's spurge (*Chamaesyce abramsiana*), was documented by the CNDDDB as occurring within the vicinity of the project site. It is a California Native Plant Society (CNPS) List 2 species, which means it is rare, threatened, or endangered in California, but more common elsewhere. It was determined by MBA that no suitable habitat for this species was present within the project site. Abram's spurge occurs in Mojavean and Sonoran desert scrub, which is absent from the project site. Therefore, this species would not be expected to occur on the project site.

Sensitive Wildlife Species

Review of the CNDDDB (2005) determined that there are three sensitive wildlife species occurring within the vicinity of the project site. The survey area was confirmed as being occupied by burrowing owl. During the reconnaissance-level survey, a total of five burrowing owls were confirmed as occurring within the project site and the 500-foot buffer (please see Exhibit 5.3-1). This included two pairs of owls, and one individual owl. The owls were observed to be utilizing the unvegetated berms associated with IID's agricultural canals and drains that occur immediately adjacent to the north and west. The berms provide suitable nesting habitat for the owls but would not provide suitable foraging habitat. The owl pairs are likely utilize the project site as foraging habitat, since they are constrained by existing development to the north and east. The individual owl may forage on the project site, as well as adjacent agricultural lands to the west and south of the project site. The individual owl on the east berm is not currently constrained by existing development.

The western yellow bat (*Lasiurus xanthinus*) is known to occur in the vicinity of the project site but only has a low potential for presence. The project site does not provide suitable foraging habitat since this species prefers to forage over water and among trees. The adjacent canals and drains may provide suitable foraging habitat. In addition, the project site provides only two palm trees, which is the preferred roost tree.

The American badger (*Taxidea taxus*) is known to historically occur in the vicinity of the project but only has a low potential for presence. The record for this species dates back to the early 1900's.

Previous agricultural practices on the project site would have created conditions unsuitable for burrowing by this species. Recently the project site has been left fallow but no sign of American badger or it's burrows was observed during the field survey.



Source: Google Earth Pro! (2005) and CNDDDB (July 2005).



Michael Brandman Associates

27990002 • 08/2006 | 5.3-1_bio_exhibit.mxd

Exhibit 5.3-1 Sensitive Species Location Map

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR

Table 5.3-1: Special Status Plant and Animal Species Identified in CNDDDB

Species		Status			Life Form	Blooming Period	Preferred Habitat	Potential on Site/Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS				
<i>Athene cunicularia</i>	Burrowing owl	—	CSC	—	—	—	Inhabits areas of short vegetation or bare ground. Breeds primarily in open fields, short grasslands, and rangelands. Requires burrows.	Species present. A total of five individuals, two pairs and one individual owl, were observed within the survey area.
<i>Chamaesyce abramsiana</i>	Abram's spurge	—	—	2	Annual herb	Sept - Nov	Prefers sandy places within Sonoran desert scrub and Mojave desert scrub.	Not likely to occur. No suitable habitat occurs on the project site. Nearest record is 2.2 miles southeast.
<i>Lasiurus xanthius</i>	Western yellow bat	—	CSC	—	—	—	Occurs in areas with untrimmed palm trees. Roosts in primarily palm trees and prefers dead fronds. Forages over water and among trees.	Low potential to occur. Limited suitable roosting habitat; foraging habitat is absent on project site. Nearest record is 2.2 miles southeast.
<i>Taxidea taxus</i>	American badger	—	CSC	—	—	—	Herbaceous, shrub, and open stages of most uncultivated habitats with dry, friable soils. Preys on burrowing rodents. Digs burrows.	Low potential to occur. Historically cultivated land not highly suitable. Nearest historical record from early 1900's is 4.5 miles west.
U.S. Fish and Wildlife Service FE Federal Endangered FT Federal Threatened California Department of Fish and Game CE California Endangered CT California Threatened CR California Rare CSC California Species of Concern California Native Plant Society 1A Plants presumed extinct in California. 1B Plants rare, threatened, or endangered in California and elsewhere. 2 Plants rare, threatened, or endangered in California, but more common elsewhere. 3 Plants about which we need more information. 4 Plants of limited distribution.								

Table 5.3-1 (Cont.): Special Status Plant and Animal Species Identified in CNDDB

Species		Status			Life Form	Blooming Period	Preferred Habitat	Potential on Site/Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS				
Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity (within 2 miles) of the property area and the diagnostic habitats strongly associated with the species does not occur on or in the immediate vicinity of the property area. Low Potential for Occurrence - There is a historical record of the species within the vicinity of the property, but no existing suitable habitat on or in the immediate vicinity of the property area. Moderate Potential for Occurrence - The suitable habitat associated with the species occurs on or in the immediate vicinity of the property area, but there is not a recorded occurrence of the species within the immediate vicinity (within 2 miles) of the property. High Potential for Occurrence - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the property area (within 2 miles). Species Present - The species was observed on the property at the time of the survey. Source: California Natural Diversity Database, 2005.								

Regional Connectivity/Wildlife Movement

The project site may provide live-in habitat for species in the area, such as the burrowing owl. Resident and wintering burrowing owls could use the site as foraging, breeding, post-natal dispersing, and winter migrations. The project site may also provide foraging and dispersing habitat for wintering raptor species. However, the project site's connectivity to other similar habitat occurs only to the west and south, where agricultural land occurs. To the north and east the project site abuts residential development associated with urban El Centro that would limit east to west and north to south movement. Therefore, the site is not thought to provide an important wildlife corridor that could provide regional connectivity to other similar habitats.

Jurisdictional Water Resources

Surface drainage features indicated as blue-line streams on United States Geological Survey (USGS) maps that are observed or expected to exhibit evidence of flow are considered potentially subject to state and federal regulatory authority as jurisdictional waters. Aerial photography was reviewed prior to the general surveys and an assessment of potentially jurisdictional waters was conducted during the habitat assessment. The project site does not contain any jurisdictional waters. The canals and drains (Date Drain Three-B) that occur on the north and west sides of the project site are operated by the IID. The IID has jurisdictional waivers that allow operation and maintenance of canals and drains.

Nesting Birds

Nesting birds are protected under the MBTA and CDFG codes. The fallow agricultural field and berms associated with the canals and ponds provide suitable habitat for nesting birds, such as burrowing owl, killdeer (*Charadrius vociferous*), and western meadowlark. The ornamental trees immediately to the south of the project site could provide suitable nesting habitat to raptor species such as red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and American kestrel.

5.3.2 - Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant biological resources impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA, including, but not limited to, marsh, vernal pool, coastal, etc., through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts

Sensitive Plant Communities

No impacts to sensitive plant communities will occur as a result of the proposed project.

Sensitive Plant Species

No impacts to sensitive plant species will occur as a result of the proposed project.

Sensitive Wildlife Species

Construction related temporary indirect impacts, such as noise, motion, and human activity, are considered significant to sensitive species, such as burrowing owl and Cooper's hawk, when nesting. These activities may disrupt the natural foraging patterns or lead to startle effects that reduce productivity of the nests. However, these impacts can be mitigated to below a level of significance.

Additionally, short-term impacts to burrowing owl will occur as a result of the open drainage facilities being undergrounded. The field survey determined that a total of three territories consisting of five burrowing owls were utilizing the IID's drains in the survey area. These owls would be adversely impacted on a short-term basis during construction activities to underground the drains. Adverse impacts would include potential direct fatalities to the owls, as all burrows would be destroyed during the undergrounding process. In addition, the loss of burrows during the undergrounding process would result in displacement of owls. The fill material used during the undergrounding process will determine if it remains suitable to fossorial mammals and owls after construction. If fill material or other design features make the post-construction undergrounding incompatible with owls, then these impacts would be considered long-term and permanent. These impacts would be considered significant and will require mitigation measures.

In the long-term indirect impacts will occur as a result of the proposed residential development. These impacts would include increased recreational use of the berms. This overall impact would include increased harassment of owls due to human activity and pets utilizing the berms. Burrowing owls are generally sensitive to disturbance and will commonly flush from the burrow. Pets, in particular dogs, are known to dig at the burrow entrance and would result in an overall degraded environmental condition for burrowing owls. These long-term indirect impacts to burrowing owls are considered significant and will require mitigation measures.

Additionally, development of the project site will result in long-term permanent impacts to 38 acres of burrowing owl foraging, dispersing, and nesting habitat. Five burrowing owls, two pairs and one individual, were confirmed to be utilizing the survey area, project site plus a 500-foot buffer, and will be significantly impacted by conversion of the fallow agricultural field to a residential subdivision. Mitigation measures will be required to reduce this impact to below a significant threshold.

Regional Connectivity/Wildlife Corridor

The proposed project is not within a known wildlife corridor, and abuts residential development to the north and east. No movement of wildlife would occur in an east-west or north-south direction due to urbanization. Therefore, the proposed project will have a less than significant impact on the regional movement of wildlife in the area.

Jurisdictional Water Resources

The project site does not contain any features that would be considered jurisdictional. Therefore, no impacts to jurisdictional water resources will occur as a result of project construction. The IID will be required to underground the water conveyance system adjacent to the project site. The IID has waivers for operation and maintenance of drains. Therefore, no jurisdictional areas would be impacted as a result of undergroundment of IID's canals and drains.

Nesting Birds

Birds and their nests are protected under the MBTA and CDFG codes. The proposed project contains suitable nesting bird habitat. If actively nesting birds are disturbed by construction activities, the proposed project would have a significant impact. Mitigation measures will be required to reduce this impact to below a significant threshold.

5.3.3 - Mitigation Measures

- BR 5.3-1** Additional focused survey shall be conducted to more conclusively determine the number of owls occupying the project site and a 500-foot buffer. Focused surveys shall follow accepted burrowing owl protocol, which includes a nesting season survey. During the nesting season survey, four site visits shall be conducted between April 15 and July 15. Surveys shall be conducted from two hours before sunset to one hour after, or from one hour before to two hours after sunrise.
- BR 5.3-2** A burrowing owl preconstruction survey shall be completed no sooner than 30 days prior to commencement of construction.
- BR 5.3-3** Burrowing owls inside the project site will be actively relocated prior to construction activity in order to avoid direct impacts of burrow destruction. Once all burrows on the project site are confirmed to be absent of owls, they shall be systematically collapsed. Where possible, burrows will be excavated using hand tools and refilled to prevent

reoccupation. Sections of flexible plastic pipe or burlap bags will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.

- BR 5.3-4** No construction-related disturbance shall occur within 50 m., approx. 160 ft., of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m., approx. 250 ft., during the breeding season of February 1 through August 31.
- BR 5.3-5** If feasible, 6.5 acres of foraging habitat for each pair of burrowing owl would be preserved in a conservation easement and managed to promote burrowing owl use of the site. This habitat should be adjacent to the project site but at least 50 meters from the impact area. The displaced owls would be encouraged to occupy this conserved area by actively relocating them to natural or artificial burrows. One alternate natural or artificial burrow should be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. Conservation of agricultural lands to the west or south of the project site would be the only appropriate options under this mitigation measure.
- BR 5.3-6** If mitigation measure BR 5.3-5 is not feasible, this mitigation measure is required. Off-site replacement of burrowing owl habitat shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable burrowing owl habitat. One alternate natural or artificial burrow shall be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. The off-site replacement of suitable burrowing owl habitat would follow one of the following scenarios:
1. Replacement of occupied habitat with off-site occupied habitat: 9.75 acres per pair or single bird.
 2. Replacement of occupied habitat with off-site suitable unoccupied habitat: 19.5 acres per pair or single bird.
- BR 5.3-7** An educational flyer shall be developed that informs new residences that off-road activity is not permitted on the surrounding berms. In addition, pets shall be on leashes if walked on berms. It would also make new residents aware of burrowing owls, their biology, how and why they are sensitive, and their benefits to insect and rodent control.
- BR 5.3-8** The removal of vegetation, ground disturbance, or elimination of other potential nesting habitat should be conducted outside of avian nesting season (February through August). This is particularly true for construction during the undergroundment of the drains as burrowing owls were confirmed as present and are likely resident breeders. If construction occurs during the avian nesting season, a pre-construction nesting bird survey shall be conducted seven days prior to any ground disturbing activities. If birds

are found to be nesting inside the impact area, construction will need to be postponed until a no-construction buffer, 250 feet for passerines and 500 feet for raptors, is established. Construction inside the buffer could commence once a qualified biologist determines that the nest is no longer active.

5.3.4 - Level of Significance After Mitigation

With implementation of mitigation measures BR 5.3-1 through BR 5.3-8, biological resources impacts are reduced to less than significant.

5.4 - Cultural Resources

Michael Brandman Associates (MBA) prepared a Phase I Cultural Resources Survey in February 2006, the findings of which are presented in this section. The cultural study is included in its entirety in Appendix E of this EIR.

5.4.1 - Existing Conditions

Regulatory Conditions

In most cases prior to impact, the California Environmental Quality Act (CEQA) and the Office of Historic Preservation (OHP) protocols require that a cultural resource record search and a cultural resource survey take place on a property that exhibits some potential for cultural resources.

According to federal National Historic Preservation Act (NHPA)/National Register for Historic Places (NRHP) (NPS 2005, CHRIS 2005) and state protocol, if such a survey detects cultural sites or artifactual remains, the jurisdictional agency, whose role is to fulfill Section 106 requirements, must be able to determine whether the cultural resources are eligible for inclusion in the California Register (CR) and/or the NRHP. A step-by-step Section 106 process has been developed and implemented per 36CFR800, revised December 12, 2000. As a part of this procedure, the resource must be evaluated to determine whether it is "significant." Eligibility must be determined using the four evaluative criteria, A, B, C, and D quoted below, found in implementing regulations 36CFR part 63. At the state level, the eligibility criteria are almost identical to federal protocols (PRC5024.1 - 14 CCR Section 4852). The federal criteria include the following:

- A) Is associated with events that have made a significant contribution to the broad patterns of our history;
- B) Is associated with the lives of persons significant in our past;
- C) Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D) That have yielded or may be likely to yield, information important in prehistory or history.

If avoidance of a site cannot occur as a result of an action, the project developmental plans must be evaluated in order to determine whether the action would cause a "substantial adverse change" in the significance of the resource using the criteria above. Adverse changes to such resources are defined in 36CFR800.5. All archaeological or historical sites must be carefully evaluated relative to the effects of the action, even if they have been or have not been listed at the time the proposed action will take place. Although avoidance of cultural resources is always the best choice, where necessary, impacts to previously listed or potentially listed resources must be mitigated for.

If it is determined that a cultural resource is or could potentially be listed on the CR or NRHP, a testing and/or historical evaluation of the resource must take place, prior to impact. If it is determined

Cultural Resources

that the resource is significant and that impacts will cause a substantial adverse change in its significance, that resource must undergo data collection prior to impact. Under CEQA, if testing results determine that the resource will not qualify for listing in the CR or the NRHP, no further mitigation of any kind is required. At the federal level, a Section 106 consultation determines the level of mitigative needs once data collection has taken place

Physical Conditions

The project is located several miles south of the center of the City of El Centro. Situated on a gently sloping alluvial fan which leads north-northwest eventually into the Salton Sink, the project is located roughly 10 feet below mean sea level (MSL) and lies several miles northeast of the plotted banks of the New River. The Imperial fault zone is located several miles east of the project area and has produced several significant earthquakes in the last 100 years. Flat and rectangular, the project site is located on ground surrounded on two sides of Date Drain 3D, a water control structure associated with the regional Central Main Canal District, and to the east by State Route 86 (SR-86).

The project area is located in a region of extreme heat. Before canals brought water from the Colorado, the property likely held a mesquite-dominated shrub environment. The project area rests on deposits the result of the extinct Lake Cahuilla. The soils consist of the Imperial wet silt clays and the Imperial-Glenbar silty clay loam (USDA on-line service).

At the time of the field survey, the property was fallow, but is clearly irrigated when in use. The entire parcel has been extensively disturbed since about the 1890's because of agricultural development.

Records Search

Cultural Resources

MBA contracted with Karen Collins, Assistant Coordinator of the Southeastern Information Center (SIC) of Imperial Valley College Desert Museum, Ocotillo, CA, to conduct a cultural resource records search in late January 2006. The records search involved examining an approximately 1-mile search radius surrounding the project site. The current inventories of the NRHP, the CR, the California Historical Landmarks (CHL) list, and the California Points of Historical Interest (CPHI) list were examined to identify any historic properties. Additionally, the California State Historic Resources Inventory (HRI) for El Centro and Imperial County were reviewed to determine the existence of previously documented local historical resources and archival maps were examined to help locate any previously plotted historic resources in the area.

The records search disclosed that no portions of the search radius have been surveyed or researched in the recent past by professional archaeologists. The research efforts indicated that no known cultural resource sites are located on the project site; however, there a few cultural resource sites known for this region consisting of several historic canals that bound the project site and ring the general area, including portions of the Date Drain 3D. Most of the canal systems in south El Centro were routed

before 1950, but it is not certain which portions were built in the modern era and which portions were not. The drains and small feeder canals near the project site are all part of the regional Imperial County Irrigation District (IID) water control system. Ms. Collins stated that OHP considers the canal system part of a CR eligible district. Unfortunately, no factual information about this district is available at the present time. Thus, it is possible that the Date Drain 3D is an element of an eligible historic district.

On March 13, 2006, MBA interviewed IID Staff Ecologist Bruce Wilcox about the process of maintaining the drains. The IID cleans out and rebuilds the shallow walls of these drains once every five years. In addition, any head gates or weirs associated with these drains are regularly replaced. Since MBA's staff archaeologists did not observe any historical elements during the survey, and since the IID process is to rebuild and replace any old elements, it is the professional opinion of MBA that the Date Drain 3D is located on the original footprint, but is entirely modern in appearance and construction. Therefore, this drain should not be considered a historic resource for the purposes of CEQA.

Paleontological Records Search

A paleontological records search was conducted in mid-February 2006 by Kesler Randall under the auspices of Dr. Tom Deméré of the San Diego Natural History Museum (SDNHM). A search of the SDNHM records indicates that no paleontologic resource localities are recorded within the boundaries of the project area or within 1 mile radius (Randall 2006). The project area is located entirely upon surface exposures of Pleistocene/Holocene Lake Cahuilla and Playa deposits. According to research in similar deposits elsewhere in the Imperial Valley, there is a high potential for the presence of paleontologic resources. However, since the property has been utilized for agriculture for many years, subsequently there is little potential for the presence of paleontologic fossils at ground levels above eight feet.

Site Reconnaissance

An archaeological field survey of the Willow Bend project site was undertaken by MBA staff archaeologists on February 5, 2006. Prior to MBA's field survey, the entirety of the project site has not been previously surveyed. The project area was examined using a block-transect technique, where the surveyors walked transects spaced 10 meters apart. The cultural resource field survey was performed to comply with certain cultural resource guidelines.

No cultural resources were detected during the February 2006 field survey. The whole of the project area has been heavily impacted by irrigated hay agriculture, which tends to obscure signatures of prehistoric deposits.

Native American Heritage Commission and Consultation

A sacred lands search with the Native American Heritage Commission (NAHC) has also taken place as part of the Cultural Resource report. On February 9 2006, MBA sent a letter to the NAHC in an

effort to determine whether any sacred sites are listed on their Sacred Lands List for this portion of the City of El Centro. There was no response to the first inquiry from the NAHC, so a second letter was sent on March 10, 2006. At the time of the publication of the Draft EIR, the NAHC had not responded to MBA's requests for information pertaining to sacred sites.

This effort does not represent concurrence with the regulations set forth in SB18 (Burton) in terms of Native American consultation. Formal consultation efforts must be initiated by the City under certain conditions. Accordingly, the Cultural Resource report can assist the City in that effort, should an SB18 consultation be required. It is not known at this time if the Willow Bend project will trigger consultation efforts by the City since the NAHC response is still outstanding.

5.4.2 - Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant cultural resources impact if it would:

- Aversely affect a unique cultural resource. An adverse affect is regarded as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource will be reduced such that it no longer meets the significance criteria provided in the California Code of Regulations, Title 14, Chapter 3, Section 15064.5; or
- Directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature as defined in Section 15064.5.

Impacts

Cultural Resources

The primary purpose of this cultural resources analysis is to determine what cultural resources more than 45 years old are located within the project area and whether such resources will be or could be impacted by development of the project. The possibility for the project site to contain prehistoric cultural resources exists because any signatures of prehistoric deposits may have been obscured by the heavy disturbances and activities associated with irrigated hay agriculture. Therefore, MBA has concluded from the records search and field survey results that there is a low potential for impacts to prehistoric cultural resources. However, if in the event that prehistoric cultural resources are accidentally discovered, the potential impacts would be mitigated to a level considered less than significant.

Additionally, although the Date Drain 3D water feature is regarded as an unrecorded historic property that might be considered a significant cultural resource by the OHP in light of its possible eligibility, the IID has continually modified the ditch since construction and no historic elements of the ditch, save for the location, remain. Accordingly, MBA has determined that the Date Drain 3D is part of

potentially eligible Historic District, but is inherently modern in construction. Thus, if the drain is buried below ground as part of project implementation, it is not considered a direct impact to any CR-eligible historical resource. No construction-related mitigation-monitoring is recommended with regards to cultural resources during ground-disturbing activities in the Willow Bend project area.

Paleontological Resources

The primary purpose of the paleontological analysis is to determine the potential for impacts to significant paleontological resources in the project area. MBA has concluded that the property has a high chance of containing significant paleontological resources, but only at depth below 8 feet. This depth will likely be reached during trenching for sewer and water. Therefore, potential impacts to paleontological resources are considered significant. A program to mitigate impacts to significant nonrenewable paleontologic resources is recommended for this project and thus MBA recommends that paleontological monitoring should take place during all construction-related excavations within the Tract once eight (8) feet below grade has been reached. Furthermore, only virgin soils should be monitored. The project site should be re-evaluated for sensitivity once 50 percent of the monitoring has been completed.

5.4.3 - Mitigation Measures

In the event of an accidental discovery or recognition of any human remains, Public Resource Code 5097.98 must be followed. In this instance, once project-related earthmoving begins and if there is accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken:

- CR 5.4-1** In the event of the discovery or recognition of human remains, the applicant shall comply with PRC 5097.98. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Imperial County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, then the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or
- CR 5.4-2** In the event of the discovery or recognition of human remains, the applicant shall comply with PRC 5097.98. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the

recommendations of the most likely descendant or on the property in a location not subject to further subsurface disturbance:

- The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
- The descendant identified fails to make a recommendation; or
- The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

CR 5.4-3 Prior to any clearing and grubbing and/or earthmoving activities on the project area, a qualified Project Paleontologist retained by the Proponent and approved by the City shall review the approved development and construction plans. The paleontologist shall participate in a pre-construction project meeting with the development staff to ensure an understanding of the mitigation measures required during construction.

CR 5.4-4 Paleontologic monitoring of any earthmoving shall be conducted by a qualified monitor, under direct guidance of a Project Paleontologist. Earthmoving in areas of the parcel where previously undisturbed sediments will be buried but not otherwise disturbed will not be monitored. Monitoring shall begin once earthmoving reaches 8 feet below the original ground surface. Non-virgin soils need not be monitored.

CR 5.4-5 If too few fossil remains are found after 50 percent of earthmoving is complete, monitoring can be reduced or discontinued in those areas at the project paleontologist's direction. If fossil remains are found during monitoring, up to 6,000 pounds of fossiliferous sediments will be recovered from the fossil site and processed to allow for the recovery of smaller fossil remains. The total weight of all processed samples from the fossil-bearing rock unit will not exceed 6,000 pounds at any one site.

CR 5.4-6 If fossil remains are found, the Project Paleontologist shall develop a storage agreement with a museum repository acceptable within the City to allow for the permanent storage and maintenance of any fossil remains recovered in the Project Site as a result of the mitigation program, and for the archiving of associated specimen data and corresponding geologic and geographic site data. Any recovered fossil remains will be prepared to the point of identification and identified to the lowest taxonomic level possible by knowledgeable paleontologists. The remains then shall be curated (assigned and labeled with museum repository fossil specimen numbers and corresponding fossil site numbers, as appropriate; placed in specimen

trays and, if necessary, vials with completed specimen data cards) and catalogued. Associated specimen data and corresponding geologic and geographic site data will be archived (specimen and site numbers and corresponding data entered into appropriate museum repository catalogs and computerized data bases) at the museum repository by a laboratory technician. The remains then will be accessioned into the museum repository fossil collection, where they will be permanently stored and maintained. The associated specimen and site data shall be made available for future study by qualified investigators.

- CR 5.4-7** A final report of findings shall be prepared by the Project Paleontologist for submission to the City, and the museum repository following accessioning of the specimens into the museum repository fossil collection. The report shall describe parcel geology/stratigraphy, summarize field and laboratory methods used, include a faunal list and an inventory of curated/catalogued fossil specimens, evaluate the scientific importance of the specimens, and discuss the relationship of any newly recorded fossil site in the parcel to relevant fossil sites previously recorded from other areas.

5.4.4 - Level of Significance After Mitigation

With implementation of mitigation measures CR 5.4-1 through CR 5.4-7, cultural resources impacts are reduced to less than significant.

5.5 - Geology and Soils

LandMark Consultants, Inc. prepared a Geotechnical Investigation in February 2005 for the proposed project. The following section is a summary of the study. The study is included in Appendix F of this Draft EIR.

5.5.1 - Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory standards that are applicable to approval of the proposed project.

Physical Conditions

Geologic Setting

The project site is located in the Imperial Valley portion of the Salton Trough physiographic province. The Salton Trough is a geologic structural depression resulting from large scale regional faulting and is bounded on the northeast by the San Andreas Fault and Chocolate Mountains and the southwest by the Peninsular Range and faults of the San Jacinto Fault Zone. The Salton Trough represents the northward extension of the Gulf of California, containing both marine and non-marine sediments since the Miocene Epoch. Tectonic activity that formed the trough continues at a high rate as evidenced by deformed sedimentary deposits and high levels of seismicity. The Imperial Valley is directly underlain by laucustriun deposits, which consist of interbedded lenticular and tabular silt, sand, and clay. The Late Pleistocene to Holocene lake deposits are probably less than 100 feet thick and derived from periodic flooding of the Colorado River. Older deposits consist of Miocene to Pleistocene non-marine and marine sediments. Basement rock consisting of Mesozoic granite and Paleozoic metamorphic rocks are estimated to exist at depths between 15,000 to 20,000 feet.

Faulting and Seismicity

As with most of California, there is the potential for seismic activity. As identified in Table 5.5-1, active fault systems within the project area (62 mile/100 kilometer) radius) include: Imperial Valley Fault System, San Jacinto Fault System, Elsinore Fault System, and San Andreas Fault System.

Table 5.5-1: Projected Maximum Peak Ground Acceleration at the Project Site

Fault or Seismic Zone	Approximate Distance (miles) and Direction	Maximum Earthquake Magnitude (Mw)	Maximum Peak Ground Acceleration (g)	Seismic Source Type UBC
Imperial Valley Fault System				
Imperial	5.9 NE	7.0	0.36	A
Brawley	6.7 NE	7.0	0.34	B
Brawley Seismic Zone	13 N	6.4	0.16	B
Cerro Prieto	19 SSE	7.2	0.18	A

Table 5.5-1 (Cont.): Projected Maximum Peak Ground Acceleration at the Project Site

Fault or Seismic Zone	Approximate Distance (mi) and Direction	Maximum Earthquake Magnitude (Mw)	Maximum Peak Ground Acceleration (g)	Seismic Source Type UBC
East Highline Canal	22 ENE	6.3	0.10	C
San Jacinto Fault System				
Superstition Hills	5 NW	6.6	0.32	B
Superstition Mountain	11 NW	6.6	0.19	B
Elmore Ranch	25 NW	6.6	0.11	B
Borrego Mountain	31 WNW	6.6	0.09	B
Anza Segment	47 NW	7.2	0.09	A
Coyote Creek	50 NW	6.8	0.07	B
Hot Springs-Buck Ridge	63 NW	6.5	0.05	B
Whole Zone	11 NW	7.5	0.31	A
Elsinore Fault System				
Laguna Salada	18 SW	7.0	0.17	B
Coyote Segment	28 W	6.8	0.11	B
Julian Segment	53 WNW	7.1	0.08	A
Earthquake Valley	55 WNW	6.5	0.06	B
Whole Zone	28 W	7.5	0.16	A
San Andreas Fault System				
Coachella Valley	42 NNW	7.4	0.11	A
Whole S. Calif. Zone	42 NNW	7.9	0.14	A
Abbreviations: NE = North-East; N = North; SSE = South-South-East; ENE = East-North-East; NW = North-West; WNW = West-North-West; SW = South-West; W = West; NNW = North-North-West Source: LandMark Consultants, Inc. February 2005.				

Primary seismic hazards include groundshaking, surface rupture, and liquefaction. Secondary hazards include landsliding, volcanic hazards, tsunamis, seiches, and flooding, and expansive soils.

Primary Seismic Hazards

Ground Shaking. The project site is located in the seismically active Imperial Valley of southern California and is considered likely to be subject to moderate to strong ground motion from earthquakes in the region. The primary seismic hazard at the project site is the potential for strong groundshaking during earthquakes along the Imperial, Brawley and Cerro Prieto Faults.

Site Acceleration. Ground motions are dependent primarily on the earthquake magnitude and distance to the rupture zone. Accelerations are also dependent upon attenuation by rock and soil deposits, direction of rupture, and typed of fault. Table 5.5-1 identifies the horizontal peak ground accelerations from maximum probable earthquakes on the active fault systems in the project area.

Historically, the largest maximum site accelerations based on deterministic computer-aided methods were 0.36g from a 7.0 magnitude earthquake on the Imperial Fault in 1940 and 0.34g from a 5.8 magnitude earthquake on the Brawley Fault in 1979¹.

Surface Rupture. However, the project site does not lie within a State of California, Alquist-Priolo Earthquake Fault Zone. According to well-delineated fault lines through the Imperial Valley as shown on the United States Geologic Survey (USGS) and California Geologic Survey (CGS) maps, surface-fault rupture is considered unlikely to occur at the project site. Yet, due to the high tectonic activity and deep alluvium of the region, there exists the potential for surface rupture on undiscovered or new faults that may underlie the site.

Liquefaction. Liquefaction occurs when granular soil below the water table is subjected to vibratory motions, such as those produced by earthquakes. Liquefaction can produce excessive settlement, ground rupture, lateral spreading, or failure of shallow bearing foundations. Four conditions generally required for liquefaction to occur are: (1) the soil must be saturated (relatively shallow groundwater); (2) the soil must be loosely packed (low to medium relative density); (3) the soil must be relatively cohesionless (not clayey); and (4) ground shaking of sufficient intensity must occur to function as a trigger mechanism. All of these conditions exist to some degree at the project site.

Tests performed by LandMark Consultants, Inc. indicated that onsite soils include saturated sandy silts and silty sands that have the potential to liquefy during California Building Code (CBC) Design Basis Earthquake (magnitude 7.0 with an average peak acceleration of 0.65g). Testing also indicated that there is the potential for liquefaction to occur within several isolated silt and sand layers between depths of 10 to 30 feet. According to LandMark Consultants, Inc., it is likely that strong ground shaking associated with the rupture of the Imperial Fault and possibly the Cerro Prieto Fault would be the triggering mechanism for liquefaction.

Secondary Seismic Hazards

Landslides. Due to the regional planar topography, landslide hazards are unlikely. No ancient landslides are shown on geologic maps of the region and LandMark Consultants, Inc. did not observe and indications of landslides during their site investigation.

Volcanic Hazards. The site is not located in proximity to any known volcanically active areas and the risk of volcanic hazards is considered low.

Tsunamis, Seiches, and Flooding. The site is not located near any large bodies of water; therefore, the threat of tsunamis, seiches, or seismically induced flooding is considered low.

Expansive Soils. In general, much of the near surface soils in the Imperial Valley consist of silty clays and clays, which are moderate to highly expansive. Subsurface soils encountered during field

¹ Average peak acceleration is expressed in gravity (g) = 9.80 meters per square second.

explorations conducted in 2005 consist of interbedded clays, silty clays, silts, and sands to depths of 50 feet (the maximum depth of exploration). Specifically, the western third of the project site has stiff to very stiff clays and silty clays with minor lenses of silty sand and sandy silt. The central portion of the project site has subsurface soils consisting of silty clay to a depth of 20 feet below the ground surface. Underlying the silty clays in the central portion of the site are medium dense to dense sand that extend to a depth of 32 feet below the ground surface and stiff to very stiff clays at depths from 32 to 50 feet below the ground surface. The eastern third of the project site consists of clay extending to a depth of 16 feet below the ground surface and dense to very dense sands at depths from 16 to 50 feet below the ground surface.

The native surface clays exhibit a have a high expansion potential and the clay is expansive when wetted and can shrink with moisture loss (drying).

Groundwater

During a test performed in January 2005, groundwater was encountered at a depth of 8 feet; however, groundwater levels may fluctuate with precipitation, irrigation of adjacent properties, drainage, and site grading. There is uncertainty in accuracy of short-term water level measurements, particularly in fine-grained soil, and the referenced groundwater level should not be interpreted to represent an accurate or permanent condition. Subsurface agriculture tile drainage pipelines (4-inch diameter plastic) exist at a depth of 5.0 to 6.5 feet below the site and have assisted in preventing an artificially high groundwater depth.

5.5.2 - Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant geology and soils impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; or
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or

- Be located on expansive soil, as defined in Table 18-1-B of the CBC (1994), creating substantial risks to life or property.

Impacts

Faulting and Seismicity

Primary Seismic Hazards

Although the project site does not lie within a State of California, Alquist-Priolo Earthquake Fault Zone, the project site is within the vicinity of numerous active faults and will likely experience moderate to strong ground motion from earthquakes in the region. The primary seismic hazard at the project site is the potential for strong groundshaking during earthquakes along the Imperial, Brawley and Cerro Prieto Faults.

Based upon the Modified Mercalli Scale which ranges from I an event felt by very few, to XII representing total damage, and according to FEMA, a maximum magnitude earthquake on the Imperial Fault, Brawley Fault, Cerro Prieto Fault, or San Jacinto Fault System (Superstition Hills) would result in an estimated site intensity ranging from VIII to IX. An event with a Modified Mercalli Scale rating of VIII would result in slight damage in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse; and great damage in poorly built structures. Additionally, panel walls would be thrown out of frame structures; chimneys, factory stacks, columns, monuments and walls would all fall; and there would be changes in well water. Whereas, an event with a Modified Mercalli Scale rating of IX would result in well-built buildings suffering considerable damage, houses that are not bolted down moving off their foundations, the breakage of some underground pipes, ground cracks, and serious damage to reservoirs.

Potentially within the lifetime of the Willow Bend project, residents will experience strong groundshaking and structures may suffer damage as a result of seismic activity. As required, structures will incorporate earthquake-reducing design with the latest Uniform Building Code (UBC) and CBC and the appropriate seismic design criteria. In addition, adherence to the Recommendations prepared by LandMark Consultants, Inc. for the proposed project (Appendix F) will reduce seismic related impacts to less than significant. In general, these recommendations offer general guidance in preparing site grading plans and include provisions and recommendations for ground surface preparation, trench backfill, compaction, stripping, fill material, excavation, foundation design, building pad preparation, moisture control and drainage, retaining walls, pavement areas, corrosivity, the placement of utility lines, etc. All of the specifications are in accordance with the standards set forth in the UBC and CBC.

Liquefaction. Evaluation of liquefaction potential at the site indicated that thin (1 to 4 feet thick), isolated, interbedded layers of silty sand and silt at a depth between 10 to 40 feet may liquefy under seismically induced groundshaking potentially resulting in an estimated 0.5 to 1 inch deep seated

settlement. As previously noted, liquefaction may result in additional effects such as settlement ground rupture, lateral spreading, or failure of shallow bearing foundations.

Since the potentially liquefiable sandy soils are overlain by 10 to 24 feet of stiff clay, which resist groundwater movement, Landmark Consultants, Inc. considers it unlikely that the light structure loads of the planned Willow Bend Subdivision are sufficient to result in liquefaction induced settlement greater than the surrounding land mass. Furthermore, it is unlikely that there will be rapid deformation or ground rupture of sand boil formations should liquefaction occur because of the thickness of the overlying non-liquefiable soil. Rather, because of the depth of the liquefiable layer, wide-area subsidence from soil overburden would be the expected effect of liquefaction not bearing capacity failure.

In general, the threshold for determining if liquefaction-induced settlements are considered significant is when the total induced settlements are estimated to be over 1.5-inch. Based on an estimate of 0.5 to 1-inch of differential liquefaction on the project site, the potential for liquefaction induced settlements to occur on the project site is low. According to Landmark Consultants, Inc., deep ground improvement to mitigate liquefaction is not required; however, special foundation designs are recommended to mitigate the potential for differential settlement. Therefore, impacts resulting from liquefaction-induced settlements are considered less than significant without mitigation.

Slope Stability. Given that the project site topography is characterized by level terrain and the depth of the Date Drain irrigation channel bank on site is shallow, the potential for landslides and general slope instability to affect the proposed development is very low.

Secondary Seismic Hazards

As previously discussed in Section 5.5.1, Existing Conditions, the project site is not anticipated to be impacted by landslides, volcanic hazards, tsunamis, seiches, or flooding; therefore, the potential for the project site to be affected by the aforementioned hazards is very low.

Expansive Soils. Information obtained from soil samples indicates that critically expansive soils are present in relatively thick sequences at sporadic locations around the project site. Other near surface soils are sands in a medium to very dense condition and should provide adequate support for the proposed residential structures provided that a portion of this stratum is excavated and compacted to provide a firm support for the proposed residential structures. The results of the testing soils for expansive properties indicated that earthwork operations can be expected to encounter expansive soils with expansion indexes in the range of medium to high. Thus, there is the potential for soils at the site to have a high potential for expansion.

The proposed development will involve site foundations and slabs-on-grade, which in the absence of mitigation, may ultimately rest on soils with a significant potential for expansion and contraction, both in a horizontal as well as a vertical plain. This is considered a significant impact. Accordingly,

development of building foundations, concrete flatwork, and asphaltic concrete pavements should include provisions for mitigating potential expansive forces and reduction in soil strength, which can occur from saturation of the soil. It is impossible to eliminate the risk of structural damage associated with expansive soils completely; however, several foundation systems and remediation schemes, as described in Appendix F's Geotechnical Study, in addition to mitigation measures included in this EIR will reduce potential expansive soils impacts level less than significant.

Groundwater

LandMark Consultants, Inc. encountered groundwater at a level of eight feet below ground surface. Yet, as indicated previously, groundwater levels may fluctuate and the groundwater level should not be interpreted to represent an accurate or permanent condition. According to LandMark Consultants, Inc., soils encountered below three feet have the potential to pump groundwater under heavy construction wheel loads because of the silty conditions in the near surface soils have the tendency to support layers of groundwater. Therefore, light earthmoving equipment such as 613 and/or 623 Earthmovers should be anticipated for use on the project site during construction activities to reduce the potential for groundwater pumping.

As previously noted, subsurface agriculture tile drainage pipelines (4-inch diameter plastic) exist at a depth of 5.0 to 6.5 feet below the site and have assisted in preventing an artificially high groundwater depth. Abandoning and plugging the subsurface drainage pipelines may result in a rise in groundwater levels variably across the site. Specific recommendations are included as mitigation within this draft EIR to reduce potential groundwater impacts associated with the abandoning and plugging of drainage pipelines.

5.5.3 - Mitigation Measures

- GS 5.5-1** Prior to the issuance of grading permits, LandMark Consultants, Inc., or other qualified engineering geologist approved by the City of El Centro shall review and approve all grading plans and earthwork operation plans in relation to the Recommendations set forth in Geotechnical Study (Appendix F).
- GS 5.5-2** LandMark Consultants, Inc. or other qualified engineering geologist approved by the City of El Centro shall be provided with a 48 hours advance notice in order to be present at the site during all earthwork activities related to the excavation, tree root removal, stripping, backfill, and compacting and filling of the site and to perform periodic compaction tests.
- GS 5.5-3** Prior to the issuance of grading permits, the project applicant shall include one of the following foundation systems and remediation schemes to reduce the potential for expansive soils to less than significant.
- Waffle-slabs supported on a system of drilled piers anchored below the zone of moisture change;

- Moisture conditioning subgrade soils to a minimum of 5% above optimum moisture (ASTM D1557) for the full range in depth of surface soils;
- Design of foundations that are resistant to shrink/swell forces of silt/clay soil;
- Excavation of existing materials and replacement by non-expansive soils;
- Reinforcement in footings and slabs. Flexural and shear stresses in slabs should be computed by determining the differential swell for the center lift and edge lift conditions using design procedures recommended by the Post-Tensioning Institute.² The differential swell should be used to compute the maximum shear stresses and flexural stresses in floor slabs and flatwork. Use edge moisture variation distance (e_m) of six feet and three feet for the center lift and edge lift conditions, respectively; and
- Provide Post-tensioned, free floating slabs-on-grade.

GS 5.5-4 Base line collectgors (6 to 8 inches in diameter) along the north side of the project site shall be crushed in place and trench backfill compacted (85 to 90 percent). The 4-inch lateral pipeline drains shall be plugged at street crossings.

GS 5.5-5 Light earthmoving equipment (i.e., 613 and/or 623 Earthmovers) shall be used on the project site during construction activities to reduce the potential for groundwater pumping.

GS 5.5-6 Provide positive free drainage away from the structure and make every effort possible to prevent subgrade saturation by measures such as:

- Containing all landscaping in sealed planters, sealing all construction joints with an elastomeric compound, providing the building with eave gutters and downspouts; and
- Routing all drainage impinging upon the site from off-site sources as well as drainage generated on the site away from the proposed residential structures.

5.5.4 - Level of Significance After Mitigation

After implementation mitigation measures 5.5-1 through 5.5-6, geology and soils impacts are reduced to less than significant.

² Post-Tensioning Institute; *Design and Construction of Post-Tensioned Slabs on Ground*; First Edition Fourth Printing (1989) by Post-Tensioned Institute.

5.6 - Hazards and Hazardous Materials

GS Lyon Consultants, Inc. (GS Lyon) prepared a Phase I Environmental Site Assessment (ESA) for the project site in January 2006, which included a site reconnaissance and records review. In addition, GS Lyon prepared a supplemental Pesticide Scan report in February of 2006, which included a field investigation and laboratory analysis. The findings of the ESA and Pesticide Scan report are summarized herein, and the complete reports are included in Appendix G of this EIR.

5.6.1 - Existing Conditions

Regulatory Conditions

While the effects of poor management of hazardous wastes are widely publicized, hazardous materials are more commonly used in close proximity to the public. Common hazardous materials referred to as household hazardous wastes (HHWs) by the Environmental Protection Agency (EPA) include solvents, paints, pesticides, herbicides, cleaners, oils, and batteries. More specifically, HHWs are any material discarded from homes, which may threaten human health or the environment when disposed of improperly. These products can include: household cleaners, deodorizers, personal hygiene products, landscaping products, pet care products, paint products, photographic chemicals, swimming pool chemicals, and automotive products and fluids.

Since hazardous materials and wastes are increasingly used and disposed of in urban settings and since they represent such a serious potential threat to human health and safety, numerous laws and regulations have been developed to control their use, storage, disposal, and transport.

Statewide, the California Department of Health Services - Toxic Substances Control Division (DTSC) is responsible for the regulation and control of hazardous materials and wastes. In general, DTSC regulates the generation, handling, storage, disposal, and transportation of hazardous waste, oversees the remediation of contaminated sites, and seeks to reduce the hazardous waste produced in California. While the scope of DTSC activities primarily focuses upon commercial and industrial operations, DTSC also oversees waste evaluation programs and assists in waste determinations to identify what substances and in what concentrations are harmful. The HHW and agricultural chemical collection programs focus on removing dangerous substances from homes and preventing their release into the environment through landfills, sewer systems, and illegal dumping. The California Hazardous Substances Control Law establishes regulations and incentives, which ensure that the generators of hazardous waste employ technology and management practices for the safe handling, treatment, recycling, and destruction of their hazardous wastes prior to disposal.

Locally, the Imperial County Waste Management Department operates the Conditionally Exempt Small Quantity Generator (CESQG) program. A CESQG is an operation that generates no more than 27 gallons or 220 lbs of hazardous waste or 2.2 lbs of extremely hazardous waste per month. In accordance with the program, CESQGs are required to use a licensed hazardous waste hauler to manifest and transport their waste. Additionally, the Regional Water Quality Control Board -

Colorado River Basin Region, the Salton Sea Air Basin Air Pollution Control District, and the City of El Centro Fire Department are responsible for implementing and enforcing hazardous materials and waste regulations, with respect to potential surface or ground water contamination, toxic air emissions, and hazardous materials storage/accident prevention and response plans, respectively. The City of El Centro Fire Department and Imperial County Fire Department have entered a Joint Powers Agreement with regard to hazardous materials emergency response. The El Centro Fire Department Hazardous Material Response program identifies hazardous materials with respect to potential surface or ground water contamination, toxic air emissions, and hazardous materials storage/accident prevention and response plans, respectively; the department also decontaminates and treats exposed victims and contains hazardous leaks, spills, and fires. Typically, the program responds to smaller leak or spill incidents, whereas, the Imperial Valley Hazardous Emergency Assistance Team (IVHEAT), which is comprised of City and County staff and is responsible for remediating and controlling the larger hazardous risk incidents. As previously discussed, the DTSC is the enforcement agency for hazardous materials and waste regulations and is responsible for cleanup operations.

Physical Conditions

The proposed project site is located on approximately 38 acres of land in the County of Imperial, within the Sphere-of-Influence of the City of El Centro, California. The project site lies within a rural agricultural area to the southwest of the City and is situated east, south, and west of City's jurisdictional boundaries. Specifically, the project site is located north of McCabe Road, east of 8th Street, west of State Route (SR) 86 (4th Street) and approximately 0.9 mile south of Interstate 8 (I-8). The project site is almost square in plan view and bounded by the Date Drain No. 3 on the north, northeast, and west. Additionally, review of historical aerial photographs established that the project site was used for agricultural cultivation from at least 1949 and has remained so to date.

Field Reconnaissance

A site reconnaissance, which included a visual observation of surficial conditions at the project site and its adjoining properties, was performed by a staff environmental specialist of GS Lyon Consultants on January 10, 2006. The objective of the site reconnaissance was to obtain information indicating the likelihood of identifying recognized environmental hazards and/or hazardous materials (including petroleum) in connection with the property. The reconnaissance also included site observations for the presence of polychlorinated biphenyls (PCB's) and/or asbestos containing materials (ACMs), indications of surface or subsurface hydrocarbon or pesticide contamination, the presence of on-site groundwater wells, pits or sumps, wastewater discharge practices, and surface water drainage patterns.

Observations

The project site is a relatively flat undeveloped land that historically supported agricultural production, and lies approximately 30 feet below mean sea level (MSL). The surface soil within the

project site and surrounding area consist predominantly of silty clay and silty clay loams of the Imperial soil group. These loams are formed in sediment and alluvium of mixed origin (Colorado River overflows and fresh-water lakebed sediments). The permeability of these soils is expected to be low to very low.

The groundwater observed within the site area is brackish and is typically encountered at a depth of 8 to 10 feet below the ground surface. Depth to groundwater may fluctuate due to localized geologic conditions, precipitation, irrigation, drainage and construction practices in the region. Based on the regional topography, groundwater flow is assumed to be generally towards the north within the site area. Flow directions may also vary locally in the vicinity of the site.

Dried crop stubble, weeds, and non-native vegetation cover the project site. The project site is bounded on the north, northeast, and west by the Date Drain No. 3, which is an earthen irrigation run-off water ditch. SR-86 (4th Street) defines the eastern boundary, and a concrete-lined Head Ditch forms the southern boundary of the project site. North of the site, high voltage power lines run along the north side of the Date Drain and south of residential uses, and four power poles dispersed along the eastern property line adjacently off-site continue the high voltage power lines from the north. Miscellaneous debris was observed along the northern boundary of the site and included a wood pallet, a cardboard box, and a large piece of Styrofoam. Additionally, three automobile tires were observed near the northeast corner along the northern boundary of the site.

No hazardous materials/waste were observed during the field reconnaissance. No sewer or potable water service is currently provided to the project site. No standing water or major depressions were observed on the project site. Exposed surface soils did not exhibit any obvious signs of discoloration. No obvious evidence (vent pipes, fill pipes, dispensers, etc.) of underground storage tanks (USTs) was noted within the area observed. The potential for contamination of the site by PCBs is unlikely due to the lack of electrical transformers. No indications of former structures, such as foundations, were observed on the project site. The potential for ACMs and lead based paint containing materials existing at the project site is highly unlikely due to the lack of prior site development.

Based on the site and surrounding area observations, GS Lyons concluded the following:

- It is unlikely that significant quantities of hazardous materials are stored at the adjacent properties.
- Use of the project site historically and recently has been in agricultural cultivation. Typical agricultural practices in the Imperial Valley consist of aerial and ground application of pesticides and application of chemical fertilizers to both ground and irrigation water. In view of that, a variety of chemicals (including pesticides, fungicides, and fertilizers) could have been applied to the agricultural crops grown on the project site. Consequently, persistent chemicals and elemental residues may exist in the soil and groundwater within and under the project area.

Based on information regarding this issue and the historical uses of the project site, the likelihood of an impact to the subsurface of the subject site by hazardous materials appears to be low.

- No service station, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted adjacent the project site.
- There are no industrial areas within 1.0 mile of the project site.

Adjacent Properties

GS Lyon Consultants also identified the existing land uses on adjacent properties during the site reconnaissance. The following observations were noted in the report:

- North of the project site: Date Drain No. 3 runs along the northern project boundary. Rural single-family residential homes are located north of the site across the Date Drain.
- East of the project site: SR-86 runs north-south along the eastern boundary. The newly constructed residential subdivision (Countryside Estates) is located east of the site across SR-86.
- South of the project site: A concrete-lined Head Ditch runs adjacently along the southern project boundary. Two rural residences are located south of the Head Ditch on the western side below the project site. Properties to the south of these uses consist of agricultural fields in production.
- West of the project site: Date Drain No. 3 runs along the western project boundary. A fallow agricultural field is located west of the site across the Date Drain.

Regulatory Records Review

CEQA requires that the lead agency consult the lists of hazardous waste sites compiled by various state agencies, pursuant to Government Code Section 65962.5 (California Public Resources Code Section 21092.6). Databases from federal and state regulatory agencies were reviewed to identify any sites known to use, generate, store, treat and/or dispose of hazardous materials and chemicals or release incidents of such materials, which may have impacted the project site. GS Lyon Consultants reviewed the available regulatory databases provided by Environmental Data Resources Inc., (EDR) dated January 11, 2006. The environmental and regulatory databases that were included in the review follow the ASTM standard E1527-00 guidelines. EDR conducted the database search by designating a central point within the project site and then expanding the database search outward by a one-mile radius in order to compile a comprehensive list that included the project site and surrounding area (see Overview Map, page 2, Appendix G). A complete description of each database is included in the Appendix G of the EIR. The following is a summary of the findings of the EDR report.

Table 5.6-1: Project Area Database Search

Map Findings Summary							
Database	Search Distance (Miles)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	Direction	Total Plotted
Federal ASTM Standard							
NPL	1.000	0	0	0	0	--	0
Proposed NPL	1.000	0	0	0	0	--	0
Delisted NPL	1.000	0	0	0	0	--	0
NPL Liens	TP	NR	NR	NR	NR	--	0
CERCLIS	0.500	0	0	0	NR	--	0
CERC-NFRAP	0.250	0	0	0	NR	--	0
CORRACTS	1.000	0	0	0	0	--	0
RCRA-TSD	0.500	0	0	0	NR	--	0
RCRA Lg. Quan. Gen.	0.250	0	0	NR	NR	--	0
RCRA Sm. Quan.Gen.	0.250	0	0	NR	NR	--	0
ERNS	TP	NR	NR	NR	NR	--	0
HMIRS	TP	NR	NR	NR	NR	--	0
US ENG CONTROLS	0.500	0	0	0	NR	--	0
US INST CONTROLS	0.500	0	0	0	NR	--	0
DOD	1.000	0	0	0	0	--	0
FUDS	1.000	0	0	0	0	—	0
US BROWNFIELDS	0.500	0	0	0	NR	—	0
CONSENT	1.000	0	0	0	0	—	0
ROD	1.000	0	0	0	0	—	0
UMTRA	0.500	0	0	0	NR	—	0
ODI	0.500	0	0	0	NR	—	0
TRIS	TP	NR	NR	NR	NR	—	0
TSCA	TP	NR	NR	NR	NR	—	0
FTTS	TP	NR	NR	NR	NR	—	0
SSTS	TP	NR	NR	NR	NR	—	0
PADS	TP	NR	NR	NR	NR	—	0
MLTS	TP	NR	NR	NR	NR	—	0
MINES	0.250	0	0	NR	NR	—	0
FINDS	TP	NR	NR	NR	NR	—	0
RAATS	TP	NR	NR	NR	NR	—	0

Table 5.6-1 (Cont.): Project Area Database Search

Database	Search Distance (Miles)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	Direction	Total Plotted
State ASTM Standard							
AWP	1.000	0	0	0	0	—	0
Cal-Sites	1.000	0	0	0	0	—	0
CA Bond Exp. Plan	1.000	0	0	0	0	—	0
NFA	0.250	0	0	NR	NR	—	0
NFE	0.250	0	0	NR	NR	—	0
REF	0.250	0	0	NR	NR	—	0
SCH	0.250	0	0	NR	NR	—	0
Toxic Pits	1.000	0	0	0	0	—	0
State Landfill	0.500	0	0	0	NR	—	0
CA WDS	TP	NR	NR	NR	NR	—	0
WMUDS/SWAT	0.500	0	0	0	NR	—	0
Cortese	0.500	0	0	0	NR	—	0
SWRCY	0.500	0	0	0	NR	—	0
LUST	0.500	0	0	0	NR*	—	0
CA FID UST	0.250	0	0	NR	NR	—	0
SLIC	0.500	0	0	0	NR	—	0
UST	0.250	0	0	NR	NR	—	0
HIST UST	0.250	0	0	NR	NR	—	0
AST	0.250	0	0	NR	NR	—	0
SWEEPS UST	0.250	0	0	NR	NR	—	0
CHMIRS	TP	NR	NR	NR	NR	—	0
Notify 65	1.000	0	0	0	1	N	1
DEED	0.500	0	0	0	NR	—	0
VCP	0.500	0	0	0	NR	—	0
CLEANERS	0.250	0	0	NR	NR	—	0
WIP	0.250	0	0	NR	NR	—	0
HAZNET	TP	NR	NR	NR	NR	—	0
EMI	TP	NR	NR	NR	NR	—	0
Tribal Records							
INDIAN RESERV	1.000	0	0	0	0	—	0
INDIAN LUST	0.500	0	0	0	NR	—	0

Table 5.6-1 (Cont.): Project Area Database Search

Database	Search Distance (Miles)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	Direction	Total Plotted
INDIAN UST	0.250	0	0	NR	NR	—	0
EDR Proprietary Historical Database							
Manufactured Gas Plants	1.000	0	0	0	0	—	0
* Contains listed LUST site that is outside search distance. 0 = No sites in Search Distance identified TP = Target Property NR = Not Requested at this Search Distance Source: GS Lyon Consultants, Inc. January 2006.							

Proposition 65 Notification Records (Notify 65)

Proposition 65 Notification Records (Notify 65) contains facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The source of the information comes from the State Water Resources Control Board's Proposition 65 databases. A review of the Notify 65 list, as provided by EDR, has revealed that there is 1 Notify 65 risk site (Gene's 76) located approximately 0.5 to 1 mile north of the project site at 2390 South 4th Street. The listing consisted of a drinking water aquifer potentially affected by a leak in a gasoline tank caused by corrosion and was confirmed in May 1989. The abatement method was to excavate and treat. This involved removal of contaminated soils and treatment of contaminated soils. Remedial action of the hazard occurred in August 1991 and the case was closed in September 1996. Furthermore, the listed hazard site is located at an elevation lower than the project site and the groundwater flow is assumed to be generally towards the north within the project site area. Therefore, based the conditions discussed above, there is no identified hazard risk located near the project site.

Leaking Underground Storage Tank (LUST)

The LUST database contains an inventory of reported leaking underground storage tank incidents. The source of the information is the California State Water Resources Control Board. The EDR report identified one site (Gene's 76) located within approximately 0.5 to 1 mile north of the project site at 2390 South 4th Street. However, upon further investigation, the hazard risk site was not included in the Map Findings Summary (Table 5.6-1) under a LUST listing because the hazard site is located outside the search distance of the LUST database (i.e., 0.5 miles) and thus not considered to pose a hazardous risk on the proposed project given the separation. This listed LUST site is the same as the Notify 65 hazard site discussed above in detail. As previously mentioned, the LUST site is located at an elevation lower than the project site and the groundwater flow is assumed to be generally towards the north within the project site area. Therefore, based the conditions discussed above, there is no identified LUST risk located near the project site.

In addition to the database searches performed by EDR, GS Lyon Consultants, Inc. also performed additional regulatory records reviews as discussed below:

Sanborn Fire Insurance Map Review

Sanborn Fire Insurance Maps (SFIMs) are large scale maps depicting the commercial, industrial, and residential sections of various cities across the United States. Since the primary use of the maps was to assess the buildings that were being insured, the existence and location of fuel storage tanks, flammable or other potentially toxic substances, and the nature of businesses are often shown on these maps. SFIMs were reviewed to evaluate prior land use at the subject site and adjacent properties. GS Lyon's search of SFIMs revealed no coverage for the subject site and adjacent properties due to the rural undeveloped nature of the site.

Historic Topographic Maps Review

Historic topographic maps, United States Geological Survey 7.5-minute El Centro, California Quadrangle, did not show development on the site.

Historic Telephone and Polk Directories Review

Telephone directories for the Imperial County, which included the City of El Centro businesses published in 1941, 1955, 1964, 1974, and 1994, were reviewed. No service station, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted at or in the immediate vicinity of the project site. The subject site is not covered by the Polk Directories due to the rural nature of the site.

Title Information/Environmental Liens Review

No title documents were provided by the client for our review and no checks for environmental liens were made.

Historical Aerial Photographs

Historical aerial photographs from the Imperial Irrigation District (IID) were reviewed to help establish the historical development of the project site. Reproductions of the historical aerial photographs reviewed are included in Appendix G of this EIR. Using the aerial photographs, GS Lyon Consultants, Inc. concluded these changes have taken place on the property within the stated periods of time:

- The 1949 aerial photograph shows the subject property as an agricultural field in production. There are is a single-family residential home outside the margins of the subject site to the south and another to the southeast. The site is surrounded by agricultural fields to the north, south, east, and west.
- The 1965 and 1972 aerial photographs are similar to the 1949 photograph.

- The 1979 aerial photograph shows single-family rural homes north of the subject site.
- The 1984 and 1992 aerial photographs are similar to the 1979 photograph.

Furthermore, findings from the ESA supported the need for near surface soil testing for pesticide contamination. This Pesticide Scan included the collecting of four (4) surface soil samples for pesticide contamination analysis. The samples were collected on January 16, 2006 from locations scattered throughout the project site and were taken from the upper 6 to 12 inches of soil. Subsequently, the samples were analyzed and the observations and findings are presented below.

5.6.2 - Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant hazards and hazardous materials impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment;
- Impair implementation or physically interfere with an adopted emergency response plan or and emergency response plan or an emergency evacuation plan;
- Emit hazardous emissions or handle hazardous or acutely hazardous, materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Affect a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result, would create a significant hazard to the public or environment;
- Expose people or structures to significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands; or
- If the project has environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

Impacts

Short-Term Impacts

Construction Activities

Grading and construction activities may involve the limited transport, storage, usage, or disposal of hazardous materials, such as the fueling/servicing of construction equipment, such activity is short-

term or one-time in nature and is subject to federal, state, and local health and safety requirements. Additionally, during the construction phase the proposed project will likely generate hazardous waste such as paint; thus, the project will be subject to the Conditionally Exempt Small Quantity Generator Program, which will require that contractors employ a licensed hazardous waste hauler to manifest and transport such waste. This requirement ensures that no significant impacts from short-term land uses will occur.

Long-Term Impacts

As noted in Table 5.6-1, the project site is not listed on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. GS Lyons performed a Phase I ESA for the project site. Based on the site reconnaissance, and a review of physiographic, historical, and regulatory information, there is no evidence of recognized environmental concerns in connection with the project site including past, present, or potential releases of hazardous substances at the site; or other potential or existing environmental conditions on site and/or the surrounding properties. However, there is the potential for previously unknown hazardous materials to be encountered during the project development activities from historical use of the project site. Such contamination if found, is subject to existing federal, state, and local policies and procedures will require the delineation and remediation of sites containing hazardous substances to the satisfaction of the designated local enforcement agency, and in accordance with the State of California Hazardous Substances Control Law. Moreover, it is unlikely that any such contamination, if to occur, will not extend beyond the capacities of typical remediation measures.

Pesticide Use/Groundwater and Soil Contamination

Review of historical aerial photographs indicates the subject site was utilized for agricultural purposes from at least 1949 and has remained so to date. Agricultural activities rely heavily on chemical fertilizers, herbicides, and pesticides to produce food. As such, pesticide residues may exist in the soil and groundwater on-site. Chlorinated hydrocarbons, including DDT, were commonly utilized as pesticides in the project area during the 1950s and early 1960s, until they were banned in 1965. A variety of chemicals could have been applied to the agricultural crops grown on the project site. Residues in the soil can leach into the groundwater and surface water bodies for many years. These residues may exist in the soil and groundwater within and under the project area. It is not known if environmentally persistent pesticides were applied to the subject site prior to the late 1949's when it was utilized for agricultural purposes. The only conclusive method to determine concentrations of pesticides in the soil would be to conduct soil sampling.

GS Lyon sampled near surface soil from four (4) locations throughout the project site. Analytical test results indicate the presence of pesticides in the near surface soils on the project site. Moreover, the analytical results show the pesticide DDE was found in each of the four soil samples. Other pesticides that were tested for were either below detectible limits or non-existent in the samples. The concentrations for the pesticide DDE in the soil encountered at the site are below the current threshold (action) limits (Preliminary Remediation Goals) as determined by the State Department of

Toxic Substance Control (DTSC). For specific sample locations and DDE concentrations, see Pesticide Scan report in Appendix G of this EIR.

The proposed development could minimally limit the use of pesticides on nearby agricultural land located west of the site across Austin Road should they remain undeveloped and under agriculture production. However, the use of pesticides and herbicides are essential at this time in order to minimize the impacts of weeds and insects on the crops, maximize harvesting efficiency, and to be competitive.

The project site is underlain by a subsurface agricultural tile drainage system (4-inch diameter plastic or clay perforated pipelines encapsulated by sand/gravel envelope) installed at a depth of 5.0 to 6.5 feet. The tile drains remove excess water to maintain groundwater below the root systems of crops and remove soluble salts and compounds leached from the soil during irrigation. The tile drain pipelines flow or are pumped into the open earthen drains/ditches along the north and west margins of the project site. According to the tile drain map (see Appendix G of this EIR), excess water is transferred to the Date Drain No. 3 at the northeast corner of the project site.

The U.S. Geological Survey, at the request of the Imperial Irrigation District (IID), performed a "one time" water quality study of 27 irrigation drains throughout the Imperial Valley during the summer of 1994. Review of the study results indicate that the drains sampled contained less than the regulatory limits of arsenic, selenium, and nitrates for drinking water.

Household Hazardous Wastes

Long-term activities on the developed project site will result in an increase in the use and storage of common household hazardous wastes, such as household cleaning and janitorial products, herbicides, insecticides, solvents, and fuel. However, Imperial County operates a household hazardous waste collection and reuse facility located at 702 East Heil Avenue in El Centro that allows residents to deliver and properly dispose of their household hazardous wastes.

School Activities

The project site is located within approximately 0.75 miles of Esther Huff School to the southwest, within approximately 0.85 miles of Desert Garden School to the north, and within approximately 0.93 miles of Gaede Preschool and Day Care to the northwest. The adjoining residential land uses would not result in the use, storage, and/or disposal of hazardous materials or wastes that would pose a serious health risk to school activities. As discussed earlier, the results of a Phase I ESA determined that there are no apparent environmental conditions affecting the site; therefore, the potential impact on nearby schools is at a level less than significant.

Emergency Services

In general, the City of El Centro's Standardized Emergency Management System (SEMS) Multihazard Functional Plan (MHFP) is to respond to emergency situations with a coordinated system of emergency service providers and facilities. The City Fire Department is responsible for

coordinating emergency service planning and preparation for response to and recovery from disasters. As stated in the City's General Plan - Safety Element (Disaster Preparedness - Policy 6.1), the City is responsible for the development of local preparedness plans and multi-jurisdictional cooperation and communication for emergency situations, consistent with the Multihazard Functional Planning Guidance. Additionally, the City is responsible for monitoring, enforcing, and updating, as appropriate, all emergency needs as conditions in the planning area change.

Wildland Fires

The project site is in an area that is quickly urbanizing with development approaching the site from the north and east, with SR-86 (4th Street) defining the eastern boundary and Interstate 8 (I-8) approximately 0.9 miles north of the project site. Therefore, due to the intensity of development in the project area, the project site is not located in an area that is considered to be subject to wildland fire hazards.

5.6.3 - Mitigation Measures

- HM 5.6-1** Prior to any earth moving activities on the project site, debris consisting of a wood pallet, dry brush, Styrofoam, cardboard and automobile tires found at the northern portions of the project site shall be removed and properly disposed.
- HM 5.6-2** Prior to the issuance of a grading permit, the project applicant shall coordinate with DTSC to review and approve the results of the pesticide scan. DTSC shall provide written verification that no further action is required in relation to the presence of DDE in near surface soils. If DTSC determines that the soils exceed the acceptable limits the soils shall be remediated and/or properly disposed of per DTSC requirements.

5.6.4 - Level of Significance After Mitigation

The implementation of the mitigation measures listed above will reduce potential project related hazardous materials impacts to less than significant.

5.7 - Noise

This section incorporates information contained in the Environmental Noise Assessment prepared for the proposed project by VRPA Technologies, Inc. (VRPA) in March 2006. The complete report is contained in Appendix H of this EIR.

5.7.1 - Existing Conditions

Regulatory Conditions

The U.S. Department of Housing and Urban Development (HUD) has set a goal of 65 dBA Ldn as a desirable maximum exterior standard for residential units developed under HUD funding. This level is also generally accepted within the State of California. While HUD does not specify acceptable interior noise levels, standard construction of residential dwellings constructed under Title 24 standards typically provides in excess of 20 dBA of attenuation with the windows closed. Based on this premise, the interior Ldn should not exceed 45 dBA Ldn. Additionally, the State Office of Noise Control has established acceptable noise limits for sensitive land uses such as dwelling units and schools, with 65 dBA CNEL being normally acceptable and 70 dBA CNEL being conditionally acceptable for exterior uses.

The City of El Centro has an exterior noise standard of 60 dB and an interior noise standard of 45 dB,

Physical Conditions

Noise Measurement Scales

The standard unit of measurement of the loudness of sound is the decibel (dB). Typical human hearing can detect changes in sound levels of approximately 3 dB under normal conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is discernable to most people in an exterior environment while a change of 10 dBA is perceived as doubling the noise. Several rating scales exist to analyze the adverse effects of noise on a community. The following measurements are used to define noise levels:

Equivalent Noise Level (Leq) - The measurement of sound energy over a specified period (usually 1 hour). Leq represents the amount of variable sound energy received by a receptor over a timed interval in a single numerical value. For example, a 1-hour Leq noise level measurement represents the average amount of acoustical energy that occurred in one hour. In addition, variations in sound levels may be addressed by statistical methods. The simplest of these are the maximum (L_{max}) and minimum (L_{min}) noise levels, which are the highest and lowest levels observed. Other variations include the L_{50} , identifying percentage of time that the noise level standard is exceeded during fifty percent of an hour (i.e. 30 minutes) or the L_{25} identifying the percentage of time that the noise level standard is exceeded during twenty-five percent of an hour (i.e. 15 minutes), etc.

Community Noise Equivalent Level (CNEL) - The CNEL noise metric is based upon 24 hours of measurement, the CNEL measurement applies a time-weighted factor that is designed to emphasize noise events that occur during the evening (7 PM to 10 PM) and nighttime (10 PM to 7 AM) hours. Noise produced during the evening hours are penalized by 5 dBA while noise that occurs during the nighttime hours is penalized by 10 dBA.

Environmental Noise Descriptors

Most environmental noise sources produce varying amounts of noise over time, so the measured sound levels also vary. For example, noise produced during an aircraft overflight will vary from relatively quiet background levels before the overflight to a maximum value when the aircraft passes overhead, then returning down to background levels as the aircraft leaves the observer's vicinity. Similarly, noise from traffic varies with the number and types of vehicles, speed, and proximity to the observer. Table 5.7-1 identifies the typical sound level associated with various noise generators.

Table 5.7-1: Examples of A-Weighted Sound Levels

Sound	Sound Level (dBA)
Jet aircraft, 100 feet	130
Rock music with amplifier	120
Thunder, snowmobile (operator)	110
Boiler shop, power mower	100
Orchestral crescendo at 25 feet, noisy kitchen	90
Busy street	80
Interior of department store	70
Ordinary conversation, 3 feet away	60
Quiet automobile at low speed	50
Average office	40
City residence	30
Quiet country residence	20
Rustle of leaves	10
Threshold of hearing	0
Source: Michael Brandman Associates, March 2006.	

Sound Propagation and Attenuation

For purpose of sound propagation, noise sources may be classified as point sources or line sources. Point sources usually are localized, such as a piece of machinery, and are at a distance where sound will propagate in a spherical pattern. Sound levels from point sources attenuate or drop-off at the rate of 6 dB for each doubling of distance. Sound from line sources, such as a highway, propagate in a cylindrical pattern. Sound levels from line sources attenuate at the rate of 3 dB per doubling of distance.

In addition to attenuation by wave spreading, sound levels also may be attenuated by air and ground absorption, and from shielding by natural or man-made obstacles in the sound path. Noise barriers (walls or earth berms) are features that are commonly constructed to interrupt noise propagation and thereby reduce noise levels. Other factors that will also influence sound propagation are wind and atmospheric temperature inversions. Obviously, all of these factors can work together influencing sound propagation.

Existing Noise Sources

Traffic

Traffic volumes collected from Katz, Okitsu & Associates at speeds of 40 miles per hour along State Route (SR) 86 were entered into the noise model (Sound 2000¹) to estimate noise levels at the proposed residential development. Additionally, VPRA staff conducted noise level measurements within the project site on November 17, 2005. The purpose of the measurements was to evaluate the accuracy of the noise model in describing traffic noise exposure within the project site. The locations described below and as shown on Exhibit 5.7-1, are representative of the approximate location of the closest proposed building setback from State Route 86.

- Location 1: 50 feet west of SR 86 center-line (North side of site plan)
- Location 2: 50 feet west of SR 86 center-line (South side of site plan)

As previously noted, the City of El Centro has an exterior noise standard of 60 dB and an interior noise standard of 45 dB. As shown in Table 5.7-2, the existing noise levels at each receptor are currently above the City of El Centro's General Plan standards for exterior noise.

Table 5.7-2: Existing Noise Conditions

Receptor	Existing Leq Measured
Receptor 1	60.7
Receptor 2	61.0
Source: VRPA, March 2006.	

5.7.2 - Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant noise impact if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

¹ Sound 2000 is the Caltrans version of FHWA's Stamina 2.0/Optima Traffic Noise Prediction Programs

Noise

- Expose persons to, or generate excessive groundborne vibration or groundborne noise levels. This impact will occur if groundborne vibration exceeds 100 vibration decibels (VdB) (a level usually perceived as annoying to building occupants);
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Expose persons residing or working in the project area to excessive noise levels as a result of activities at an airport.

Additionally, the proposed project is subject to the City of El Centro noise standards as outlined in the City's General Plan; thus the project would result in a significant noise impact if it would:

- Expose persons to an exterior CNEL that exceeds 60 dB at the proposed residential lots; or
- Expose persons to an interior CNEL that exceeds 45 dB at the proposed residences.

Impacts

Short-Term Impacts

Short-term noise impacts consist of noise associated with the construction for the proposed project. Construction noise impacts are short-term impacts in that they occur only during periods of project construction. Earthmoving, materials handling, stationary, and impact equipment and vehicles generate noise during clearing, excavation, grading, structure, roadway, and utility construction operations associated with the development of the proposed project.

Actual noise levels generated by equipment and experienced at nearby and adjacent residences during construction would vary hourly, daily, and weekly because the number and types of equipment used would vary. Noise could be produced by diesel powered motor graders, tractors, fork lifts, loaders, rollers, asphalt pavers, generators, flatbed trucks, delivery trucks, and rollers. The proposed project would generate two types of construction noise: equipment noise and traffic noise. During the construction of the project, noise from construction activities would potentially impact noise-sensitive land uses in the immediate area. Activities involved in construction would generate noise levels in the range of 80 dBA to 87 dBA. Construction activities will be temporary in nature and in accordance with City noise standards, which limits construction activities to between 7:00 AM and 7:00 PM. However, while short-term in nature and adherence to the City's standards reduces noise impacts, construction noise could result in annoyance for nearby sensitive receptors if the equipment is not properly muffled or maintained.

Groundborne Vibration. Groundborne vibration is measured by the velocity of the vibration oscillations. As with noise, a logarithmic decibel scale (VdB) is used to quantify vibration intensity. When groundborne vibration exceeds 75 to 80 VdB, it is usually perceived as annoying to building occupants. The degree of annoyance is dependent upon type of land use, individual sensitivity to vibration, and the frequency of the vibration events. Typically, vibration levels must exceed 100 VdB before building damage occurs.

The primary vibratory source during the construction of the project will be large bulldozers. Typical bulldozer activities generate an approximate vibration level of 87 VdB at a distance of 25 feet. This is below the threshold at which building damage occurs. As a bulldozer moves within about 100 feet of the residential property lines, it is possible that vibration will be perceived by the residents; however, the vibration level would be less than significant.

Long-Term Noise Impacts

In relation to residential projects, long-term noise impacts are generally associated with an increase in vehicle traffic in a project area. To analyze traffic noise levels, the Federal Highway Administration's (FHWA) Highway Traffic Noise Prediction methodology was used. Existing or "baseline" traffic noise levels are established based on previously collected traffic data (see Appendix I, Traffic Impact Study) and using Sound 2000 modeling. Once existing levels are established, project buildout noise levels, based on expected year 2008 traffic forecasts, were calculated and compared to both the existing noise level and the maximum allowable noise exposure based on the El Centro General Plan.

An analysis of the project impacts on sensitive receptors in the surrounding area was conducted to determine whether the project's traffic would have an impact on these sensitive receptors. Approximately 700 feet north of the proposed project is a home that is located about 50 feet from the centerline of SR 86. This home will be used to represent all sensitive receptors in the area because of its close proximity to SR 86. Table 5.7-3 shows the impacts of the proposed project traffic to offsite receptors. Results of the analysis indicate that the proposed traffic alone would not cause significant impacts to nearby receptors. It should also be noted that when the project traffic is added to the future no project conditions, there is only an increase of 1.4 Leq.

Table 5.7-3: Noise Impacts from Proposed Project (Leq)

Receptor	Project Traffic Impacts Predicted	Future (2008) No Project Predicted	Future (2008) Plus Project Predicted	Future (2008) No Project & Future Plus Project Difference
Receptor 1	59.5	65.1	66.5	1.4
Source: VRPA, March 2006.				

Noise

Aircraft Noise

The CEQA Guidelines outline that a significant noise impact may occur if persons are exposed to excessive noise because of airport activities. The nearest airport, Imperial County Airport is located over 3.5 miles to the north of the project site and the project is not located in an area regulated by an airport land use plan; therefore, the proposed project is not anticipated to be affected by aircraft noise.

5.7.3 - Mitigation Measure

- N 5.7-1** Prior to the issuance of grading permits, the grading plans shall state that all gas and diesel power equipment shall be properly muffled and maintained. Construction activities should be limited to the hours and days permitted by the City of El Centro.

5.7.4 - Level of Significance after Mitigation

After implementation mitigation measure 5.7-1, noise impacts are reduced to less than significant.

5.8 - Public Services and Utilities

This section is based upon consultation with the individual service providers that will service the project site. Additional information was provided by the El Centro Fire Department, the El Centro Police Department, the McCabe Union Elementary School District, the Central Union High School District, the El Centro Public Works Department, the California Integrated Waste Management Board, the Environmental Protection Agency, and the Imperial Irrigation District. Information was also provided by the City of El Centro General Plan. Specifically, this section will address fire protection and emergency medical services, police protection, public education, library services, health services, solid waste, potable water, wastewater, electricity, and gas.

5.8.1 - Fire Protection and Emergency Medical Services

Existing Conditions

Regulatory Conditions

The El Centro Code of Ordinances adopts the 1994 Uniform Building Code (2001 Edition) and the California Fire Code (2001 Edition) by reference. The Uniform Building Code prescribes performance characteristics and materials to be used to achieve acceptable levels of fire protection. The California Fire Code outlines fire protection standards for the safety, health, and welfare of the public and contains standards for building design, and water supply.

Physical Conditions

The El Centro Fire Department (ECFD) provides fire protection and emergency medical services to the City of El Centro. Additionally, the ECFD provides fire suppression, advanced life support, basic life support, fire prevention, consulting, and investigative services; community disaster preparedness, hazardous materials response and mitigation; confined space rescue services; and water rescue.

Staffing

The ECFD is staffed by 37 full time employees; 33 of whom are assigned to shift and the remaining four to administrative positions. All firefighters are trained emergency medical technicians and 12 are capable of providing advanced life support. In addition, the ECFD has 12 hazardous materials specialists, six confined space rescuers, and two bomb technicians.

Fire personnel work 56/112 shifts, in which they are on-duty for 24 hours and then off-duty for 24 hours. There are three shifts, with 11 persons assigned to each shift.

Apparatus

The ECFD fleet consists of the following apparatus:

- 4 Fire Engines (includes pumpers)
- 1 Ladder Truck
- 1 Rescue Squad
- 1 Mobile Air Compressor

- 1 Incident Command Vehicle
- 1 Hazardous Materials Unit

Stations

The ECFD operates two fire stations. The characteristics of each station are summarized in Table 5.8-1.

Table 5.8-1: Fire Station Summary

Station	Location	Distance from Project Site	Apparatus
Station 1	775 State Street	2.4 miles	1 Fire Engine; 1 Super Duty Rescue Squad; 1 Mobile Air Compressor; 1 Pumper (reserve)
Station 2	900 S. Dogwood Road	2.7 miles	1 Fire Engine; 1 Ladder Truck; 1 Pumper (reserve)
Source: El Centro Fire Department. Fleet and Facilities Maintenance, 2000.			

Response Times

The Fire Department uses the National Fire Protection Association standard 1710 (2001 edition) to measure service delivery. This standard requires that the fire engine company responding to a fire arrive at the fire in four minutes or less after receipt of the alarm. The standard further requires that the remainder of the first alarm assignment arrive less than eight minutes after the alarm. In addition, the standard requires the arrival of a Basic Life Support unit within four minutes to a medical emergency and the arrival of an Advanced Life Support unit within eight minutes. Table 5.8-2 summarizes the percent of time the Fire Department has met its response time standards.

Table 5.8-2: Response Time Summary

Response Time Metric	2003	2004	2005
% of Time Standard Has Been Met	62.3%	57.2%	55.6%
Source: El Centro Fire Department, December 2, 2005.			

Mutual Aid Agreements

The ECFD participates in mutual or automatic aid agreements with the Brawley, Calipatria, Calexico, Holtville, Imperial, Westmorland, Winterhaven, and Yuma fire departments.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicate that a project would result in a significant fire and/or emergency medical impact if it would:

- Result in a substantial adverse physical impact associated with the provision of new or physically altered fire service facilities; or

- Result in the need for new or physically altered fire service facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.

Impacts

Figures provided by the ECFD indicate that a typical 1 and 2 family unit generates an average of 0.252 alarm calls on an annual basis. Table 5.8-3 summarizes the estimated alarm calls the proposed project would create.

Table 5.8-3: Estimated Alarm Calls

Alarm Call Rate	Calculation	Project Estimated Alarm Calls
0.252 alarm calls per household per year	(131 dwelling units) x (0.252 alarm calls per household per year)	34 alarm calls per year
Source: El Centro Fire Department, December 2, 2005.		

The proposed project is estimated to generate 34 alarm calls per year.

The ECFD has indicated that it does not believe that estimated alarm calls per year provides an accurate representation of the proposed project's demand for fire protection and emergency medical services. The Fire Department has stated that it cannot currently meet the existing needs of the community and implementation of the proposed project would exacerbate this condition. In addition, the Fire Department indicates that it has identified a need for two new fire facilities to provide adequate fire protection for new development in El Centro.¹

The developer will be required to enter into an agreement that will mitigate the operational impacts to fire services as a result of project approval and implementation.

Mitigation Measures

PSU 5.8-1 Prior to recordation of the final map, the applicant shall be required to enter into an agreement that will mitigate the operational impacts to fire services caused by the approval of the project. The description of the security for the agreement and the method of payment will be included in the agreement.

5.8.2 - Police Protection

Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory standards that are applicable to approval of the proposed project.

¹ Personal communication, Chief Chris Petree, December 2, 2005.

Physical Setting

The El Centro Police Department (ECPD) is the primary law enforcement agency in the City of El Centro. The ECPD headquarters is located at 150 N. 11th Street and is approximately 3 miles from the project site. The ECPD also operates substations at the El Centro Community Center, located at 375 S. 1st Street, and at Posada Del Sol, located at 1400 N. Imperial Avenue. The Community Center substation is used for community-oriented policing activities, while the Posada Del Sol substation is primarily used for report writing.

Staffing

The established staffing ratio set forth by the ECPD is 1.2 officers per 1,000 residents. The ECPD has a total of 49 sworn officer positions, of which, 47 are currently filled. Using the City's most recent population estimate of 40,030 residents², the ECPD has an existing officer-to-resident ratio of 1.14 officers per 1,000 residents. Broken down by rank, the ECPD's sworn personnel consists of:

- 1 chief of police
- 1 captain
- 3 lieutenants
- 6 sergeants
- 36 police officers

Included in the sworn ranks are two school resource officers, one assigned to the two high schools and the other assigned to the two junior high schools. In addition, the ECPD operates a traffic unit, an emergency response team, and a gang enforcement unit.

The ECPD also employs 23 non-sworn personnel assigned to various duties including animal control, communications, community oriented policing, computer information systems, crime analysis, crime prevention, evidence, parking enforcement, and records.

The ECPD has a minimum staffing requirement of four sworn officers plus one supervisor on duty per 12 hour shift.

Calls for Service

Between 2000 and 2004, calls for service ranged between 48,099 and 53,846. Calls for police services are summarized below in Table 5.8-4.

Table 5.8-4: Police Department Calls for Service

2000	2001	2002	2003	2004
48,340	48,099	50,368	53,846	46,830
Source: El Centro Police Department. 2004 Annual Report, 2005.				

² California Department of Finance. City/County Population and Housing Estimates, May 2005.

Reported Crime

FBI Crime Index crimes are summarized in Table 5.8-5. Serious and violent crimes per 1,000 persons ranged between 46.36 and 63.76 between 2000 and 2004.

Table 5.8-5: FBI Crime Index

Crime	Reported Crimes				
	2000	2001	2002	2003	2004
Homicide	2	2	1	0	0
Rape	5	10	14	7	17
Robbery	39	38	49	52	61
Assault	527	519	432	456	456
Burglary	632	638	564	584	642
Larceny	1,012	933	504	893	878
Grand Theft Auto	209	229	201	198	218
Total	2,441	2,396	1,775	2,194	2,278
Crimes Per 1,000 People	63.76	62.58	46.36	57.31	56.60
Source: El Centro Police Department. 2004 Annual Report, 2005.					

Response Times

The ECPD's most recent daytime and nighttime average response times are summarized in Table 5.8-6. The ECPD does not have prescribed response time standard. Note that response times are influenced by the distance an officer must travel to reach an incident and traffic conditions.

Table 5.8-6: Average Police Department Response Times

Daytime Response	Nighttime Response
5:06	3:12
Source: El Centro Police Department, November 17, 2005.	

Mutual Aid Agreements

For large scale emergencies, the ECPD adheres to the mutual aid agreement set forth by the State Office of Emergency Services Standardized Emergency Management System. For smaller incidents in the sphere-of-influence, the ECPD can request mutual aid from the Imperial ECPD, the Imperial County Sheriff's Office, and the California Highway Patrol.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant impact on police protection if it would:

- Result in a substantial adverse physical impact associated with the provision of new or physically altered police protection facilities; or
- Result in the need for new or physically altered police protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.

Impacts

The ECPD has indicated that the proposed project would increase demands for police protection and would have an adverse impact on response times and staffing ratios. The ECPD has stated that this would be a significant impact and implementation of the proposed project would exacerbate this condition³.

The developer will be required to enter into an agreement that will mitigate the operational impacts to police services as a result of project approval and implementation.

Mitigation Measures

PSU 5.8-2 Prior to recordation of the final map, the applicant shall be required to enter into an agreement that will mitigate the operational impacts to police services caused by the approval of the project. The description of the security for the agreement and the method of payment will be included in the agreement.

5.8.3 - Public Education**Existing Conditions****Regulatory Conditions**

Assembly Bill 2926, signed into law in September 1986, gave school district governing boards the authority to impose fees, charges, dedications or other form of requirement against any development project for the construction or reconstruction of school facilities. The State Allocation Board (SAB) adjusts the statutory level of fee (Level I Fees) that can be levied every two years.

In August 1998, Senate Bill 50 (SB 50) was signed into law, which includes, in part, the Leroy F. Greene School Facilities Act of 1998 (SFP). This bill made significant changes in the state school building program as well as addressing the level of permissible school fees assessed on construction.

Physical Conditions

Public education in the project area is provided by the McCabe Union Elementary School District and the Central Union High School District. A description of each district is provided below.

McCabe Union Elementary School District

The McCabe Union Elementary School District provides kindergarten through 8th grade education to the unincorporated areas around El Centro and areas that have recently annexed into the City of El

³ Personal communication, Paul Longoria, November 17, 2005.

Centro. The Elementary School District operates one school: McCabe Elementary School. The school is summarized Table 5.8-7. The school is

Table 5.8-7: McCabe Elementary School Summary

School	Location	Distance from Project Site	Enrollment	Capacity	% of Capacity
McCabe Elementary School	701 W. McCabe Road	3.0 miles	824	455	181%
Source: McCabe Union Elementary School District, 2005.					

Future School Facilities

The Elementary School District has plans to build new and expand existing school facilities. A 900-student school adjacent to the existing school at 701 W. McCabe Road is under construction and scheduled to open in August 2007. Plans indicate that this school would ultimately become a middle school. In addition, a new 600-student school site is planned for the Miller Burson residential project, located west of Lotus Lane and north of Interstate 8 on the west side of El Centro.

Central Union High School District

The Central Union High School District provides 9th through 12th grade education to the City of El Centro and surrounding areas. Students from the El Centro Elementary School District, the Heber Elementary School District, the McCabe Union Elementary School District, the Meadows Elementary School District, and the Seeley Elementary School District attend the Central Union High School District for secondary education. The High School District operates two high schools and a continuation school. A summary of each school is provided in Table 5.8-8.

Table 5.8-8: High School Summary

School	Location	Distance from Project Site	Enrollment	Capacity	% of Capacity
Central Union High School	1001 Brighton Avenue	2.6 miles	1,740	1,440	121%
Southwest High School	2001 Ocotillo Drive	2.6 miles	2,147	2,200	98%
Desert Oasis High School (Continuation School)	1302 S. 3 rd Street	1.7 miles	N/A	N/A	N/A
N/A = Not Available Source: Central Union High School District, November 17, 2005.					

Future School Facilities

The High School District has plans to build new and expand existing school facilities. A School Facilities Needs Analysis, dated November 11, 2004, analyzed planned development projects with the district boundaries and detailed the High School District's anticipated facilities needs through 2010.

Table 5.8-9 summarizes future enrollment growth and the facilities needed to accommodate these students.

Table 5.8-9: Anticipated Enrollment Growth and Facilities Needs

Planned Dwelling Units	Student Generation Factor	Calculation	Total Student Generation	Site Factor	Calculation	New School Sites Needed
8,587 dwelling units	0.38 student / dwelling unit	(8,587 dwelling units) x (0.38 student / dwelling unit)	3,264 students	2,000 students / 1 school site	(3,264 students) / (2,000 students / 1 school site)	1.63 sites
Planned Dwellings Units are for years 2005-2010 Source: Central Union High School District. School Facilities Needs Analysis, November 11, 2004.						

As shown above, the High School District would need to acquire 1.63 new school sites to meet anticipated enrollment growth through 2010.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant public education impact it would:

- Result in a substantial adverse physical impact associated with the provision of new or physically altered public education facilities; or
- Result in the need for new or physically altered public education facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.

Impacts

McCabe Union Elementary School District

The estimated student generation for the Elementary School District is summarized in Table 5.8-10.

Table 5.8-10: Student Generation Estimate

Student Generation Factor	Calculation	Estimated Student Generation
0.83 student per dwelling unit	(131 dwelling units) x (0.83 student per dwelling unit)	109 students
Source: McCabe Union Elementary School District, December 8, 2005.		

The Elementary School District's tentative plans indicate that students from the proposed project would attend the future Miller Burson 600-student school site.⁴ Although this school site is being planned to accommodate growth within the district boundaries, the addition of the proposed project's 109 students would contribute to the need for new or expanded school facilities. Therefore, this is a potentially significant impact.

Central Union High School District

The estimated student generation for the High School District is summarized in Table 5.8-11.

Table 5.8-11: Student Generation Estimate

Student Generation Factor	Calculation	Estimated Student Generation
0.358 student per single-family dwelling unit	(131 dwelling units) x (0.358 student per dwelling unit)	47 students
Source: Central Union High School District, November 17, 2005.		

The Central Union High School District's two existing mainstream high schools are at or above capacity and the addition of the proposed project's 47 students would require the construction or expansion of existing facilities. This is a potentially significant impact.

In accordance with SB 50, the project proponent will be required to pay a school impact fee to each affected school district, to help fund new and expanded classroom and support facilities. Currently the McCabe Union Elementary School District and Central Union High School District impose fees of \$2.57 and \$2.01 per square foot of residential development respectively; however impact fees are determined by the findings of the annual School Facilities Needs Analyses prepared by each school district throughout the State. Therefore, homebuilders will be required to pay the school impact fee as published at the time of issuance of building permits. As cited in the Government Code Section 65995, the payment of this statutory fee, "is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization.

Therefore, potential impacts on schools would be less than significant.

Mitigation Measures

No mitigation measures are required.

⁴ Personal Communication, Amanda Brooke, Superintendent, McCabe Union Elementary School District. December 8, 2005.

5.8.4 - Library Services

Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory library services standards that are applicable to the proposed project.

Physical Setting

The main El Centro Public Library is located at 539 State Street and a branch is located at the El Centro Community Center at 375 S. 1st Street. The main library has more than 14,000 square feet of space and maintains a collection of more than 111,000 items. The libraries are open Monday through Saturday for a total of 48 hours a week. The libraries offer internet access, children's reading programs, and vocal theatrical workshops.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant library services impact if it would:

- Result in a substantial adverse physical impact associated with the provision of new or physically altered library facilities; or
- Result in the need for new or physically altered library facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.

Impacts

Using El Centro's average household size of 3.5⁵, the proposed project's 131 dwelling units are projected to add 459 new residents to the City. These new residents would be expected to increase demands for library services, creating a need for new or expanded library facilities. This would be a potentially significant impact.

To reduce the proposed project's impact on library services, payment of development fees would be made to the City of El Centro at the time building permits are sought. This is considered a self-mitigating feature of the project and would reduce potentially significant impacts to a level of less than significant.

Mitigation Measures

No mitigation measures are required.

⁵ El Centro General Plan, February 2004.

5.8.5 - Parks and Recreation

Existing Conditions

Regulatory Conditions

State of California Quimby Act

The State of California Quimby Act was instituted for the purpose of preserving open space and providing park facilities for California's growing population, and provides enabling authority to local governments to require land dedication or in-lieu fees in conjunction with approvals of residential subdivision projects, to help fund acquisition of public parkland. This legislation sets a planning standard of a minimum of three acres of parkland per 1,000 persons. Pursuant to the Quimby Act, the City of El Centro adopted a standard of three acres of parkland per 1,000 persons and establishes a formula by which parkland or in-lieu fees are exacted from new residential subdivision projects.

Physical Setting

Parks and Community Facilities

The City of El Centro has a total of 13 parks and recreational facilities. The parks and recreational facilities location, acreage, and amenities are summarized in Table 5.8-12.

Table 5.8-12: Park Summary

Park	Location	Area	Amenities
Adams Park	4 th Street and 8 th Street	9.33 acres	Open space, restrooms, shelter/picnic areas, children's playground, gymnasium, swimming pool, ramada, and roller hockey area
Bucklin Park	8 th Street and W. Aurora Drive	20 acres	Open space, restrooms, shelter/picnic areas, children's playground, lake, pavilion area, horseshoe pit, and walking path
Carlos Aguilar Park	W. Pico Avenue and Imperial Avenue	4.75 acres	Open space, restrooms, shelter/picnic areas, children's playground, soccer fields, and basketball courts
Debbie Pittman Park	S. La Brucherie Road and Orange Avenue	4.73 acres	Youth softball fields and restrooms
Equestrian Center	W. Dannenberg Road	38 acres	Open space, picnic areas, roping area, restroom, charro arena, and boarding facility
Frazier Field	N. 6 th Street and Villa Avenue	3.55 acres	Little League baseball fields and restrooms
Gomez Park	S. Hope Street	2.66 acres	Open space, restrooms, shelter/picnic areas, children's playground, jogging track, and picnic area
Leeper Park	W. Main Street and Lotus Lane	3.71 acres	Open space / No structures
Lotus Park	S. Lotus Lane	3.85 acres	Open space / No structures

Table 5.8-12 (Cont.): Park Summary

Park	Location	Area	Amenities
McGee Park	E. Brighton Avenue and S. Fairfield Drive	5.31 acres	Community center, shelter/picnic areas, children's playground, soccer field, and basketball courts
Stark Field	4 th Street and Lenrey Avenue	11.44 acres	Baseball complex, practice fields, restrooms, shelter/picnic areas, and children's playground
Swarthout Field	4 th Street and Euclid Avenue	15.49 acres	Shelter/picnic areas, children's playground, restrooms, adult softball fields, soccer fields, basketball courts, and volleyball area
Wildflower Park	E. Aten Road	3.96 acres	Open space / No structures
Total		126.78 acres	
Source: City of El Centro General Plan. Table PF-2, 2004.			

The parks are utilized for weekend activities such as children's fairs, circuses, and cultural events. Recreational programs sponsored by the City include summer recreation programs, senior programs, day camps, and many specialized classes including dance, art, and crafts, public swimming, swimming lessons, and life guarding.

Future Parkland Needs

Buildout of the City of El Centro General Plan would necessitate the provision of additional parkland acreage to maintain the City's 3.0 acres of parkland per 1,000 residents standard. Table 5.8-13 summarizes the baseline (2000) acreage and the General Plan Buildout (2025 acreage).

Table 5.8-13: Existing and Future Parkland Needs

Year	Population	Parkland/Resident Standard	Parkland Required	Existing Parkland	Difference
2000 (Baseline Year)	37,835	3.0 acres per 1,000 residents	133.5 acres	126.8 acres	+13.3 acres
2025 (General Plan Buildout)	134,238		402.7 acres	126.8 acres	-279.5 acres
Source: City of El Centro General Plan. Table PF-3, 2004.					

As indicated in Table 5.8-13, the City will need to provide an additional 276 acres of parkland to maintain the General Plan established parkland-to-resident standard at buildout. The General Plan indicates that new development will be conditioned to provide all the land and improvements required to achieve the parkland standard of three acres of developed parkland per 1,000 residents. The City encourages developers to meet the parkland requirements that by designing flood control basins that also provide open space.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant recreation services impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impacts

The proposed project would add an estimated 459 new residents to the City of El Centro. Table 5.8-14 summarizes the additional parkland the proposed project would need to provide to maintain the General Plan established standard of 3.0 acres per 1,000 residents.

Table 5.8-14: Parkland Required

Project Population	General Plan Parkland/Resident Ratio	Calculation	Parkland Required
459 residents	3.0 acres of parkland / 1,000 residents	(459 residents) x (3 acres of parkland / 1,000 residents)	1.4 acres
Source: Michael Brandman Associates, November 21, 2005.			

The proposed project would be required to dedicate a minimum of 1.4 acres of parkland or make in-lieu-of payments to acquire a similar acreage of parkland to the City of El Centro. The proposed project will provide 1.67 acres of parkland; therefore the project meets the standards set forth in the Quimby Act and thus the project will have no park or recreation impacts.

Mitigation Measures

No mitigation measures are required.

5.8.6 - Potable Water

Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory standards that are applicable to approval of the proposed project.

Physical Conditions

The City of El Centro provides potable water treatment and distribution services within the City limits, as well as to some adjacent unincorporated areas of Imperial County under special circumstances. Given that the project site would be annexed into the City's incorporated boundaries upon project approval, the project would be served by the City. The City operates a water distribution

system that totals more than 70 miles in length. The City's Public Works Department Utilities Division is responsible for maintenance and upkeep of the system.

Water Treatment Facility

The City owns and operates a potable water treatment facility at 310 S. 8th Street that processes, treats, and pumps an average of 244 million gallons of water per month. The water treatment plant provides clarification, filtration, and disinfections of water from the Colorado River, the primary source of potable water for El Centro. The untreated Colorado River water is delivered to the plant via the Imperial Irrigation District (IID) All American Canal and Date Canal. Treated water is then pumped from storage tanks to users via a grid of distribution pipelines and water mains.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant potable water services impact if it would:

- Require or result in the construction of new potable water facilities or the expansion of existing facilities; or
- Sufficient water supplies are not available to serve the project from existing entitlements and resources.

Impacts

Using a potable water consumption rate provided by the United States Environmental Protection Agency, the proposed project's daily and annual water consumption rates were calculated. The rates are summarized in Table 5.8-15.

Table 5.8-15: Potable Water Consumption

Consumption Rate	Consumption Calculation	Daily Consumption	Annual Consumption
107,000 gallons / household / year	(131 dwelling units) x (107,000 gallons)	36,644 gallons (0.11 acre-feet)	13.4 million gallons (41.1 acre-feet)
1 acre-foot = 325,581.43 gallons Source: United States Environmental Protection Agency. Water On Tap, 2003.			

The 41.1 acre-feet of water demanded by the proposed project on an annual basis would be less than one percent of the City of El Centro's current annual consumption of approximately 9,000 acre-feet. The City is expected to have adequate supplies to meet this demand. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.8.7 - Wastewater

Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory wastewater standards that are applicable to approval of the proposed project.

Physical Conditions

The City of El Centro provides wastewater collection, treatment, and disposal services within the City limits and in general, does not provide to adjacent unincorporated areas. Given that the project site would be annexed into the City's incorporated boundaries upon project approval, the project would be served by the City. The City owns and operates a wastewater collection and transmission system totaling more than 80 miles comprising of collector streets, trunk sewers, lift stations, and force mains. The City's Public Works Department Utilities Division is responsible for maintenance and upkeep of the system.

Wastewater Treatment Plant

The City operates a wastewater treatment plant at 2255 La Brucherie Avenue that provides secondary-level treatment. The plant currently operates at approximately 4.25 million gallons a day (MGD) and has a design capacity of 8 MGD. The plant is expandable to 200 MGD and would have the capacity to serve El Centro's Sphere-of-Influence areas at buildout. Treated effluent is discharged into the Alamo River.

The wastewater treatment plant was out of compliance with Federal water toxicity standards for three months in 2004. Subsequent testing revealed that the testing method itself was producing false positive results because of high salinity levels present in Imperial County groundwater. The City has requested to the Colorado River Basin Regional Water Quality Control Board to use a different testing method.

Infrastructure Improvements

The City is in the midst of a capital improvement program to upgrade its wastewater infrastructure system to serve planned development projects. Five new pump stations are slated to be constructed by the end of 2006.

The recently completed Alder Sewer project has established a direct line to the treatment plant and is designed to serve the entire east and southern portions of the City's sphere-of-influence.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant wastewater services impact if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities; or
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand.

Impacts

Using a wastewater generation rate provided by the City of El Centro Public Works Department, the proposed project's daily and annual wastewater generation rates were calculated. The rates are summarized in Table 5.8-16.

Table 5.8-16: Wastewater Generation

Residential Wastewater Generation Rate	Consumption Calculation	Daily Generation	Annual Generation
100 gallons / occupant / day	(131 dwelling units) x (3.5 occupants / dwelling unit) x (100 gallons / occupant / day)	45,850 gallons	16.74 million gallons
Source: City of El Centro Public Works Department (2006).			

The proposed project is projected to add 45,850 additional gallons of wastewater to the City wastewater collection and treatment system on a daily basis. The La Brucherie Avenue Treatment plan has a capacity of 8 MGD and is currently operating at 4.25 MGD. The plant would have capacity to receive an additional 45,850 gallons and would not adversely impact the treatment plant's capacity. The proposed project would provide all on-site infrastructure and connections to the City wastewater system in accordance with City engineering standards and as required by the City, the sewer collection system will be reviewed and approved by the City Engineer prior to the issuance of grading permits. In addition, the proposed project would also pay connection fees to the City. The provision of wastewater infrastructure and the payment of connection fees are self-mitigating features of the proposed project and would reduce potential impacts to a level of less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No mitigation measures are required for wastewater; impacts are considered less than significant.

5.8.8 - Solid Waste

Existing Conditions

Regulatory Conditions

California Integrated Waste Management Act

Signed into law in 1989, the California Integrated Waste Management Act set forth new requirements for solid waste management. The act required each jurisdiction in the state to set diversion requirements of 25 percent in 1995 and 50 percent in 2000, established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated.

Physical Conditions

Solid Waste Collection

Allied Waste Services of Imperial contracts with the City of El Centro to provide residential solid waste collection service. Allied Waste Services transports residential solid waste from El Centro to the Valley Environmental Services Transfer Station in Imperial for processing.

Landfills

After processing, solid waste generated in the City of El Centro is disposed of at one of three landfills in Imperial County. A summary of each landfill is provided in Table 5.8-17.

Table 5.8-17: Landfill Summary

Landfill	Location	Operator	Permitted Daily Capacity	Remaining Capacity	Closure Date
Allied Imperial Landfill	Imperial, CA	Imperial Landfill, Inc.	1,135 tons	3.7 million cubic yards	2012
Imperial Solid Waste Site	Imperial, CA	County of Imperial Public Works	130 tons	87,000 cubic yards	2022
Calexico Solid Waste Site	Calexico, CA	County of Imperial Public Works	150 tons	1.9 million cubic yards	2142
Total			1,415 tons	5.7 million cubic yards	
Source: California Integrated Waste Management Board. Solid Waste Information System, 2005.					

Allied Imperial Landfill is the primary landfill for El Centro and the two smaller facilities provide additional capacity. In 2000, the most recent year information is available, approximately 45,000 tons of solid waste from El Centro was landfilled.

Waste Diversion

Waste diversion is a measurement of how much solid waste is diverted from landfills through recycling and waste prevention programs. To promote waste diversion, curbside green waste and recycling programs are provided to residential consumers in El Centro. The City of El Centro's waste diversion rates between 1995 and 2003, the most recent year information is available, are summarized

in Table 5.8-18. El Centro is currently in compliance with the State's requirement of at least 50 percent waste diversion for every jurisdiction.

Table 5.8-18: El Centro Solid Waste Diversion Rates

1995	1996	1997	1998	1999	2000	2001	2002	2003
39%	48%	43%	33%	N/A	60%	62%	62%	56%*
* Preliminary Data; subject to change. N/A = Not Available Source: California Integrated Waste Management Board. Jurisdictional Diversion and Disposal Profile, 2005.								

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines indicates that a project would result in a significant solid waste services impact if it would:

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

Impacts

Short-term Construction Waste Generation

Estimated construction waste generation is summarized in Table 5.8-19. For the purposes of this analysis, the average size of each dwelling unit was conservatively estimated to be 3,500 square feet. Multiplied by 131 dwelling units, the total development square footage is 458,500 square feet.

Table 5.8-19: Construction Waste Generation

Activity	Generation Rate	Calculation	Waste Generation
Residential Construction	4.38 pounds / sq ft	(458,500 sq ft) x (4.38 pounds/sq ft)	1,004 tons
1 ton = 2,000 pounds Source: Environmental Protection Agency. Characterization of Building Related Construction and Demolition Debris in the United States, June 1998.			

The generation of approximately 1,004 tons of construction debris would be a significant short-term solid waste impact. Mitigation in the form of the retention of a certified construction and demolition debris recycler would reduce potential impacts on short-term landfill capacity to a level of less than significant.

Long-Term Operational Waste Generation

The estimated operational waste generation is summarized in Table 5.8-20. Two solid waste generation rates are shown: before diversion and after diversion. The after diversion figure applies in

the City of El Centro's 2003 diversion rate of 56 percent to account for recycling and waste reduction measures.

Table 5.8-20: Operational Waste Generation

Generation Rate	Waste Generation Calculation	Annual Waste Generation Before Diversion	Waste Diversion Calculation	Annual Waste Generation After Diversion
2.04 tons / unit / year	(131 units) x (2.04 tons / year)	267 tons	(255 tons) x (1-0.56)	112.2 tons
1 ton = 2,000 pounds Source: California Integrated Waste Management Board. Residential Sector Solid Waste Generation Rates, 2005.				

The three landfills summarized in Table 5.8-20 have more than 1,400 tons in permitted daily capacity available. The proposed project would generate 255 tons annually (0.70 ton daily) before diversion and 112.2 tons annually (0.31 ton daily) after diversion. The three landfills would all have capacity to accept the proposed project's before diversion daily generation. Therefore, impacts on long-term landfill capacity would be less than significant.

Mitigation Measures

PSU 5.8-3 At the time building permits are sought, the project applicant shall demonstrate to the satisfaction of the City of El Centro Public Works Department that a certified construction and demolition recycler has been retained and a Waste Management Plan has been prepared for the construction phase of the proposed project.

Level of Significance After Mitigation

After implementation of mitigation measure 5.8-3, solid waste impacts are reduced to less than significant.

5.8.9 - Energy

Existing Conditions

Regulatory Conditions

California Code of Regulations Title 24, Part 6, California's Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. New standards were adopted by the Commission in 2001 as mandated by Assembly Bill 970 to reduce California's electricity demand. The new standards went into effect on June 1, 2001. Title 24 prohibits the installation of new fixtures unless the manufacturer has been certified by the California Energy Commission (CEC) to be in compliance with the flow rate standards and addresses pipe insulation requirements.

Physical Conditions

Electricity

The Imperial Irrigation District (IID) provides electricity to more than 130,000 customers in Imperial County, including the City of El Centro, as well as parts of Riverside and San Diego counties.

The El Centro Generating Station is the primary source of IID's power. The Generating Station has two steam units and a combined cycle unit and can produce up to 233 megawatts of electricity. IID also operates eight hydroelectric plants on the All-American Canal. In 1993, IID purchased a 74-megawatt steam unit and a 22-megawatt gas turbine at the Yucca Power Plant in Yuma, Arizona. Arizona Public Service Company operates these units for IID.

In addition to its own generated power, IID purchases power from the Western Area Power Administration (Parker-Davis) and from the El Paso Electric Company. IID has joined with the Southern California Public Power Authority in purchasing interests in the Palo Verde Nuclear Generating Plant and San Juan Generating Station Unit 3. IID also participates, through the Western Systems Power Pool, in sales and purchases of both firm and non-firm energy.

The IID has also purchased an interest in the Palo Verde/San Diego 500-kilovolt transmission line, which allows IID access to cheaper imported energy.

The City of El Centro coordinates with IID to ensure that adequate rights-of-way, easements, and improvements are provided in new developments. Electricity consumers in Imperial County tend to consume more electricity than the national average because of the constant use of air conditioning during the hot summer months.

Natural Gas

The Southern California Gas Company (Gas Company) provides natural gas service to the City of El Centro. The Gas Company's primary sources are the El Paso Natural Gas Company and the Transwestern Pipeline Company that convey natural gas from the southwestern United States. Currently, the Gas Company meets the City of El Centro's demand for natural gas.

Project Impacts

Thresholds of Significance

Appendix G of the CEQA Guidelines does not include a threshold of significance for energy resources; however, a significant energy resource would occur if the project would:

- Result in a determination by the energy provider, which serves or may serve the proposed project that it does not have adequate capacity to serve the project's projected demand in addition to the providers existing commitment.

Impacts

Using an electricity consumption rate provided by IID and a natural gas consumption rate provided by the Southern California Gas Company, the proposed project's energy consumption is calculated in Table 5.8-21.

Table 5.8-21: Energy Consumption

Energy Type	Consumption Rate	Calculation	Annual Consumption
Electricity	14,440 kWh / dwelling unit / year	(131 dwelling units) x (14,440 kWh / dwelling unit / year)	1.89 million kWh
Natural Gas	799 therms / dwelling unit / year	(131 dwelling units) x (799 therms / dwelling unit / year)	104,669 therms
kWh = kilowatt hours Source: Imperial Irrigation District, Personal Communication July 31, 2006. Southern California Gas Company. Comment Letter, February 28, 2003.			

The proposed project is consistent with the land use designations in the City of El Centro General Plan, and therefore, this growth has already been anticipated by the utility providers in their respective long-term service plans. Moreover, the proposed project would not contain any features that would create a demand for energy that would exceed these energy consumption projections. Therefore, impacts on energy consumption would be less than significant.

Level of Significance After Mitigation

All impacts would be less than significant after mitigation.

5.8.10 - Telecommunications

Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory standards that are applicable to approval of the proposed project.

Physical Setting

Imperial Valley Telecommunications Authority (IVTA) is a network of public agencies, including Imperial County school districts, county agencies, Imperial Community College and San Diego State University (Imperial Valley Campus). It provides community wide system access to the participating agencies through a fiber optic communications network. Currently there is an existing communication system within the project site.

Thresholds of Significance

Appendix G of the CEQA Guidelines does not include a threshold of significance for energy resources; however, a significant impact to telecommunications would occur if the project would:

- Result in a determination by the IVTA network administrator, that the proposed project would affect the ability of the IVTA to provide services to their member's demarcation points.

Impacts

The developer will be required to meet standards set by IVTA, that will mitigate the operational impacts to IVTA as a result of project approval and implementation.

Mitigation Measures

- T 5.8-1** The developer will provide a preliminary conduit layout with respect to other infrastructure systems for the development. The IVTA Network Administrator will determine the size and number of conduits and fiber optic cables the developer will be required to install in order to serve IVTA needs.

Level of Significance

Less than significant.

5.9 - Transportation and Traffic

The analysis contained in this section is based on the Addendum Traffic Impact Study (TIS) prepared for the proposed project by Katz, Okitsu & Associates (KOA) in July 2006. The complete report is provided in Appendix I of this EIR.

5.9.1 - Existing Conditions

Regulatory Conditions

There are no federal, state, or local regulatory standards that are applicable to approval of the proposed project.

Physical Conditions

Roadway Circulation System

The following is a discussion of the principal roadways in the existing project study area circulation system. Exhibit 5.9-1 shows the existing circulation network and study area intersections within the project area.

Danenberg Drive - Danenberg Drive is classified as a collector street that runs east/west north of the project. It is currently configured as a two lane undivided roadway with no bike lanes and parking is generally permitted. The speed limit is posted at 40 miles per hour (mph) in the project area.

Horne Road - Horne Road is classified as a collector street that runs east/west north of the project. It is constructed as a two lane undivided roadway with no bike lanes and parking is generally permitted. The speed limit is posted at 35 mph in the project area.

Interstate 8 (I-8) - I-8 is an east/west freeway connecting the City of El Centro to the San Diego region west of the project and the City of Yuma, Arizona east of the project. It provides four lanes, with two travel lanes in each direction. Connections to the project area are possible via both eastbound and westbound ramps at its intersection with State Route (SR) 86.

McCabe Road - McCabe Road is classified as a major collector that runs east/west south of the project area. It is constructed as a two lane undivided roadway with no bike lanes and parking is generally prohibited in the project area. The speed limit is posted at 55 mph.

State Route 86 - SR 86 is classified as a state highway; it runs north/south and connects project traffic to I-8. South of the project area, SR-86 connects the City of El Centro to Calexico with connections to Mexicali south of the U.S. border. It is currently constructed as a four-lane arterial north of Wake Avenue. Between Wake Avenue and Countryside Drive, SR-86 is constructed as a three-lane arterial with two northbound lanes and one southbound lane; along this section there are raised medians and median breaks with left-turn pockets providing access to local streets. South of Countryside Drive, SR-86 transitions to a two-lane undivided roadway with a paved roadway width of 32 feet. The General Plan recommends a four-lane roadway along the SR 86 corridor at this

location. There are no bike lanes or bus stops and parking is generally prohibited in the project area. Sidewalks are missing on the west side of the roadway between Wake Avenue and McCabe Road and on the east side of the roadway between Danenberg Drive and McCabe Roads, with exception of the sidewalk improvements which were constructed along the adjacent Countryside Estates' frontage. The posted speed limit varies between 40 and 55 mph in the project area.

Wake Avenue - Wake Avenue: Runs east/west north of the project in the City of El Centro and intersects with both SR-86 and 8th Street. It is constructed as a four-lane roadway from 8th Street continuing east of SR-86. It has no raised or painted medians, bike lanes or bus stops. There are contiguous sidewalks along the corridor and parking is prohibited.

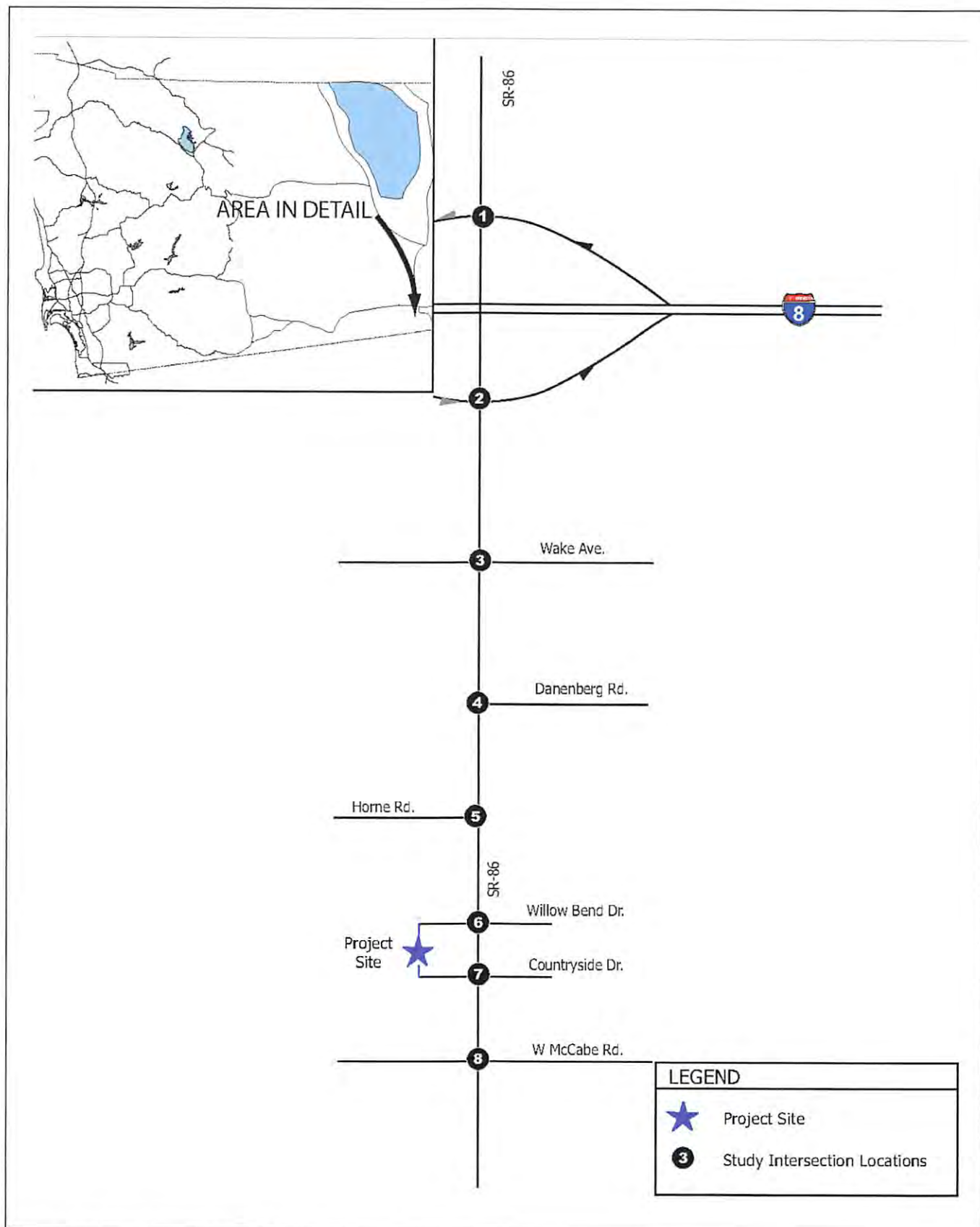
Level of Service Criteria

A level of service (LOS) designation is the generally accepted measure for determining the quality of operation of either an intersection or a roadway segment. The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. There are six LOS categories ranging from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion).

The objective of the City of El Centro's General Plan Circulation Element is to provide a roadway system with adequate capacity and acceptable LOS to accommodate projected travel demands associated with the buildout of the General Plan Land Use Element. This can be accomplished by establishing minimum LOS for the designated street and conventional state highway system. The performance criteria used for evaluating volumes and capacities on the City street system are based on average daily traffic (ADT) data and the classification system described in the Circulation Element. The City of El Centro considers LOS C to be acceptable. Table 5.9-1 identifies the City's current system of LOS evaluation criteria.

Table 5.9-1: Circulation System Performance Criteria

Roadway Classification	No. of Lanes	Level of Service with ADT and Volume/Capacity (V/C) Range				
		LOS A	LOS B	LOS C	LOS D	LOS E
Freeway	4	30,000 (<0.43)	40,000 (0.44-0.57)	50,000 (0.58-0.71)	60,000 (0.72-0.86)	70,000 (0.87-1.00)
Four Lane Arterial	4	14,800 (<0.40)	24,700 (0.41-0.67)	29,600 (0.68-0.80)	33,400 (0.81-0.90)	37,000 (0.91-1.00)
Two Lane Arterial	2	2,000 (<0.11)	4,500 (0.12-0.26)	7,700 (0.27-0.44)	11,800 (0.45-0.67)	17,500 (0.68-1.00)
Collector	2	1,900 (<0.12)	4,100 (0.13-0.25)	7,100 (0.26-0.44)	10,900 (0.45-0.67)	16,200 (0.68-1.00)



Source: Katz, Okitsu & Associates, March 2006



Not to Scale

Michael Brandman Associates

27990002 • 08/2006 | 5.9-1_project_study_area.cdr

Exhibit 5.9-1 Project Study Area

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR

Table 5.9-1 (Cont.): Circulation System Performance Criteria

Roadway Classification	No. of Lanes	Level of Service with ADT and Volume/Capacity (V/C) Range				
		LOS A	LOS B	LOS C	LOS D	LOS E
Residential Street	2	*	*	1,500 (NA)	*	*
Residential Loop Street or Cul-de-Sac	2	*	*	200 (NA)	*	*
* Note: LOS are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. LOS normally applies to roads carrying through traffic between major trip generators and attractors. Source: Katz, Okitsu & Associates, July 2006.						

Additionally, the City of El Centro has established performance criteria for daily traffic volumes for intersections and roadways within its jurisdiction. Table 5.9-2 and Table 5.9-3 identify the LOS criteria for both signalized and unsignalized intersections.

Table 5.9-2: Level of Service Criteria for Signalized Intersections

Control Stopped Delay (sec/veh)	Level of Service	Traffic Characteristics
<10	A	Describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay
10 - 20	B	Describes operations with generally good progression and/or short cycle lengths. More vehicle stops than for LOS A, causing higher levels of average delay.
20.1 - 35.0	C	Describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through intersection without stopping.
35.1 - 55.0	D	Describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 - 80.0	E	Considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	F	Describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.
Source: Katz, Okitsu & Associates, July 2006.		

Table 5.9-3: Level of Service Criteria for Unsignalized Intersections

Average Stopped Delay (sec)	Level of Service	Traffic Characteristics
<5	A	Little or no delay
5 - 10	B	Short traffic delay
10 - 20	C	Average traffic delay
20 - 30	D	Long traffic delay
30 - 45	E	Very long traffic delay
>45	F	Extreme delays
Source: Katz, Okitsu & Associates, July 2006.		

Table 5.9-4 identifies LOS criteria for roadway segments. The volume to capacity ratio measures the percentage of actual traffic volume on a roadway compared to the total traffic capacity of that roadway and also corresponds with LOS designations.

Table 5.9-4: Level of Service Criteria for Roadway Segments

Congestion/Delay	Level of Service	Traffic Description
None	A	Free Flow.
None	B	Free to stable flow, light to moderate volumes.
None to minimal	C	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
Minimal to substantial	D	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
Significant	E	Extremely unstable flow, maneuverability, and psychological comfort extremely poor.
Source: Katz, Okitsu & Associates, July 2006.		

Existing Traffic Volumes

The existing circulation system within the project area currently provides transportation in an area of residential, vacant land, and agricultural land uses. Exhibit 5.9-1 illustrates existing and future intersections, interchanges, and SR segments. Traffic counts were taken at major intersections within the study area as required by the City of El Centro. Counts were used to determine the local peak hour, directional distribution, and existing operational level of service.

Peak hour counts were conducted at eight intersections (i.e., AM Peak Hour and/or PM Peak Hour) in the traffic study area. The intersection turning movement counts were conducted during the weekday morning peak period from 7 AM to 9 AM and during the weekday evening peak period from 4 PM to 6 PM. Existing peak hour turning movement volumes were field measured at all existing study intersections in October 2005 with exception of the intersection of SR-86 and Horne Road, at which turning movement volumes were field measured in 2004 by Linscott, Law & Greenspan Engineers. Based on the intersection peak hour volumes, the morning and evening peak hours levels of service at

each intersection was determined (see Table 5.9-5). As shown, all study area intersections currently operate at LOS C or better.

Table 5.9-5: Existing Unsignalized and Signalized Intersections Levels of Service

Intersections	Without Project	
	Delay (sec)	LOS
AM Peak Hour		
Unsignalized Intersections		
SR 86 and Horne Road	11.3	B
SR-86 and Willow Bend Drive (Project Access)	10.9	B
SR-86 and Countryside Drive (Project Access)	10.7	B
SR-86 and West McCabe Road	19.7	C
Signalized Intersections		
SR-86 and I-8 Westbound Ramp	19.0	B
SR-86 and I-8 Eastbound Ramp	19.9	B
SR-86 and Wake Avenue	17.2	B
SR-86 and Danenberg Drive	13.5	B
PM Peak Hour		
Unsignalized Intersections		
SR-86 and Horne Road	13.7	B
SR-86 and Willow Bend Drive (Project Access)	11.3	B
SR-86 and Countryside Drive (Project Access)	11.1	B
SR-86 and West McCabe Road	19.7	C
Signalized Intersections		
SR-86 and I-8 Westbound Ramp	23.1	C
SR-86 and I-8 Eastbound Ramp	25.7	C
SR-86 and Wake Avenue	18.0	B
SR-86 and Danenberg Drive	14.8	B
Source: Katz, Okitsu & Associates, July 2006.		

Average daily traffic volumes were obtained through machine data collection for all roadway segments collected in 2005 with exception of the SR-86 south of I-8 eastbound ramps roadway segment, which was collected from the Caltrans *Traffic Data Systems Unit* 2004 databank. Again, the volume to capacity ratio (V/C) measures the percentage of actual traffic volume on a roadway compared to the total traffic capacity (i.e., LOS E) of that roadway and also corresponds with LOS designations. The existing LOS for the study area roadway segments are identified in Table 5.9-6. Currently, none of the five roadway segments analyzed within the TIS operate below the City of El Centro's performance criteria of LOS C.

Table 5.9-6: Existing Roadway Segment Capacity

Roadway Segment	Lanes/Class	LOS E Capacity	Without Project		
			ADT	V/C	LOS
SR-86					
McCabe Road to Project Access ¹	2/Arterial	17,500	7,631	0.436	C
Project Access to Danenberg Drive ¹	3/Arterial	27,750	7,631	0.275	A
Danenberg Drive to Wake Avenue ²	3/Arterial	27,750	13,575	0.489	B
Wake Avenue to I-8 Eastbound Ramps ³	4/Arterial	37,000	20,500	0.554	B
I-8 Westbound Ramps to Aurora Drive ³	4/Arterial	37,000	13,576	0.367	A
¹ Two Lane Arterial standards from the El Centro General Plan Circulation Element (2004).					
² Ratio of Four Lane Arterial standards from El Centro General Plan Circulation Element (2004) given the three-lane alignment with a raised median.					
³ Four Lane Arterial standards from the El Centro General Plan Circulation Element (2004).					
Source: Katz, Okitsu & Associates, July 2006.					

5.9.2 - Project Impacts**Thresholds of Significance Criteria**

To determine roadway segment and intersection project impacts, KOA in concert with the City of El Centro has developed a series of thresholds based on allowable increases in volume-to-capacity ratios for roadway segments and increases in seconds of delay for intersections that become more stringent as levels of service worsens. Roadway segments and intersections operating at LOS C or better in the existing condition with the addition of the proposed project are not considered significantly impacted. Table 5.9-7 and Table 5.9-8 summarize the significance criteria for both intersections and roadway segments.

Table 5.9-7: Intersection Significance Criteria¹

Existing with Project Traffic Scenario		
Existing	Existing + Project	Impact Type
LOS C or better	LOS C or better	None
LOS C or better	LOS C or worse	Direct
LOS C or worse	Project Traffic adds < 2.0 seconds of delay	None
LOS C or worse	Project Traffic adds > 2.0 seconds of delay	Direct
¹ Study area intersections are defined by the assignment of 500 daily trips or 50 peak hour direction trips along with guidance provided by the City staff. Source: Katz, Okitsu & Associates, July 2006.		

Table 5.9-8: Roadway Segment Significance Criteria

Existing with Project Traffic Scenario		
Existing	Existing + Project	Impact Type
LOS C or better	LOS C or better	None
LOS C or better	LOS C or worse	Direct ¹
LOS C or worse	Project Traffic adds < 0.02 V/C ²	None
LOS C or worse	Project Traffic adds > 0.02 V/C ²	Direct
Note: Study area intersections are defined by the assignment of 500 daily trips or 50 peak hour direction trips along with guidance provided by the City staff. ¹ Not a direct impact when project segment operation is LOS D and intersections along the segment operate at LOS D or better. ² V/C = Volume-to-Capacity Ratio. Source: Katz, Okitsu & Associates, July 2006.		

Impacts

The analysis of project impacts included the following assumptions regarding the proposed project:

- The proposed project consists of a residential subdivision of approximately 38 acres of farmland into 133 lots, which will allow for the development of 131 single-family residential units 1.67 acres of parkland and a 3.02 acre retention basin.
- Full project build-out will be completed by 2008.
- Primary access to the project is proposed via SR-86.

Project Trip Generation

Vehicle traffic generation characteristics for projects are estimated based on established rates. These rates identify the probable traffic generation of various land uses based on studies of developments in comparable settings. The daily traffic volumes estimated to be generated by the proposed development were based on the data obtained from the Institute of Transportation Engineers (ITE) Trip Generation, 7th edition (2003). This publication provides standards and recommendations for the probable traffic generation of various land uses based upon local, regional, and nationwide studies of existing developments in comparable settings. As shown below in Table 5.9-9, at full project build-out, it is estimated that the project will generate a total of approximately 1,333 vehicular trip ends per day, of which 101 will be AM peak hour trips and 137 will be PM peak hour trips.

Table 5.9-9: Project Trip Generation

Land Use	Amount	Daily Trips	AM Peak Hour	AM In	AM Out	PM Peak Hour	PM In	PM Out
Trip Generation Rate								
Single-family Dwelling Unit	1	¹	²	25% ³	75% ³	4	63% ³	37% ³
Project Generation Rate								
Single-family Dwelling Unit	131	1,333	101	25	76	137	86	51
¹ $\ln(T) = 0.92\ln(x) + 2.71$ ² $T = 0.70(x) + 9.43$ ³ Percent of Peak Hour Trips ⁴ $\ln(T) = 0.90\ln(x) + 0.53$ Source: Katz, Okitsu & Associates, July 2006.								

Trip Distribution and Assignment

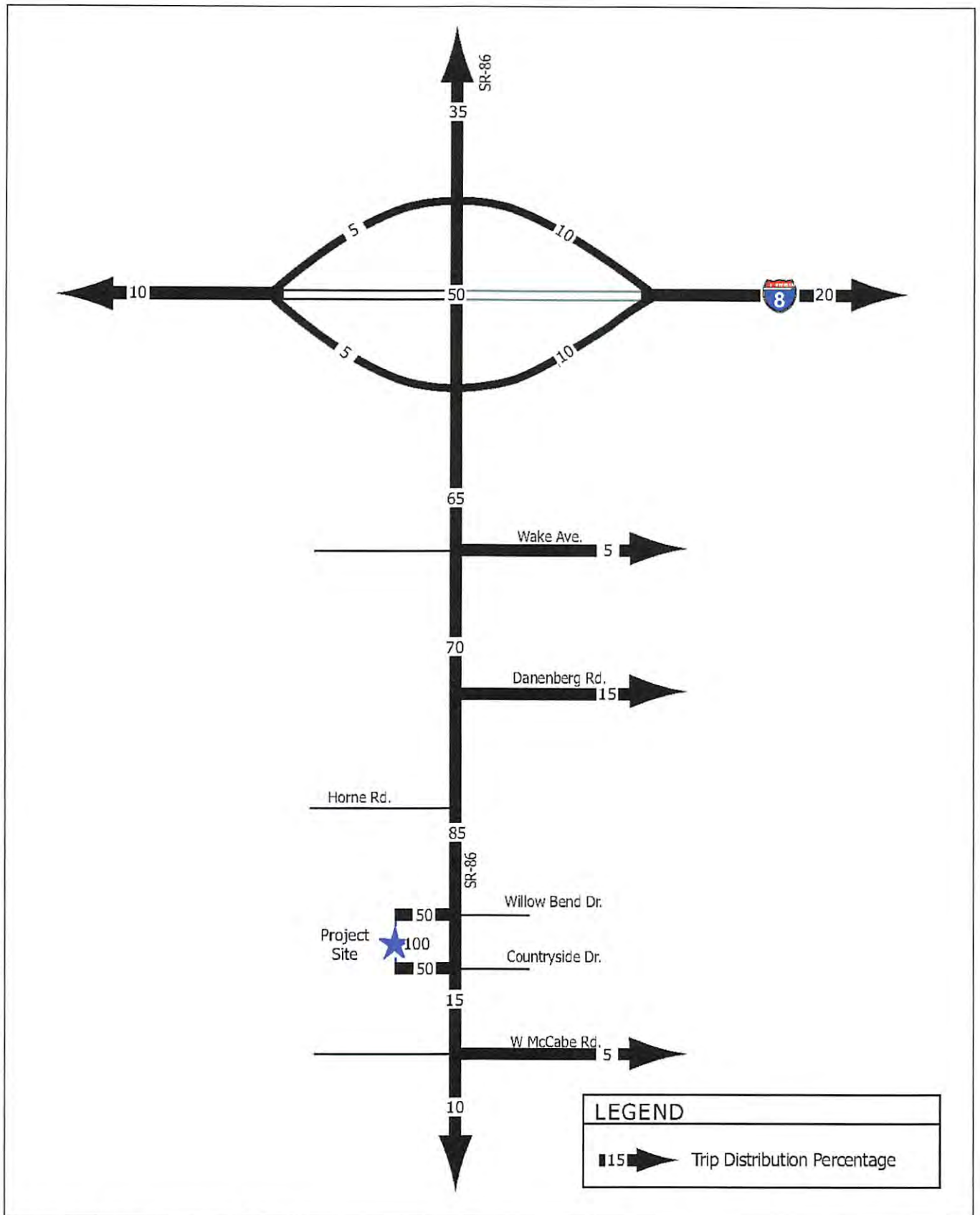
Trip distribution and assignment is the process of identifying the probable destinations, directions and traffic routes that project related traffic will likely affect. The trip distribution and assignment assumptions for this project are based on observed traffic patterns and experience. The trip distribution and assignment for the project-related trips is shown in Exhibit 5.9-2.

Intersection Analysis

Table 5.9-10 shows the year 2008 LOS during the AM and PM peak hours for the intersections within the study area.

Table 5.9-10: Intersection Level of Service for Year 2008

Intersections	Without Project		With Project			
	Delay (sec)	LOS	Delay (sec)	LOS	Δ (Sec)	Sig
Unsignalized Intersections						
SR-86 and Horne Road	11.3	B	12.8	B	1.5	No
SR-86 and Willow Bend Drive (Project Access)	10.9	B	15.6	C	4.7	No
SR-86 and Countryside Drive (Project Access)	10.7	B	14.9	B	4.2	No
SR-86 and West McCabe Road	19.7	C	20.5	C	0.8	No
Signalized Intersections						
SR-86 and I-8 Westbound Ramp	19.0	B	19.2	B	0.2	No
SR-86 and I-8 Eastbound Ramp	19.9	B	19.9	B	0	No
SR-86 and Wake Avenue	17.2	B	17.2	B	0	No



Source: Katz, Okitsu & Associates, March 2006



Not to Scale

Michael Brandman Associates

27990002 • 08/2006 | 5.9-2_project_trip.cdr

Exhibit 5.9-2 Project Trip Distribution

ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP
WILLOW BEND • DRAFT EIR

Table 5.9-10 (Cont.): Intersection Level of Service for Year 2008

Intersections	Without Project		With Project			
	Delay (sec)	LOS	Delay (sec)	LOS	Δ (Sec)	Sig
AM Peak Hour						
SR-86 and Danenberg Drive	13.5	B	12.8	B	-0.7	No
PM Peak Hour						
	Delay (sec)	LOS	Delay (sec)	LOS	Δ (Sec)	Sig
Unsignalized Intersections						
SR-86 and Horne Road	13.7	B	15.0	C	1.3	No
SR-86 and Willow Bend Drive (Project Access)	11.3	B	21.7	C	10.4	No
SR-86 and Countryside Drive (Project Access)	11.1	B	19.5	C	8.4	No
SR-86 and West McCabe Road	19.7	C	20.4	C	0.7	No
Signalized Intersections						
SR-86 and I-8 Westbound Ramp	23.1	C	24.4	C	1.3	No
SR-86 and I-8 Eastbound Ramp	25.7	C	26.5	C	0.8	No
SR-86 and Wake Avenue	18.0	B	18.8	B	0.8	No
SR-86 and Danenberg Drive	14.8	B	14.4	B	-0.4	No
Source: Katz, Okitsu & Associates, July 2006.						

As shown in Table 5.9-10, there are no intersections that will operate at a LOS D or worse after project implementation. All study intersections will operate at LOS C or better, which is the City's established standard. Additionally, there were no intersections that will degrade from LOS C or better to worse than LOS C, or degrade from LOS D or worse to a worse level of service. Therefore, no significant impacts are expected as a result of project implementation.

Roadway Segment Analysis

Table 5.9-11 shows the LOS for the roadway segments studied within the study area. As shown the roadway capacity analysis is provided for the year 2008.

Table 5.9-11: Year 2008 Roadway Segment Capacity

Roadway Segment	Lanes/Class	LOS E Capacity	Project Traffic	With Project			Comparison	
				ADT	V/C	LOS	Δ V/C	Sig
McCabe Road to Project Access ¹	2/Arterial	17,500	200	7,831	0.447	D	0.011	No

Table 5.9-11 (Cont.): Year 2008 Roadway Segment Capacity

Roadway Segment	Lanes/Class	LOS E Capacity	Project Traffic	With Project			Comparison	
				ADT	V/C	LOS	Δ V/C	Sig
Project Access to Danenberg Drive ¹	3/Arterial	27,750	1,133	8,764	0.316	A	0.041	No
Danenberg Drive to Wake Avenue ²	3/Arterial	27,750	93	14,508	0.523	B	0.034	No
Wake Avenue to I-8 Eastbound Ramps ³	4/Arterial	37,000	866	21,336	0.577	B	0.023	No
I-8 Westbound Ramps to Aurora Drive ³	4/Arterial	37,000	467	14,093	0.380	A	0.013	No
¹ Two Lane Arterial standards from the El Centro General Plan Circulation Element (2004). ² Ratio of Four Lane Arterial standards from the El Centro General Plan Circulation Element (2004) given the three-lane alignment with a raised median. ³ Four Lane Arterial standards from the El Centro General Plan Circulation Element (2004). Source: Katz, Okitsu & Associates, July 2006.								

As shown in Table 5.9-11, there are no roadway segments that will operate at a LOS D or worse after project implementation. All study roadway segments will operate at LOS C or better, which is the City's established standard. Additionally, there were no roadway segments that will degrade from LOS C or better to worse than LOS C, or degrade from LOS D or worse to a worse level of service. Therefore, no significant impacts are expected as a result of project implementation.

5.9.3 - Mitigation Measures

Intersections

No mitigation measures are required.

Roadway Segments

No mitigation measures are required.

5.9.4 - Level of Significance After Mitigation

No significant project related transportation and traffic impacts will occur with project implementation.

SECTION 6: CUMULATIVE IMPACTS

6.1 - CEQA Requirements

Section 15130 of the CEQA Guidelines requires that the EIR discuss cumulative impacts of a project when the incremental effects of a project are cumulatively considerable. Cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or which, compound or increase other effects. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impacts from several projects is the change in the environment, which results from the project when added to other closely related projects. In identifying projects, which may contribute to cumulative impacts the CEQA Guidelines allow the use of: (1) a list of past, present, and probable future projects producing related or cumulative impacts even if they are not in the jurisdiction of the lead agency; or (2) a summary of projection contained in an adopted General Plan or related planning document which is designed to evaluate regional or area-wide conditions.

6.2 - Cumulative Impact Setting

The cumulative analysis discussed in this section depends on the environmental component that is analyzed. The cumulative analysis for transportation and traffic includes both a near-term cumulative scenario, which examines the project plus cumulative projects impacts in the year 2008, at the time of project buildout (see Table 6-1) and a future year 2025 scenario. Additionally, the cumulative analysis for noise are based upon the Future 2025 scenario.

Consistent with Section 15130(b) of the CEQA Guidelines, the cumulative analysis for the Air Quality is based in part on a summary of projections. Project emissions compared to emissions in the San Joaquin Valley Air Basin as published by the California Air Resources Board (CARB). The cumulative air quality analysis also includes a discussion of the project's consistency with applicable air quality attainment plans and with the District's thresholds for cumulative impacts.

The cumulative analysis for agricultural resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, and public services and utilities is based on the list of projects identified in Table 6-1.

Table 6-1: Cumulative Project List

Project Name	Type	Size	Daily Trips	AM Trips	PM Trips
Buena Vista Park	Residential	465 SFDU	4,450	NA	NA
Calexico International Center - Phase I	Mixed Use	Hotel, Restaurant, Gas Station, and RV Park	5,130	84	420

Table 6-1 (Cont.): Cumulative Project List

Project Name	Type	Size	Daily Trips	AM Trips	PM Trips
Calexico Wal-Mart	Commercial	230 KSF ¹	1,960	80	157
Countryside Subdivision	Residential	330 SFDU	3,300	264	330
Desert Village Mixed-Use	Mixed Use	95 SFDU, 260 MFDU, 318 KSF Commercial	8,741	331	818
Farmer Estimates	Residential	89 SFDU	934	79	97
Heber Elementary School	Elementary School	600 Students	1,740	539	322
Heber Meadows	Residential	222 SFDU 476 MFDU	5,270	391	500
Imperial Center	Mixed Use	722 KSF (Gas Station, Hotel, and Shopping Center)	25,397	723	2,334
Imperial Valley Commons	Commercial	700 KSF ¹	21,603	441	1,979
Imperial Valley Mall	Commercial	1,460 KSF ¹	47,300	1,095	4,440
Lerno-Verhaegen Specific Plan	Mixed Use	680 AC	41,553	2,860	4,227
Linda Vista Mixed Use	Mixed Use	173 DU, 4.46 AC Commercial, 600 Students Elementary School	7,223	580	799
McCabe Ranch	Residential	428 SFDU	3,550	282	385
Smoketree Drive Apartments	Residential	5.23 AC	860	60	77
Wake Avenue Auto Park	Commercial	34.62	11,040	442	940
¹ Thousand square feet. Source: Katz, Okitsu & Associates. Willow Bend Impact Study, July 2006.					

6.3 - Cumulative Impact Analysis

Agricultural Resources

The proposed project will result in the conversion of Farmlands of Statewide Importance. Additionally, the proposed project will result in the conversion of lands zoned for agricultural land uses to non-agricultural land uses. Similar to the proposed project, those projects listed in Table 6-1 have or will result in the conversion of designated farmlands and/or lands zoned for agricultural land uses. As with the proposed project, this is considered a significant and unavoidable impact.

Mitigation Measures

No mitigation is available.

Level of Significance After Mitigation

The conversion of designated farmland and/or lands zoned for agricultural land uses to non-agricultural land uses would be significant and unavoidable after mitigation. This significant and unavoidable impact would require the adoption of a Statement of Overriding Considerations.

Air Quality

The domain for cumulative air quality impacts is the Salton Sea Air Basin because it is the area in which pollutants from the basin circulate and are trapped. While a list of projects in the project area was used and is suitable for other cumulative analysis such as infrastructure, the list does not encompass all reasonably foreseeable future air pollution sources within the air basin. Therefore, the cumulative analysis of air quality needs to be comprehensive to the air basin.

A comparison was made of the CARB emissions inventory for the Salton Sea Air Basin and the Imperial County portion of the Salton Sea Air Basin with those from the project. This comparison is made to illustrate the project's contribution to the projected emissions in the Imperial County portion of the Salton Sea Air Basin. The comparison of projections for the year 2025 in the Salton Sea Air Basin, Imperial County, and the project are shown in Table 6-2. As shown in the table, the project contributes a small portion of the projected emissions in the year 2025. Note that project emissions found in Table 6-2 reflect a buildout year of 2007¹. Emissions in 2025 would be approximately 30% to 40% lower because less polluting vehicles would replace the vehicles with higher emissions.

It is important to note that the emission projections for the Basin and County do not come directly from the City's or County's general plan or zoning maps. The bulk of the emission inventory is derived from data provided by air districts, Council of Governments, and transportation authorities. The on-road mobile emission sources are estimated using vehicle data from vehicle registration from the California Department of Motor Vehicles, travel information from the California Department of Transportation, local governments, as well as through fleet monitoring projects (CARB 2004). The off-road emissions are determined by the OFF-ROAD model (CARB 2004b). The stationary sources are large, fixed sources of air pollution and include plants, refineries, and factories. The stationary source data is sent to CARB from the state's air districts (CARB 2005). Area-wide sources are determined for approximately 500 emission source categories and the methodologies differ by sources (CARB 2004c).

¹ It is recognized that project buildout is expected for the year 2008; however, given that vehicle fleets become less pollutant with the passing of time, the 2007 analysis is considered a worst-case scenario.

Table 6-2: Comparison of Year 2025 California Air Resources Board Projections and Project Emissions

Source	Emissions (tons per day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Total Emissions - Salton Sea Air Basin	41.8	38.7	130.8	1.8	272.2	63.8
Total Emissions - Imperial County Portion of Salton Sea Air Basin	30.4	28.4	76.2	1.4	245.6	57.4
Percent stationary sources	11%	24%	2%	7%	1%	3%
Percent area-wide sources	58%	2%	11%	4%	98%	95%
Percent mobile sources	31%	74%	87%	89%	1%	2%
Emissions- Operational Project	0.1	0.1	0.9	8E-5	0.01	0.002
Operational Project Percent of Salton Sea Air Basin	0.24%	0.26%	0.69%	0.00%	0.00%	0.00%
Operational Project Percent of Imperial County	0.33%	0.35%	1.18%	0.00%	0.00%	0.00%
Source: California Air Resources Board. 2004 Emission Projections 2005.						

The Imperial County Air Pollution Control District (Imperial County APCD) evaluated the Imperial County portion of the Salton Sea Air Basin in developing its Imperial County Air Quality Attainment Plan (Attainment Plan) and State Implementation Plan for PM₁₀ in the Imperial Valley (PM₁₀ Plan). The Attainment Plan and the PM₁₀ Plan contain performance standards and emission reduction targets necessary to attain the state and federal ambient air quality standards. Note that the Attainment Plan and PM₁₀ Plan were originally adopted in 1991 and 1993 respectively and are currently being revised with adoption of the revised plans anticipated in 2007. District Rules reflect the reduction targets in the revised plans currently under development. The project will comply with all District rules and regulations. As required, the project will follow all Best Available Control Measures (BACM) found in the District's Regulation VIII Fugitive Dust Rules including Rule 801 which in part requires the project to develop a dust control plan. Therefore, project compliance with this rule will provide consistency with the currently adopted and revised PM₁₀ and Attainment Plans. However, as discussed in Section 5.2.2 the density of the proposed project was not contemplated in the land use and population projections for the project area in these currently adopted plans. Because the density of the project exceeds the population projections in the 1991 Attainment Plan and 1993 PM₁₀ Plan, the project specific analysis found the project to be inconsistent with these plans.

District Threshold Consistency

According to the CEQA Air Quality Handbook (2005) published by the Imperial County APCD, a cumulative impact analysis should encompass all planned construction activities within one-mile of the project site. The CEQA Air Quality Handbook also requires that an EIR evaluate project consistency with the Clean Air Plans and the District's Rules and Regulations.

As noted above, the project will comply with all District Rules and Regulations, but the project specific analysis found that the project is not consistent with the 1991 Attainment Plan or the 1993 PM₁₀ Plan because the density of the project is greater than that anticipated in those plans.

There is substantial development in the project area and in the Salton SSAB. Much of this new development was not contemplated in the population projections of the 1991 Attainment Plan and the 1993 PM₁₀ Plan. These new development projects have the potential to increase the emissions in the basin. The project area is not in attainment for ozone, CO, or PM₁₀. Operational emissions of ROG, NO_x (ozone precursor pollutants) CO, and PM₁₀ from the proposed project will incrementally contribute to a significant cumulative effect because the project emissions combined with emissions from all other projects in the Salton Sea Air Basin will form cumulatively considerable air quality impacts with regard to these pollutants.

Mitigation Measures

See mitigation measures AQ 5.2-1 through AQ 5.2-9, in Section 5.2, Air Quality of this EIR.

Level of Significance After Mitigation

The project along with cumulative development is not consistent with the land use projections in the currently adopted plans and therefore, the proposed project will contribute to a significant and unavoidable cumulative air quality impact.

Biological Resources

Implementation of the proposed project, in conjunction with future developments as identified earlier in this section would contribute to the ongoing loss of open space in the region, resulting in a decline of habitat for burrowing owls and nesting birds. Cumulative development would also result in an increase in traffic and human use of the project vicinity, which would increase human intrusion and activity levels in proximity to habitat areas and wildlife use areas and, therefore, further reduce the quantity and quality of wildlife habitat. This would be a significant impact.

Mitigation Measures

See mitigation measures BR 5.3-1 through BR 5.3-8, in Section 5.3, Biological Resources of this EIR.

Level of Significance After Mitigation

After implementation of mitigation measures BR 5.3-1 through BR 5.3-8, the project's contribution to cumulative biological resources impacts would be less than significant.

Cultural Resources

The project site does not contain any known archaeological resources; however, there is the potential for soils at a depth of eight feet below ground level to contain paleontological resources. These resources may be impacted during earth moving construction activities. It is likely that only during trenching for utilities will soils be disturbed at a depth of eight feet below ground level. As with the

proposed project, historically the project sites listed in Table 6-1 supported agricultural activities, which most likely would have destroyed any potential archeological resources. However, like the proposed project, undisturbed soils at a depth of 8 feet below ground level could contain paleontological resources. Trenching for utilities or other earth moving activities that disturb soils eight feet and below ground level could impact paleontological resources. This would be a significant impact

Mitigation Measures

See mitigation measures CR 5.4-1 through BR 5.4-7, in Section 5.4, Cultural Resources of this EIR.

Level of Significance After Mitigation

After implementation of mitigation measures CR 5.4-1 through CR 5.4-7, the project's contribution to cumulative cultural resources impacts would be less than significant.

Geology and Soils

Geologic and soil influences are site specific and there is little, if any cumulative relationship between the development of the proposed project and development within the greater cumulative project area. For instance, development at the project site will not result in the altering of geologic events or soil features/characteristics, such as groundshaking, seismic intensity, or soil expansion, to and residential development at the project site will not affect the level of intensity at which a seismic event on an adjacent site is experienced. However, future development within the project site and the project area, as outlined earlier in Section 5.5, Geology and Soils of this EIR, may expose future populations to seismic hazards; yet, seismic safety standards for new construction and ongoing provisions for emergency preparedness and response are anticipated to reduce such a risk to an acceptable level, on a project-by-project basis. Therefore, the project in conjunction with other projects or conditions will not result in cumulative impacts on geology and soils.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No significant cumulative geology and soils impacts will occur with project implementation.

Hazards and Hazardous Materials

The presence of stored hazardous materials or the potential for the prior release and migration of hazardous materials tends to be site specific and is dictated primarily by historical and present land uses at the project site and surrounding sites. The ability of contaminants to migrate onto a site is determined in part by depth and flow of groundwater, the presence or absence of physical barriers, and other topographical conditions. As discussed in Section 5.6 of this EIR, groundwater was encountered at a depth of 8 feet; however, groundwater levels may fluctuate with precipitation, irrigation of adjacent properties, drainage, and site grading. It should be noted that there is uncertainty in accuracy of short-term water level measurements, particularly in fine-grained soil, and

the referenced groundwater level should not be interpreted to represent an accurate or permanent condition. As discussed in Section 5.4, with the exception of trenching for utilities during construction, soils (and subsequently groundwater) at a depth of 8 feet or greater below ground level are not anticipated to be disturbed and residential development such as that proposed is not likely to result in activities that would introduce hazardous materials at such depths.

The proposed project will cumulatively increase the use of common Household Hazardous Wastes (HHWs) in the area as development intensifies within the greater project area. The use of HHWs is regulated federally, state-wide, and locally, and Imperial County operates a household hazardous waste collection and reuse facility, which allows residents to deliver and dispose of their household hazardous wastes in a manner which will not result in cumulative hazardous materials impacts. It is recognized that proper disposal is voluntary, and there is the possibility that some HHWs will be disposed of in an improper manner. However, the use of HHWs by a typical homeowner is not at such levels that the occasional improper disposal will result in a release that will pose a threat.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No significant cumulative hazards and hazardous materials impacts will occur with project implementation.

Noise

In this scenario forecasted traffic volumes for the year 2025 were used in the model to analyze future year conditions. Results are identified in Table 6-3.

Table 6-3: Cumulative Noise Levels

Receptor	Future No Project Predicted	Future Plus Project Predicted	Future No Project & Future Plus Project Difference
Receptor 1	65.1	66.5	1.4
Receptor 2	65.3	66.6	1.3

Interior Noise Analysis

Residential construction methods complying with current building code requirements will reduce exterior noise levels by at least 20-25 dB if windows and doors are closed. An evaluation of predicted future noise levels indicate that this reduction will be sufficient for compliance with the City's 45 dB DNL interior standard.

Exterior Noise Analysis

Results of the analysis indicate that Receptors 1 and 2 (see Exhibit 5.7-1 of this EIR) will exceed El Centro's acceptability criterion of 60 dB L_{eq} within the outdoor activity areas of noise sensitive land

uses. For the undeveloped site, the future traffic noise exposure from State Route 86 at the closest proposed building setback is 66.6 L_{eq} .

An analysis of the projects impact on sensitive receptors in the surrounding area was conducted to determine whether or not the projects traffic would have an impact on these sensitive receptors. As discussed in Section 5.8 of the EIR, approximately 700 feet north of the proposed project is home that is located approximately 50 feet from the centerline of SR 86. This home is used to represent all sensitive receptors in the area because of its close proximity to SR 86. Under cumulative conditions, the proposed project contributes a 1.3 L_{eq} , which is less than the noticeably perceptible noise increase under laboratory conditions and therefore, the proposed project's contribution to the cumulative noise environment is not considered cumulatively considerable.

Mitigation Measures

- N 6-1** A 6-foot high sound wall should be constructed along the project site. The sound wall must be continuous and constructed of a dense material such as masonry blocks or stucco on both sides of a wood/steel frame.
- N 6-2** Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors may remain closed for the required acoustical insulation.

Table 6-4 shows the noise levels at the receptor sites after mitigation.

Table 6-4: Mitigated Future Year Traffic Noise

Receptor	Sound Wall Height, Feet	Predicted Future L_{eq} , dB
1	6.0	59.3
2	6.0	59.6
Source: VRPA Technologies, Inc. Proposed Willow Bend Development Noise Impact Assessment, July 2006.		

Level of Significance After Mitigation

After implementation of mitigation measures N 6-1 and N 6-2, the project's contribution to cumulative noise impacts is less than significant.

Public Services and Utilities

The proposed project will result in an increased demand for public services and utilities. As discussed in Section 5.8 of this EIR, with the exception of solid waste impacts, the payment of development fees and/or in lieu fees, the project will not result in any significant public services and utilities impacts. Like the proposed project, those cumulative projects listed in Table 6-1 will increase the demand for public services and utilities; however, these projects have or will be required to pay development fees and/or in lieu fees as appropriate. Additionally, similar to the proposed project solid waste impacts would be mitigated on a project by project basis through compliance with AB 930 and other solid waste regulation. In addition to compliance with applicable regulations to

reduce public service and utilities impact the payment of development and/or in-lieu fees will assist in the financing for the construction of new facilities, purchase of new equipment, and/or the employment of additional staff needed to serve cumulative development.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No significant cumulative public services and utilities impacts will occur with project implementation.

Transportation and Traffic

To evaluate the cumulative impact of the project and future growth on the transportation network, two cumulative scenarios have been prepared for the proposed project, the Near-Term (2008) and Horizon Year (2025) scenario.

Near-term Traffic Scenario

Near-term conditions represent the addition of the proposed project to the future near-term traffic volumes. Traffic growth on the study area network is a function of the expected land development, economic activity, and changes in demographics. For this analysis, traffic from proposed project and other cumulative projects were added to existing traffic counts to develop near-term traffic volumes. Other than the proposed project, cumulative projects consist of planned new developments that will add traffic to the study area roadway network. The type and size of each project are shown in Table 6-1, Cumulative Projects List. No circulation network alterations were assumed under the Near-term scenario.

As previously discussed in Section 5.9, to determine direct and cumulative roadway segment and intersection project impacts, Katz Okitsu & Associates in concert with the City of El Centro developed a series of thresholds based on allowable increases in volume-to-capacity ratios for roadway segments and increases in seconds of delay for intersections that become more stringent as levels of service worsens. Roadway segments and intersections operating at LOS C or better in the existing condition with the addition of the proposed project are not considered significantly impacted. Under the Near-term analysis, which includes the addition of all planned cumulative projects including the proposed project, roadway segments and intersections operating at a LOS D or better are not considered cumulatively impacted.

Intersection Analysis

The Near-term with project weekday AM and PM peak hour intersection volumes within the study area and corresponding LOS are shown in Table 6-5.

Table 6-5: Intersection Level of Service for Near-term Conditions

Intersections	Existing without Project		Existing with Project and Cumulative Projects			
	Delay (sec)	LOS	Delay (sec)	LOS	Δ (Sec)	Significant
AM Peak Hour						
Unsignalized Intersections						
State Route 86 & Horne Road	11.3	B	29.0	D	17.9	No
State Route 86 & Willow Bend Drive (Project Access)	10.9	B	25.0	C	14.0	No
State Route 86 & Countryside Drive (Project Access)	10.7	B	23.5	C	12.7	No
State Route 86 & West McCabe Road	19.7	C	OVR	F	N/A	Cumulative
Signalized Intersections						
State Route 86 & Interstate 8 Westbound Ramp	19.0	B	32.9	C	13.9	No
State Route 86 & Interstate 8 Eastbound Ramp	19.9	B	31.6	C	11.7	No
State Route 86 & Wake Avenue	17.2	B	26.1	C	8.9	No
State Route 86 & Danenberg Drive	13.5	B	13.5	B	0	No
PM Peak Hour						
Unsignalized Intersections						
State Route 86 & Horne Road	13.7	B	360.1	F	343.6	Cumulative
State Route 86 & Willow Bend Drive (Project Access)	11.3	B	61.9	F	48.9	Cumulative
State Route 86 & Countryside Drive (Project Access)	11.1	B	52.7	F	40.6	Cumulative
State Route 86 & West McCabe Road	19.7	C	OVR	F	N/A	Cumulative
Signalized Intersections						
State Route 86 & Interstate 8 Westbound Ramp	23.1	C	144.7	F	121.6	Cumulative
State Route 86 & Interstate 8 Eastbound Ramp	25.7	C	142.3	F	116.6	Cumulative
State Route 86 & Wake Avenue	18.0	B	75.3	E	57.3	Cumulative
State Route 86 & Danenberg Drive	14.8	B	27.9	C	13.1	No
Source: Katz, Okitsu & Associates, July 2006.						

As shown in Table 6-5, seven (7) of the eight study area intersections under the Near-term conditions will experience a significant cumulative impact. The addition of project traffic will cumulatively contribute to the degradation of these intersections resulting in an operational LOS E or worse. These intersections are:

- State Route 86 and West McCabe Road (AM - LOS F, PM - LOS F)
- State Route 86 and Horne Road (PM - LOS F)
- State Route 86 and Willow Bend Drive (Project Access) (PM - LOS F)
- State Route 86 and Countryside Drive (Project Access) (PM - LOS F)
- State Route 86 and Interstate 8 Westbound Ramp (PM - LOS F)
- State Route 86 and Interstate 8 Eastbound Ramp (PM - LOS F)
- State Route 86 and Wake Avenue (PM - LOS E)

Roadway Segment Analysis

The Near-term with project daily traffic volumes for the roadway segments studied within the study area and corresponding LOS are shown in Table 6-6.

Table 6-6: Roadway Segment Capacity for Near-term

Roadway Segment	Lanes/Class	LOS E Capacity	Existing without Project			Project Traffic	Existing with Project and Cumulative Projects			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	Δ V/C	Significant
State Route 86											
McCabe Road to Project Access ¹	2/Arterial	17,500	7,631	0.436	C	200	14,731	0.842	E	0.406	Cumulative
Project Access to Danenberg Drive ¹	3/Arterial	27,750	7,631	0.275	A	1,133	15,664	0.564	B	0.289	No
Danenberg Drive to Wake Avenue ²	3/Arterial	27,750	13,575	0.489	B	933	22,108	0.797	C	0.307	No
Wake Avenue to I-8 Eastbound Ramps ³	4/Arterial	37,000	20,500	0.554	B	866	35,426	0.957	E	0.403	Cumulative
I-8 Westbound Ramps to Aurora Drive ³	4/Arterial	37,000	13,576	0.367	A	467	24,743	0.669	C	0.302	No
¹ Two Lane Arterial standards from the El Centro General Plan Circulation Element (2004). ² Ratio of Four Lane Arterial standards from El Centro General Plan Circulation Element (2004) given the three lane alignment with a raised median. ³ Four Lane Arterial standards from the El Centro General Plan Circulation Element (2004). Source: Katz, Okitsu & Associates, July 2006.											

As shown in Table 6-6 two (2) of the five roadway segments under the Near-term conditions will be significantly impacted by cumulative projects that include the proposed project. The addition of project traffic will cumulatively contribute to the degradation of these roadway segments resulting in an operational LOS E or worse. These roadway segments are:

- State Route 86 - McCabe Road to Project Access (South of Horne Road) (LOS E)
- State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps (LOS E)

Fair Share Calculation

Since the City of El Centro has not adopted a fair share percentage calculation formula; therefore with the agreement of the City of El Centro, the City of San Diego formula has been used. This is consistent with the fair share calculation methodology implemented for other approved projects within the City of EL Centro. The City of San Diego fair share formula is as follows:

$$\frac{\text{Project Traffic (ADT)}}{[\text{Existing (ADT)} + \text{Project (ADT)} + \text{Cumulative (ADT)}] - \text{Existing (ADT)}} = \%$$

Mitigation Measures

The following roadway improvements are recommended to improve the operation of the impacted locations. The City Engineer shall make the determination of whether the payment of proportionate share or installation of the improvements is required. This shall be completed at the time of project approval. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for all cumulatively impacted locations.

As these roadway network improvements effect intersections and roadways under Jurisdiction of the State of California Department of Transportation (Caltrans) along State Route 86, the following improvements are in accordance with the Memorandum of Understanding (MOU) regarding State Route 86 between Caltrans and the City of El Centro. These improvements adhere to the guidelines as established within the MOU and mitigate all intersections and roadway segments to a LOS D or better.

Intersections

- TT 6-1** State Route 86 and Interstate 8 Westbound Ramp - The project applicant shall contribute a fair share (4.9%) towards the construction of a westbound right-turn lane and a second northbound left-turn lane. LOS before/after mitigation: F/D.
- TT 6-2** State Route 86 and Interstate 8 Eastbound Ramp - The project applicant shall contribute a fair share (4.6%) towards the construction of two eastbound right-turn lanes and a second southbound left-turn lane. LOS before/after mitigation: F/D.

- TT 6-3** State Route 86 and Wake Avenue - The project applicant should contribute a fair share (4.7%) towards the construction of a second eastbound left-turn lane. LOS before/after mitigation: E/D.
- TT 6-4** State Route 86 and Horne Road - The project applicant should contribute a fair share (10.6%) towards the signalization of the intersection. LOS before/after mitigation: F/B.
- TT 6-5** State Route 86 and Willow Bend Drive - The project applicant should contribute a fair share (13.8%) towards the construction of a right turn in/right turn out island from the project driveway. LOS before/after mitigation: F/C.
- TT 6-6** State Route 86 and Countryside Drive - The project applicant should contribute a fair share (9.0%) towards the signalization of the intersection. LOS before/after mitigation: F/A.
- TT 6-7** State Route 86 and West McCabe Road - The project applicant should contribute a fair share (1.5%) towards the signalization of the intersection including the provision of dedicated eastbound and westbound left-turn pockets. LOS before/after mitigation: F/C.

Roadway Segments

- TT 6-8** State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps - The project applicant should contribute a fair share (5.6%) towards the widening of SR 86 between Wake Avenue and I-8 to six lanes. LOS before/after mitigation: E/B.
- TT 6-9** State Route 86 - McCabe Road to Project Access - The project applicant should contribute a fair share (2.7%) towards the widening of SR 86 between McCabe Road and Project Access to four lanes, including the widening of SR 86 to four lanes along the project frontage. LOS before/after mitigation: E/A.

Level of Significance After Mitigation

After implementation of mitigation measures TT 6-1 through TT 6-9, the project's contribution to significant transportation and traffic is less than significant.

Future-Year 2025 Traffic Scenario

Horizon Year conditions were obtained from the Imperial County Traffic Model (ICTM) provided by Caltrans District 11, which represents Year 2025. The proposed project traffic was assumed in the model and the effects of the long-term traffic including traffic associated with the proposed project on the study area circulation network was evaluated. The following table summarizes the results of this analysis. The long-term plus project daily traffic volumes including levels of service are shown in Table 6-6.

Horizon Year 2025 Circulation Network

No other circulation network changes were assumed under the Near-term scenario.

Table 6-7: Horizon Year 2025 Roadway Segment Conditions

Roadway Segment	Lane/Class s	LOS E Capacity	Existing No Project			Project Traffic	Long-Term (Existing + Horizon Year Including the Proposed Project)			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	Δ V/C	Significant
State Route 86											
Between McCabe Road and Project Access (South of Home Road) ¹	2/Arterial	17,500	7,631	0.436	C	193	22,400	1.280	F	0.844	Long-Term
Between Project Access and Danenberg Drive ²	3/Arterial	27,750	7,631	0.275	A	1,093	22,400	0.807	D	0.532	No
Between Danenberg Drive and Wake Avenue ²	3/Arterial	27,750	13,575	0.489	B	900	29,500	1.063	F	0.574	Long-Term
Between Wake Avenue and I-8 Eastbound Ramps ³	4/Arterial	37,000	20,500	0.554	B	836	29,500	0.797	C	0.243	No
¹ Two Lane Arterial standards from El Centro General Plan Circulation (2004). ² Ratio of Four Lane Arterial standards from El Centro General Plan Circulation Element (2004) given three lane alignment with raised median. ³ Four Lane Arterial standards from El Centro General Plan Circulation Element (2004). Source: Katz, Okitsu & Associates. Willow Bend Traffic Impact Study, July 2006.											

As shown in Table 6-1, no roadway segment within the study area included in the Imperial County Traffic Model will operate at an unacceptable level (LOS D or worse) under a Future Year 2025 cumulative traffic scenario.

Mitigation Measures

One new mitigation measure beyond those identified for the Near Term cumulative traffic scenario, which are to be implemented at the time of project buildout in year 2008 is required for the Future Year 2025 cumulative traffic scenario.²

Roadway Segment

TT 6-10 SR-86 between Danenberg Drive and Wake Avenue - The project applicant shall contribute a fair share (5.7%) towards the widening of the SR-86 between Danenberg and Wake Avenue to four lanes.

It should be noted that the City Engineer shall make the determination whether the payment of the proportionate share or installation of the improvements is required. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for a cumulatively impacted locations.

Level of Significance After Mitigation

With the implementation of mitigation measure TT 6-10, the project's contribution to cumulative transportation and traffic impacts is less than significant.

6.4 - Conclusions

With the inclusion of the mitigation measures identified in this EIR, with the exception of cumulative agricultural resources and air quality impacts, all cumulative impacts will be reduced to less than significant. The project will require the adoption of a Statement of Overriding Considerations for impacts to agricultural resources and air quality.

² Please note that TIS indicates that there is a 2025 Future Year Impact along SRj-86 between McCabe Road and the project access. The project's fair share contribution for the near-term conditions constitute full project mitigation for this roadway segment.

SECTION 7: ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the State CEQA Guidelines, as amended, mandates that an EIR include a comparative evaluation of a proposed project with the alternatives to the project. CEQA requires that this analysis explain why the alternatives and related mitigation measures would not be preferable to the proposed project. This must include a No Project Alternative. This section focuses on alternatives, as identified in Section 15126(d)(2) of the State CEQA Guidelines, to the Willow Bend project that are capable of avoiding or substantially lessening any significant adverse impacts associated with the proposed project—even if these alternatives would to some degree impede attainment of project objectives or be more costly. The alternatives may result in new impacts that would not result from the proposed project.

Case law suggests that discussion of alternatives need not be exhaustive, and that alternatives be subject to reasonable construction. CEQA Guidelines Section 15126(d)(3) states that impacts of the alternatives may be discussed “in less detail than the significant effects of the project as proposed.”

This Draft EIR evaluates two alternatives:

- No Project/No Development Alternative; and
- No Project/Development in Accordance with the Existing Zoning Alternative

Additionally, a third alternative, an Alternative Site Alternative was considered but was eliminated from further analysis in this EIR as discussed in Section 7.3 below.

An Environmentally Superior Alternative will be selected from among the two alternatives evaluated in this Draft EIR. An alternative that is environmentally superior will result in the fewest or least significant environmental impacts and will achieve the project objectives of the planning effort.

As stated in Section 3, Project Description, of this Draft EIR, the project objectives are to:

- Supply single-family housing to meet the growth projections of the City of El Centro contiguous to similar development within the City’s Sphere-of-Influence;
- Locate development to meet anticipated growth in areas of relatively lesser environmental sensitivity, accommodating growth while balancing environmental considerations;
- Provide public infrastructure improvements for the orderly expansion of urban development; and
- Locate housing adjacent to major highway arterials (Highway 86) and with convenient access to Interstate 8 to promote efficient traffic flows and minimize traffic demands on local and collector streets.

The analysis of the alternatives assumes that all applicable mitigation measures associated with the project will be implemented with the appropriate alternatives. However, applicable mitigation measures may be scaled to reduce or avoid a potential impact of the alternative under consideration and may not precisely match those identified for the Willow Bend project.

7.1 - No Project/No Development Alternative

Under the No Project/No Development Alternative (No Project Alternative) the entire project site would remain unchanged and no new development would occur onsite. In general the Willow Bend project site would continue to support undeveloped agricultural land uses and the project site would not be annexed into the City of El Centro.

7.1.1 - Impact Analysis

Agricultural Resources

Historically, the project site supported agricultural land uses. However, presently, the site does not support agricultural land uses and the site remains undeveloped. As discussed in Section 5.1, Agricultural Resources, of this Draft EIR, the project site contains soils that are associated lands designated as Farmland of Statewide Importance. Project implementation will result in the conversion of the site from undeveloped land to a residential subdivision. This conversion will preclude the use of the site for future agricultural land uses and therefore, result in the loss of Farmland of Statewide Importance, which is considered a significant unavoidable impact. The No Project Alternative would not result in any development onsite and thus it would not result in the loss of Farmland of Statewide Importance and would not preclude future agricultural land uses at the project site. Therefore, the No Project Alternative is considered to have less agricultural resources impacts in relation to the proposed project.

Air Quality

Air quality impacts are primarily associated with vehicle emissions. In the short-term air emissions are generated through the operation of construction and earth moving vehicles and in the long-term air emissions are generated through by project-related traffic. No new short-term or long-term air emissions would be generated as a result of the No Project Alternative. However, as identified in Section 5.2, Air Quality, and Section 6, Cumulative Impacts, of this Draft EIR, with mitigation the proposed project will not result in any significant short-term or long-term air quality impacts; however, the proposed project is not consistent with the Air Quality Management Plan and therefore, in accordance with the air quality thresholds identified in Appendix G of the CEQA Guidelines, the proposed project will result in a significant unavoidable impact. The No Project Alternative would not generate any air emissions and will be consistent with the Air Quality Management Plan; therefore, the No Project Alternative is considered to have less air quality impacts in relation to the proposed project.

Biological Resources

In the short-term, impacts to burrowing owls will occur as a result of the open drainage facilities being undergrounded. In the long-term, development of the project site will result in permanent impacts to 38 acres of burrowing owl foraging, dispersing, and nesting habitat and two pair and one individual burrowing owl were observed onsite during field surveys. Additionally, the project site contains suitable nesting bird habitat. As identified in Section 5.3, Biological Resources, of this Draft EIR, with mitigation the proposed project will not result in any significant biological resources impacts. However, the No Project Alternative would not result in short-term or long-term impacts to burrowing owls or nesting birds. Therefore, the No Project Alternative is considered to have less biological resources impacts in relation to the proposed project.

Cultural Resources

The project site has the potential to contain paleontological resources, which could be disturbed during site preparation. As identified in Section 5.4, Cultural Resources, of this Draft EIR, with mitigation, the proposed project will not result in any significant cultural resources impacts. However, under the No Project Alternative, the project site would remain undisturbed and thus, would not result in potentially disturbing paleontological resources. Therefore, the No Project Alternative is considered to have less cultural resources impacts in relation to the proposed project.

Geology and Soils

As with most of southern California, the project site is located in a seismically active area and it is likely that the project site will experience strong groundshaking during the lifetime of the project. The project site may also be subject to impacts as a result differential settlement, expansive soils, and high groundwater. As identified in Section 5.5, Geology and Soils, of this Draft EIR, with mitigation, the proposed project will not result in any significant geology and soils impacts. However, the No Project Alternative would not introduce populations or structures in a seismically active area that is subject to geological impacts. Therefore, the No Project Alternative is considered to have less geology and soils impacts in relation to the proposed project.

Hazards and Hazardous Materials

In general, in relation to residential developments, hazardous materials impacts occur in the short-term during ground disturbance and construction activities and in the long-term as a result of the storage and disposal of household hazardous wastes (HHWs). Additionally, as with any ground disturbing activity, there is the potential for the discovery and disturbance of previously unknown hazardous materials during construction and earth moving. As discussed in Section 5.6, Hazards and Hazardous Materials, of the Draft EIR, the proposed project will not result in any hazards or hazardous materials impacts. However, since the No Project Alternative would not introduce any HHWs into the project area or result in ground disturbing activities. Therefore, the No Project Alternative is considered to have less hazards and hazardous materials impacts in relation to the proposed project.

Noise

Primarily, residential development creates short-term noise impacts through the operation of construction equipment and long-term noise impacts through increased vehicle traffic. As discussed in Section 5.7, Noise, with mitigation, the proposed project will not result in any significant noise impacts. However, the No Project Alternative would not result in any short-term construction activities or introduce new vehicle traffic into the project area. Therefore, the No Project Alternative is considered to have less noise impacts in relation to the proposed project.

Public Services and Utilities

Project implementation will generate a demand for public services and utilities and will require the extension of utility infrastructure to the site. The introduction of new residences and populations has the potential to place constraints on public services. However, as discussed in Section 5.8, Public Services, of the Draft EIR, in addition to mitigation measure PSU 5.8-1 the project applicant will be required to pay development fees and/or pay one-time presumptive payment fees, which reduce project public service and utilities impacts to less than significant. Yet, the No Project Alternative would not generate a demand for services or require the extension of infrastructure to the site. Therefore, the No Project Alternative is considered to have less public services and utilities impacts in relation to the proposed project.

Transportation and Traffic

Project implementation will result in generating 1,333 vehicle trips per day, of which 101 will be AM peak hour trips and 137 will be PM peak hour trips. The No Project Alternative would not result in generating any new vehicle trips within the project area. The proposed project is not anticipated to result in any project-related direct impacts and as discussed in Section 6, Cumulative Impacts, of this Draft EIR, all project related cumulative impacts can be mitigated to a level that is less than significant. Yet, since the No Project Alternative would not result in any new vehicle trips, this alternative is considered to have less transportation and traffic impacts in relation to the proposed project.

7.1.2 - Conclusions

The No Development Alternative would result in less agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, public services and utilities, and transportation and traffic impacts than the proposed project. The No Project Alternative would not meet the objectives of the proposed project.

7.2 - No Project/Development in Accordance with the Existing Zoning Alternative

The No Project/Development in Accordance with the Existing Zoning Alternative (Zoning Alternative) would result in the development of the project site under the existing zoning designation. Similar to the No Project Alternative, under this alternative scenario, the project would not be

annexed into the City of El Centro. Currently the project site is zoned by Imperial County as General Agriculture/Urban Overlay (A2U). Under this designation, agricultural land uses are allowed. The density permitted is one dwelling unit per 40 acres. Therefore, under the current County zoning designation, the 38-acre project would preclude residential development but allow agricultural production and associated activities.

7.2.1 - Impact Analysis

Agricultural Resources

Under this alternative, the project site would be utilized for agricultural land uses. As discussed in Section 5.1, Agricultural Resources, of this Draft EIR, the project site contains soils that are associated lands designated as Farmland of Statewide Importance. Project implementation will result in the conversion of the site from undeveloped land to a residential subdivision. This conversion will preclude the use of the site for future agricultural land uses and therefore, result in the loss of Farmland of Statewide Importance, which is considered a significant unavoidable impact. The Zoning Alternative would not preclude agricultural activities onsite and thus it would not result in the loss of Farmland of Statewide Importance. However, it should be noted, given the site's proximity to encroaching urban development, agricultural activities may be limited. However, the Zoning Alternative would not result in the conversion of designated farmlands; therefore, the Zoning Alternative is considered to have less agricultural resources impacts in relation to the proposed project.

Air Quality

Air quality impacts are primarily associated with vehicle emissions. In the short-term air emissions are generated through the operation of construction and earth moving vehicles and in the long-term air emissions are generated by project-related traffic. Under the Zoning Alternative air quality impacts would result from the operation of agricultural cultivation equipment, potentially soil erosion, and crop burning. The amount of air quality emissions that could occur under this alternative is speculative since it would vary with types of crops and farming methods. Additionally, currently agricultural operations are to have dust control plans available for review. As identified in Section 5.2, Air Quality, and 6, Cumulative Impacts, of this Draft EIR, with mitigation the proposed project will not result in any significant short-term or long-term air quality impacts; however, the proposed project is not consistent with the Air Quality Management Plan and therefore, in accordance with the air quality thresholds identified in Appendix G of the CEQA Guidelines, the proposed project will result in a significant unavoidable impact. The Zoning Alternative would be consistent with the Air Quality Management Plan; therefore, this alternative is considered to have less air quality impacts in relation to the proposed project.

Biological Resources

Two pair and one individual burrowing owl were observed onsite during field surveys. The Zoning Alternative would not result in the undergrounding of drainage facilities. However, agricultural

activities may result in permanent impacts to 38 acres of burrowing owl foraging, dispersing, and nesting habitat. As identified in Section 5.3, Biological Resources, of this Draft EIR, with mitigation the proposed project will not result in any significant biological resources impacts. However, while the Zoning Alternative would result in the same long-term impacts as the proposed project (impacts to burrowing owl foraging, dispersing, and nesting habitat) it would not result in the undergrounding of drainage facilities, which would result in the destruction of burrowing owl habitat. Therefore, Zoning Alternative is considered to have slightly less biological resources impacts in relation to the proposed project.

Cultural Resources

As identified in Section 5.4 of this Draft EIR, it is likely that any near surface paleontological resources have been disturbed due to historical agricultural activities at the project site. However, paleontological resources may be present onsite at depths below 8 feet, which may be impacted during site preparation activities such as trenching for utilities. As identified in Section 5.4, Cultural Resources, of this Draft EIR, with mitigation, the proposed project will not result in any significant cultural resources impacts. However, the Zoning Alternative would not result in impacts to cultural resources. Therefore, the Zoning Alternative is considered to have less cultural resources impacts in relation to the proposed project.

Geology and Soils

As with most of southern California, the project site is located in a seismically active area and it is likely that the project site will experience strong groundshaking during the lifetime of the project. The project site may also be subject to impacts as a result differential settlement, expansive soils, and high groundwater. As identified in Section 5.5, Geology and Soils, of this Draft EIR, with mitigation, the proposed project will not result in any significant geology and soils impacts. However, the Zoning Alternative would not introduce populations or structures in a seismically active area that is subject to geological impacts. Therefore, the Zoning Alternative is considered to have less geology and soils impacts in relation to the proposed project.

Hazards and Hazardous Materials

In general, agricultural activities include the use of chemicals and pesticides; however, given the project site's proximity to urban uses, in particular residential land uses, the application of chemicals or pesticides would be limited under the Zoning Alternative. Under project implementation hazardous materials impacts would occur in the short-term during ground disturbance and construction activities and in the long-term as a result of the storage and disposal of household hazardous wastes (HHWs). Additionally, as with any ground disturbing activity, there is the potential for the discovery and disturbance of previously unknown hazardous materials during construction and earth moving. As discussed in Section 5.6, Hazards and Hazardous Materials, of the Draft EIR, the proposed project will not result in any hazards or hazardous materials impacts. Therefore, the Zoning Alternative would not introduce any HHWs into the project area but it could result in the limited use

or disposal of other hazardous materials. Therefore, neither the Zoning Alternative nor the proposed project is considered to be superior in relation to hazards and hazardous materials.

Noise

Under the Zoning Alternative, noise generation would be primarily associated with the operation of agricultural cultivation equipment. The proposed project would generate short-term noise impacts through the operation of construction equipment and long-term noise impacts through increased vehicle traffic. As discussed in Section 5.7, Noise and Section 6, Cumulative Impacts, with mitigation, the proposed project will not result in any significant noise impacts. However, the Zoning Alternative would not result in any short-term construction activities or introduce new vehicle traffic into the project area. Therefore, the Zoning Alternative is considered to have less noise impacts in relation to the proposed project.

Public Services and Utilities

Project implementation will generate a demand for public services and utilities and will require the extension of utility infrastructure to the site. The introduction of new residences and populations has the potential to place constraints on public services. However, as discussed in Section 5.8, Public Services, of the Draft EIR, in addition to mitigation measure PSU 5.8-1 the project applicant will be required to pay development fees and/or pay one-time presumptive payment fees, which reduce project public service and utilities impacts to less than significant. Yet, the Zoning Alternative would not generate a demand for services or require the extension of infrastructure to the site. Therefore, the Zoning Alternative is considered to have less public services and utilities impacts in relation to the proposed project.

Transportation and Traffic

Project implementation will result in generating 1,333 vehicle trips per day, of which 101 will be AM peak hour trips and 137 will be PM peak hour trips. The Zoning Alternative would not result in generating any new vehicle trips within the project area. The proposed project is not anticipated to result in any project-related direct impacts and as discussed in Section 6, Cumulative Impacts, of this Draft EIR, all project related cumulative impacts can be mitigated to a level that is less than significant. Yet, since the Zoning Alternative would not result in any new vehicle trips, this alternative is considered to have less transportation and traffic impacts in relation to the proposed project.

7.2.2 - Conclusions

The Zoning Alternative would result in less agricultural resources, air quality, biological resources, cultural resources, geology and soils, public services and utilities, and transportation and traffic impacts than the proposed project and similar level of hazards and hazardous materials impacts as the proposed project. The No Project Alternative would not meet the objectives of the proposed project.

7.3 - Alternative Site Alternative (Alternative Considered and Rejected)

An Alternative Site Alternative was initially considered for analysis within this Draft EIR; however after further consideration, it was determined that this alternative would not be feasible. Specifically, an examination of available parcels of land that could support the proposed project indicated that the inventory of available parcels consisted of agricultural lands and lands designated for agricultural land uses. Therefore, similar to the proposed project, the implementation of an Alternative Site Alternative would result in the conversion of agricultural lands and would not be consistent with the Air Quality Management Plan thus, an Alternative Site Alternative would not eliminate a significant unavoidable project impact. Additionally, while CEQA Guidelines do not require that an alternative meet the project objectives and may to some degree impede attainment of project objectives, there was no suitable alternative site that could avoid a project-related significant unavoidable impacts and partially meet the project objectives.

7.4 - Environmentally Superior Alternative

The environmentally superior alternative is selected from among the preceding alternatives and the Willow Bend project. An alternative that is environmentally superior would result in the fewest or least significant impacts and will feasibly attain most of the objectives of the planning effort. Based on the evaluation of the alternatives in this section, the No Project/No Development Alternative would result in fewer significant impacts than the Willow Bend project. CEQA states that if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative from other alternatives. The No Project Development Under the Existing Zoning Alternative is, thus, considered to be the environmentally superior alternative. However, this alternative would not meet any of the project objectives.

SECTION 8: OTHER CEQA CONSIDERATIONS

8.1 - Significant Unavoidable Impacts

According to CEQA Guidelines Section 15126, an EIR must disclose the significant unavoidable impacts that will result from a project. Moreover, these guidelines state that an EIR should explain the implications of such impacts and the reasons why the project is being proposed, notwithstanding such impacts. Implementation of the Willow Bend residential subdivision project will result in the alteration of the physical environment. Section 5, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation and Section 6, Cumulative Impacts of this Draft EIR provide a description of the potential environmental impacts of the proposed project, as well as measures to reduce the environmental impacts to the maximum extent feasible. After implementation of the Willow Bend project and the project-related mitigation measures, it has been determined that with the exception of agricultural land use and air quality impacts, as summarized below, all project-related impacts can be feasibly mitigated to a level that is considered less than significant.

- The project site contains Soils of Statewide Importance, and therefore, the project site is considered to contain Farmland of Statewide Importance. Accordingly, the conversion of agricultural land to urban uses would constitute a significant loss of Prime Farmland or Farmland of Statewide Importance. Potential impacts in this regard would be significant and unavoidable under CEQA. No feasible measures are available for the project applicant to reduce this potential impact to a level less than significant. However, the project site meets LAFCO criteria to be converted from agricultural use to urban use, and impacts would be less than significant in this regard.
- Development of the proposed project and future development in accordance with the City's General Plan would result in inconsistencies with the Imperial County Air Quality Attainment Plan (Attainment Plan) and the State Implementation Plan for PM₁₀ in the Imperial Valley (PM₁₀ Plan). The Imperial County population projections for year 2020 used in the Attainment Plan and PM₁₀ Plan for the City of El Centro assumes land use designations in the General Plan and includes build-out of the site. The project site under the current County General Plan land use designation (Urban) would accommodate approximately only 2 dwelling units (based on the 2 dwelling units per parcel). The proposed project accommodates a maximum of 131 single-family residential dwelling units. Clearly the proposed project would result in a higher density, and more vehicle trips and vehicle miles traveled than what was anticipated in the Attainment Plan and PM₁₀ Plan. Because the project will result in more people and more traffic than what was considered in the plan, the project is not consistent with the Attainment Plan and PM₁₀ Plan, and therefore would create a significant impact in this regard.

8.2 - Growth Inducing Impacts

This section evaluates the potential for the Willow Bend residential project to affect “economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment” (CEQA Guidelines, 15126.2[d]).

There are two types of growth inducing impacts a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated.

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community that directly induces population growth or the construction of additional developments in the same area of the proposed project, thereby triggering related growth-associated impacts. Included in this analysis are projects that would remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant that could allow more construction in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they trigger. In contrast, projects that physically remove obstacles to growth, projects that indirectly induce growth, are those which may provide a catalyst for future unrelated development in an area (such as a new residential community that requires additional commercial uses to support residents).

Implementation of the proposed project will result in growth inducement directly through the construction of new residential units. However, the proposed residential land uses are in accordance with the planned development Tier II growth patterns for southern El Centro as outlined in the General Plan - Urban Development Program. The project does not introduce any new offsite roadways (arterials or collectors) or interchanges and it does not result in any extensions or upgrades of circulation facilities not already planned pursuant to the General Plan. Thus, the project is not introducing any new facilitations to growth inducement not already envisioned to be needed to accommodate planned future growth. Hence, while it is recognized that the project will induce growth in the project area, such growth is in concurrence with the planned growth patterns established by the City through its General Plan process.

8.3 - Irreversible and Irretrievable Commitment of Resource

The environmental effects associated with the development of the proposed project are summarized in Table 2-1 and in Sections 5 and Section 6 of this EIR. Implementation of the proposed project will require a long-term commitment of land as discussed below. More specifically, the primary effect of development under the proposed project would be the commitment of approximately 38 acres of undeveloped agricultural land to residential uses. The financial and material investments that would be required of the applicant and the City would result in further commitments of land resources

making it likely that the same or similar uses would continue in the future. Implementation of the proposed project represents a long-term commitment to urbanization.

Environmental changes associated with the implementation of the proposed project would result in alterations of the physical environment. In order to develop the proposed project, existing undeveloped/agricultural land would be irrevocably committed to residential uses. If the proposed project is approved, and subsequently implemented, new structures would be built, additional utilities would be constructed, and circulation improvements would be made. Nonrenewable resources would be committed, primarily in the form of fossil fuels, and would include fuel oil, natural gas, and gasoline used by vehicles and equipment associated with the construction of the proposed project. The consumption of other nonrenewable or slowly renewable resources would result from development of the proposed project. These resources would include, but not be limited to, lumber and other forest products, sand and gravel, asphalt, petrochemical construction materials, steel, copper, lead, and water. Because alternative energy sources such as solar or wind energy are not currently in widespread local use, it is unlikely that a real savings in nonrenewable energy supplies (i.e., oil and gas) could be realized in the immediate future.

SECTION 9: ORGANIZATIONS AND PERSONS CONSULTED

9.1 - Public Agencies

City of El Centro Planning Department	Oliver Alvarado Norma M. Villicaña
City of El Centro Public Works Department.....	Danny Brammer Terry Hagen John Gay Randy Hines
El Centro Fire Department	Chief Chris Petree
El Centro Police Department.....	Paul Longoria
El Centro Water Department	Paul Stewart
McCabe Union Elementary School District	Amanda Brooke
Imperial Valley Telecommunications Authority	Fernando Garcia
Imperial Irrigation District	Sam Marquez

SECTION 10: REPORT PREPARATION PERSONNEL

10.1 - EIR Preparation Personnel

Lead Agencies

City of El Centro Oliver Alvarado, Planning Director
Norma Villicaña, Associate Planner

Local Agency Formation Commission..... Jerg Heuberger, Executive Officer

Consultant Team

Environmental Impact Report

Michael Brandman Associates Michael Houlihan, Project Director
Kara Palm, Project Manager
Lisa Fisher, Assistant Project Manager
Mikael Romich, Project Biologist
Grant Gruber, Environmental Planner
Steven Snyder, Environmental Analyst
Kristen M. Garcia, Environmental Analyst
Michael Hendrix, Air Quality Specialist
Michael Dice, Senior Archaeologist
Mike Serrano, Geographic Information Systems
Karlee Haggins, Graphic Artist
Angel Penatch, Word Processor
Sandra Tomlin, Senior Editor
Jose Morelos, Reprographics

Geological Investigation

Landmark Consultants, Inc..... Jeffrey O. Lyon, President
Steven K. Williams, Senior Engineering Geologist

Phase I Environmental Site Assessment and Supplemental Pesticide Scan Report

GS Lyon Consultants, Inc Jeffrey O. Lyon, Principal Engineer
Steven K. Williams, Senior Engineering Geologist

Noise Impact Assessment

VRPA Technologies, Inc..... Jason Ellard, Transportation Planner

Traffic and Transportation

Katz, Okitsu and Associates J. Arnold Torma, Principal Engineer
Phillip Trom, Associate Transportation Planner

SECTION 11: REFERENCES

- Bolt, Bruce A. *Abridged Modified Mercalli Intensity Scale, Earthquakes - Newly Revised and Expanded*. Appendix C, W.H. Freeman and Co. pp. 331. 1993.
- California Environmental Quality Act (CEQA). CEQA Guidelines. 2005
- CARB 2004. California Air Resources board's Emissions Inventory Series. Volume 1, Issue 6. Overview of the On-Road Emissions Inventory. <http://www.arb.ca.gov/msei/on-road/briefs/emfac6.pdf>
- CARB 2004b. California Air Resources Board. Off-Road Emissions Inventory Program. Page updated April 7, 2004. <http://www.arb.ca.gov/msei/off-road/off-road.htm>
- CARB 2004c. California Air Resources Board. Area-Wide Source Methodologies. Updated November 16, 2004. <http://www.arb.ca.gov/ei/areasrc/areameth.htm>.
- CARB 2005. California Air Resources Board. Emission Inventory, Stationary Sources. <http://www.arb.ca.gov/ei/stationarysources.htm>.
- City of El Centro, Final General Plan. February, 2004.
- Federal Emergency Management Agency (FEMA) and ESRI online hazard maps, <http://www.esri.com/hazards/makemap.html>.
- GS Lyon Consultants, Inc. 2006. *Phase I Environmental Site Assessment Report: 40-acre Willowbend Subdivision. El Centro, California. GSL Report No. GS0604.*
- GS Lyon Consultants, Inc. *Pesticide Scan: 40-acre Willowbend Subdivision. El Centro, California. GSL Report No. GS0604.* 2006.
- Katz, Okitsu & Associates. *Willow Bend Traffic Impact Study.* 2006.
- Landmark Consultants, Inc. *Geotechnical Investigation: 80-acres Willowbend Subdivision. SWC Willowbend Drive and State Hwy 86. El Centro, California. LCI Report No. LE05030.* 2005.
- Michael Brandman Associates. Air Quality Modeling Data. March 2006..
- Michael Brandman Associates. MBA Biological Field Notes. November 2005..
- Michael Brandman Associates. 2006. *Phase I Cultural Resources Assessment and Paleontological Records Review. Zone Change 05-02. El Centro, Imperial County, California.*
- United States Decennial Census online data sets, <http://www.factfinder.census.gov>.
- United States Geological Survey, *Gosford 7.5-minute quadrangle map*, 1973.
- VRPA Technologies, Inc. *Noise Impact Assessment: Willow Bend Development. State Route 86 & Duff Road. El Centro, California.* 2006.

**Response to Comments
on the Draft Environmental Impact Report
for
City of El Centro
Zone Change 05-05 and
Tentative Subdivision Map (Willow Bend)
State Clearinghouse Number: 2005101128**

Prepared for:

City of El Centro
Planning Department
1275 Main Street
El Centro, CA 92243

Contact: Oliver Alvarado, Planning Director

Prepared by:

Michael Brandman Associates
Michael Brandman Associates
220 Commerce, Suite 200
Irvine, CA 92602

Contact: Kara E. Palm, Project Manager



October 27, 2006

TABLE OF CONTENTS

Section 1: Introduction 1
 1.1 - Purpose..... 1

Section 2: List of Commentors 3

Section 3: Responses to Comments..... 5
 3.1 - Introduction 5
 3.2 - Comment Letters and Responses..... 5
 3.2.1 - State Agencies 9
 3.2.2 - Local Agencies 37
 3.2.3 - County Agencies 47
 3.2.4 - Local Agencies 77
 3.2.5 - Private Organizations and Persons 99

Section 4: Errata..... 101

SECTION 1: INTRODUCTION

1.1 - PURPOSE

In accordance with § 15088 of the State of California Environmental Quality Act (CEQA) Guidelines, the City of El Centro, as the lead agency, has evaluated the comments received on the Draft EIR. The responses to the comments and the Draft EIR comprise the Final EIR for use by the City of El Centro in their review.

This Response to Comments document is organized as follows:

- **Section 1 - Introduction.**
- **Section 2 - List of Commentors.** Provides a list of the agencies, organizations, and individuals that commented on the Draft EIR.
- **Section 3 - Responses to Comments.** Includes a copy of all of the letters received and provides responses to comments on environmental issues describing the disposition of the issues, explaining the EIR analysis, supporting the EIR conclusions, and/or providing information or corrections as appropriate. This section is organized with a copy of the comment letter followed with the corresponding responses.
- **Section 4 - Errata.** Includes an addendum listing refinements and clarifications, which have been incorporated.

SECTION 2: LIST OF COMMENTORS

A list of public agencies, organizations, and individuals that provided comments on the Draft EIR is presented below. Each comment has been assigned a code. Individual comments within each communication have been numbered so comments can be cross-referenced with responses. Section 4, Responses to Comments, includes the text of the communication followed by the corresponding response.

COMMENTOR CODE

State Agencies

State of California Native American Heritage Commission, August 16, 2006 NAHC
State of California Department of California Highway Patrol, August 30, 2006..... CHP
State of California Department of Transportation, September 5, 2006 CALTRANS
State of California Public Utilities Commission, September 18, 2006 PUC
State of California Department of Toxic Substances Control, September 25, 2006 DTSC
State of California Governor's Office of Planning and Research, September 25, 2006 OPR

Regional Agencies

California Regional Water Quality Control Board, September 12, 2006,.....RWQCB
Southern California Association of Governments, September 12, 2006.....SCAG

County Agencies

Imperial County Local Agency Formation Commission, August 13, 2006 LAFCO
County of Imperial Public Health Department, August 21, 2006 ICPHD
County of Imperial Public Works Department, September 6, 2006..... ICPWD
Imperial County Planning and Development Services, September 12, 2006.....ICPDS
Imperial County Air Pollution Control District, September 18, 2006.....ICAPCD

Local Agencies

Central Union High School District, August 18, 2006.....CUHSD
McCabe Union School District, September 5, 2006MUSD

Private Organizations and Persons

D. R. Horton, September 25, 2006 DRH

SECTION 3: RESPONSES TO COMMENTS

3.1 - INTRODUCTION

In accordance with Section 15088 of the California Environmental Quality Act (CEQA) Guidelines, the City of El Centro as the lead agency evaluated the comments received on the Draft EIR (State Clearinghouse No. 2005101128) for the Zone Change 05-05 and Tentative Subdivision Map Willow Bend Project and has prepared the following responses to the comments received. This Response to Comments document becomes part of the Final EIR for the project in accordance with § 15132 of the CEQA Guidelines.

3.2 - COMMENT LETTERS AND RESPONSES

The comment letters reproduced in the following pages follow the same organization as used in Sections 2's List of Commentors.

STATE OF CALIFORNIA

Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 384
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov



Clear
9-22-06
e

August 16, 2006



Mr. Oliver Alvarado
City of El Centro
1275 Main Street
El Centro, CA 92243

Re: SCH#2005101128: CEQA Draft Environmental Impact Report (EIR): Zone Change 05-05 and Tentative Subdivision Map for the Willow Bend Project: Imperial County, California

Dear Mr. Alvarado:

Thank you for the opportunity to comment on the above-referenced document. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR per CEQA guidelines § 15064.5(b)(c). In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the area of project effect (APE), and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following action:

- ✓ Contact the appropriate California Historic Resources Information Center (CHRIS). The record search will determine:
 - If a part or the entire APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded in or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological information center.
- ✓ Contact the Native American Heritage Commission (NAHC) for:
 - * A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project vicinity who may have additional cultural resource information. Please provide this office with the following citation format to assist with the Sacred Lands File search request: USGS 7.5-minute quadrangle citation with name, township, range and section:
 - The NAHC advises the use of Native American Monitors to ensure proper identification and care given cultural resources that may be discovered. The NAHC recommends that contact be made with Native American Contacts on the attached list to get their input on potential project impact, particularly the contacts of the on the list.
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
- ✓ Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.
 - * CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the

NAHC-1

NAHC-2

NAHC-3

NAHC-4

NAHC-5

NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

✓ Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the CEQA Guidelines mandate procedures to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

✓ Lead agencies should consider avoidance, as defined in § 15370 of the CEQA Guidelines, when significant cultural resources are discovered during the course of project planning.

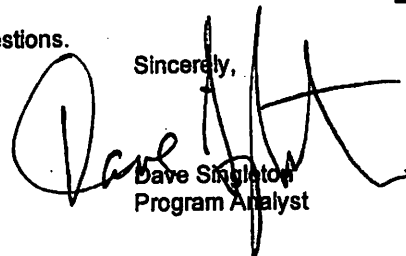
NAHC-5
CONT

NAHC-6

NAHC-7

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,



Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: List of Native American Contacts

3.2.1 - State Agencies

State of California Native American Heritage Commission, August 16, 2006 (NAHC)

Response to Comment NAHC-1

As noted on page 5.4-2 of the DEIR, as part of the Phase I Cultural Resources Survey, MBA contracted with Karen Collins of the Southeastern Information Center to conduct a cultural resources records search.

Response to Comment NAHC-2

As stated in Appendix E, Cultural Resources Assessment of the DEIR, at the request of the City of El Centro Planning Department, Michael Brandman Associates (MBA) has conducted a cultural resource block-transect survey for the proposed development.

The purpose of this report is to delineate the location of the project area, identify all potentially significant cultural and paleontological resources located within the project area, evaluate any detected cultural resources and, if they will be impacted by the proposed development, propose recommendations for mitigation. Completion of this investigation fulfills the requirements of the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA) as Amended, and Executive Order 11593 requirements. Published California State Office of Historic Preservation (OHP) procedures for cultural resource surveys, as found on their website, and the Archaeological Resource Management Reports (ARMR) reporting format were followed.

Response to Comment NAHC-3

A sacred lands search with the Native American Heritage Commission (NAHC) has taken place as part of this study, but this was associated with fact-finding only. We note that the City may be required to undertake Native American consultations to fulfill processes associated with SB18 (Burton).

Response to Comment NAHC-4

No significant impact on cultural resources are expected to occur based on the cultural resources assessment prepared for the project; however out of abundance of caution the following measure will further reduce potential impacts. If archeological resources are discovered during construction no further excavation or disturbance of the area or resources are found shall occur until a qualified archeologist evaluates the finds. If the find is determined to be a unique archeological resource contingency funding and a time allotment sufficient to allow for implementation of avoidance

measures or appropriate mitigation should be available. Work could continue on other parts of the project site while the unique archeological resource mitigation takes place. If the qualified archaeologist determines that the find is a unique archaeological resource, the resource site shall be evaluated and recorded in accordance with requirements of the State Office of Historic Preservation (OHP). If the site is determined to be significant, an adequate amount of data at the site shall be collected by the qualified archaeologist. The archaeologist shall determine the amount of data needed to be collected and an appropriate technical report must be prepared and submitted to the City and San Joaquin Valley Information Center. If the site is determined to be not significant, the site need not be mitigated for as described above.

Response to Comment NAHC-5

Please see Mitigation Measures CR 5.4-1 and CR 5.4-2 on pages 5.4-5 and 5.4-6 of the DEIR for a discussion of discovering human remains during construction.

Response to Comment NAHC-6

Please see Response to Comment NAHC-5.

Response to Comment NAHC-7

As required, if in the event that previously unknown cultural resources are discovered during the course of project planning, the City of El Centro will adhere to §15370 of the CEQA Guidelines.

State of California—Business, Transportation and Housing Agency

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

EL CENTRO AREA

2231 Highway 86

Imperial, CA 92251

(760) 482-2500

(800) 735-2829 (T/T/DB)

(800) 735-2922 (Voice)



CHP
PAGE 1 OF 1

RECEIVED

SEP 01 2006

August, 30, 2006
File No.: 625.9641

PLANNING DEPT.
CITY OF EL CENTRO

Oliver M. Alvarado
City of El Centro
1275 Main Street
El Centro, CA 92243

Dear Mr. Alvarado:

Thank you for the opportunity to review the Draft Environmental Impact Report (DEIR) for the proposed "Willow Bend" project, State Clearinghouse (SCH) #2005101128. The California Highway Patrol (CHP) is the primary agency that provides traffic law enforcement, safety and management on the roadways in the unincorporated portions of Imperial County.

CHP-1

The proposed "Willow Bend" project is immediately adjacent to State Route 86. State Route 86 is currently heavily traveled roadways connecting the cities of El Centro, Calexico and the town of Heber. Also adjacent to the area is Interstate 8 with exit ramps to State Route 86. Upon completion of this project, the increase in passenger vehicle and commercial truck traffic on these roadways, along with the Imperial Valley Mall traffic and the new schools proposed in the area, will have a significant impact on our ability to provide critical services elsewhere in Imperial County. The surrounding intersections in the area are reaching levels that are becoming critical. You state in your report that the upgrade of the surrounding intersections would be left to future decisions by the El Centro city engineer. We feel it is necessary that these intersections be upgraded prior the completion of the project, because it will have a potentially significant impact to accumulative traffic. Due to the substantial increase in traffic, there is a possibility of exceeding the traffic load and capacity of the existing street system. Based on that information, I would request that each phase of this development be presented to the El Centro Area in order to adequately address the increased amount of service required as well as the issue of road improvements with regards to traffic congestion and traffic safety.

CHP-2

Should you have any questions concerning this matter, please do not hesitate to contact Officer Richard Bird at (760) 482-2500.

CHP-3

Signed:

R. E. JONES, Captain
Commander
El Centro Area

cc: Special Projects Section
Border Division

Safety, Service, and Security

State of California Department of California Highway Patrol, August 30, 2006 (CHP)

Response to Comment CHP-1

The comment is noted that the CHP is the primary agency that provides traffic law enforcement, safety, and management on the roadways in unincorporated Imperial County.

Response to Comment CHP-2

Once incorporated, the project site will be served by the City of El Centro Police Department.

The proposed project will not result in any project only traffic related impacts; however, project related traffic will contribute to cumulative traffic related impacts. In lieu of an adopted Traffic Impact Fee (TIF), the City of El Centro Engineer will determine whether the project applicant shall implement the improvements at affected intersections and roadway segments or if the project applicant will pay a fair share towards cumulative improvements.

Please see Response to Comment CALTRANS-2 regarding fair share contribution.

Response to Comment CHP-3

The comment regarding the CHP contact is noted.

DEPARTMENT OF TRANSPORTATION

District 11
4050 Taylor Street, MS 240
San Diego, CA 92110
PHONE (619) 688-6954
FAX (619) 688-4299

CALTRANS
PAGE 1 OF 2



*Flex your power!
Be energy efficient!*

RECEIVED

September 5, 2006

SEP 12 2006

PLANNING DEPT.
CITY OF EL CENTRO

11-IMP-86
PM 5.00
DEIR (SCH 2005101128)
Willow Bend

Mr. Oliver Alvarado
City of El Centro
1275 W. Main Street
El Centro, CA 92243

Dear Mr. Alvarado:

The California Department of Transportation (Caltrans) received a copy of the Draft Environmental Impact Report (DEIR – SCH 2005101128) for the Willow Bend residential project located on the west side of State Route 86 (SR-86), south of Interstate 8 (I-8) between McCabe and Horne Roads. Caltrans has the following comments:

- Table 8-1 Suggested Mitigation, Figure 8-1, in the Revised Traffic Impact Study (July 2006) shows a proposed signal at Horne Road. The Memorandum of Understanding (MOU) dated February 10, 1997 for "Future improvement and access management plan for SR-86 south of I-8 to the El Centro City limits" does not allow for the signalization of this intersection. The TIS/DEIR and mitigation for Horne Road should be updated based on not signalizing Horne Road. CALTRANS
-1
- In lieu of an adopted Transportation Impact Fee (TIF) program, Caltrans supports Fair Share contributions for all cumulative impact mitigation. Major deficiencies are identified for the Near Term Cumulative conditions. Caltrans and the City should coordinate to determine the appropriate mitigation and the timing of the improvements. A mechanism such as a traffic mitigation monitoring plan should be developed by the City for fair share contributions to monitor actual cumulative impacts and to insure that roadway segments and intersections remain at acceptable levels of service. Should the level of service reach unacceptable levels, the City should delay the issuance of building permits for any project until the appropriate cumulative impact mitigation is completed. A traffic mitigation monitoring plan should be developed and incorporated into the DEIR for the Willow Bend project detailing a phasing/implementation plan for cumulative impact mitigation. CALTRANS
-2
- Caltrans future concept for SR-86 calls for the upgrade from a conventional 2-lane highway to a four-lane facility. Therefore, the proposed development must be compatible with proposed future improvements to SR-86. The applicant should obtain an Irrevocable Offer of Dedication (IOD) from the City and a slope rights / drainage easement in order to accomplish preserving the necessary right-of-way for future improvements. CALTRANS
-3
- All lighting within this project should be placed and/or shielded so as not to be hazardous to vehicles traveling on SR-86. CALTRANS
-4

"Caltrans improves mobility across California"

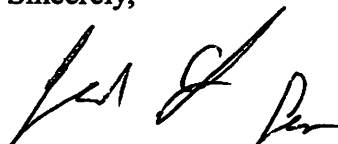
Mr. Oliver Alvarado
August 29, 2006
Page 2

- Caltrans will not be held responsible for any noise impacts to this development, including from the ultimate configuration of SR-86. CALTRANS
-5
- All signs visible to traffic on SR-86 need to be constructed in compliance with County and State regulations. CALTRANS
-6
- Improvements to project frontage along SR-86 should include curb, gutter, and sidewalk to accommodate pedestrians and disabled persons. CALTRANS
-7
- Any mitigation work performed within Caltrans right of way will require an encroachment permit. Additional information regarding encroachment permits may be obtained by contacting our Permits Office at (619) 688-6158. Early coordination with our agency is strongly advised for all encroachment permits. CALTRANS
-8

If a developer proposes any work or improvements within the Caltrans right of way, the projects environmental studies must include such work. The developer is responsible for quantifying the environmental impacts of the improvements (project level analysis) and completing all appropriate mitigation measures for the impacts. The developer will also be responsible for procuring any necessary permits or approvals from the regulatory and resource agencies for the improvements. CALTRANS
-9

If you have any questions, please contact Jacob Armstrong, Development Review Branch, at (619) 688-6960.

Sincerely,



MARIO H. ORSO, Chief
Development Review Branch

Cc: Daniel Arvizo, DD&E

State of California Department of Transportation, September 5, 2006 (CALTRANS)

Response to Comment CALTRANS-1

Section 3 of the Memorandum of Understanding states that Horne Road is exempt from the one-quarter mile restriction. Furthermore, a letter from CALTRANS dated October 9, 2003 states that any improvements within CALTRANS right-of-way must be supported by the project's environmental studies. The signalized intersection spacing between Dannenberg Road and Horne Road would be 600 feet. This signal would improve safety for left-turning vehicles from Horne Road to SR-86.

Response to Comment CALTRANS-2

The comment is noted that in lieu of an adopted Traffic Impact Fee, that CALTRANS supports fair share contributions for near-term cumulative impacts. As stated on page 6-13 of the DEIR, "The City Engineer shall make the determination of whether the payment or proportionate share or installation of the improvements is required. This shall be completed at the time of project approval. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for all cumulatively impacted locations."

Response to Comment CALTRANS-3

As noted on page 6-13 of the DEIR, as roadway improvements effect intersections and roadways under the jurisdiction of CALTRANS along State Route (SR) 86, improvements are in accordance with the Memorandum of Understanding regarding SR 86 between CALTRANS and the City of El Centro. The project applicant, as required, will obtain an Irrevocable Offer of Dedication.

Response to Comment CALTRANS-4

Project lighting shall be in accordance with the City of El Centro's lighting ordinance and CALTRANS guidelines.

Response to Comment CALTRANS-5

An Environmental Noise Assessment was prepared for the proposed project and is included in Appendix H and summarized in Section 5.7 of the DEIR. As discussed on page 6-8 of the DEIR, the project will include the construction of a 6-foot high sound wall and all homes shall have mechanical ventilation or air conditioning to reduce noise impacts from SR 86 to less than significant (see Mitigation Measures N6-1 and N 6-2). It is noted that CALTRANS is not responsible for noise impacts as a result of traffic traveling along SR 86.

Response to Comment CALTRANS-6

As required, all project related signage along SR-86 will be in compliance with County and State regulations.

Response to Comment CALTRANS-7

As required, all project related improvements, along SR-86 and within the CALTRANS right of way will be in compliance with applicable regulations.

Response to Comment CALTRANS-8

Please see Response to Comment CALTRANS-3. In addition, as required, the applicant shall obtain an encroachment improvement for any improvements within the CALTRANS right-of-way.

Response to Comment CALTRANS-9

Please see Response to Comments CALTRANS-3 and CALTRANS-8.

PUBLIC UTILITIES COMMISSION

320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013



RECEIVED

September 18, 2006

SEP 25 2006

PUC
PAGE 1 OF 1

Oliver Alvarado
City of El Centro
1275 Main Street
El Centro, CA 92243

PLANNING DEPT.
CITY OF EL CENTRO

Dear Mr. Alvarado:

Re: SCH# 2005101128; Change of Zone 05-05 and Tentative Subdivision Map (Willow Bend)

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the Union Pacific Railroad (UPRR) right-of-way be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way.

Safety factors to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the City.

Please advise us on the status of the project. If you have any questions in this matter, please contact me at (213) 576-7078 or at rxm@cpuc.ca.gov.

Sincerely,

Rosa Muñoz, PE
Utilities Engineer

Rail Crossings Engineering Section
Consumer Protection & Safety Division

C: Freddy Cheung, UPRR

PUC-1

State of California Public Utilities Commission, September 18, 2006 (PUC)

Response to Comment PUC-1

The proposed project does not include development within a Union Pacific Railroad right-of-way.



Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630



Arnold Schwarzenegger
Governor

September 25, 2006

Mr. Oliver Alvarado
City of El Centro, Planning Department
1275 Main Street
El Centro, California 92243

DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR CITY OF EL CENTRO ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP (SCH#2005101128)

Dear Mr. Alvarado:

The Department of Toxic Substances Control (DTSC) has received your submitted (EIR) document for the above-mentioned project. As stated in your document: "The proposed project is the development of a single-family residential community on approximately 38 acres. The project includes the subdivision of 38 acres of farmland to provide for 131 single-family residential lots, a 3.02-acre retention basin, and 1.67-acre park. The purpose of this project is to supply single-family housing to meet the growth projections of the City of El Centro contiguous to similar development within the City's Sphere-of-Influence; to locate the development to meet anticipated growth in areas of relatively lesser environmental sensitivity; accommodating growth while balancing environmental considerations; to provide public infrastructure improvements for the orderly expansion of urban development; and to locate housing adjacent to major highway arterials (SR-86) and with convenient access to Interstate 8 to promote efficient traffic flows and minimize traffic demands on local and collector streets".

DTSC has previously issued comments regarding the Notice of Preparation on November 28, 2005, which have not been fully addressed. The comments are as follows:

1. The draft EIR needs to identify and determine whether current or historic uses at the Project site have resulted in any release of hazardous wastes/substances at the Project area.
2. The draft EIR needs to identify any known or potentially contaminated sites within the proposed Project area. For all identified sites, the draft EIR should evaluate whether conditions at the site pose a threat to human health or the environment. A Phase I Assessment may be sufficient to identify these sites. Following are the databases of some of the regulatory agencies:

DTSC-1

DTSC-2

Mr. Oliver Alvarado
September 25, 2006
Page 2

- National Priorities List (NPL): A list is maintained by the United States Environmental Protection Agency (U.S.EPA).
 - CalSites: A Database primarily used by the California Department of Toxic Substances Control.
 - Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
 - Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.
 - Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
 - Leaking Underground Storage Tanks (LUST) / Spills, Leaks, Investigations and Cleanups (SLIC): A list that is maintained by Regional Water Quality Control Boards (RWQCBs).
 - Local County and City maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.
3. The draft EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If hazardous materials or wastes were stored at the site, an environmental assessment should be conducted to determine if a release has occurred. If so, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. It may be necessary to determine if an expedited response action is required to reduce existing or potential threats to public health or the environment. If no immediate threat exists, the final remedy should be implemented in compliance with state laws, regulations and policies.
4. If the subject property was previously used for agriculture, onsite soils could contain pesticide residues. Proper investigation and remedial action may be necessary to ensure the site does not pose a risk to the future residents.

DTSC-2
CONT

DTSC-3

DTSC-4

Mr. Oliver Alvarado
September 25, 2006
Page 3

- | | | |
|-----|---|---------|
| 5. | All environmental investigations, sampling and/or remediation should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous waste cleanup. The findings and sampling results from the subsequent report should be clearly summarized in the EIR. | DTSC-5 |
| 6. | Proper investigation, sampling and remedial actions, if necessary, should be conducted at the site prior to the new development or any construction, and overseen by a regulatory agency. | DTSC-6 |
| 7. | If any property adjacent to the project site is contaminated with hazardous chemicals, and if the proposed project is within 2,000 feet from a contaminated site, then the proposed development may fall within the "Border Zone of a Contaminated Property". Appropriate precautions should be taken prior to construction if the proposed project is within a "Border Zone Property". | DTSC-7 |
| 8. | Human health and the environment of sensitive receptors should be protected during the construction or demolition activities. A study of the site overseen by the appropriate government agency might have to be conducted to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment. | DTSC-8 |
| 9. | If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If so, the facility should obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. | DTSC-9 |
| 10. | If hazardous wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite, or (c) disposed of onsite, then a permit from DTSC may be required. If so, the facility should contact DTSC at (818) 551-2171 to initiate pre application discussions and determine the permitting process applicable to the facility. | DTSC-10 |
| 11. | Certain hazardous waste treatment processes may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA. | DTSC-11 |
| 12. | If the project plans include discharging wastewater to a storm drain, you may be required to obtain a wastewater discharge permit from the overseeing Regional Water Quality Control Board. | DTSC-12 |

Mr. Oliver Alvarado
September 25, 2006
Page 4

13. If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight. DTSC-13
14. During project construction and implementation, all chemicals (including herbicides and pesticides, runoff, hazardous materials and waste) should be handled, stored, transported, and disposed of properly and in accordance with applicable local, state, and federal regulations. DTSC-14
15. If structures on the Project Site contain potentially hazardous materials, such as; asbestos-containing materials, lead-based paint, and mercury- or PCB-containing materials, such materials should be removed properly prior to demolition and disposed of at appropriate landfills or recycled, in accordance with the regulatory guidance provided in California Code of Regulation (CCR) and following the requirements of the Universal Waste Rule (40 CFR, Part 9). DTSC-15

If you have any questions regarding this letter, please contact me at (714) 484-5461 or Mr. Al Shami, Project Manager, at (714) 484-5472 or at "ashami@dtsc.ca.gov".

Sincerely,


Greg Holmes
Unit Chief

Southern California Cleanup Operations Branch - Cypress Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

CEQA # 1502

Mr. Oliver Alvarado
September 25, 2006
Page 3

- | | | |
|-----|---|---------|
| 5. | All environmental investigations, sampling and/or remediation should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous waste cleanup. The findings and sampling results from the subsequent report should be clearly summarized in the EIR. | DTSC-5 |
| 6. | Proper investigation, sampling and remedial actions, if necessary, should be conducted at the site prior to the new development or any construction, and overseen by a regulatory agency. | DTSC-6 |
| 7. | If any property adjacent to the project site is contaminated with hazardous chemicals, and if the proposed project is within 2,000 feet from a contaminated site, then the proposed development may fall within the "Border Zone of a Contaminated Property". Appropriate precautions should be taken prior to construction if the proposed project is within a "Border Zone Property". | DTSC-7 |
| 8. | Human health and the environment of sensitive receptors should be protected during the construction or demolition activities. A study of the site overseen by the appropriate government agency might have to be conducted to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment. | DTSC-8 |
| 9. | If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If so, the facility should obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. | DTSC-9 |
| 10. | If hazardous wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite, or (c) disposed of onsite, then a permit from DTSC may be required. If so, the facility should contact DTSC at (818) 551-2171 to initiate pre application discussions and determine the permitting process applicable to the facility. | DTSC-10 |
| 11. | Certain hazardous waste treatment processes may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA. | DTSC-11 |
| 12. | If the project plans include discharging wastewater to a storm drain, you may be required to obtain a wastewater discharge permit from the overseeing Regional Water Quality Control Board. | DTSC-12 |

Mr. Oliver Alvarado
September 25, 2006
Page 4

- | | | |
|-----|--|---------|
| 13. | If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight. | DTSC-13 |
| 14. | During project construction and implementation, all chemicals (including herbicides and pesticides, runoff, hazardous materials and waste) should be handled, stored, transported, and disposed of properly and in accordance with applicable local, state, and federal regulations. | DTSC-14 |
| 15. | If structures on the Project Site contain potentially hazardous materials, such as; asbestos-containing materials, lead-based paint, and mercury- or PCB-containing materials, such materials should be removed properly prior to demolition and disposed of at appropriate landfills or recycled, in accordance with the regulatory guidance provided in California Code of Regulation (CCR) and following the requirements of the Universal Waste Rule (40 CFR, Part 9). | DTSC-15 |

If you have any questions regarding this letter, please contact me at (714) 484-5461 or Mr. Al Shami, Project Manager, at (714) 484-5472 or at "ashami@dtsc.ca.gov".

Sincerely,


Greg Holmes
Unit Chief

Southern California Cleanup Operations Branch - Cypress Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

CEQA # 1502

State of California Department of Toxic Substances Control, September 25, 2006 (DTSC)

Response to Comment DTSC-1

A Phase I Environmental Site Assessment (ESA) prepared in accordance with the American Society for Testing Materials Standard (ASTM) E 1527-00. The ASTM standard is the most widely accepted nationwide protocol for environmental assessment of commercial properties and seeks to identify "recognized environmental conditions" on a property. Additionally, a supplemental Pesticide Scan Report were prepared for the proposed project and are included in Appendix G and summarized in Section 5.6 of the DEIR

Response to Comment DTSC-2

The Phase I ESA included a review of all applicable regulatory databases per ASTM Standard E 1527-00.

Response to Comment DTSC-3

Please see Response to Comment DTSC-1. Additionally, as noted in Mitigation Measure HM 5.6-2, prior to the issuance of grading permits, the applicant shall coordinate with DTSC in regard to the results of the pesticide scan.

Response to Comment DTSC-4

Please see Response to Comment DTSC-3.

Response to Comment DTSC-5

Please see Response to Comment DTSC-3.

Response to Comment DTSC-6

Please see Response to Comment DTSC-3.

Response to Comment DTSC-7

One property, located 0.5 to 1-mile north of the project site was listed on a regulatory database reviewed in accordance with ASTM E 1527-00. As noted on page 5.6-7 of the DEIR, this property was listed on the Notify 65 database. A gasoline leak was detected in May 1989, Subsequent remediation occurred and the case was closed in September 1996.

Response to Comment DTSC-8

Please see Response to Comment DTSC-1.

Response to Comment DTSC-9

As noted on page 5.6-9 of the DEIR, construction may involve the limited transport, storage, usage, or disposal of hazardous materials and as noted on page 5.6-11 of the DEIR, project operation will involve the use of common household hazardous wastes. All site operations (short-term and long-term) will be in accordance with all applicable regulations including the California Hazardous Waste Control Law and the Hazardous Waste Control Regulations. Section 5.6-1 of the DEIR outlines the applicable hazardous waste laws.

Response to Comment DTSC-10

Please see Response to Comment DTSC-9.

Response to Comment DTSC-11

The comment is noted. If applicable, the project applicant will obtain authorization from the Certified Unified Program Agency.

Response to Comment DTSC-12

As noted in the Initial Study and Notice of Preparation prepared for the proposed project, "The proposed project will be implemented in accordance with all applicable water quality standards and waste discharge requirements, which will ensure that the quality and quantity of surface water flowing from the site would not be substantially affected."

Response to Comment DTSC-13

A Phase I ESA did not reveal any known soil or groundwater contamination on site; however, historically, the project site has been used for agricultural production. A Pesticide Scan Report was prepared. As noted in Section 5.6 of the DEIR, the pesticide scan revealed concentrations of DDE in four soil samples; yet, the concentration of DDE in the soil is below the current action limits as determined by DTSC. Regardless, Mitigation Measure HM 5.6-2 requires the applicant to review the pesticide scan with DTSC prior to the issuance of a grading permit. DTSC shall provide written verification that no further action is required in relation to the presence of DDE in near surface soils. All project related activities will be in accordance with the applicable hazardous materials/wastes regulations as required.

Response to Comment DTSC-14

All project related activities will be in accordance with the applicable hazardous materials/wastes regulations as required.

Response to Comment DTSC-15

Site investigations performed in accordance with the Phase I ESA, which is included in Appendix G of the DEIR did not reveal any asbestos, lead based paint, mercury, or PCB containing materials onsite. All project related activities will be in accordance with the applicable hazardous materials/wastes regulations as required.



Arnold Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Sean Walsh
Director

September 25, 2006

OPR
PAGE 1 OF 2

Oliver Alvarado
City of El Centro
1275 Main Street
El Centro, CA 92243

Subject: Change of Zone 05-05 and Tentative Subdivision Map (Willow Bend)
SCH#: 2005101128

Dear Oliver Alvarado:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on September 22, 2006, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

OPR-1

**Document Details Report
State Clearinghouse Data Base**

OPR
PAGE 2 OF 2

SCH# 2005101128
Project Title Change of Zone 05-05 and Tentative Subdivision Map (Willow Bend)
Lead Agency El Centro, City of

Type EIR Draft EIR

Description The proposed project is the development of a single-family residential community on approximately 38 acres. The project includes the subdivision of 38 acres of farmland to provide for 131 single-family residential lots, a 3.02-acre retention basin, and 1.67-acre park. The purpose of this project is to supply single-family housing to meet the growth projections of the City of El Centro contiguous to similar development within the City's Sphere of Influence; to locate projections of the City of El Centro contiguous to similar development within the City's Sphere of Influence; to locate development to meet anticipated growth in areas of relatively lesser environmental sensitivity, accomodating growth while balancing environmental considerations; to provide public infrastructure improvements for the orderly expansion of urban development; and to locate housing adjacent to major highway arterials (SR-86) and with convenient access to I-8 to promote efficient traffic flows and minimize traffic demands on local and collector streets.

Lead Agency Contact

Name	Oliver Alvarado		
Agency	City of El Centro		
Phone	(760) 337-4545	Fax	
email			
Address	1275 Main Street		
City	El Centro	State CA	Zip 92243

Project Location

County	Imperial			
City	El Centro			
Region				
Cross Streets	McCabe Road, east of 8th Street, and west of 4th Street (SR-86)			
Parcel No.				
Township	16S	Range	14E	Section 83
				Base

Proximity to:

Highways	SR-86
Airports	
Railways	
Waterways	
Schools	
Land Use	Vacant land that historically has been utilized for farmland. Z: General Agriculture/Urban Overlay (A2U)

Project Issues Agricultural Land; Air Quality; Archaeologic-Historic; Cumulative Effects; Growth Inducing; Noise; Public Services; Schools/Universities; Sewer Capacity; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Supply; Wildlife

Reviewing Agencies Resources Agency; Regional Water Quality Control Board, Region 7; Department of Parks and Recreation; Native American Heritage Commission; Office of Historic Preservation; Office of Emergency Services; Department of Health Services; Department of Fish and Game, Region 6; Department of Water Resources; California Highway Patrol; Caltrans, District 11; Department of Toxic Substances Control

Date Received 08/09/2006 **Start of Review** 08/09/2006 **End of Review** 09/22/2006

State of California Governor's Office of Planning and Research, September 25, 2006 (OPR)

Response to Comment OPR-1

Comment is noted, and it is acknowledged that the Draft EIR was distributed to selected state agencies for review. No specific comments on the Draft EIR were provided; therefore, no further response is necessary.



Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board Colorado River Basin Region

73-720 Fred Waring Drive, Suite 100, Palm Desert, California 92260
(760) 346-7491 • Fax (760) 341-6820
<http://www.waterboards.ca.gov/coloradoriver>



Arnold Schwarzenegger
Governor

RWQCB
PAGE 1 OF 2

September 12, 2006

Oliver Alvarado, Planning Director
Planning Department
City of El Centro
1275 Main Street
El Centro, CA 92243

RECEIVED

SEP 14 2006

PLANNING DEPT.
CITY OF EL CENTRO

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT FOR CITY OF EL CENTRO ZONE CHANGE 05-05 AND TENTATIVE SUBDIVISION MAP (WILLOW BEND), SCH #2005101128

The Regional Board reviews the submitted CEQA documents generated by lead agencies and provides comments regarding overall adequacy of the document, water quality impacts that need to be addressed or are inadequately addressed, and the need for permits, certification, or mitigation from the Regional Board.

The following comments are in response to the submitted Draft Environmental Impact Report for the above referenced project dated August 9, 2006.

The following permit may be needed:

A. CONSTRUCTION ACTIVITIES (STORM WATER AND 401 WATER QUALITY CERTIFICATION)

1. Storm Water Construction General Permit 99-08-DWD. Dischargers whose projects disturb 1 or more acres of soil or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity. Here is the website hyperlink - <http://www.waterboards.ca.gov/stormwtr/construction.html>
2. 401 Water Quality Certification. If appropriate, an application for water quality certification for this project needs to be filed with this Regional Board. Before anyone can obtain a federal permit for any activity that may result in a discharge to a surface water of the United States, they must obtain certification from the appropriate state pursuant to Section 401 of the Clean Water Act. Section 401 provides the states with a mechanism to ensure that

RWQCB-1

RWQCB-2

California Environmental Protection Agency

Recycled Paper



Oliver Alvarado

September 12, 2006

federally permitted activities meet state requirements to protect water quality. If the United States Army Corp of Engineers (USACE) has determined the project is outside federal jurisdiction and a 404 permit is not needed, provide a copy of the USACE jurisdictional disclaimer letter. Here is the website hyperlink -
<http://www.waterboards.ca.gov/coloradoriver/regulatory2/401Cert.html>

RWQCB-2
CONT

If have any questions concerning this matter, please contact me at (760) 340-4521.



JOHN CARMONA

Senior Water Resources Control Engineer

JC/tab

cc: Theresa Illare, Jay Mirpour

File: ER IMP ED

California Environmental Protection Agency

Recycled Paper



3.2.2 - Local Agencies

California Regional Water Quality Control Board, September 12, 2006 (RWQCB)

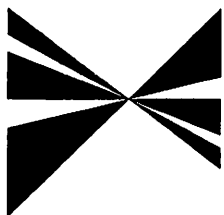
Response to Comment RWQCB-1

Please see Response to Comment DTSC-12 regarding water quality.

Response to Comment RWQCB-2

Please see Response to Comment DTSC-12 regarding water quality.

SOUTHERN CALIFORNIA



**ASSOCIATION of
GOVERNMENTS**

Main Office

818 West Seventh Street

12th Floor

Los Angeles, California

90017-3435

t (213) 236-1800

f (213) 236-1825

www.scag.ca.gov

Officers: President: Yvonne B. Burke, Los Angeles County • First Vice President: Gary Oritt, San Bernardino County • Second Vice President: Richard Dixon, Lake Forest • Immediate Past President: Toni Young, Port Hueneme

Imperial County: Victor Carrillo, Imperial County • Jon Edney, El Centro

Los Angeles County: Yvonne B. Burke, Los Angeles County • Zev Yaroslavsky, Los Angeles County • Jim Aldinger, Manhattan Beach • Harry Baldwin, San Gabriel • Paul Bowen, Cerritos • Tirdi Campbell, Burbank • Tony Carlenas, Los Angeles • Stan Carroll, La Habra Heights • Margaret Clark, Rosemead • Gene Daniels, Paramount • Mike Dispenza, Palmdale • Judy Dunlap, Inglewood • Rae Gabelich, Long Beach • David Gafin, Downey • Eric Garretti, Los Angeles • Wendy Gueul, Los Angeles • Frank Gurdie, Cudahy • Janice Hahn, Los Angeles • Isadore Hall, Compton • Keith W. Hanks, Azusa • José Huizar, Los Angeles • Tom LaBonge, Los Angeles • Paula Lantz, Pomona • Paul Nowatka, Torrance • Pam O'Connor, Santa Monica • Alex Padilla, Los Angeles • Bernard Parks, Los Angeles • Jan Perry, Los Angeles • Ed Reyes, Los Angeles • Bill Rosendahl, Los Angeles • Greig Smith, Los Angeles • Tom Sykes, Walnut • Paul Talbot, Alhambra • Mike Ten, South Pasadena • Tonia Reyes Uranga, Long Beach • Antonio Villaraigosa, Los Angeles • Dennis Washburn, Calabasas • Jack Weiss, Los Angeles • Herb J. Wesson, Jr., Los Angeles • Dennis Zine, Los Angeles

Orange County: Chris Norby, Orange County • Christine Barnes, La Palma • John Beauman, Brea • Lou Bone, Tustin • Art Brown, Buena Park • Richard Chavez, Anaheim • Debbie Cook, Huntington Beach • Leslie Daigle, Newport Beach • Richard Dixon, Lake Forest • Paul Glaab, Laguna Niguel • Marilyn Poe, Los Alamitos

Riverside County: Jeff Stone, Riverside County • Thomas Buckley, Lake Elsinore • Bonnie Flickinger, Moreno Valley • Ron Loveridge, Riverside • Greg Pettis, Cathedral City • Ron Roberts, Temecula

San Bernardino County: Gary Oritt, San Bernardino County • Lawrence Dale, Barstow • Paul Eaton, Montclair • Lee Ann Garcia, Grand Terrace • Tim Jasper, Town of Apple Valley • Larry McCallion, Highland • Deborah Robertson, Rialto • Alan Wagner, Ontario

Ventura County: Judy Mikelis, Ventura County • Glen Becerra, Simi Valley • Carl Morehouse, San Buenaventura • Toni Young, Port Hueneme

Orange County Transportation Authority: Lou Correa, County of Orange

Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission: Keith Millhouse, Moorpark

559.09.06

September 12, 2006

Mr. Oliver Alvarado
Planning Director
City of El Centro Planning Department
1275 Main Street
El Centro, CA 92243

RE: SCAG Clearinghouse No. I 20060545 City of El Centro Zone Change 05-05 and Tentative Subdivision Map (Willow Bend)

Dear Mr. Alvarado:

Thank you for submitting the **City of El Centro Zone Change 05-05 and Tentative Subdivision Map (Willow Bend)** for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **City of El Centro Zone Change 05-05 and Tentative Subdivision Map (Willow Bend)**, and have determined that the proposed Project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and California Environmental Quality Act (CEQA) Guidelines (Section 15206). Therefore, the proposed Project does not warrant comments at this time. Should there be a change in the scope of the proposed Project, we would appreciate the opportunity to review and comment at that time.

A description of the proposed Project was published in SCAG's **August 1-15, 2006 Intergovernmental Review Clearinghouse Report** for public review and comment.

The project title and SCAG Clearinghouse number should be used in all correspondence with SCAG concerning this Project. Correspondence should be sent to the attention of the Clearinghouse Coordinator. If you have any questions, please contact me at (213) 236-1851. Thank you.

Sincerely,

Pauline Jones for
APRIL GRAYSON
Associate Regional Planner
Intergovernmental Review

Doc 125766

RECEIVED

SEP 14 2006

**PLANNING DEPT.
CITY OF EL CENTRO**

SCAG-1

SCAG-2

SCAG-3

SCAG-4

Southern California Association of Governments, September 12, 2006 (SCAG)

Response to Comment SCAG-1

This comment is noted, and acknowledges SCAG's responsibilities as a regional planning organization.

Response to Comment SCAG-2

This comment is noted, and acknowledges SCAG's determination that the proposed project is not regionally significant. No specific comments on the Draft EIR were provided; therefore, no further response is necessary.

Response to Comment SCAG-3

This comment is noted, and acknowledges SCAG's publication of the proposed project's description in its 2006 Intergovernmental Review Clearinghouse Report (August 1-15, 2006).

Response to Comment SCAG-4

This comment regarding future correspondence is noted.

CERTIFIED MAIL #7004 1350 0002 4587 3951

RECEIVED

August 13, 2006

AUG 24 2006

City of El Centro
1275 Main Street
El Centro, CA 92243

PLANNING DEPT.
CITY OF EL CENTRO

RE: Response to DERI 2005101128 (Willow Bend)

Mr. Alvarado:

The following comments are submitted on behalf of the Local Agency Formation Commission on the above referenced project. As always we appreciate the opportunity to review this project, particularly since as a Responsible Agency we will also be expected to utilize this document.

Our comments therefore are as follows:

- 1) We received the document on August 11, 2006 but no cover letter to indicate when the comment period ends! We would expect that other agencies and commenter's received some indication on the close of the comment period.
- 2) Pg. 2-6: Section 5.1: (also section 5.1.3 on page 5.1-8) We recognize and understand that conversion of ag land has no direct mitigation, short of replacement land in another area, i.e. conversion of open desert land. We would however suggest that by requiring the developer to acquire other farm land and place it into a trust under the Williamson Act or by having the developer negotiate with an exiting farmer for Williamson Act inclusion would provide some future protection for ag land, not to mention added benefits both in funding for the Valley and in making farming for viable for the farmer.
- 3) Pg. 2-8: Section 5.2: We will defer to the APCD to address all air mitigation requirements, however we would disagree that "no" air quality mitigation measures are feasible for the long term. We would recommend that the City review prior comments by the Air District on mitigation measures that are feasible.
- 4) Pg. 2-13: Section 5.7: We do not see a proposed mitigation measure for traffic generated noise along south 4th St.? At the very least the

LAFCO-1

LAFCO-2

LAFCO-3

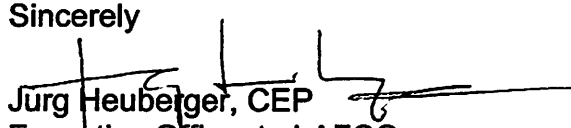
LAFCO-4

- | | | |
|-----|--|-----------------|
| | proposed wall indicated in the subsequent chapter should be listed as mitigation measures. | LAFCO-4
CONT |
| 5) | Pg. 2-14: Section 5.8: We have on a number of EIR commented that "landfill capacity" is a long term issue, and we would gain reiterate that some measure of mitigation needs to be included in this EIR as the City cannot conclude that there is capacity forever? | LAFCO-5 |
| 6) | Pg. 2-15: Section 5.9: We do not concur that there are no project generated traffic impacts. We understand that there are cumulative "but for this project" there would be no intersections required on South 4 th , so the project does have a project related impact. | LAFCO-6 |
| 7) | Pg. 2-14: Section 6: (Agriculture) we disagree with the conclusion, as stated above under comment #2. | LAFCO-7 |
| 8) | Pg. 2-16: Section 6: (Traffic) In a global response, a number of the mitigation measures indicate a change in levels of service from F to E or from D to E, and a percentage of fair share. While we understand that it should not be the burden of one developer to upgrade a system to the minimum of LOS C, we would expect that the fair share improvement costs be based on an improvement cost of bringing these intersections and road segments to acceptable LOS levels, i.e. "C". If that is not the case then the DEIR needs to explain how the City or Caltrans will ultimately bring these segments or intersections to LOS C! | LAFCO-8 |
| 9) | Pg. 2-16: Section 6: (Traffic) We see no fair share contributions to a variety of road segments or intersections that this project will impact. In fact the impact analysis seems rather focused in terms of distance from the project. We would request that the same level of analysis be performed as was performed on the Linda Vista project and similar mitigation measures be applied. In particular we would expect a fair share contribution by this project to the intersections of SR 86 and McCabe (signalization and turn lanes); Dogwood and McCabe (interchange design and construction); Clark Rd. and McCabe Rd. intersection (signalization and turn lanes), among others. We also question whether Wake Ave, Horne Rd. and project access road meet the spacing requirements for a full intersection along HWY 86? Lastly, the improvements required should be delineated in the conditions of approval and not left to the "Future" decisions of the City Engineer. We will therefore expect to see that determination before the project is submitted to LAFCO. | LAFCO-9 |
| 10) | Pg. 5.8-3: Section PSU 5.8-1: it is unclear what the mitigation measure is. TO enter into an agreement leaves open to the imagination a lot of options, including no agreement. What exactly is this project expected to mitigate and how? | LAFCO-10 |
| 11) | Pg. 5.8-6. Section PSU 5.8-2: Same question as under 10 above. | LAFCO-11 |
| 12) | Pg. 5.8-9: Section 5.8-9: School impacts do not appear to have been adequately addressed or mitigated. It will be necessary that prior to annexation these issues are resolved and an agreement between the School's and the developer presented to LAFCO. | LAFCO-12 |

- | | | |
|-----|---|----------|
| 13) | Pg. 5.8-12: Section 5.8-13: Is it not a negative under the difference in the parkland for baseline. In other words is not the City short 13.3 acres? | LAFCO-13 |
| 14) | Pg. 5.8-19: Below table 5.8-20 the paragraph references Table 5.8-20 but we believe this should be Table 5.8-17. We also must disagree that long term impacts are insignificant as the DEIR has not analyzed options should the Allied Site not be permitted past its current operational limits of 2010 or 2012, so what happens after that site is closed or at capacity? Also what happens if the County ceases to operate the Imperial site which may be a real possible? | LAFCO-14 |
| 15) | Pg. 5.9-1: Exhibit 5.9-1. If this is indeed the total project study area for traffic for this project then it is completely inadequate. The County as well as LAFCO have previously indicated that traffic must be reviewed on a regional basis. Therefore at the very least, an analysis of McCabe and Dogwood Rd. intersection must be addressed, as must McCabe and Clark Rd., SR 86 and Dogwood, and McCabe and Austin. In addition the road segments to these intersections must be addressed. | LAFCO-15 |
| 16) | Pg. 6-2 under Cumulative we have the following comments:
a. Agriculture: Previously stated that there are impact mitigations that can be achieved.
b. Air Quality, we will defer to the APCD.
c. Traffic. Already noted that traffic analysis is incomplete and does not address regional impacts. | LAFCO-16 |
| 17) | Regional Medical Center: It is our understanding that EC policy requires that "health" services be addressed. We did not find a section dealing with the EC Hospital or Health Services in general. Is this not applicable to all Projects? | LAFCO-17 |

Thank you for the opportunity to comment on this project. If you have any questions, please contact us.

Sincerely


Jurg Heuberger, CEP
Executive Officer to LAFCO

Cc: Ruben, Duran, City Manager
Terry Hagen, City Public Works
Bill Brunet, County Public Works
Steve Birdsall, APCO
Robertta Burns, County CEO
Joanne Yeager, LAFCO Counsel
Darrell Gardner, Assist. County Planning Dir.
California Highway Patrol
CALTRANS, B. Figge and M. Orso
Ralph Cordova, County Counsel
Files: 10.105, 10.124, 10.130, 10.133, 10.134, 10.175, 10.258, 50.000, 50.004, 50.008, 50.009, 50.010, 50.018

JH/ca.S:/LAFCO/EI Centro/EC 1-05 Willowbend/response to Willowbend DEIR 08-11-06-Certified

3.2.3 - County Agencies

Imperial County Local Agency Formation Commission, August 13, 2006 (LAFCO)

Response to Comment LAFCO-1

In accordance with California Public Resources Code §21092, the City of El Centro posted the Notice of Availability of the DEIR in the Imperial Valley Press at the time of the commencement of the public review period for the DEIR. The posting included the start and end date for the 45-day review period for the DEIR.

Response to Comment LAFCO-2

Presently there is no formal program that has been implemented in the County of Imperial for the mitigation of the conversion of agricultural lands through the purchase and/or dedication of agricultural land offsite to be placed in a Williamson Act trust or the negotiation of a Williamson Act trust between a project applicant and a farmer not currently in a Williamson Act contract.. Therefore this is not considered feasible mitigation. The proposed project will result in a significant unavoidable impact in relation to the conversion of designated farmland and the City of El Centro will prepare a State of Overriding Considerations in relation to this impact.

Response to Comment LAFCO-3

The comment regarding air Quality mitigation measures is noted. Please see Response to Comment ICAPCD-1 through ICAPCD-8.

Response to Comment LAFCO-4

The proposed project will not result in any-project related long-term traffic related noise impacts. However, under the cumulative scenario, the project site will experience a traffic related noise impact without mitigation. The project will include the construction of a 6-foot high sound wall (see Mitigation measure N 6-1). This measure is included on page 2-15 (Executive Summary Table 2-1) and page 6-8 of the DEIR.

Response to Comment LAFCO-5

Allied Landfill has the capacity for the next 15 years. The proposed project is to be built out by the year 2008 and as such it is well within the near term capacity factored into the landfill volumes.

Response to Comment LAFCO-6

Katz Okitsu & Associates in conjunction with the City of El Centro determined the project site study area, which is considered to be conservative. As stated in the Traffic Impact Study, which is contained within Appendix I of the DEIR, the scope of the study area was based on a review of on-

going traffic studies and a working knowledge of the local transportation system. Regional guidelines (e.g. City of San Diego, SANTEC, SANDAG CMP etc.) require a study area to include any intersection that the project will add 50 or more peak hour peak direction trips. It was determined that the proposed project individually and cumulatively would not contribute traffic volumes along South 4th Avenue at a rate that was considered to have a potential impact. (i.e. 50 or more peak hour direction trips).

Response to Comment LAFCO-7

Please see Response to Comment LAFCO-2.

Response to Comment LAFCO-8

The mitigation measures described in the Traffic Impact Study improve all segments and intersections to a level of service (LOS) D or better, which is considered acceptable. Three of the ten improvements mitigate to LOS D, all other mitigation measures improve the level of service to LOS C or better. Other regional guidelines (e.g. City of San Diego, SANTEC, SANDAG CMP etc.) identify LOS D as an acceptable level of service, which is considered acceptable with the City of El Centro's roadway and intersection significance criteria.

Response to Comment LAFCO-9

The study area for the proposed project includes those locations that are expected to be affected by the project. As discussed in the Traffic Impact Study, included in Appendix I of the DEIR, the scope of the study area is based on a review of on-going traffic studies and a working knowledge of the local transportation system. Regional guidelines (e.g. City of San Diego, SANTEC, SANDAG CMP etc.) require a study area to include any intersection that the project will add 50 or more peak hour peak direction trips. For this traffic study we have analyzed eight intersections, three of which will experience less than 50 additional trips in the peak hour peak direction as a result of the proposed project. Therefore, the study area is conservative.

The existing signalized intersection spacing on SR-86 south of I-8 between Wake Avenue and Dannenberg Road is 1,500 feet. The signalized intersection spacing between Dannenberg Road and Horne Road would be 600 feet. This signal would improve safety for left-turning vehicles from Horne Road to SR-86. Please see Response to Comment CALTRANS-1.

Response to Comment LAFCO-10

The developer will be required to pay two fees: The Development Impact Fee (DIF), which is paid at the time building permits are pulled. The DIF funds are allocated to cover any additional capital

improvement costs brought up by the project. The second fee (which is paid prior to the recordation of the final map) is for police and fire services. These are fees collected for hiring additional fire and police personnel that may be required due to the impact of the project.

Response to Comment LAFCO-11

Please see Response to Comment LAFCO-10.

Response to Comment LAFCO-12

As stated on page 5.8-9 of the DEIR,

In accordance with SB 50, the project proponent will be required to pay a school impact fee to each affected school district, to help fund new and expanded classroom and support facilities. Currently the McCabe Union Elementary School District and Central Union High School District impose fees of \$2.57 and \$2.01 per square foot of residential development respectively; however, impact fees are determined by the findings of the annual School Facilities Needs Analyses prepared by each school district throughout the State. Therefore, homebuilders will be required to pay the school impact fee as published at the time of issuance of building permits. As cited in the Government Code Section 65995, the payment of this statutory fee, "is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization.

Therefore, potential impacts on schools would be less than significant.

Response to Comment LAFCO-13

The comment is noted. In Table 5.8-13 on page 5.8-12 of the DEIR, the City currently has a deficit of 13.3 acres of parkland. As stated on page 5.8-12 of the DEIR, buildout of the City of El Centro General Plan would necessitate the provision of additional parkland to maintain the City's parkland standard of 3.0 acres per 1,000 persons. New development is conditioned to provide all the land and improvements required to achieve the parkland standard.

Response to Comment LAFCO-14

The comment is noted. Table 5.8-17 has been eliminated from the document. This correction is included in Section 4, Errata of this document. Please see Response to Comment LAFCO-5.

Response to Comment LAFCO-15

In the peak hour peak direction, the project is adding less than 5 trips to McCabe Road. This number of project trips is negligible and will not cause a significant impact. Austin Road will experience even less of an increase in traffic due to the project. Please see Responses to Comments LAFCO-6 and LAFCO-9.

Response to Comment LAFCO-16

The comment is noted. The proposed project will require a Statement of Overriding Consideration for the significant and unavoidable impacts to farmland.

The City of El Centro in conjunction with Katz Okitsu & Associates determined the intersections and roadway segments to be included within the study area based upon the project's traffic generation and distribution. As stated in the Traffic Impact Study (Appendix I of the DEIR), the scope of the study area is based on a review of on-going traffic studies and a working knowledge of the local transportation system.

Response to Comment LAFCO-17

The City of El Centro does not have a policy requiring the analysis of health services.



COUNTY OF IMPERIAL

PUBLIC HEALTH DEPARTMENT

DIVISION OF ENVIRONMENTAL HEALTH SERVICES

Courthouse • 939 Main Street - B7 • El Centro, CA 92243
Phone (760) 482-4203 • FAX (760) 352-1309

ROBIN HODGKIN, M.P.A.
Director

MARK JOHNSTON, R.E.H.S., Division Supervisor

STEPHEN W. MUNDAY, M.D., M.S.
Health Officer

RECEIVED

August 21, 2006

AUG 25 2006

Mr. Jurg Hueberger, Director
Imperial County Planning and Development Dept.
801 Main Street
El Centro, CA 92243

PLANNING DEPT.
CITY OF EL CENTRO

Subject: Draft Environmental Impact Report for City of El Centro Zone Change 05-05 and Tentative Subdivision Map (Willow Bend), SCH #2005101128

Dear Mr. Heuberger:

The Imperial County Public Health Department's Division of Environmental Health Services appreciates the opportunity to comment on the above subject document. Environmental Health Services has completed its review of the document and has the following comments:

Section 5.8.6 – Potable Water

- The DEIR states the City of El Centro uses an average of 244 million gallons per month, which equals to approximately 8 millions gallons per day (mgd). As part of the projects potential impact on the City's ability to provide potable water to its residents, the project does not appear to analyze the current demands on the City's existing 13.5 mgd capacity plant. Also, the project's assessment does not appear to account for the City's peak summer demand of 12.5 mgd. At a minimum, this project should assess its potential impacts in relation to the demands of already authorized future residential and commercial developments.

ICPHD-1

Section 5.8.7 – Wastewater

- The DEIR states the City of El Centro generates an average of 4.25 million gallons per day (mgd) and has a design capacity of 8 mgd. The project does not appear to analyze the potential impacts associated with peak demands nor does it assess the projects potential impact in relation to the demands of already authorized future residential and commercial developments.

ICPHD-2

Section 5.8.8 – Solid Waste

The DEIR identifies Allied Imperial Landfill as the City of El Centro's "primary" landfill for disposal. The DEIR does not discuss any vehicle trip limitations for the landfills. The Allied Imperial Landfill is permitted for a 174 vehicle trips per day, whereas, the Imperial and Calexico Solid Waste Site's are permitted for 50 and 75 vehicle trips per day, respective.

ICPHD-3

Although, the DEIR identifies the Imperial and Calexico Solid Waste Sites as alternative landfills for handling the City of El Centro's generated solid waste, both facilities have significantly reduced

ICPHD-4

permitted maximum daily tonnage and permitted vehicle trips. In order for either one of the County operated landfills (Imperial Solid Waste Site or Calexico Solid Waste Site) to meet the needs of the City's daily peak flow, one or both landfills will require permit revisions in order to meet the city's daily solid waste disposal needs.

ICPHD
CONT

Secondly, the City of El Centro currently contracts with Allied Waste for the collection and disposal of City's residential and commercially generated solid waste. The DEIR leads the reviewer to believe the City could direct the disposal of their solid waste to one of or a combination of the three identified landfills.

ICPHD

The DEIR should reflect the impacts the project would have in relation to approved future residential and commercial developments. In addition, the project should reflect the impacts on the City's existing solid waste collection and disposal operation with respect to remaining site life of the Allied Imperial Landfill.

ICPHD

Storm Water Retention Basins

- Although the DEIR does not elaborate on the management of the proposed projects storm water retention basins, required routine maintenance of the basins is critical for minimizing and or eliminating the potential for mosquito breeding and the potential spread of the West Nile Virus.
- The property owner should be required to assign qualified maintenance personnel for periodic inspection and cleaning out of the retention basins on a routine frequency or on a frequency as determined by the Imperial County Mosquito Abatement District. Basin maintenance should include, but is not limited to, the removal of woody vegetation, trash, debris, and any other foreign material from the basin and drainage system. The property owner is required to maintain an access road to and around the basin. The basin should only receive water from storm events. All other fugitive or "nuisance" water (landscape water, etc.) should be conveyed through a grease/oil separator to an Imperial Irrigation District drain, if consistent with IID requirements, this will require engineering of the drainage system to prevent routine discharges of nuisance water into the storm water basin and the resulting marshy conditions that breed mosquitoes.

ICPHD

ICPHD

Furthermore, the storm water retention basin must be engineered to prevent standing water longer than 72 hours. In the event that this design is not possible, a mosquito abatement program shall be drafted for review and approval by the Imperial County Mosquito Abatement District.

ICPHD

Lastly, section 5.6.1 of the Hazardous and Hazardous Materials section references the "California Department of Health Services – Toxic Substances Control Division (DTSC)". During the '90s major organizational changes took place within California's environmental regulatory programs. With the Governor's Reorganization Plan, the California Environmental Protection Agency (Cal/EPA) (July 17, 1991) was created. Under this order, the Toxic Substances Control Program under DHS became the new Department of Toxic Substance Control (DTSC). You may want to update your resources.

ICPHD

Should you have questions, please do not hesitate to contact me at 760-482-4203.

Sincerely,



Jeff Lamoure, REHS III
Environmental Health Services

Cc: Oliver Alvarado, City of El Centro, Planning Department
G:\Solid Waste\Other Solid Waste\DEIR for Zone Change Willow Bend Project in EC 8-21-06.doc

County of Imperial Public Health Department, August 21, 2006 (ICPHD)

Response to Comment ICPHD-1

The water treatment plant's existing capacity is 13.5 mgd. The average daily demand is 8 mgd per day. On peak days, demand is approximately 12.5 mgd. The city is currently planning the expansion of the water treatment facility to twice its existing capacity within the next two years. As an interim solution to water treatment needs, the City has completed filter upgrades to the existing plant thereby increasing capacity to 17 mgd.

Response to Comment ICPHD-2

The wastewater treatment plant capacity is 8 million gallons per day (mgd) and the project demand capacity for the City for 2005 was 4.1 mgd. The City has no plans for constructing a second wastewater treatment plant or expanding the existing plant. Therefore, with the payment of the mandatory development impact fees, the proposed project would not result in significant impacts to sewer services.

Response to Comment ICPHD-3

While residents may dispose of their waste at any County landfill for a fee, it is noted that the primary landfill serving the site will be the privately operated Allied Landfill. Waste will be hauled from the project site by a private hauler contacted with the City. It is noted that currently the City contracts with Allied Waste to haul residential solid waste to the Allied Landfill. Allied Imperial Landfill is a 42-acre landfill that opened in January 2000 and has a closure date of 2012. An additional 160 acres have been purchased, 100 acres, which will be used as a landfill and 60-acres, which will be used as a buffer. This additional acreage has a 30-year capacity and will be able to accept 1,000 tons of solid waste per day for a fee, the primary landfill serving the site is the Allied Landfill. This correction is included in Section 4, Errata, of this document.

Response to Comment ICPHD-4

Please see Response to Comment ICPHD-3.

Response to Comment ICPHD-5

Please see Response to Comment ICPHD-3.

Response to Comment ICPHD-6

Please see Response to Comment ICPHD-3.

Response to Comment ICPHD-7

The proposed project is required to be consistent with the California Health and Safety Code, which addresses mosquito abatement through appropriate design. All retention facilities and drainage improvements of the project will be installed in accordance with the City's Retention Basin Standards. The primary purpose of the Retention Basin Standards is to reduce the maximum flow rate and load on the stormwater drainage collection system, which is currently operated and maintained by the Imperial Irrigation District. The standards also incorporate pollution control and groundwater recharge concepts.

Response to Comment ICPHD-8

Please see Response to Comment ICPHD-7.

Response to Comment ICPHD-9

Please see Response to Comment ICPHD-7.

Response to Comment ICPHD-10

The comment is noted that the former California Department of Health Services – Toxic Substances Control Division (DTSC) is now the Department of Toxic Substances Control.



County of Imperial

Building Roads into the Next Century

PUBLIC WORKS DEPARTMENT

RECEIVED

SEP 08 2006

PLANNING DEPT.
CITY OF EL CENTRO

September 6, 2006

Mr. Oliver Alvarado, Planning Director
City of El Centro Planning Department
1275 Main Street
El Centro, CA 92243

SUBJECT: Draft Environmental Impact Report for City of El Centro Zone Change
05-05 and Tentative Subdivision Map (Willow Bend)

Dear Mr. Alvarado:

This letter is in response to the above mentioned Draft EIR received August 11, 2006 and prepared by Michael Brandman Associates.

The project site is located in the County of Imperial, within the Sphere of Influence of the City of El Centro, California. The 38 acre project site is located east, south, and west of the City of El Centro jurisdictional boundaries, approximately 0.9 mile south of Interstate (I) 8 in Tract 83, of Township 16 South, Range 14 East, of the United States Geological Survey El Centro 7.5- minute topographic. Specifically, the proposed project site is situated north of McCabe Road, east of 8th Street, west of 4th Street (State Route (SR) 86)

The project includes the subdivision of 38 acres of farmland to provide for 131 single-family residential lots, 3.02-acre retention basin, and 1.67-acre park. Project site access is via SR-86 and two project access drives (Willow Bend Drive and Countryside Drive.)

The EIR was reviewed and this Department offers the following comments:

1. Section 5.9 page 2-14 (Transportation and Traffic) it currently states that with the implementation of the proposed project all intersections and road way segment will operate at an acceptable LOS. Table 5.9-11; Year 2008 roadway segment capacity reflect a LOS of D for roadway segment for Hwy.86 from McCabe Road to project access. (Please clarify).
2. Although the project will ultimately lie within the City of El Centro, the County is concerned primarily with the additional traffic impacts and resulting burden to the surrounding County road network which provides regional and interregional movement of people goods and services. It is therefore requested that the Traffic Impact Study include the following segments and all included intersections.

ICPWD-1

ICPWD-2

Road Segments

- McCabe Road from Dogwood Road to State Route 86.
- McCabe Road from Austin Road to La Brucherie Road.
- McCabe Road from Clark Road to State Route 86.
- McCabe Road from Clark Road to La Brucherie Road.

ICPWD-2
CONTRoad Intersections

- Dogwood Road and McCabe Road (North and South)
- La Brucherie Road and McCabe Road.
- Clark Road and McCabe Road.
- Austin Road and McCabe Road.

3. County Requires Level of service "C" in analysis and anything less than "C" is not acceptable in the County road segments and Intersections. Table 6-5 Intersection level of service for Near-term Conditions, States LOS of D for the following Intersection which are under County jurisdictions State Route 86 / Heber Road and State Route 86 / McCabe Road. The Fair share cost toward the signalization of both Intersections shall be approved by the Director of Public Works for Imperial County.
4. Section 5.9 Transportation and Traffic; page 5.9-1; Under Regulatory Conditions it states there are no federal, state, or local regulatory standards that are applicable to approval of the proposed project. Our department believes that Caltrans must be contacted due to the project location and impact to Hwy 86 and Hwy.8.
5. Section 5.9; Physical Conditions:
 - a) McCabe Road is currently classified as a minor Arterial under the current (County Circulation Element of the General Plan) requiring 102 feet of right-of-way.
 - b) Horne Road is currently classified as a local County road requiring 60 feet of right-of-way.
6. Page 2-15 (Transportation and Traffic near term scenario Intersections) McCabe Road and Horne Road are currently under County jurisdiction. Although they intersect with SR-86, any proposed work impacting County right-of-way will involve securing an encroachment permit from Public Works Department. This includes any wet or dry utilities, signage, etc.
7. Section 5.8.8; Solid Waste; Under *Landfills* it states that solid waste generated in the City of El Centro is disposed of at one of the three landfills in Imperial County. The three landfills include the Imperial Solid Waste Site and the Calexico Solid Waste Site which are operated by the County of Imperial Public Works Department.

The statement mentioned above is inaccurate. Residents of the City of El Centro may be allowed to dispose any waste at County landfills; but are charged a disposal fee. The City of El Centro has a Solid Waste Disposal contract with a private hauler and utilizes a private landfill. There is no existing contract between City and County for disposal of city waste at County landfills.

ICPWD-3

ICPWD-4

ICPWD-5

ICPWD-6

ICPWD-7

Mr. Oliver Alvarado

-3-

September 6, 2006

- | | |
|---|----------|
| 8. Page 6-16 Table 6-7 (Horizon year 2025 Roadway Segment Condition) State Route 86 should read : Between McCabe Road and project access (South of <u>Horne</u> Road) | ICPWD-8 |
| 9. Section 5.9.1 Existing Conditions; Dogwood Road; Austin Road, La Brucherie Road, and Clark Road should be included in the analysis of the principal roadways in the existing project circulation system. | ICPWD-9 |
| 10. Section 5.9.1 Existing Conditions, Under Level of Service Criteria. Even though this project will be under City of El Centro jurisdiction, there are some County's Road Segments and Intersections that will be greatly impacted. Therefore mentioned of Imperial County General Plan Circulation Element should be provided. | ICPWD-10 |
| 11. Table for Horizon year 2025 for roadway Intersection where not included as part of Draft EIR. | ICPWD-11 |

Thank you for the opportunity to review and comment on this Draft EIR.

Should you have any questions, please do not hesitate to contact myself at (760) 482-4462

Respectfully,

William S. Brunet, P.E.
Director of Public Works

By: 

Manuel Ortiz
Assistant County Engineer

LL/ga

County of Imperial Public Works Department, September 6, 2006 (ICPWD)

Response to Comment ICPWD-1

Level of service D is considered an acceptable level of service according to the significance standards of this analysis. These standards are consistent with other regional adopted guidelines (e.g. City of San Diego, SANTEC, SANDAG CMP etc.).

Response to Comment ICPWD-2

Please see Response to Comments LAFCO-6 and LAFCO-9.

Response to Comment ICPWD-3

The traffic study does not analyze the intersection of SR-86/Heber Road. The level of service after mitigation at SR-86/McCabe Road is LOS C. Therefore, there appears to be a discrepancy in the comment.

Response to Comment ICPWD-4

Mitigation measures contained within Section 6 of the DEIR are in accordance with the Memorandum of Understanding (MOU) between CALTRANS and the City of El Centro regarding State Route 86. CALTRANS reviewed and commented on the DEIR and the associated Traffic Impact Study. Please see Response to Comments CALTRANS-1 through CALTRANS-9.

Response to Comment ICPWD-5

The clarification is noted that McCabe Road is currently classified as a minor arterial requiring 102 feet of right-of-way and that Horne Road is currently classified as a local County road requiring 60 feet of right-of-way. These revisions are included in Section 4, Errata, of this document.

Response to Comment ICPWD-6

The comment is noted. The project applicant will obtain an encroachment permit from the County of Imperial Public Works Department for any improvements that occur within the right-of-way of McCabe Road and Horne Road.

Response to Comment ICPWD-7

The comment is noted that residents of the City of El Centro may dispose any waste at any County landfill for a disposal fee. The correction is included in Section 4, Errata, of this document.

Response to Comment ICPWD-8

The correction is noted and is included in Section 4, Errata of this document.

Response to Comment ICPWD-9

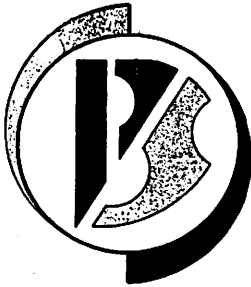
Please see Response to Comment LAFCO-9 regarding roadways within the study area.

Response to Comment ICPWD-10

Please see Response to Comment LAFCO-9.

Response to Comment ICPWD-11

The Table for Horizon Year 2025 Roadway Segment Conditions is included as Table 6-7 on page 6-16 of the DEIR and as Table 6-1 on page 33 of the Traffic Impact Study, which was included as Appendix I of the DEIR.



IMPERIAL COUNTY

PLANNING & DEVELOPMENT SERVICES

PLANNING / BUILDING INSPECTION / ECONOMIC DEVELOPMENT / PLANNING COMMISSION / A.L.U.C.

CERTIFIED MAIL 7003-2260-0003-7208-0259

JURG HEUBERGER, AICP, CEP, CBO
PLANNING & DEVELOPMENT SERVICES DIRECTOR

September 12, 2006

RECEIVED

City of El Centro
1275 Main Street
El Centro, CA 92243

SEP 18 2006

PLANNING DEPT.
CITY OF EL CENTRO

Attention: Oliver Alvarado, Planning Director

**Subject: Response to City of El Centro "Draft Environmental Impact Report"
Zone Change 05-05 and Tentative Subdivision for Willow Bend
(EC1-05)**

Dear Oliver:

The Planning & Development Services Department has on August 11, 2006, received the City's Draft Environmental Impact Report (DEIR), SCH #2005101128 (dated August 9, 2006) for the above Zone Change and Tentative Subdivision Map for the Willow Bend project for review and comment. There was no City cover letter indicating what the deadline for submission of comments (typically a 45-day comment period) ending approximately on **September 20, 2006**.

Please find the following comments on the City's DEIR document:

- (1) On page iv, Table of Contents, Listing of Appendices, the DEIR apparently does not have a Fiscal Impact Analysis (FIA) included within the document. Has a Fiscal Impact Analysis been prepared by the City for the Willow Bend project? If so, it should be made an attachment to the Final EIR for public review purposes.

ICPDS
1

Are the ADT's generated by this project consistent with the Fiscal Impact Analysis? Without the benefit of having the FIA to review, a comprehensive comment on this document cannot be provided at this time.

- (2) In the "Notice of Preparation" for the project, the project is defined as the subdivision and zone change for a 38-acre agricultural parcel into "...**120** single-family units..." However, within the DEIR, Section 2: Executive Summary, 2.1 - Proposed Project, page 2-1, it states that the project "...includes the subdivision of 38 acres of farmland to provide for **131** single-family residential lots..." This is also identified in numerous places throughout the DEIR. Also, within the Appendices, Appendix I, Traffic Impact Study, 1.0, The Project, Project Description, states "...The project consists of **131** single-family dwelling units..."

ICPDS
2

Also, within the 5.2 – Air Quality, Section 5.2.2 – Project Impacts, page 5.2-11, it states “...The proposed project accommodates a maximum of 126 single-family residential dwelling units...” The Final EIR should clarify the correct number of single-family residences that are projected to be constructed for this project and explain any discrepancies.

ICPD
3

(3) On page 5.6-3, the Date Drain is discussed and it is not clear whether or not this drainage ditch is within the development area. If so, how will this drainage ditch be handled, i.e. what will be the Imperial Irrigation District's role, and what financing mechanisms will cover any costs involved? The Date Drain No. 3 is described as bounding the subject property on the “north, northeast, and west”. This should be corrected to read “north, northwest, and west” in the Final EIR.

ICPD
4

(4) The County is preparing a 50-year traffic circulation plan (Circulation/Scenic Highways Element) for the entire County. The project site is located north of McCabe Road, east of 8th Street, and West of 4th Street with two access drives proposed, i.e. Willow Bend Drive and Countryside Drive. In the future conceptually, State Route 86 is being considered as a major north-south corridor as a four lane “expressway”, approximately 134’ to 158’ in width with access points at 3/4 mile to 1 mile spacing, with highly restrictive access, no parking and raised/landscaped medians.

The proposed Zone Change and the Tentative Subdivision Map project must take into account the above criteria and the Final EIR should clarify the spacing for the two access driveways into the Willow Bend project site as it relates to access onto State Route 86.

ICPD
5

Within Section 5.9, the traffic impact analysis appears to be narrowly addressing the specific project area and not on a “regional” basis. The City’s consultant who prepared Appendix I, Traffic Impact Study, only references the “El Centro General Plan Circulation Element (2004)” and does not address the 50-year plan that the County, various cities and CALTRANS have been discussing for a coordinated effort at managing future traffic circulation patterns throughout the County. The Final EIR should address other County roads and intersections, e.g. McCabe and Dogwood Road, McCabe and Clark Road, State Route 86 and Dogwood, McCabe and Austin Roads as to their rights-of-way, roadway capacities and spacing onto State Route 86, to ensure that both County roads and City streets are adequately analyzed for this project.

(5) The Cumulative Impacts, Air Quality Section, page 6-5, under “Mitigation Measures”, it states that “...the proposed project will incrementally contribute to a significant cumulative effect because the project emissions combined with emissions from all other projects in the Salton Sea Air Basin will form cumulatively considerable air quality impacts with regard to these pollutants...”

ICPD
6

This section goes on to state "...See mitigation measures..." but does not indicate whether or not the City Council will prepare a "Statement of Overriding Consideration" for the air quality impacts of the Willow Bend project.

The Imperial County Air Pollution Control District should be contacted to determine the "cumulative" emissions from previously approved City projects and the Final EIR should clarify and ensure that all applicable air quality impacts have been appropriately mitigated.

ICPDS
6
CONT

- (6) Within Section 8, Other CEQA Considerations, 8.1 – Significant Unavoidable Impacts, page 8-1, it states that "...the conversion of agricultural land to urban uses would constitute a significant loss of Prime Farmland or Farmland of Statewide Importance. Potential impacts in this regard would be significant and unavoidable under CEQA. No feasible measures are available from the project applicant to reduce this potential impact to a level less than significant. However, the project site meets LAFCO criteria to be converted from agricultural use to urban use, and impacts would be less than significant in this regard..."

ICPDS
7

The Final EIR should clarify how this statement of the conversion of agricultural lands and the meeting of LAFCO criteria would reduce this proposed conversion of agricultural land to a "less than significant" impact.

- (7) Within Section 9, Organizations and Persons Contacted, 9.1 – Public Agencies, it identifies a number of agencies but does not include CALTRANS, State agencies, or any of the Imperial County Departments that would be affected by the Willow Bend Zone Change and Tentative Subdivision Map project.

ICPDS
8

The Final EIR should add these agencies or explain why they were not contacted with regard to the Willow Bend project.

- (8) Within Section 11: References, page 11-1, the various references that are identified do not include any County documents that are impacted by the converting of agricultural lands within the County, i.e. the "Agricultural Element", the "Urban" area classification within the County's General Plan, Land Use Element, and future cumulative traffic impacts associated with the project as they relate to the existing County "Circulation/Scenic Highways Element".

ICPDS
9

There are a few "typos" found within the document, e.g. on page 6-17, within the footnote it states, "...Please note that TIS indicates that there is a 2025 Future Year Impact along SRj-86 between McCabe Road and the project access...", the "SRj-86" should read "SR-86"; and on page 10-1, Section 10: Report Preparation Personnel, 10.1 – EIR Preparation Personnel, Lead Agencies, Local Agency Formation Commission, "Jerg Heuberger, Executive Officer" should read "Jurg Heuberger".

ICPDS
10

In Summary:

With the above concerns addressed in the Final EIR, we continue to look forward to working with the City of El Centro and other affected agencies on the proposed Willow Bend Zone Change, Tentative Subdivision Map, and annexation of the project site.

If you have any questions on the above, please contact me at (760) 482-4236, extension 4279, or via e-mail at darrellgardner@imperialcounty.net.

ICPDS
11

Sincerely,


Darrell Gardner, Assistant Director
Planning & Development Services

CC: Robertta Burns, County Executive Officer
Ralph Cordova, County Counsel
Jurg Heuberger, LAFCO Executive Officer
Joanne L. Yeager, Assistant County Counsel
Stephen L. Birdsall, Ag. Comm/APCD
William R. Brunet, Public Works Director
Bill Figge, CALTRANS, District 11
Terry Hagen, El Centro Public Works Director
Jim Minnick, County Planning Division Manager
WillowBend (EC1-05)
Files: 10.101, 10.105, 10.124, 10.130, 10.133, 10.134, 10.175, 10.258
50.000, 50.004, 50.008, 50.009, 50.010, 50.018

JH/DG/JM/RCLF/ID/S:/LAFCO/El Centro/Willow Bend (EC1-05)/WillowBendDEIRResponseLetter

Imperial County Planning and Development Services, September 12, 2006 (ICPDS)

Response to Comment ICPDS-1

This comment is noted. Preparing a Fiscal Impact Analysis (FIA) is not required under CEQA, and therefore no FIA was prepared for the proposed project.

Response to Comment ICPDS-2

As noted, the proposed project will include the subdivision of 38 acres of farmland to provide for 131 single-family dwelling units.

Response to Comment ICPDS-3

Please see Response to Comment ICPDS-2 above. The Final EIR will consistently identify the number of proposed dwelling units as 131.

Response to Comment ICPDS-4

The comment is noted that the Date Drain is located north, northwest, and west side of the project site. This correction is included in Section 4, Errata, of the document. It is the policy of the Imperial Irrigation District that canals be undergrounded as part of development. The project applicant will be responsible with costs associated with the undergrounding of this portion of the canal. The undergrounding of the canal is required to be in compliance with the *IID Water Department Requirements and Project Process* (March 18, 2005), which addresses general irrigation and discharge issues and mitigation of impacts on IID's irrigation and drainage system. The document also details how a project is processed through the IID.

Response to Comment ICPDS-5

Please see Response to Comment LAFCO-9 regarding the traffic study area and the existing spacing of signalized intersections along SR-86.

Response to Comment ICPDS-6

The proposed project will require a Statement of Overriding Considerations for cumulative air quality impacts. The Imperial County Air Pollution Control District (ICAPCD) was contacted during the preparation of the DEIR. In addition, the ICAPCD had the opportunity to comment on the DEIR, please see Response to Comment ICAPCD-1 through ICAPCD-8.

Response to Comment ICPDS-7

The Imperial County Local Agency Formation Commission (LAFCO) has the authority to exercise its power to conserve and preserve agricultural land pursuant to the following standards:

1. LAFCO may approve a change in organization, which will result in the conversion of prime agricultural land in open space use to other uses, only if the Commission finds that the proposal will lead to the planned, orderly, and efficient development of an area. For purposes of this standard, a proposal leads to the planned, orderly, and efficient development of an area only if the Commission finds that all of the following criteria are met:
 - a. The land subject to the change in organization is contiguous to either existing developed lands or lands that have received all General Plan, zoning and subdivision map, or use permit approvals for such development.
 - b. The proposed development of the subject lands is consistent with the Sphere of Influence Plan, including the "Service Area Plan" of the affected agency or agencies.
 - c. Development of all or a substantial portion of the subject land will occur within five years. In the case of very large developments, it may approve annexation if all or a substantial portion of the subject land is likely to develop within 10 years, and appropriate assurance is made to LAFCO.
 - d. Insufficient vacant non-prime lands exist within the applicable Sphere of Influence plan, accessible and developable for the same general type of use.
2. LAFCO may approve a change in organization, which would result in the conversion of prime agricultural land in open space use to non-open space use(s), only if the Commission finds the proposal will have no significant adverse effect on the physical and economic integrity of other agricultural lands. In making this determination, LAFCO will consider the following factors:
 - a. The agricultural significance of the subject and adjacent areas relative to other agricultural lands in the region.
 - b. The use of the subject and the adjacent areas.
 - c. Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of adjacent or nearly agricultural lands, or will be extended through or adjacent to, any other agricultural lands, which lie between the project site and existing facilities.
 - d. Whether natural or man-made barriers serve to buffer adjacent or near by agricultural land from the effects of the proposed development.
 - e. Applicable provisions of the General Plan open space and land use elements, applicable growth-management policies, or other statutory provisions designed to protect agriculture.

3. The LAFCO will comment upon, whenever feasible, Notices of Preparation (NOP) for Environmental Impact Reports that propose the pre-emption of large tracts of open space and agricultural lands and that are not scheduled for urbanization within a five-year period. Potential adverse impacts related to the loss of open space or agricultural land also will be commented upon by LAFCO.
4. LAFCO will discourage the conversion, particularly the premature conversion, of agricultural lands to non-agricultural (i.e., urban) planned uses in or around areas that are not planned for urban uses by the County General Plan. LAFCO will also evaluate and discourage the conversion of "prime agricultural land" or land of "state wide significance" if the City or District has other lesser "quality" agricultural lands available that would be compatible

As stated on page 5.1-7 and 5.1-8 of the DEIR,

Imperial County LAFCO regulates the conversion of agricultural land to urban uses by virtue of its authority to approve or deny annexations of unincorporated areas into incorporated cities. To determine if agricultural land is being prematurely converted to urban uses, LAFCO has specific threshold criteria it uses to evaluate individual annexation applications. That criteria is summarized in 5.1.2 Regulatory Framework. Below is discussion of the proposed project's consistency with LAFCO agricultural conversion criteria:

The east side of the project site is immediately adjacent to the City of El Centro limits and urban uses within the city limits. This satisfies LAFCO requirements for contiguousness with existing or planned urban development.

The project site is within a Tier II Growth Area, as defined by the City of El Centro General Plan. There are three Tiers, I, II, and III, and their designation reflects the availability of infrastructure to support urban development. Tier I is the "Current Service Area;" Tier II is the "Planned Urban Service Area;" and Tier III is the "Future Urban Service Area." As the project site is in Tier II, it contains land adjacent to the city limits, but contains limited infrastructure. Note that the General Plan states that the Tier Growth Areas numbering system reflects the infrastructure necessary to serve planned development and is not intended to be a sequence of future development. Regardless, the proposed project is consistent with the Urban Service Plan of the City of El Centro.

Finally, the project site is expected to be developed within the next five years because insufficient available land of similar acreage to the project site exists within the El Centro city limits. The absence of developable land of this size within the limits of the City of El Centro and the demand for new housing creates the reasonable expectation that the project site will

be converted to urban uses within the next five years. This condition satisfies the last two LAFCO requirements.

In summary, the project site meets LAFCO criteria to be converted from agricultural use to urban use. Impacts would be less than significant in this regard.

However, as outlined in Appendix G of the CEQA Guidelines, a project will have a significant unavoidable impact if it results in the conversion of prime farmland. Therefore, the proposed project will have a significant and unavoidable impact in this regard and will require the City of El Centro to adopt a Statement of Overriding Considerations in relation to the conversion of prime farmland to urban uses.

Response to Comment ICPDS-8

Section 9 of the DEIR includes all Organizations and Personnel contacted by MBA as part of the preparation of the DEIR. CALTRANS as with any other public agency had the opportunity to comment on the Initial Study/Notice of Preparation and the DEIR (see Response to Comments CALTRANS-1 through CALTRANS-9). Public Agencies, such as CALTRANS or the Imperial County Air Pollution Control District (see ICAPCD-1 through ICAPCD-8) may have been contacted as part of the preparation of the various technical reports prepared for the proposed project and as such would be included in the reference sections of those documents, which are included as appendices to the DEIR.

Response to Comment ICPDS-9

The proposed project is within the sphere-of-influence of the City of El Centro and is proposed to be annexed into the City of El Centro. As such, the City of El Centro's General Plan is the appropriate planning document in regards to plan consistency.

Response to Comment ICPDS-10

The comment regarding the County working with El Centro is noted in regard to the typos.

Response to Comment ICPDS-11

The comment is noted.

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850



ICAPCD
PAGE 1 OF 3

TELEPHONE: (760) 482-4606
FAX: (760) 353-9904

September 18, 2006

RECEIVED

CITY MANAGER
2006 9 20 11:36
CITY OF EL CENTRO

Mr. Oliver M. Alvarado, AICP
Director of Planning & Housing
City of El Centro
1275 Main Street
El Centro, CA 92243-2816

SEP 22 2006
PLANNING DEPT.
CITY OF EL CENTRO

SUBJECT: Draft Environmental Impact Report; Zone Change 05-05; Tentative Subdivision Map for Willow Bend

Dear Mr. Alvarado:

The Draft Environmental Impact Report (EIR), Zone Change 05-05 and Tentative Subdivision Map for the Willow Bend project has been reviewed. Thank you for giving the Imperial County Air Pollution Control District (Air District) an opportunity to review this project. The project review includes 38 acres of farmland that will be converted into 131 single-family residential lots with a 3.02 acre retention basin and a 1.67 acre park. The Air Quality section of the Draft EIR addressed the short-term, long-term and consistency with the Air Quality Management Plan (AQMP). The Air District has strived to address the parameter analysis and possibly some misnomers or inconsistencies within the report as concisely as possible. The intentions and direction of the draft EIR are immediately evident upon reading section 2.3 – Significant Unavoidable Adverse Environmental Effects on page 2-2. “With the implementation of the mitigation measures proposed, no significant unavoidable project-related or cumulative impacts will occur, with the exception of impacts to agricultural resources and air quality....” The summary of the analysis further explains that both construction and operational impacts will be reduced to less than significant however meeting the consistency of the AQMP will exceed the AQMP projections and cause the proposed project to “result in a higher density, and more vehicle trips and vehicle miles traveled than what was anticipated in the Attainment Plan and PM-10 Plan.” Finally, the draft EIR makes the correlation that “Because the project will result in more people and more traffic than what was considered in the plan, the project is not consistent with the Attainment Plan and PM-10 Plan, and therefore would create a significant impact in this regard. No mitigation is available to reduce this significant impact to less than significant.” To this the Air District disagrees. To mitigate the increase in emissions due to local growth the CEQA Air Quality Handbook provides standard and discretionary site design & energy efficiency measures which may be applied and for the PM10 issue the application of Best Available Control Measures under the requirements of Regulation VIII are necessary.

ICAPCD-1

Table 2-1: Summary of Project Impacts and Mitigation Measures

While the summary indicates that with mitigation measures found in the CEQA Air Quality Handbook for Imperial County the impact will be reduced to "Less than significant" please be mindful that Regulation VIII is mandatory and directly tied to the reduction of PM₁₀ levels in Imperial County. The Air District would like to see those mitigation measures found within Regulation VIII listed with language indicating commitment to the implementation of those same measures.

ICAPCD-2

Section 5.2 – Air Quality

The Air District would like to see not only a complete description of the pollutants which comprise the "Ambient Air Quality Standards" but in addition, there adverse affects and the target groups which are affected. As a side note, California Ambient Air Quality Standards are not only different they are stricter than federal standards thus conformity to California standards assures conformity to federal standards.

ICAPCD-2

Similarly, the number of state violations for ozone for the year 2005 was 8 not 4 and under the federal 8 hr standard there has been no noticeable improvement.

ICAPCD-4

As clarification, please note that CEQA section 15382 which was quoted under "Thresholds of Significance," does not only call to question the "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected...." But it clearly calls for the "potentially substantial, adverse change...." Thus, the impact of a project should be examined through the characterization of "substantial or potentially substantial adverse change in any of the physical conditions within the area affected..."

ICAPCD-5

Table 5.2-3: Short-term Construction Emissions

The draft EIR indicates that with mitigation the short-term effects during the construction phase will be reduced to less than significant. Again, the Air District would like to see a very definitive tie between the CEQA mitigation measures and those of Regulation VIII, including language demonstrating commitment to these mitigation measures. Please note that the table demonstrates higher than average levels of ROG and NOx during the construction phase and thus must be mitigated.

ICAPCD-6

While the long-term emissions of the project are considered as less than significant without mitigation as a stand alone project it cannot be equally applied to the cumulative portion of the project. The potential of this project to add to the overall increase in emissions within the air basin is real and cannot be dismissed with a statement that there is no "mitigation" available. What the Air District would like see is the application of proactive solutions in design and energy efficiency.

ICAPCD-7

In closing, the Air District feels that the final analysis finding that project inconsistent with the AQMP and having a cumulative impact on air quality deserves the attention to those measures mentioned above. Should you have any questions regarding this letter, please contact Reyes Romero, Monica Soucier or myself at (760) 482 4606.

ICAPCD-8

Sincerely,

For:



Brad Foiriez
Air Pollution Control Officer

cc: Jurg Heuberger, Executive Officer, LAFCO
Joanne Yeager, LAFCO Counsel
Darrell Gardner, Asst. Planning and Development Director
Frank Fiorenza, Acting Public Works Director

Imperial County Air Pollution Control District, September 18, 2006 (ICAPCD)

Response to Comment ICAPCD-1

Because the proposed project was determined to exceed the population projections and vehicle trips contemplated for the project area in the Attainment Plan and the PM-10 Plan, the analysis of air quality impacts focused on ways to reduce vehicle trips and vehicle miles traveled. However, in reviewing the project area it was determined that logical pedestrian and bicycle paths were not feasible because of the distance to existing and proposed commercial areas, schools, parks and other logical destinations. Further exacerbating the problem is the fact that if the project included pedestrian and bicycle paths that they would not connect to any existing or proposed network of paths in the project area. For these reasons, mitigation to reduce vehicle trips was deemed infeasible.

Response to Comment ICAPCD-2

All standard and discretionary mitigation measures listed in Section 7.1 of the CEQA Air Quality Handbook for Imperial County are included in the project and listed in Section 5.2.3 of the Draft EIR. Mitigation Measure Air Quality 5.2-8, requires the applicant to provide a site specific Fugitive Dust Control Plan and include all best management practices including watering all disturbed soils a minimum of 2 times per day, covering all haul vehicles, replanting inactive disturbed areas, restricting vehicle speeds to 15 mph on unpaved roadways. Implementation of this plan would fulfill all the requirements found in Regulation VIII.

Response to Comment ICAPCD-3

Section 5.2.1 of the Draft EIR describes in detail each of the criteria air pollutants, the adverse health effects associated with each pollutant, the State and Federal Ambient Air Quality Standards for each pollutant (Table 5.2.1 of the Draft EIR), the attainment status of the State and Federal Ambient Air Quality Standards for the project area (Table 5.2.2 of the Draft EIR) for each of these pollutants, and the highest documented concentration of the criteria pollutants in the project area (Table 5.2.2 of the Draft EIR).

Response to Comment ICAPCD-4

At the time of the air quality evaluation for the project (March 2006), the California Air Resources Board (CARB) website had preliminary information concerning the number of days the project area was in violation of the State's 1-hour Ozone Standard. At that time the CARB website showed 4 violations. Since that time this information has been updated and now shows 8 days that the project area was in violation of the State's 1-hour Ozone Standard. The Final EIR will correct the information in Table 5.2.2 to show 8 days in violation of the State's 1-hour Ozone Standard.

Response to Comment ICAPCD-5

The comment is noted. CEQA Guideline Section 15382 states,

Significant effect on the environment means a substantial , or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to physical change may be considered in determining whether a physical change is significant.

Response to Comment ICAPCD-6

Mitigation Measures Air Quality 8 meets and exceeds all the requirements in Regulation VIII. Mitigation Measures Air Quality 1 through Air Quality 8, implements and exceeds all the standard and discretionary mitigation measures described in Section 7.1 of the CEQA Air Quality Handbook for Imperial County. Mitigation Measures Air Quality 1 through Air Quality 7 focuses on a reduction of exhaust emissions including NOx. Mitigation Measure Air Quality 9 substantially reduces emissions of ROCs during paint applications.

Response to Comment ICAPCD-7

See Response to Comment ICAPCD 1

Response to Comment ICAPCD-8

We concur with the District that the project's inconstancy with the AQMP and cumulative impacts to air quality deserve attention. However, as described in Response to Comment ICAPCD 1, there is not feasible mitigation that would reduce these impacts to less than significant.



BOARD OF TRUSTEES

Lee Hindman
Jacinto Jimenez
Efrain Silva
Jeanne Vogel
Steve Walker

CUHSD

RECEIVED

August 18, 2006

AUG 21 2006

PLANNING DEPT.
CITY OF EL CENTRO

Central Union High School
District

351 Ross Avenue
El Centro, CA 92243
(760) 336-4500
(760) 353-3606 FAX

Superintendent
C. Thomas Budde, Ph.D

**Assistant Superintendent
Educational Services**
Sheri L. Hart

**Director
Business & Support Services**
Orlando S. Johnson

**Director
Human Resources**
Paula M. Duffield

Central Union High School

1001 Brighton Avenue
El Centro, CA 92243
(760) 336-4300
(760) 353-3570 FAX

Principal
Emma L. Jones

Southwest High School

2001 Ocotillo Drive
El Centro, CA 92243
(760) 336-4100
(760) 353-0467 FAX

Principal
Joe Evangelist

Desert Oasis High School

1302 South 3rd Street
El Centro, CA 92243
(760) 336-4555
(760) 337-3952 Fax

Principal
Danette Morrell

Oliver Alvarado, Planning Director
Planning Department
City of El Centro
1275 Main Street
EL Centro, CA 92243

Re: Change of Zone 05-05 and Tentative Subdivision Map(Willow Bend)

Dear Sirs,

Thank you for the opportunity to respond to the Change of Zone 05-05 and Tentative Subdivision Map. The project is located within the Central Union High School District. It proposes to create 131 new housing units. Based upon the District's student yield rate factor of (.358) 9-12 students per single-family home, it is anticipated that this project will generate (47) Forty-seven 9-12 students.

This project is currently located within the attendance boundary of Central Union High School. This school's current enrollment is 1,740 and is anticipated to significantly increase within the next five years. The Central Union High School District is currently experiencing rapid residential growth, which will impact the District's existing schools. The District may be forced to change attendance boundaries due to potential overcrowding, which may affect this project.

Senate Bill 50 does not adequately fund the development of school facilities with rising land values and construction costs. The short fall is significant to the development of adequate facilities to house additional students from the Willow Bend development. If this short fall is not met it is doubtful, Central Union High School District will be able to adequately house the additional student generated from this project.

The District currently collects \$2.01 per square foot in developer fees. This fee does not adequately mitigate impacts related to students generated from new housing units. Further mitigation may be requested by the District on a project-by-project basis in order to adequately house students generated by this project and other new projects within the District.

We would like to meet with you and discuss how you can assist Central Union High School District in mitigation associated with your proposed development. Please do not hesitate to contact me at any time.

Sincerely,


Orlando S. Johnson
Director of Business & Support Services

Kara E. Palm, Project Manager
Michael Brandman Associates
220 Commerce, Suite 200
Irvine, CA 92602

CUHSD-1

CUHSD-2

CUHSD-3

CUHSD-4

CUHSD-5

3.2.4 - Local Agencies

Central Union High School District, August 18, 2006 (CUHSD)

Response to Comment CUHSD-1

The comment is noted, and confirms the data analyzed in the DEIR is correct.

Response to Comment CUHSD-2

The comment is noted that the district may be required to change its attendance boundaries

Response to Comment CUHSD-3

Please see Response to Comment LAFCO-12.

Response to Comment CUHSD-4

Please see Response to Comment LAFCO-12.

Response to Comment CUHSD-5

The comment is noted that CUHSD is willing to meet with the City to discuss the proposed project.

McCABE UNION SCHOOL DISTRICT

701 WEST McCABE ROAD • EL CENTRO, CALIFORNIA 92243
TELEPHONE (760) 352-5443 • FAX (760) 352-6812

AMANDA BROOKE
Superintendent

ARLYN ATADERO
Principal/Projects Director

BOARD OF TRUSTEES

Michael McFadden, President
Chris Legakes, Clerk
Judy Tagg, Member
Chip Corfman, Member
Mark Larson, Member

September 5, 2006

RECEIVED

SEP 06 2006

PLANNING DEPT.
CITY OF EL CENTRO

Mr. Oliver Alvarado
Planning Director
City of El Centro
1275 Main Street
El Centro, CA 92243

Subject: Comments on the Draft Environmental Impact Report for the City of El Centro
Zone Change and Tentative Subdivision Map (Willow Bend)

Thank you for the opportunity to provide comments and recommendations regarding the proposed tentative map for the above referenced project.

An analysis of the project indicates that the project involves the development of a 38-acre site into 131 single-family homes. Based on the McCabe Union Elementary School District's State approved yield rate of .83 students per dwelling unit, it appears that this development has the potential to yield 109 students as reflected in the table on page 5.8-8. Using our State approved School Facilities Needs Analysis, we estimate that each unit will be approximately 2,250 square feet. Based on this estimate, it is anticipated that the development will yield \$ 775,192 in developer fees. *With this amount added to State funding, the District is left with a gap of \$576,693 – See attached worksheet.*

MUSD-1

Additionally, there are improvements that must be made on McCabe Road and Austin Road. The current street frontages have no curbs, gutters, sidewalks, or turn lanes for access to the McCabe School site. The two streets, McCabe Road and Austin Road, are old narrow two-lane roads with a large irrigation canal immediately adjacent to Austin Road. The existing conditions create a safety hazard for students and parents accessing the McCabe School site. We have enclosed, for your review, a series of photographs illustrating the existing conditions.

MUSD-2

The McCabe Union Elementary School District has no local or State funding to provide for the construction of the necessary road improvements and, therefore, is requesting that the developer assume a fair share portion of this project. The Draft EIR states that the traffic counts were completed in October 2005 (pg. 5.9-6). Since that time, McCabe School has enrolled an additional 350 students. Moreover, in October 2005 the traffic characteristics for West McCabe Road was rated at a Level of Service (LOS) C. Therefore, it is imperative to reiterate that the study is one year old and the student population has increased by 350 students.

MUSD-3

The Draft EIR also states that the students generated by this development will attend a school placed in the Miller Burson Development. At this time, a school in the Miller Burson Development is still at the primitive planning stage.

MUSD-4

I thank you in advance for your prompt attention to this letter. If you should have any questions, please do not hesitate to call me at 352-5443. We look forward to working with the City of El Centro and the project applicant regarding the proposed project.

MUSD-5

Sincerely,



Amanda Brooke
Superintendent

Cc: Ruben Duran, City Manager
Jurg Hueburger, LAFCO
Rita Noden, City Clerk
Armando Villa, DR Horton

Willow Bend
New School Construction
McCabe Union School District

9/5/2006

Item	Calculation	K-6 Amount	7-8 Amount	Total Cost/SFU
Cost Per Student	600 ADA K-6 School on 12 Acres (\$13,000,000) 900 ADA 7-8 School on 20 Acres (\$24,500,000)	\$21,667.00	\$27,222.00	
Student Yield Factor	(.74 K-6 students per SFU; .09 7-8 students per SFU) No. of Single Family Units	\$16,033.58	\$2,449.98	\$18,483.56 131
Total Cost				\$2,421,346.36
State Grant Amounts	Per Pupil Grants	\$7,082.00	\$7,490.00	
	Fire Detection	\$9.00	\$13.00	
	Fire Sprinkler	\$135.00	\$161.00	
	Site Acquisition*	\$500.00	\$556.00	
	Site Development**	\$1,565.00	\$1,777.00	
	Sub Total State Grants	\$9,291.00	\$9,997.00	
	Plus 5% Geographical Hardship***	\$464.55	\$499.85	
	Total State Grants	\$9,755.55	\$10,496.85	
	K-6(\$9,755.55x.74), 7-8(\$10,496.85x.09) No. of Single Family Units	\$7,219.11	\$944.72	\$8,163.82 131
Total State Funding				\$1,069,460.88
Developer Fees	\$2.63 a sq ft X 2,250 sq ft X 131 Homes			\$775,192.50
Total Funding				\$1,844,653.38
Cost Gap/ For entire development				\$576,692.98
Cost Gap/ Per SFU				\$4,402.24

***Site Acquisition per SFNA**

\$25,000 per acre @ 12 acres per K-6 site = \$300,000 divided by 600 students = \$500 per student
\$25,000 per acre @ 20 acres per 7-8 site = \$500,000 divided by 900 students = \$556 per student

****Site Development per SFNA**

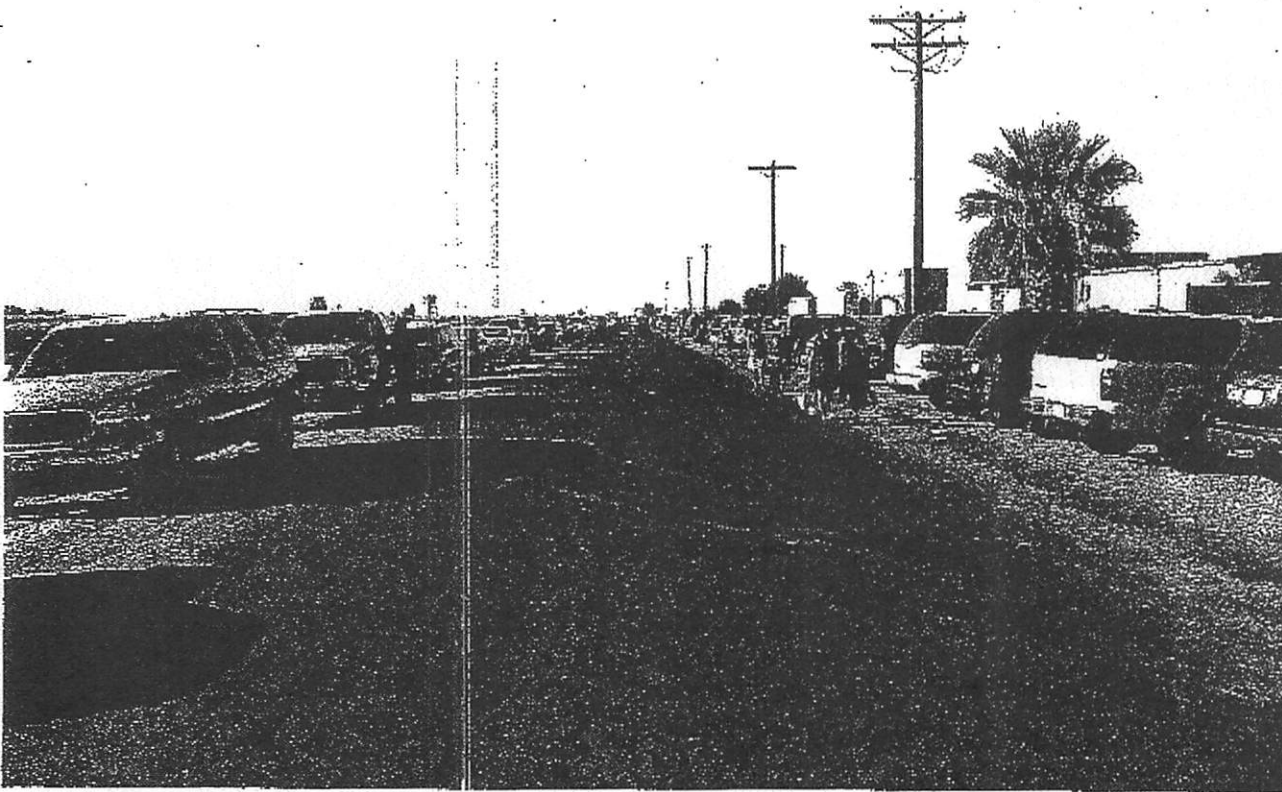
State grants for site improvements- off-site, service site, and utilities, based on 50% of site development costs

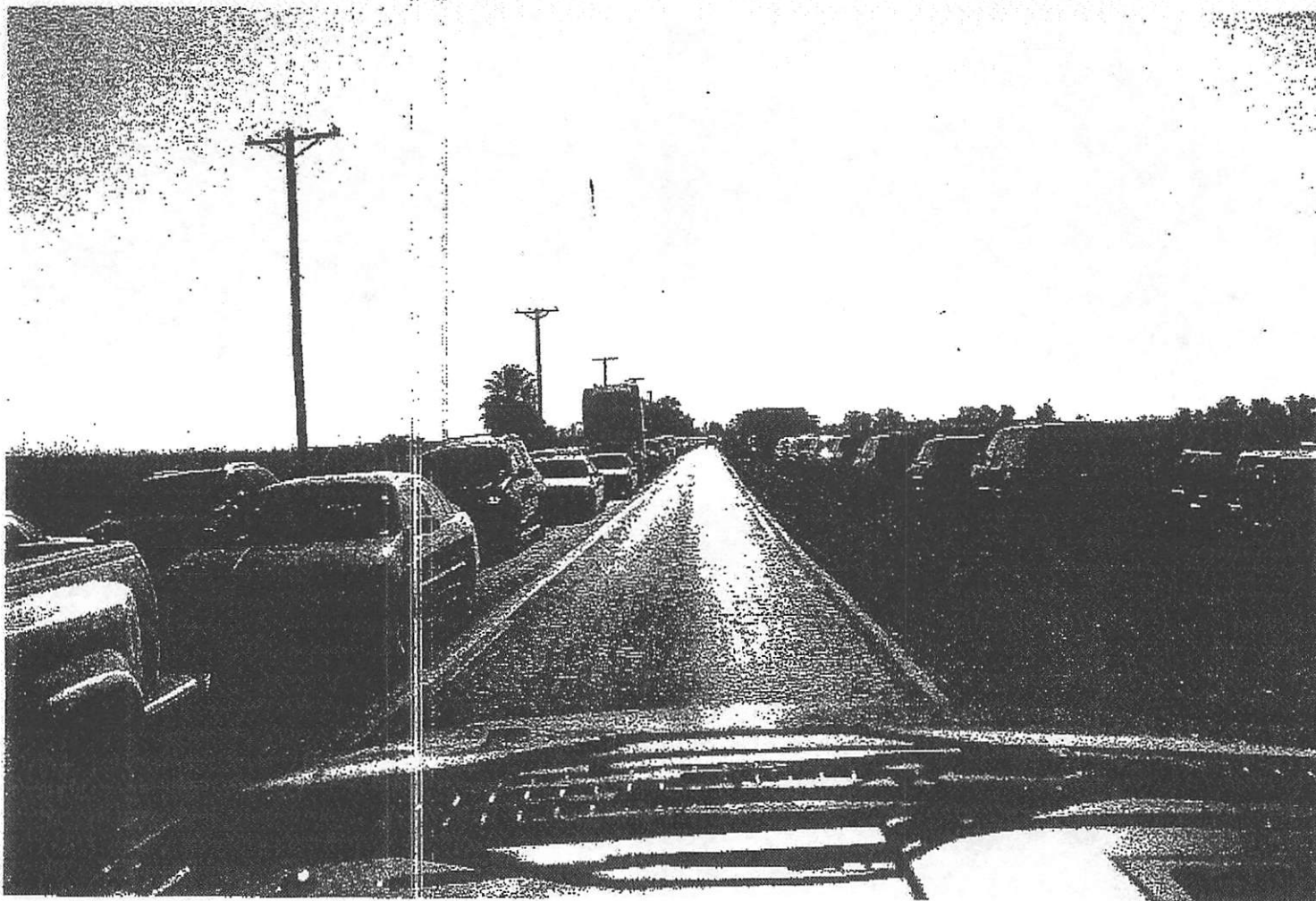
*****Geographic Hardship Grant**

OPSC supplements grants by 5% for Imperial County school sites

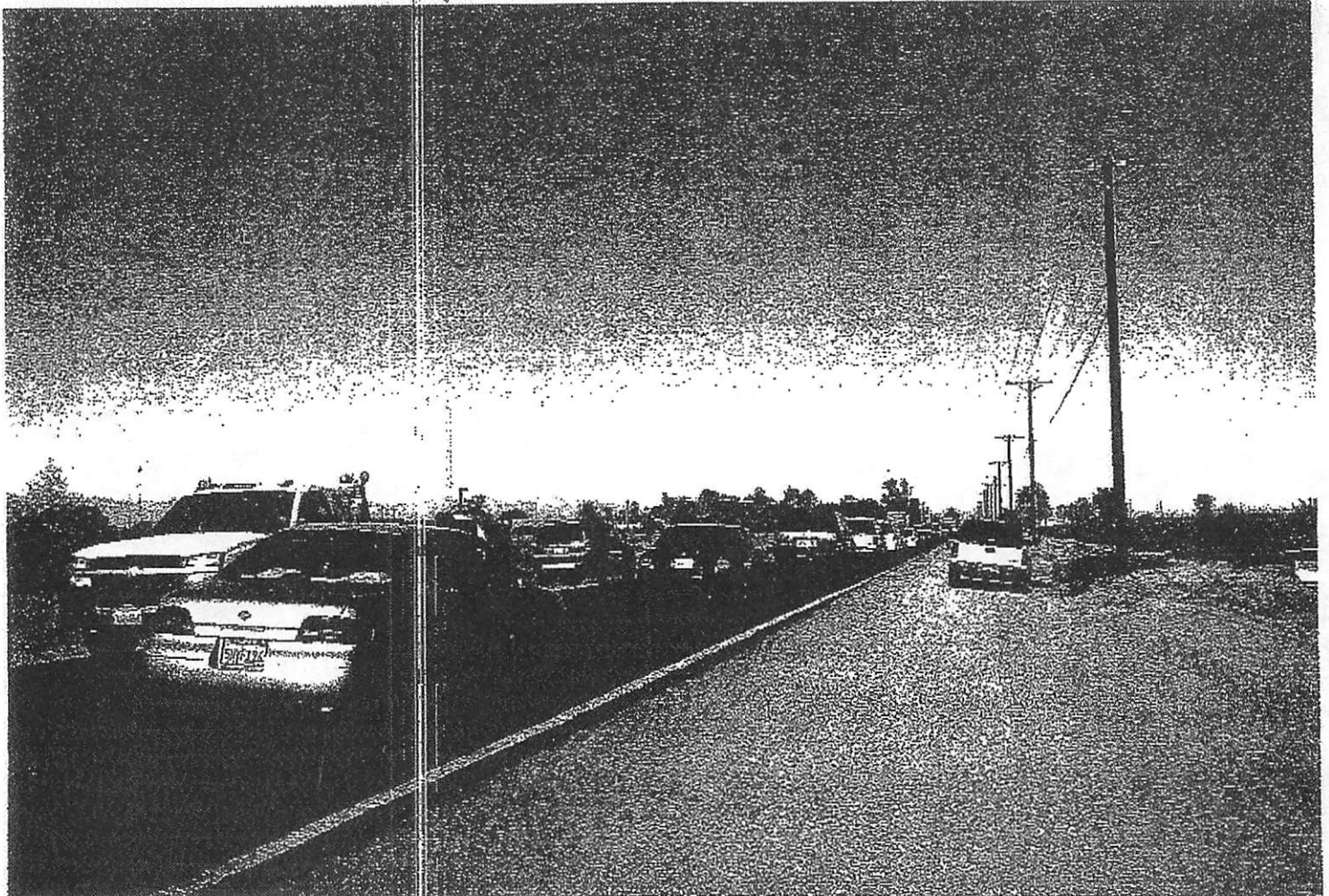
******Yield Factor, .83**

131 Single Family Homes generates 109 new students.

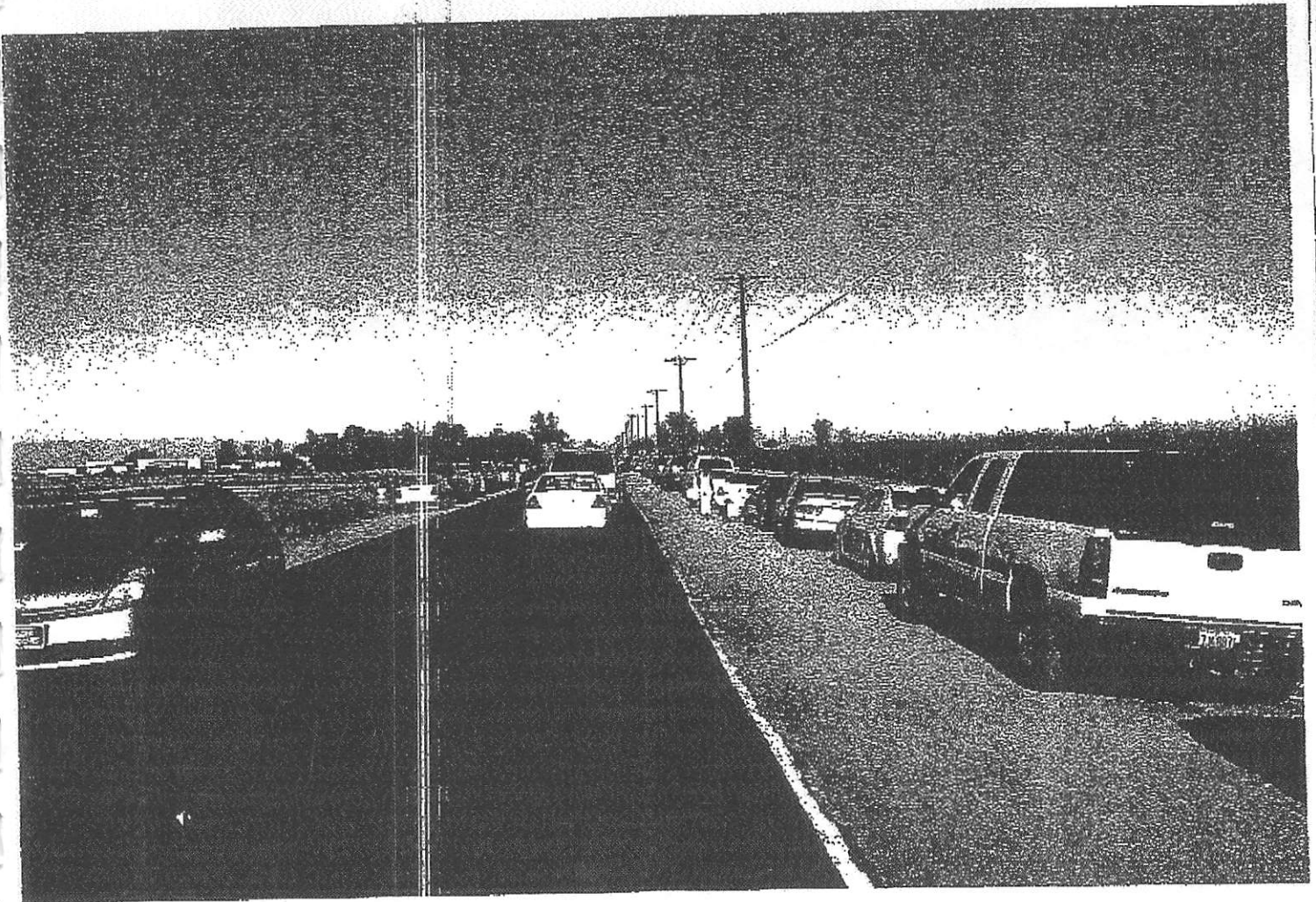




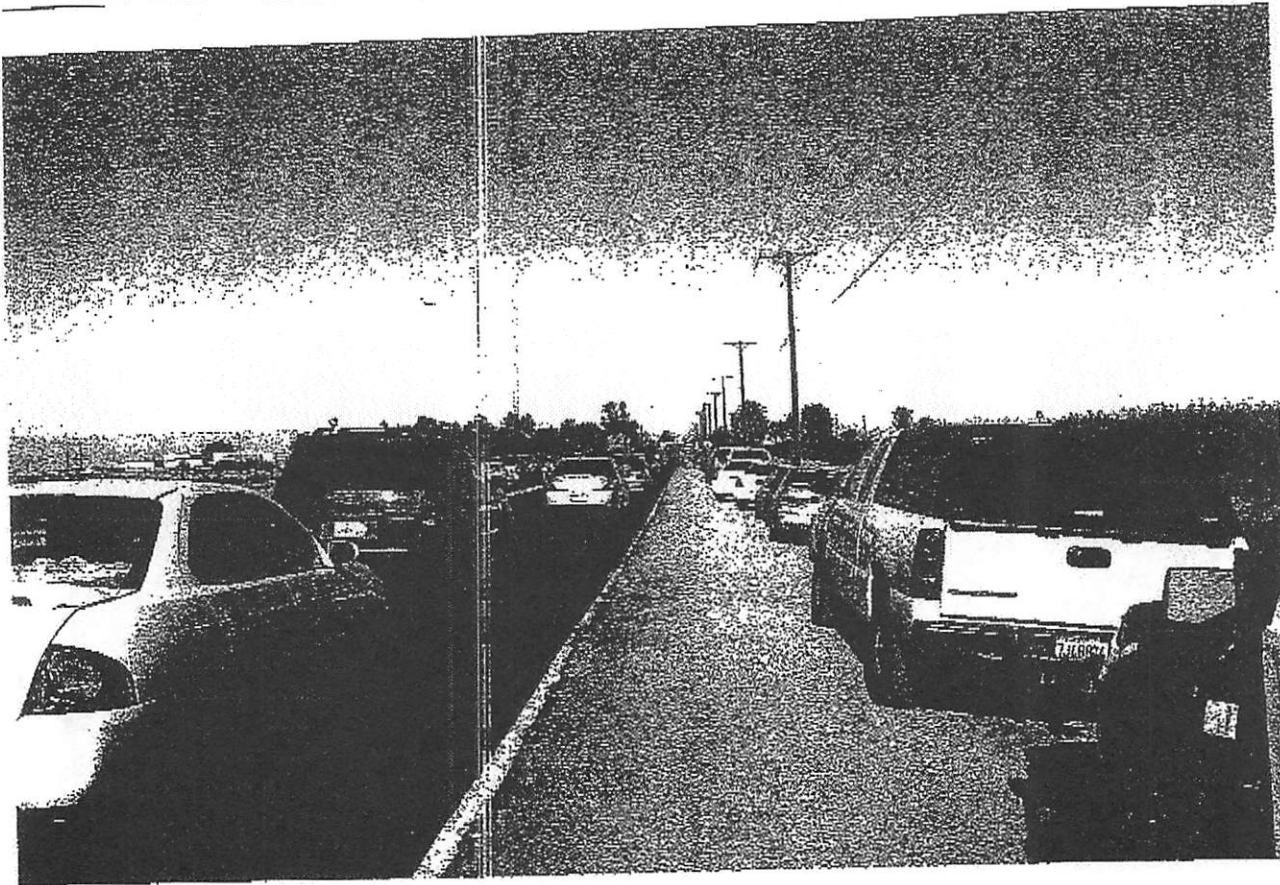
MUSD
PAGE 6 OF 16

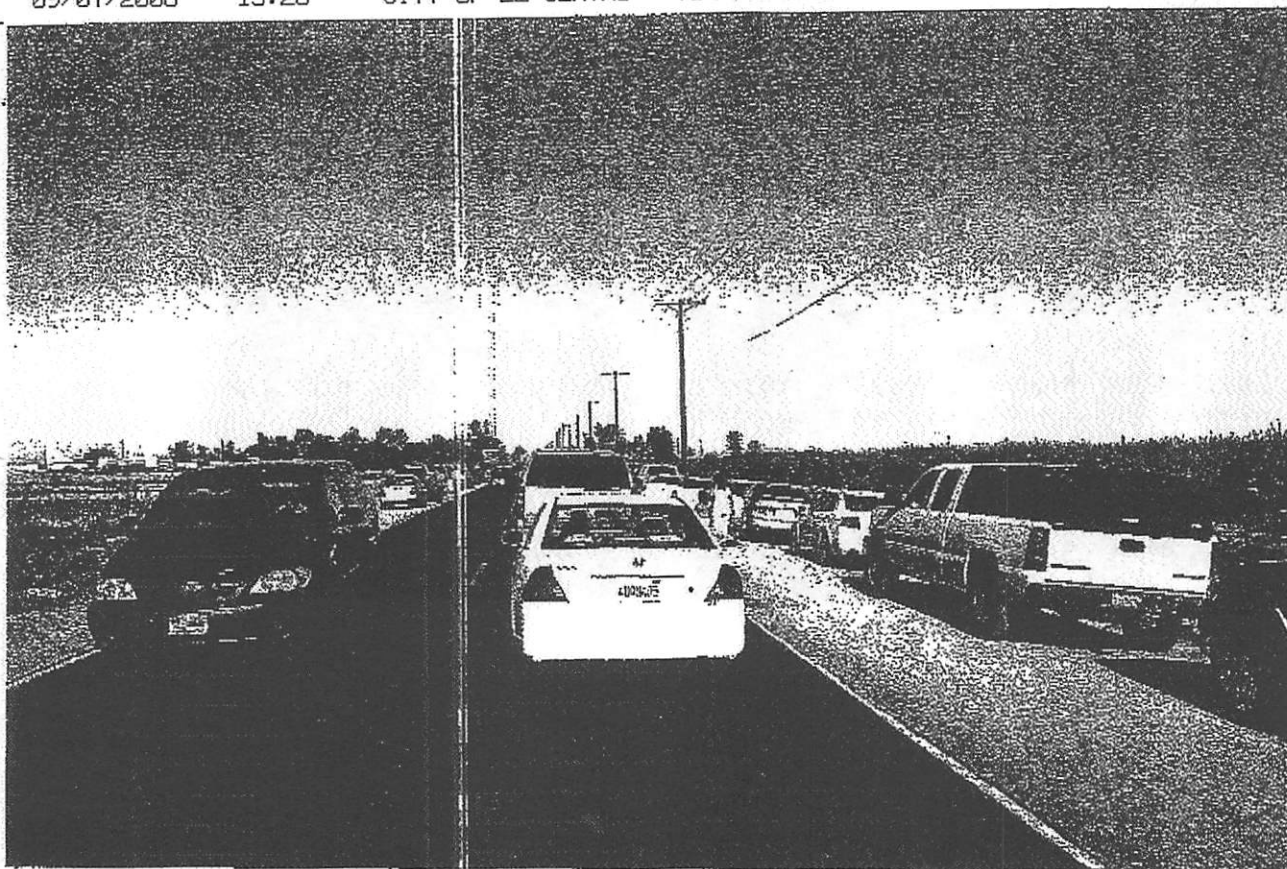


MUSD
PAGE 7 OF 16

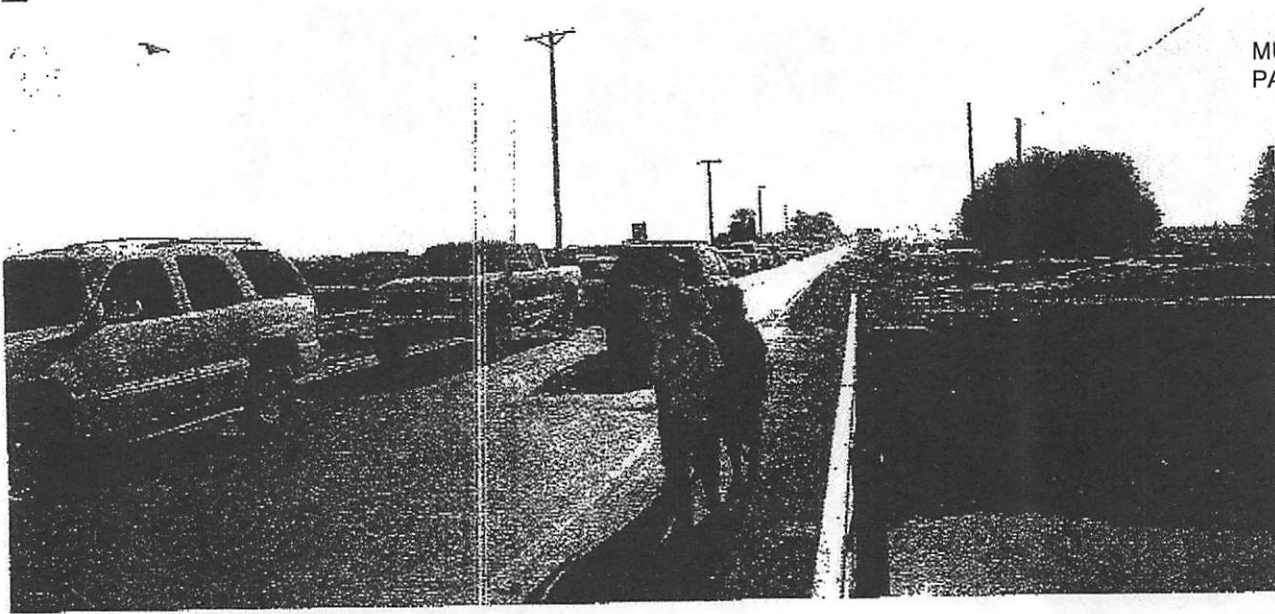


MUSD
PAGE 8 OF 16





MUSD
PAGE 10 OF 16

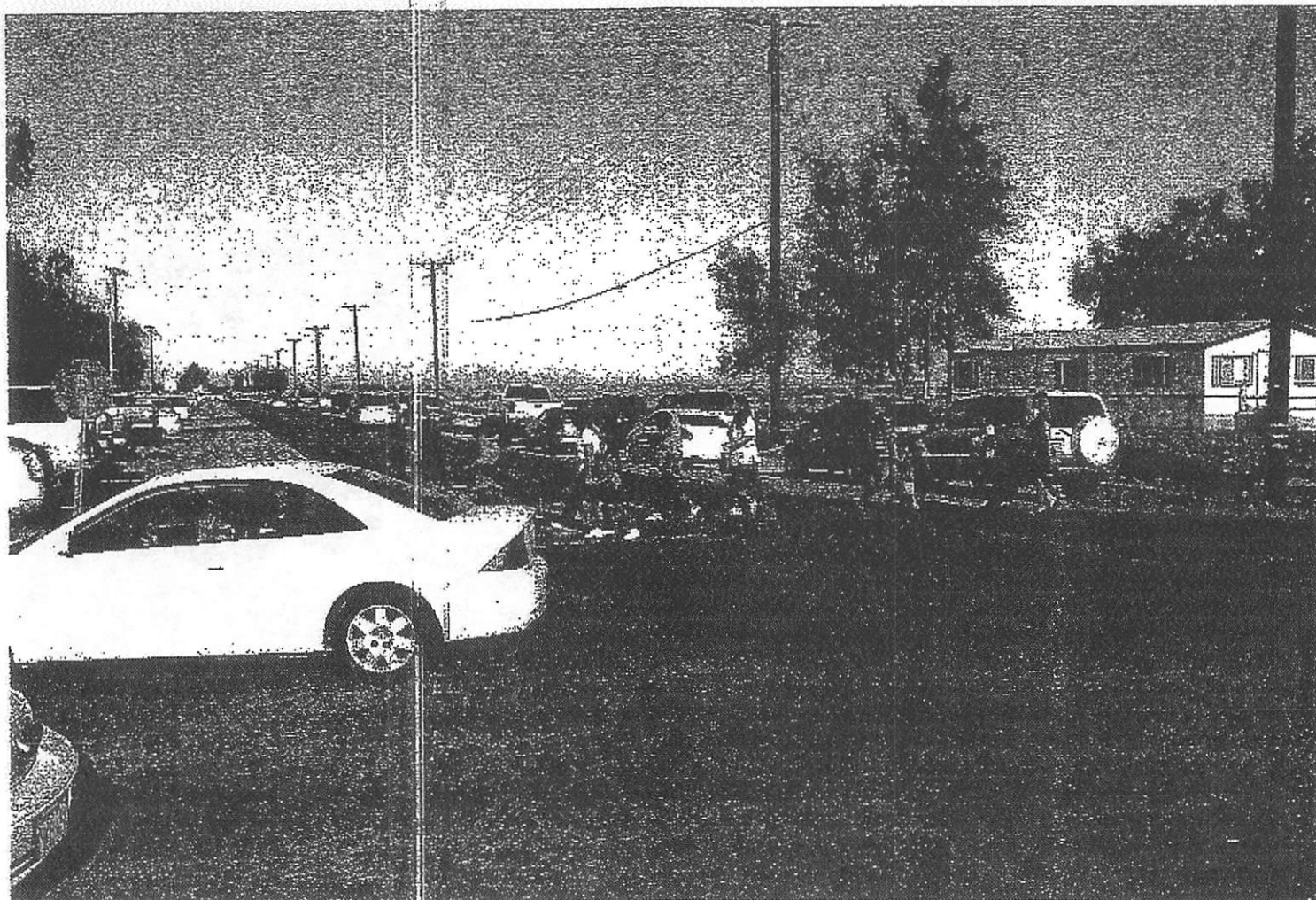


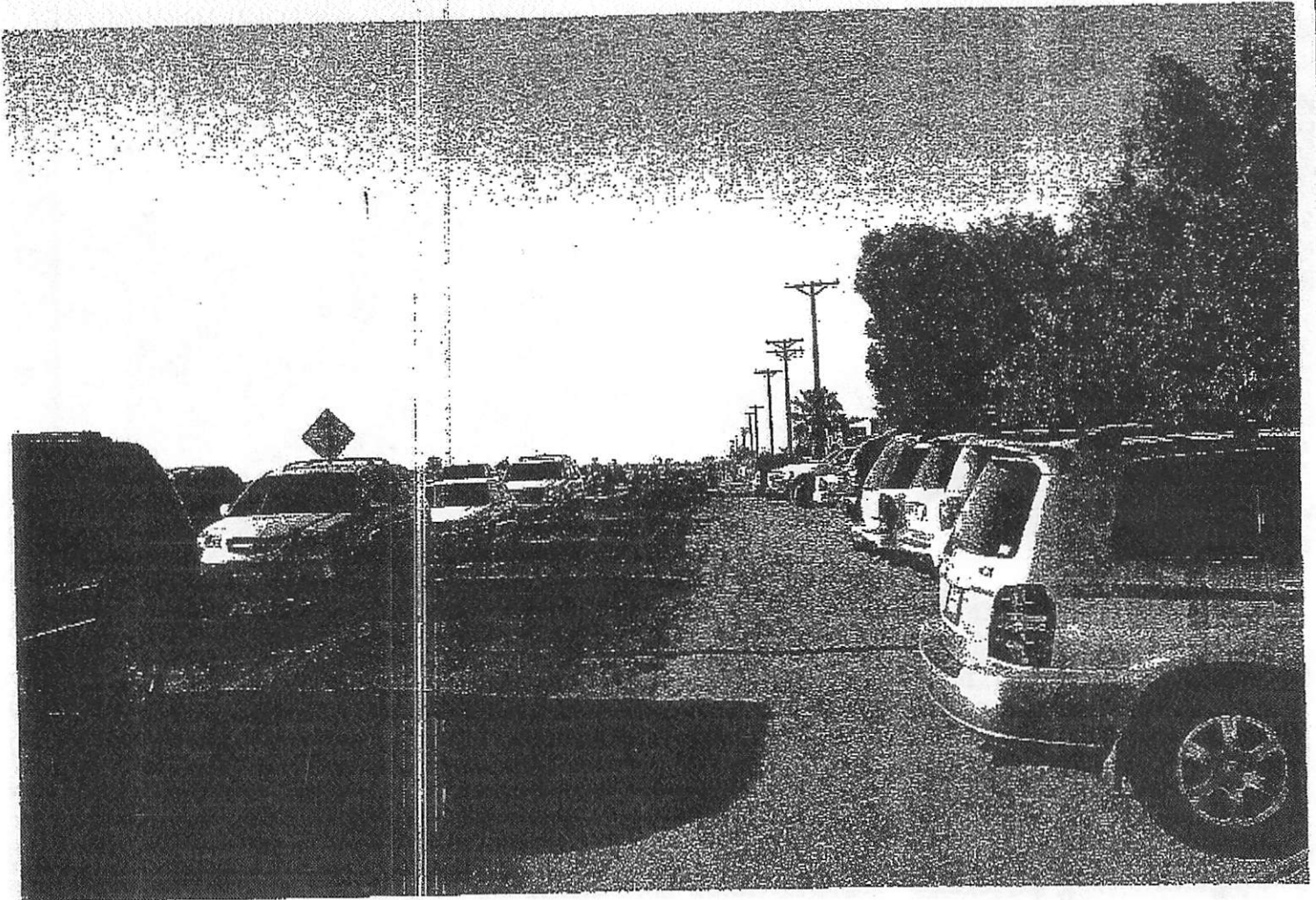
MUSD
PAGE 11 OF 16

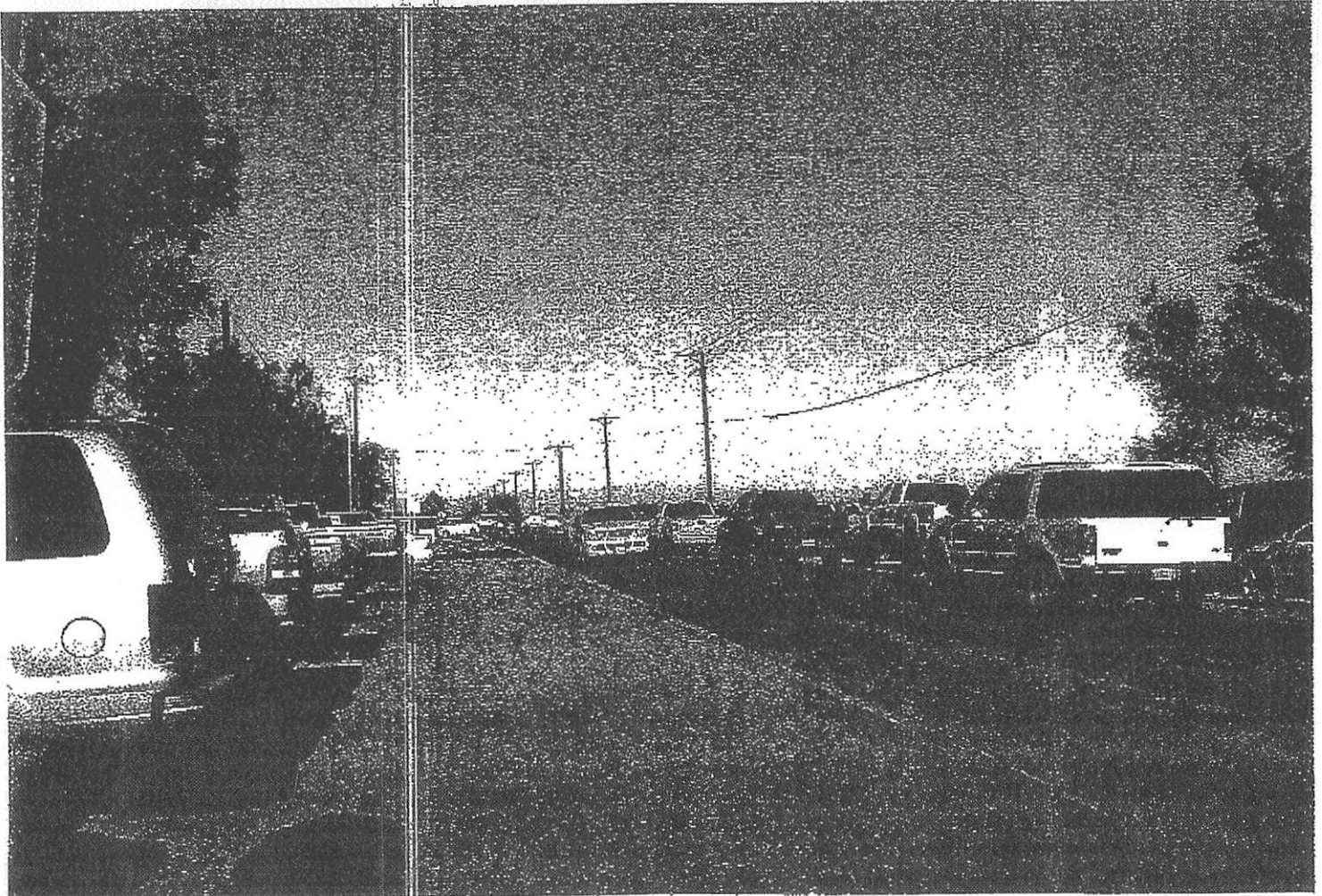


MUSD

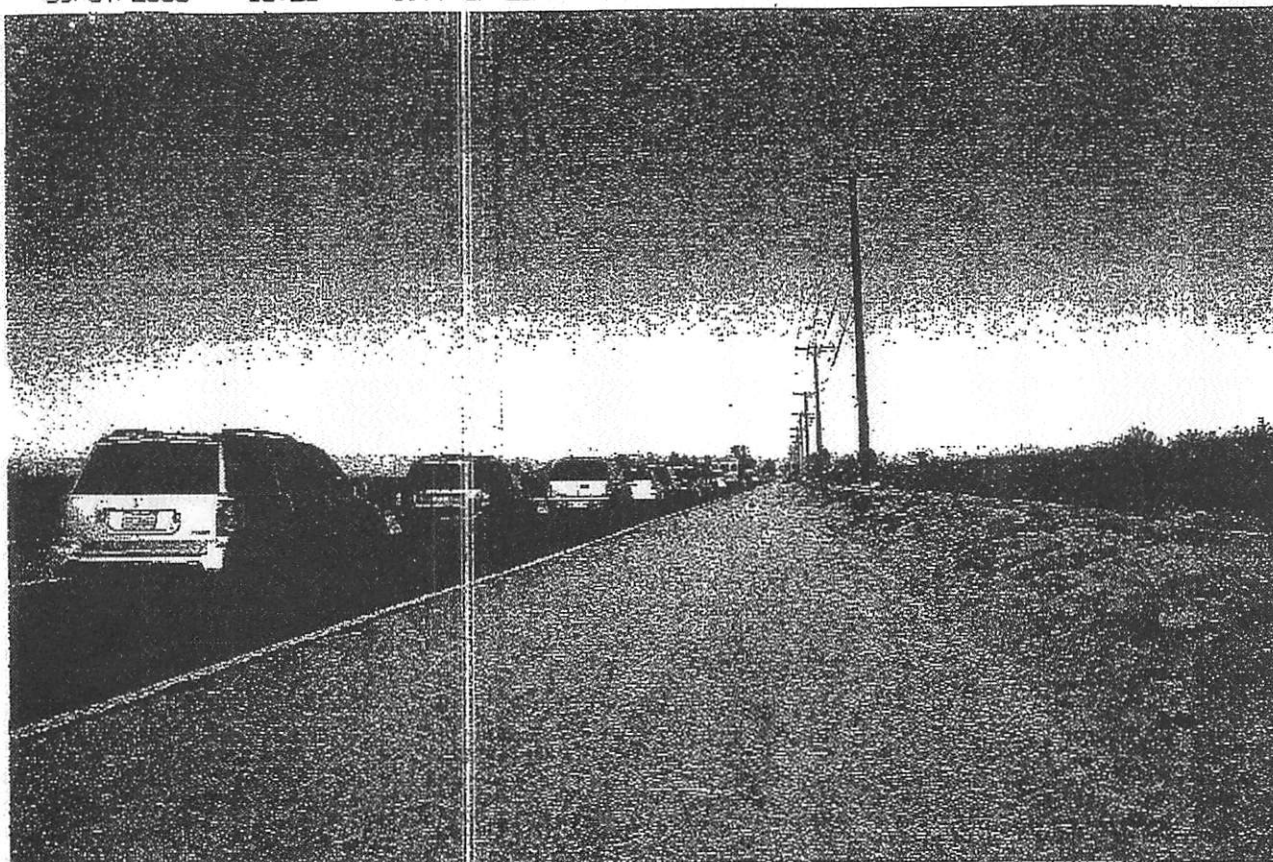
PAGE 13 OF 16







MUSD
PAGE 16 OF 16



McCabe Union School District, September 5, 2006 (MUSD)

Response to Comment MUSD-1

The comment is noted that MUSD is in agreement with the numbers presented in Table 5.8-10 of the DEIR. Please see Response to Comment LAFCO-12.

Response to Comment MUSD-2

A Traffic Impact Study was prepared for the proposed project, which analyzed the proposed project and cumulative traffic generation and distribution on the surrounding circulation network (see Response to Comment LAFCO 16). In accordance with the thresholds established by the City of El Centro the proposed project will not result in a significant impact individually or cumulatively to either McCabe Road or Austin Road. In the peak hour direction, the project will add less than five trips to McCabe Road and less than five to Austin Road. CEQA Guidelines § 15041 and § 15126.4 require that there be a nexus between the mitigation imposed upon an applicant and the impact. Given that the proposed project will not result in significant impacts to either McCabe Road or Austin Road, the applicant is not responsible for providing improvements to these roadways. Please see Response to Comment LAFCO-6.

Response to Comment MUSD-3

The traffic counts for the traffic study were performed in October 2005. According to the McCabe Union School District, an additional 350 students now attend McCabe Union Elementary School. This has potentially increased the traffic on West McCabe Road; however, as stated above in MUSD 2, the project adds negligible trips to this road and will not cause a significant impact. Please see Response to Comment LAFCO-6.

Response to Comment MUSD-4

The comment regarding a future school site is noted.

Response to Comment MUSD-5

The comment regarding the District working with the City and the applicant is noted.

D·R·HORTON®

America's Builder

DRH-1
PAGE 1 OF 2

September 25, 2006

RECEIVED

Ms. Norma Villicaña
Associate Planner
1275 Main Street
City of El Centro
El Centro, CA 92243

SEP 25 2006

PLANNING DEPT.
CITY OF EL CENTRO

VIA: HAND DELIVERED ON SEPTEMBER 25, 2006

RE: Willow Bend DEIR Comments

Dear Ms. Villicaña:

Thank you the opportunity to review the Draft Environmental Impact Report (DEIR) for the Willow Bend project and would like the opportunity to provide the following comments to the DEIR prior to the close of the 45-day public review period:

1. Table 2-1: Summary of Project Impacts and Mitigation Measures Section 5.3, Proposed Mitigation 5.3-1 thru 5.3-6. There appears to be an inconsistency with these proposed Mitigation Measures and the standard practice protocol by CDFG in the Valley. In the Imperial Valley, only passive relocation protocol should be used for owl mitigation. Active relocation is not permitted. The proposed mitigation is not consistent with current mitigation that is being implemented by other biologist in the county. The owl consortium mitigation requirements are only recommendations and are not required. California Department of Fish and Game reviews proposed mitigation on a case by case basis which may include relocation to onsite artificial burrow within a fenced area of the detention basin. Currently off-site mitigation is not an alternative due to the unresolved issue of preserving agricultural sites in perpetuity for the burrowing owl. The biologist should contact Steve Gibson at CDFG @ (760) 200-9371.
2. Table 2-1: Summary of Project Impacts and Mitigation Measures Section 6, Proposed Mitigation TT 6-4. This Mitigation Measure proposed a traffic signal at the intersection of Horne Road and Hwy 86. Traffic signalization at this intersection would be in conflict with the current Caltrans and city MOU along Hwy 86.
3. Pages 5.8-3 and 5.8-6, under proposed Mitigation PSU 5.8-1 and 5.8-2. These Mitigation Measures require that the developer enter into a mitigation agreement prior to map recordation for city Police and Fire Services. Since the city already has a Development Impact Fee (DIF) system of which a portion covers police and fire services, why not just require the appropriate payment of DIF at the time of building permit issuance. The appropriate nexus studies have already been done with the implementation of the citywide DIF. We believe that the portion of DIF dedicated to police and fire more that adequately covers impacts to Police and Fire Services.

DRH-1

DRH-2

DRH-3

Letter to Norma Villicana
September 25, 2006
Page 2 of 2

RE: WILLOWBEND DRAFT EIR COMMENTS

Please feel free to contact me if you have any additional questions (760) 337-1533, ext., 1102 or via email at agvilla@drhorton.com.

Sincerely,
D.R. Horton, Inc. - Imperial County



Armando G. Villa
Director of Forward Planning

c: Oliver Alvarado, El Centro Planning Director
Elizabeth Shoemaker, DDE, Inc., Project Manager

3.2.5 - Private Organizations and Persons

D. R. Horton, September 25, 2006 (DRH)

Response to Comment DRH-1

Michael Brandman Associates (MBA) wrote in the DEIR "burrowing owls inside the project site shall be actively or passively relocated prior to construction activity in order to avoid direct impacts of burrow destruction". These two options were provided because at the writing of the DEIR, the Fish and Wildlife Service (FWS) and California Department of Fish and Game (CDFG) had different recommendations in regards to relocation of burrowing owl. At the time, the FWS was enforcing and prosecuting under the Migratory Bird Treaty Act (MBTA) those who destroyed occupied burrowing owl burrows year-round. Late last year this conflict was resolved and the FWS began enforcing the MBTA from February 1 through August 31. CDFG does informally approve active relocation of burrowing owl on a case by case basis when it is determined that passive relocation is not feasible (i.e. the site is surrounded by development). For this project site, passive relocation was recommended by the CDFG in their comment on the Negative Declaration.

As stated in CDFG's staff report on burrowing owl mitigation: "to offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat per pair or unpaired resident bird, should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the Department. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances. The California Burrowing Owl Consortium (CBOC) has also developed mitigation guidelines that can be incorporated by CEQA lead agencies and which are consistent with this staff report." CDFG's staff report continues to state that "the project sponsor should provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to the Department." MBA recommended mitigation measures based on CDFG's staff report and CBOC's mitigation measures.

The project site has a 3 acre retention basin proposed that is not of sufficient size to accommodate a single burrowing owl territory. The minimum acreage per pair or single owl is 6.5 acres.

MBA had a conversation with CDFG Staff Environmental Scientist Eddy Konno regarding off-site burrowing owl mitigation, and he recommended that if adjacent land to the site is not available, that land be acquired for conservation adjacent to existing protected/managed lands in the area. MBA is not aware of any existing issues to preserving/purchasing agricultural sites for burrowing owl.

Response to Comment DRH-2

Please see Response to Comment CALTRANS-1.

Response to Comment DRH-1

Please see Response to Comment LAFCO-10 regarding the Development Impact Fee.

SECTION 4: ERRATA

The following are revisions to the Zone Change 05-05 and Tentative Subdivision Map (Willow Bend) Draft EIR. These revisions are minor modifications and clarifications to (this these) document(s) and do not change the significance of any of the environmental issue conclusions within the DEIR. The revisions are listed by page number. All additions to the text are underline (underlined) and all deletions from the text are stricken (~~stricken~~).

Page 5.8-12

The following correction has been made in Table 5.8-13:

Table 5.8-13: Existing and Future Parkland Needs

Year	Population	Parkland/Resident Standard	Parkland Required	Existing Parkland	Difference
2000 (Baseline Year)	37,835	3.0 acres per 1,000 residents	133.5 acres	126.8 acres	+ 13.3 acres
2025 (General Plan Buildout)	134,238		402.7 acres	126.8 acres	-279.5 acres
Source: City of El Centro General Plan. Table PF-3. 2004.					

Page 5.8-17

The following correction is made in the first sentence of the third paragraph in Section 5.8.8:

After processing solid waste generated in the City of El Centro is disposed of at ~~one of three landfills in Imperial County~~ Allied Imperial Landfills, which is a private landfill. Allied Imperial Landfill is a 42-acre landfill that opened in January 2000 and has a closure date of 2012. An additional 160 acres have been purchased, 100 acres, which will be used as a landfill and 60-acres, which will be used as a buffer. This additional acreage has a 30-year capacity and will be able to accept 1,000 tons of solid waste per day.

~~In addition, residents may for a disposal fee dispose of solid waste at any County landfill.~~

Page 5.8-17

Table 5.8-17 has been deleted:

Table 5.8-17: Landfill Summary

Landfill	Location	Operator	Permitted Daily Capacity	Remaining Capacity	Closure Date
Allied Imperial Landfill	Imperial, CA	Imperial Landfill, Inc.	1,135 tons	3.7 million cubic yards	2012
Imperial Solid Waste Site	Imperial, CA	County of Imperial Public Works	130 tons	87,000 cubic yards	2022
Calexico Solid Waste Site	Calexico, CA	County of Imperial Public Works	150 tons	1.9 million cubic yards	2142
Total			1,415 tons	5.7 million cubic yards	
Source: California Integrated Waste Management Board, Solid Waste Information System, 2005.					

All subsequent tables have been renumbered.

Page 5.8-19

The following correction has been made in the first sentence below Table 5.8-20:

~~The three landfills summarized in Table 5.8-20 have more than 1,400 tons in permitted daily capacity available. As previously stated, the City of El Centro utilizes the private Allied Landfill, which currently is a 42-acre landfill that opened in January 2000 and has a closure date of 2012. An additional 160 acres have been purchased, 100 acres, which will be used as a landfill and 60-acres, which will be used as a buffer. This additional acreage has a 30-year capacity and will be able to accept 1,000 tons of solid waste per day.~~

Page 5.9-1

Section 5.9.1, Existing Conditions, the following changes have been made:

McCabe Road - McCabe Road is classified as a ~~major collector~~ minor arterial that runs east/west south of the project area. It is constructed as a two lane undivided roadway with no bike lanes and parking is generally prohibited in the project area. The speed limit is posted at 55 mph.

Horne Road - Horne Road is classified as a ~~collector street~~ local County road that runs east/west north of the project. It is constructed as a two lane undivided roadway with no bike lanes and parking is generally permitted. The speed limit is posted at 35 mph in the project area.

Page 6-16

The following change has been made to Table 6-7:

Table 6-7: Horizon Year 2025 Roadway Segment Conditions

Roadway Segment	Lane/Class	LOS E Capacity	Existing No Project			Project Traffic	Long-Term (Existing + Horizon Year Including the Proposed Project)			Comparison	
			ADT	V/C	LOS		ADT	V/C	LOS	Δ V/C	Significant
State Route 86											
Between McCabe Road and Project Access (South of Home Horne Road) ¹	2/Arterial	17,500	7,631	0.436	C	193	22,400	1.280	F	0.844	Long-Term
Between Project Access and Danenberg Drive ²	3/Arterial	27,750	7,631	0.275	A	1,093	22,400	0.807	D	0.532	No
Between Danenberg Drive and Wake Avenue ²	3/Arterial	27,750	13,575	0.489	B	900	29,500	1.063	F	0.574	Long-Term
Between Wake Avenue and I-8 Eastbound Ramps ³	4/Arterial	37,000	20,500	0.554	B	836	29,500	0.797	C	0.243	No
¹ Two Lane Arterial standards from El Centro General Plan Circulation (2004). ² Ratio of Four Lane Arterial standards from El Centro General Plan Circulation Element (2004) given three lane alignment with raised median. ³ Four Lane Arterial standards from El Centro General Plan Circulation Element (2004). Source: Katz, Okitsu & Associates. Willow Bend Traffic Impact Study, July 2006.											

**CEQA Findings and Findings of Fact
for the
Zone Change 05-05 and Tentative Subdivision Map
Willow Bend
State Clearinghouse Number: 2005101128**

Prepared for:

City of El Centro
Planning Department
1275 Main Street
El Centro, CA 92243

Contact: Oliver Alvarado, Planning Director

Prepared by:

Michael Brandman Associates
Michael Brandman Associates
220 Commerce, Suite 200
Irvine, CA 92602

Contact: Kara E. Palm, Project Manager



November 2, 2006

TABLE OF CONTENTS

Section 1: Introduction	1
Section 2: Project Description	7
Section 3: Mitigated Project-Level and Cumulative Adverse Impacts.....	8
3.1 - Air Quality	8
3.2 - Biological Resources	12
3.3 - Cultural Resources	17
3.4 - Geology and Soils	21
3.5 - Hazards and Hazardous Materials	27
3.6 - Noise	29
3.7 - Public Services	30
3.8 - Cumulative.....	31
Section 4: Significant and Unavoidable Adverse Impacts.....	41
4.1 – Agricultural Resources	41
4.2 – Air Quality	41
Section 5: Feasibility of Project Alternatives.....	44
5.1 - No Project/No Development Alternative.....	45
5.2 - No Project/Development in Accordance with the Existing Zoning Alternative	46
5.3 - Environmentally Superior Alternative	46
 Appendix A: Statement of Overriding Considerations	

SECTION 1: INTRODUCTION

In compliance with the requirements of the California Environmental Quality Act (CEQA) and the CEQA Guidelines, the City of El Centro has conducted an environmental review of the proposed Zone Change 05-05 and Tentative Subdivision Map (Willow Bend) project. A Notice of Preparation was released for public review in October 2005. In August 2006, the Draft EIR was released. After receiving public comment on the Draft EIR, the City prepared a document entitled Responses to Comments on the Draft EIR (RTC). The RTC document includes the verbatim comments received on the Draft EIR, a list of those commenting, and the City's responses to the significant environmental points raised in the review and consultation process. In response to certain comments, the Draft EIR was modified, as set forth in the responses to comments. The Final EIR for the Project consists of the Draft EIR and the RTC document. The RTC provides responses to comments on environmental issues describing the disposition of the issues, explaining the EIR analysis, supporting the EIR conclusions, and/or providing information or corrections as appropriate. These Findings are based upon the information in the record of proceedings, including the Final EIR, staff reports, project applicant's materials, Mitigation Monitoring Program, and the testimony presented at public hearings.

The California Environmental Quality Act (CEQA; Pub. Res. Code §§ 21000 et seq.) provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would *substantially lessen* the significant environmental effects of such projects[.]" (CEQA § 21002; emphasis added.) The procedures required by CEQA "are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects." (CEQA § 21002; emphasis added.)

CEQA also provides that "in the event [that] specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects. (CEQA § 21002.) CEQA provides that a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian. (CEQA § 21081; CEQA Guidelines, 14 Cal. Code of Regulations, § 15021(d).) CEQA requires decision-makers to balance the benefits of a proposed project against its significant unavoidable adverse environmental impacts, and, if the benefits of a proposed project outweigh the significant unavoidable adverse environmental impacts, the unavoidable adverse environmental impacts may be considered "acceptable" by adopting a "Statement of Overriding Considerations." (CEQA Guidelines § 15093.) The Statement of Overriding Considerations must set forth the project benefits or reasons why the Lead Agency is in favor of approving the project and must weigh these benefits against the project's adverse environmental impacts identified in the Final EIR that cannot be mitigated to a less-than-significant level.

CEQA's mandates and principles are implemented, in part, through the requirement that agencies adopt findings before approving projects for which EIRs are required. For each significant environmental effect identified in an EIR for a proposed project, the approving agency must issue a written finding reaching one or more of three permissible conclusions: (1) that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR," (2) [s]uch changes or alterations are within the responsibility and jurisdiction of another public agency or can and should be adopted by such other agency," or (3) [s]pecific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR." (CEQA Guidelines § 15091.) CEQA defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors." (CEQA § 21061.1.) CEQA Guideline section 15364 adds another factor: "legal" considerations.

The concept of "feasibility" also encompasses the question of whether a particular alternative promotes the underlying goals and objectives of a project. "Feasibility under CEQA encompasses "desirability" to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors.

CEQA requires that the lead agency exercise its independent judgment in reviewing the adequacy of an EIR and that the decision of a lead agency in certifying a Final EIR and approving a project not be predetermined. The City Council has conducted its own review and analysis, and is exercising its independent judgment when acting as herein provided.

CEQA requires decision-makers to adopt a mitigation monitoring and reporting program (MMRP) for those mitigation measures identified in the Final EIR that would mitigate or avoid each significant impact identified in the EIR and to incorporate the mitigation monitoring and reporting program, including all mitigation measures, as conditions of project approval.

CEQA requires that the responses to comments in the Final EIR demonstrate good faith and a well-reasoned analysis, and not be overly conclusory. In response to several of the comments received, portions of the Draft EIR have been revised. Although new material has been added to the Draft EIR through preparation of the Final EIR, this new material provides clarification to points and information already included in the Draft EIR and is not considered to be significant new information or a substantial change to the Draft EIR or to the project that would necessitate recirculation.

CEQA Guidelines Section 15003(c) and (i) note that state courts have held that the purpose of an EIR is to inform other governmental agencies and the public generally of the environmental impacts of a proposed project. CEQA does not require technical perfection or exhaustive treatment of issues in an

EIR, but rather adequacy, completeness, and a good-faith effort at full disclosure. CEQA provides that disagreement among experts regarding conclusions in the EIR is acceptable. Also, exhaustive treatment of issues is not required in an EIR.

Because the Willow Bend EIR identified significant effects that may occur as a result of the project, and in accordance with the provisions of CEQA and the CEQA Guidelines, the City Council of the City of El Centro hereby adopts these Findings. For each of the significant effects identified in Section 3, as set forth in greater detail in these Findings below, the City Council makes the finding under paragraph (1) of subdivision (a) of Public Resources Code Section 21081. For each of the significant effects identified in Section 4, as set forth in greater detail in these Findings below, the City Council makes the finding under paragraph (3) of subdivision (a) and under subdivision (b) of Public Resources Code Section 21081.

In accordance with the provisions of CEQA and the CEQA Guidelines, the City Council of the City of El Centro has independently reviewed the record of proceedings and based on the evidence in the record adopts these Findings.

SECTION 2: PROJECT DESCRIPTION

The proposed project is the development of a single-family residential community on approximately 38 acres. The project includes the subdivision of 38 acres of farmland to provide for 131 single-family residential lots, a 3.02-acre retention basin, and 1.67-acre park (Exhibit 3-3). Project site access is via SR-86 and two project access drives (Willow Bend Drive and Countryside Drive).

SECTION 3: MITIGATED PROJECT-LEVEL AND CUMULATIVE ADVERSE IMPACTS

The EIR identified significant project-level and cumulative adverse impacts of the proposed project and proposed mitigation measures to avoid or substantially lessen those impacts. Those impacts and mitigation measures are identified in the following sections. The El Centro City Council finds, based on the record and on the facts as set forth below, that the incorporation of the identified mitigation measures will mitigate most of the identified significant project-level and cumulative adverse impacts to a level that is considered less than significant. However, as identified in the Draft EIR, the conversion of agricultural land and the inconsistencies with the Imperial Valley Air Quality Attainment Plan and the State Implementation Plan for PM₁₀ will result in significant and unavoidable agricultural and air quality impacts. Therefore, as outlined in CEQA Guideline 21081, the project will require a Statement of Overriding Considerations (see Attachment A).

3.1 - Air Quality

3.1.1 - Potentially Significant Impact

Onsite construction emissions generated during construction principally consist of exhaust emissions (NO_x, SO_x, CO, VOC, and PM₁₀) from heavy-duty construction equipment operation and fugitive dust (PM₁₀) from disturbed soil..

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- AQ 5.2-1** During construction of the proposed improvements, all construction equipment will be properly maintained at an offsite location and includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction.
- AQ 5.2-2** During construction of the proposed improvements, all construction equipment will be fueled with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use in off-road equipment).
- AQ 5.2-3** To the maximum extent feasible, use diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.

- AQ-5.2.4** Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction site and provide temporary traffic control (i.e. flag person) during demolition debris transport and other construction related truck hauling activities.
- AQ 5.2-5** During construction of the proposed improvements, construction equipment will not idle on site for more than 10 minutes.
- AQ 5.2-6** During construction of the proposed improvements, the project applicant will provide onsite meals to construction workers by arranging a lunch wagon to visit the construction site during work breaks including the lunch break. This will improve air quality by reducing traffic created by construction workers.
- AQ 5.2-7** During construction of the proposed improvements, the project applicant will provide onsite electrical hook ups for electric construction tools, such as saws, drills and compressors, to eliminate the need for diesel powered electric generators.
- AQ 5.2-8** Prior to construction of the proposed improvements, the project proponent will provide a Dust Control Plan that will describe the application of standard best management practices to control dust during construction. Best management practices will include application of water on disturbed soils a minimum of two times per day, covering haul vehicles, replanting disturbed areas as soon as practical, restricting vehicle speeds on unpaved roads to 15 mph, sweeping street access points at the end of each day, and other measures, as deemed appropriate to the site, to control fugitive dust. The Fugitive Dust Control Plan shall be submitted to the City and the Imperial County Air Pollution Control District for approval and approved prior to construction.
- AQ 5.2-9** During construction of the proposed improvements, only low volatility paints and coatings as defined in Imperial County APCD Rule 424 shall be used. All paints shall be applied using either high volume, low pressure (HVLV) spray equipment or by hand application.

3.2 - Biological Resources

3.2.1 - Potentially Significant Impact

Burrowing owls would be adversely impacted on a short-term basis during construction activities to underground the onsite drains.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- BR 5.3-1** Additional focused survey shall be conducted to more conclusively determine the number of owls occupying the project site and a 500-foot buffer. Focused surveys shall follow accepted burrowing owl protocol, which includes a nesting season survey. During the nesting season survey, four site visits are conducted between April 15 and July 15. Surveys shall be conducted from two hours before sunset to one hour after, or from one hour before to two hours after sunrise.
- BR 5.3-2** A burrowing owl preconstruction survey shall be completed no sooner than 30 days prior to commencement of construction.
- BR 5.3-3** Burrowing owls inside the project site shall be actively relocated prior to construction activity in order to avoid direct impacts of burrow destruction. Once all burrows on the project site are confirmed to be absent of owls, they shall be systematically collapsed. Where possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.
- BR 5.3-4** No construction-related disturbance shall occur within 50 m., approx. 160 ft., of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m., approx. 250 ft., during the breeding season of February 1 through August 31.
- BR 5.3-5** If feasible, 6.5 acres of foraging habitat for each pair of burrowing owl would be preserved in a conservation easement and managed to promote burrowing owl use of the site. This habitat shall be adjacent to the project site but at least 50 meters from the impact area. The displaced owls would be encouraged to occupy this conserved area by actively relocating them to natural or artificial burrows. One alternate natural or artificial burrow should be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. Conservation of agricultural lands to the west or south of the project site would be the only appropriate options under this mitigation measure.

BR 5.3-6 If Mitigation Measure BR 5.3-5 is not feasible, this mitigation measure is required. Off-site replacement of burrowing owl habitat shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable burrowing owl habitat. One alternate natural or artificial burrow shall be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. The off-site replacement of suitable burrowing owl habitat shall follow one of the following scenarios:

1. Replacement of occupied habitat with off-site occupied habitat: 9.75 acres per pair or single bird.
2. Replacement of occupied habitat with off-site suitable unoccupied habitat: 19.5 acres per pair or single bird.

3.2.2 - Potentially Significant Impact

In the long-term, due to increased recreational use of the berms by humans and pets, harassment of owls will occur. Also, the conversion of burrowing owl foraging, dispersing, and nesting habitat will be impacted

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

BR 5.3-7 An educational flyer shall be developed that informs new residences that off-road activity is not permitted on the surrounding berms. In addition, pets shall be on leashes if walked on berms. The flyer shall also make new residents aware of burrowing owls, their biology, how and why they are sensitive, and their benefits to insect and rodent control.

3.2.3 - Potentially Significant Impact

The proposed project contains suitable nesting bird habitat. If actively nesting birds are present during construction, they will be disturbed by construction activities.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- BR 5.3-8** The removal of vegetation, ground disturbance, or elimination of other potential nesting habitat should be conducted outside of avian nesting season (February through August). This is particularly true for construction during the undergroundment of the drains as burrowing owls were confirmed as present and are likely resident breeders. If construction occurs during the avian nesting season, a pre-construction nesting bird survey shall be conducted seven days prior to any ground disturbing activities. If birds are found to be nesting inside the impact area, construction will need to be postponed until a no-construction buffer, 250 feet for passerines and 500 feet for raptors, is established. Construction inside the buffer could commence once a qualified biologist determines that the nest is no longer active.

3.3 - Cultural Resources

3.3.1 - Potentially Significant Impact

The records search and field survey results revealed that there a low potential exists for impacts to prehistoric cultural resources. However, there is always the potential for undiscovered resources to be uncovered.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measure as identified in the final EIR and incorporated into the Project.

- CR 5.4-3** Prior to any clearing and grubbing and/or earthmoving activities on the project area, a qualified Project Paleontologist retained by the Proponent and approved by the City shall review the approved development and construction plans. The paleontologist shall participate in a pre-construction project meeting with the development staff to ensure an understanding of the mitigation measures required during construction.
- CR 5.4-4** Paleontologic monitoring of any shall be conducted by a qualified monitor, under direct guidance of a Project Paleontologist. Earthmoving in areas of the parcel where

previously undisturbed sediments will be buried but not otherwise disturbed will not be monitored. Monitoring shall begin once earthmoving reaches 8 feet below the original ground surface. Non-virgin soils need not be monitored.

- CR 5.4-5** If too few fossil remains are found after 50 percent of earthmoving is complete, monitoring can be reduced or discontinued in those areas at the project paleontologist's direction. If fossil remains are found during monitoring, up to 6,000 pounds of fossiliferous sediments will be recovered from the fossil site and processed to allow for the recovery of smaller fossil remains. The total weight of all processed samples from the fossil-bearing rock unit will not exceed 6,000 pounds at any one site.
- CR 5.4-6** If fossil remains are found, the Project Paleontologist shall develop a storage agreement with a museum repository acceptable within the City to allow for the permanent storage and maintenance of any fossil remains recovered in the Project Site as a result of the mitigation program, and for the archiving of associated specimen data and corresponding geologic and geographic site data. Any recovered fossil remains will be prepared to the point of identification and identified to the lowest taxonomic level possible by knowledgeable paleontologists. The remains then shall be curated (assigned and labeled with museum repository fossil specimen numbers and corresponding fossil site numbers, as appropriate; placed in specimen trays and, if necessary, vials with completed specimen data cards) and catalogued. Associated specimen data and corresponding geologic and geographic site data will be archived (specimen and site numbers and corresponding data entered into appropriate museum repository catalogs and computerized data bases) at the museum repository by a laboratory technician. The remains then will be accessioned into the museum repository fossil collection, where they will be permanently stored and maintained. The associated specimen and site data shall be made available for future study by qualified investigators.
- CR 5.4-7** A final report of findings shall be prepared by the Project Paleontologist for submission to the City, and the museum repository following accessioning of the specimens into the museum repository fossil collection. The report shall describe parcel geology/stratigraphy, summarize field and laboratory methods used, include a faunal list and an inventory of curated/catalogued fossil specimens, evaluate the scientific importance of the specimens, and discuss the relationship of any newly recorded fossil site in the parcel to relevant fossil sites previously recorded from other areas.

3.4 - Geology and Soils

3.4.1 - Potentially Significant Impact

The project site is within the vicinity of numerous active faults and will likely experience moderate to strong ground motion from earthquakes in the region.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measure as identified in the final EIR and incorporated into the Project.

GS 5.5-1 Prior to the issuance of grading permits, LandMark Consultants, Inc., or other qualified engineering geologist approved by the City of El Centro shall review and approve all grading plans and earthwork operation plans in relation to the Recommendations set forth in Section 4 of the Geotechnical Study (Appendix F of this DEIR).

GS 5.5-2 LandMark Consultants, Inc. or other qualified engineering geologist approved by the City of El Centro shall be provided with a forty-eight hours advance notice in order to be present at the site during all earthwork activities related to the excavation, tree root removal, stripping, backfill, and compacting and filling of the site and to perform periodic compaction tests.

3.4.2 - Potentially Significant Impact

The results of the testing soils for expansive properties indicated that earthwork operations can be expected to encounter expansive soils with expansion indexes in the range of medium to high. Thus, there is the potential for soils at the site to have a high potential for expansion.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- GS 5.5-1** Prior to the issuance of grading permits, LandMark Consultants, Inc., or other qualified engineering geologist approved by the City of El Centro shall review and approve all grading plans and earthwork operation plans in relation to the Recommendations set forth in Section 4 of the Geotechnical Study (Appendix F of this DEIR).
- GS 5.5-2** LandMark Consultants, Inc. or other qualified engineering geologist approved by the City of El Centro shall be provided with a forty-eight hours advance notice in order to be present at the site during all earthwork activities related to the excavation, tree root removal, stripping, backfill, and compacting and filling of the site and to perform periodic compaction tests.
- GS 5.5-3** Prior to the issuance of grading permits, the project applicant shall include one of the following foundation systems and remediation schemes to reduce the potential for expansive soils to less than significant.
- Waffle-slabs supported on a system of drilled piers anchored below the zone of moisture change;
 - Moisture conditioning subgrade soils to a minimum of 5% above optimum moisture (ASTM D1557) for the full range in depth of surface soils;
 - Design of foundations that are resistant to shrink/swell forces of silt/clay soil;
 - Excavation of existing materials and replacement by non-expansive soils;
 - Reinforcement in footings and slabs. Flexural and shear stresses in slabs should be computed by determining the differential swell for the center lift and edge lift conditions using design procedures recommended by the Post-Tensioning Institute. The differential swell should be used to compute the maximum shear stresses and flexural stresses in floor slabs and flatwork. Use edge moisture variation distance (em) of six feet and three feet for the center lift and edge lift conditions, respectively; and
 - Provide Post-tensioned, free floating slabs-on-grade.
- GS 5.5-6** Provide positive free drainage away from the structure and make every effort possible to prevent subgrade saturation by measures such as:
- containing all landscaping in sealed planters, sealing all construction joints with an elastomeric compound, providing the building with eave gutters and downspouts; and
 - routing all drainage impinging upon the site from off-site sources as well as drainage generated on the site away from the proposed residential structures.

3.4.3 - Potentially Significant Impact

There is groundwater at a level of eight feet below ground surface. Soils encountered below three feet have the potential to pump groundwater under heavy construction wheel loads because of the silty conditions in the near surface soils have the tendency to support layers of groundwater.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measure as identified in the final EIR and incorporated into the Project.

- GS 5.5-4** Base line collectors (6-8 inches in diameter) along the north side of the project site shall be crushed in place and trench backfill compacted (85-90%). The 4-inch lateral pipeline drains shall be plugged at street crossings.
- GS 5.5-5** Light earthmoving equipment (i.e., 613 and/or 623 Earthmovers) shall be used on the project site during construction activities to reduce the potential for groundwater pumping.
- GS 5.5-6** Provide positive free drainage away from the structure and make every effort possible to prevent subgrade saturation by measures such as:
- containing all landscaping in sealed planters, sealing all construction joints with an elastomeric compound, providing the building with eave gutters and downspouts; and
 - routing all drainage impinging upon the site from off-site sources as well as drainage generated on the site away from the proposed residential structures.

3.5 - Hazards and Hazardous Materials

3.5.1 - Potentially Significant Impact

Remnants of past activities and debris are located on the project site..

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on water quality that could be caused by construction activities.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

HM 5.6-1 Prior to any earth moving activities on the project site, debris consisting of a wood pallet, dry brush, Styrofoam, cardboard and automobile tires found at the northern portions of the project site shall be removed and properly disposed.

3.5.2 - Potentially Significant Impact

Pesticide residue (DDE) exists in the project site soils below current threshold (action) limits.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measure as identified in the final EIR and incorporated into the Project.

HM 5.6-2 Prior to the issuance of a grading permit, the project applicant shall coordinate with DTSC to review and approve the results of the pesticide scan. DTSC shall provide written verification that no further action is required in relation to the presence of DDE in near surface soils. If DTSC determines that the soils exceed the acceptable limits the soils shall be remediated and/or properly disposed of per DTSC requirements.

3.6 - Noise

3.6.1 - Potentially Significant Impact

Activities involved in construction of the project would generate noise levels in the range of 80 dBA to 87 dBA.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- N 5.7-1** Prior to the issuance of grading permits, the grading plans shall state that all gas and diesel power equipment shall be properly muffled and maintained. Construction activities should be limited to the hours and days permitted by the City of El Centro.

3.7 - Public Services

3.7.1 - Potentially Significant Impact

The project's construction would generate approximately 920 tons of construction debris. This would be significant short-term solid waste impact. .

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- PSU 5.8-1** At the time building permits are sought, the project applicant shall demonstrate to the satisfaction of the City of El Centro Public Works Department that a certified construction and demolition recycler has been retained and a Waste Management Plan has been prepared for the construction phase of the proposed project.

3.8 - Cumulative

3.8.1 - Potentially Significant Impact

Implementation of the proposed project, in conjunction with future developments as identified earlier in this section would contribute to the ongoing loss of open space in the region, resulting in a decline of habitat for burrowing owls and nesting birds.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measure as identified in the final EIR and incorporated into the Project.

Please see mitigation measures **BR 5.3-1** through **BR 5.3**.

3.8.2 - Potentially Significant Impact

Like the proposed project, cumulative projects may result in the disturbance of soils at a depth of 8 feet or greater below ground level, which, could contain paleontological resources.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

Please see mitigation measures CR 5.4-1 through CR 5.4-7.

3.8.3 - Potentially Significant Impact

Onsite locations will exceed El Centro's acceptability criterion of 60 dB Leq within the outdoor activity areas.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- N 6-1 A 6-foot high sound wall should be constructed along the project site. The sound wall must be continuous and constructed of a dense material such as masonry blocks or stucco on both sides of a wood/steel frame.
- N 6-2 Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors may remain closed for the required acoustical insulation.

3.8.4 - Potentially Significant Impact

Seven of the eight study area intersections under the near-term conditions will experience a significant cumulative impact. The addition of project traffic will cumulatively contribute to the degradation of these intersections resulting in an operational LOS E or worse. These intersections are:

- State Route 86 and West McCabe Road (AM - LOS F, PM - LOS F)

- State Route 86 and Horne Road (PM - LOS F)
- State Route 86 and Willow Bend Drive (Project Access) (PM - LOS F)
- State Route 86 and Countryside Drive (Project Access) (PM - LOS F)
- State Route 86 and Interstate 8 Westbound Ramp (PM - LOS F)
- State Route 86 and Interstate 8 Eastbound Ramp (PM - LOS F)
- State Route 86 and Wake Avenue (PM - LOS E)

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

The following roadway improvements are recommended to improve the operation of the impacted locations. The City Engineer shall make the determination of whether the payment of proportionate share or installation of the improvements is required. This shall be completed at the time of project approval. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for all cumulatively impacted locations.

As these roadway network improvements effect intersections and roadways under Jurisdiction of the State of California Department of Transportation (Caltrans) along State Route 86, the following improvements are in accordance with the Memorandum of Understanding (MOU) regarding State Route 86 between Caltrans and the City of El Centro. These improvements adhere to the guidelines as established within the MOU and mitigate all intersections and roadway segments to a LOS D or better.

Intersections

- TT 6-1** State Route 86 and Interstate 8 Westbound Ramp - The project applicant should contribute a fair share (4.9%) towards the construction of a westbound right-turn lane and a second northbound left-turn lane. LOS before/after mitigation: F/D.
- TT 6-2** State Route 86 and Interstate 8 Eastbound Ramp - The project applicant should contribute a fair share (4.6 %) towards the construction of two eastbound right-turn lanes and a second southbound left-turn lane. LOS before/after mitigation: F/D.

- TT 6-3** State Route 86 and Wake Avenue - The project applicant should contribute a fair share (4.7%) towards the construction of a second eastbound left-turn lane. LOS before/after mitigation: E/D.
- TT 6-4** State Route 86 and Horne Road - The project applicant should contribute a fair share (10.6%) towards the signalization of the intersection. LOS before/after mitigation: F/B.
- TT 6-5** State Route 86 and Willow Bend Drive - The project applicant should contribute a fair share (13.8%) towards the construction of a right turn in/right turn out island from the project driveway. LOS before/after mitigation: F/C.
- TT 6-6** State Route 86 and Countryside Drive - The project applicant should contribute a fair share (9.0%) towards the signalization of the intersection. LOS before/after mitigation: F/A.
- TT 6-7** State Route 86 and West McCabe Road - The project applicant should contribute a fair share (1.5%) towards the signalization of the intersection including the provision of dedicated eastbound and westbound left-turn pockets. LOS before/after mitigation: F/C.

3.8.5 - Potentially Significant Impact

Two of the five roadway segments under the near-term conditions will be significantly impacted by cumulative projects that include the proposed project. The addition of project traffic will cumulatively contribute to the degradation of these roadway segments resulting in an operational LOS E or worse. These roadway segments are:

- State Route 86 - McCabe Road to Project Access (South of Horne Road) (LOS E)
- State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps (LOS E)

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

- TT 6.8** State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps - The project applicant should contribute a fair share (5.6 %) towards the widening of SR 86 between Wake Avenue and I-8 to six lanes. LOS before/after mitigation: E/B.

TT 6-9 State Route 86 - McCabe Road to Project Access - The project applicant should contribute a fair share (2.7%) towards the widening of SR 86 between McCabe Road and Project Access to four lanes, including the widening of SR 86 to four lanes along the project frontage. LOS before/after mitigation: E/A.

3.8.6 - Potentially Significant Impact

In the Horizon Year 2025, the proposed project will contribute to a significant cumulative roadway segment impact along SR 86 between Danenberg Drive and Wake Avenue.

Finding

Changes or alterations have been required in, or incorporated into, the project, which mitigate or avoid the significant effects on the environment.

Facts in Support of Finding

The project-level significant effect has been eliminated or substantially lessened to a level that is less than significant by virtue of the following mitigation measures as identified in the final EIR and incorporated into the Project.

TT 6-10 SR-86 between Danenberg Drive and Wake Avenue - The project applicant shall contribute a fair share (5.7%) towards the widening of the SR-86 between Danenberg Drive and Wake Avenue to four lanes.

It should be noted that the City Engineer shall make the determination whether the payment of the proportionate share or installation of the improvements is required. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for a cumulatively impacted locations.

SECTION 4. SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

4.1 - Agricultural Resources

4.1.1 - Significant Unavoidable Impact

Project implementation will result in the conversion of Farmland of Statewide Importance

4.1.2 - Finding

Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the environmental impact report.

4.1.3 - Facts in Support of Finding

No feasible measures are available for the project applicant to reduce the loss of Farmland of Statewide Importance. Project implementation will result in the conversion of this agricultural land to urban uses, which would constitute a significant loss of Farmland of Statewide Importance. Potential impacts in this regard are significant and unavoidable under CEQA. No mitigation is available to reduce this significant impact to a level of less than significant.

The potential significant and unavoidable adverse impacts related to the loss of Farmland of Statewide Importance of the proposed Project are considered to be acceptable in light of the Statement of Overriding Considerations provided herein as Attachment A.

4.2 - Air Quality

4.2.1 - Significant Unavoidable Impact

The proposed Project is not consistent with the Air Quality Attainment Plan and the State Implementation Plan for PM10.

4.2.2 - Finding

Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the environmental impact report.

4.2.3 - Facts in Support of Finding

The Imperial County population projections for year 2010 used in the Air Quality Attainment Plan and State Implementation Plan for PM-10 for the City of El Centro assumes land use designations in the General Plan and includes build-out of the site. The project site under the current County General Plan land use designation would accommodate approximately 2 dwelling units per parcel or 76 units for the project site. The proposed project includes the development of 131 single-family residential dwelling units. Clearly, the proposed project would result in a higher density, and more vehicle trips

and vehicle miles traveled than what was anticipated in the Air Quality Attainment Plan and State Implementation Plan for PM-10. Because the project will result in more people and more traffic than what was considered in the plan, the project is not consistent with the Air Quality Attainment Plan and State Implementation Plan for PM-10, and therefore would create a significant impact in this regard. No mitigation is available to reduce this significant impact to less than significant.

The potential significant and unavoidable adverse air quality impacts of the proposed Project are considered to be acceptable in light of the Statement of Overriding Considerations provided herein as Attachment A.

SECTION 5. FEASIBILITY OF PROJECT ALTERNATIVES

CEQA requires that an EIR include an analysis of a reasonable range of feasible alternatives to a proposed project capable of avoiding or substantially lessening any significant adverse environmental impact associated with the project. The discussion of alternatives is required to include the "No Project" alternative. CEQA requires further that the City identify an environmentally superior alternative. If the "No Project" alternative is the environmentally superior alternative, an environmentally superior alternative must be identified from among the other alternatives. (CEQA Guidelines, Section 15126.6.)

As set forth in these Findings, the Project, with the Mitigation Measures incorporated, will have remaining significant adverse environmental impacts. The City has, in addition to incorporating the recommended measures to mitigate the identified impacts, reviewed a range of potential alternatives to the proposed project. The Willow Bend EIR discussed the No Project/No Development Alternative, and the No Project/Development in Accordance with the Existing Zoning Alternative,. A third Alternative, an Alternative Site Alternative was considered and rejected because it was determined that it was not possible to eliminate a significant unavoidable impact.. An Environmentally Superior Alternative has been selected from among the two alternatives evaluated in this Draft EIR. An alternative that is environmentally superior will result in the fewest or least significant environmental impacts and will achieve the project objectives of the planning effort. The No Project/Development in Accordance with the Existing Zoning Alternative was determined to be the Environmentally Superior Alternative; however, this alternative would not meet the project objectives. Based on meeting the goal of accommodating growth projections in the City of El Centro within the City's Sphere-of-Influence the City Council rejects the No Project/No Development Alternative and the No Project/Development in Accordance with the Existing Zoning Alternative.

5.1 - No Project/No Development Alternative

Under the No Project/No Development Alternative (No Project Alternative), the entire project site would remain unchanged and no new development would occur onsite. In general, the Willow Bend project site would continue to exist as undeveloped land and the project site would not be annexed into the City of El Centro. Although this alternative is environmentally superior to the project, the City finds it to be less desirable than the proposed project, and rejects it because it fails to meet the project's objectives.

5.2 - No Project/Development in Accordance with the existing zoning Alternative

The No Project/Development in Accordance with Existing Zoning Alternative (Zoning Alternative) would result in the development of the project site under the existing zoning designation. Similar to the No Project Alternative, under this alternative scenario, the project would not be annexed into the

City of El Centro. Currently the project site is zoned by Imperial County as General Agriculture/Urban Overlay (A2U). Under this designation, agricultural land uses are allowed. The density permitted is one dwelling unit per 40 acre parcel. Therefore, under the current County zoning designation, the 38-acre project would preclude residential development but allow agricultural production and associated activities. . Although this alternative is environmentally superior to the project, the City finds it to be less desirable than the proposed project, and rejects it because it fails to meet the project's objectives.

5.3 - Environmentally Superior Alternative

The environmentally superior alternative is selected from among the preceding alternatives and the Willow Bend project. An alternative that is environmentally superior would result in the fewest or least significant impacts and will feasibly attain most of the objectives of the planning effort. As is usually the case, the No Project/No Development Alternative would result in fewer significant impacts than the Willow Bend subdivision project. CEQA, however, states that if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative from other alternatives. Thus, the No Project/Development in Accordance with the Existing Zoning Alternative would be considered Environmentally Superior Alternative. As previously stated, this Alternative does not meet the project objectives.;. In particular, the No Project/Development in Accordance with the Existing Zoning Alternative would not provide single-family housing to meet the growth projections of the City of El Centro within the City's Sphere-of-Influence; or provide public infrastructure improvements for the orderly expansion of urban development.

Appendix A: Statement of Overriding Considerations

STATEMENT OF OVERRIDING CONSIDERATIONS

The California Environmental Quality Act (CEQA) requires the lead agency to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve the project. The City of El Centro proposes to approve the Willow Bend project although unavoidable adverse agricultural resources and air quality impacts have been identified in the EIR. Specifically, the significant and unavoidable impacts are associated with the loss of Farmland of Statewide Importance due to the conversion of the project site to urban uses and to inconsistency with the adopted Air Quality Attainment Plan and State Implementation Plan for PM10. Even though these adverse impacts are not reduced to a level considered less than significant, the El Centro City Council finds that those impacts are outweighed by the benefits of the Willow Bend project. Further, the alternatives which were identified in the EIR would not meet either in part or in whole the project objectives, as summarized below, to the same extent as the proposed project:

- Supply single-family housing to meet the growth projections of the City of El Centro contiguous to similar development within the City's Sphere-of-Influence;
- Locate development to meet anticipated growth in areas of relatively lesser environmental sensitivity, accommodating growth while balancing environmental considerations;
- Provide public infrastructure improvements for the orderly expansion of urban development; and
- Locate housing adjacent to major highway arterials (SR-86) and with convenient access to Interstate 8 to promote efficient traffic flows and minimize traffic demands on local and collector streets.

Therefore, the El Centro City Council, having reviewed and considered the information contained in the EIR and the public record, adopts the Statement of Overriding Considerations which has been balanced against the unavoidable adverse impacts in reaching a decision on this project.

**Mitigation Monitoring and Reporting Program for
Environmental Impact Report
for
City of El Centro
Zone Change 05-05 and Tentative Subdivision Map
(Willow Bend)
State Clearinghouse No. 2005101128**

Prepared for:

City of El Centro
Planning Department
1275 Main Street
El Centro, CA 92243

Contact: Oliver Alvarado, Planning Director

Prepared by:

Michael Brandman Associates
Michael Brandman Associates
220 Commerce, Suite 200
Irvine, CA 92602

Contact: Kara E. Palm, Project Manager



October 30, 2006

**Draft Environmental Impact Report for City of El Centro
 Zone Change 05-05 and Tentative Subdivision Map (Willow Bend) Mitigation Monitoring and Reporting Program**

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
SECTION 5.1 - AGRICULTURAL RESOURCES									
Project implementation will result in the conversion of Farmland of Statewide Importance.	There are no feasible mitigation measures.								
SECTION 5.2 - AIR QUALITY									
Onsite construction emissions generated during construction principally consist of exhaust emissions (NO _x , SO _x , CO, VOC, and PM ₁₀) from heavy-duty construction equipment operation and fugitive dust (PM ₁₀) from disturbed soil.	AQ 5.2-1. During construction of the proposed improvements, all construction equipment will be properly maintained at an offsite location and includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction.	During construction.	Applicant and City of El Centro						
	AQ 5.2-2. During construction of the proposed improvements, all construction equipment will be fueled with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use in off-road equipment).	During construction.	Applicant and City of El Centro						
	AQ 5.2-3. To the maximum extent feasible, use diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.	During construction.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	AQ-5.2.4. Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction site and provide temporary traffic control (i.e. flag person) during demolition debris transport and other construction related truck hauling activities.	Prior to issuance of a grading permit and during construction.	Applicant and City of El Centro						
	AQ 5.2-5. During construction of the proposed improvements, construction equipment will not idle on site for more than 10 minutes.	During construction.	Applicant and City of El Centro.						
	AQ 5.2-6. During construction of the proposed improvements, the project applicant will provide onsite meals to construction workers by arranging a lunch wagon to visit the construction site during work breaks including the lunch break. This will improve air quality by reducing traffic created by construction workers.	During construction.	Applicant and City of El Centro						
	AQ 5.2-7. During construction of the proposed improvements, the project applicant will provide onsite electrical hook ups for electric construction tools, such as saws, drills and compressors, to eliminate the need for diesel powered electric generators.	During construction.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	AQ 5.2-8. Prior to construction of the proposed improvements, the project proponent will provide a Dust Control Plan that will describe the application of standard best management practices to control dust during construction. Best management practices will include application of water on disturbed soils a minimum of two times per day, covering haul vehicles, replanting disturbed areas as soon as practical, restricting vehicle speeds on unpaved roads to 15 mph, sweeping street access points at the end of each day, and other measures, as deemed appropriate to the site, to control fugitive dust. The Fugitive Dust Control Plan shall be submitted to the City and the Imperial County Air Pollution Control District for approval and approved prior to construction.	Prior to issuance of a grading permit and during construction.	Applicant and City of El Centro						
	AQ 5.2-9. During construction of the proposed improvements, only low volatility paints and coatings as defined in Imperial County APCD Rule 424 shall be used. All paints shall be applied using either high volume, low pressure (HVLP) spray equipment or by hand application.	During construction.	Applicant and City of El Centro						
The proposed project is not consistent with the AQMP	No mitigation is available.								

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
SECTION 5.3 - BIOLOGICAL RESOURCES									
Burrowing owls would be adversely impacted on a short-term basis during construction activities to underground the onsite drains.	BR 5.3-1. Additional focused survey shall be conducted to more conclusively determine the number of owls occupying the project site and a 500-foot buffer. Focused surveys shall follow accepted burrowing owl protocol, which includes a nesting season survey. During the nesting season survey, four site visits are conducted between April 15 and July 15. Surveys shall be conducted from two hours before sunset to one hour after, or from one hour before to two hours after sunrise.	Prior to issuance of a grading permit.	Applicant and City of El Centro						
	BR 5.3-2. A burrowing owl preconstruction survey shall be completed no sooner than 30 days prior to commencement of construction.	Prior to issuance of a grading permit.	Applicant and City of El Centro						
	BR 5.3-3. Burrowing owls inside the project site shall be actively relocated prior to construction activity in order to avoid direct impacts of burrow destruction. Once all burrows on the project site are confirmed to be absent of owls, they shall be systematically collapsed. Where possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags will be inserted into the tunnels during	Prior to issuance of a grading permit.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	excavation to maintain an escape route for any animals inside the burrow.								
	BR 5.3-4. No construction-related disturbance shall occur within 50 m., approx. 160 ft., of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m., approx. 250 ft., during the breeding season of February 1 through August 31.	During construction.	Applicant and City of El Centro						
47	BR 5.3-5. If feasible, 6.5 acres of foraging habitat for each pair of burrowing owl would be preserved in a conservation easement and managed to promote burrowing owl use of the site. This habitat shall be adjacent to the project site but at least 50 meters from the impact area. The displaced owls would be encouraged to occupy this conserved area by actively relocating them to natural or artificial burrows. One alternate natural or artificial burrow should be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. Conservation of agricultural lands to the west or south of the project site would be the only appropriate options under this mitigation measure.	Prior to issuance of grading permit.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
42	BR 5.3-6. If Mitigation Measure BR 5.3-5 is not feasible, this mitigation measure is required. Off-site replacement of burrowing owl habitat shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable burrowing owl habitat. One alternate natural or artificial burrow shall be provided for each burrowing owl suitable burrow that will be excavated in the project impact zone, including the undergroundment of the adjacent drains. The off-site replacement of suitable burrowing owl habitat shall follow one of the following scenarios: • Replacement of occupied habitat with off-site occupied habitat: 9.75 acres per pair or single bird; or • Replacement of occupied habitat with off-site suitable unoccupied habitat: 19.5 acres per pair or single bird.	Prior to issuance of grading permit	Applicant and City of El Centro						
	In the long-term, due to increased recreational use of the berms by humans and pets, harassment of owls will occur. Also, the conversion of burrowing owl foraging, dispersing, and nesting habitat will be impacted.	During construction and operation of the project.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
The proposed project contains suitable nesting bird habitat. If actively nesting birds are present during construction, they will be disturbed by construction activities.	BR 5.3-8. The removal of vegetation, ground disturbance, or elimination of other potential nesting habitat should be conducted outside of avian nesting season (February through August). This is particularly true for construction during the undergroundment of the drains as burrowing owls were confirmed as present and are likely resident breeders. If construction occurs during the avian nesting season, a pre-construction nesting bird survey shall be conducted seven days prior to any ground disturbing activities. If birds are found to be nesting inside the impact area, construction will need to be postponed until a no-construction buffer, 250 feet for passerines and 500 feet for raptors, is established. Construction inside the buffer could commence once a qualified biologist determines that the nest is no longer active.	Prior to issuance of a grading permit and during construction.	Applicant and City of El Centro.						
SECTION 5.4 - CULTURAL RESOURCES									
Cultural Resources The records search and field survey results revealed that there a low potential exists for impacts to prehistoric cultural resources. However, there is always the potential for undiscovered resources to be uncovered.	CR 5.4-1. In the event that human remains are uncovered, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Imperial County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the	During construction.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	remains to be Native American, then the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or								
47	CR 5.4-2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or on the property in a location not subject to further subsurface disturbance: • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. • The descendant identified fails to make a recommendation; or • The landowner or his authorized representative rejects the	During construction.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the landowner.								
Paleontological Resources There is a high probability that the project site contains significant paleontological resources, at a depth of eight feet or greater below ground surface.	CR 5.4-3. Prior to any clearing and grubbing and/or earthmoving activities on the project area, a qualified Project Paleontologist retained by the Proponent and approved by the City shall review the approved development and construction plans. The paleontologist shall participate in a pre-construction project meeting with the development staff to ensure an understanding of the mitigation measures required during construction.	Prior to issuance of grading permit.	Project Paleontologist, Applicant and City of El Centro.						
	CR 5.4-4. Paleontologic monitoring of any shall be conducted by a qualified monitor, under direct guidance of a Project Paleontologist. Earthmoving in areas of the parcel where previously undisturbed sediments will be buried but not otherwise disturbed will not be monitored. Monitoring shall begin once earthmoving reaches 8 feet below the original ground surface. Non-virgin soils need not be monitored.	During construction.	Project Paleontologist, Applicant and City of El Centro.						
	CR 5.4-5. If too few fossil remains are found after 50 percent of earthmoving is complete, monitoring can be reduced or discontinued in those areas at the project paleontologist's direction. If fossil remains are found during monitoring, up	During construction.	Project Paleontologist and Applicant.						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor	Report?
	to 6,000 pounds of fossiliferous sediments will be recovered from the fossil site and processed to allow for the recovery of smaller fossil remains. The total weight of all processed samples from the fossil-bearing rock unit will not exceed 6,000 pounds at any one site.								
	CR 5.4-6. If fossil remains are found, the Project Paleontologist shall develop a storage agreement with a museum repository acceptable within the City to allow for the permanent storage and maintenance of any fossil remains recovered in the Project Site as a result of the mitigation program, and for the archiving of associated specimen data and corresponding geologic and geographic site data. Any recovered fossil remains will be prepared to the point of identification and identified to the lowest taxonomic level possible by knowledgeable paleontologists. The remains then shall be curated (assigned and labeled with museum repository fossil specimen numbers and corresponding fossil site numbers, as appropriate; placed in specimen trays and, if necessary, vials with completed specimen data cards) and catalogued. Associated specimen data and corresponding geologic and geographic site data will be archived (specimen and site numbers and corresponding data entered into	During construction.	Project Paleontologist and Applicant.						

46

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	appropriate museum repository catalogs and computerized data bases) at the museum repository by a laboratory technician. The remains then will be accessioned into the museum repository fossil collection, where they will be permanently stored and maintained. The associated specimen and site data shall be made available for future study by qualified investigators.								
47	CR 5.4-7. A final report of findings shall be prepared by the Project Paleontologist for submission to the City, and the museum repository following accessioning of the specimens into the museum repository fossil collection. The report shall describe parcel geology/stratigraphy, summarize field and laboratory methods used, include a faunal list and an inventory of curated/catalogued fossil specimens, evaluate the scientific importance of the specimens, and discuss the relationship of any newly recorded fossil site in the parcel to relevant fossil sites previously recorded from other areas.	Post construction.	Project Paleontologist, Applicant and City of El Centro.						
SECTION 5.5 - GEOLOGY AND SOILS									
The project site is within the vicinity of numerous active faults and will likely experience moderate to strong ground	GS 5.5-1. Prior to the issuance of grading permits, LandMark Consultants, Inc., or other qualified engineering geologist approved by the City of El Centro shall	Prior to the issuance of grading permits.	Qualified engineering geologist, Applicant						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
motion from earthquakes in the region.	review and approve all grading plans and earthwork operation plans in relation to the Recommendations set forth in Section 4 of the Geotechnical Study (Appendix F of this DEIR).		and City of El Centro.						
	GS 5.5-2. LandMark Consultants, Inc. or other qualified engineering geologist approved by the City of El Centro shall be provided with a forty-eight hours advance notice in order to be present at the site during all earthwork activities related to the excavation, tree root removal, stripping, backfill, and compacting and filling of the site and to perform periodic compaction tests.	During all earthwork activities.	Qualified engineering geologist, Applicant and City of El Centro.						
The results of the testing soils for expansive properties indicated that earthwork operations can be expected to encounter expansive soils with expansion indexes in the range of medium to high. Thus, there is the potential for soils at the site to have a high potential for expansion.	Please refer to mitigation measures GS 5.5-1 and 5.5-2,								
	GS 5.5-3. Prior to the issuance of grading permits, the project applicant shall include one of the following foundation systems and remediation schemes to reduce the potential for expansive soils to less than significant. • Waffle-slabs supported on a system of	Prior to the issuance of grading permits.	Applicant and City of El Centro.						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor	Report?
	drilled piers anchored below the zone of moisture change; - Moisture conditioning subgrade soils to a minimum of 5% above optimum moisture (ASTM D1557) for the full range in depth of surface soils; - Design of foundations that are resistant to shrink/swell forces of silt/clay soil; - Excavation of existing materials and replacement by non-expansive soils; - Reinforcement in footings and slabs. Flexural and shear stresses in slabs should be computed by determining the differential swell for the center lift and edge lift conditions using design procedures recommended by the Post-Tensioning Institute. The differential swell should be used to compute the maximum shear stresses and flexural stresses in floor slabs and flatwork. Use edge moisture variation distance (em) of six feet and three feet for the center lift and edge lift conditions, respectively; and - Provide Post-tensioned, free floating slabs-on-grade.								
	GS 5.5-6. Provide positive free drainage away from the structure and make every effort possible to prevent subgrade saturation by measures such as: containing all landscaping in sealed	During Construction	Qualified Engineering geologist, applicant, and City of						

49

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	planters, sealing all construction joints with an elastomeric compound, providing the building with eave gutters and downspouts; and routing all drainage impinging upon the site from off-site sources as well as drainage generated on the site away from the proposed residential structures.		El Centro						
There is groundwater at a level of eight feet below ground surface. Soils encountered below three feet have the potential to pump groundwater under heavy construction wheel loads because of the silty conditions in the near surface soils have the tendency to support layers of groundwater.	GS 5.5-4. Base line collectors (6-8 inches in diameter) along the north side of the project site shall be crushed in place and trench backfill compacted (85-90%). The 4-inch lateral pipeline drains shall be plugged at street crossings.	During all earthwork activities.	Applicant and City of El Centro						
	GS 5.5-5. Light earthmoving equipment (i.e., 613 and/or 623 Earthmovers) shall be used on the project site during construction activities to reduce the potential for groundwater pumping.	During all earthwork activities.	Applicant and City of El Centro						
SECTION 5.6 - HAZARDS AND HAZARDOUS MATERIALS									
Remnants of past activities and debris are located on the project site.	HM 5.6-1. Prior to any earth moving activities on the project site, debris consisting of a wood pallet, dry brush, Styrofoam, cardboard and automobile tires found at the northern portions of the project site shall be removed and properly disposed.	Prior to the issuance of a grading permit.	Applicant and City of El Centro						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
Pesticide residue (DDE) exists in the project site soils below current threshold (action) limits.	HM 5.6-2. Prior to the issuance of a grading permit, the project applicant shall coordinate with DTSC to review and approve the results of the pesticide scan. DTSC shall provide written verification that no further action is required in relation to the presence of DDE in near surface soils. If DTSC determines that the soils exceed the acceptable limits the soils shall be remediated and/or properly disposed of per DTSC requirements.	Prior to the issuance of a grading permit.	Applicant, the Department of Toxic Substance Control (DTSC), and City of El Centro.						
SECTION 5.7 - NOISE									
Activities involved in construction of the project would generate noise levels in the range of 80 dBA to 87 dBA.	N 5.7-1. Prior to the issuance of grading permits, the grading plans shall state that all gas and diesel power equipment shall be properly muffled and maintained. Construction activities should be limited to the hours and days permitted by the City of El Centro.	Prior to the issuance of grading permits and during construction.	Applicant and City of El Centro						
SECTION 5.8 - PUBLIC SERVICES AND UTILITIES									
Fire Protection and Emergency Medical Services The El Centro Fire Department (ECFD) has stated that the proposed project would increase demands for fire protection and emergency medical services and would have an adverse impact on response times and staffing ratios. The ECFD has stated that it cannot currently meet the	PSU 5.8-1. Prior to recordation of the final map, the applicant shall be required to enter into an agreement that will mitigate the operational impacts to fire services caused by the approval of the project. The description of the security for the agreement and the method of payment will be included in the agreement.	Prior to final map approval.	Applicant and City of El Centro.						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
existing needs of the community and implementation of the proposed project would exacerbate this condition.									
Police Services The El Centro Police Department (ECPD) has indicated that the proposed project would increase demands for police protection and would have an adverse impact on response times and staffing ratios. The ECPD has stated that this would be a significant impact and implementation of the proposed project would exacerbate this condition.	PSU 5.8-2. Prior to recordation of the final map, the applicant shall be required to enter into an agreement that will mitigate the operational impacts to police services caused by the approval of the project. The description of the security for the agreement and the method of payment will be included in the agreement.	Prior to final map approval.	Applicant and City of El Centro.						
Solid Waste The project's construction would generate approximately 1,004 tons of construction debris. This would be a significant short-term solid waste impact.	PSU 5.8-3. At the time building permits are sought, the project applicant shall demonstrate to the satisfaction of the City of El Centro Public Works Department that a certified construction and demolition recycler has been retained and a Waste Management Plan has been prepared for the construction phase of the proposed project.	Prior to the approval of building permits.	Applicant and City of El Centro.						
SECTION 5.9 - TRANSPORTATION AND TRAFFIC									
With the implementation of the proposed project all intersections and roadway segments will operate at an acceptable LOS.	No mitigation is required.								

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
SECTION 6 - CUMULATIVE IMPACTS									
Agricultural Resources The proposed project will result in the conversion of Farmlands of Statewide Importance. Similar projects will result in the conversion of designated farmlands and/or lands zoned for agricultural land uses. This is considered a significant and unavoidable cumulative impact.	No mitigation is available.								
There is substantial development in the project area and in the Salton Sea Air Basin. Much of this new development was not contemplated in the populations of the 1991 Attainment Plan and the 1993 PM ₁₀ Plan. These new development projects have the potential to increase the emissions of the basin. The project area is not attainment for ozone, CO, or PM ₁₀ . Operational emissions of ROG, NO _x (Ozone precursor pollutants) CO, and PM ₁₀ from the proposed project will incrementally contribute to a significant cumulative effect because the project emissions combined with emissions from all other projects in the Salton Sea Air Basin will be	No mitigation is available								

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
cumulatively considerable air quality impacts with regard to these pollutants.									
Biological Resources Implementation of the proposed project, in conjunction with future developments as identified earlier in this section would contribute to the ongoing loss of open space in the region, resulting in a decline of habitat for burrowing owls and nesting birds.	Please see mitigation measures BR 5.3-1 through BR 5.3-8 in Section 5.3, Biological Resources, of this EIR.	Prior to the issuance of grading permits and ongoing during construction	Applicant and City of El Centro						
Cultural Resources Like the proposed project, cumulative projects may result in the disturbance of soils at a depth of 8 feet or greater below ground level, which, could contain paleontological resources.	Please see mitigation measures CR 5.4-1 through CR 5.4-7, in Section 5.4, Cultural Resources, of this EIR.	Prior to the issuance of grading permits and ongoing during construction	Applicant, project paleontologist, and the City of El Centro						
Noise Onsite locations will exceed El Centro's acceptability criterion of 60 dB Leq within the outdoor activity areas.	N 6-1. A 6-foot high sound wall should be constructed along the project site. The sound wall must be continuous and constructed of a dense material such as masonry blocks or stucco on both sides of a wood/steel frame.	Prior to the approval of building permits.	Applicant and City of El Centro.						
	N .6-2. Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors may remain closed for the required acoustical insulation.	During construction.	Applicant.						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
Transportation and Traffic Near-Term Scenario Intersections Seven of the eight study area intersections under the near-term conditions will experience a significant cumulative impact. The addition of project traffic will cumulatively contribute to the degradation of these intersections resulting in an operational LOS E or worse. These intersections are: - State Route 86 and West McCabe Road (AM - LOS F, PM - LOS F) - State Route 86 and Home Road (PM - LOS F) - State Route 86 and Willow Bend Drive (Project Access) (PM - LOS F) - State Route 86 and Countryside Drive (Project Access) (PM - LOS F) - State Route 86 and Interstate 8 Westbound Ramp (PM - LOS F) - State Route 86 and Interstate 8 Eastbound Ramp (PM - LOS F)	The following roadway improvements are recommended to improve the operation of the impacted locations. The City Engineer shall make the determination of whether the payment of proportionate share or installation of the improvements is required. This shall be completed at the time of project approval. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for all cumulatively impacted locations. As these roadway network improvements effect intersections and roadways under Jurisdiction of the State of California Department of Transportation (Caltrans) along State Route 86, the following improvements are in accordance with the Memorandum of Understanding (MOU) regarding State Route 86 between Caltrans and the City of El Centro. These improvements adhere to the guidelines as established within the MOU and mitigate all intersections and roadway segments to a LOS D or better.								

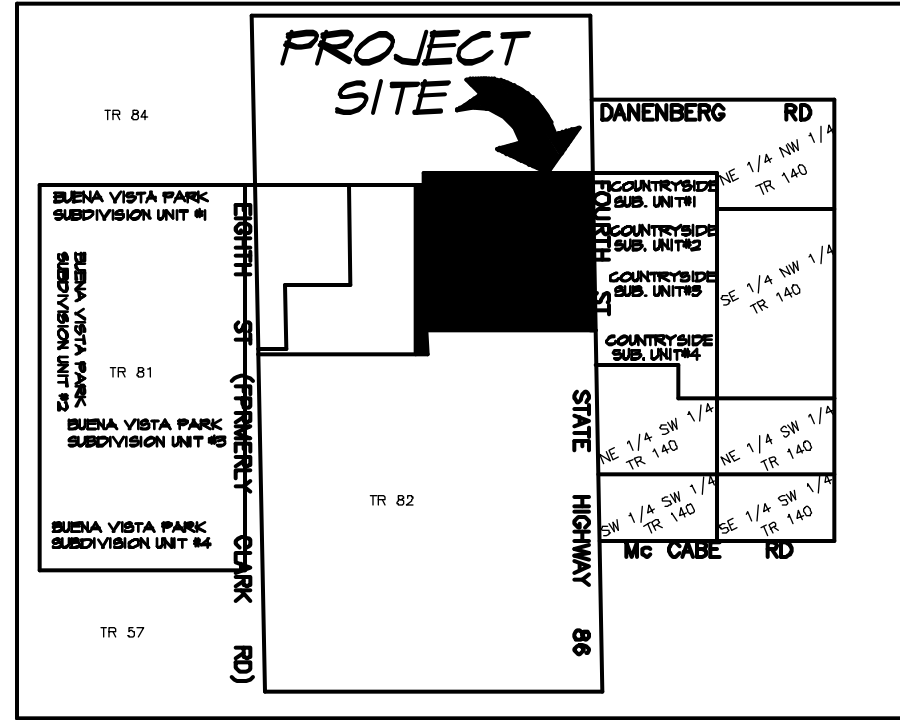
Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
• State Route 86 and Wake Avenue (PM - LOS E)									
	Intersections TT 6-1. State Route 86 and Interstate 8 Westbound Ramp - The project applicant should contribute a fair share (4.9%) towards the construction of a westbound right-turn lane and a second northbound left-turn lane. LOS before/after mitigation: F/D.	At the time of project approval.	Applicant and the City of El Centro.						
	TT 6-2. State Route 86 and Interstate 8 Eastbound Ramp - The project applicant should contribute a fair share (4.6 %) towards the construction of two eastbound right-turn lanes and a second southbound left-turn lane. LOS before/after mitigation: F/D.	At the time of project approval.	Applicant and the City of El Centro.						
	TT 6-3. State Route 86 and Wake Avenue - The project applicant should contribute a fair share (4.7%) towards the construction of a second eastbound left-turn lane. LOS before/after mitigation: E/D.	At the time of project approval.	Applicant and the City of El Centro.						
	TT 6-4. State Route 86 and Horne Road - The project applicant should contribute a fair share (10.6%) towards the signalization of the intersection. LOS before/after mitigation: F/B.	At the time of project approval.	Applicant and the City of El Centro.						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
	TT 6-5. State Route 86 and Willow Bend Drive - The project applicant should contribute a fair share (13.8%) towards the construction of a right turn in/right turn out island from the project driveway. LOS before/after mitigation: F/C.	At the time of project approval.	Applicant and the City of El Centro.						
	TT 6-6. State Route 86 and Countryside Drive - The project applicant should contribute a fair share (9.0%) towards the signalization of the intersection. LOS before/after mitigation: F/A.	At the time of project approval.	Applicant and the City of El Centro.						
	TT 6-7. State Route 86 and West McCabe Road - The project applicant should contribute a fair share (1.5%) towards the signalization of the intersection including the provision of dedicated eastbound and westbound left-turn pockets. LOS before/after mitigation: F/C.	At the time of project approval.	Applicant and the City of El Centro.						
Roadway Segments Two of the five roadway segments under the near-term conditions will be significantly impacted by cumulative projects that include the proposed project. The addition of project traffic will cumulatively contribute to the degradation of these roadway segments resulting in an operational LOS E or worse. These roadway segments are:	Roadway Segments TT 6.8. State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps - The project applicant should contribute a fair share (5.6 %) towards the widening of SR 86 between Wake Avenue and I-8 to six lanes. LOS before/after mitigation: E/B.	At the time of project approval.	Applicant and the City of El Centro.						

Impacts	Mitigation Measures	Schedule for Implementation	Monitoring Responsibilities	Compliance Monitoring and Reporting					
				Shown on Plans		Installed on Site		Frequency of:	
				Req'd	Verified Date/Init	Req'd	Verified Date/Init	Monitor ¹	Report ²
- State Route 86 - McCabe Road to Project Access (South of Horne Road) (LOS E) - State Route 86 - Wake Avenue to Interstate 8 Eastbound Ramps (LOS E)									
	TT 6-9. State Route 86 - McCabe Road to Project Access - The project applicant should contribute a fair share (2.7%) towards the widening of SR 86 between McCabe Road and Project Access to four lanes, including the widening of SR 86 to four lanes along the project frontage. LOS before/after mitigation: E/A.	At the time of project approval.	Applicant and the City of El Centro.						
Horizon Year 2025 Scenario The proposed project will contribute to a significant cumulative roadway segment impact along SR 86 between Danenberg Drive and Wake Avenue.	TT 6-10. SR-86 between Danenberg Drive and Wake Avenue - The project applicant shall contribute a fair share (5.7%) towards the widening of the SR-86 between Danenberg Drive and Wake Avenue to four lanes. It should be noted that the City Engineer shall make the determination whether the payment of the proportionate share or installation of the improvements is required. Additionally, should the City of El Centro adopt a Transportation Impact Fee (TIF) program, payment into such a program may replace the fair share contribution for a cumulatively impacted locations.	At the time of project approval.	Applicant and the City of El Centro.						

TENTATIVE SUBDIVISION MAP WILLOW BEND

CITY OF EL CENTRO, COUNTY OF IMPERIAL, STATE OF CALIFORNIA



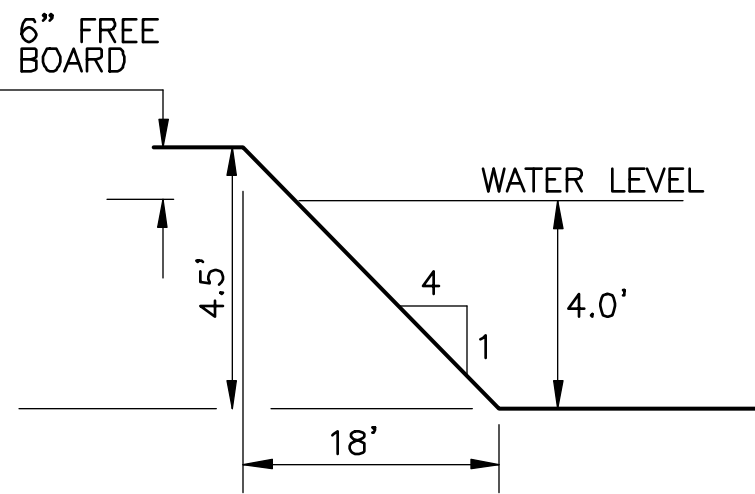
VICINITY MAP

FLOOD ZONE:

ACCORDING TO FEMA, FLOOD INSURANCE RATE MAP PANEL 06025C125C, WITH EFFECTIVE DATE OF 04-26-2008, THE PROJECT SITE LIES IN ZONE 'X' WHICH IS DEFINED AS 'AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

GENERAL NOTES:

- TOTAL AREA OF SUBDIVISION 37.05+ ACRES
- SOILS REPORT: LEIGHTON AND ASSOCIATES, INC.
- TITLE REPORT: CHICAGO TITLE INSURANCE COMPANY
- ZONING:
EXISTING ZONING: A-2, COUNTY OF IMPERIAL
PROPOSED ZONING: R-1, CITY OF EL CENTRO
- DESCRIPTION OF LOTS:
TOTAL LOTS 120 LOTS
SINGLE-FAMILY 120 LOTS
RETENTION BASIN 2.54+ ACRES
PARK 1.37+ ACRES
- ESTIMATED POPULATION EQUIVALENTS:
R-3 3 PERSONS/UNIT
ESTIMATED POPULATION FULL DEV. 360 PERSONS
- ESTIMATED WATER DEMANDS:
R-3 (AVERAGE/PEAK) 250/625 GPCPD
ESTIMATED DEMAND AT FULL DEV. (AVERAGE FLOW) 40.00 THOUSAND GALS.
ESTIMATED DEMAND AT FULL DEV. (PEAK FLOW 250) 225.00 THOUSAND GALS.
ESTIMATED FIRE HYDRANT PLACEMENT WITHIN 150 FEET OF EACH LOT
- ESTIMATED SEWER DEMANDS:
R-3 (AVERAGE/PEAK) 100/200 GPCPD
ESTIMATED DISCHARGE AT FULL DEV. (AVERAGE FLOW) 36.00 THOUSAND GALS.
ESTIMATED DISCHARGE AT FULL DEV. (PEAK FLOW 2.0) 72.00 THOUSAND GALS.
MANHOLE SPACING (APPROXIMATE) 300 FEET
- STORM WATER RETENTION:
RETENTION BASIN DESIGN TO STORE 100% OF A 100-YEAR STORM (3 INCHES OF RAIN).
CONVEYANCE SYSTEM TO BE DESIGNED TO A 25-YEAR FREQUENCY STORM.
- PROPOSED ENGINEERING DESIGN STANDARDS:
WATER DEMANDS (AVERAGE / PEAK) 250/625 GPCPD
FIRE DEMAND 1000 GPM
SEWAGE DISCHARGE (AVERAGE / PEAK) 100/200 GPCPD
STORM WATER (25 YEAR) (TOTAL 3 INCHES) 0.3 INCH PER HOUR.
CURB W / GUTTER SLOPE (0.0020 MIN. RECOMMENDED)
SANITARY SEWER SLOPE (0' MIN DIA) 0.0020 MIN.
STORM DRAIN SLOPE (18" MIN DIA) 0.0010 MIN.
FIRE HYDRANT PLACEMENT WITHIN 150 FT OF EACH LOT
STREET LIGHT SPACING (APPROXIMATE) 300 FEET.
MANHOLE SPACING (APPROXIMATE) 300 FEET.
- PROPOSED LOT DEVELOPMENT STANDARDS:
MIN SIZE LOT 6020 SQ. FT (AVERAGE LOT SIZE TO BE 1168 SQ. FT)
MINIMUM WIDTH LOT 60 FEET
SIDE YARDS 5 FEET (BOTH SIDES)
SIDE YARDS AT CORNER 15 FEET
FRONT YARD SET - BACK 25 FEET
REAR YARD SET - BACK REGULAR 5 FEET, 2 STORY 25 FEET
TREES 2 EACH 15 - GALLON SIZE PER LOT
- MULTIPLE MAPS TO BE FILED PER SECTION 66456.1 OF MAP ACT
- WATER TREATMENT AND DISTRIBUTION BY CITY OF EL CENTRO.
- SEWAGE COLLECTION AND TREATMENT BY CITY OF EL CENTRO.
- ALL IMPROVEMENTS TO BE IN ACCORDANCE WITH CITY STANDARDS AND CALTRANS FOR HWY 86 (4TH STREET).
- STORM DRAIN PIPELINE SIZES SHOWN HEREON ARE PRELIMINARY.
- PIPELINE INVERT ELEVATIONS SHOWN HEREON ARE PRELIMINARY.
- 10' DRAIN NOT TO BE PLACED UNDERGROUND. ONLY FENCING TO BE PROVIDED FOR SAME.



RETENTION BASIN TYPICAL SECTION

RETENTION BASIN: (REQUIRED)

V = OA
A = DRAINAGE AREA = 32.55 Ac.
C = RUNOFF COEFFICIENT = 1.00
V = 32.55 X 3"/12" X 1.0 = 8.14 AC-FT
PROPOSED RETENTION BASIN CAPACITY:
WATER LEVEL AREA = 2.477 Ac.
BOTTOM AREA = 1.603 Ac.
AVERAGE = (2.477 + 1.603) / 2 = 2.040
CAPACITY = 2.040 X 4.00 = 8.16 AC-FT

NO.	REVISION/ADDITION DESCRIPTION:	BY:	DATE:
1	DSE REVISIONS TO TM PER CLIENT COMMENTS LETTER DATED 02-14-24	G.O.	02-21-24
2	LCE REVISIONS TO TM PER CITY OF EL CENTRO COMMENTS LETTER DATED 05-09-24	STAFF	05-30-24
3	DSE REVISIONS TO TM PER CITY OF EL CENTRO COMMENTS LETTER DATED 05-09-24	G.O.	06-10-24
4	DSE REVISIONS TO TM PER CORTNEY COYNE E-MAIL DATED 06-18-24	G.O.	06-21-24
5	LCE REVISIONS TO TM PER CORTNEY COYNE E-MAIL DATED 07-24-24	STAFF	08-13-24
6	LCE REVISIONS TO TM PER CITY OF EL CENTRO COMMENTS LETTER DATED 11-12-24	STAFF	11-14-24
7			
8			
9			
10			

TR 84



PARCEL 3
PM 12-46

AGRICULTURE

PARCEL 2
PM 12-46

RURAL RESIDENTIAL AGRICULTURE

TR 83

PM 2-46

PM 2-47

PM 2-48

PM 2-49

PM 2-50

PM 2-51

PM 2-52

PM 2-53

PM 2-54

PM 2-55

PM 2-56

PM 2-57

PM 2-58

PM 2-59

PM 2-60

PM 2-61

PM 2-62

PM 2-63

PM 2-64

PM 2-65

PM 2-66

PM 2-67

PM 2-68

PM 2-69

PM 2-70

PM 2-71

PM 2-72

PM 2-73

PM 2-74

PM 2-75

PM 2-76

PM 2-77

PM 2-78

PM 2-79

PM 2-80

PM 2-81

PM 2-82

PM 2-83

PM 2-84

PM 2-85

PM 2-86

PM 2-87

PM 2-88

PM 2-89

PM 2-90

PM 2-91

PM 2-92

PM 2-93

PM 2-94

PM 2-95

PM 2-96

PM 2-97

PM 2-98

PM 2-99

PM 2-100

PM 2-101

PM 2-102

PM 2-103

PM 2-104

PM 2-105

PM 2-106

PM 2-107

PM 2-108

PM 2-109

PM 2-110

PM 2-111

PM 2-112

PM 2-113

PM 2-114

PM 2-115

PM 2-116

PM 2-117

PM 2-118

PM 2-119

PM 2-120

PM 2-121

PM 2-122

PM 2-123

PM 2-124

PM 2-125

PM 2-126

PM 2-127

PM 2-128

PM 2-129

PM 2-130

PM 2-131

PM 2-132

PM 2-133

PM 2-134

PM 2-135

PM 2-136

PM 2-137

PM 2-138

PM 2-139

PM 2-140

PM 2-141

PM 2-142

PM 2-143

PM 2-144

PM 2-145

PM 2-146

PM 2-147

PM 2-148

PM 2-149

PM 2-150

PM 2-151

PM 2-152

PM 2-153

PM 2-154

PM 2-155

PM 2-156

PM 2-157

PM 2-158

PM 2-159

PM 2-160

PM 2-161

PM 2-162

PM 2-163

PM 2-164

PM 2-165

PM 2-166

PM 2-167

PM 2-168

PM 2-169

PM 2-170

PM 2-171

PM 2-172

PM 2-173

PM 2-174

PM 2-175

PM 2-176

PM 2-177

PM 2-178

PM 2-179

PM 2-180

PM 2-181

PM 2-182

PM 2-183

PM 2-184

PM 2-185

PM 2-186

PM 2-187

PM 2-188

PM 2-189

PM 2-190

PM 2-191

PM 2-192

PM 2-193

PM 2-194

PM 2-195

PM 2-196

PM 2-197

PM 2-198

PM 2-199

PM 2-200

PM 2-201

PM 2-202

PM 2-203

PM 2-204

PM 2-205

PM 2-206

PM 2-207

PM 2-208

PM 2-209

PM 2-210

PM 2-211

PM 2-212

PM 2-213

PM 2-214

PM 2-215

PM 2-216

PM 2-217

PM 2-218

PM 2-219

PM 2-220

PM 2-221

PM 2-222

PM 2-223

PM 2-224

PM 2-225

PM 2-226

PM 2-227

PM 2-228

PM 2-229

PM 2-230

PM 2-231

PM 2-232

PM 2-233

PM 2-234

PM 2-235

PM 2-236

PM 2-237

PM 2-238

PM 2-239

PM 2-240

PM 2-241

PM 2-242

PM 2-243

PM 2-244

PM 2-245

PM 2-246

PM 2-247

PM 2-248

PM 2-249

PM 2-250

PM 2-251

PM 2-252

PM 2-253

PM 2-254

PM 2-255

PM 2-256

PM 2-257

PM 2-258

PM 2-259

PM 2-260

PM 2-261

PM 2-262

PM 2-263

PM 2-264

PM 2-265

PM 2-266

PM 2-267

PM 2-268

PM 2-269

PM 2-270

PM 2-271

PM 2-272

PM 2-273

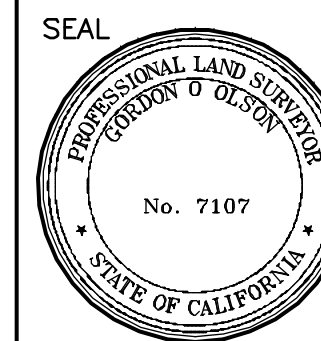
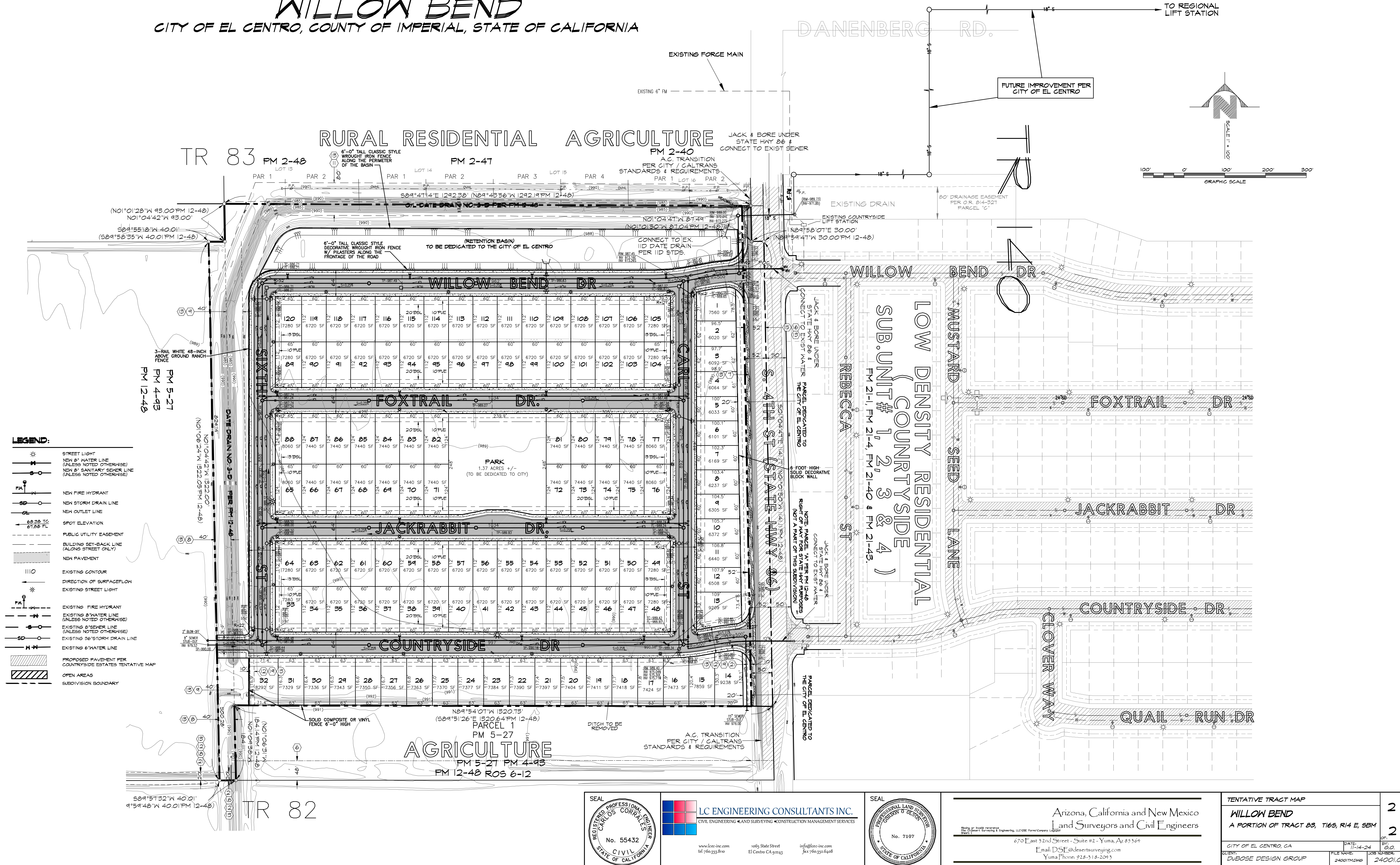
PM 2-274

PM 2-275

PM 2-276

PM

TENTATIVE SUBDIVISION MAP
WILLOW BEND
CITY OF EL CENTRO, COUNTY OF IMPERIAL, STATE OF CALIFORNIA



Arizona, California and New Mexico
Land Surveyors and Civil Engineers
670 East 32nd Street - Suite #2 - Yuma, AZ 85364
Email: DSE@desertsurveying.com
Yuma Phone: 928-318-2043

TENTATIVE TRACT MAP			
WILLOW BEND			
A PORTION OF TRACT 83, T16S, R14 E, S8M			
CITY OF EL CENTRO, CA		DATE: 11-14-24	BY: B.O.
CLIENT: DUBOSE DESIGN GROUP	FILE NAME: 240017.DWG	JOB NUMBER: 24001.0	



Addendum to the
Final Environmental Impact Report for the
Zone Change 05-05 and Tentative Subdivision
Map Willow Bend
El Centro, California

Prepared for
City of El Centro
1275 W. Main Street
El Centro, CA 92243

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108
P 619.308.9333

RECON Number 9938
December 2, 2024

TABLE OF CONTENTS

Acronyms and Abbreviations.....	ii
1.0 Introduction	1
2.0 Project Description	1
3.0 Zone Change 05-05 and Tentative Subdivision Map Willow Bend EIR.....	12
4.0 Environmental Impacts of Proposed Project.....	13
4.1 Agriculture and Forestry Resources	13
4.2 Air Quality.....	14
4.3 Biological Resources	15
4.4 Cultural Resources	16
4.5 Geology and Soils	16
4.6 Hazards and Hazardous Materials	17
4.7 Noise	18
4.8 Public Services and Utilities.....	19
4.9 Transportation and Traffic.....	19
5.0 Conclusion.....	23
6.0 Sources Consulted.....	23

FIGURES

1 Regional Location	2
2: Project Location on USGS Map	3
3: Project Location on Aerial Photograph	4
4: Approved Tentative Subdivision Map.....	5
5: Proposed Tentative Subdivision Map.....	6

ATTACHMENT

- 1: Willow Bend Project – Transportation Assessment (LLG Engineers)
- 2: Intersection Control Evaluation – SR-86 / Countryside Drive Intersection (LLG Engineers)

Acronyms and Abbreviations

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
Final EIR	City of El Centro Zone Change 05-05 and Tentative Subdivision Map Willow Bend Final Environmental Impact Report (SCH# 2005101128)
I-8	Interstate 8
ICAPCD	Imperial County Air Pollution Control District
ICE	Intersection Control Evaluation
IID	Imperial Irrigation District
LLG	Linscott, Law & Greenspan, Engineers
LLMD	Lighting and Landscape Maintenance District
NOP	Notice of Preparation
SR-86	State Route 86
TIF	Traffic Impact Fee
TIS	Traffic Impact Study
TM	Tentative Subdivision Map

1.0 Introduction

This document is an Addendum to the City of El Centro Zone Change 05-05 and Tentative Subdivision Map Willow Bend Final Environmental Impact Report (SCH# 2005101128; hereafter referred to as the Final EIR or 2007 Final EIR). The Addendum analyzes the environmental effects of the proposed changes to the Final EIR from 2007, which analyzed potential environmental impacts associated with the development of the Willow Bend project. The Addendum has been prepared in accordance with relevant provisions of the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines.

According to Section 15164 of the State CEQA Guidelines, an addendum to a previously certified EIR or Negative Declaration is the appropriate environmental document in instances when “only minor technical changes or additions are necessary” and when the new information does not involve new significant environmental effects beyond those identified in the previous EIR.

This Addendum describes the details of the updated Tentative Subdivision Map (TM) for the Willow Bend project in the City of El Centro and compares its impacts to those identified in the Final EIR. The analysis herein demonstrates that the proposed addendum involves only minor technical changes to the Final EIR that was adopted in February 2007 and would not result in any new or increased severity significant environmental effects beyond those identified in the Final EIR. As such, an addendum is the appropriate environmental document under CEQA.

2.0 Project Description

The City of El Centro proposes to amend the 2007 Willow Bend TM which was addressed in a Final EIR. The Final EIR is a comprehensive environmental document that reviewed potential environmental impacts associated with the development of the Willow Bend housing project. The currently approved Final EIR would allow for 131 single-family residences, a 1.67-acre park, and a 3.02-acre retention basin on a subdivision of 38 acres.

The project site is located north of McCabe, east of South Clark Road, and west of State Route 86 (SR-86) in the southern part of the city of El Centro (Figures 1-3). The proposed project site remains in agricultural production and is surrounded by residential development to the north and east, and agricultural land to the west and south. Access to the project site would be provided from SR-86 by two driveways, Willow Bend Drive and Countryside Drive. The proposed project would amend the approved TM (Figure 4) and update the original conditions of approval that were included in the Final EIR.

The addendum compares the impacts from the proposed project with the impacts presented in the 2007 Final EIR for the adopted project. The proposed project would allow for 120 units in comparison to 131 single-family residences approved in the Final EIR. The proposed 11-unit reduction in the number of residential units results in an 8% decrease from the original map. A comparison of Figure 4 (Approved TM) and Figure 5 (Proposed TM) shows that the 11-unit decrease allows for the accommodation of an on-site 1.37-acre park in the center of the site. The on-site retention basin under the revised proposal would be 1.452 acres compared to the 3.02 acres for the original map.

Figure 1: Regional Location

Figure 2: Project Location on USGS Map

Figure 3: Project Location on Aerial Photograph

Figure 4: Approved Tentative Subdivision Map

Figure 5: Proposed Tentative Subdivision Map

Unlike the original TM approval, the Date Drain No. 3 would be unaffected by project grading under the revised TM. Additionally, the addendum addresses the applicant's requested changes and updates to the original project conditions of approval as they apply to issue areas (e.g., traffic conditions of approval). The applicant-requested changes are described below.

List of Applicant-Requested Changes to Original Conditions of Approval

Proposed Amendments to Conditions

Condition 1: The project shall include the development of a maximum of 134 single-family residential lots with average minimum lot sizes of 7,200 square feet. The residences located on lots 129-134 shall be limited to a single story.

Change to: The project shall include the development of a maximum of 120 single-family residential lots with an average minimum lot size of 6,000 square feet.

Condition 10: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (2.7%) or provide the appropriate Traffic Impact Fee (TIF), towards the widening of Highway 86 between McCabe Road and the project site to four lanes along the project frontage.

Change to: Prior to the recording of the first final map, the applicant shall complete or provide security for the widening of Highway 86 (4th Street) to a four-lane right-of-way width along the project frontage prior to recording of the first final map.

The widening, including any required deceleration and acceleration lanes north and south of the development frontage, shall be completed prior to the issuance of the 60th certificate of occupancy, as determined by the approved Caltrans [California Department of Transportation] ICE [Intersection Control Evaluation] Study or other Caltrans requirements.

The No. 2 southbound lane shall merge into the No. 1 southbound lane such that the Countryside Drive and Highway 86 intersection transitions to a single southbound lane at the intersection.

Condition 12: Prior to the issuance of the first certificate of occupancy, the applicant shall signalize the Highway 86 and Countryside intersection.

Change to: Prior to the issuance of the 1st certificate of occupancy, and contingent upon approval by Caltrans, the applicant shall complete improvements to the intersection at Highway 86 (4th Street) and Countryside Drive to provide full directional access to the development. Final intersection improvements shall be designed and constructed in accordance with the results of the Caltrans Intersection Control Evaluation (ICE) and shall be completed no later than the issuance of the 60th certificate of occupancy, or as determined by the approved Caltrans ICE Study.

Condition 16: Prior to the recordation of the final map, the applicant shall be required to enter into an agreement with the City for the payment of a fair share cost to mitigate the operation and maintenance impacts to fire and police services caused by the approval of the project. The

description of the security for the agreement and the method of payment shall be included in the agreement.

Change to: The applicant agrees to pay standard Police and Fire Impact fees as part of building permit issuance unless deferred as approved by the City of El Centro.

Condition 17: Prior to the first final inspection, the existing Date Drain abutting the western boundary of the project site shall be pipelined, undergrounded and landscaped in accordance with the specifications of the Imperial Irrigation District (IID). In addition, the private delivery canal located along the southern boundary of the project site shall be removed.

Change to: Access to the Date Drain by the public shall be secured with a four-foot-high, three-rail wood fence along the western project site boundary. Fencing shall be installed prior to the completion of Grass Street/6th Street. The applicant shall coordinate with the Imperial Irrigation District for maintenance access requirements.

Condition 18: Prior to the issuance of building permits, a trunk sewer line shall be provided along the eastern boundary of the project adjacent to Highway 86 (outside CalTrans' right-of-way) extending to the southern boundary, as per city standards.

Change to: Prior to the issuance of the first certificate of occupancy, a trunk sewer line shall be installed on Carl Street to connect to the existing lift station at Highway 86 (4th Street) and Willow Bend Drive. The trunk sewer line may be constructed within the right-of-way within the development (Carl Street) or adjacent to Highway 86 (4th Street). The Countryside Drive sewer line shall be sized and placed to allow connection from the development at the west. The developer shall be reimbursed for any additional costs incurred due to upsizing by the development to the west.

Condition 19: A six (6') foot high solid decorative block/masonry or stucco wall shall be provided along the eastern boundary of lots 1-14 and 129, the western boundary of lots 32 and 134, and the northern boundary of lots 129-134.

Change to: A six (6) foot high solid decorative block/masonry wall shall be provided along the western Highway 86 right-of-way line (eastern boundary of lots 1-14) and along the property lines abutting the park (eastern boundary of lots 81 and 70 and western boundary of lots 80 and 71). A vinyl or composite fencing shall be installed along the southern project boundary (southern boundary of lots 14-31 and western boundary of lot 31).

Condition 20: The proposed storm water retention basin for the project site shall be developed in accordance with the City's design standards for retention basins.

Change to: The proposed stormwater retention basin for the project site shall be developed in accordance with the City's design standard for retention basins. This requires a wrought iron fence with pilasters along the perimeter of the basin abutting and visible from the public right-of-way.

Condition 21: Prior to the close of the sale of the thirteenth lot, the applicant shall establish a Lighting/Landscaping Maintenance Assessment District for the project in order to pay for the maintenance of any lighting, landscaping, and Park/Recreation facilities, including graffiti abatement, within the public right-of-way, IID easements, retention basin, park and multi-use trail.

Change to: Prior to the issuance of the thirteenth certificate of occupancy, the applicant shall establish a Lighting and Landscape Maintenance District (LLMD) for the project. The LLMD shall pay for the maintenance of any lighting, landscaping, park, and recreation facilities, including graffiti abatement, within the public right-of-way, IID easement, retention basin and the park.

Condition 26: The applicant shall be responsible for any costs associated with right-of-way acquisition, if necessary. In the event the acquisition of right-of-way is needed, applicant shall enter into an agreement with the City prior to the approval of the final map to pay for the costs of acquiring off-site real property interests and to complete the improvements required herein at such time as the City acquires an interest in the real property that will permit the improvements to be made by the applicant.

Change to: The applicant shall be responsible for any costs associated with right-of-way acquisition for the purposes of ingress or egress to the project site along Willow Bend Drive and Countryside Drive, if necessary to accommodate required off-site improvements.

Condition 28: Relocation and underground plans for canals and drains shall be designed to maintain existing flow rates and structure capacity to the satisfaction of the City and Imperial Irrigation District.

Change to: The construction of Countryside Drive crossing over the IID Date Drain must be completed prior to the issuance of the 80th certificate of occupancy. The threshold for this condition may be extended prior to the issuance of the 100th certificate of occupancy if circumstances beyond the applicants control occur that delay this improvement, as approved by the City Engineer and the Community Development Director.

The road crossing shall consist of two travel lanes, with no parking lanes, and shall include curb, gutter, and sidewalks on each side. City participation on all costs related to the IID drain construction and Countryside Drive improvements will be three hundred twenty-five thousand dollars, through a reimbursement agreement between City and applicant.

Condition 29: The project shall provide a 1.6 acre park in accordance with the City's specifications. In-lieu park fees shall be paid for any park area located within the IID easement.

Change to: The applicant shall construct or provide security for a 1.3-acre improved park. The park shall include a multi-use grass field, park lighting, hard surface court, multi-use path, picnic, and playground area. The park is to be completed prior to 50% of the certificates of occupancy are issued. The developer shall provide park renderings and construction plans and cost estimates to the City of El Centro for review prior to filing of the first final map. Park development impact fees shall be waived by the City if park costs are higher than the subdivisions' park development impact fees to the satisfaction of the Community Development Director.

Condition 30: The project shall provide the following minimum building setbacks: front yard, twenty (20') feet; side yards, five (5') feet on one side and ten (10') feet on the other side; exterior side yard, fifteen (15') feet; and rear yard, five (5') feet for single story and twenty-five (25') feet for two story.

Change to: The project shall provide the minimum building setbacks in accordance with the R1-Single Family Residential Zone development standards.

Condition 31: Prior to the first final inspection of each phase of development, all street dedications and off-site improvements (curb, gutter, sidewalk, and paving) shall be provided in accordance with the City's Subdivision Ordinance including parkways not less than 6.5 feet wide, measured from the face of the curb to the outside edge of the sidewalk.

Change to: Prior to the issuance of the first certificate of occupancy of each phase of development, all street dedications and off-site improvements (curb, gutter, sidewalk, and paving) for each phase shall be provided in accordance with the City's Subdivision Ordinance.

Condition 33: Prior to the first final inspection, the applicant shall provide a minimum of two trees per lot within the parkway strip. Said trees shall be selected from the City's tree list and consist of a variety of trees. Street themes shall be provided.

Change to: Prior to the issuance of the certificate of occupancy of each residence, the applicant shall provide a minimum of one tree within the parkway strip on Countryside Drive only and one tree within the front yard landscaped area per lot. Said trees shall be selected from the City's list and consist of a variety of trees. The remaining lots shall provide two trees in the front yard.

Condition 34: Prior to the issuance of each building permit, the applicant shall pay the appropriate development impact and sewer/water capacity fees.

Change to: Prior to the issuance of each building permit, the applicant shall pay the appropriate development impact and sewer and water capacity fees unless deferred to prior to the issuance of a certificate of occupancy in compliance with Ordinance 21-03 and subject to the approval of the City Manager. Payment must clear prior to the issuance of a certificate of occupancy.

Condition 35: Fire hydrants, markers, and water mains shall be provided in accordance with the Fire Department's specifications. All fire hydrants shall be on a looped water system and shall be in service before any combustible construction begins.

Change to: Fire hydrants markers and water mains shall be provided in accordance with the Fire Department's specifications. Fire hydrants shall be on a looped water system. Any combustible construction shall not begin until a fire hydrant is in service within 150 feet of construction activity. Applicant shall provide a phasing plan to the Engineering Division showing compliance with this condition prior to the issuance of the certificate of compliance.

Condition 38: Developer shall coordinate project flood protection improvements with current efforts of the Imperial Irrigation District and other public agencies to provide regional flood protection facilities, if applicable.

Change to: The developer shall work directly with IID to obtain an encroachment permit for project related improvements on IID system facilities.

Condition 41: The project shall comply with applicable staff comments labeled Exhibit A of the Planning Commission staff report and all other applicable Federal, State and local codes, ordinances and resolutions.

Change to: Applicable off-site improvements shall be completed or secured to the satisfaction of the City Engineer prior to the recordation of each final map.

Proposed New Conditions

Condition 43: Public landscaping improvements shall be installed along the northern side of Willow Bend Drive, West side of Carl Street, South of lot 13, North side of lot 1, and West and East side of Grass (6th) Street in the side yards of the noted locations and homes. Public landscaping improvements shall be included in the lighting and landscape maintenance district.

Condition 44: A school bus loading area shall be installed in front of the park area, unless otherwise determined by the school districts that the location would be unfeasible for a school bus loading area.

Proposed Conditions of Approval Requested to be Eliminated

Condition 3: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (4.9%), or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a westbound right-turn lane and a second northbound left-turn lane at the westbound ramp of Highway 86 and Interstate 8.

Condition 4: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (4.6%), or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a two eastbound right-turn lanes and a second southbound left-turn lane at the eastbound ramp of Highway 86 and Interstate 8.

Condition 5: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (4.7%), or provide the appropriate Traffic Impact Fee (TIF), towards the construction of a second eastbound left-turn lane at the intersection of Highway 86 and Wake Avenue.

Condition 6: Prior to the recordation of the final map, the applicant shall construct a raised median for full turning movement with southbound acceleration and deceleration lanes with a left turn in pocket and left turn at Highway 86 and Horne Road. (As per attached Exhibit A-1, subject to a credit for other traffic impact fees or reimbursement from other benefited projects in the area, at the City's option.

Condition 7: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (13.8%), or provide the appropriate Traffic Impact Fee (TIF), towards the construction of a right turn in/right turn out island from Willow Bend Drive at Highway 86.

Reasoning: This improvement has already been completed.

Condition 8: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (1.5%), or provide the appropriate Traffic Impact Fee (TIF), towards the signalization of the Highway 86 and west McCabe Road intersection as well as the provision of a dedicated eastbound and westbound left turn pockets.

Reasoning: This signal light has already been installed.

Condition 9: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (5.6%), or provide the appropriate Traffic Impact Fee (TIF), towards the widening of Highway 86 between Wake Avenue and Interstate 8 to six (6) lanes.

Reasoning: Work improvements have already been completed.

Condition 11: Prior to the recordation of the final map, the applicant shall either pay the City a fair share payment (4.6%), or provide the appropriate Traffic Impact Fee (TIF), towards the widening of Highway 86 between Danenberg Drive and Wake Avenue to four (4) lanes.

Reasoning: Condition can take place when other neighboring frontage properties are developed.

Condition 42: The project shall provide a 20-foot multi-use trail with a split rail fence at its center along the northern boundary and a 10-foot multi-use trail along the western boundary of the project site.

Reason: No longer part of the project.

Potential environmental impacts associated with development according to the General Plan were evaluated in the Final EIR, which is incorporated herein by reference and available at El Centro City Hall and on the City's website.

3.0 Zone Change 05-05 and Tentative Subdivision Map Willow Bend EIR

The City of El Centro prepared an EIR for the Willow Bend project in accordance with the requirements of CEQA and the State CEQA Guidelines. A Notice of Preparation (NOP) was filed with the California Office of Planning and Research and distributed to public agencies and interested parties for a 30-day public review period. The Draft EIR was circulated for a 45-day public review period that ran from August 9, 2006, to September 22, 2006. The Final EIR was certified in February 2007 by the City Council of the City of El Centro.

As noted previously, the EIR addresses the potential environmental effects associated with the development of the Willow Bend project, which includes annexation to the City of El Centro and residential subdivision of 131 single-family residences. The scope of the EIR includes environmental issues determined to be potentially significant based on the Initial Study and responses to the NOP. The following issues are addressed in detail in the EIR:

- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Noise
- Public Services and Utilities
- Transportation and Traffic

The Final EIR identifies significant and unavoidable impacts related to agriculture resources and air quality.

4.0 Environmental Impacts of Proposed Project

This section addresses each of the environmental issues discussed in the Final EIR to determine whether or not the proposed project has the potential to create new significant impacts or a substantial increase in the significance of a previously identified significant impact as compared to what was identified in the Final EIR.

4.1 Agriculture and Forestry Resources

2007 Final EIR

The Final EIR states that the project site is considered to contain Farmland of Statewide Importance. Table 5.1-3 of the Final EIR includes a soils summary for the acreage of the project site. The Final EIR concluded that the conversion of agricultural land to urban use would constitute a significant loss of Prime Farmland or Farmland of Statewide Importance, and potential impacts would be significant and unavoidable.

As noted in the Final EIR, the Imperial County Assessor's office indicated that no active Williamson Act contracts encumber the project site. Therefore, no impacts Williamson Act contract lands were identified. Additionally, the Final EIR identified the surrounding area to be composed of residential and agricultural uses. The proposed project would conflict with agricultural land use to the west and south of the site; however, the eventual conversion of the lands to urban uses was analyzed in the Final EIR and potential impacts were disclosed and mitigated where feasible. Therefore, impacts would be less than significant.

Proposed Project

Housing development under the proposed Willow Bend Project would continue to occur on land that is designated as Farmland of Statewide Importance, as shown in the Final EIR and California Important Farmland Finder. The project could contribute to the significant impact associated with the General Plan Update by converting sites containing designated farmlands to residential use. However, because the project does not include any land use designation changes beyond those included in the Final EIR, it would not result in any new significant impact identified in the Final EIR.

Because the City and Sphere of Influence (SOI) include no Williamson Act contracts or agriculturally zoned land, the Project would similarly have no conflict related to Williamson Act contracts. The project site is designated as a Low Density Residential land use in the Land Use Map in the City of El Centro General Plan 2040. Thus, it would not result in any new significant impact or increased severity of a previously identified significant impact.

4.2 Air Quality

Consistency with Applicable Air Quality Plan

2007 Final EIR

The Final EIR determined that the proposed project was not consistent with the Imperial County Air Quality Attainment Plan (Attainment Plan) and the State Implementation Plan for PM₁₀ in the Imperial Valley due to the proposed project resulting in a higher density and generating more vehicle trips. Therefore, impacts would be considered significant and unavoidable.

Proposed Project

The incremental decrease in the number of units associated with the project (11 units) would not affect the conclusions presented in the Final EIR. Impacts would remain significant and unavoidable.

Cumulative Increase in Emissions

2007 Final EIR

Tables 5.2-3 and 5.2-4 in the Final EIR provide an analysis of both short-term construction emissions and long-term emissions, respectively. Analysis in the Final EIR found that without mitigation measures, all short-term construction emissions were considered to have significant impacts. Mitigation measures AQ 5.2-1 through AQ 5.2-9 were included in the Final EIR in respect to short-term construction emissions. These measures would reduce the project-related emissions to levels less than significant.

Long-term emissions as a result of the proposed project were found to be below the Imperial County Air Pollution Control District (ICAPCD) thresholds of significance. Therefore, long-term impacts as a result of the project were considered less than significant.

Proposed Project:

The proposed project would contribute to the significant and unavoidable air quality impacts identified in the Final EIR by accommodating additional housing throughout the City, but would not accommodate any housing development beyond that noted in the City's General Plan. Additionally, all development under the project would be subject to applicable ICAPCD requirements as well as mitigation measures AQ 5.2-1 through AQ 5.2-9 from the Final EIR. As such, both construction and operational emission impacts associated with development under the project would remain significant and unavoidable.

Odors Impacts

2007 Final EIR

The Final EIR notes that the project presented the potential for the generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site during construction. However, the emissions would rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. The Final EIR cites the ICAPCD *CEQA Air Quality Handbook*, which provides screening level distances for potential odor impacts. According to the handbook, if a project is proposed within one mile of a wastewater treatment plant, sanitary landfill, composting station, feedlot, asphalt batching plant, painting/coating operation, or rendering plant, a potential odor problem may result. The project site is approximated one-quarter mile north of a horse stable and the ICAPCD was contacted at the time of the Final EIR to request if any odor complaints were lodged in the project area. The ICAPCD indicated that no odor complaints were submitted within the last year at the time of the request. Due to this result, the Final EIR concluded that the project would not subject a substantial amount of people to objectionable odors.

Proposed Project

The proposed project does not include heavy industrial or agricultural uses that are typically associated with objectionable odors. The project would involve the use of diesel-powered equipment during construction which may be noticeable at adjacent properties; however, construction activities would be temporary, and the odors would dissipate quickly in an outdoor environment. There is no evidence that the project would require a major change to the 2007 Final EIR. Therefore, the project would not result in any new or increased severity significant odor impact beyond that identified in the Final EIR.

4.3 Biological Resources

2007 Final EIR

A field survey and literature review were conducted for the Final EIR in 2005 by Michael Brandman Associates. The Final EIR determined that there would be construction-related, temporary impacts to sensitive wildlife species including the burrowing owl and Cooper's hawk, when nesting. In regards to impacts to the burrowing owl, the field survey concluded that owls were utilizing the IID's drains in the survey area, and would be adversely impacted on a short-term basis during construction

activities to underground the drains. Construction activities would include potential direct fatalities to the owls, and result in displacement of owls and burrows.

Additionally, long-term indirect impacts would occur as a result of the residential development. The impacts would include increased recreational use of the berms, and the overall impact would include increased harassment of owls due to human activity and pets utilizing the berms. Development of the project site was determined to result in long-term permanent impacts to 38 acres of burrowing owl foraging, dispersing, and nesting habitat. Mitigation measures BR 5.3-1 through BR 5.3-8 were included in the Final EIR in respect to burrowing owls and nesting birds to reduce impacts to a level less than significant.

Proposed Project

As described in the 2007 Final EIR, the proposed project also has the potential to result in direct impacts to nesting birds (including the burrowing owl) within the project area if vegetation removal occurs during the typical bird breeding season. Direct impacts to nesting birds would be considered significant and require mitigation. As conditions have not changed on the site, the proposed project would be subject to the mitigation measures established in the Final EIR, BR 5.3-1 through BR 5.3-8. The project would not result in a new significant impact, nor would a substantial increase in the severity of impacts occur from that described in the 2007 Final EIR.

4.4 Cultural Resources

2007 Final EIR

The Final EIR included a cultural resource survey prepared by Michael Brandman Associates in February 2006. The analysis concluded that there was a low potential for impacts to prehistoric cultural resources. However, if in the event that prehistoric cultural resources are accidentally discovered, the potential impacts would be mitigated by the implementation of measures CR 5.4-1 and CR 5.4-2 and considered less than significant.

Proposed Project

The proposed project could contribute to potential significant impacts to historical resources as identified in the Final EIR. Since there is always the potential for undiscovered resources to be uncovered, the mitigation measures from the 2007 Final EIR would continue to apply. The impacts would remain potentially significant and mitigated.

4.5 Geology and Soils

2007 Final EIR

Section 5.5 of the Final EIR provides an analysis of the geology and soils impacts associated with the project. The Final EIR determined that the project site does not lie within a State of California Alquist-Priolo Earthquake Fault Zone; however, there is still potential for seismic activity that could produce moderate to strong ground motion from earthquakes in the region. Structures would be

required to incorporate earthquake-reducing design with the latest Uniform Building Code and California Building Code and the appropriate seismic design criteria. As discussed in Section 5.5.1, Existing Conditions of the Final EIR, the project site is not anticipated to be impacted by landslides, volcanic hazards, tsunamis, seiches, or flooding. In addition, the Final EIR found that the potential for liquefaction induced settlements to occur on the project site is low and impacts were considered to be less than significant.

The Final EIR also found that critically expansive soils were present around the project site; thus, there is the potential for soils to have high potential for expansion. Additionally, the EIR states that groundwater was encountered at a level of eight feet below ground surface during the geotechnical investigation. Soils encountered below three feet have the potential to pump groundwater under heavy construction wheel loads due to the silty conditions in the near surface soils. Therefore, light earthmoving equipment should be anticipated for use on the project site during construction activities to reduce the potential for groundwater pumping. The Final EIR included measures GS 5.5-1 through GS 5.5-6 to address these impacts. After implementation of the measures, geology and soils impacts would be reduced to less than significant.

Proposed Project

A site-specific geotechnical investigation was not conducted for the currently proposed project as conditions have not changed. There is no evidence that the project would require a major change to the 2007 Final EIR. The proposed project would be subject to all mitigation measures GS 5.5-1 through GS 5.5-6 from the Final EIR. The project would not result in a new significant impact, nor would a substantial increase in the severity of impacts occur from that described in the 2007 Final EIR.

4.6 Hazards and Hazardous Materials

2007 Final EIR

Section 5.6 of the Final EIR details the analysis of the hazards and hazardous materials associated with the project. A Phase I Environmental Site Assessment was prepared for the project site prior to the completion of the Final EIR.

a. Short-Term Impacts:

The Final EIR states that grading and construction activities may involve the limited transport, storage, usage, or disposal of hazardous materials such as the fueling and/or servicing of construction equipment. Such activity is subject to federal, state, and local health and safety requirements. It is likely that the construction phase of the project will generate hazardous waste such as paint, therefore the project would be subject to the Conditionally Exempt Small Quantity Generator Program. Contractors would be required to employ a licensed hazardous waste hauler to obtain and transport such waste. This requirement would ensure that no significant short-term impacts would occur.

b. Long-Term Impacts:

The Final EIR found that there was the potential for previously unknown hazardous materials to be encountered during project development from historical use of the project site. Long-term impacts were identified and mitigation measures HM 5.6-1 and HM 5.6-2 were included to reduce project-related hazardous material impacts to less than significant.

Proposed Project

If grading of the project site were to encounter any hazardous materials within the soil under the project site, the project would be required to comply with policies contained in the Final EIR, and regulations imposed by federal, state, and local agencies, including the U.S. Environmental Protection Agency, California Department of Health Services, Imperial County Waste Management Department, Regional Water Quality Control Board – Colorado River Basin Region, Salton Sea Air Basin Air Pollution Control District, and the City of El Centro Fire Department. Based on the foregoing analysis and information, there is no evidence that the project would require a major change to the 2007 Final EIR. The proposed project would follow the mitigation measures presented in the Final EIR. The project would not result in a new significant impact, nor would a substantial increase in the severity of impacts from that described in the Final EIR occur.

4.7 Noise**2007 Final EIR**

Section 5.7 of the 2007 Final EIR analyzed noise impacts based on the noise assessment prepared for the proposed project by VRPA Technologies, Inc. in March 2006. The Final EIR identified short-term noise impacts during construction and included mitigation measure N 5.7-1 to ensure that noise level standards are met.

Proposed Project

The proposed project would involve construction and operational noise nearly identical to that identified in the 2007 Final EIR. The project would produce short-term noise impacts associated with construction due to noise generating vehicles and construction operations. Impacts would remain potentially significant, however; mitigation measure N 5.7-1 from the Final EIR would apply to development under the project. The proposed project would not create any new significant impact related to short-term construction noise, nor would there be a substantial increase in the severity of impacts from that described in the 2007 Final EIR.

The proposed project would contribute to traffic on the local roadways, however there is no evidence that the proposed project would not increase the severity of this already identified significant impact or result in any new significant impact related to traffic noise.

4.8 Public Services and Utilities

2007 Final EIR

The Final EIR addressed fire protection services, police protection services, public education, libraries, parks and recreational services and facilities, potable water services, wastewater, solid waste, energy, and telecommunications. Fire and police protection impacts were determined to be potentially significant due to the project having the potential to increase demands for both services which would have an adverse impact on response times and staffing ratios. The Final EIR included mitigation measures PSU 5.8-1 and 5.8-2 that required the applicant to enter into an agreement that will mitigate operational impacts to fire and police services caused by the approval of the project. Additionally, the Final EIR included mitigation measure T 5.8-1 which would mitigate the operational impacts to the Imperial Valley Telecommunications Authority. Potential impacts on schools, library services, parks and recreation, potable water, solid waste, energy, and telecommunications were deemed less than significant.

Proposed Project

The proposed project would include the development of 120 single-family homes and would not result in a need for any new or expanded public services. In addition, the project would not result in a need for a new or expanded fire, police, school, library, park or other public facility. The project would continue to be subject to mitigation measures PSU 5.8-1 and 5.8-2 from the Final EIR as they relate to fire and police services. Therefore, the project would not create any new significant impacts, nor would there be a substantial increase in the severity of impacts from that described in the 2007 Final EIR.

In regards to utilities, the proposed project would extend water service connections from IID, and would connect to the existing sewer line. Due to the proposed homesite lots being accounted for in the 2007 Final EIR, there is no evidence that the project would require a major change to the Final EIR. The proposed project would be subject to the mitigation in the Final EIR for telecommunications, T 5.8-1. The project would not create any new significant impacts, nor would there be a substantial increase in the severity of impacts from that described in the 2007 Final EIR.

4.9 Transportation and Traffic

2007 Final EIR

A Traffic Impact Study (TIS) was prepared for the Final EIR by Katz, Okitsu & Associates in July 2006. The TIS and Final EIR did not identify any significant impacts due to transportation and traffic issues; however, there were nine conditions of approval for nine different intersections and roadway segments near the project site when the Final EIR was adopted that would be implemented throughout phases of the project (TT 6-1 through TT 6-2).

Proposed Project

A Transportation Assessment for the proposed project was prepared by Linscott, Law & Greenspan, Engineers (LLG) on June 27, 2022. The assessment is included as Attachment 1. The assessment provided analysis to determine which of the original conditions of approval for the approved Willow Bend Project are still necessary given the current traffic situation surrounding the project site. The assessment reviewed 10 conditions of approval. Specifically, the analysis focused on whether the following 10 improvements are still necessary:

1. SR-86 between Interstate 8 (I-8) eastbound ramps and Wake Avenue – contribute a fair-share to widen to six lanes.
2. SR-86/I-8 westbound ramp – contribute a fair-share to construct a westbound right-turn lane and a second northbound left-turn lane.
3. SR-86/I-8 eastbound ramp – contribute a fair-share to construct two eastbound right-turn lanes and a second southbound left-turn lane.
4. SR-86/Wake Avenue – contribute a fair-share to construct a dedicated eastbound left-turn lane.
5. SR-86/Horne Road – construct a raised median for full turning movement with southbound acceleration and deceleration lanes with a left turn in pocket and left turn at SR-86 and Horne Road. Subject to a credit from other traffic impact fees or reimbursement from other benefited projects in the area, at the City's option.
6. SR-86/Willow Bend Drive – contribute a fair-share to construct a right-in/right-out island from the project driveway.
7. SR-86/Countryside Drive – signalize the intersection.
8. SR-86/McCabe Road – contribute a fair-share to signalize the intersection and construct dedicated eastbound and westbound left-turn pockets.
9. SR-86 between Project Access and McCabe Road – contribute a fair-share to widen to four lanes including along the Project frontage.
10. SR-86 between Wake Avenue and Danenberg Drive – contribute a fair-share to widen to four lanes.

The LLG report concluded that only a few of the original conditions of approval are deemed necessary to be implemented. Their report concluded the following:

1. SR-86 between I-8 eastbound ramps and Wake Avenue – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the widening of SR-86 between I-8 and Wake Avenue to six lanes.

Based on the analysis for this street segment, acceptable levels of service are calculated under near-term conditions. Therefore, the condition to widen this street segment to six lanes can be removed.

2. SR-86/I-8 westbound ramp – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a westbound right-turn lane and a second northbound left-turn lane at the westbound ramp of SR-86 and I-8.

It should be noted that this intersection already has a westbound right-turn lane. Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the remaining condition to construct a second northbound left-turn lane can be removed.

3. SR-86/I-8 eastbound ramp – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of two eastbound right-turn lanes and a second southbound left-turn lane at the eastbound ramp of SR-86 and I-8.

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to construct two eastbound right-turn lanes and a second southbound left-turn lane can be removed.

4. SR-86/Wake Avenue – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a dedicated eastbound left-turn lane at the intersection of SR-86 and Wake Avenue.

Based on the analysis for this intersection, an unacceptable level of service is calculated during the PM peak hour under near-term conditions. However, the City will be conducting a roadway maintenance project at the end of 2022 and will stripe a dedicated eastbound left-turn lane as part of that work. Therefore, this condition can be removed.

5. SR-86/Horne Road – Prior to the recordation of the final map, the applicant shall construct a raised median for full turning movement with southbound acceleration and deceleration lanes with a left turn in pocket and left turn at SR-86 and Horne Road. Subject to a credit for other traffic impact fees or reimbursement from other benefited projects in the area, at the City's option.

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to construct a raised median and reconfigure the lane geometry at this intersection can be removed.

6. SR-86/Willow Bend Drive – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the construction of a right turn in/right turn out island from Willow Bend Drive at SR-86.

It should be noted that this intersection currently has an island that allows for a southbound left-turn movement to enter Willow Bend Drive on the east leg. Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Since this intersection already has an island that only allows right-in/right-out at the project driveway, the conditions for this intersection can be removed. However, it is recommended that a northbound left-turn pocket is constructed to allow for an inbound access at this driveway from the south.

7. SR-86/Countryside Drive – Prior to the issuance of the first certificate of occupancy, the applicant shall signalize the SR-86 and Countryside Drive intersection.

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to signalize this intersection can be removed. An ICE was completed for the SR-86/Countryside Drive intersection based on Year 2045 (Horizon Year) forecast traffic volumes in conjunction with traffic generated by the proposed project. The ICE is included as Attachment 2. The ICE determined that both an All-Way Stop Control configuration and a roundabout configuration would operate at acceptable levels of service in the Year 2045 (Horizon Year) scenario. Caltrans will determine which of these two configurations will be selected for the SR-86/Countryside Drive intersection.

8. SR-86/McCabe Road – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the signalization of the SR-86 and west McCabe Road intersection as well as the provision of a dedicated eastbound and westbound left-turn pockets.

It should be noted that this intersection is already signalized. Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to provide dedicated eastbound and westbound left-turn pockets can be removed.

9. SR-86 between Project Access and McCabe Road – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the widening of SR-86 between the project site and McCabe Road to four lanes along the project frontage.

Based on the analysis for this street segment, acceptable levels of service are calculated under near-term conditions. Therefore, the condition to widen this street segment to four lanes can be removed between the Project Access at Countryside Drive and McCabe Road. However, the condition to widen should still be implemented between Willow Bend Drive and Countryside Drive fronting the Project site.

10. SR-86 between Wake Avenue and Danenberg Drive – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the widening of SR 86 between Wake Avenue and Danenberg Drive to four lanes.

Based on the analysis for this street segment, acceptable levels of service are calculated under near-term conditions. Therefore, the condition to widen this street segment to four lanes can be removed.

As described above, the SR-86/Wake Avenue location was calculated to operate at unacceptable levels of services; however, the City will be conducting a roadway maintenance project at the end of 2022 and will stripe a dedicated eastbound left-turn lane as a part of their work. Once completed, the original condition for this location can be removed. Also, with implementation of the adjustments to improvements described above to improvements 6, 7, and 9, the project would not create any new significant impact, nor would a substantial increase in the severity of impacts occur from that described in the 2007 Final EIR.

5.0 Conclusion

The proposed revised project is consistent with the Willow Bend Final EIR that the City of El Centro adopted in 2007 and would not result in any new significant impacts or increased severity significant impacts beyond those identified in the El Centro General Plan Update Final EIR. Therefore, this Addendum is the appropriate environmental document under CEQA.

6.0 Sources Consulted

El Centro, City of

- 2021 El Centro General Plan Update Draft Program Environmental Impact Report. March.
- 2021 El Centro General Plan Update Final Program Environmental Impact Report. June.
- 2021 El Centro General Plan Update. June.
- 2021 Draft El Centro Housing Element Update. September.

INTERSECTION CONTROL EVALUATION
SR-86 / COUNTRYSIDE DRIVE INTERSECTION
El Centro, California
December 3, 2024

LLG Ref. 3-23-3841

Prepared by:
Narasimha Prasad
Senior Transportation Engineer

Under the Supervision of:
John Boarman, P. E.
Principal

**Linscott, Law &
Greenspan, Engineers**
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

TABLE OF CONTENTS

SECTION	PAGE
1.0 Introduction.....	1
2.0 Existing Traffic Conditions.....	4
2.1 Existing Traffic Conditions.....	4
2.2 Existing Traffic Volumes.....	4
2.3 Safety Review - Existing Traffic Collision History.....	5
2.4 Natural Habitat and Visual Impacts.....	5
3.0 Near-Term and Long-Term Year 2045 Traffic Volumes.....	8
3.1 Proposed Willow Bend Project.....	8
3.2 Existing Traffic Volumes With Willow Bend Project.....	8
3.3 Year 2045 Volumes Forecast.....	10
4.0 Planning-level Screening Analysis.....	14
4.1 Unsignalized Operations Evaluation.....	14
4.2 Signal Operations Evaluation	15
4.3 Roundabout Operations Evaluation	16
5.0 Intersection Analysis.....	17
5.1 Analysis Scenarios	17
5.2 Intersection Analysis.....	17
5.2.1 Existing	17
5.2.2 Existing With Willow Bend Traffic.....	18
5.2.3 Year 2045.....	18
5.3 Queue Analysis	18
5.3.1 Existing	18
5.3.2 Existing With Willow Bend Project	18
5.3.3 Year 2045.....	18
6.0 Intersection Alternatives Discussion	22
6.1 Minor-Street Stop Control Alternative	22
6.1.1 Safety Considerations	23
6.1.2 Right-of-Way Easement Impacts.....	23
6.1.3 Environmental Impacts	23
6.2 All-Way Stop Control Alternative.....	23
6.2.1 Safety Considerations	24
6.2.2 Right-of-Way Easement Impacts.....	24
6.2.3 Environmental Impacts	24
6.3 Traffic Signal Alternative	24
6.3.1 Safety Considerations	25

TABLE OF CONTENTS

SECTION	PAGE
6.3.2 Right-of-Way Easement Impacts	25
6.3.3 Environmental Impacts	25
6.4 Roundabout Alternative	25
6.4.1 Safety Considerations	26
6.4.2 Right-of-Way Easement Impacts	29
6.4.3 Environmental Impacts	30
7.0 Signal Warrant Analysis	36
7.1 Near-Term Conditions	37
7.2 Long-Term (Year 2045) Conditions	45
7.3 Summary of Warrants Satisfied	46
8.0 Project Costs	47
8.1 Construction Cost	47
8.2 Operation and Maintenance Cost	47
9.0 Summary of Findings	50

APPENDICES

APPENDIX
A. Existing Traffic Collision Data
B. Intersection and Queue Analysis Worksheets – Existing
C. Intersection and Queue Analysis Worksheets – Existing With Willow Bend
D. Intersection and Queue Analysis Worksheets – Year 2045 With Willow Bend
E. Figure 4C-103(CA), MUTCD

LIST OF FIGURES

SECTION—FIGURE #	PAGE
Figure 1–1 Vicinity Map	2
Figure 1–2 Project Area Map	3
Figure 2–1 Existing Conditions.....	6
Figure 2–2 Existing Volumes.....	7
Figure 3–1 Willow Bend Project Site Plan.	11
Figure 3–2 Existing With Willow Bend Project Traffic Volumes.....	12
Figure 3–3 Year 2045 Traffic Volumes	13
Figure 6–1 Conceptual Plan – Two-Way Stop Control	31
Figure 6–2 Conceptual Plan – All-Way Stop Control.....	32
Figure 6–3 Conceptual Plan – Signal Control.....	33
Figure 6–4 Conceptual Plan – Roundabout Control (I-Lane)	34
Figure 6–5 Conceptual Plan – Roundabout Control (2-Lane)	35

LIST OF TABLES

SECTION—TABLE #	PAGE
Table 3–1 Willow Bend Project Trip Generation	9
Table 4–1 Suggested Intersection Control Strategies by Total ADT Entering.....	14
Table 4–2 LOS Descriptions.....	15
Table 4–3 Intersection Level of Service (LOS) & Delay Ranges	15
Table 4–4 LOS Criteria for Roundabout Intersections	16
Table 5–1 Intersection Analysis.....	19
Table 5-2 Queue Analysis.....	20
Table 7–1 Warrant 1: Eight - Hour Vehicular Volume: Existing 70% Criteria	37
Table 7–2 Warrant 1: Traffic Volume Data: Existing With Willow Bend Traffic 70% Criteria	38
Table 7–3 Warrant 2, Four-Hour Vehicular Warrant: Existing with Willow Bend Traffic	40
Table 7–4 Warrant 3: Peak - Hour: Existing	42
Table 7–9 Signal Warrant Analysis Summary.....	46
Table 8–1 Alternatives Construction Costs	47
Table 8–2 20-Year Stop-Control Condition Maintenance Costs (Intersection Lighting).....	48
Table 8–3 20-Year Traffic Signal Maintenance Costs	48
Table 8–4 20-Year Roundabout Maintenance Costs (Intersection Lighting).....	49
Table 9–1 Alternatives Performance Summary Table.....	52

INTERSECTION CONTROL EVALUATION
SR-86 / COUNTRYSIDE DRIVE
Imperial County, California
December 3, 2024

1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared the following report to detail our assessment, findings, and conclusions of the Intersection Control Evaluation (ICE) at the intersection of SR-86 / Countryside Drive, a Caltrans-maintained intersection located in El Centro.

LLG conducted an ICE analysis to objectively evaluate and screen intersection control alternatives at the subject intersection. The intersection traffic control options which were assessed are minor-street stop, all-way stop, signalization, and roundabout control. The intersection control alternatives were analyzed using Year 2045 (Horizon Year) forecast traffic volumes including traffic generated by the planned Willow Bend project.

Figure 1–2 depicts the Vicinity Map and **Figure 1–3** depicts the area of the subject intersection in greater detail.

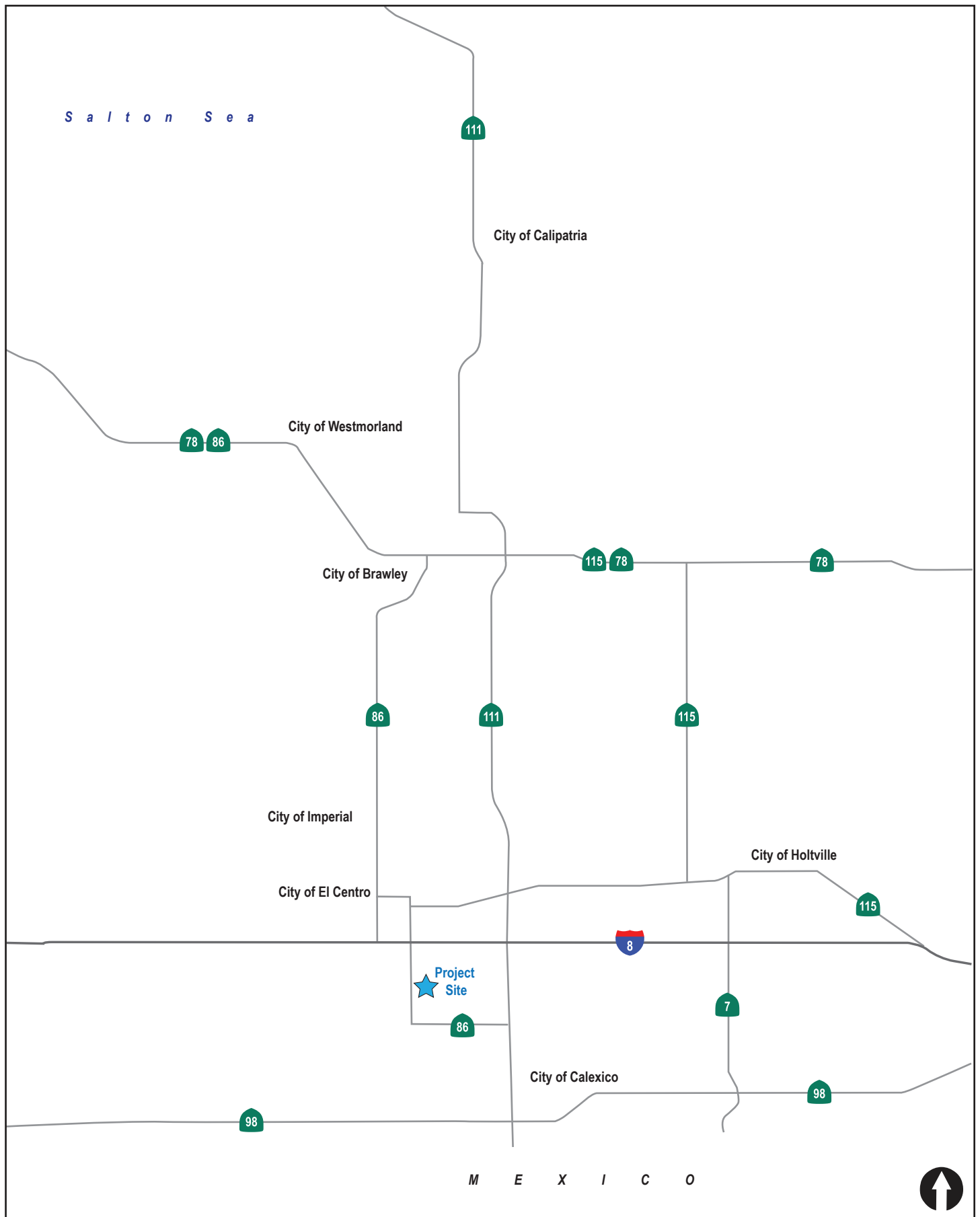


Figure 1-1

Vicinity Map



Figure 1-2
Intersection Location

2.0 EXISTING TRAFFIC CONDITIONS

2.1 Existing Traffic Conditions

Following is a description of the two subject roadways:

SR-86

As described in the *Circulation and Scenic Highways Element*, Imperial County, January 29, 2008, State Route 86 is generally a north-south route and begins near the community of Heber in the south as a two-lane conventional highway and continues into Riverside County line in the north as a four-lane expressway.

Near the SR-86/Countryside Drive intersection, SR-86 is built as 3-Lane Road to the north of Countryside Drive up to Dannenberg Road, with a raised median, two lanes northbound and one lane southbound. South of Countryside Drive to McCabe Road, SR-86 is a two-lane undivided road. Curb, gutter, and sidewalks are not provided. Bike lanes and bus stops are not provided, and the speed limit is posted at 55 mph.

The Willow Bend Project will build the second southbound through Lane on SR 86 along its frontage between just north of Willow Bend Drive and just south of Countryside Drive.

Countryside Drive

Countryside Drive is a two-lane residential street east of SR-86. Curb, gutter, and non-contiguous sidewalks are provided on Countryside Drive. Countryside Drive ends at SR-86 and does not continue west of SR-86.

The Willow Bend Project, which is planned on the westside of SR 86 between just north of Willow Bend Drive and just south of Countryside Drive will extend Countryside Drive to the west of SR 86. This new west leg of the SR 86/ Countryside Drive intersection will provide access to the site.

Existing conditions are depicted graphically on **Figure 2-1**.

The SR-86/Countryside Drive intersection is currently a three-leg intersection, with stop control on westbound Countryside Drive. Currently, the west leg does not exist. Hence, the existing intersection geometry is as follows:

- Southbound: One left-turn lane and one through lane
- Westbound: One shared left / right lane
- Northbound: One through lane and one shared through / right lane

2.2 Existing Traffic Volumes

Existing traffic volume counts were obtained from the Caltrans Traffic Census Website. **Figure 2-2** depicts the existing peak hour volumes at the SR-86 / Countryside Drive intersection.

2.3 Safety Review - Existing Traffic Collision History

A total of one (1) collision occurred on SR-86 at Countryside Drive based on accident data provided by the Statewide Integrated Traffic Records System (SWITRS) over a six-year period from January 1, 2016, through December 31, 2021. This collision involved a vehicle and an object with injury to one person. There are no fatalities reported at this location.

Appendix A contains the Collision data.

2.4 Natural Habitat and Visual Impacts

The affected right of way is comprised primarily of disturbed soils within the existing right-of-way (ROW). West of SR-86, agricultural land and overhead electrical distribution line poles are present both the north and south side of Countryside Drive. An irrigation canal runs north/south on the east side of SR-86 and provides a delivery point to the farmlands west of SR-86, south of Countryside Drive. East of SR-86 are single-family residences, with a sub-division generally north of Countryside Drive and larger single-family lots south of Countryside Drive. There are no scenic resources occurring within this area.

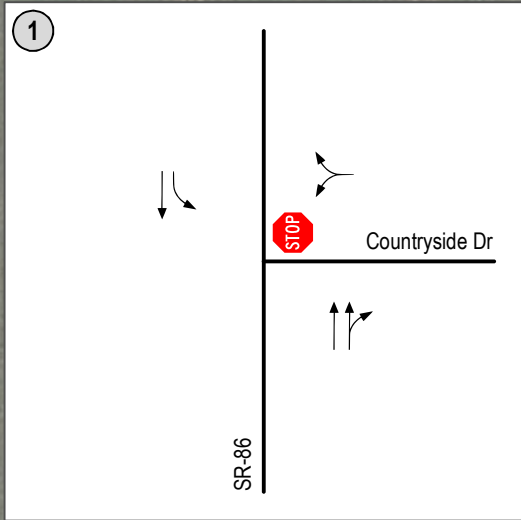
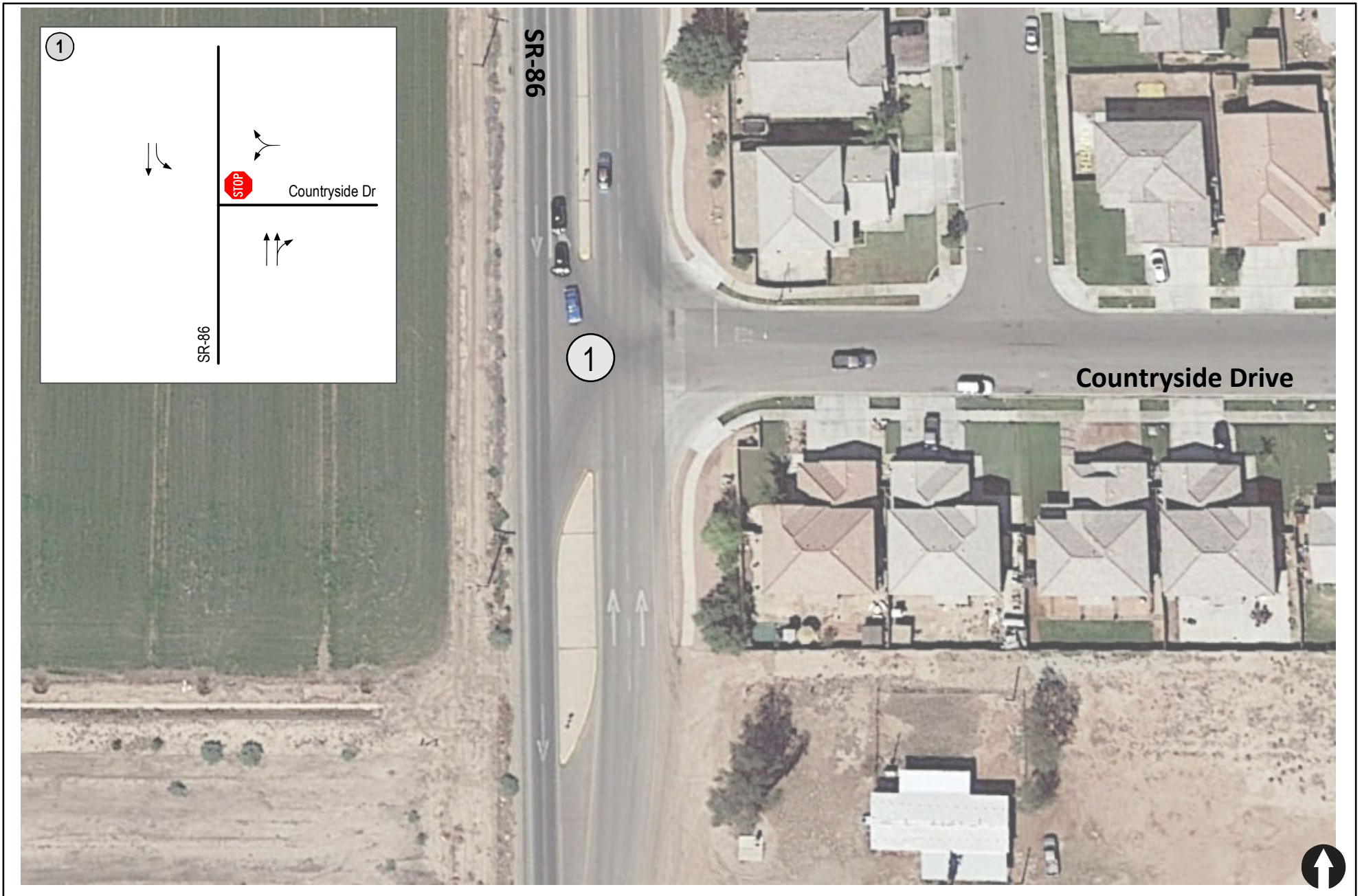


Figure 2-1

Existing Conditions Diagram

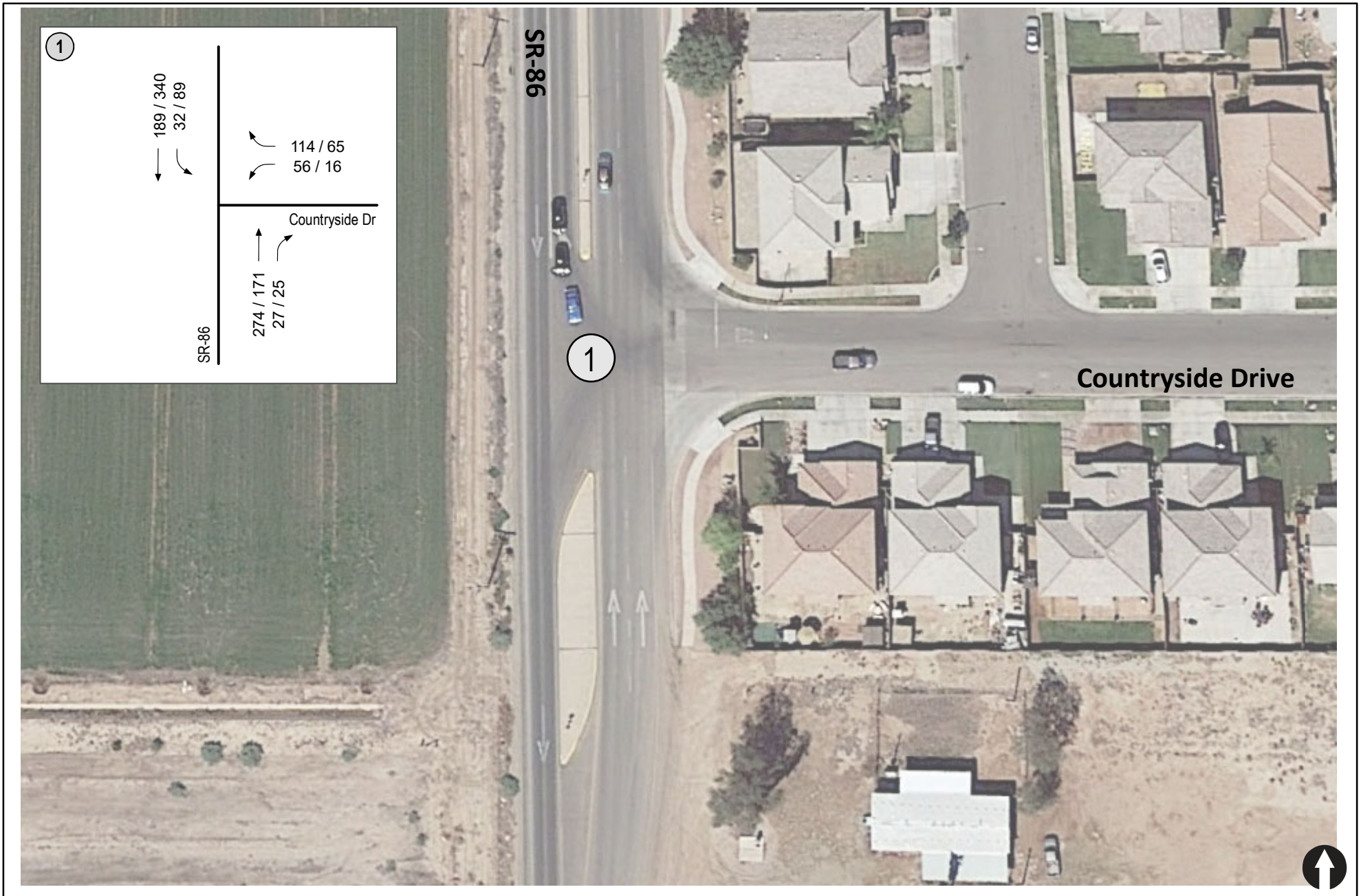


Figure 2-2

Existing Traffic Volumes

3.0 NEAR-TERM AND LONG-TERM YEAR 2045 TRAFFIC VOLUMES

The impetus for this analysis is the proposed reconfiguration and control of the SR-86 / Countryside Drive intersection. Currently, this is a T-intersection with no west leg. The fourth (west) leg will be provided at this intersection and will provide direct access to the proposed Willow Bend project. The following intersection geometry is proposed at the SR-86 / Countryside Drive intersection:

- Southbound: One left turn lane, one through lane and one shared through /right lane. The No.2 SB lane may be a dedicated right turn lane in the interim, awaiting development south of the project.
- Westbound: One left turn lane and one shared through / right-turn lane
- Northbound: One left turn lane, one through lane and one shared through /right lane
- Eastbound: One left turn lane and one shared through / right-turn lane (new west leg)

3.1 Proposed Willow Bend Project

The Willow Bend residential project (Project) is proposed on the west side of SR-86 between Willow Bend Drive and Countryside Drive. The Willow Bend Traffic Impact Study dated March 2006 was approved by the City. Following is one of the conditions of approval:

- Prior to the issuance of the first certificate of occupancy, the applicant shall signalize the Highway 86 and Countryside intersection.

The traffic signal at this intersection was recommended in the previous March 2006 report but is no longer required as described later in this report. Since this intersection is maintained by Caltrans, an Intersection Control Evaluation (ICE) study is required.

Table 3-1 summarizes the Trip Generation for the proposed Willow Bend Project. As seen in *Table 3-1*, the Willow Bend project is calculated to generate 1,264 daily trips with 94 AM peak hour trips (24 inbound/ 70 outbound trips) and 126 PM peak hour trips (79 inbound/ 47 outbound trips).

It should be noted that after this report was completed, the number of units in the proposed Project was reduced to 120. However, since this analysis assumes 134 units, the analysis is conservative and the very small decrease in peak hour trips would not change the results of this analysis.

Figure 3-1 depicts the proposed Willow Bend project site plan.

3.2 Existing Traffic Volumes With Willow Bend Project

The traffic generated by the Willow Bend project was assigned to the SR-86 / Countryside Drive intersection. This traffic was added to the existing traffic at this intersection to obtain the Existing with Willow Bend project traffic at the SR-86 / Countryside Drive intersection.

Figure 3-2 depicts the Existing with Willow Bend project traffic volumes.

**TABLE 3-1
WILLOW BEND PROJECT TRIP GENERATION**

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
				Rate ^a	In:Out Split ^a	Volume			Rate ^a	In:Out Split ^a	Volume		
		Rate ^a	Volume			In	Out	Total			In	Out	Total
Single-Family Detached Housing ^b	134 DU	9.43 / DU	1,264	0.70 / DU ^b	26:74	24	70	94	0.94 / DU ^b	63:37	79	47	126

Source: Table 1-1 Project Trip Generation, The *Willow Bend Traffic Impact Study*, March 2006.

Footnotes:

- a. Trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition.
- b. Rates for Single-Family Detached Housing (Land Use 210) were used.

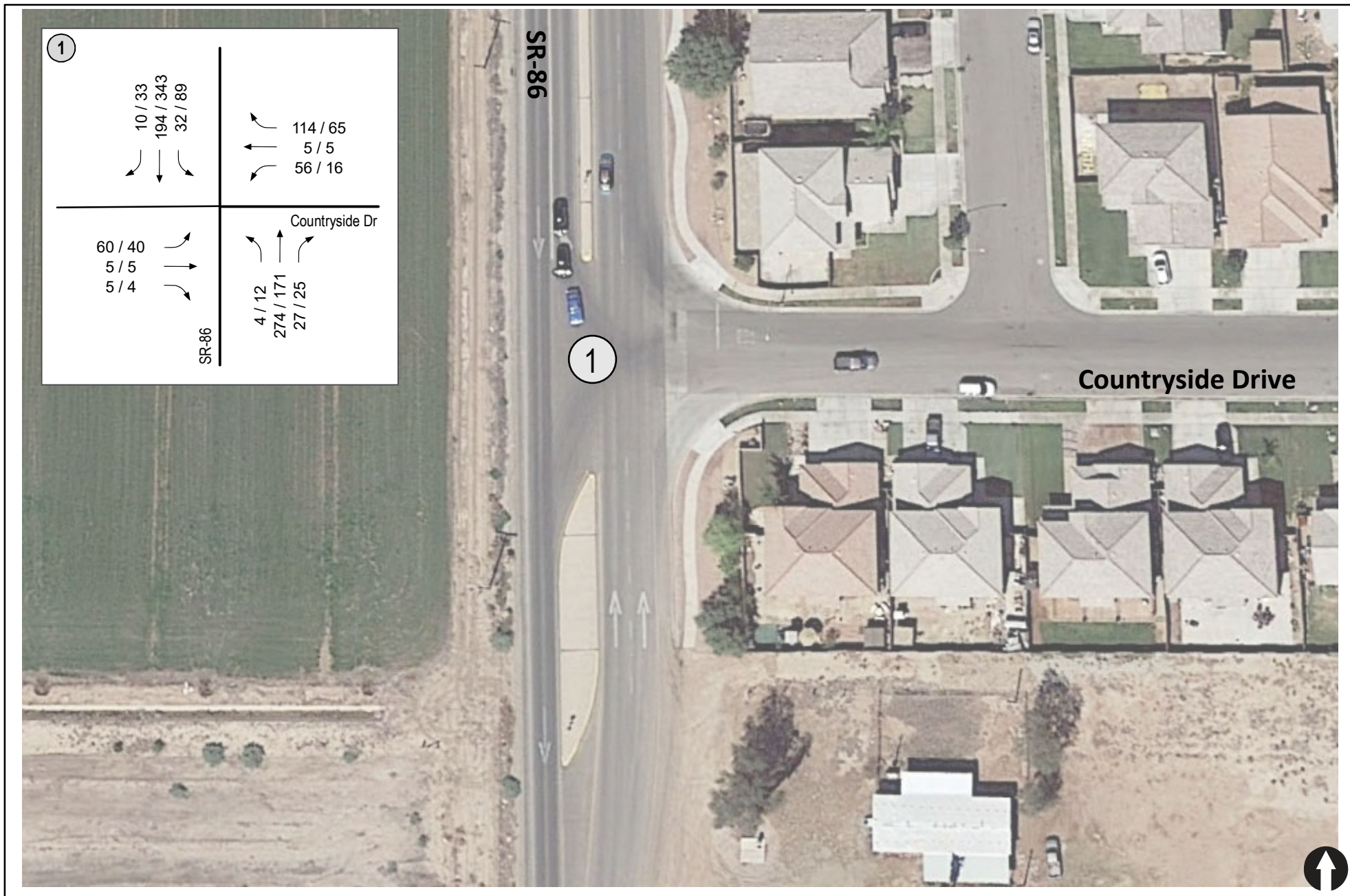
General Notes:

DU – dwelling units

3.3 Year 2045 Volumes Forecast

In order to obtain future ADT and peak hour volumes for the Year 2045 conditions, a growth factor was applied to the existing traffic volumes. For the purposes of this report, a growth factor of 1.28 was obtained from the approved Circulation and Scenic Highways Element report, January 2008. The growth factor was calculated between the forecasted Year 2025 and Year 2050 ADT volumes. The traffic generated by the Willow Bend project was added to the Year 2045 traffic to obtain the total Year 2045 Traffic.

Figure 3-3 depicts the Year 2045 project Traffic Volumes.



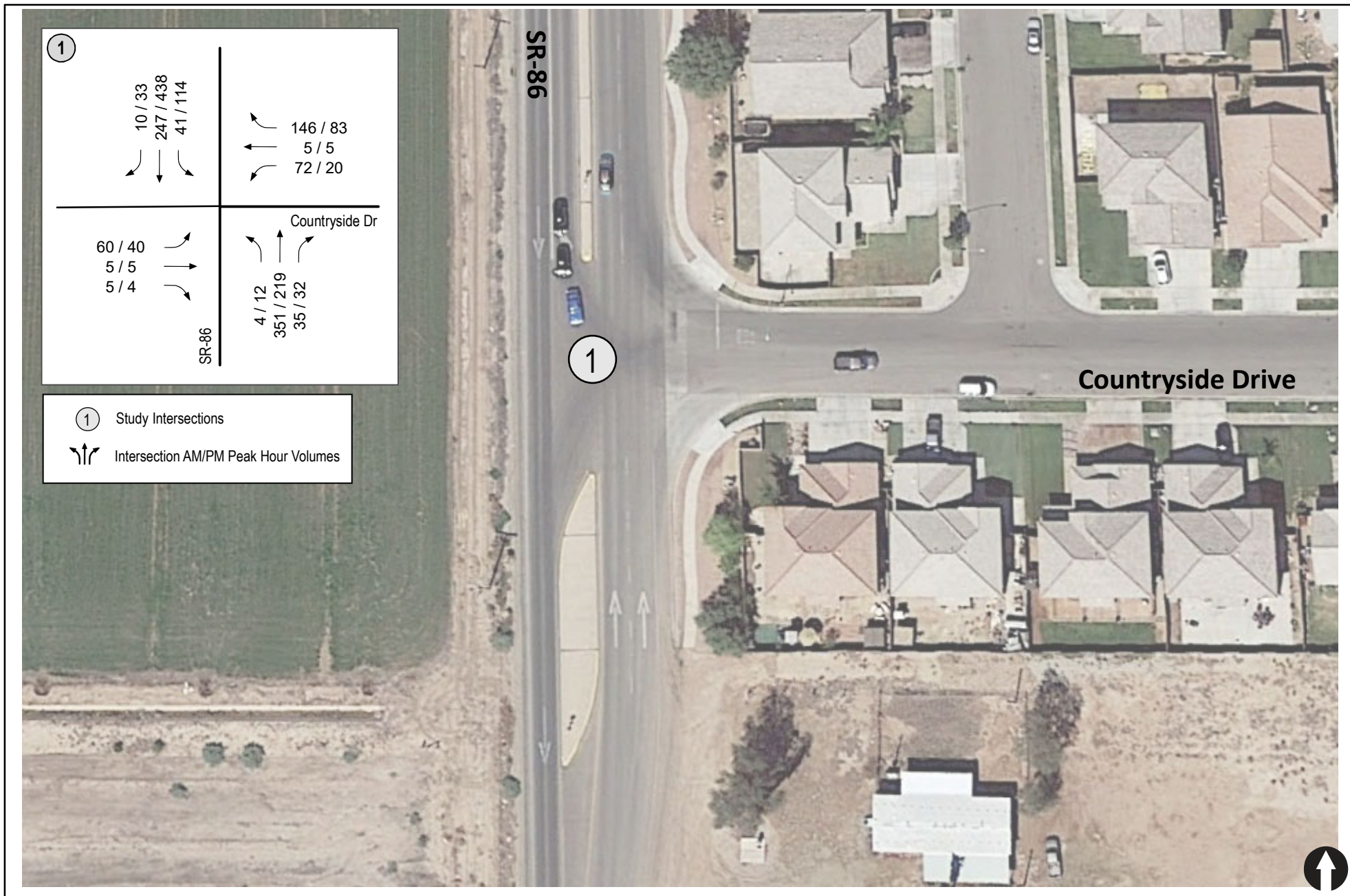


Figure 3-3
Year 2045 (with Willow Bend Project) Traffic Volumes

4.0 PLANNING-LEVEL SCREENING ANALYSIS

According to the ICE Process Steps & Outcomes flowchart provided in TOPD 13-02, an initial screening should be performed to eliminate options and strategies that fail to meet the established need. To facilitate this initial screening process, **Table 4–1** provides thresholds for suggested control strategies by Average Daily Traffic on the adjacent roadways. The Design Year for modeling future traffic volumes and estimated ADT is 2045 and the estimated total entering ADT at this intersection is 11,800 vehicles per day in the Year 2045. Using this ADT based screening method, grade separation can be eliminated as a rational traffic control strategy. Therefore, this study assesses Minor-Street Stop Control, the All-Way Stop Control, Signal Control and Single-Lane Roundabout Control for the design and traffic analysis process.

TABLE 4–1
SUGGESTED INTERSECTION CONTROL STRATEGIES BY TOTAL ADT ENTERING

Total Entering ADT	All-Way Stop	Signal	Yield (RBT)	Grade Separation
7,500-15,000	X		X (Single lane)	
15,000-25,000	X	X	X (Single lane)	
25,000-80,000		X	X (Multi-lane)	
>80,000				X

There are various methodologies used to analyze signalized and unsignalized intersections. The measure of effectiveness for intersections is level of service (LOS) which denotes the operating conditions which occur at a given intersection. It is a qualitative measure used to describe a quantitative analysis considering factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of an intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. LOS designation is reported differently for signalized and unsignalized intersections.

Table 4–2 provides a description of the levels of service from A through F. **Table 4–3** summarizes the criteria, which are based on the average control delay for the worst minor street movement (unsignalized intersections) and overall intersection (signalized intersections).

4.1 Unsignalized Operations Evaluation

For unsignalized intersections, LOS is determined by the computed or measured control delay and is defined for each minor movement. For All-Way-Stop-controlled (AWSC) intersections, the overall intersection delay is reported. For two-way-stop-controlled (MSSC) intersections, LOS is not defined for the overall intersection, but the worst-case movement (typically the minor street left-turn) delay and LOS are reported.

4.2 Signal Operations Evaluation

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. In the Highway Capacity Manual (HCM) 6th Edition, LOS for signalized intersections is defined in terms of delay. The LOS analysis provides results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

**TABLE 4-2
LOS DESCRIPTIONS**

LOS	Description
A	Operations with very low delay and most vehicles do not stop.
B	Operations with good progression but with some restricted movement.
C	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines
E	Operations where there is significant delay, extensive queuing, and poor progression.
F	Operations that is unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

**TABLE 4-3
INTERSECTION LEVEL OF SERVICE (LOS) & DELAY RANGES**

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: Highway Capacity Manual 6th Edition

4.3 Roundabout Operations Evaluation

The Highway Capacity Manual (HCM) published by the Transportation Research Board establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values. NCHRP Report 1043, Guide for Roundabouts, 2023 (Roundabout Guide) provides the methodology for calculating the Level of Service (LOS) for yield-controlled roundabouts. **Table 4–4** displays the LOS thresholds for roundabouts presented in the HCM 6th Edition. If the V/C is greater than 1.0, the LOS is F.

TABLE 4–4
LOS CRITERIA FOR ROUNDABOUT INTERSECTIONS

Control Delay (seconds/vehicle)	Level of Service by Volume to Capacity Ratio
≤ 10.0	A
> 10.0 and ≤ 15.0	B
> 15.0 and ≤ 25.0	C
> 25.0 and ≤ 35.0	D
> 35.0 and ≤ 50.0	E
> 50.0	F

Source: 2010 Highway Capacity Manual, Chapter 22, Page 22-9, Exhibit 22-8.

5.0 INTERSECTION ANALYSIS

5.1 Analysis Scenarios

This section summarizes the traffic analysis results and other considerations for each intersection alternative. The following traffic control alternatives are evaluated, with detailed discussion of each alternative in this section:

1. Existing Conditions - Minor Street Stop Control (MSSC)
2. Existing Conditions (With Willow Bend Project traffic)
 - a. MSSC
 - b. All-Way Stop Control (AWSC)
 - c. Traffic Signal
 - d. Roundabout
 - i. One-Lane
 - ii. Two-Lane
3. Year 2045 (Includes Willow Bend Project)
 - a. MSSC
 - b. AWSC
 - c. Traffic Signal
 - d. Roundabout
 - i. One-Lane
 - ii. Two-Lane

These alternatives were developed to establish what the intersection configuration requirements for operations to perform at LOS C or better during both peak periods. Per Caltrans Guide for the Preparation of Traffic Impact Studies, “Caltrans endeavors to maintain a target LOS at the transition between LOS “C” and LOS “D” on State highway facilities”. Additionally, providing manageable queuing lengths is another goal of the design alternatives. As these are two very different types of control strategies, there are differences in the overall intersection footprint and lane geometry needs.

5.2 Intersection Analysis

5.2.1 Existing

Currently, the minor street left-turn movement at the SR-86 / Countryside Drive intersection is calculated to operate at LOS B during the AM and PM peak hours.

Appendix B contains the Existing peak hour intersection analysis worksheets.

5.2.2 Existing With Willow Bend Traffic

With the Willow Bend Project, the fourth leg (west leg) of the SR-86 / Countryside Drive intersection will be built. **Table 5–1** shows the intersection operations for each of the four (4) intersection controls. As shown in **Table 5–1**, with the Willow Bend traffic, this intersection is calculated to operate at LOS C or better under all the traffic control alternatives listed in Section 5.1 during the AM and PM peak hours.

Appendix C contains the Existing With Willow Bend Traffic peak hour intersection analysis worksheets for all alternatives.

It was determined that up to 60 units can be built before improvements in the traffic control (AWSC) will be required.

5.2.3 Year 2045

As shown in **Table 5–1**, In the Year 2045 traffic, the subject intersection is calculated to operate at LOS D or better under all the traffic control alternatives listed in Section 5.1 during the AM and PM peak hours.

Appendix D contains the peak hour intersection analysis worksheets for all alternatives.

5.3 Queue Analysis

Table 5–2 summarizes the queues at the SR-86 / Countryside Drive intersection for all analysis scenarios. The longest queue between the AM and PM peak hours is shown for each alternative. For all alternatives, the 95th percentile queue lengths are calculated. Queue analysis worksheets are available for signalized intersections but not for unsignalized intersections. Queues for roundabouts are provided in the peak hour analysis worksheets.

5.3.1 Existing

As seen in **Table 5–2**, under Existing conditions, the queue in the southbound left-turn movement is within the available storage. Northbound and eastbound left-turn movements do not exist. In the westbound approach, the left and right movements are shared.

5.3.2 Existing With Willow Bend Project

With the Willow Bend Project, it is recommended that 75-foot-long left-turn lanes be provided in the westbound, northbound, and eastbound approaches. As seen in **Table 5–2**, with the Willow Bend Project, queues in all left-turn movements are calculated to be within the available storage.

Appendix C contains the Existing With Willow Bend queue analysis worksheets.

5.3.3 Year 2045

As seen in **Table 5–2**, in the Year 2045, queues in all left-turn movements are calculated to be within the available storage.

Appendix D contains the Year 2045 queue analysis worksheets.

**TABLE 5-1
INTERSECTION ANALYSIS**

Scenario / Control Type	Peak Hour	Delay ^a	LOS ^b
Existing MSSC ^c	AM	12.7	B
	PM	11.0	B
Existing with Willow Bend Project	MSSC	AM	18.6
	PM	22.3	C
	AWSC ^d	AM	12.0
	PM	12.3	B
	Signal	AM	23.4
	PM	19.9	C
	Single-Lane Roundabout	AM	5.2
	PM	5.7	A
	Two-Lane Roundabout	AM	4.9
	PM	5.3	A
Year 2045 with Willow Bend Project	MSSC	AM	26.6
	PM	33.6	D
	AWSC	AM	16.1
	PM	17.4	C
	Signal	AM	24.8
	PM	20.6	C
	Single-Lane Roundabout	AM	6.2
	PM	6.8	A
	Two-Lane Roundabout	AM	5.7
	PM	6.3	A

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service.
- MSSC – Minor Street Stop Controlled intersection. Minor street left-turn delay, and LOS reported.
- AWSC – All Way Stop Controlled intersection. Overall delay, and LOS reported.

SIGNALIZED		UNSIGNALIZED	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

**TABLE 5-2
QUEUE ANALYSIS**

Scenario / Control Type	Movement	Storage (feet)	95 th Percentile Queue (feet) ^a	Adequate?
Existing				
MSSC	SBL	225	6	Yes
	WBL	-	-	NA
	NBL	DNE	DNE	NA
	EBL	DNE	DNE	NA
Existing With Willow Bend Project				
MSSC	SBL	225	6	Yes
	WBL	75	13	Yes
	NBL	100	0	Yes
	EBL	100	22	Yes
AWSC	SBL	225	^b	NA
	WBL	75	^b	NA
	NBL	100	^b	NA
	EBL	100	^b	NA
Signal	SBL	225	99	Yes
	WBL	75	79	Yes
	NBL	100	18	Yes
	EBL	100	83	Yes
Single-Lane Roundabout	SB	>100	2	Yes
	WB	>100	1	Yes
	NB	>100	1	Yes
	EB	>100	1	Yes
Two-Lane Roundabout	SB	>100	2	Yes
	WB	>100	1	Yes
	NB	>100	1	Yes
	EB	>100	1	Yes

TABLE 5-2 (CONTINUED)
QUEUE ANALYSIS

Scenario / Control Type	Movement	Available Storage (feet)	95 th Percentile Queue (feet) ^a	Adequate?
Year 2045 With Willow Bend Project				
MSSC	SBL	225	3	Yes
	WBL	75	25	Yes
	NBL	100	1	Yes
	EBL	100	37	Yes
AWSC	SBL	225	b	NA
	WBL	75	b	NA
	NBL	100	b	NA
	EBL	100	b	NA
Signal	SBL	225	123	Yes
	WBL	75	95	Yes
	NBL	100	19	Yes
	EBL	100	84	Yes
Single-Lane Roundabout	SB	>100	3	Yes
	WB	>100	1	Yes
	NB	>100	2	Yes
	EB	>100	1	Yes
Two-Lane Roundabout	SB	>100	3	Yes
	WB	>100	1	Yes
	NB	>100	1	Yes
	EB	>100	1	Yes

Footnotes:

- a. 95th percentile queue length in feet (25 feet per vehicle). Longest of the AM and PM peak hour queue.
b. Shared lane, queue not available.

General Notes:

MSSC – Minor Street Stop Controlled intersection
AWSC – All Way Stop Controlled intersection
DNE – Does not exist
NA – Not Applicable

6.0 INTERSECTION ALTERNATIVES DISCUSSION

The following is a detailed discussion of each alternative traffic control for the SR-86 / Countryside Drive intersection.

6.1 Minor-Street Stop Control Alternative

The minor-street stop control alternative retains the existing Stop sign traffic control on westbound Countryside Drive and assumes a stop control on (the new) eastbound Countryside Drive. Analysis was completed using HCM 7 methodology and Synchro (version 12) software.

Figure 6-1 depicts the intersection geometry for the Minor-Street-Stop-Control (MSSC) alternative. The following ultimate lane geometry with the second southbound through lane on SR 86 merging south of Countryside Drive is shown on *Figure 6-1*:

- Southbound: One left turn lane, one through lane and one shared through /right lane. As mentioned previously, the No. 2 SB may be a dedicated right turn lane for this project (future will be shared through/right lane)
- Westbound: One left turn lane and one shared through / right-turn lane
- Northbound: One left turn lane, one through lane and one shared through /right lane
- Eastbound: One left turn lane and one shared through / right-turn lane (new west leg)

The eastbound and westbound lane assignment match and the second southbound through lane matches the 2 northbound through lanes.

Currently there is a fire hydrant at the southeast corner of the SR 86 / Countryside Drive intersection and two driveways immediately adjacent. Hence there is no opportunity for parking along the south curb of Countryside Drive, east of SR 86, for a distance of approximately 110 feet east of SR 86 and the provision of two (2) westbound lanes will not impede curbside parking. Currently, the volume in the westbound direction during the AM peak hour is approximately 56 in the left-turn movement and 114 in the right-turn movement. Therefore, having a dedicated left-turn lane will provide better operations at this intersection.

The critical minor-street left-turn delay in the westbound left-turn movement is reported in *Table 5-1*. As seen, the westbound left movement is calculated to operate at an acceptable LOS C during the AM and PM peak hours with delays of 20.2 seconds and 22.8 seconds during the AM & PM peak hours respectively, with the MSSC. The calculated overall average delay for the intersection is less than five seconds, as traffic on the major street (SR-86) does not stop.

The maximum calculated queue in the left-turn movements on all approaches is approximately one (1) vehicle or less during the AM and PM peak hours. The storage provided in the left-turn movements on all approaches can accommodate the calculated queues.

Appendix C contains the Existing with Willow Bend Traffic Minor-Street Stop Control Alternative queue analysis worksheets and *Appendix D* contains the same for Year 2045 with Willow Bend traffic.

6.1.1 Safety Considerations

The most significant pedestrian conflict for MSSC intersections is pedestrians crossing the major street who have potential conflicts with through vehicles on the major street. Pedestrians crossing the minor street will encounter drivers turning into the minor street with drivers being processed through the stop sign. These drivers are focused primarily on looking for gaps in the major street traffic and may not see pedestrians.

6.1.2 Right-of-Way Easement Impacts

Within the intersection improvement limits and from available record information, there is not any recorded highway right of way along the west side SR-86, therefore it is assumed that prescriptive rights would be approximately 34 feet west of the highway centerline. Due to the required pavement widening to accommodate second southbound through lane, shoulder and drainage improvements, this alternative would require a minimum of 26 ft of additional right of way, along the west side of SR-86 from Willow Bend Drive to approximately 1,680 lineal feet south of Countryside Drive. The proposed right-of-way acquisition area would impact the existing agricultural field south of Countryside Drive. However, this will only be required when the area south of Countryside drive is developed in the future.

The land north of Countryside Drive is the proposed single family home subdivision, requiring access onto SR-86 at Countryside Drive. The widening of SR 86 is necessary only along the frontage of the Willow Bend Project and does not need to extend to McCabe Road.

Due to the proposed southbound widening, this option would require the relocation of the power poles for the length of the widening. The poles carry both electrical distribution and communications facilities; therefore, both would be impacted by the pole relocation. The anticipated relocation length would be approximately 1,900 lineal feet. The construction estimate provided in *Table 9-1*, includes known estimated utility relocation costs.

6.1.3 Environmental Impacts

Due to the proposed development, a westbound leg of Countryside Drive extended would be constructed west of SR-86, thus creating a four-way intersection. No impacts to native habitat or visual resources are expected to occur with implementation of this proposed SR-86/Countryside Drive MSSC alternative.

6.2 All-Way Stop Control Alternative

The All-Way-Stop-Control (AWSC) alternative assumes stop control on all four approaches. Analysis was completed using HCM 7 methodology and Synchro (version 12) software.

Figure 6-2 depicts recommended lane geometry proposed for the AWSC alternative. As shown on *Figure 6-2*, a flashing R1-1 is recommended on the SR 86 median in both the north and south approaches to Countryside Drive. In addition, an advanced flashing W3-1 should be provided on SR 86 in both the north and south approaches to Countryside to alert drivers approaching the intersection

at night. The second southbound through lane on SR 86 merging south of Countryside Drive is shown on *Figure 6-2*:

The overall intersection delay and LOS is reported in *Table 5-1*. As seen in *Table 5-1*, this intersection is calculated to operate at an overall LOS B during the AM and PM peak hours with delays of 12.0 seconds and 12.2 seconds during the AM & PM peak hours respectively, with AWSC.

The calculated queues in the left-turn movements on all approaches are one (1) vehicle or less during the AM and PM peak hours. The storage provided in the left-turn movements on all approaches can accommodate the calculated queues.

Appendix C the Existing with Willow Bend Traffic contains the All-Way Stop Control Alternative intersection and queue analysis worksheets and *Appendix D* Contains the same for the Year 2045 With Willow Bend traffic.

6.2.1 Safety Considerations

With the All-Way-Stop Control alternative, vehicles on all approaches will stop and proceed when clear. Pedestrian crosswalks will be provided on all approaches. This will eliminate vehicle / pedestrian conflicts since every vehicle has to stop before proceeding through the intersection. As described previously, development of the Willow Bend project is not anticipated to generate any substantial increase in pedestrian crossing demand at this location.

6.2.2 Right-of-Way Easement Impacts

The amount of widening on SR-86 for the AWSC alternative is the same as for the MSSC alternative and no additional right-of-way impacts are anticipated outside of what was discussed above. Please see the description in Section 6.1.2 above.

In addition, this alternative will have the same impacts and associated costs for the overhead utility relocations as noted in Section 6.1.2.

6.2.3 Environmental Impacts

The amount of widening on SR-86 for the AWSC alternative is the same as for the MSSC alternative and no additional environmental impacts are anticipated with this alternative. Please see the description in Section 6.1.3 above.

6.3 Traffic Signal Alternative

The traffic signal alternative assumes installation of a traffic signal with protected left-turn phasing for all approaches. Analysis was completed using HCM 7 methodology and Synchro (version 12) software.

Figure 6-3 depicts the intersection geometry for the Traffic Signal (Signal) alternative. As shown in *Figure 6-3*, it is proposed to provide the lane geometry proposed for the TWSC alternative, with the second southbound through lane merging south of Countryside Drive.

The overall intersection delay and LOS is reported in *Table 5–1*. As seen in *Table 5–1*, this intersection is calculated to operate at an overall LOS C or better during the AM and PM peak hours with delays of 22.9 seconds and 19.2 seconds during the AM & PM peak hours respectively, with signal control.

The calculated queues in the left-turn movements on all approaches are five (5) vehicles or less during the AM and PM peak hours. The storage provided in the left-turn movements on all approaches can accommodate the calculated queues.

Appendix C contains the Existing with Willow Bend Traffic Signal Alternative intersection analysis and queue analysis worksheets and *Appendix D* contains the same for Year 2045 with Willow Bend traffic.

6.3.1 Safety Considerations

Traffic signals can reduce the likelihood of pedestrian-vehicle conflicts by providing visual and audible pedestrian signal indications in coordination with compatible vehicular traffic phases. However, pedestrian conflicts can still occur due to red light running (illegal), right turns on green, left turns on green, and right turns on red (legal). The greatest left-turn volume is 10 vehicles on southbound approach for this project.

6.3.2 Right-of-Way Easement Impacts

The amount of widening on SR-86 for the Signal alternative is the same as for the MSSC alternative and no additional right-of-way impacts are anticipated outside of what was discussed above. Please see the description in Section 6.1.2 above.

6.3.3 Environmental Impacts

The amount of widening on SR-86 for the Signal alternative is the same as for the MSSC alternative and no additional environmental impacts are anticipated with this alternative. Please see the description in Section 6.1.3 above.

6.4 Roundabout Alternative

The following two roundabout options were studied:

Option 1

One-lane roundabout with one circulating lane, 140-foot outer diameter and 112 feet diameter of the central island. Single-lane approaches are proposed on all legs on SR-86 and Countryside Drive.

Figure 6–4 depicts the intersection geometry for the one-lane Roundabout Alternative

Option 2

Two-lane roundabout with two circulating lanes, 150-foot outer diameter and 86 feet diameter of the central island. Two-lane approaches on SR-86, and single lane approaches on Countryside Drive are proposed.

Figure 6–5 depicts the intersection geometry for the two-lane Roundabout Alternative.

As seen in *Figures 6-4 and 6-5*, the existing curvature at the south leg has been maintained to prevent improvements from exceeding the eastern right-of-way. A curve approach has been introduced for the north leg to enhance traffic calming as vehicles approach the roundabout. Additionally, tighter exit radii have been implemented at the east leg on Countryside Drive to avoid encroaching on existing properties. The shared path meets the minimum width requirement of 8 feet in both instances, while the single-lane roundabout provides a preferred width of 10 feet.

Analysis was completed using HCM 7 methodology and Synchro (version 12) software.

The overall intersection delay and LOS is reported in *Table 5–1*. As shown in *Table 5–1*, this intersection is calculated to operate at an overall LOS A during the AM and PM peak hours with delays of 5.2 seconds and 5.6 seconds during the AM & PM peak hours respectively, with Roundabout control.

The calculated queues in all approaches are one (1) vehicle or less during the AM and PM peak hours. The storage provided in the left-turn movements on all approaches can accommodate the calculated queues.

In general, the performance of roundabouts during off-peak periods is good compared with other intersection improvement options, requiring fewer vehicles to stop or slow, though no off-peak analysis was completed at this intersection.

Appendix C contains the Existing with Willow Bend Traffic Signal Alternative intersection analysis worksheets and *Appendix D* contains the same for Year 2045 with Willow Bend traffic. The roundabout analysis worksheets also including the queues.

6.4.1 Safety Considerations

A roundabout is one of the options contemplated for this intersection. It may be noted that per Exhibit 10.3 Common Inscribed Circle Diameter Ranges in the Roundabout Guide, shown below, the diameter for a two-lane roundabout that accommodates STAA trucks, or equivalent of WB-62 or WB-67 trucks ranges between 140 to 180 feet.

Ideally, the entry speed for a single-lane roundabout should be no more than 20 mph and for a dual-lane roundabout should be no more than 25 mph, as indicated in Table 6-3 in the Roundabout Guide. Hence the approach speed on SR 86 needs to be reduced from 50 mph to no more than 20 or 25 mph as described above. The circulatory speed within the roundabout should be 20 mph or less for both single and dual-lane roundabouts.

The diameter assumed for a roundabout at this intersection is 165 feet, approximately in the middle of the prescribed range. The purpose and result of a roundabout is to reduce the speed of traffic on the intersecting streets. In the northbound direction, due to the existing homes on the east curb of SR 86,

the center of the roundabout has to be located to the west of the intersection, providing minimum deflection at the northbound entry into the roundabout. The following conditions prevail:

- Traffic entering the roundabout from the south does not have to reduce speed since they enter and exit the roundabout at almost 90°.
- The entry angle cannot be increased as there is not sufficient Caltrans ROW. Increasing it would require major realignment of SR 86 through Countryside Drive with acquisition of a large amount of right-of-way, new easements to the IID for the relocation of the undergrounded Dogwood Lateral 2 canal and necessary eminent domain for ROW acquisition and relocation of multiple single-family homes, which would result in additional environmental impacts. ROW needs are from both the east and west of SR 86.
- Traffic entering the roundabout from the east at speeds of 15 mph or lower, has to merge with traffic traveling at almost 50 mph.
- Reducing the diameter is not ideal since, as a result, trucks will have to use the center island to negotiate the roundabout.
- A residential project is proposed at the northwest corner of the SR 86 / Countryside Drive intersection with two southbound lanes on SR 86 per the city's mobility element. This will require the two southbound lanes to merge into one lane prior to entering the one lane roundabout option. This will also require new easements to the IID for the relocation of the undergrounded Dogwood Lateral 2 canal and necessary eminent domain for ROW acquisition and relocation of multiple single-family homes, which would result in additional environmental impacts.
- Roundabouts result in an increase in single-vehicle and fixed-object crashes compared to other intersection treatments.
- Multilane roundabouts present more difficulties for individuals with blindness or low vision due to challenges in detecting gaps and determining that vehicles have yielded at crosswalks.

Exhibit 10.3. Common Inscribed Circle Diameter Ranges

Roundabout Configuration	Typical AASHTO Design Vehicle	Common ICD Range ^a
Mini-roundabout	SU-30	45 ft to 90 ft (14 m to 27 m)
Compact roundabout	BUS-40 WB-40 WB-62 or WB-67 ^b	65 ft to 120 ft (20 m to 37 m)
Single-lane roundabout (non-traversable central island)	BUS-40 WB-40 WB-62 or WB-67	90 ft to 120 ft (27 m to 37 m) 100 ft to 130 ft (30 m to 40 m) 120 ft to 180 ft (37 m to 55 m)
Multilane roundabout (2 lanes circulating) ^c	WB-40 WB-62 or WB-67	135 ft to 160 ft (41 m to 49 m) 140 ft to 180 ft (43 m to 55 m)
Multilane roundabout (3 lanes circulating) ^c	WB-62 or WB-67	190 ft to 240 ft (58 m to 73 m)

Footnotes:

- a. Assumes 90-degree angles between entries and no more than four legs. List of possible design vehicles is not comprehensive.
- b. Serving WB-62 or larger vehicles as through movements. Right turning may require other special considerations for approach and splitter island design.
- c. Common ICD ranges depend on whether the design vehicle will straddle or stay in-lane. Does not account for special vehicles or OSOWs.

- Trucks may also have to straddle the two lanes, thus disrupting the path of other vehicles through the roundabout, which is not desirable.
- The posted speed limit on SR 86 is 50 mph. The needs to slow down to 20-25 mph on the approaches to the roundabout. The reduction in speed can only be achieved by the introduction of a curve on the approaches to slow traffic speeds that would result in requiring additional right-of-way. This large reduction in the speed is not desirable and hence, a roundabout is not appropriate traffic control at this intersection.
- The center of the Roundabout is offset to the west from the SR 86 center line because of existing homes along the eastern curb of SR 86 and due to right-of-way constraints. Therefore, sufficient deflection is not provided at the entry to the roundabout from the south.

For the reasons stated above, a roundabout is not the ideal traffic control type for this intersection.

The following roundabout description of roundabouts and their functioning provided in the Roundabout Guide for, 2023 is provided for information:

Multilane roundabouts include at least two circulating lanes in at least a portion of the circulatory roadway. They include roundabouts with entries on one or more approaches that flare from one to two or more lanes that circulate through the roundabout. In some cases, the roundabout may have a different number of lanes on one or more approaches (e.g., two-lane entries on the major street and one-lane entries on the minor street). The geometric design includes raised splitter islands, a truck apron, a non-traversable central island, and appropriate entry path deflection.

Multilane roundabouts have some key differences from single-lane roundabouts. They typically have higher circulating and exiting speeds than single-lane roundabouts. This is a result of their larger ICD and wider entry and exit configurations that allow vehicles to navigate larger curve radii on their travel paths through the roundabout. Circulatory roadway widths may also vary, depending on the number of lanes and the design vehicle turning requirements. A constant width is not required throughout the entire circulatory roadway, and it is desirable to provide the minimum width necessary to serve the required lane configurations within that specific portion of the roundabout.

A multilane entry or exit also increases pedestrian crossing exposure compared with a single-lane entry or exit. Research into accessible pedestrian design has concluded that in many circumstances, additional geometric treatments, traffic control treatments, or both are needed to make the crossing accessible to all pedestrians.

Multilane roundabouts have more conflict points (16) than single-lane roundabouts (4) because of additional lanes and the associated width between curbs, as with any larger intersection.

Multilane roundabouts often do not achieve the same levels of crash reduction as their single-lane counterparts. Multilane roundabouts serve higher traffic volumes over more lanes compared with single-lane configurations. However, the severity of crashes is generally comparable at multilane and single-lane roundabouts (5, 6). The low speeds present in roundabouts compared with those of non-roundabout intersections reduce the frequency of severe crashes.

6.4.2 Right-of-Way Easement Impacts

Option 1: One-Lane Roundabout

See Section 6.1.2 for a discussion on the existing right of way along with the required highway widening outside of the roundabout footprint at SR-86 and Countryside Drive. If the proposed one-lane roundabout were implemented at the subject location, right of way would be required at the northwest and southwest quadrants of the intersection. The roundabout design concept, depicting a 140-foot inscribed diameter, will accommodate a STAA 53 design vehicle.

Since the design of the roundabout footprint would push most of the improvements to the west side of SR 86, into the proposed subdivision boundary, the developer would be required to dedicate approximately 35 feet from the edge of pavement to accommodate the roundabout improvements and necessary drainage features.

Like the prior noted alternatives, the overhead utility facilities along the west side of SR 86 will be impacted by the single lane roundabout. However, the limits of impact will be less than the other options, as the roundabout option does not require an auxiliary merge lane south of Countryside Drive. The anticipated relocation length would be approximately 900 lineal feet. The construction estimates provided in *Table 7-1* include known estimated utility relocation costs.

Option 2: Two-Lane Roundabout

See Section 6.1.2 for a discussion on the existing right of way along with the required highway widening outside of the roundabout footprint at SR-86 and Countryside Drive. If the proposed two-lane roundabout were implemented at the subject location, right of way would be required at the northwest and southwest quadrants of the intersection. The roundabout design concept, depicting a 150-foot inscribed diameter, will accommodate a STAA 53 design vehicle.

Similar to the one-lane roundabout option, since the design of the roundabout footprint would push most of the improvements to the west side of SR 86, into the proposed subdivision boundary, the developer would be required to dedicate approximately 65 feet from the edge of pavement to accommodate the roundabout improvements and necessary drainage features.

In addition, this alternative will have the same impacts and associated costs for the overhead utility relocations as noted in Option 1 above.

6.4.3 Environmental Impacts

Option 1: One-Lane Roundabout

The One-Lane Roundabout intersection improvements will require additional right of way beyond what is described in Section 6.1.3, however, all additional roundabout right of way would take away from any onsite development potential. The project does not foresee any impacts to native habitat or visual resources are expected to occur with implementation of the SR-86/Countryside Drive one-lane Roundabout option.

Option 2: Two-Lane Roundabout

The Two-Lane roundabout intersection improvements will require additional right of way beyond what is described in Section 6.1.3, however, all additional roundabout right of way would take away from any onsite development potential. The project does not foresee any impacts to native habitat or visual resources are expected to occur with implementation of the SR-86/Countryside Drive two-lane Roundabout option.

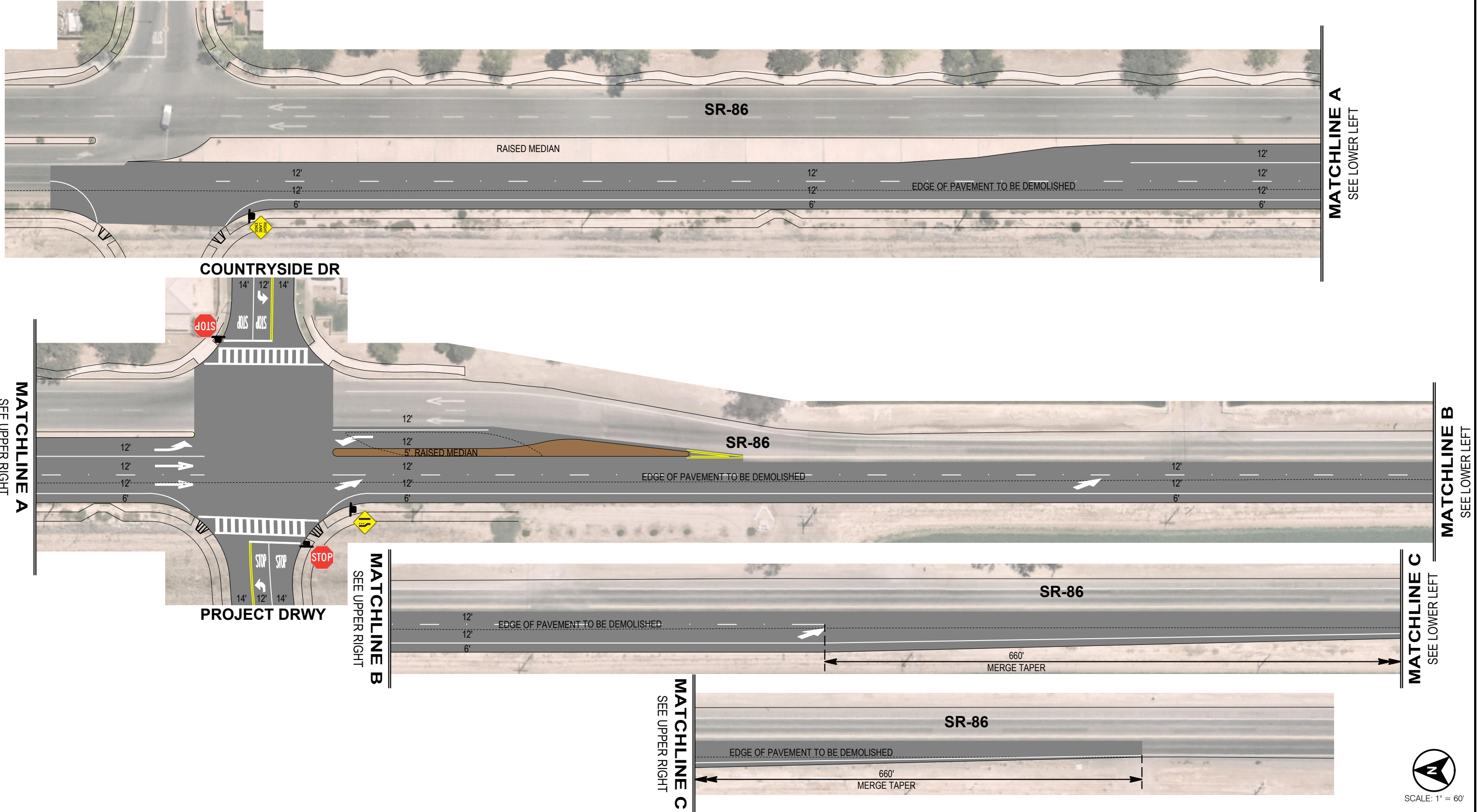


Figure 6-1

Conceptual Plan - Two-Way Stop Control

CONCEPTUAL ONLY
NOT FOR CONSTRUCTION

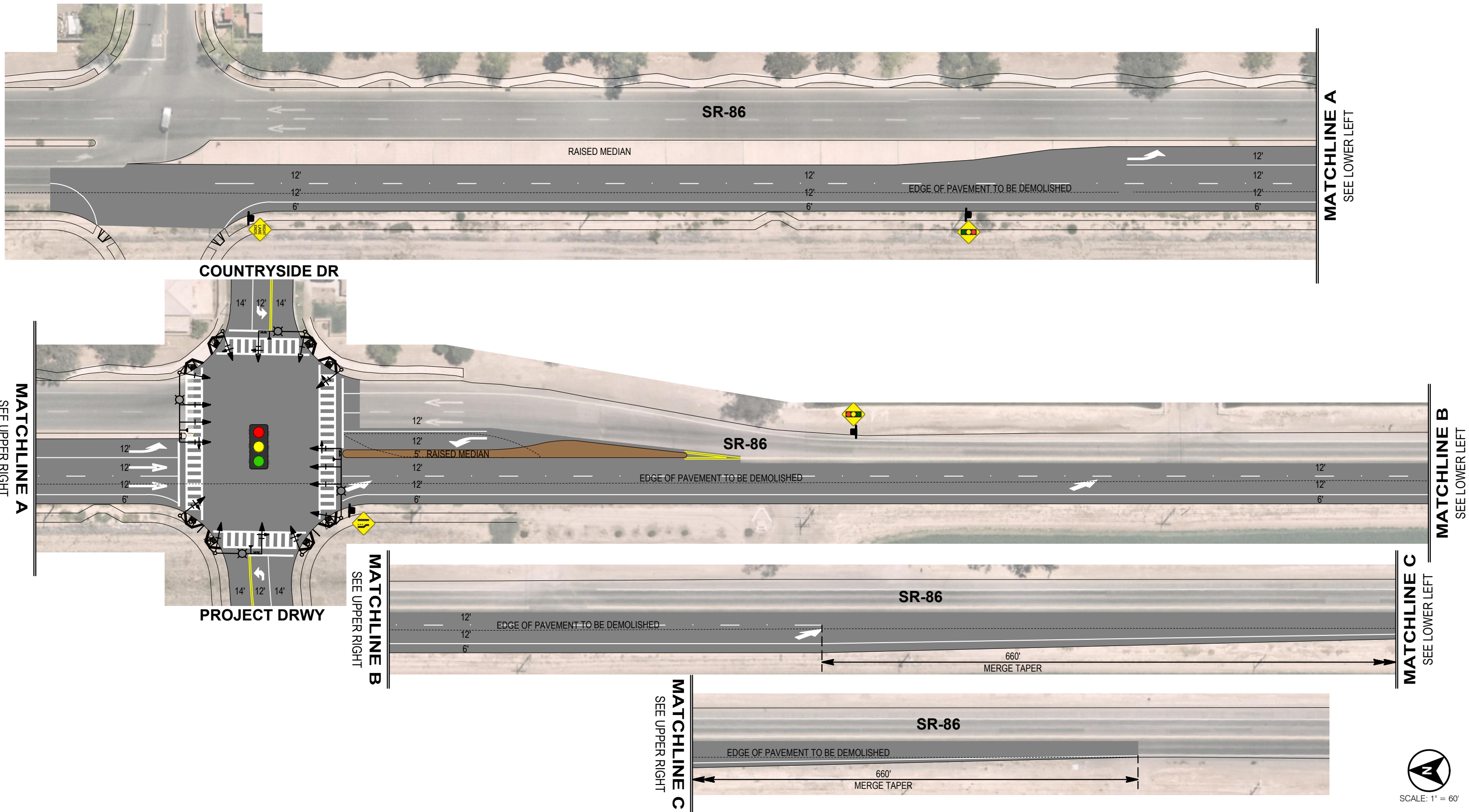
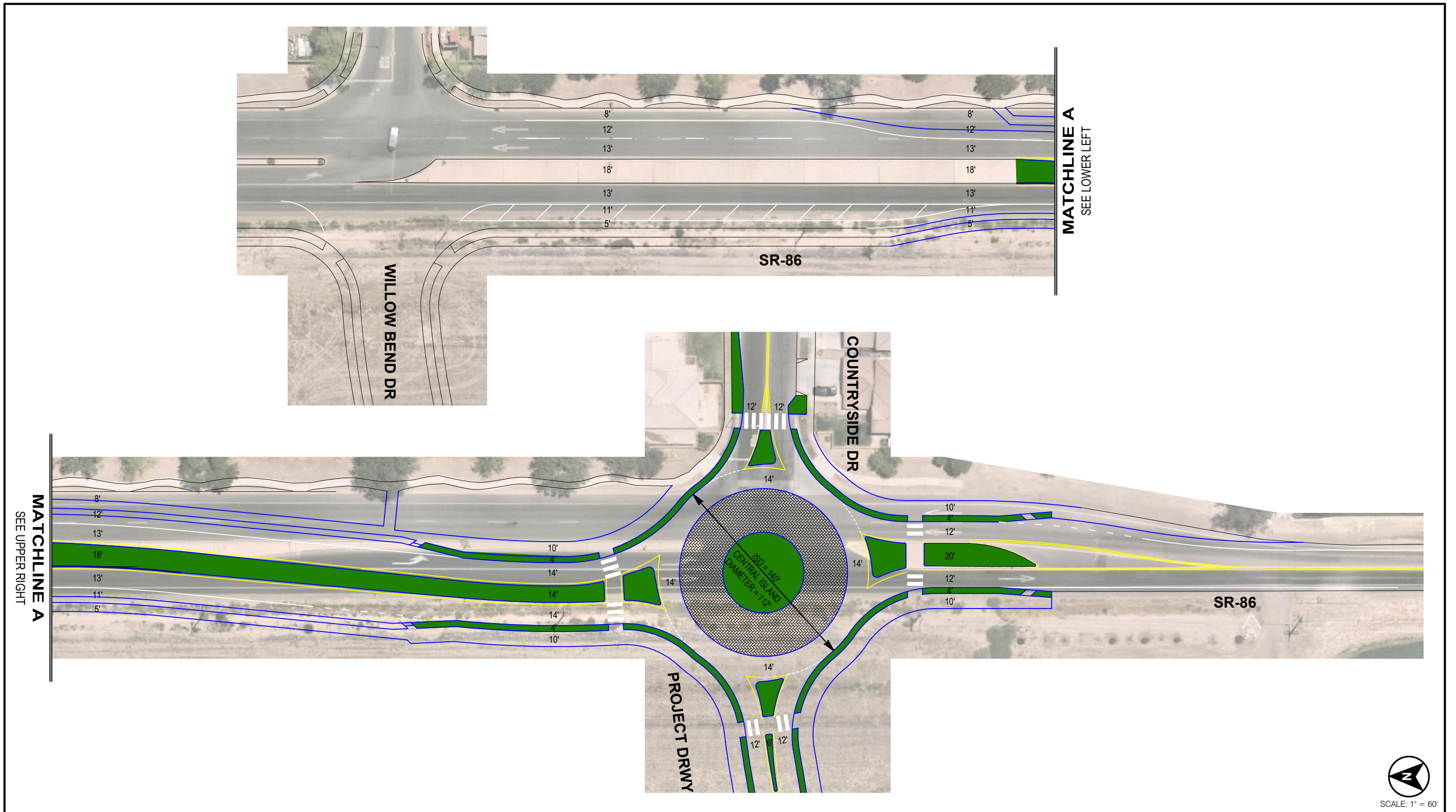


Figure 6-3

Conceptual Plan - Signal Control

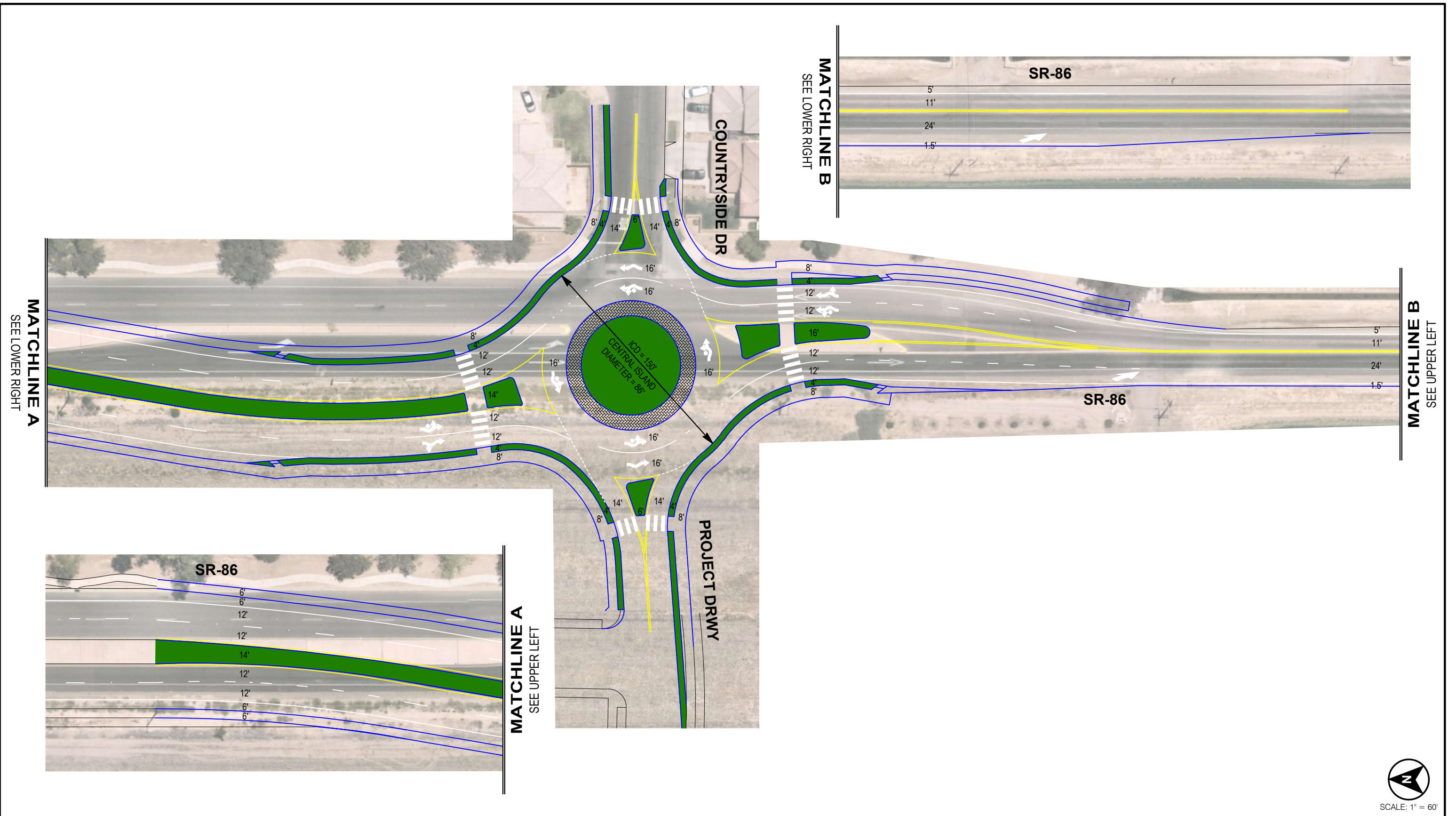
CONCEPTUAL ONLY
NOT FOR CONSTRUCTION



C O N C E P T U A L O N L Y
NOT FOR CONSTRUCTION

Figure 6-4

Single-Lane Roundabout Concept Plan



7.0 SIGNAL WARRANT ANALYSIS

The following is a discussion of the various signal warrants for the SR-86 / Countryside Drive intersection for the Near-Term.

Assumptions

The SR-86 / Countryside Drive intersection is currently a three-leg intersection with no west leg. As explained in Section 3.0 Year 2045 Traffic Volumes, the Willow Bend Project will install the west leg and provide the following geometry on the Project Opening Day:

- Southbound: One left turn lane one through lane and one shared through /right lane. The No. 2 SB may be a dedicated right turn lane for this project (future will be shared through/right lane).
- Westbound: One left turn lane and one shared through / right-turn lane
- Northbound: One left-turn lane, one through and one shared through / right-turn lane
- Eastbound: One left turn lane and one shared through / right-turn lane (new west leg)

The following assumptions are made in determining the conditions at the subject intersection:

- *Approach Lanes* – One right-turn lane and one left-turn lane will be provided in the eastbound and westbound directions on Countryside Drive.

Page 847 of the California Manual On Uniform Traffic Control Devices (MUTCD) 2014 Edition states “for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.”

At this location, the project access road is a two-lane road (one lane in each direction) with dedicated left-turn and a shared through/right lanes at the intersection and it is not considered to be possible for traffic to enter SR 86 with “minimal conflict”. The storage in the left-turn lane will not be sufficient to accommodate the entire left-turning traffic. Hence, this approach will function and is analyzed as a one lane approach.

- *Approach Volumes* – As stated in the MUTCD, “engineering judgment and rationale should be applied to a street approach with one left-turn lane plus a shared through/right lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.”

As described above, a shared through right lane and a left-turn lane is provided on the approach to SR 86, on countryside Drive. Based on the number of approach lanes and the MUTCD (previous bullet item), based on engineering judgement, a 25% reduction in right-turning traffic is assumed since this is considered a one-lane approach (see above) and right-turning traffic has to enter a 4-lane Major Road.

7.1 Near-Term Conditions

Near-Term traffic volumes include the traffic generated by the proposed Willow Bend Project.

Warrant 1 – Eight-Hour Vehicular Volume

Methodology

The need for a traffic signal shall be considered if an engineering study finds that one of the following conditions exist for each of 8 hours of an average day:

- A. The vehicles per hour given in both 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or
- B. The vehicles per hour given in both 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition, the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours. If the posted or statutory speed limit or the 85th percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70% columns in Table 4C-1 may be used in place of the 100 percent columns.

The subject intersection is located in an isolated community and the posted speed limit is 50 mph. Therefore the 70% criterion was used for all warrants as applicable, in this study.

Table 7–1 shows the 70% volume thresholds for two-lane (or more) approaches on the major street and one-lane approach on the minor street.

TABLE 7–1
WARRANT 1: EIGHT - HOUR VEHICULAR VOLUME: EXISTING
70% CRITERIA

Warrant 1	Vehicles Per Hour on Major Street (Total of Both Approaches)	Vehicles Per Hour on Higher-Volume Minor-Street (One Direction Only)
Condition A	420	105
Condition B	630	53

Calculations

Table 7–2 compares the actual 24-hour volumes to the minimum volumes (*Table 7–1*) required to satisfy this warrant. As seen in *Table 7–2*, the Condition A warrant volumes are met for only one hour and hence Condition A is not satisfied. Condition B warrant volumes are met for only seven (7) hours on a typical day and hence Condition B is not satisfied.

Based on the above, Warrant 1 is not satisfied in the Existing with Willow Bend Traffic condition.

TABLE 7–2
WARRANT 1: TRAFFIC VOLUME DATA: EXISTING WITH WILLOW BEND TRAFFIC
70% CRITERIA

Hour Begin	SR-86 (Major Street)	Countryside Drive (Minor Street)	1-A	1-B
0:00	38	3	N	N
1:00	22	2	N	N
2:00	35	0	N	N
3:00	53	3	N	N
4:00	84	5	N	N
5:00	208	50	N	N
6:00	316	43	N	N
7:00	619	217	Y	Y
8:00	507	64	N	N
9:00	420	42	N	N
10:00	405	55	N	N
11:00	497	39	N	N
12:00	589	55	N	Y
13:00	358	65	N	N
14:00	611	59	N	Y
15:00	756	78	N	Y
16:00	723	68	N	Y
17:00	819	85	N	Y
18:00	559	63	N	Y
19:00	375	26	N	N
20:00	306	31	N	N
21:00	234	18	N	N
22:00	144	10	N	N
23:00	61	5	N	N
Total	8,739	1,086	1	7

Warrant 2 – Four-Hour Vehicular Volume

Methodology

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes, on the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours. If the posted or statutory speed limit or the 85th percentile speed on the major street exceeds 40 mph or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Calculations

As explained previously, the 70% criterion applies. Therefore, Figure 4C-2 applies. **Table 7–3** summarizes the Warrant 2 calculations. As seen in Figure 4C-2 below, all hourly traffic volumes except two fall below the “2 Lane & 1 Lane” curve when plotted on Figure 4C-2 of the California MUTCD.

Based on the above, Warrant 2 is not satisfied for the Existing with Willow Bend Traffic condition.

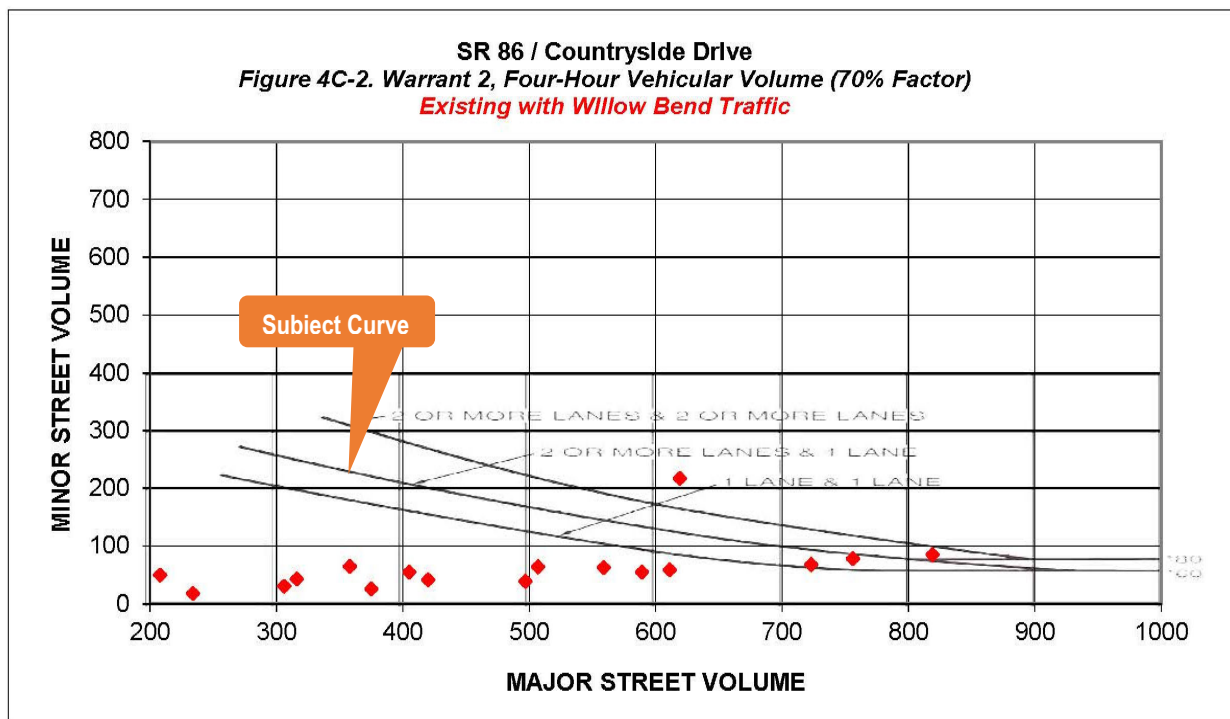


TABLE 7-3
WARRANT 2, FOUR-HOUR VEHICULAR WARRANT: EXISTING WITH WILLOW BEND TRAFFIC

Warrant 2 - Four-Hour Vehicular Warrant

Satisfied *

Yes ☐ No ☒

Approach Lanes	One	2 or More				
Both Approaches -Major Street		X				
Highest Approaches -Minor Street	X					

* All Plotted points fall above the curves in MUTCD Figure 4C-1 or 4C-2

Yes ☐ No ☒

Warrant 3 – Peak Hour

Methodology

The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

- A. If all of the three conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
 1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds:4 Vehicles-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
 2. The volume on the same-minor street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for the intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
- B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume on the minor – street approach (one direction only) for 1 hour (or any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to satisfy the criteria in the second category.

Calculations

None of the three conditions of Part A are satisfied and hence Part A is not satisfied. As explained previously, the 70% criterion applies for Part B. Therefore, the Figure 4C-4 is used in place of Figure 4C-3. **Table 7-4** summarizes Warrant 3 calculations. As seen in **Table 7-4**, peak hour traffic volumes

fall below the curve for the appropriate number of lanes when plotted on Figure 4C-4 of the California MUTCD.

The unsignalized Existing + Willow Bend peak hour intersection analysis indicates LOS C (22.9 seconds delay) during the AM peak hour and LOS B (19.2 seconds delay) during the PM peak hour. The calculated 95th percentile queue in the eastbound left-turn lane is 99 feet or approximately 4 cars length in the AM peak hour and 25 feet or approximately 1 car length in the PM peak hour. The Existing AM and PM peak hour intersection analysis worksheets are included in **Appendix D**.

Based on the above, and *Table 7-4*, Warrant 3 is not satisfied for the Existing with Willow Bend Traffic condition.

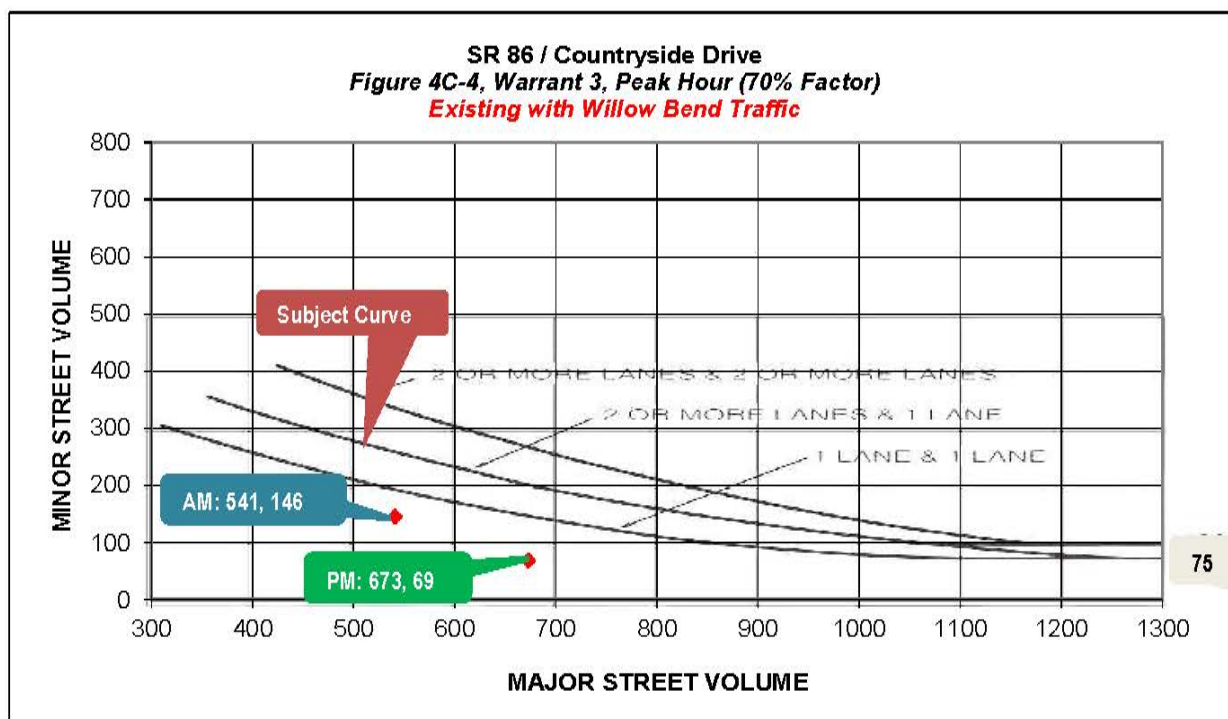


TABLE 7-4
WARRANT 3: PEAK - HOUR: EXISTING

Warrant 3 – Peak Hour

Part A or Part B Satisfied

Yes ☐ No ☒

Part A

Satisfied

Yes ☐ No ☒

(All Parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor-street approach controlled by a STOP sign equal or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND
2. The volume on the same-minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND
3. The entering volume serviced during the hour equals or exceeds 800 vph for the intersections with four or more approaches or 650 vehicles per hour for intersections with three approaches.

Yes ☐ No ☒

Yes ☒ No ☐

Yes ☐ No ☒

Part B

Satisfied

Yes ☐ No ☒

Approach Lanes	One	2 or More				
Both Approaches -Major Street	X					
Highest Approaches -Minor Street	X					

The plotted points for vehicles per hour on Major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15-minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.

Warrant 4 – Pedestrian Volume

Methodology

The need for a traffic control signal at an intersection or midblock shall be considered if an engineering study finds that both of the following criteria are met:

- A. The pedestrian volume crossing the major street at an intersection or midblock location during an average day is 100 or more for each of any 4 hours or 190 or more during any 1 hour; and
- B. There are fewer than 60 gaps per hour in the traffic stream of adequate length to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic.

The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic signal along the major street is less than 300 feet unless the proposed traffic control signal will not restrict the progressive movement of traffic. If this warrant is met and a traffic control

signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads conforming to requirements set forth in Chapter 4E of the MUTCD.

Calculations

As explained previously, pedestrians are not a major factor at this intersection and therefore, Warrant 4 is not satisfied for the Existing with Willow Bend Traffic condition.

Warrant 5 – School Crossing

Methodology

The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the children are using the crossing less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 students during the highest crossing hour. Before a decision is made to install a traffic control signal, consideration should be given to the implementation of other remedial measures, such as warning signs, flashers, school speed zones, school crossing guards, or a grade-separated crossing. The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 90 m (300 ft.) unless the proposed traffic control signal will not restrict the progressive movement of traffic.

Calculations

There are no schools in the vicinity of the proposed intersection and therefore this warrant does not apply. Thus, Warrant 5 is not satisfied for the Existing with Willow Bend Traffic condition.

Warrant 6 – Coordinated Signal System

Methodology

The need for a traffic control signal shall be considered if an engineering study finds that, one of the following criteria are met:

- A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.
- B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.

Calculations

The proposed intersection will not improve coordination along the SR-86 corridor and therefore, this warrant does not apply. Thus, Warrant 6 is not satisfied for the Existing with Willow Bend Traffic condition.

Warrant 7 – Crash Experience

Methodology

The need for a traffic control signal shall be considered if an engineering study finds that, all of the following criteria are met:

- A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and,
- B. Five or more reported crashes of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and
- C. For each of 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1, or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

If the posted or statutory speed limit or the 85th percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Calculations

A total of one (1) collision occurred on SR-86 at Countryside Drive based on collision data provided by the Statewide Integrated Traffic Records System (SWITRS) over a six-year period from January 1, 2016, through December 31, 2021. This collision involved a vehicle hitting an object, causing injury to one person. There are no fatalities reported at this location. Based on this discussion, Warrant 7 is not satisfied for the Existing with Willow Bend Traffic condition.

Warrant 8 – Roadway Network

Methodology

The need for a traffic signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

- A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday, or,

- B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

A major route as used in this signal warrant shall have one or more of the following characteristics.

- A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
- B. It includes rural or suburban highways outside, or traversing a City; or
- C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Calculations

The above thresholds are not met at this intersection. Therefore, Warrant 8 is not satisfied for the Existing with Willow Bend Traffic condition.

Warrant 9, Intersection Near a Grade Crossing

Methodology

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

- A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and
- B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13.

Calculations

No grade crossing exists in the vicinity of this intersection. Therefore, Warrant 9 is not satisfied for the Existing with Willow Bend Traffic condition.

7.2 Long-Term (Year 2045) Conditions

Traffic counts cannot be counted at the SR 86 / Countryside Drive intersection in the Year 2045. Hence, Figure 4C-103(CA) Traffic Signal Warrants Worksheet (Average Traffic Estimate Form) based on Year 2045 ADT volumes was utilized to determine if Signal Warrants are satisfied in the Year 2045 with Willow Bend Traffic. The following three warrants are not satisfied:

- Condition A – Minimum vehicular Volume Warrant

- Condition B, Interruption of Continuous Traffic
- The combination of Conditions A & B

Therefore, signal warrants are not satisfied at the SR-86 / Countryside Drive intersection in the Existing With Willow Bend Traffic and the Year 2045 with Willow Bend Traffic conditions.

Figure 4C-103(CA) Traffic Signal Warrants Worksheet (Average Traffic Estimate Form) based on Year 2045 ADT volumes is included in *Appendix E*.

7.3 Summary of Warrants Satisfied

Table 7–9 summarizes the warrants satisfied at the proposed SR-86 / Countryside Drive intersection for the two analysis scenarios. As seen in *Table 7–9*, none of the warrants are satisfied in the Near-Term conditions. In the Long-Term (Year 2045) conditions, Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume) and Warrant 3 (Peak Hour Volume) are also not satisfied.

TABLE 7–9
SIGNAL WARRANT ANALYSIS SUMMARY

Warrant	Near-Term (With Willow Bend Traffic)	Long-Term (With Willow Bend Traffic)
1. Eight-Hour Vehicular Volume	Not satisfied	Not satisfied per Figure 4C-103(CA). See <i>Appendix E</i> .
2. Four-Hour Vehicular Volume	Not satisfied	
3. Peak hour Volume	Not satisfied	
4. Pedestrian Volume	Not satisfied	
5. School Crossing	Not satisfied	
6. Coordinated Signal System	Not satisfied	
7. Crash Experience	Not satisfied	
8. Roadway Network	Not satisfied	
9. Intersection Near a Grade Crossing	Not satisfied	

8.0 PROJECT COSTS

This section will provide an analysis of the various costs associated with the four traffic control alternatives analyzed in this report.

8.1 Construction Cost

The construction cost for the four alternatives, including necessary widening to accommodate the required turn lanes, is summarized in **Table 8-1**. The project costs include costs for widening, traffic signals / stop signs, and also relocation of utilities such as gas, electric, water, sewer, stormwater, or streams of water.

There will be a cost saving in terms of right-of-way acquisition and construction for the widening of the portion of SR 86 south of Countryside Drive in the interim. However, when the area south of Countryside Drive is developed, this cost will be incurred. The cost shown accounts for the ultimate condition that includes widening for 1,680 feet south of Countryside Drive, that will occur in the future.

TABLE 8-1
ALTERNATIVES CONSTRUCTION COSTS

Alternative	Construction Cost
2-Way Stop Pavement Widening	\$1,140,000
4-Way Stop Pavement Widening	\$1,155,000
Traffic Signal w/ Pavement Widening	\$1,590,000
-Lane Roundabout w/ corners Widening	\$2,014,000
2-Lane Roundabout w/ corners Widening	\$2,478,000

For the above estimated construction costs, the overhead utility relocations for the 2-Way Stop, 4-Way Stop, and Traffic Signal were estimated at \$160,000 and both roundabout alternatives were estimated at \$70,000.

8.2 Operation and Maintenance Cost

Life cycle costs include the initial construction costs, user costs and benefits, maintenance costs and rehabilitation costs. The 20-year Stop-Control Condition, Traffic Signal Maintenance and Roundabout Costs are provided in **Tables 8-2** through **8-4**. It should be noted that the 20-year cost is determined assuming a 2% maintenance cost increase per year for 20 years.

TABLE 8-2
20-YEAR STOP-CONTROL CONDITION MAINTENANCE COSTS (INTERSECTION LIGHTING)

Cost Item	Lifespan (Years)	Replacement Cost	Cost Per Year	20-Year Cost
Electrical Costs	N/A	N/A	\$1,750	\$42,500
Maintenance	N/A	N/A	\$2,200	\$53,500
Overhead Safety Lighting Luminaires (x4)	15	\$15,000 ^a	\$1,000	\$24,300
Street Light Poles (x4)	50	\$14,000 ^a	\$280	\$6,800
Total:				\$127,100

Footnotes:

a. Denotes total cost

TABLE 8-3
20-YEAR TRAFFIC SIGNAL MAINTENANCE COSTS

Cost Item	Lifespan (Years)	Replacement Cost	Cost Per Year	20-Year Cost
Electrical Costs	N/A	N/A	\$1,750	\$42,500
Maintenance	N/A	N/A	\$2,200	\$53,500
Controller Cabinet & Equipment	20	\$44,000	\$2,200	\$53,500
Video Detection Cameras	15	\$16,500	\$1,100	\$26,700
Vehicle Detection Loops	10	\$6,800	\$680	\$16,500
Vehicle LED Indications	10	\$15,000	\$1,500	\$36,500
Pedestrian LED Indications	10	\$9,500	\$950	\$23,100
Internally Illuminated Street Name Signs (IISNS)	15	\$4,050 ^a	\$270	\$6,600
Overhead Safety Lighting Luminaires	15	\$15,000 ^a	\$1,000	\$24,300
Wiring	30	\$45,000	\$1,500	\$36,500
Signal Poles & Mast Arms	50	\$370,000 ^a	\$7,400	\$179,800
Total:				\$499,500

Footnotes:

a. Denotes total cost

TABLE 8-4
20-YEAR ROUNDABOUT MAINTENANCE COSTS (INTERSECTION LIGHTING)

Cost Item	Lifespan (Years)	Replacement Cost	Cost Per Year	20-Year Cost
Electrical Costs	N/A	N/A	\$1,750	\$42,500
Maintenance	N/A	N/A	\$2,200	\$53,500
Overhead Safety Lighting Luminaires	15	\$45,000 ^a	\$3,000	\$72,900
Street Light Poles	50	\$42,000 ^a	\$840	\$20,400
Total:				\$189,300

Footnotes:

a. Denotes total cost

9.0 SUMMARY OF FINDINGS

The purpose of the ICE process is to objectively evaluate and screen intersection control alternatives at the SR-86 / Countryside Drive intersection. As part of the screening process, three intersection control alternatives were evaluated and analyzed in addition to the existing MSSC condition, an AWSC alternative, a Traffic Signal alternative and a Dual-Lane yield controlled Roundabout alternative. The operations, safety, and right-of-way impacts were considered in each alternative.

According to the analysis results, all intersection control alternatives are forecast to operate at LOS D or better during the peak hours except with the MSSC alternative, which is calculated to operate at LOS E during the PM peak hour in the long-term. The calculated 95th percentile queue lengths can be accommodated in all traffic control alternatives.

As described previously, signal warrants are not met in the Existing with Willow Bend Traffic or in the Year 2045 with Willow Bend Traffic condition and therefore, a traffic signal is not recommended.

Even though this intersection operates with the lowest delay and LOS with the roundabout alternative and the number of conflict points are the least, the roundabout traffic control alternative is not recommended for the following reasons:

- Traffic entering the roundabout from the south does not have to reduce speed since they enter and exit the roundabout at almost 90°. This would be considered a dangerous condition.
- To achieve a reduction in the approach speed, a curved approach needs to be introduced in the north leg to ensure traffic calming as vehicles approach the roundabout. This adjustment will require additional right-of-way on the east side, on the developer's property, requiring approximately 35 feet for the single-lane roundabout and 65 feet for the dual lane roundabout from the edge of pavement. Reducing the diameter is not recommended since, trucks would need to use the center island to negotiate the roundabout.
- Trucks will have to straddle the two lanes, thus disrupting the path of other vehicles through the roundabout, which is not desirable.

The AWSC traffic control alternative adequately serves this intersection for the following reasons:

- The intersection operates at an adequate LOS C.
- All-Way-Stop-Control improvements can be made within the existing right-of-way.
- This traffic control will eliminate vehicle / pedestrian conflicts since every vehicle has to stop before proceeding through the intersection.
- The cost of the AWSC alternative is between 50% to 60% of the cost of the traffic signal and the two roundabout alternatives.
- At a STOP sign, all traffic must stop and then proceed. Thus, traffic collisions occur at low speeds, resulting in lower impact collisions.

- As mentioned previously, 60 homes can be built before improvements to the traffic control will be required.

Table 9–1 is a comparison of the various parameters for each alternative.

It is recommended that the AWSC Alternative be implemented, based on the comparison of the ICE performance measures in *Table 9–1* and the safety considerations listed above.

TABLE 9-1
ALTERNATIVES PERFORMANCE SUMMARY TABLE

Performance Measure	Minor- Street Stop Control	All-Way Stop Control	Traffic Signal	Roundabout (1-Lane)	Roundabout (2-Lane)	Comments
Traffic Analysis						
<u>Intersection Delay Analysis</u> – All approaches LOS D or better (LOS A rated at a 5, LOS E rated at a 1).						Table 5-1
<u>Queue Analysis</u> – Adequate queue storage?	Yes	Yes	Yes	Yes	Yes	Table 5-2
Traffic Safety Analysis						
<u>Vehicle Conflicts</u> ^a – The number of potential conflict points for all movements based on intersection geometry.	40	40	40	8	14	-
<u>Bicycle Conflicts</u> ^a – The number of potential conflict points for all movements based on intersection geometry.	38	38	38	8	12	-
<u>Pedestrian Conflicts</u> ^a – The number of potential conflict points for all movements based on intersection geometry.	28	28	28	8	12	-
Design						
<u>Right-of-Way (ROW)</u>	26 ft of ROW for a distance of 1,680 feet along the west side of SR-86 south of Willow Bend Drive to 1,680 feet south of Countryside Drive, which is required only in the future when the area south of Countryside Drive is developed.	26 ft of ROW for a distance of 1,680 feet along the west side of SR-86 south of Willow Bend Drive to 1,680 feet south of Countryside Drive, which is required only in the future when the area south of Countryside Drive is developed.	26 ft of ROW for a distance of 1,680 feet along the west side of SR-86 south of Willow Bend Drive to 1,680 feet south of Countryside Drive, which is required only in the future when the area south of Countryside Drive is developed.	26 ft of ROW for a distance of 1,680 feet along the west side of SR-86 south of Willow Bend Drive to 1,680 feet south of Countryside Drive and 35-foot right-of-way on the developer's property, from the edge of pavement	26 ft of ROW for a distance of 1,680 feet along the west side of SR-86 south of Willow Bend Drive to 1,680 feet south of Countryside Drive and 65-foot right-of-way on the developer's property, from the edge of pavement	Section 6

CONTINUED ON THE NEXT PAGE

TABLE 9-1 (CONTINUED)
ALTERNATIVES PERFORMANCE SUMMARY TABLE

Performance Measure	Two-Way Stop Control	All-Way Stop Control	Traffic Signal Alternative	Roundabout (1-Lane)	Roundabout (2-Lane)	Comments
CONTINUED FROM THE PREVIOUS PAGE						
<i>Non-Standard Features</i> – Based on the Highway Design Manual (HDM).	0	0	0	0	0	Figure 6-1 through Figure 6-5
<i>Truck Accommodations</i> – Serves design vehicle for all movements?	Yes	Yes	Yes	Yes	Yes	
Project Costs						
<i>Construction Cost</i>	\$1.140,000	\$1,155,000	\$1,590,000	\$2,014,400	\$2,478,000	Tables 8-1 through 8–4
<i>20-Year Operations & Maintenance Cost</i>	\$127,200	\$127,200	\$499,500	\$189,300	\$189,300	
TOTAL COST	\$1,267,200	\$1,282,200	\$2,089,500	\$2,203,700	\$2,667,300	
<i>Total Performance Measures Met</i>	No	Yes	Yes	Yes	Yes	

Footnote:

NCHRP Research Report 1043 Guide for Roundabouts.



Engineers & Planners

Traffic
Transportation
Parking

**Linscott, Law &
Greenspan, Engineers**

4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T

www.llgengineers.com

Pasadena
Irvine
San Diego
Woodland Hills

March 18, 2024

Mr. Angel Hernandez
City of El Centro
1275 Main Street
El Centro, CA 92243

LLG Reference: 3-23-3841

Subject: **Willow Bend Project – Transportation Assessment**
City of El Centro

Dear Angel:

1.0 INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has prepared this letter report to conduct an analysis to determine which of the 2006 conditions of approval for the Willow Bend Project are still necessary, given the current transportation situation. Specifically, this analysis focuses on whether the following ten (10) improvements are still necessary.

1. SR 86 between I-8 eastbound ramps and Wake Avenue – contribute a fair-share to widen to six lanes.
2. SR 86 / I-8 westbound ramp – contribute a fair-share to construct a westbound right-turn lane and a second northbound left-turn lane.
3. SR 86 / I-8 eastbound ramp – contribute a fair-share to construct two eastbound right-turn lanes and a second southbound left-turn lane.
4. SR 86 / Wake Avenue – contribute a fair-share to construct a second eastbound left-turn lane.
5. SR 86 / Horne Road – construct a raised median for full turning movement with southbound acceleration and deceleration lanes with a left turn in pocket and left turn at SR 86 and Horne Road. Subject to a credit from other traffic impact fees or reimbursement from other benefited projects in the area, at the City's option.
6. SR 86 / Willow Bend Drive – contribute a fair-share to construct a right-in/right-out island from the Project driveway.
7. SR 86 / Countryside Drive – signalize the intersection.
8. SR 86 / McCabe Road – contribute a fair-share to signalize the intersection and construct dedicated eastbound and westbound left-turn pockets.

Philip M. Linscott, PE (1924-2000)
William A. Law, PE (1921-2018)
Jack M. Greenspan, PE (Ret.)
Paul W. Wilkinson, PE (Ret.)
John P. Keating, PE (Ret.)
David S. Shender, PE
John A. Boarman, PE
Clare M. Look-Jaeger, PE (Ret.)
Richard E. Barretto, PE
Keil D. Maberry, PE
Walter B. Musial, PE
Kalyan C. Yellapu, PE
Dave Roseman, PE

9. SR 86 between Project Access and McCabe Road – contribute a fair-share to widen to four lanes including along the Project frontage.
10. SR 86 between Wake Avenue and Danenberg Drive – contribute a fair-share to widen to four lanes.

2.0 PROJECT DESCRIPTION

The 2006 conditions of approval originated from the *Willow Bend Traffic Impact Study (dated March 2006)* prepared by KOA. The Project proposed to construct 126 single-family homes on a vacant site located on the west side of State Route 86 (SR 86), south of Intersection 8 (I-8) between Horne Road and McCabe Road. The project was calculated to generate 1,286 daily trips with 98 AM peak hour trips and 132 PM peak hour trips but was not built.

The Project plans to construct 134 single-family homes which is the basis of this analysis to determine which portion of the conditions of approval are necessary. The latest Project trips are discussed in the *Trip Generation / Trip Distribution* section.

Access to the Project site would be provided from SR86 by two driveways, Willow Bend Drive and Countryside Drive.

Figure 1 shows the Project vicinity and **Figure 2** illustrates, in more detail, the site location. **Figure 3** shows the Project site plan.

3.0 TRAFFIC VOLUMES / EXISTING CONDITIONS

3.1 Existing Street Network

The following is a description of the existing street network in the study area.

SR-86 (4th Street) north / south facility and is classified as a 4-Lane Arterial in the *City of El Centro Circulation Element*. It is currently constructed as a four-lane divided roadway, providing two travel lanes per direction between the I-8 ramps and Wake Avenue. Between Wake Avenue and Countryside Drive, the roadway is constructed as a three-lane divided roadway, providing one southbound travel lane and two northbound travel lanes. From Countryside Drive to McCabe Road, it is constructed as a two-lane undivided roadway. Sidewalks are provided on both sides of the roadway between the I-8 ramps and Wake Avenue. Sidewalks are provided on the east side between Wake Avenue and Danenberg Drive and between Willow Bend Drive and Countryside Drive. Curbside parking is not permitted. Bike lanes are not provided. The posted speed limit is 40 mph.

Wake Avenue is classified as a 2-lane Arterial in the *City of El Centro Circulation Element*. It is currently constructed as a four-lane undivided roadway with a two-way

left turn lane, providing two travel lanes per direction, west of SR-86 (4th Street). East of SR-86 (4th Street), Wake Avenue is constructed as a four-lane undivided roadway. This facility runs east-west. Sidewalks are provided on both sides of the roadway except for the south side, east of 6th Street. Curbside parking is not permitted. Bike lanes are not provided. The posted speed limit is 40 mph.

Horne Road is an unclassified roadway in the *Imperial County Circulation Element*. It is currently constructed as a two-lane undivided roadway. This facility runs east-west. Sidewalks are not provided. Curbside parking is not permitted. Bike lanes are not provided. There is no posted speed limit.

Willow Bend Drive is an unclassified roadway in the *City of El Centro Circulation Element*. It is currently constructed as a two-lane undivided roadway. This facility runs east-west. Sidewalks are provided on both sides of the roadway. Curbside parking is permitted. Bike lanes are not provided. There is no posted speed limit.

Countryside Drive is classified as a 2-lane Arterial in the *City of El Centro Circulation Element*. It is currently constructed as a two-lane undivided roadway. This facility runs east-west. Sidewalks are provided on both sides of the roadway. Curbside parking is permitted. Bike lanes are not provided. There is no posted speed limit.

McCabe Road is classified as a 2-Lane Minor Collector in the *Imperial County Circulation Element*. It is currently constructed as a two-lane undivided roadway. This facility runs east-west. Sidewalks are not provided. Curbside parking is not permitted. Bike lanes are not provided. There is no posted speed limit.

Figure 4 shows an existing conditions diagram.

3.2 Existing Traffic Volumes

The study area intersection peak hour volume counts were conducted on Thursday, March 7, 2022 with the exception of the SR 86 / Wake Avenue intersection, which was counted on Tuesday, December 14, 2021 for a traffic study recently prepared by LLG (*Wake Avenue Affordable Housing*). The study area street segment ADT volumes were obtained from the Wake Avenue Affordable Housing traffic study as well.

Figure 5 shows the Existing traffic volumes and **Attachment 1** contains the Existing count sheets.

4.0 TRIP GENERATION / TRIP DISTRIBUTION

4.1 Trip Generation

Trip generation rates were obtained from the *ITE Trip Generation Manual, 11th Edition*. It should be noted that the original 2006 Project proposed 126 single-family homes and referred to the 7th Edition. The current study will analyze 134 single-family homes and is the basis of the analysis.

Table 1 summarizes the Project trip generation calculations. As shown in **Table 1**, the Project is calculated to generate 1,264 daily trips with 94 AM peak hour trips (24 inbound/ 70 outbound trips) and 126 PM peak hour trips (79 inbound/ 47 outbound trips).

4.2 Trip Distribution / Assignment

The Project traffic was distributed along SR 86 based on the site location, access to the I-8, existing traffic patterns in the area, anticipated traffic patterns to and from the site and a review of the previously submitted traffic study for the Willow Bend Project.

Figure 6 shows the Project traffic distribution. **Figure 7** shows the Project traffic volumes. **Figure 8** shows the Existing + Project traffic volumes.

5.0 NEAR-TERM ANALYSIS

5.1 Existing Operations

INTERSECTIONS

Table 2 summarizes the peak hour intersection operations under Existing conditions in the study area. As shown in **Table 2**, the study area intersections are calculated to currently operate at LOS D or better during the AM and PM peak hours.

Attachment 2 contains the Existing intersection analysis worksheets.

STREET SEGMENTS

The street segment analysis prepared in this report reflects the roadway classification and LOS table contained in the Mobility Element adopted in Year 2021. **Table 3** summarizes the daily street segment operations under Existing conditions in the study area. As shown in **Table 3**, the study area street segments are calculated to currently operate at LOS B or better.

5.2 Existing + Project Operations

INTERSECTIONS

Table 2 summarizes the peak hour intersection operations under Existing + Project conditions in the study area. As shown in **Table 2**, the study area intersections are

calculated to continue to operate at LOS D or better during the AM and PM peak hours.

Attachment 3 contains the Existing + Project intersection analysis worksheets.

STREET SEGMENTS

Table 3 summarizes the daily street segment operations under Existing + Project conditions in the study area. As shown in *Table 3*, the study area street segments are calculated to continue to operate at LOS B or better.

5.3 Existing + Cumulative + Project Operations

INTERSECTIONS

Based on research and discussions with City staff, there are several cumulative projects within the project study area which would generate a relatively substantial amount of traffic between the date traffic counts were conducted and the Project's opening year. Eleven (11) cumulative projects were determined to add traffic within the study area and were therefore included in the analysis. In addition, in order to account for ambient growth within the study area, LLG utilized the latest available Caltrans historical traffic volume data to calculate an appropriate growth factor. Based on the growth rate calculations, an average yearly growth rate of 1.02% was obtained. To be conservative, a growth rate of 2% for three years was applied as ambient growth. These volumes were summed to obtain Cumulative projects traffic volumes. Project traffic volumes were then added to obtain Existing + Cumulative + Project traffic volumes. **Table 4** shows the list of cumulative projects included in the analysis and their descriptions and locations. *Attachment 1* contains the growth rate calculations.

Table 2 summarizes the peak hour intersection operations with the addition of cumulative projects and proposed Project traffic volumes (Existing + Cumulative + Project). As shown in *Table 2*, the study area intersections are calculated to operate at LOS D or better during the AM and PM peak hours with the exception of the following intersection:

- SR 86 / Wake Avenue – LOS F during the PM peak hour

STREET SEGMENTS

Table 3 summarizes the daily street segment operations with the addition of cumulative projects and proposed Project traffic volumes (Existing + Cumulative + Project). As shown in *Table 3*, the study area street segments are calculated to operate at LOS D or better.

Figure 9 shows the Cumulative projects traffic volumes. **Figure 10** shows the Existing + Cumulative + Project traffic volumes. **Attachment 4** contains the Existing + Cumulative + Project intersection analysis worksheets.

6.0 YEAR 2045 ANALYSIS

Per coordination with Caltrans, Year 2045 forecasted traffic volumes were analyzed in this report for informational purposes. In order to obtain future ADT and peak hour volumes for the Year 2045 conditions, a growth factor was applied to the existing traffic volumes. For the purposes of this report, a growth factor of 1.28 was obtained from the approved *Circulation and Scenic Highways Element report (dated January 2008)*. The growth factor was calculated between the forecasted Year 2025 and Year 2050 ADT volumes. As a check for accuracy of the forecasted volumes, a comparison with the existing ADT traffic volume of 23,970 vehicles (*see Figure 5*) shows a reasonable Year 2025 ADT volume in the Circulation and Scenic Highways Element report of 24,890 vehicles. Therefore, it was deemed reasonable to use the calculated growth factor.

Attachment 5 contains excerpts from the Circulation and Scenic Highways Element report.

6.1 Year 2045 Operations

INTERSECTIONS

Table 5 summarizes the peak hour intersection operations under Year 2045 conditions in the study area. As shown in *Table 5*, the study area intersections are calculated to operate at LOS D or better during the AM and PM peak hours with the exception of the following intersections:

- SR 86 / I-8 WB Ramps – LOS E during the AM and PM peak hours
- SR 86 / Wake Avenue – LOS E during the AM and LOS F during PM peak hour
- SR 86 / Horne Road – LOS E during the PM peak hour
- SR 86 / McCabe Road – LOS E during the AM and LOS F during the PM peak hour

Figure 11 shows the Year 2045 traffic volumes. **Attachment 5** contains the Year 2045 intersection analysis worksheets.

STREET SEGMENTS

Table 6 summarizes the daily street segment operations under Year 2045 conditions in the study area. As shown in *Table 6*, the study area street segments are calculated to operate at LOS D or better.

6.2 Year 2045 + Project Operations

INTERSECTIONS

Table 5 summarizes the peak hour intersection operations under Year 2045 + Project conditions in the study area. As shown in Table 5, the study area intersections are calculated to operate at LOS D or better during the AM and PM peak hours with the exception of the following intersections:

- SR 86 / I-8 WB Ramps – LOS E during the AM and PM peak hours
- SR 86 / Wake Avenue – LOS E during the AM and LOS F during PM peak hour
- SR 86 / Horne Road – LOS F during the PM peak hour
- SR 86 / McCabe Road – LOS E during the AM and LOS F during the PM peak hour

Figure 12 shows the Year 2045 + Project traffic volumes. Attachment 6 contains the Year 2045 + Project intersection analysis worksheets.

STREET SEGMENTS

Table 6 summarizes the daily street segment operations under Year 2045 + Project conditions in the study area. As shown in Table 6, the study area street segments are calculated to operate at LOS D or better.

7.0 SUMMARY OF FINDINGS

The purpose of this letter report was to determine which of the 2006 conditions of approval for the Willow Bend Project are still necessary. The following conditions of approval were reviewed.

1. **SR 86 between I-8 eastbound ramps and Wake Avenue** – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the widening of SR 86 between I-8 and Wake Avenue to six lanes.

Based on the analysis for this street segment, acceptable levels of service are calculated under near-term conditions. Therefore, the condition to widen this street segment to six lanes can be removed.

2. **SR 86 / I-8 westbound ramp** – Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a westbound right-turn lane and a second northbound left-turn lane at the westbound ramp of SR 86 and I-8.

It should be noted that this intersection already has a westbound right-turn lane. Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the remaining condition to construct a second northbound left-turn lane can be removed.

3. **SR 86 / I-8 eastbound ramp** – *Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of two eastbound right-turn lanes and a second southbound left-turn lane at the eastbound ramp of SR 86 and I-8.*

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to construct two eastbound right-turn lanes and a second southbound left-turn lane can be removed.

4. **SR 86 / Wake Avenue** – *Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a second eastbound left-turn lane at the intersection of SR 86 and Wake Avenue.*

Based on the analysis for this intersection, an unacceptable level of service is calculated during the PM peak hour under near-term conditions. Therefore, the second eastbound left-turn lane at this intersection would improve the operation to an acceptable level of service under near-term conditions.

5. **SR 86 / Horne Road** – *Prior to the recordation of the final map, the applicant shall construct a raised median for full turning movement with southbound acceleration and deceleration lanes with a left turn in pocket and left turn at SR 86 and Horne Road. Subject to a credit for other traffic impact fees or reimbursement from other benefited projects in the area, at the City's option.*

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to construct a raised median and reconfigure the lane geometry at this intersection can be removed.

6. **SR 86 / Willow Bend Drive** – *Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the construction of a right turn in/right turn out island from Willow Bend Drive at SR 86.*

It should be noted that this intersection currently has an island that allow for a southbound left-turn movement to enter Willow Bend Drive on the east leg.

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Since this intersection already has an island that only allows right-in/right-out at the Project driveway, the conditions for this intersection can be removed.

- 7. SR 86 / Countryside Drive** – *Prior to the issuance of the first certificate of occupancy, the applicant shall signalize the SR 86 and Countryside Drive intersection.*

Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to signalize this intersection can be removed. However, it is recommended that a northbound left-turn pocket be provided to allow for an inbound access at this driveway from the south outside of the thru lanes.

- 8. SR 86 / McCabe Road** – *Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the signalization of the SR 86 and west McCabe Road intersection as well as the provision of a dedicated eastbound and westbound left turn pockets.*

It should be noted that this intersection is already signalized. Based on the analysis for this intersection, acceptable levels of service are calculated during the AM and PM peak hours under near-term conditions. Therefore, the condition to provide dedicated eastbound and westbound left-turn pockets can be removed.

- 9. SR 86 between Project Access and McCabe Road** – *Prior to the recordation of the final map, the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the widening of SR 86 between the Project site and McCabe Road to four lanes along the project frontage.*

Based on the analysis for this street segment, acceptable levels of service are calculated under near-term conditions. Therefore, the condition to widen this street segment to four lanes can be removed between the Project Access at Countryside Drive and McCabe Road. However, the condition to widen should still be implemented between Willow Bend Drive and Countryside Drive fronting the Project site.

- 10. SR 86 between Wake Avenue and Danenberg Drive** – *Prior to the recordation of the final map, the applicant shall pay the City a fair-share*

payment or provide the appropriate Traffic Impact Fee (TIF), towards the widening of SR 86 between Wake Avenue and Danenberg Drive to four lanes.

Based on the analysis for this street segment, acceptable levels of service are calculated under near-term conditions. Therefore, the condition to widen this street segment to four lanes can be removed.

8.0 CONCLUSIONS

Based on the preceding analysis of the near-term scenarios for the Willow Bend Project, it was determined that only a portion of the 2006 conditions of approval is deemed necessary to be implemented. The following location is calculated to operate at unacceptable levels of service and would therefore require the previously mentioned improvement.

- SR 86 / Wake Avenue – the applicant shall pay the City a fair-share payment or provide the appropriate Traffic Impact Fee (TIF), towards the provision of a second eastbound left-turn lane.

As shown in *Table 2*, implementing the condition of approval at the above-listed location would enhance the operations to an acceptable level. **Attachment 7** contains the Existing + Cumulative + Project with mitigation intersection analysis worksheets.

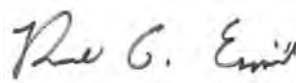
Please let us know if you have any questions. Thank you.

Sincerely,

Linscott, Law & Greenspan, Engineers



John Boarman, P.E.
Principal



Transportation Engineer III

Renald Espiritu

cc: File

FIGURES

Figure 1: Project Vicinity Map

Figure 2: Project Area Map

Figure 3: Project Site Plan

Figure 4: Existing Conditions Diagram

Figure 5: Existing Traffic Volumes
Figure 6: Project Trip Distribution
Figure 7: Project Traffic Volumes
Figure 8: Existing + Project Traffic Volumes
Figure 9: Cumulative Projects Location Map
Figure 10: Cumulative Projects Traffic Volumes
Figure 11: Existing + Cumulative + Projects Traffic Volumes
Figure 12: Year 2045 Traffic Volumes
Figure 13: Year 2045 + Projects Traffic Volumes

TABLES

Table 1: Project Trip Generation
Table 2: Near-Term Intersection Operations
Table 3: Near-Term Street Segment Operations
Table 4: Cumulative Projects Information
Table 5: Year 2045 Intersection Operations
Table 6: Year 2045 Street Segment Operations

ATTACHMENT

Attachment 1: Intersection and street segment count sheets; growth rate calculations
Attachment 2: Existing intersection analysis worksheets
Attachment 3: Existing + Project intersection analysis worksheets
Attachment 4: Existing + Cumulative + Project intersection analysis worksheets
Attachment 5: Circulation and Scenic Highways Element report excerpts and Year 2045 intersection analysis worksheets
Attachment 6: Year 2045 + Project intersection analysis worksheets
Attachment 7: Existing + Cumulative + Project with mitigation intersection analysis worksheets

TABLE 1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate ^a	Volume	Rate ^a	In:Out Split ^a	Volume			Rate ^a	In:Out Split ^a	Volume		
						In	Out	Total			In	Out	Total
Single-Family Detached Housing	134 DU	9.43 / DU ^b	1,264	0.70 / DU ^b	26:74	24	70	94	0.94 / DU ^b	63:37	79	47	126

Footnotes:

- a. Rates are based on the trip rates provided in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition*.
b. Rates for Single-Family Detached Housing (Land Use 210) was used.

General Notes:

1. DU – dwelling units

TABLE 2
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Existing + Cumulative + Project		Existing + Cumulative + Project with Improvements	
			Delay ^a	LOS ^b	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 86 / I-8 WB Ramps	Signal	AM	25.2	C	26.1	C	51.5	D	—	—
		PM	22.5	C	23.6	C	40.7	D	—	—
2. SR 86 / I-8 EB Ramps	Signal	AM	20.9	C	21.3	C	37.1	D	—	—
		PM	20.8	C	21.8	C	38.2	D	—	—
3. SR 86 / Wake Ave	Signal	AM	40.5	D	40.6	D	51.7	D	—	—
		PM	50.1	D	51.0	D	81.5	F	54.4	D
4. SR 86 / Horne Rd	TWSC ^c	AM	14.8	B	15.7	C	24.0	C	—	—
		PM	17.6	C	20.1	C	34.3	D	—	—
5. SR 86 / Willow Bend Dr	TWSC	AM	9.4	A	10.9	B	11.4	B	—	—
		PM	9.5	A	11.5	B	12.1	B	—	—
6. SR 86 / Countryside Dr	TWSC	AM	13.9	B	16.3	C	18.9	C	—	—
		PM	11.7	B	21.4	C	25.8	D	—	—

TABLE 2
 NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Existing + Cumulative + Project		Existing + Cumulative + Project with Improvements	
			Delay ^a	LOS ^b	Delay	LOS	Delay	LOS	Delay	LOS
7. SR 86 / McCabe Rd	Signal	AM PM	47.6	D	48.3	D	52.2	D	–	–
			43.8	D	44.5	D	51.7	D	–	–

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 3
NEAR-TERM STREET SEGMENT OPERATIONS

Segment	Functional Classification	LOS E Capacity ^a	Existing			Existing + Project			Existing + Cumulative + Project		
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C	Volume	LOS	V/C
SR 86											
I-8 EB Ramps to Wake Ave	4-Ln Divided Arterial	36,000	23,970	B	0.666	24,792	B	0.689	29,984	D	0.833
Wake Ave to Danenberg Dr	3-Ln Divided Arterial ^e	27,000	14,090	A	0.522	14,975	A	0.555	17,623	B	0.653
Project Drwy to McCabe Rd	2-Ln Arterial	18,000	9,960	A	0.553	10,150	A	0.564	11,683	B	0.649

Footnotes:

- Capacities based on City of El Centro Roadway Classification & LOS table contained in the Mobility Element adopted in Year 2021.
- Average Daily Traffic
- Level of Service
- Volume to Capacity ratio
- This segment has three lanes, one in the southbound direction and two lanes in the northbound direction and a raised median. 75% of a 4-Lane Divided Arterial (with left-turn lane) capacity is assumed.

TABLE 4
CUMULATIVE PROJECTS INFORMATION

Name	Description	Location
1. Wake Avenue Affordable Housing	288 multi-family apartments	Northeast corner of the 6th Street / Spears Avenue intersection
2. Parkview Residential Subdivision	114-lot single-family subdivision	East side of 8th Street; 625 feet south of Horne Road
3. Spear & 6th Street Apartments	288 multi-family apartments	Northeast corner of 6th Street and Spear Avenue
4. La Brucherie Apartments	177 multi-family apartments	Southeast corner of La Brucherie Road and W Main Street
5. Residence Inn Hotel	104-room hotel	3409 S Dogwood
6. Jacaranda Gardens Apartments	96 multi-family apartments	1625 N Waterman Avenue
7. State Courthouse	46,810 SF State Courthouse building	650 Wake Avenue
8. California Highway Patrol Station	44,473 SF California Highway Patrol Station	2802 S 4th Street
9. Lotus Ranch	609-lot single family subdivision	West of La Brucherie Avenue, south of I-8
10. Home 2 Suites IV Mall	79-room hotel	3105 S Dogwood Road
11. Maverik Gas Station	21-pump gas station and 5,951 SF convenience store	1402 S Dogwood Avenue

TABLE 5
YEAR 2045 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2045		Year 2045 + Project	
			Delay ^a	LOS ^b	Delay	LOS
1. SR 86 / I-8 WB Ramps	Signal	AM PM	77.6 64.4	E E	78.5 65.7	E E
2. SR 86 / I-8 EB Ramps	Signal	AM PM	43.6 43.7	D D	44.3 46.2	D D
3. SR 86 / Wake Ave	Signal	AM PM	69.6 99.4	E F	69.7 107.1	E F
4. SR 86 / Horne Rd	TWSC ^c	AM PM	28.2 47.2	D E	32.4 67.1	D F
5. SR 86 / Willow Bend Dr	TWSC	AM PM	9.8 9.8	A A	11.9 12.8	B B
6. SR 86 / Countryside Dr	TWSC	AM PM	21.4 15.4	C C	23.8 31.7	C D

TABLE 5
 YEAR 2045 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2045		Year 2045 + Project	
			Delay ^a	LOS ^b	Delay	LOS
7. SR 86 / McCabe Rd	Signal	AM PM	74.7 80.4	E F	75.5 81.7	E F

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6
YEAR 2045 STREET SEGMENT OPERATIONS

Segment	Functional Classification	LOS E Capacity ^a	Year 2045			Year 2045 + Project		
			ADT ^b	LOS ^c	V/C ^d	Volume	LOS	V/C
SR 86								
I-8 EB Ramps to Wake Ave	4-Ln Divided Arterial	36,000	30,680	D	0.852	31,502	D	0.875
Wake Ave to Danenberg Dr	3-Ln Divided Arterial ^e	27,000	18,040	B	0.668	18,925	C	0.701
Project Drwy to McCabe Rd	2-Ln Arterial	18,000	12,750	C	0.708	12,940	C	0.719

Footnotes:

- Capacities based on City of El Centro Roadway Classification & LOS table contained in the Mobility Element adopted in Year 2021.
- Average Daily Traffic
- Level of Service
- Volume to Capacity ratio
- This segment has three lanes, one in the southbound direction and two lanes in the northbound direction and a raised median. 75% of a 4-Lane Divided Arterial (with left-turn lane) capacity is assumed.

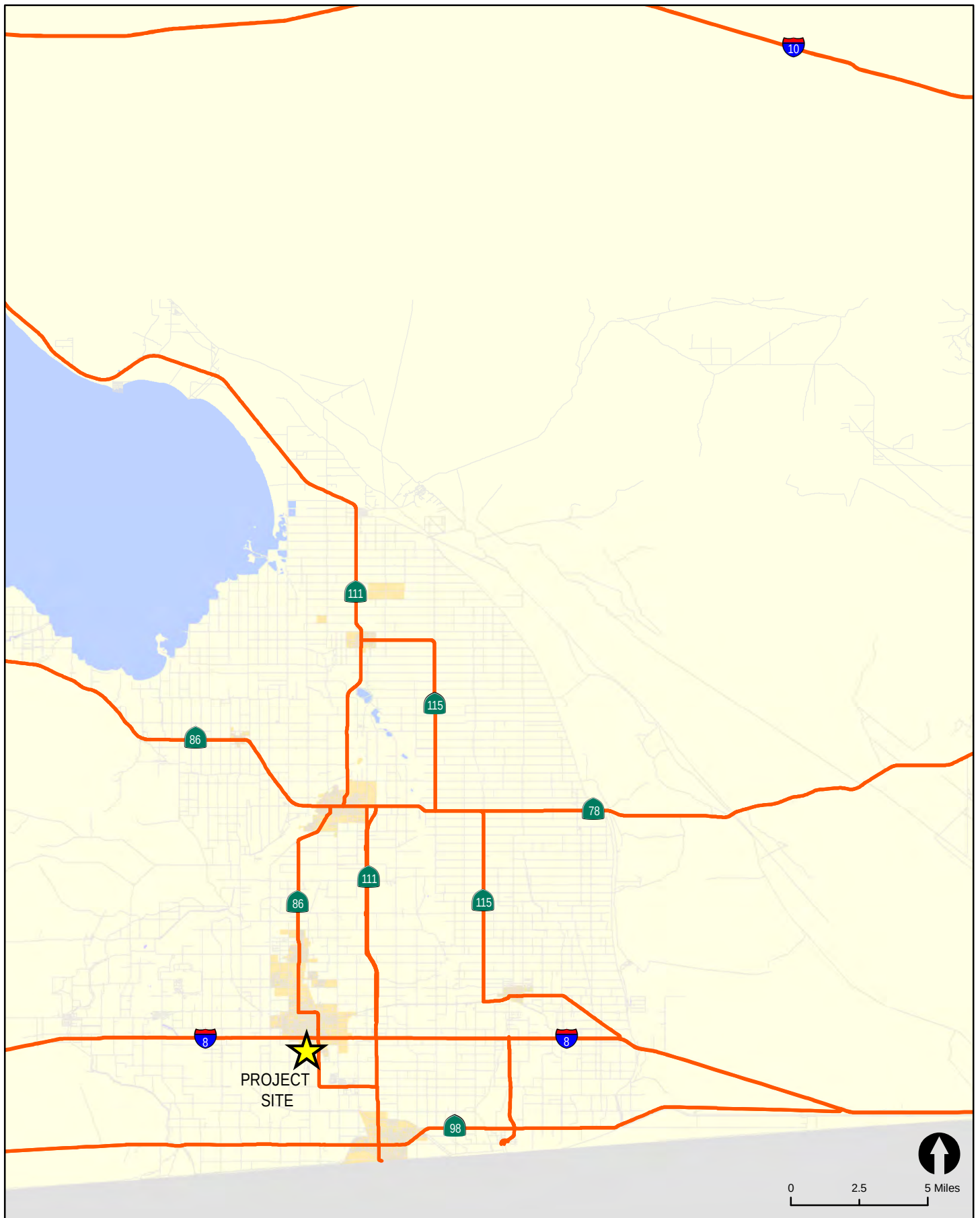


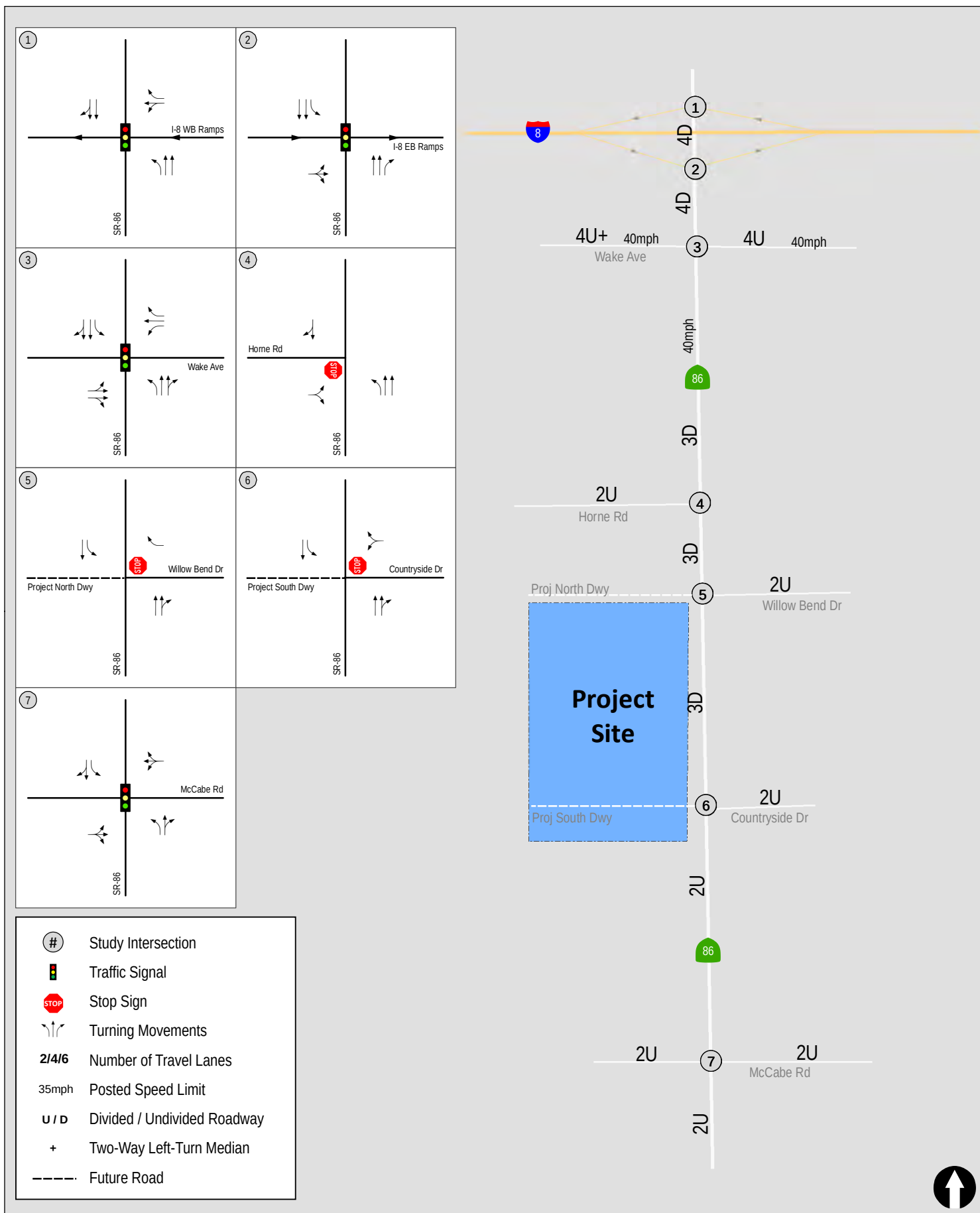


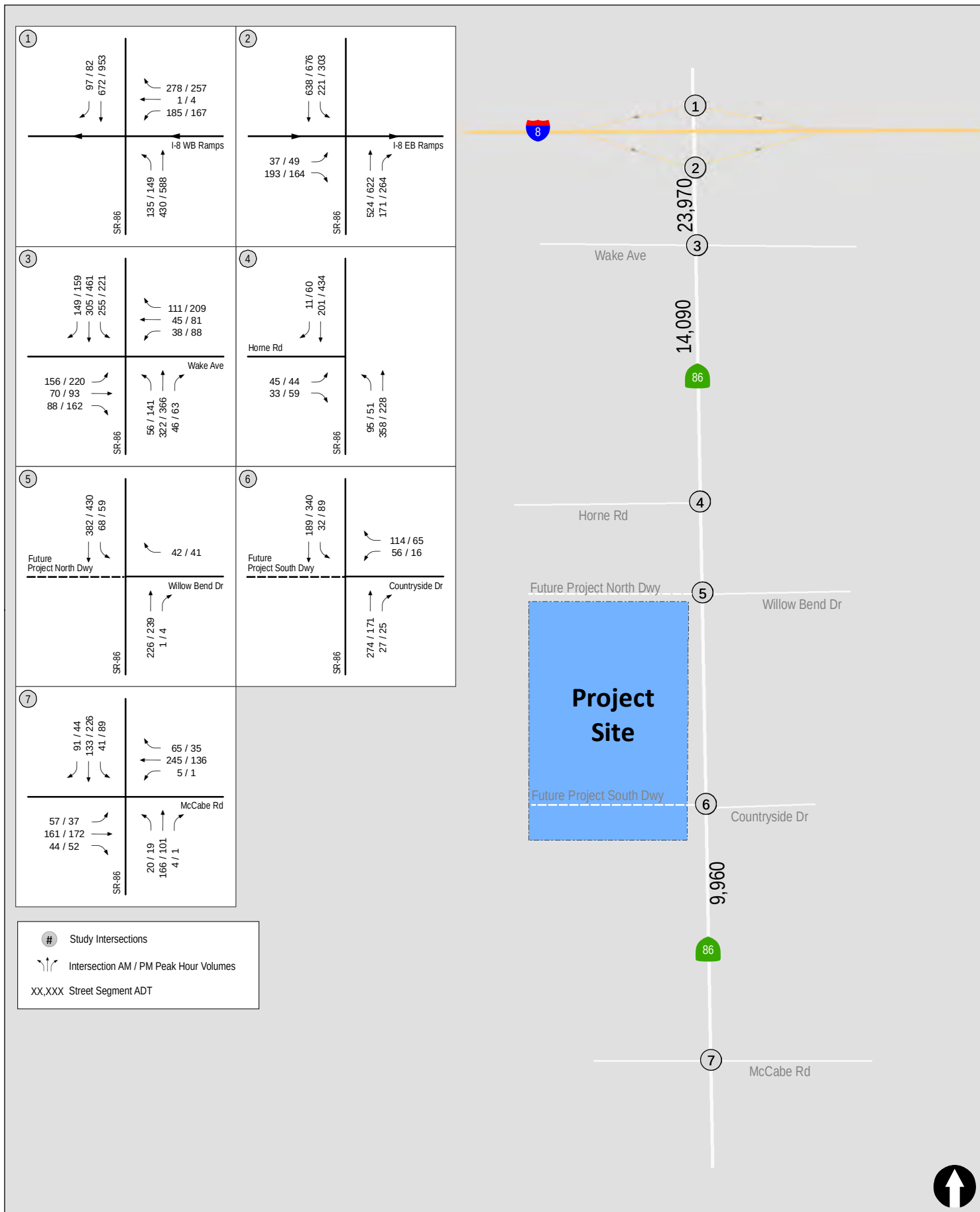
Figure 2

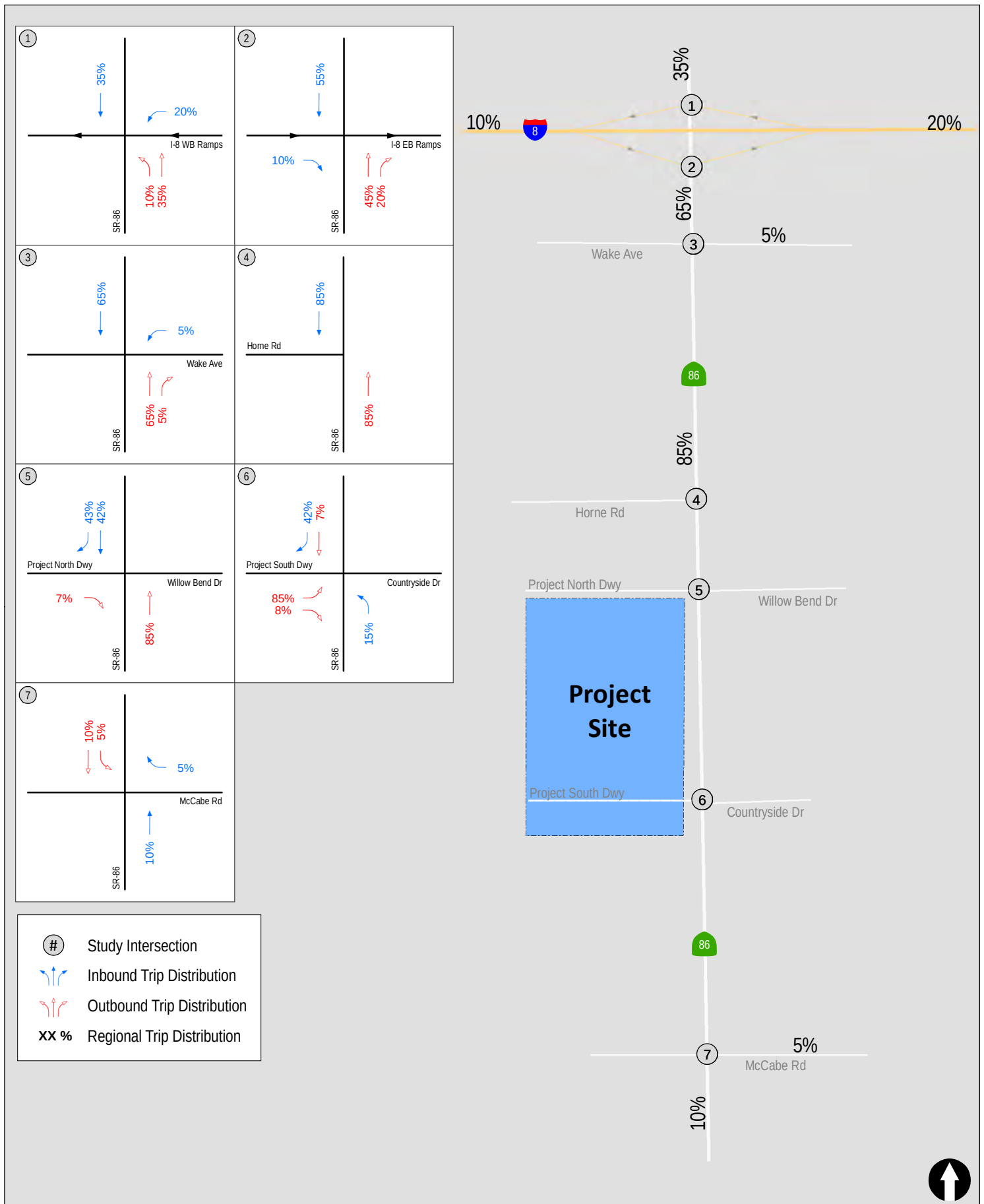
Project Area Map

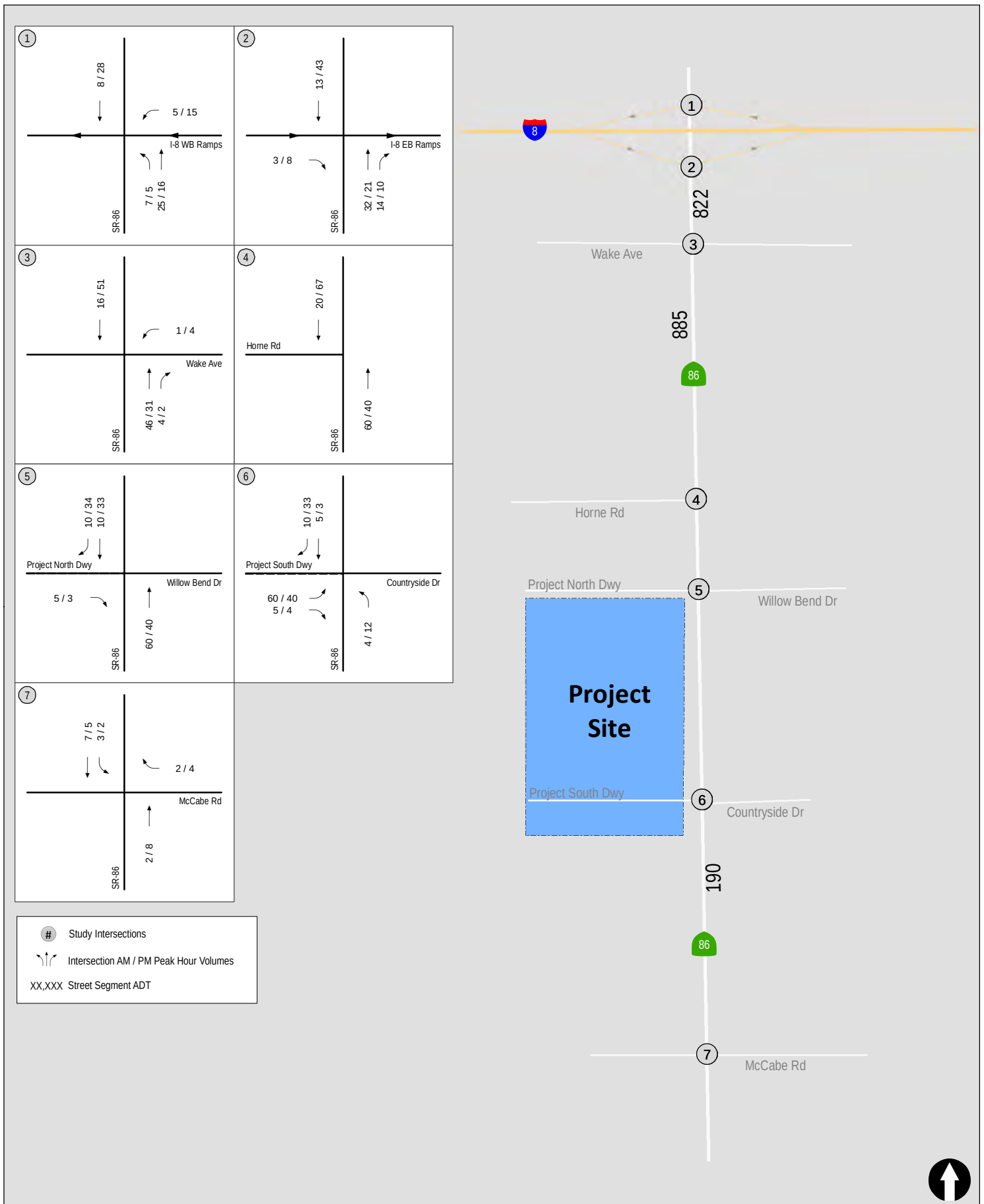


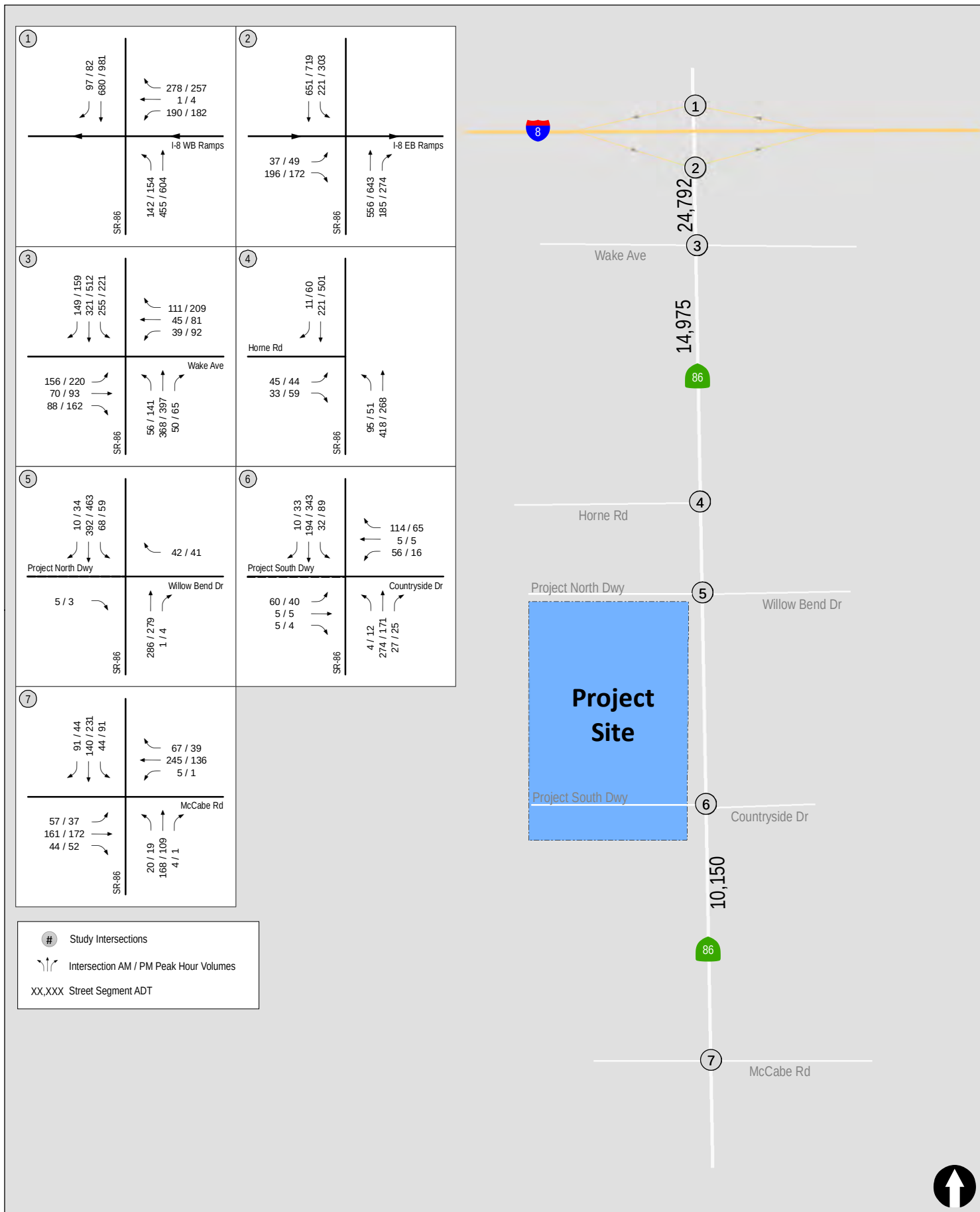
Site Plan

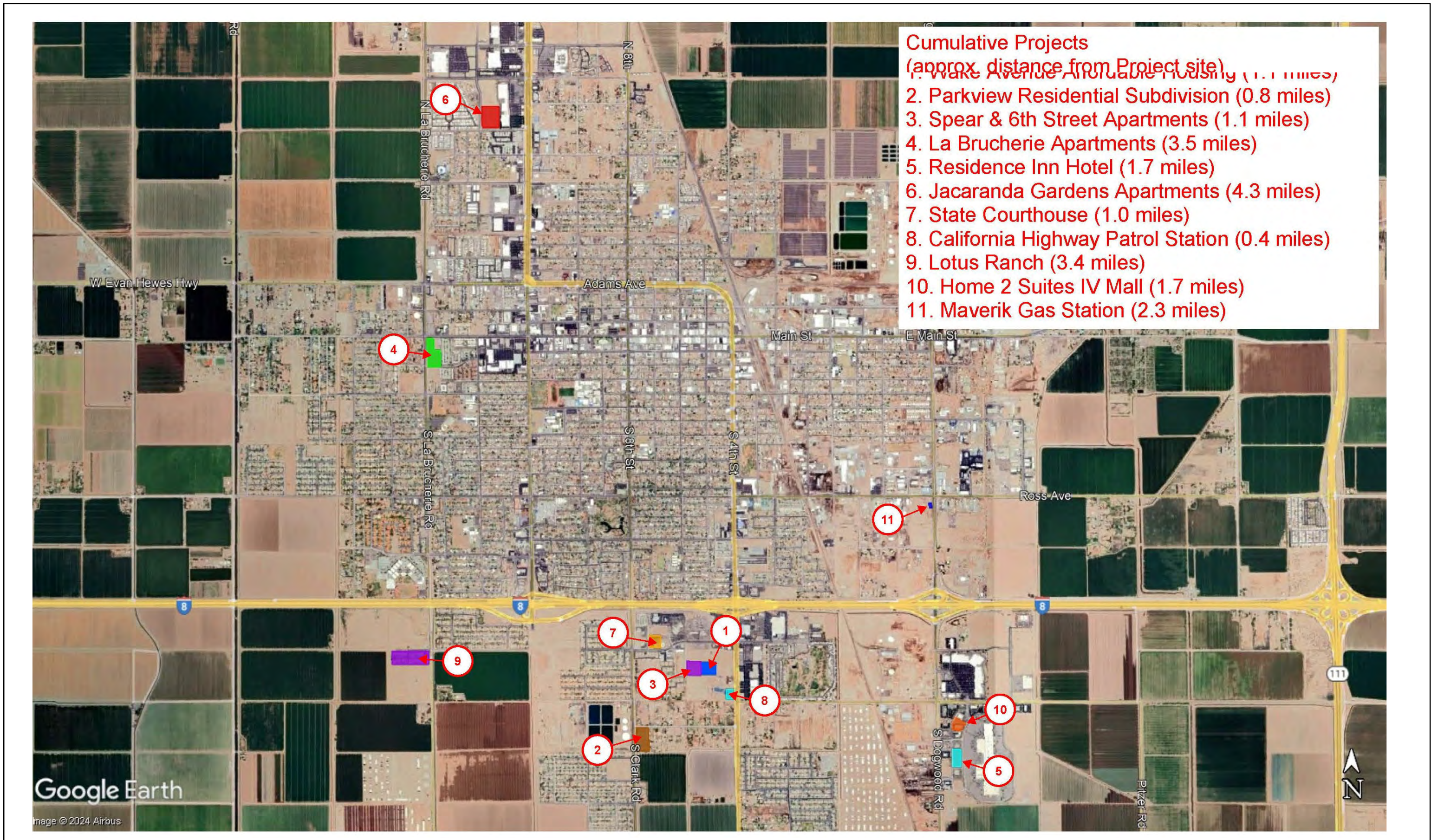












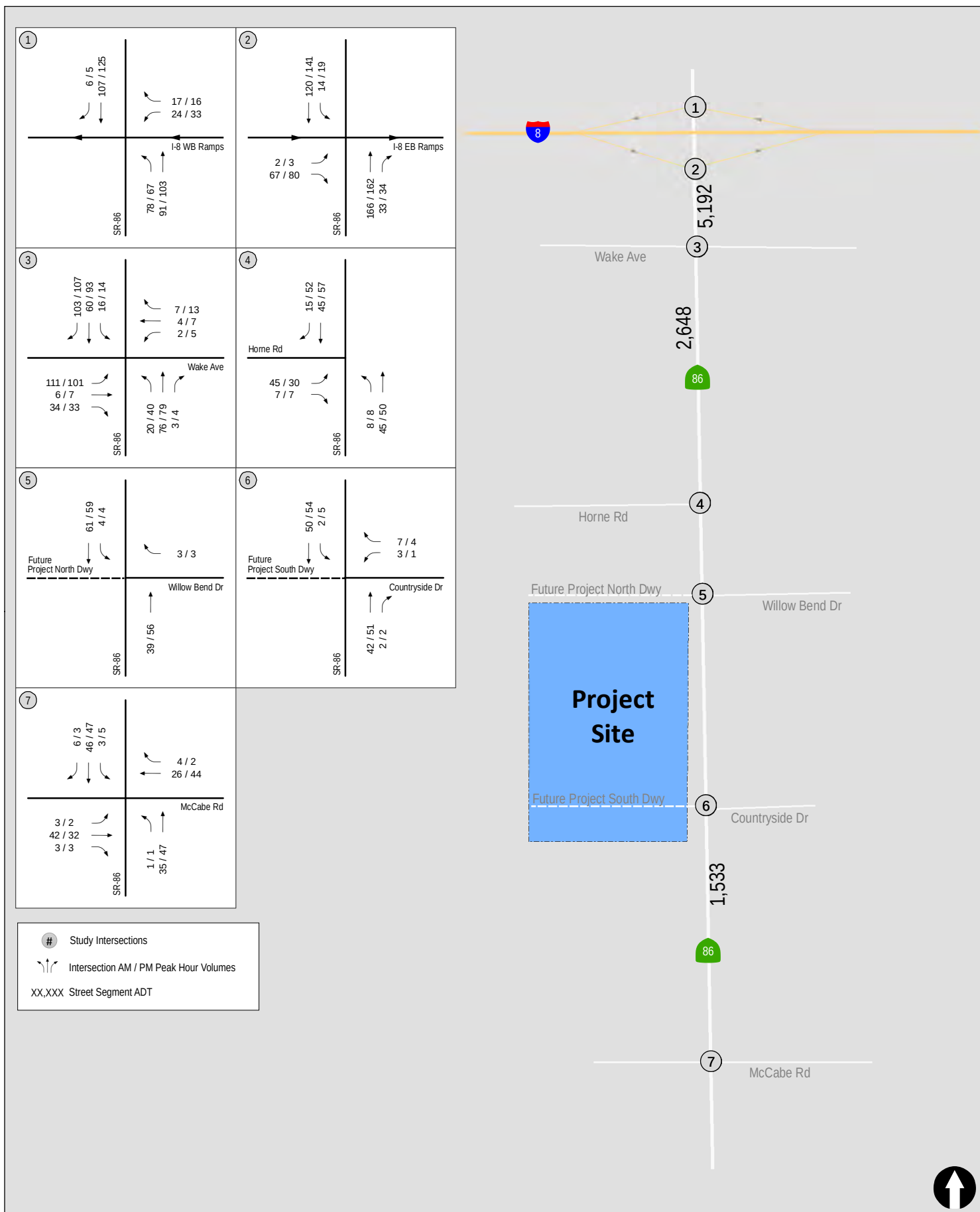
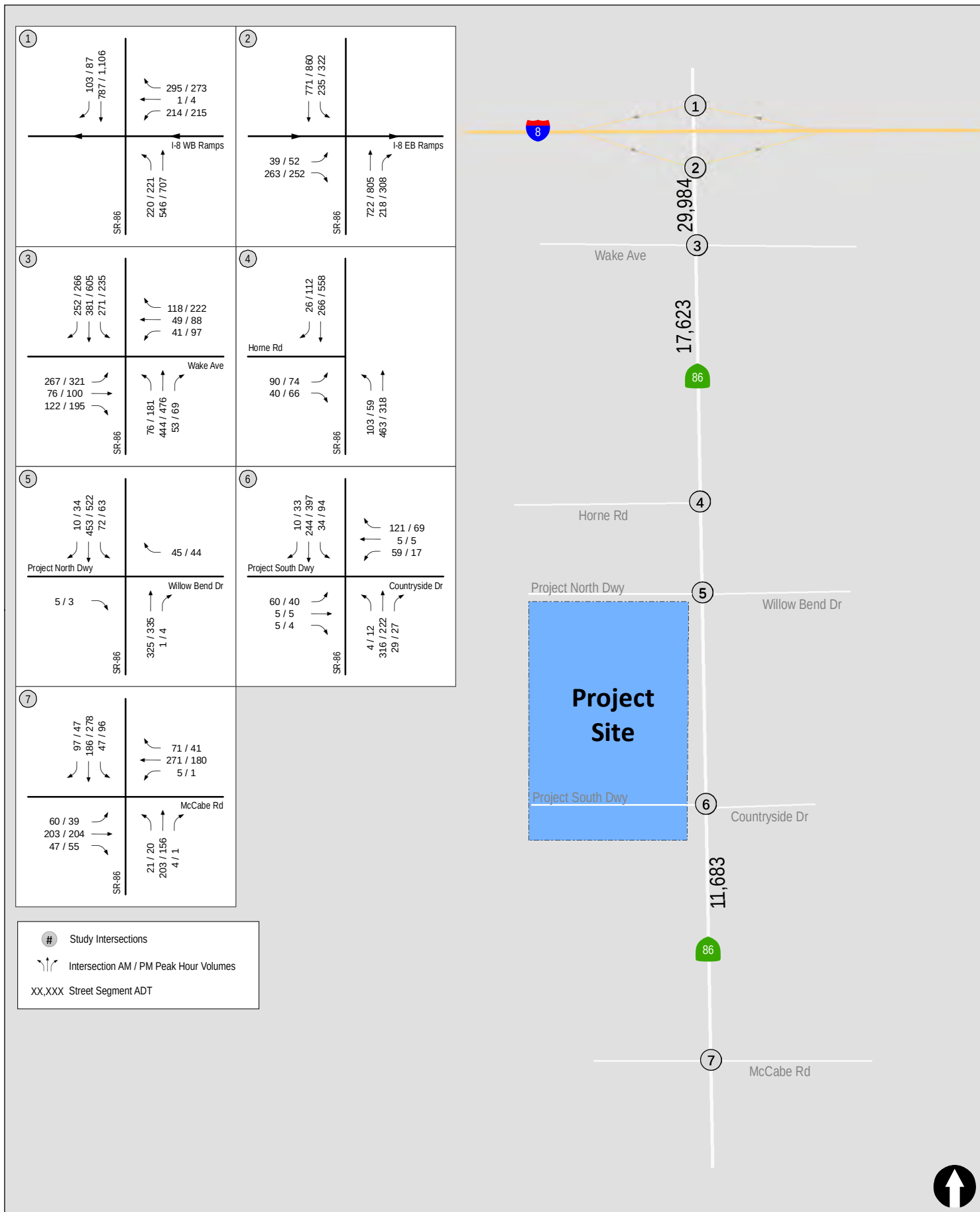


Figure 10
Cumulative Projects Traffic Volumes



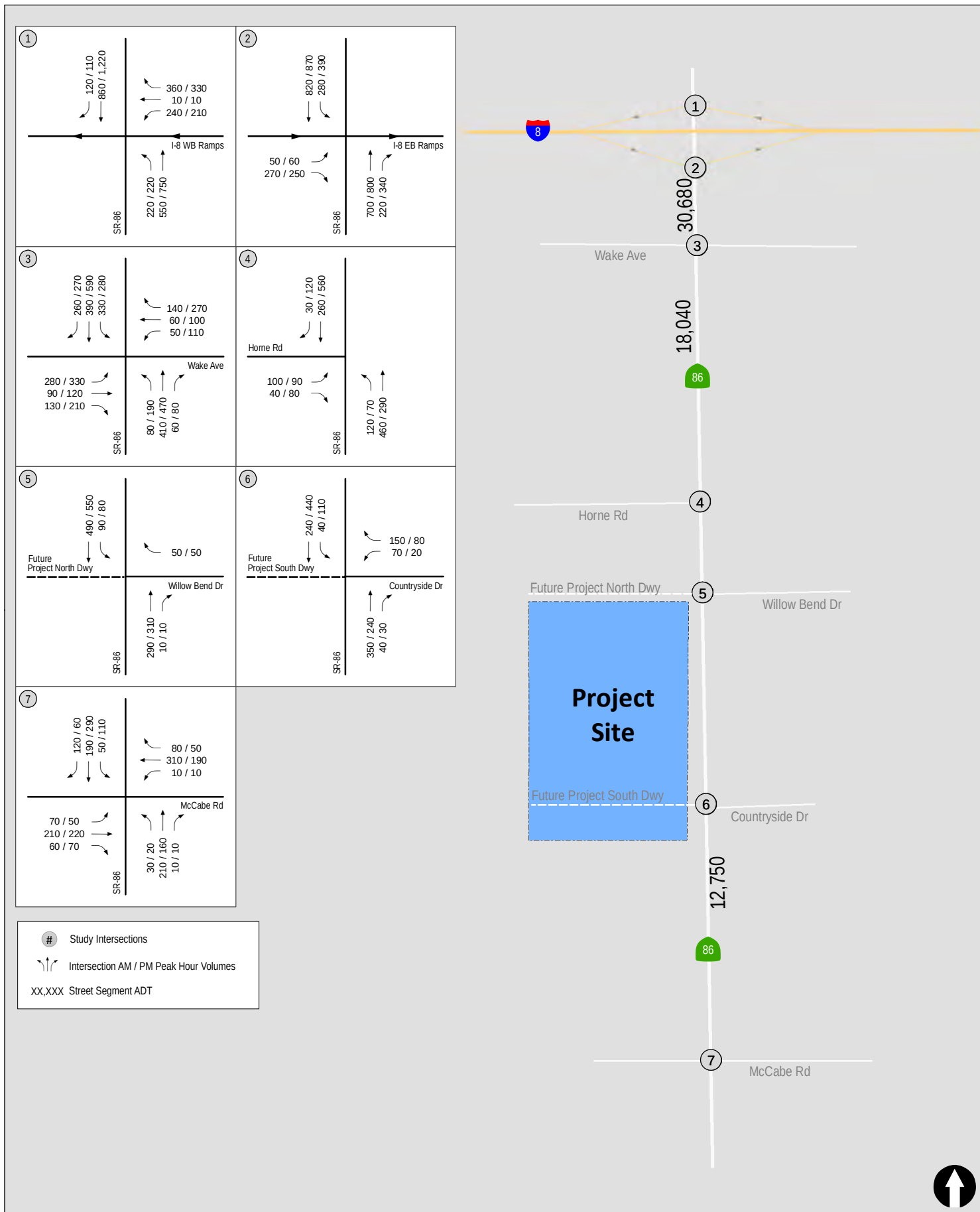


Figure 12
Year 2045 Traffic Volumes

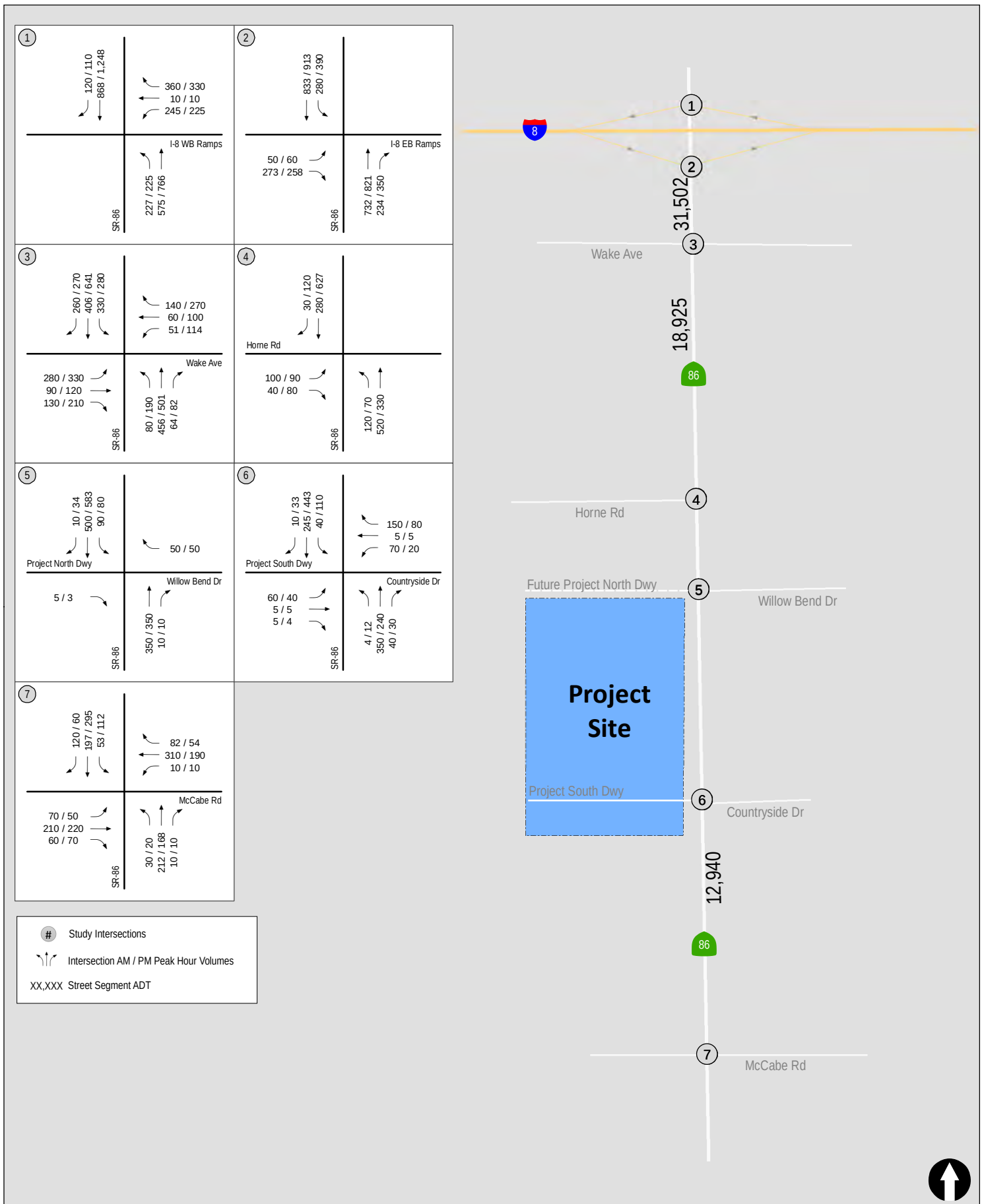


Figure 13
Year 2045 + Project Traffic Volumes

ATTACHMENT 1

INTERSECTION AND STREET SEGMENT COUNT SHEETS; GROWTH RATE CALCULATIONS

Intersection Turning Movement - Peak Hour Vehicle Count



Location: #01
Intersection: SR-86 & I-8 Westbound Ramps
Date of Count: Thursday, March 07, 2022

File Name: ITM-22-022-01
Project: LLG Ref. 3-22-3559
El Centro

AM	SR-86 Southbound			I-8 Off Ramp Westbound			SR-86 Northbound			I-8 On Ramp Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	92	24	24	1	56	19	69	0	0	0	0	285
7:15	0	113	22	21	0	55	29	97	0	0	0	0	337
7:30	0	156	29	33	1	62	45	99	0	0	0	0	425
7:45	0	204	25	75	0	111	45	129	0	0	0	0	589
8:00	0	165	24	37	0	54	26	89	0	0	0	0	395
8:15	0	147	19	40	0	51	19	113	0	0	0	0	389
8:30	0	142	19	43	1	59	29	110	0	0	0	0	403
8:45	0	138	11	45	0	55	22	129	0	0	0	0	400
Total	0	1157	173	318	3	503	234	835	0	0	0	0	3223
Approach%	-	87.0	13.0	38.6	0.4	61.0	21.9	78.1	-	-	-	-	
Total%	-	35.9	5.4	9.9	0.1	15.6	7.3	25.9	-	-	-	-	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	-	672	97	185	1	278	135	430	-	-	-	-	1,798
Approach%	-	87.4	12.6	39.9	0.2	59.9	23.9	76.1	-	-	-	-	
Total%	-	37.4	5.4	10.3	0.1	15.5	7.5	23.9	-	-	-	-	
PHF			0.84			0.62			0.81		#DIV/0!		0.76

PM	SR-86 Southbound			I-8 Off Ramp Westbound			SR-86 Northbound			I-8 On Ramp Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	222	16	62	2	68	30	156	1	0	0	0	557
16:15	0	195	20	51	1	72	16	122	18	0	0	0	495
16:30	0	244	29	30	1	65	26	144	0	0	0	0	539
16:45	0	200	18	50	2	59	29	120	0	0	0	0	478
17:00	0	212	17	37	1	65	59	187	0	0	0	0	578
17:15	0	297	18	50	0	68	35	137	0	0	0	0	605
17:30	0	227	19	51	1	64	34	107	0	0	0	0	503
17:45	0	192	19	30	0	80	33	142	0	0	0	0	496
Total	0	1789	156	361	8	541	262	1115	19	0	0	0	4251
Approach%	-	92.0	8.0	39.7	0.9	59.5	18.8	79.9	1.4	-	-	-	
Total%	-	42.1	3.7	8.5	0.2	12.7	6.2	26.2	0.4	-	-	-	

PM Intersection Peak Hour: 16:30 to 17:30

Volume	-	953	82	167	4	257	149	588	-	-	-	-	2,200
Approach%	-	92.1	7.9	39.0	0.9	60.0	20.2	79.8	-	-	-	-	
Total%	-	43.3	3.7	7.6	0.2	11.7	6.8	26.7	-	-	-	-	
PHF			0.82			0.91			0.75		#DIV/0!		0.91

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #01	File Name: ITM-22-022-01
Intersection: SR-86 & I-8 Westbound Ramps	Project: LLG Ref. 3-22-3559
Date of Count: Thursday, March 07, 2022	El Centro

AM	SR-86 Southbound				I-8 Off Ramp Westbound				SR-86 Northbound				I-8 On Ramp Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	2	0	0	2	0	0	0	0	0	1	0	0	0	0	0	5
7:30	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	2
7:45	1	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3	1
8:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
Ped Total	3				0				0				3				6	
Bike Total		0	4	0		2	0	1		0	3	1		0	0	0		11

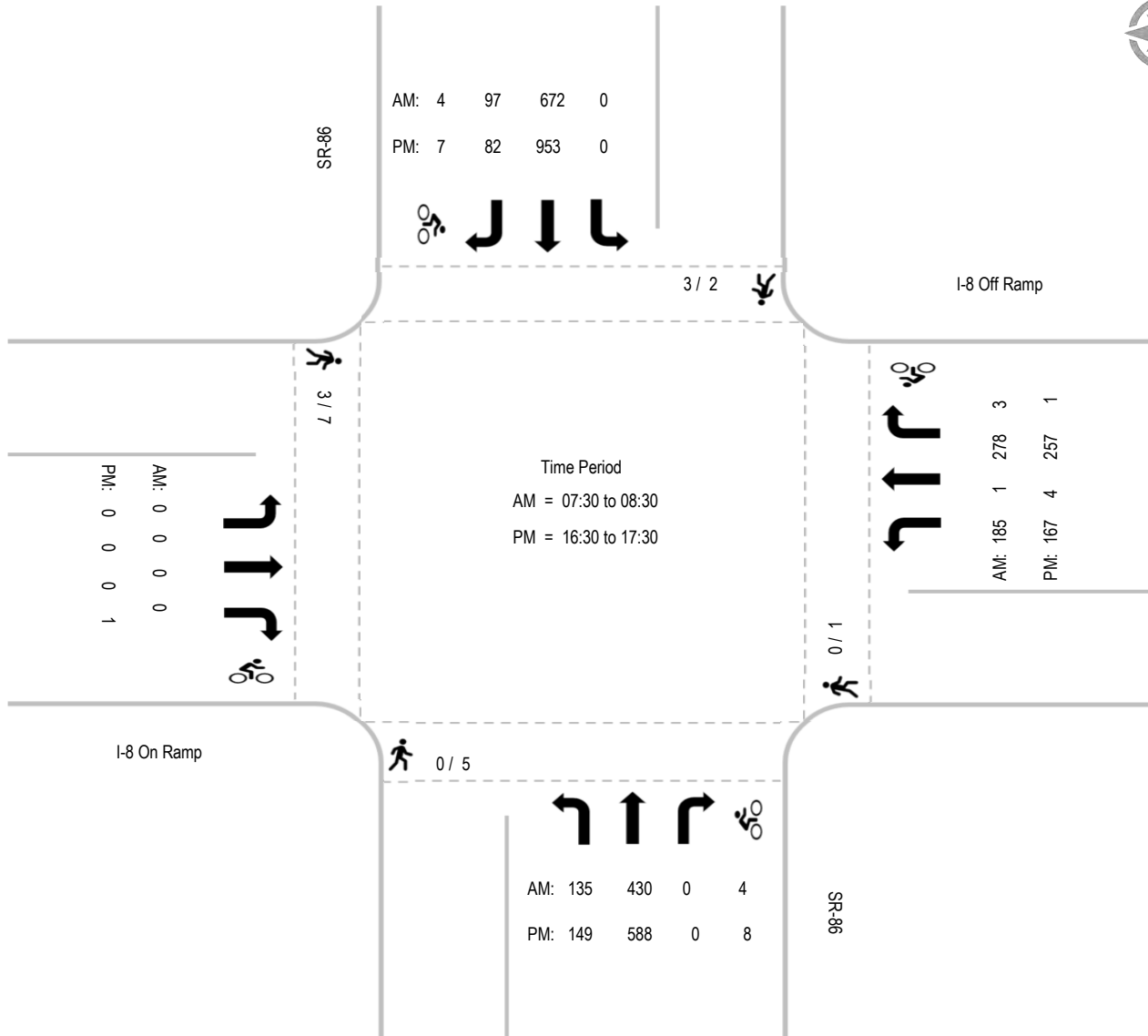
PM	SR-86 Southbound				I-8 Off Ramp Westbound				SR-86 Northbound				I-8 On Ramp Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	3	1
16:15	1	0	0	0	0	0	0	0	0	0	1	0	5	0	1	0	6	2
16:30	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
17:15	1	0	1	0	1	0	0	0	3	0	3	0	0	0	0	0	5	4
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	2	0	0	1	0	0	0	0	3	0	0	0	0	0	0	6
Ped Total	2				1				5				7				15	
Bike Total		0	7	0		1	0	0		0	8	0		0	1	0		17

Intersection Turning Movement - Peak Hour Summary



Location: #01
 Intersection: SR-86 & I-8 Westbound Ramps
 Date of Count: Thursday, March 07, 2022

File Name: ITM-22-022-01
 Project: LLG Ref. 3-22-3559
 El Centro



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 |

Intersection Turning Movement - Peak Hour Vehicle Count



Location: #02
Intersection: SR-86 & I-8 Eastbound Ramps
Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-02
Project: LLG Ref. 3-22-3559
El Centro

AM	SR-86 Southbound			I-8 Eastbound On Ramp Westbound			SR-86 Northbound			I-8 Eastbound Off Ramp Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	43	74	0	0	0	0	0	84	25	9	0	16	251
7:15	46	87	0	0	0	0	0	121	39	8	0	22	323
7:30	64	138	0	0	0	0	0	127	43	8	0	36	416
7:45	65	187	0	0	0	0	0	144	49	11	0	80	536
8:00	52	179	0	0	0	0	0	134	38	14	0	47	464
8:15	40	134	0	0	0	0	0	119	41	4	0	30	368
8:30	55	137	0	0	0	0	0	101	38	7	0	32	370
8:45	52	135	0	0	0	0	0	138	27	11	0	34	397
Total	417	1071	0	0	0	0	0	968	300	72	0	297	3125
Approach%	28.0	72.0	-	-	-	-	-	76.3	23.7	19.5	-	80.5	
Total%	13.3	34.3	-	-	-	-	-	31.0	9.6	2.3	-	9.5	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	221	638	-	-	-	-	-	524	171	37	-	193	1,784
Approach%	25.7	74.3	-	-	-	-	-	75.4	24.6	16.1	-	83.9	
Total%	12.4	35.8	-	-	-	-	-	29.4	9.6	2.1	-	10.8	
PHF		0.85				#DIV/0!		0.90			0.63		0.83

PM	SR-86 Southbound			I-8 Eastbound On Ramp Westbound			SR-86 Northbound			I-8 Eastbound Off Ramp Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	86	190	0	0	0	0	0	124	43	15	0	61	519
16:15	57	159	0	0	0	0	0	147	58	14	0	47	482
16:30	76	170	0	0	0	0	0	147	49	11	0	45	498
16:45	71	142	0	0	0	0	0	125	43	20	0	56	457
17:00	66	175	0	0	0	0	0	217	90	16	0	34	598
17:15	98	179	0	0	0	0	0	108	72	10	0	42	509
17:30	74	149	0	0	0	0	0	148	60	15	0	55	501
17:45	65	173	0	0	0	0	0	149	42	8	0	33	470
Total	593	1337	0	0	0	0	0	1165	457	109	0	373	4034
Approach%	30.7	69.3	-	-	-	-	-	71.8	28.2	22.6	-	77.4	
Total%	14.7	33.1	-	-	-	-	-	28.9	11.3	2.7	-	9.2	

PM Intersection Peak Hour: 17:00 to 18:00

Volume	303	676	-	-	-	-	-	622	264	49	-	164	2,078
Approach%	30.9	69.1	-	-	-	-	-	70.2	29.8	23.0	-	77.0	
Total%	14.6	32.5	-	-	-	-	-	29.9	12.7	2.4	-	7.9	
PHF		0.88				#DIV/0!		0.72			0.76		0.87

Intersection Turning Movement - Bicycle & Pedestrian Count



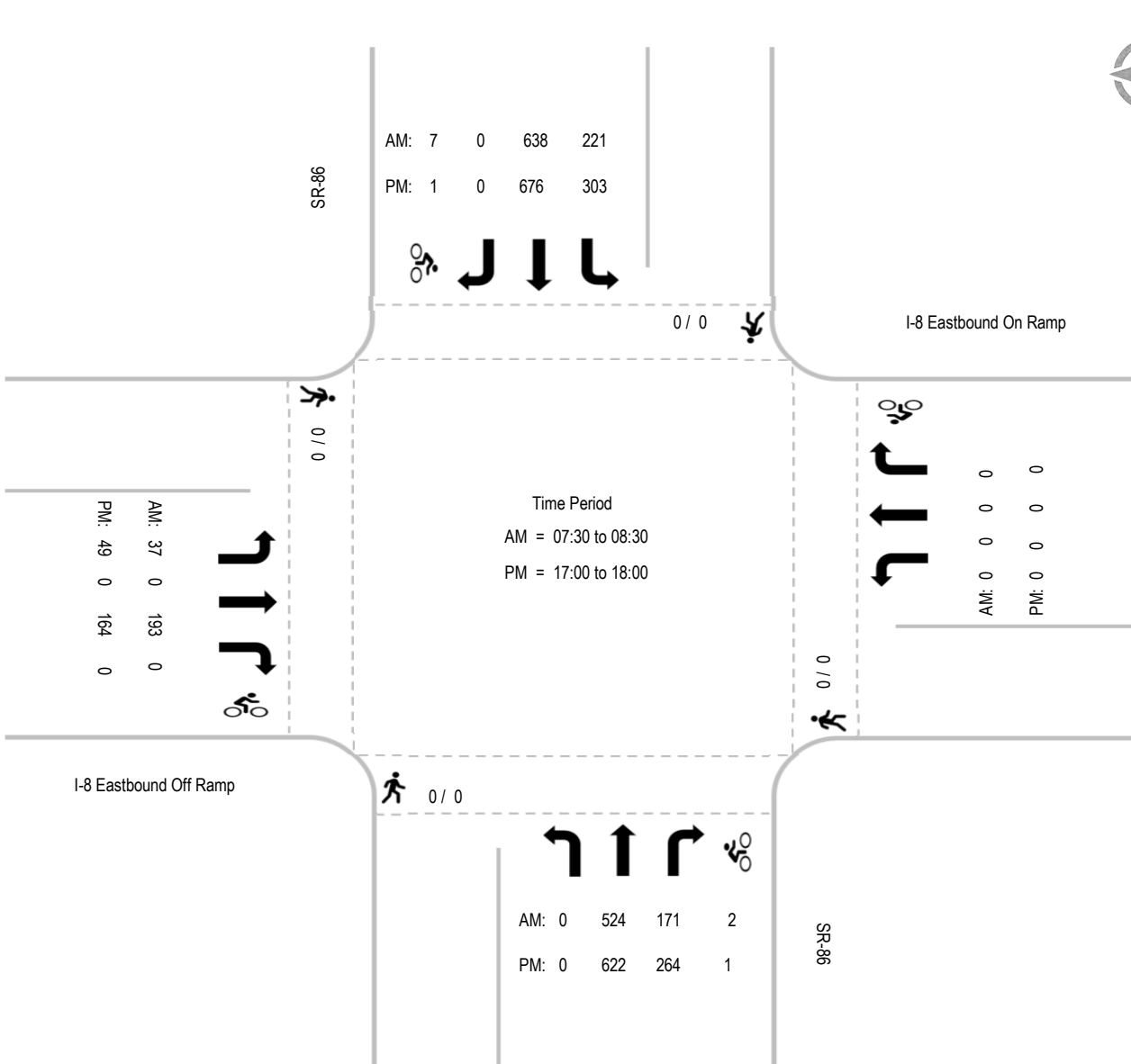
Location: #02	File Name: ITM-22-022-02
Intersection: SR-86 & I-8 Eastbound Ramps	Project: LLG Ref. 3-22-3559
Date of Count: Tuesday, March 05, 2022	El Centro

AM	SR-86 Southbound				I-8 Eastbound On Ramp Westbound				SR-86 Northbound				I-8 Eastbound Off Ramp Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	7	0		0	0	0		0	2	0		0	0	0		9

PM	SR-86 Southbound				I-8 Eastbound On Ramp Westbound				SR-86 Northbound				I-8 Eastbound Off Ramp Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	1	0		0	0	0		0	1	0		0	0	0		2

LINSCOTT
LAW &
GREENSPAN
engineers

File Name: ITM-22-022-02
Project: LLG Ref. 3-22-3559
El Centro



Intersection Turning Movement - Peak Hour Vehicle Count



Location: #07
 Intersection: 4th Street (SR-86) and Wake Avenue
 Date of Count: Tuesday, December 14, 2021

File Name: ITM-21-085-04
 Project: LLG Ref. 3-21-XXXX
 El Centro

AM	4th Street (SR-86) Southbound			Wake Avenue Westbound			4th Street (SR-86) Northbound			Wake Avenue Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	31	33	21	9	5	20	9	43	9	24	5	9	218
7:15	55	33	24	6	8	18	8	61	8	37	20	12	290
7:30	46	50	24	9	9	28	10	107	7	54	11	17	372
7:45	63	120	47	4	16	18	18	90	14	40	17	34	481
8:00	67	78	46	11	13	35	12	62	10	34	20	22	410
8:15	79	57	32	14	7	30	16	63	15	28	22	15	378
8:30	72	52	45	8	16	35	13	48	19	25	13	13	359
8:45	77	59	28	11	15	49	16	44	20	19	21	16	375
Total	490	482	267	72	89	233	102	518	102	261	129	138	2883
Approach%	39.5	38.9	21.5	18.3	22.6	59.1	14.1	71.7	14.1	49.4	24.4	26.1	
Total%	17.0	16.7	9.3	2.5	3.1	8.1	3.5	18.0	3.5	9.1	4.5	4.8	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	255	305	149	38	45	111	56	322	46	156	70	88	1,641
Approach%	36.0	43.0	21.0	19.6	23.2	57.2	13.2	75.9	10.8	49.7	22.3	28.0	
Total%	15.5	18.6	9.1	2.3	2.7	6.8	3.4	19.6	2.8	9.5	4.3	5.4	
PHF			0.77			0.82			0.85			0.86	0.85

PM	4th Street (SR-86) Southbound			Wake Avenue Westbound			4th Street (SR-86) Northbound			Wake Avenue Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	71	110	47	18	13	46	38	92	13	31	24	34	537
16:15	58	131	44	22	20	59	32	67	24	64	26	39	586
16:30	55	113	39	21	15	45	27	83	11	53	17	35	514
16:45	49	120	38	19	23	46	31	81	16	27	23	48	521
17:00	59	97	38	26	23	59	51	135	12	76	27	40	643
17:15	56	121	26	7	17	36	34	86	18	48	16	52	517
17:30	61	99	39	24	19	46	37	83	7	49	23	35	522
17:45	58	99	28	16	14	25	22	65	14	45	16	37	439
Total	467	890	299	153	144	362	272	692	115	393	172	320	4279
Approach%	28.2	53.7	18.1	23.2	21.9	54.9	25.2	64.1	10.7	44.4	19.4	36.2	
Total%	10.9	20.8	7.0	3.6	3.4	8.5	6.4	16.2	2.7	9.2	4.0	7.5	

PM Intersection Peak Hour: 16:15 to 17:15

Volume	221	461	159	88	81	209	141	366	63	220	93	162	2,264
Approach%	26.3	54.8	18.9	23.3	21.4	55.3	24.7	64.2	11.1	46.3	19.6	34.1	
Total%	9.8	20.4	7.0	3.9	3.6	9.2	6.2	16.2	2.8	9.7	4.1	7.2	
PHF			0.90			0.88			0.72			0.83	0.88

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #07
 Intersection: 4th Street (SR-86) and Wake Avenue
 Date of Count: Tuesday, December 14, 2021

File Name: ITM-21-085-04
 Project: LLG Ref. 3-21-XXXX
 El Centro

AM	4th Street (SR-86) Southbound				Wake Avenue Westbound				4th Street (SR-86) Northbound				Wake Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:45	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	0	6	0
8:30	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	1				1				2				7				11	
Bike Total		1	0	0		0	0	0		0	2	0		0	0	0		3

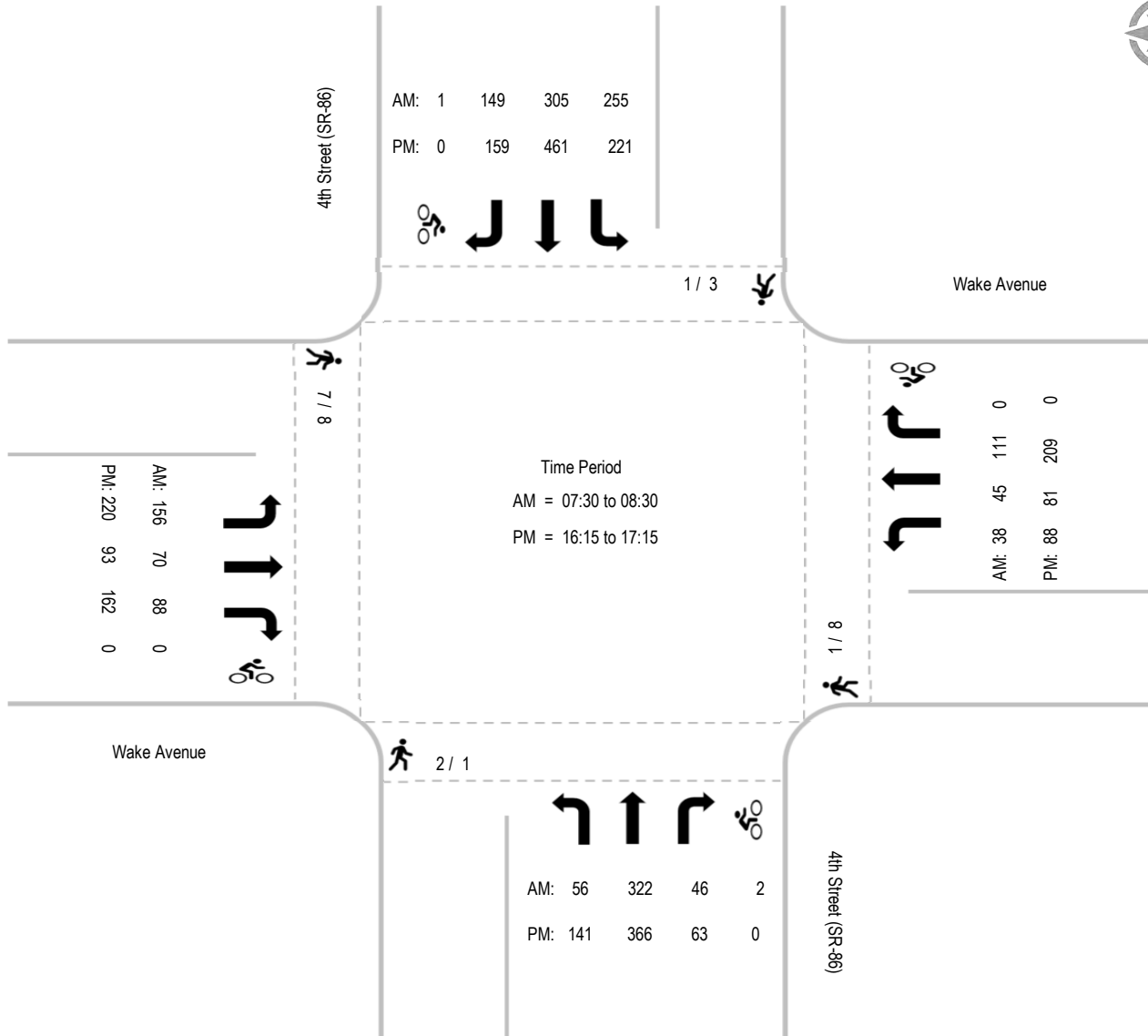
PM	4th Street (SR-86) Southbound				Wake Avenue Westbound				4th Street (SR-86) Northbound				Wake Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	6	0
16:30	2	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	5	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0
17:30	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0
17:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0
Ped Total	3				8				1				8				20	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

Intersection Turning Movement - Peak Hour Summary



Location: #07
 Intersection: 4th Street (SR-86) and Wake Avenue
 Date of Count: Tuesday, December 14, 2021

File Name: ITM-21-085-04
 Project: LLG Ref. 3-21-XXXX
 El Centro



Intersection Turning Movement - Peak Hour Vehicle Count



Location: #03
Intersection: SR-86 & Home Road
Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-03
Project: LLG Ref. 3-22-3559
El Centro

AM	SR-86 Southbound			- Westbound			SR-86 Northbound			Home Road Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	24	3	0	0	0	9	60	0	7	0	6	109
7:15	0	29	3	0	0	0	21	78	0	10	0	4	145
7:30	0	51	0	0	0	0	40	106	0	11	0	8	216
7:45	0	34	4	0	0	0	33	113	0	21	0	8	213
8:00	0	64	5	0	0	0	10	71	0	6	0	12	168
8:15	0	52	2	0	0	0	12	68	0	7	0	5	146
8:30	0	32	3	0	0	0	4	64	0	9	0	10	122
8:45	0	52	9	0	0	0	11	65	0	8	0	6	151
Total	0	338	29	0	0	0	140	625	0	79	0	59	1270
Approach%	-	92.1	7.9	-	-	-	18.3	81.7	-	57.2	-	42.8	
Total%	-	26.6	2.3	-	-	-	11.0	49.2	-	6.2	-	4.6	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	-	201	11	-	-	-	95	358	-	45	-	33	743
Approach%	-	94.8	5.2	-	-	-	21.0	79.0	-	57.7	-	42.3	
Total%	-	27.1	1.5	-	-	-	12.8	48.2	-	6.1	-	4.4	
PHF			0.77			#DIV/0!			0.78			0.67	0.86

PM	SR-86 Southbound			- Westbound			SR-86 Northbound			Home Road Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	122	9	0	0	0	5	56	0	12	0	15	219
16:15	0	95	15	0	0	0	15	56	0	11	0	14	206
16:30	0	97	5	0	0	0	3	62	0	6	0	13	186
16:45	0	85	12	0	0	0	13	57	0	7	0	15	189
17:00	0	136	26	0	0	0	8	60	0	11	0	11	252
17:15	0	111	13	0	0	0	12	66	0	8	0	19	229
17:30	0	97	12	0	0	0	10	48	0	16	0	15	198
17:45	0	90	9	0	0	0	21	54	0	9	0	14	197
Total	0	833	101	0	0	0	87	459	0	80	0	116	1676
Approach%	-	89.2	10.8	-	-	-	15.9	84.1	-	40.8	-	59.2	
Total%	-	49.7	6.0	-	-	-	5.2	27.4	-	4.8	-	6.9	

PM Intersection Peak Hour: 17:00 to 18:00

Volume	-	434	60	-	-	-	51	228	-	44	-	59	876
Approach%	-	87.9	12.1	-	-	-	18.3	81.7	-	42.7	-	57.3	
Total%	-	49.5	6.8	-	-	-	5.8	26.0	-	5.0	-	6.7	
PHF			0.76			#DIV/0!			0.89			0.83	0.87

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #03
 Intersection: SR-86 & Home Road
 Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-03
 Project: LLG Ref. 3-22-3559
 El Centro

AM	SR-86 Southbound				- Westbound				SR-86 Northbound				Home Road Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
Ped Total	0				0				0				0				0	
Bike Total		0	3	1		0	0	0		0	0	0		1	0	0		5

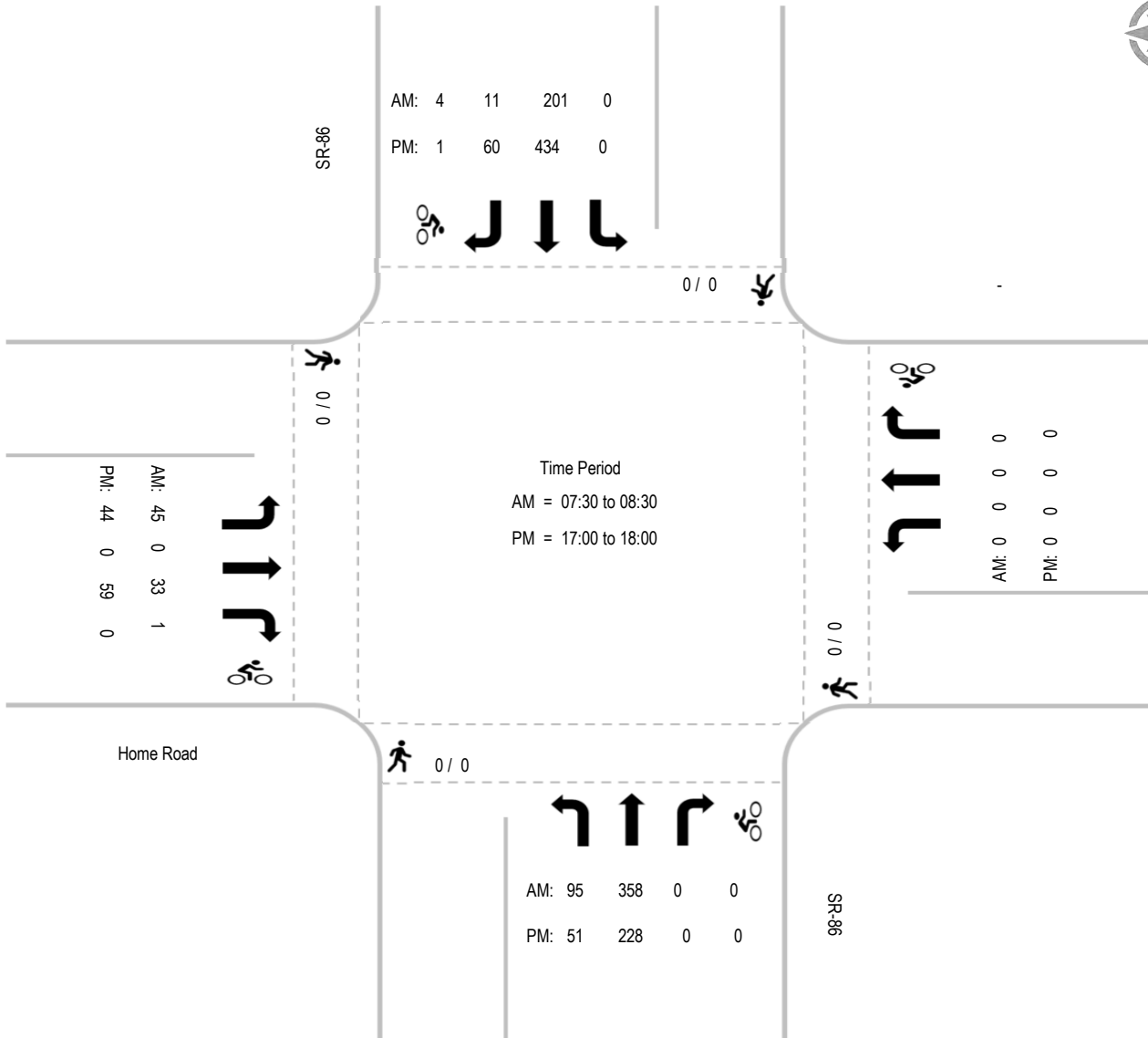
PM	SR-86 Southbound				- Westbound				SR-86 Northbound				Home Road Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	1	0		0	0	0		0	0	0		0	0	0		1

Intersection Turning Movement - Peak Hour Summary



Location: #03
 Intersection: SR-86 & Home Road
 Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-03
 Project: LLG Ref. 3-22-3559
 El Centro



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT
LAW &
GREENSPAN
engineers

Location: #04
Intersection: SR-86 & Willow Bend Drive
Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-04
Project: LLG Ref. 3-22-3559
El Centro

AM	SR-86 Southbound			Willow Bend Drive Westbound			SR-86 Northbound			- Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	15	121	0	0	0	10	0	51	0	0	0	0	197
7:15	20	87	0	0	0	15	0	57	0	0	0	0	179
7:30	19	87	0	0	0	6	0	59	1	0	0	0	172
7:45	14	87	0	0	0	11	0	59	0	0	0	0	171
8:00	13	59	0	0	0	13	0	69	3	0	0	0	157
8:15	5	56	0	0	0	6	0	72	1	0	0	0	140
8:30	4	35	0	0	0	8	0	65	1	0	0	0	113
8:45	6	56	0	0	0	11	0	66	1	0	0	0	140
Total	96	588	0	0	0	80	0	498	7	0	0	0	1269
Approach%	14.0	86.0	-	-	-	100.0	-	98.6	1.4	-	-	-	
Total%	7.6	46.3	-	-	-	6.3	-	39.2	0.6	-	-	-	

AM Intersection Peak Hour: 07:00 to 08:00

Volume	68	382	-	-	-	42	-	226	1	-	-	-	719
Approach%	15.1	84.9	-	-	-	100.0	-	99.6	0.4	-	-	-	
Total%	9.5	53.1	-	-	-	5.8	-	31.4	0.1	-	-	-	
PHF			0.83			0.70			0.95			#DIV/0!	0.91

PM	SR-86 Southbound			Willow Bend Drive Westbound			SR-86 Northbound			- Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	15	119	0	0	0	10	0	50	0	0	0	0	194
16:15	20	88	0	0	0	16	0	57	0	0	0	0	181
16:30	20	87	0	0	0	6	0	59	1	0	0	0	173
16:45	14	87	0	0	0	11	0	59	0	0	0	0	171
17:00	16	128	0	0	0	11	0	57	0	0	0	0	212
17:15	17	113	0	0	0	11	0	67	1	0	0	0	209
17:30	11	101	0	0	0	7	0	51	2	0	0	0	172
17:45	15	88	0	0	0	12	0	64	1	0	0	0	180
Total	128	811	0	0	0	84	0	464	5	0	0	0	1492
Approach%	13.6	86.4	-	-	-	100.0	-	98.9	1.1	-	-	-	
Total%	8.6	54.4	-	-	-	5.6	-	31.1	0.3	-	-	-	

PM Intersection Peak Hour: 17:00 to 18:00

Volume	59	430	-	-	-	41	-	239	4	-	-	-	773
Approach%	12.1	87.9	-	-	-	100.0	-	98.4	1.6	-	-	-	
Total%	7.6	55.6	-	-	-	5.3	-	30.9	0.5	-	-	-	
PHF			0.85			0.85			0.89			#DIV/0!	0.92

Intersection Turning Movement - Bicycle & Pedestrian Count



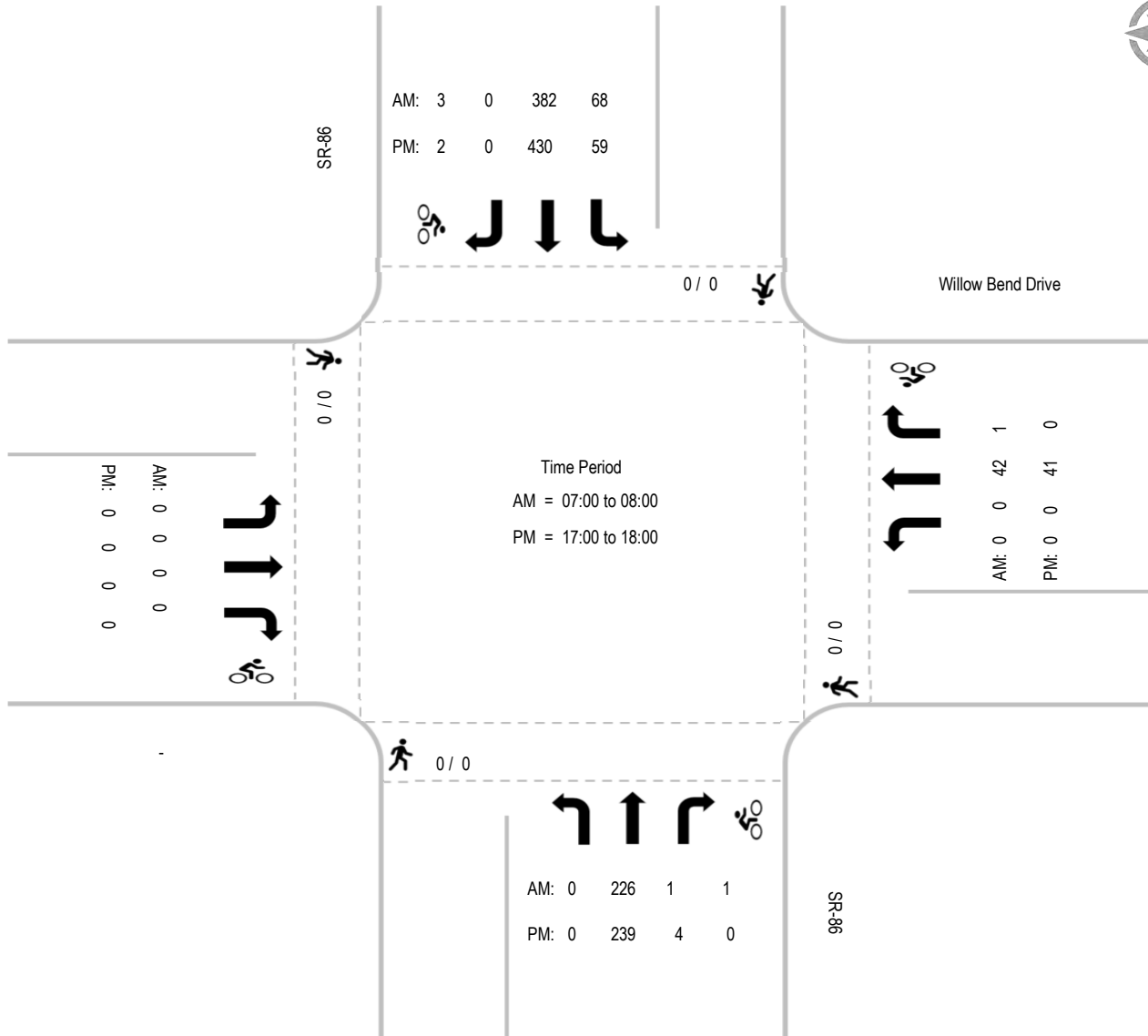
Location: #04	File Name: ITM-22-022-04
Intersection: SR-86 & Willow Bend Drive	Project: LLG Ref. 3-22-3559
Date of Count: Tuesday, March 05, 2022	El Centro

AM	SR-86 Southbound				Willow Bend Drive Westbound				SR-86 Northbound				- Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
Ped Total	0				0				0				0				0	
Bike Total		1	2	0		0	0	1		0	1	0		0	0	0		5

PM	SR-86 Southbound				Willow Bend Drive Westbound				SR-86 Northbound				- Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ped Total	0				0				0				0				0	
Bike Total		0	2	0		0	0	0		0	0	0		0	0	0		2

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location: #04	File Name: ITM-22-022-04
	Intersection: SR-86 & Willow Bend Drive	Project: LLG Ref. 3-22-3559
	Date of Count: Tuesday, March 05, 2022	El Centro



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 |

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT
LAW &
GREENSPAN
engineers

Location: #05
Intersection: SR-86 & Countryside Drive
Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-05
Project: LLG Ref. 3-22-3559
El Centro

AM	SR-86 Southbound			Countryside Drive Westbound			SR-86 Northbound			- Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	8	16	0	10	0	13	0	48	6	0	0	0	101
7:15	4	26	0	14	0	36	0	44	2	0	0	0	126
7:30	6	50	0	26	0	50	0	67	2	0	0	0	201
7:45	6	42	0	19	0	42	0	76	3	0	0	0	188
8:00	13	52	0	0	0	8	0	70	16	0	0	0	159
8:15	7	45	0	11	0	14	0	61	6	0	0	0	144
8:30	10	28	0	1	0	8	0	53	1	0	0	0	101
8:45	9	44	0	2	0	20	0	57	1	0	0	0	133
Total	63	303	0	83	0	191	0	476	37	0	0	0	1153
Approach%	17.2	82.8	-	30.3	-	69.7	-	92.8	7.2	-	-	-	
Total%	5.5	26.3	-	7.2	-	16.6	-	41.3	3.2	-	-	-	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	32	189	-	56	-	114	-	274	27	-	-	-	692
Approach%	14.5	85.5	-	32.9	-	67.1	-	91.0	9.0	-	-	-	
Total%	4.6	27.3	-	8.1	-	16.5	-	39.6	3.9	-	-	-	
PHF			0.85			0.56			0.88			#DIV/0!	0.86

PM	SR-86 Southbound			Countryside Drive Westbound			SR-86 Northbound			- Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	30	92	0	6	0	10	0	41	7	0	0	0	186
16:15	17	71	0	5	0	13	0	41	2	0	0	0	149
16:30	19	70	0	1	0	15	0	49	4	0	0	0	158
16:45	20	66	0	6	0	17	0	36	4	0	0	0	149
17:00	17	112	0	3	0	9	0	42	4	0	0	0	187
17:15	27	86	0	9	0	20	0	50	11	0	0	0	203
17:30	22	78	0	1	0	13	0	37	7	0	0	0	158
17:45	23	64	0	3	0	23	0	42	3	0	0	0	158
Total	175	639	0	34	0	120	0	338	42	0	0	0	1348
Approach%	21.5	78.5	-	22.1	-	77.9	-	88.9	11.1	-	-	-	
Total%	13.0	47.4	-	2.5	-	8.9	-	25.1	3.1	-	-	-	

PM Intersection Peak Hour: 17:00 to 18:00

Volume	89	340	-	16	-	65	-	171	25	-	-	-	706
Approach%	20.7	79.3	-	19.8	-	80.2	-	87.2	12.8	-	-	-	
Total%	12.6	48.2	-	2.3	-	9.2	-	24.2	3.5	-	-	-	
PHF			0.83			0.70			0.80			#DIV/0!	0.87

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #05
 Intersection: SR-86 & Countryside Drive
 Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-05
 Project: LLG Ref. 3-22-3559
 El Centro

AM	SR-86 Southbound				Countryside Drive Westbound				SR-86 Northbound				- Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

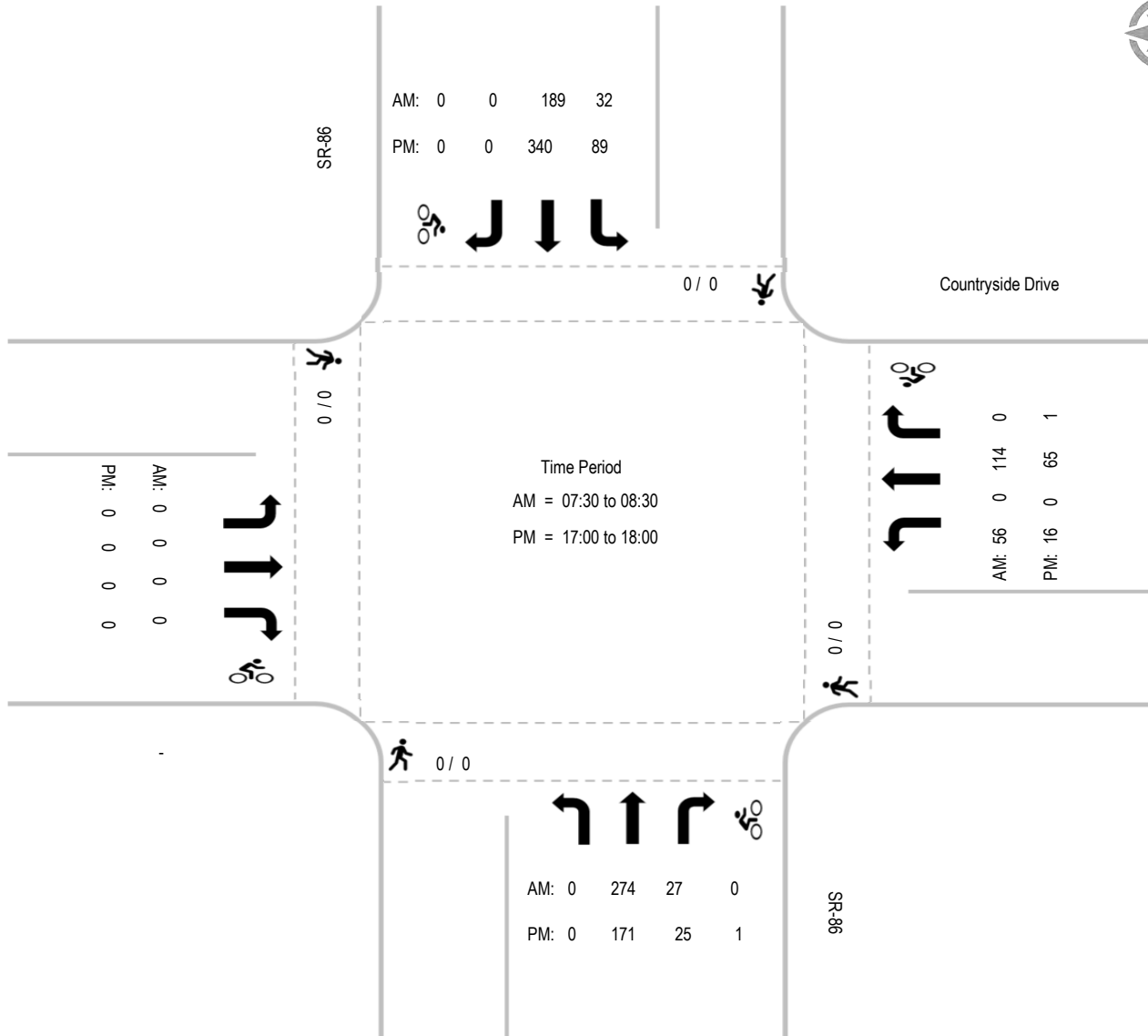
PM	SR-86 Southbound				Countryside Drive Westbound				SR-86 Northbound				- Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	0	1		0	0	1		0	0	0		2

Intersection Turning Movement - Peak Hour Summary



Location: #05
 Intersection: SR-86 & Countryside Drive
 Date of Count: Tuesday, March 05, 2022

File Name: ITM-22-022-05
 Project: LLG Ref. 3-22-3559
 El Centro



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 |

Intersection Turning Movement - Peak Hour Vehicle Count

Location: #06
Intersection: SR-86 & McCabe Road
Date of Count: Thursday, March 07, 2022

File Name: ITM-22-022-06
Project: LLG Ref. 3-22-3559
El Centro

AM	SR-86 Southbound			McCabe Road Westbound			SR-86 Northbound			McCabe Road Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	13	12	10	3	32	8	4	27	0	13	12	7	141
7:15	6	19	12	1	52	17	2	45	1	6	26	10	197
7:30	8	32	30	1	91	21	5	36	0	7	33	15	279
7:45	14	50	35	2	58	15	4	56	0	16	38	8	296
8:00	13	32	14	1	44	12	9	29	3	28	64	11	260
8:15	9	22	11	0	24	11	5	35	0	25	26	7	175
8:30	6	23	5	1	23	12	8	25	0	11	19	6	139
8:45	9	20	6	2	21	17	6	26	0	3	15	4	129
Total	78	210	123	11	345	113	43	279	4	109	233	68	1616
Approach%	19.0	51.1	29.9	2.3	73.6	24.1	13.2	85.6	1.2	26.6	56.8	16.6	
Total%	4.8	13.0	7.6	0.7	21.3	7.0	2.7	17.3	0.2	6.7	14.4	4.2	

AM Intersection Peak Hour: 07:15 to 08:15

Volume	41	133	91	5	245	65	20	166	4	57	161	44	1,032
Approach%	15.5	50.2	34.3	1.6	77.8	20.6	10.5	87.4	2.1	21.8	61.5	16.8	
Total%	4.0	12.9	8.8	0.5	23.7	6.3	1.9	16.1	0.4	5.5	15.6	4.3	
PHF			0.67			0.70			0.79			0.64	0.87

PM	SR-86 Southbound			McCabe Road Westbound			SR-86 Northbound			McCabe Road Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	16	42	9	0	31	12	8	29	1	12	48	15	223
16:15	21	31	8	0	27	11	9	31	2	6	30	8	184
16:30	16	59	11	0	36	10	5	36	1	8	40	8	230
16:45	22	50	12	0	29	7	5	26	0	8	27	12	198
17:00	23	58	14	1	43	13	2	25	0	15	71	23	288
17:15	28	59	7	0	28	5	7	14	0	6	34	9	197
17:30	19	48	2	0	26	17	7	15	0	6	48	14	202
17:45	23	34	4	0	27	18	3	21	0	8	36	15	189
Total	168	381	67	1	247	93	46	197	4	69	334	104	1711
Approach%	27.3	61.9	10.9	0.3	72.4	27.3	18.6	79.8	1.6	13.6	65.9	20.5	
Total%	9.8	22.3	3.9	0.1	14.4	5.4	2.7	11.5	0.2	4.0	19.5	6.1	

PM Intersection Peak Hour: 16:30 to 17:30

Volume	89	226	44	1	136	35	19	101	1	37	172	52	913
Approach%	24.8	63.0	12.3	0.6	79.1	20.3	15.7	83.5	0.8	14.2	65.9	19.9	
Total%	9.7	24.8	4.8	0.1	14.9	3.8	2.1	11.1	0.1	4.1	18.8	5.7	
PHF			0.94			0.75			0.72			0.60	0.77

Intersection Turning Movement - Bicycle & Pedestrian Count

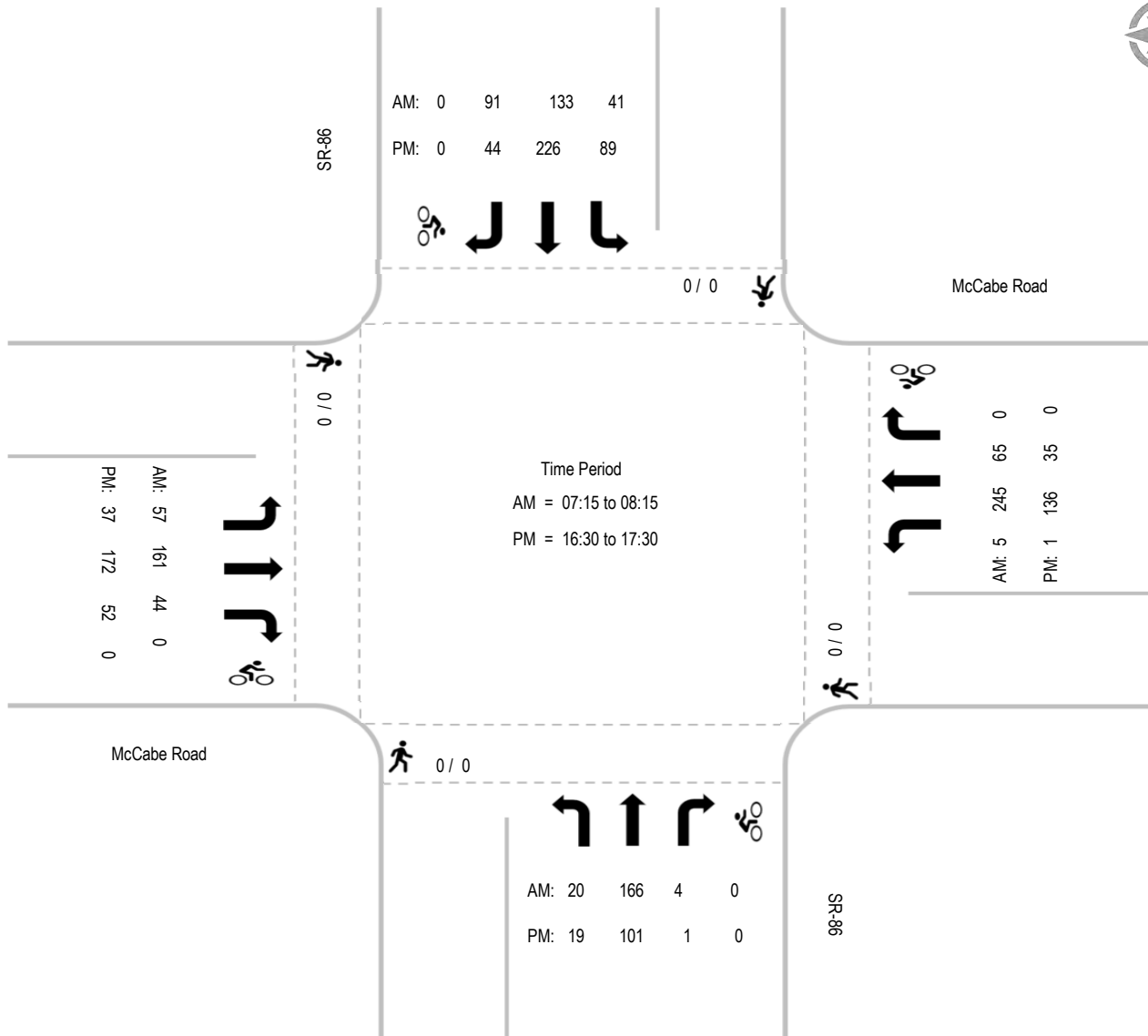
LINSCOTT LAW & GREENSPAN 	Location: #06	File Name: ITM-22-022-06
	Intersection: SR-86 & McCabe Road	Project: LLG Ref. 3-22-3559
	Date of Count: Thursday, March 07, 2022	El Centro

AM	SR-86 Southbound				McCabe Road Westbound				SR-86 Northbound				McCabe Road Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

PM	SR-86 Southbound				McCabe Road Westbound				SR-86 Northbound				McCabe Road Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN <i>engineers</i>	Location: #06	File Name: ITM-22-022-06
	Intersection: SR-86 & McCabe Road	Project: LLG Ref. 3-22-3559
	Date of Count: Thursday, March 07, 2022	El Centro



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 |

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **4th Ave-SR-86, between I-8 Eastbound Ramps and Wake Ave**

Date: **Tuesday, December 14, 2021**

Total Daily Volume: **23972**

Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
141	84	73	112	210	476	678	1238	1311	1329	1505	1720	1800	1825	1802	1852	1851	1829	1300	952	723	569	363	229
40	32	15	14	32	78	128	209	364	341	365	439	437	459	454	444	447	542	373	278	207	186	117	78
37	11	20	35	42	96	155	257	323	293	394	402	447	464	448	452	503	452	332	224	182	140	93	48
39	22	22	32	57	148	175	345	313	317	388	483	460	454	463	510	470	442	308	209	164	118	97	41
25	19	16	31	79	154	220	427	311	378	358	396	456	448	437	446	431	393	287	241	170	125	56	62

Date: **Tuesday, December 14, 2021**

Total Daily Volume: **11620**

Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
71	47	31	57	120	303	366	626	596	630	716	858	859	890	873	829	807	931	627	472	347	288	165	111
10	17	7	7	21	63	71	105	159	161	182	229	232	232	225	212	191	311	180	120	104	99	56	42
19	8	7	21	18	61	88	139	154	139	186	212	207	230	195	195	211	219	157	121	80	68	41	20
25	8	9	15	35	92	102	221	148	155	183	233	220	217	232	225	227	224	146	103	79	70	47	15
17	14	8	14	46	87	105	161	135	175	165	184	200	211	221	197	178	177	144	128	84	51	21	34

Date: **Tuesday, December 14, 2021**

Total Daily Volume: **12352**

Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
70	37	42	55	90	173	312	612	715	699	789	862	941	935	929	1023	1044	898	673	480	376	281	198	118
30	15	8	7	11	15	57	104	205	180	183	210	205	227	229	232	256	231	193	158	103	87	61	36
18	3	13	14	24	35	67	118	169	154	208	190	240	234	253	257	292	233	175	103	102	72	52	28
14	14	13	17	22	56	73	124	165	162	205	250	240	237	231	285	243	218	162	106	85	48	50	26
8	5	8	17	33	67	115	266	176	203	193	212	256	237	216	249	253	216	143	113	86	74	35	28

Report Generated by "Count Data" all rights reserved

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **SR-86, between Wake Ave and Danenberg Dr**

Date: Tuesday, December 14, 2021						Total Daily Volume: 14094											Description: Total Volume									
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00			
71	35	40	47	117	263	353	639	640	725	818	980	1087	1080	1088	1158	1183	1181	841	612	465	350	204	117			
14	10	9	8	19	43	65	105	187	169	179	251	272	281	270	281	292	334	242	172	141	112	57	32			
27	7	9	9	23	48	89	123	153	177	223	232	272	267	291	279	296	316	220	157	103	84	52	32			
19	11	12	13	29	86	97	188	143	170	211	261	291	260	269	304	280	270	184	122	115	76	54	18			
11	7	10	17	46	86	102	223	157	209	205	236	252	272	258	294	315	261	195	161	106	78	41	35			

Date: Tuesday, December 14, 2021						Total Daily Volume: 6455											Description: Northbound Volume										
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00				
24	21	16	26	73	177	210	396	354	345	381	431	458	503	480	480	463	473	357	284	204	152	96	51				
5	5	4	4	12	34	44	65	99	90	87	116	138	136	112	123	125	157	100	65	58	55	27	9				
7	6	5	6	10	35	51	80	89	88	90	99	104	126	134	117	109	124	90	88	45	34	20	15				
8	4	3	7	16	53	49	125	76	80	114	109	110	114	110	120	101	97	85	58	54	32	30	10				
4	6	4	9	35	55	66	126	90	87	90	107	106	127	124	120	128	95	82	73	47	31	19	17				

Date: Tuesday, December 14, 2021						Total Daily Volume: 7639											Description: Southbound Volume										
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00				
47	14	24	21	44	86	143	243	286	380	437	549	629	577	608	678	720	708	484	328	261	198	108	66				
9	5	5	4	7	9	21	40	88	79	92	135	134	145	158	158	167	177	142	107	83	57	30	23				
20	1	4	3	13	13	38	43	64	89	133	133	168	141	157	162	187	192	130	69	58	50	32	17				
11	7	9	6	13	33	48	63	67	90	97	152	181	146	159	184	179	173	99	64	61	44	24	8				
7	1	6	8	11	31	36	97	67	122	115	129	146	145	134	174	187	166	113	88	59	47	22	18				

Report Generated by "Count Data" all rights reserved

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **SR-86, between Danenberg Dr and McCabe Rd**

Date: **Tuesday, December 14, 2021**

Total Daily Volume: **9957**

Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
54	29	37	44	107	229	319	604	536	494	570	592	701	688	714	794	827	790	568	423	350	248	149	90
12	8	10	7	17	41	55	107	170	129	131	142	174	173	152	184	204	233	168	124	110	72	42	27
20	4	7	11	21	43	77	116	127	121	153	155	172	170	187	192	210	215	141	110	79	61	38	21
13	8	10	10	25	79	84	172	109	113	148	166	180	159	183	205	204	179	119	80	73	69	39	13
9	9	10	16	44	66	103	209	130	131	138	129	175	186	192	213	209	163	140	109	88	46	30	29

Date: **Tuesday, December 14, 2021**

Total Daily Volume: **4738**

Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
18	17	15	24	69	161	204	414	316	251	291	278	307	350	311	342	324	298	244	188	129	92	60	35
5	5	4	3	12	31	37	70	97	65	63	72	77	94	63	79	83	74	72	54	35	30	14	8
3	3	4	7	10	32	47	79	72	67	70	73	64	81	86	74	79	91	58	53	35	23	15	7
6	2	3	5	14	51	44	124	65	57	87	72	73	81	72	87	74	66	53	35	29	29	17	6
4	7	4	9	33	47	76	141	82	62	71	61	93	94	90	102	88	67	61	46	30	10	14	14

Date: **Tuesday, December 14, 2021**

Total Daily Volume: **5219**

Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
36	12	22	20	38	68	115	190	220	243	279	314	394	338	403	452	503	492	324	235	221	156	89	55
7	3	6	4	5	10	18	37	73	64	68	70	97	79	89	105	121	159	96	70	75	42	28	19
17	1	3	4	11	11	30	37	55	54	83	82	108	89	101	118	131	124	83	57	44	38	23	14
7	6	7	5	11	28	40	48	44	56	61	94	107	78	111	118	130	113	66	45	44	40	22	7
5	2	6	7	11	19	27	68	48	69	67	68	82	92	102	111	121	96	79	63	58	36	16	15

Report Generated by "Count Data" all rights reserved

Changes in Traffic Volumes on SR 86

Segment			Difference	
			Amount	Percent
SR 86				
North of McCabe Road				
2015-2016	7,700	7,800	100	1.30%
2016-2017	7,800	7,900	100	1.28%
2017-2018	7,900	7,900	0	0.00%
2018-2019	7,900	8,100	200	2.53%
2019-2020	8,100	8,100	0	0.00%
Average Growth				1.02%

ATTACHMENT 2

EXISTING INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Existing AM
06/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↶	↶	↶↶			↶↶	
Traffic Volume (veh/h)	0	0	0	185	1	278	135	430	0	0	672	97
Future Volume (veh/h)	0	0	0	185	1	278	135	430	0	0	672	97
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				243	1	366	178	566	0	0	884	128
Peak Hour Factor				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				547	2	475	218	1921	0	0	1084	157
Arrive On Green				0.31	0.31	0.31	0.12	0.54	0.00	0.00	0.35	0.35
Sat Flow, veh/h				1774	7	1540	1781	3647	0	0	3188	448
Grp Volume(v), veh/h				244	0	366	178	566	0	0	508	504
Grp Sat Flow(s),veh/h/ln				1782	0	1540	1781	1777	0	0	1777	1765
Q Serve(g_s), s				7.6	0.0	15.0	6.8	6.0	0.0	0.0	18.0	18.0
Cycle Q Clear(g_c), s				7.6	0.0	15.0	6.8	6.0	0.0	0.0	18.0	18.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				549	0	475	218	1921	0	0	623	619
V/C Ratio(X)				0.44	0.00	0.77	0.82	0.29	0.00	0.00	0.82	0.82
Avail Cap(c_a), veh/h				950	0	821	228	1921	0	0	623	619
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.2	0.0	21.8	29.7	8.7	0.0	0.0	20.5	20.5
Incr Delay (d2), s/veh				0.6	0.0	2.7	18.0	0.4	0.0	0.0	11.2	11.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	5.4	3.8	2.0	0.0	0.0	8.5	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.8	0.0	24.5	47.7	9.1	0.0	0.0	31.7	31.8
LnGrp LOS				B	A	C	D	A	A	A	C	C
Approach Vol, veh/h					610			744			1012	
Approach Delay, s/veh					22.6			18.3			31.8	
Approach LOS					C			B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			13.2	29.7		26.5				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 8.9	23.9		37.0				
Max Q Clear Time (g_c+I1), s		8.0			8.8	20.0		17.0				
Green Ext Time (p_c), s		9.2			0.0	3.1		2.8				
Intersection Summary												
HCM 6th Ctrl Delay				25.2								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

2: SR-86 (4th St) & I-8 EB Ramps

Existing AM
06/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕↕	↗	↖	↕↕	
Traffic Volume (veh/h)	37	0	193	0	0	0	0	524	171	221	638	0
Future Volume (veh/h)	37	0	193	0	0	0	0	524	171	221	638	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	45	0	233				0	631	206	266	769	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	46	0	237				0	1290	550	319	2229	0
Arrive On Green	0.18	0.00	0.18				0.00	0.36	0.36	0.18	0.63	0.00
Sat Flow, veh/h	252	0	1306				0	3647	1516	1781	3647	0
Grp Volume(v), veh/h	278	0	0				0	631	206	266	769	0
Grp Sat Flow(s),veh/h/ln	1558	0	0				0	1777	1516	1781	1777	0
Q Serve(g_s), s	9.8	0.0	0.0				0.0	7.6	5.5	7.9	5.7	0.0
Cycle Q Clear(g_c), s	9.8	0.0	0.0				0.0	7.6	5.5	7.9	5.7	0.0
Prop In Lane	0.16		0.84				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	283	0	0				0	1290	550	319	2229	0
V/C Ratio(X)	0.98	0.00	0.00				0.00	0.49	0.37	0.84	0.34	0.00
Avail Cap(c_a), veh/h	283	0	0				0	1290	550	379	2229	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.4	0.0	0.0				0.0	13.6	12.9	21.8	4.9	0.0
Incr Delay (d2), s/veh	48.1	0.0	0.0				0.0	1.3	1.9	11.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	0.0				0.0	2.7	1.8	3.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.5	0.0	0.0				0.0	14.9	14.9	33.0	5.3	0.0
LnGrp LOS	E	A	A				A	B	B	C	A	A
Approach Vol, veh/h	278							837		1035		
Approach Delay, s/veh	70.5							14.9		12.4		
Approach LOS	E							B		B		
Timer - Assigned Phs	1	2	4		6							
Phs Duration (G+Y+Rc), s	14.5	25.4	15.1		39.9							
Change Period (Y+Rc), s	4.7	5.4	5.1		5.4							
Max Green Setting (Gmax), s	18.1	18.1	10.0		34.5							
Max Q Clear Time (g_c+I19, s)	9.6	9.6	11.8		7.7							
Green Ext Time (p_c), s	0.1	5.5	0.0		12.3							

Intersection Summary

HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Existing AM
06/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	156	70	88	38	45	111	56	322	46	255	305	149
Future Volume (veh/h)	156	70	88	38	45	111	56	322	46	255	305	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	82	104	45	53	131	66	379	54	300	359	175
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	133	170	220	231	474	114	864	122	324	929	444
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.06	0.28	0.28	0.18	0.40	0.40
Sat Flow, veh/h	1655	777	996	1781	1870	1501	1781	3112	439	1781	2311	1105
Grp Volume(v), veh/h	199	0	171	45	53	131	66	215	218	300	274	260
Grp Sat Flow(s), veh/h/ln	1788	0	1640	1781	1870	1501	1781	1777	1775	1781	1777	1638
Q Serve(g_s), s	11.2	0.0	10.4	2.4	2.8	7.2	3.9	10.7	10.9	17.8	11.8	12.1
Cycle Q Clear(g_c), s	11.2	0.0	10.4	2.4	2.8	7.2	3.9	10.7	10.9	17.8	11.8	12.1
Prop In Lane	0.93		0.61	1.00		1.00	1.00		0.25	1.00		0.67
Lane Grp Cap(c), veh/h	305	0	280	220	231	474	114	493	493	324	714	659
V/C Ratio(X)	0.65	0.00	0.61	0.20	0.23	0.28	0.58	0.44	0.44	0.93	0.38	0.39
Avail Cap(c_a), veh/h	548	0	502	595	625	790	198	493	493	324	714	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	41.3	42.4	42.6	28.5	49.0	32.0	32.0	43.3	22.8	22.9
Incr Delay (d2), s/veh	3.3	0.0	3.1	0.2	0.2	0.1	1.7	2.8	2.9	31.0	1.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.3	1.1	1.3	0.0	1.7	4.8	4.9	10.4	5.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	0.0	44.4	42.6	42.8	28.6	50.7	34.8	34.9	74.3	24.3	24.6
LnGrp LOS	D	A	D	D	D	C	D	C	C	E	C	C
Approach Vol, veh/h	370			229			499			834		
Approach Delay, s/veh	44.7			34.6			36.9			42.4		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.2		25.8	11.6	50.6		19.7				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 12	* 38		36.0				
Max Q Clear Time (g_c+1.0), s	19.8	12.9		13.2	5.9	14.1		9.2				
Green Ext Time (p_c), s	0.0	4.9		2.8	0.0	7.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay 40.5
HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	33	95	358	201	11
Future Vol, veh/h	45	33	95	358	201	11
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	38	110	416	234	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	689	261	257	0	-	0
Stage 1	251	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	395	777	1306	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	354	762	1294	-	-	-
Mov Cap-2 Maneuver	354	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.8	1.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1294	-	458	-	-	
HCM Lane V/C Ratio	0.085	-	0.198	-	-	
HCM Control Delay (s)	8	-	14.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.7	-	-	

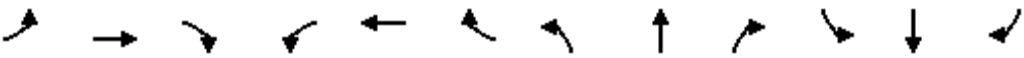
Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	42	226	1	68	382
Future Vol, veh/h	0	42	226	1	68	382
Conflicting Peds, #/hr	10	10	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	248	1	75	420
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	145	0	0	259	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	4.13	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	0	877	-	-	1304	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	860	-	-	1292	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		1.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	860	1292	-	
HCM Lane V/C Ratio	-	-	0.054	0.058	-	
HCM Control Delay (s)	-	-	9.4	8	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-	

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	114	274	27	32	189
Future Vol, veh/h	56	114	274	27	32	189
Conflicting Peds, #/hr	10	10	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	133	319	31	37	220
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	649	195	0	0	360	0
Stage 1	345	-	-	-	-	-
Stage 2	304	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	418	814	-	-	1197	-
Stage 1	689	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	397	799	-	-	1186	-
Mov Cap-2 Maneuver	397	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.9	0	1.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	599	1186	-	
HCM Lane V/C Ratio	-	-	0.33	0.031	-	
HCM Control Delay (s)	-	-	13.9	8.1	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1.4	0.1	-	

HCM 6th Signalized Intersection Summary

7: SR-86 (4th St) & McCabe Rd

Existing AM
06/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (veh/h)	57	161	44	5	245	65	20	166	4	41	133	91
Future Volume (veh/h)	57	161	44	5	245	65	20	166	4	41	133	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	185	51	6	282	75	23	191	5	47	153	105
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	217	60	7	315	84	58	477	12	88	283	194
Arrive On Green	0.20	0.20	0.20	0.23	0.23	0.23	0.03	0.26	0.26	0.05	0.28	0.28
Sat Flow, veh/h	388	1086	299	29	1380	367	1781	1811	47	1781	1009	693
Grp Volume(v), veh/h	302	0	0	363	0	0	23	0	196	47	0	258
Grp Sat Flow(s),veh/h/ln	1773	0	0	1776	0	0	1781	0	1859	1781	0	1702
Q Serve(g_s), s	17.5	0.0	0.0	21.1	0.0	0.0	1.3	0.0	9.2	2.7	0.0	13.7
Cycle Q Clear(g_c), s	17.5	0.0	0.0	21.1	0.0	0.0	1.3	0.0	9.2	2.7	0.0	13.7
Prop In Lane	0.22		0.17	0.02		0.21	1.00		0.03	1.00		0.41
Lane Grp Cap(c), veh/h	354	0	0	405	0	0	58	0	489	88	0	477
V/C Ratio(X)	0.85	0.00	0.00	0.90	0.00	0.00	0.40	0.00	0.40	0.53	0.00	0.54
Avail Cap(c_a), veh/h	442	0	0	493	0	0	119	0	489	147	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.0	0.0	0.0	39.8	0.0	0.0	50.4	0.0	32.3	49.3	0.0	32.5
Incr Delay (d2), s/veh	12.5	0.0	0.0	16.6	0.0	0.0	1.6	0.0	2.4	1.9	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	0.0	11.0	0.0	0.0	0.6	0.0	4.4	1.2	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	0.0	0.0	56.4	0.0	0.0	52.1	0.0	34.7	51.2	0.0	36.8
LnGrp LOS	D	A	A	E	A	A	D	A	C	D	A	D
Approach Vol, veh/h		302			363			219			305	
Approach Delay, s/veh		53.5			56.4			36.5			39.0	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	35.9		28.7	8.2	37.7		31.8				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 8.8	* 28		26.5	* 7.1	29.3		29.5				
Max Q Clear Time (g_c+I1), s	4.7	11.2		19.5	3.3	15.7		23.1				
Green Ext Time (p_c), s	0.0	2.5		1.0	0.0	3.1		1.2				
Intersection Summary												
HCM 6th Ctrl Delay			47.6									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Existing PM
06/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱	↰	↱			↰↱	
Traffic Volume (veh/h)	0	0	0	167	4	257	149	588	0	0	953	82
Future Volume (veh/h)	0	0	0	167	4	257	149	588	0	0	953	82
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				184	4	282	164	646	0	0	1047	90
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				454	10	400	200	2053	0	0	1296	111
Arrive On Green				0.26	0.26	0.26	0.11	0.58	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1745	38	1535	1781	3647	0	0	3392	283
Grp Volume(v), veh/h				188	0	282	164	646	0	0	564	573
Grp Sat Flow(s),veh/h/ln				1783	0	1535	1781	1777	0	0	1777	1805
Q Serve(g_s), s				5.7	0.0	10.8	5.8	6.1	0.0	0.0	18.3	18.3
Cycle Q Clear(g_c), s				5.7	0.0	10.8	5.8	6.1	0.0	0.0	18.3	18.3
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.16
Lane Grp Cap(c), veh/h				464	0	400	200	2053	0	0	698	709
V/C Ratio(X)				0.40	0.00	0.71	0.82	0.31	0.00	0.00	0.81	0.81
Avail Cap(c_a), veh/h				1017	0	875	200	2053	0	0	698	709
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.8	0.0	21.7	28.2	7.1	0.0	0.0	17.5	17.5
Incr Delay (d2), s/veh				0.6	0.0	2.3	21.4	0.4	0.0	0.0	9.7	9.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	3.9	3.5	1.8	0.0	0.0	8.2	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.4	0.0	24.0	49.5	7.5	0.0	0.0	27.2	27.2
LnGrp LOS				C	A	C	D	A	A	A	C	C
Approach Vol, veh/h					470			810			1137	
Approach Delay, s/veh					22.6			16.0			27.2	
Approach LOS					C			B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			12.0	30.9		22.0				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 7.3	25.5		37.0				
Max Q Clear Time (g_c+I1), s		8.1			7.8	20.3		12.8				
Green Ext Time (p_c), s		10.6			0.0	4.3		2.2				
Intersection Summary												
HCM 6th Ctrl Delay				22.5								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

2: SR-86 (4th St) & I-8 EB Ramps

Existing PM
06/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↕	↕	↕	
Traffic Volume (veh/h)	49	0	164	0	0	0	0	622	264	303	676	0
Future Volume (veh/h)	49	0	164	0	0	0	0	622	264	303	676	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	56	0	189				0	715	303	348	777	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	60	0	202				0	1265	539	399	2340	0
Arrive On Green	0.17	0.00	0.17				0.00	0.36	0.36	0.22	0.66	0.00
Sat Flow, veh/h	359	0	1212				0	3647	1515	1781	3647	0
Grp Volume(v), veh/h	245	0	0				0	715	303	348	777	0
Grp Sat Flow(s), veh/h/ln	1571	0	0				0	1777	1515	1781	1777	0
Q Serve(g_s), s	9.2	0.0	0.0				0.0	9.7	9.7	11.3	5.7	0.0
Cycle Q Clear(g_c), s	9.2	0.0	0.0				0.0	9.7	9.7	11.3	5.7	0.0
Prop In Lane	0.23		0.77				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	262	0	0				0	1265	539	399	2340	0
V/C Ratio(X)	0.94	0.00	0.00				0.00	0.57	0.56	0.87	0.33	0.00
Avail Cap(c_a), veh/h	262	0	0				0	1265	539	484	2340	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.7	0.0	0.0				0.0	15.6	15.6	22.4	4.5	0.0
Incr Delay (d2), s/veh	38.6	0.0	0.0				0.0	1.8	4.2	12.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0				0.0	3.6	3.4	5.5	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	0.0	0.0				0.0	17.4	19.7	34.7	4.9	0.0
LnGrp LOS	E	A	A				A	B	B	C	A	A
Approach Vol, veh/h	245						1018			1125		
Approach Delay, s/veh	63.3						18.1			14.1		
Approach LOS	E						B			B		
Timer - Assigned Phs	1	2		4			6					
Phs Duration (G+Y+Rc), s	18.1	26.8		15.1			44.9					
Change Period (Y+Rc), s	4.7	5.4		5.1			5.4					
Max Green Setting (Gmax), s	18.5			10.0			39.5					
Max Q Clear Time (g_c+1.3), s	11.7			11.2			7.7					
Green Ext Time (p_c), s	0.2	5.1		0.0			13.6					

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Existing PM
06/15/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↑	↔	↔	↑		↔	↔	
Traffic Volume (veh/h)	220	93	162	88	81	209	141	366	63	221	461	159
Future Volume (veh/h)	220	93	162	88	81	209	141	366	63	221	461	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	250	106	184	100	92	238	160	416	72	251	524	181
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	142	255	306	321	507	186	730	125	277	768	264
Arrive On Green	0.21	0.21	0.21	0.17	0.17	0.17	0.10	0.24	0.24	0.16	0.30	0.30
Sat Flow, veh/h	1519	672	1203	1781	1870	1519	1781	3016	517	1781	2573	884
Grp Volume(v), veh/h	295	0	245	100	92	238	160	244	244	251	361	344
Grp Sat Flow(s),veh/h/ln	1794	0	1601	1781	1870	1519	1781	1777	1756	1781	1777	1680
Q Serve(g_s), s	18.8	0.0	17.2	6.0	5.2	15.1	10.7	14.6	14.8	16.7	21.6	21.8
Cycle Q Clear(g_c), s	18.8	0.0	17.2	6.0	5.2	15.1	10.7	14.6	14.8	16.7	21.6	21.8
Prop In Lane	0.85		0.75	1.00		1.00	1.00		0.29	1.00		0.53
Lane Grp Cap(c), veh/h	380	0	339	306	321	507	186	430	425	277	531	502
V/C Ratio(X)	0.78	0.00	0.72	0.33	0.29	0.47	0.86	0.57	0.58	0.91	0.68	0.69
Avail Cap(c_a), veh/h	490	0	437	530	557	699	211	430	425	302	531	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	0.0	44.4	43.9	43.6	32.4	53.2	40.3	40.4	50.2	37.3	37.4
Incr Delay (d2), s/veh	7.0	0.0	5.2	0.2	0.2	0.3	23.7	5.3	5.6	26.5	6.9	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	7.2	2.6	2.4	5.5	5.9	6.9	6.9	9.3	10.2	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	0.0	49.6	44.2	43.8	32.7	77.0	45.6	45.9	76.6	44.2	44.8
LnGrp LOS	D	A	D	D	D	C	E	D	D	E	D	D
Approach Vol, veh/h	540			430			648			956		
Approach Delay, s/veh	50.9			37.7			53.5			52.9		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.2	36.5		33.0	17.4	43.4		27.2				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	20.5	29.0		33.0	* 14	* 36		36.0				
Max Q Clear Time (g_c+1.0), s	19.7	16.8		20.8	12.7	23.8		17.1				
Green Ext Time (p_c), s	0.1	4.6		3.4	0.0	6.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay	50.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	59	51	228	434	60
Future Vol, veh/h	44	59	51	228	434	60
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	68	59	262	499	69
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	803	554	578	0	-	0
Stage 1	544	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	336	531	994	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	309	521	985	-	-	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17.6	1.6		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	985	-	403	-	-	
HCM Lane V/C Ratio	0.06	-	0.294	-	-	
HCM Control Delay (s)	8.9	-	17.6	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-	

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	41	239	4	59	430
Future Vol, veh/h	0	41	239	4	59	430
Conflicting Peds, #/hr	10	10	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	45	260	4	64	467
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	152	0	0	274	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	4.13	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	0	868	-	-	1288	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	852	-	-	1276	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	852		1276	-	
HCM Lane V/C Ratio	-	0.052		0.05	-	
HCM Control Delay (s)	-	9.5		8	-	
HCM Lane LOS	-	A		A	-	
HCM 95th %tile Q(veh)	-	0.2		0.2	-	

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	65	171	25	89	340
Future Vol, veh/h	16	65	171	25	89	340
Conflicting Peds, #/hr	10	10	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	225	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	75	197	29	102	391
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	827	133	0	0	236	0
Stage 1	222	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	325	892	-	-	1330	-
Stage 1	794	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	294	875	-	-	1317	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	497	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.7	0		1.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		629	1317	
HCM Lane V/C Ratio	-	-		0.148	0.078	
HCM Control Delay (s)	-	-		11.7	8	
HCM Lane LOS	-	-		B	A	
HCM 95th %tile Q(veh)	-	-		0.5	0.3	

HCM 6th Signalized Intersection Summary

7: SR-86 (4th St) & McCabe Rd

Existing PM
06/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	172	52	1	136	35	19	101	1	89	226	44
Future Volume (veh/h)	37	172	52	1	136	35	19	101	1	89	226	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	223	68	1	177	45	25	131	1	116	294	57
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	261	79	1	205	52	63	476	4	145	457	89
Arrive On Green	0.22	0.22	0.22	0.15	0.15	0.15	0.04	0.26	0.26	0.08	0.30	0.30
Sat Flow, veh/h	250	1163	355	8	1405	357	1781	1853	14	1781	1508	292
Grp Volume(v), veh/h	339	0	0	223	0	0	25	0	132	116	0	351
Grp Sat Flow(s),veh/h/ln	1768	0	0	1770	0	0	1781	0	1867	1781	0	1800
Q Serve(g_s), s	17.4	0.0	0.0	11.7	0.0	0.0	1.3	0.0	5.4	6.1	0.0	16.0
Cycle Q Clear(g_c), s	17.4	0.0	0.0	11.7	0.0	0.0	1.3	0.0	5.4	6.1	0.0	16.0
Prop In Lane	0.14		0.20	0.00		0.20	1.00		0.01	1.00		0.16
Lane Grp Cap(c), veh/h	396	0	0	258	0	0	63	0	480	145	0	545
V/C Ratio(X)	0.86	0.00	0.00	0.86	0.00	0.00	0.39	0.00	0.28	0.80	0.00	0.64
Avail Cap(c_a), veh/h	487	0	0	290	0	0	133	0	480	252	0	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	0.0	39.5	0.0	0.0	44.7	0.0	28.1	42.7	0.0	28.6
Incr Delay (d2), s/veh	11.9	0.0	0.0	20.9	0.0	0.0	1.5	0.0	1.4	3.8	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.0	6.5	0.0	0.0	0.6	0.0	2.5	2.7	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	0.0	0.0	60.4	0.0	0.0	46.2	0.0	29.6	46.5	0.0	34.3
LnGrp LOS	D	A	A	E	A	A	D	A	C	D	A	C
Approach Vol, veh/h		339			223			157			467	
Approach Delay, s/veh		47.2			60.4			32.2			37.4	
Approach LOS		D			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.4	32.2		28.7	8.1	36.6		21.3				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 13	* 23		26.1	* 7.1	28.7		15.5				
Max Q Clear Time (g_c+I1), s	8.1	7.4		19.4	3.3	18.0		13.7				
Green Ext Time (p_c), s	0.1	1.4		1.1	0.0	3.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				43.8								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

ATTACHMENT 3

EXISTING + PROJECT INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Existing + Project AM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱	↰	↱			↰↱	
Traffic Volume (veh/h)	0	0	0	190	1	278	142	455	0	0	680	97
Future Volume (veh/h)	0	0	0	190	1	278	142	455	0	0	680	97
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				250	1	366	187	599	0	0	895	128
Peak Hour Factor				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				548	2	475	227	1919	0	0	1069	153
Arrive On Green				0.31	0.31	0.31	0.13	0.54	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1775	7	1540	1781	3647	0	0	3193	443
Grp Volume(v), veh/h				251	0	366	187	599	0	0	513	510
Grp Sat Flow(s),veh/h/ln				1782	0	1540	1781	1777	0	0	1777	1766
Q Serve(g_s), s				7.9	0.0	15.0	7.1	6.5	0.0	0.0	18.5	18.5
Cycle Q Clear(g_c), s				7.9	0.0	15.0	7.1	6.5	0.0	0.0	18.5	18.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				550	0	475	227	1919	0	0	613	609
V/C Ratio(X)				0.46	0.00	0.77	0.82	0.31	0.00	0.00	0.84	0.84
Avail Cap(c_a), veh/h				949	0	821	228	1919	0	0	613	609
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.3	0.0	21.8	29.5	8.8	0.0	0.0	20.9	20.9
Incr Delay (d2), s/veh				0.6	0.0	2.7	19.7	0.4	0.0	0.0	12.9	12.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.1	0.0	5.4	4.1	2.1	0.0	0.0	8.9	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.9	0.0	24.4	49.2	9.3	0.0	0.0	33.8	33.9
LnGrp LOS				B	A	C	D	A	A	A	C	C
Approach Vol, veh/h					617			786			1023	
Approach Delay, s/veh					22.6			18.8			33.8	
Approach LOS					C			B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			13.6	29.3		26.5				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 8.9	23.9		37.0				
Max Q Clear Time (g_c+I1), s		8.5			9.1	20.5		17.0				
Green Ext Time (p_c), s		9.7			0.0	2.8		2.8				
Intersection Summary												
HCM 6th Ctrl Delay				26.1								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 2: SR-86 (4th St) & I-8 EB Ramps

Existing + Project AM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↕	↕	↕	
Traffic Volume (veh/h)	37	0	196	0	0	0	0	556	185	221	651	0
Future Volume (veh/h)	37	0	196	0	0	0	0	556	185	221	651	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	45	0	236				0	670	223	266	784	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	45	0	238				0	1290	550	319	2229	0
Arrive On Green	0.18	0.00	0.18				0.00	0.36	0.36	0.18	0.63	0.00
Sat Flow, veh/h	249	0	1308				0	3647	1516	1781	3647	0
Grp Volume(v), veh/h	281	0	0				0	670	223	266	784	0
Grp Sat Flow(s), veh/h/ln	1558	0	0				0	1777	1516	1781	1777	0
Q Serve(g_s), s	9.9	0.0	0.0				0.0	8.1	6.0	7.9	5.8	0.0
Cycle Q Clear(g_c), s	9.9	0.0	0.0				0.0	8.1	6.0	7.9	5.8	0.0
Prop In Lane	0.16		0.84				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	283	0	0				0	1290	550	319	2229	0
V/C Ratio(X)	0.99	0.00	0.00				0.00	0.52	0.41	0.84	0.35	0.00
Avail Cap(c_a), veh/h	283	0	0				0	1290	550	379	2229	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	0.0				0.0	13.8	13.1	21.8	4.9	0.0
Incr Delay (d2), s/veh	51.2	0.0	0.0				0.0	1.5	2.2	11.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	0.0				0.0	2.9	2.0	3.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.6	0.0	0.0				0.0	15.2	15.3	33.0	5.3	0.0
LnGrp LOS	E	A	A				A	B	B	C	A	A
Approach Vol, veh/h	281						893			1050		
Approach Delay, s/veh	73.6						15.3			12.4		
Approach LOS	E						B			B		
Timer - Assigned Phs	1	2		4			6					
Phs Duration (G+Y+Rc), s	14.5	25.4		15.1			39.9					
Change Period (Y+Rc), s	4.7	5.4		5.1			5.4					
Max Green Setting (Gmax), s	18.1	18.1		10.0			34.5					
Max Q Clear Time (g_c+I), s	19.5	10.1		11.9			7.8					
Green Ext Time (p_c), s	0.1	5.4		0.0			12.5					

Intersection Summary

HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Existing + Project AM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	156	70	88	39	45	111	56	368	50	255	321	149
Future Volume (veh/h)	156	70	88	39	45	111	56	368	50	255	321	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	82	104	46	53	131	66	433	59	300	378	175
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	133	170	220	231	474	114	869	118	324	946	430
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.06	0.28	0.28	0.18	0.40	0.40
Sat Flow, veh/h	1655	777	996	1781	1870	1501	1781	3131	424	1781	2352	1070
Grp Volume(v), veh/h	199	0	171	46	53	131	66	244	248	300	284	269
Grp Sat Flow(s),veh/h/ln	1788	0	1640	1781	1870	1501	1781	1777	1778	1781	1777	1646
Q Serve(g_s), s	11.2	0.0	10.4	2.5	2.8	7.2	3.9	12.4	12.6	17.8	12.3	12.6
Cycle Q Clear(g_c), s	11.2	0.0	10.4	2.5	2.8	7.2	3.9	12.4	12.6	17.8	12.3	12.6
Prop In Lane	0.93		0.61	1.00		1.00	1.00		0.24	1.00		0.65
Lane Grp Cap(c), veh/h	305	0	280	220	231	474	114	493	494	324	714	662
V/C Ratio(X)	0.65	0.00	0.61	0.21	0.23	0.28	0.58	0.50	0.50	0.93	0.40	0.41
Avail Cap(c_a), veh/h	548	0	502	595	625	790	198	493	494	324	714	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	41.4	42.5	42.6	28.5	49.0	32.6	32.7	43.3	22.9	23.0
Incr Delay (d2), s/veh	3.3	0.0	3.1	0.2	0.2	0.1	1.7	3.5	3.6	31.0	1.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.3	1.1	1.3	0.0	1.7	5.7	5.7	10.4	5.2	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	0.0	44.4	42.6	42.8	28.6	50.7	36.1	36.3	74.3	24.6	24.9
LnGrp LOS	D	A	D	D	D	C	D	D	D	E	C	C
Approach Vol, veh/h	370			230			558			853		
Approach Delay, s/veh	44.7			34.6			37.9			42.2		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.2		25.8	11.6	50.6		19.7				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 12	* 38		36.0				
Max Q Clear Time (g_c+1.0), s	19.8	14.6		13.2	5.9	14.6		9.2				
Green Ext Time (p_c), s	0.0	5.3		2.8	0.0	7.8		0.4				

Intersection Summary

HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	33	95	418	221	11
Future Vol, veh/h	45	33	95	418	221	11
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	38	110	486	257	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	747	284	280	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	364	754	1281	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	326	740	1269	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.7	1.5		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1269	-	427	-	-	
HCM Lane V/C Ratio	0.087	-	0.212	-	-	
HCM Control Delay (s)	8.1	-	15.7	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.8	-	-	

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕↗		↗	↘	
Traffic Vol, veh/h	0	0	5	0	0	42	0	286	1	68	392	10
Future Vol, veh/h	0	0	5	0	0	42	0	286	1	68	392	10
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	92	91	92	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	46	0	314	1	75	431	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	437	-	-	178	-	0	0	325	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	619	0	0	835	0	-	-	1233	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	619	-	-	819	-	-	-	1221	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.9		9.7		0		1.2					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT	SBR			
Capacity (veh/h)	-		-		619 819		1221	-	-			
HCM Lane V/C Ratio	-		-		0.009 0.056		0.061	-	-			
HCM Control Delay (s)	-		-		10.9 9.7		8.1	-	-			
HCM Lane LOS	-		-		B A		A	-	-			
HCM 95th %tile Q(veh)	-		-		0 0.2		0.2	-	-			

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	60	5	5	56	5	114	4	274	27	32	194	10
Future Vol, veh/h	60	5	5	56	5	114	4	274	27	32	194	10
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	92	86	92	86	86	86	86	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	5	5	65	5	133	4	319	31	37	226	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	486	674	242	674	664	195	237	0	0	360	0	0
Stage 1	306	306	-	353	353	-	-	-	-	-	-	-
Stage 2	180	368	-	321	311	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	478	375	796	354	380	814	1329	-	-	1197	-	-
Stage 1	703	661	-	638	630	-	-	-	-	-	-	-
Stage 2	805	621	-	690	658	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	380	359	788	332	363	799	1329	-	-	1186	-	-
Mov Cap-2 Maneuver	380	359	-	332	363	-	-	-	-	-	-	-
Stage 1	701	641	-	630	622	-	-	-	-	-	-	-
Stage 2	657	613	-	652	638	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	16.3		15.7		0.1		1.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1329	-	-	393	539	1186	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.194	0.377	0.031	-	-				
HCM Control Delay (s)	7.7	-	-	16.3	15.7	8.1	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.7	1.7	0.1	-	-				

HCM 6th Signalized Intersection Summary

7: SR-86 (4th St) & McCabe Rd

Existing + Project AM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	161	44	5	245	67	20	168	4	44	140	91
Future Volume (veh/h)	57	161	44	5	245	67	20	168	4	44	140	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	185	51	6	282	77	23	193	5	51	161	105
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	216	60	7	313	85	58	477	12	91	291	190
Arrive On Green	0.20	0.20	0.20	0.23	0.23	0.23	0.03	0.26	0.26	0.05	0.28	0.28
Sat Flow, veh/h	388	1086	299	29	1371	374	1781	1812	47	1781	1033	674
Grp Volume(v), veh/h	302	0	0	365	0	0	23	0	198	51	0	266
Grp Sat Flow(s),veh/h/ln	1773	0	0	1775	0	0	1781	0	1859	1781	0	1707
Q Serve(g_s), s	17.6	0.0	0.0	21.4	0.0	0.0	1.4	0.0	9.4	3.0	0.0	14.2
Cycle Q Clear(g_c), s	17.6	0.0	0.0	21.4	0.0	0.0	1.4	0.0	9.4	3.0	0.0	14.2
Prop In Lane	0.22		0.17	0.02		0.21	1.00		0.03	1.00		0.39
Lane Grp Cap(c), veh/h	353	0	0	405	0	0	58	0	490	91	0	482
V/C Ratio(X)	0.85	0.00	0.00	0.90	0.00	0.00	0.40	0.00	0.40	0.56	0.00	0.55
Avail Cap(c_a), veh/h	439	0	0	479	0	0	118	0	490	153	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	0.0	0.0	40.1	0.0	0.0	50.8	0.0	32.5	49.6	0.0	32.7
Incr Delay (d2), s/veh	12.8	0.0	0.0	18.0	0.0	0.0	1.6	0.0	2.5	2.0	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	11.2	0.0	0.0	0.6	0.0	4.4	1.4	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	0.0	0.0	58.1	0.0	0.0	52.4	0.0	35.0	51.6	0.0	37.2
LnGrp LOS	D	A	A	E	A	A	D	A	C	D	A	D
Approach Vol, veh/h	302		365				221			317		
Approach Delay, s/veh	54.1		58.1				36.8			39.5		
Approach LOS	D		E				D			D		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.2	36.1	28.8		8.2	38.1	31.9					
Change Period (Y+Rc), s	* 4.7	* 7.9	7.5		* 4.7	7.9	7.5					
Max Green Setting (Gmax), s	* 9.2	* 28	26.5		* 7.1	29.9	28.9					
Max Q Clear Time (g_c+I1), s	5.0	11.4	19.6		3.4	16.2	23.4					
Green Ext Time (p_c), s	0.0	2.5	1.0		0.0	3.2	1.1					
Intersection Summary												
HCM 6th Ctrl Delay			48.3									
HCM 6th LOS			D									
Notes												

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Existing + Project PM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱	↰	↱			↱	↰
Traffic Volume (veh/h)	0	0	0	182	4	257	154	604	0	0	981	82
Future Volume (veh/h)	0	0	0	182	4	257	154	604	0	0	981	82
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				200	4	282	169	664	0	0	1078	90
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				457	9	401	200	2050	0	0	1298	108
Arrive On Green				0.26	0.26	0.26	0.11	0.58	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1748	35	1535	1781	3647	0	0	3401	276
Grp Volume(v), veh/h				204	0	282	169	664	0	0	579	589
Grp Sat Flow(s),veh/h/ln				1783	0	1535	1781	1777	0	0	1777	1806
Q Serve(g_s), s				6.2	0.0	10.8	6.0	6.3	0.0	0.0	19.1	19.1
Cycle Q Clear(g_c), s				6.2	0.0	10.8	6.0	6.3	0.0	0.0	19.1	19.1
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.15
Lane Grp Cap(c), veh/h				466	0	401	200	2050	0	0	697	709
V/C Ratio(X)				0.44	0.00	0.70	0.84	0.32	0.00	0.00	0.83	0.83
Avail Cap(c_a), veh/h				1015	0	874	200	2050	0	0	697	709
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				20.0	0.0	21.7	28.3	7.2	0.0	0.0	17.8	17.8
Incr Delay (d2), s/veh				0.6	0.0	2.2	25.6	0.4	0.0	0.0	11.0	10.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	3.9	3.8	1.9	0.0	0.0	8.7	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.7	0.0	24.0	53.9	7.6	0.0	0.0	28.8	28.8
LnGrp LOS				C	A	C	D	A	A	A	C	C
Approach Vol, veh/h					486			833			1168	
Approach Delay, s/veh					22.6			17.0			28.8	
Approach LOS					C			B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			12.0	30.9		22.1				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 7.3	25.5		37.0				
Max Q Clear Time (g_c+I1), s		8.3			8.0	21.1		12.8				
Green Ext Time (p_c), s		10.9			0.0	3.8		2.3				
Intersection Summary												
HCM 6th Ctrl Delay				23.6								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 2: SR-86 (4th St) & I-8 EB Ramps

Existing + Project PM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	0	172	0	0	0	0	643	274	303	719	0
Future Volume (veh/h)	49	0	172	0	0	0	0	643	274	303	719	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	56	0	198				0	739	315	348	826	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	58	0	204				0	1265	539	399	2340	0
Arrive On Green	0.17	0.00	0.17				0.00	0.36	0.36	0.22	0.66	0.00
Sat Flow, veh/h	346	0	1223				0	3647	1515	1781	3647	0
Grp Volume(v), veh/h	254	0	0				0	739	315	348	826	0
Grp Sat Flow(s),veh/h/ln	1569	0	0				0	1777	1515	1781	1777	0
Q Serve(g_s), s	9.7	0.0	0.0				0.0	10.1	10.1	11.3	6.2	0.0
Cycle Q Clear(g_c), s	9.7	0.0	0.0				0.0	10.1	10.1	11.3	6.2	0.0
Prop In Lane	0.22		0.78				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	261	0	0				0	1265	539	399	2340	0
V/C Ratio(X)	0.97	0.00	0.00				0.00	0.58	0.58	0.87	0.35	0.00
Avail Cap(c_a), veh/h	261	0	0				0	1265	539	484	2340	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	0.0	0.0				0.0	15.7	15.7	22.4	4.6	0.0
Incr Delay (d2), s/veh	47.6	0.0	0.0				0.0	2.0	4.6	12.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	0.0				0.0	3.8	3.6	5.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	0.0	0.0				0.0	17.7	20.3	34.7	5.0	0.0
LnGrp LOS	E	A	A				A	B	C	C	A	A
Approach Vol, veh/h	254							1054		1174		
Approach Delay, s/veh	72.4							18.5		13.8		
Approach LOS	E							B		B		
Timer - Assigned Phs	1	2	4		6							
Phs Duration (G+Y+Rc), s	18.1	26.8	15.1		44.9							
Change Period (Y+Rc), s	4.7	5.4	5.1		5.4							
Max Green Setting (Gmax), s	18.5	18.5	10.0		39.5							
Max Q Clear Time (g_c+1.3), s	12.1	12.1	11.7		8.2							
Green Ext Time (p_c), s	0.2	4.9	0.0		14.4							

Intersection Summary

HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Existing + Project PM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	220	93	162	92	81	209	141	397	65	221	512	159
Future Volume (veh/h)	220	93	162	92	81	209	141	397	65	221	512	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	250	106	184	105	92	238	160	451	74	251	582	181
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	142	255	306	321	507	186	736	120	277	791	245
Arrive On Green	0.21	0.21	0.21	0.17	0.17	0.17	0.10	0.24	0.24	0.16	0.30	0.30
Sat Flow, veh/h	1519	672	1203	1781	1870	1519	1781	3042	496	1781	2649	821
Grp Volume(v), veh/h	295	0	245	105	92	238	160	262	263	251	390	373
Grp Sat Flow(s),veh/h/ln	1794	0	1601	1781	1870	1519	1781	1777	1761	1781	1777	1693
Q Serve(g_s), s	18.8	0.0	17.2	6.3	5.2	15.1	10.7	15.9	16.1	16.7	23.8	24.0
Cycle Q Clear(g_c), s	18.8	0.0	17.2	6.3	5.2	15.1	10.7	15.9	16.1	16.7	23.8	24.0
Prop In Lane	0.85		0.75	1.00		1.00	1.00		0.28	1.00		0.49
Lane Grp Cap(c), veh/h	380	0	339	306	321	507	186	430	426	277	531	506
V/C Ratio(X)	0.78	0.00	0.72	0.34	0.29	0.47	0.86	0.61	0.62	0.91	0.73	0.74
Avail Cap(c_a), veh/h	490	0	437	530	557	699	211	430	426	302	531	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	0.0	44.4	44.1	43.6	32.4	53.2	40.8	40.8	50.2	38.1	38.1
Incr Delay (d2), s/veh	7.0	0.0	5.2	0.2	0.2	0.3	23.7	6.3	6.6	26.5	8.8	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	7.2	2.8	2.4	5.5	5.9	7.5	7.6	9.3	11.4	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	0.0	49.6	44.3	43.8	32.7	77.0	47.1	47.4	76.6	46.9	47.4
LnGrp LOS	D	A	D	D	D	C	E	D	D	E	D	D
Approach Vol, veh/h	540			435			685			1014		
Approach Delay, s/veh	50.9			37.8			54.2			54.4		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.2	36.5		33.0	17.4	43.4		27.2				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	20.5	29.0		33.0	* 14	* 36		36.0				
Max Q Clear Time (g_c+1.9), s	11.7	18.1		20.8	12.7	26.0		17.1				
Green Ext Time (p_c), s	0.1	4.5		3.4	0.0	6.1		0.8				

Intersection Summary

HCM 6th Ctrl Delay 51.0

HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	59	51	268	501	60
Future Vol, veh/h	44	59	51	268	501	60
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	68	59	308	576	69
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	903	631	655	0	-	0
Stage 1	621	-	-	-	-	-
Stage 2	282	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	292	480	930	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	268	471	921	-	-	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.1	1.5		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	921	-	356	-	-	
HCM Lane V/C Ratio	0.064	-	0.333	-	-	
HCM Control Delay (s)	9.2	-	20.1	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.4	-	-	

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕↗		↗↘	↘	
Traffic Vol, veh/h	0	0	3	0	0	41	0	279	4	59	463	34
Future Vol, veh/h	0	0	3	0	0	41	0	279	4	59	463	34
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	45	0	303	4	64	503	37
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	522	-	-	174	-	0	0	317	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	554	0	0	840	0	-	-	1241	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	554	-	-	824	-	-	-	1229	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.5		9.6		0		0.9					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	-	-	554	824	1229	-	-					
HCM Lane V/C Ratio	-	-	0.006	0.054	0.052	-	-					
HCM Control Delay (s)	-	-	11.5	9.6	8.1	-	-					
HCM Lane LOS	-	-	B	A	A	-	-					
HCM 95th %tile Q(veh)	-	-	0	0.2	0.2	-	-					

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↕↵		↵	↵	
Traffic Vol, veh/h	40	5	4	16	5	65	12	171	25	89	343	33
Future Vol, veh/h	40	5	4	16	5	65	12	171	25	89	343	33
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	92	87	92	87	87	87	87	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	5	4	18	5	75	13	197	29	102	394	36
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	753	878	422	879	882	133	430	0	0	236	0	0
Stage 1	616	616	-	248	248	-	-	-	-	-	-	-
Stage 2	137	262	-	631	634	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	312	286	631	255	284	892	1128	-	-	1330	-	-
Stage 1	477	481	-	735	701	-	-	-	-	-	-	-
Stage 2	853	691	-	468	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	258	625	228	256	875	1128	-	-	1317	-	-
Mov Cap-2 Maneuver	259	258	-	228	256	-	-	-	-	-	-	-
Stage 1	471	444	-	720	686	-	-	-	-	-	-	-
Stage 2	758	676	-	419	436	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	21.4		13.4		0.5		1.5					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1128	-	-	272	526	1317	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.196	0.187	0.078	-	-				
HCM Control Delay (s)	8.2	-	-	21.4	13.4	8	-	-				
HCM Lane LOS	A	-	-	C	B	A	-	-				
HCM 95th %tile O(veh)	0	-	-	0.7	0.7	0.3	-	-				

HCM 6th Signalized Intersection Summary
7: SR-86 (4th St) & McCabe Rd

Existing + Project PM
03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	172	52	1	136	39	19	109	1	91	231	44
Future Volume (veh/h)	37	172	52	1	136	39	19	109	1	91	231	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	223	68	1	177	51	25	142	1	118	300	57
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	260	79	1	204	59	63	471	3	148	456	87
Arrive On Green	0.22	0.22	0.22	0.15	0.15	0.15	0.04	0.25	0.25	0.08	0.30	0.30
Sat Flow, veh/h	250	1163	355	8	1361	392	1781	1854	13	1781	1514	288
Grp Volume(v), veh/h	339	0	0	229	0	0	25	0	143	118	0	357
Grp Sat Flow(s),veh/h/ln	1768	0	0	1761	0	0	1781	0	1867	1781	0	1801
Q Serve(g_s), s	17.5	0.0	0.0	12.1	0.0	0.0	1.3	0.0	5.9	6.2	0.0	16.4
Cycle Q Clear(g_c), s	17.5	0.0	0.0	12.1	0.0	0.0	1.3	0.0	5.9	6.2	0.0	16.4
Prop In Lane	0.14		0.20	0.00		0.22	1.00		0.01	1.00		0.16
Lane Grp Cap(c), veh/h	396	0	0	263	0	0	63	0	474	148	0	543
V/C Ratio(X)	0.86	0.00	0.00	0.87	0.00	0.00	0.39	0.00	0.30	0.80	0.00	0.66
Avail Cap(c_a), veh/h	485	0	0	287	0	0	133	0	474	252	0	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	0.0	39.6	0.0	0.0	44.9	0.0	28.7	42.9	0.0	29.0
Incr Delay (d2), s/veh	12.1	0.0	0.0	22.5	0.0	0.0	1.5	0.0	1.6	3.7	0.0	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.0	6.8	0.0	0.0	0.6	0.0	2.8	2.8	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	0.0	0.0	62.1	0.0	0.0	46.4	0.0	30.3	46.6	0.0	35.1
LnGrp LOS	D	A	A	E	A	A	D	A	C	D	A	D
Approach Vol, veh/h		339			229			168			475	
Approach Delay, s/veh		47.6			62.1			32.7			38.0	
Approach LOS		D			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	32.1		28.8	8.1	36.6		21.7				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 14	* 23		26.1	* 7.1	28.7		15.5				
Max Q Clear Time (g_c+I1), s	8.2	7.9		19.5	3.3	18.4		14.1				
Green Ext Time (p_c), s	0.1	1.5		1.1	0.0	3.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				44.5								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

ATTACHMENT 4

EXISTING + CUMULATIVE + PROJECT INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Existing + Cumulative Projects + Project AM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↶	↶	↶↶			↶↶	
Traffic Volume (veh/h)	0	0	0	214	1	295	220	546	0	0	787	103
Future Volume (veh/h)	0	0	0	214	1	295	220	546	0	0	787	103
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				282	1	388	289	718	0	0	1036	136
Peak Hour Factor				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				571	2	496	209	1883	0	0	1087	142
Arrive On Green				0.32	0.32	0.32	0.12	0.53	0.00	0.00	0.35	0.35
Sat Flow, veh/h				1775	6	1541	1781	3647	0	0	3232	412
Grp Volume(v), veh/h				283	0	388	289	718	0	0	586	586
Grp Sat Flow(s),veh/h/ln				1782	0	1541	1781	1777	0	0	1777	1774
Q Serve(g_s), s				9.1	0.0	16.2	8.3	8.4	0.0	0.0	22.8	22.8
Cycle Q Clear(g_c), s				9.1	0.0	16.2	8.3	8.4	0.0	0.0	22.8	22.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.23
Lane Grp Cap(c), veh/h				573	0	496	209	1883	0	0	615	614
V/C Ratio(X)				0.49	0.00	0.78	1.38	0.38	0.00	0.00	0.95	0.95
Avail Cap(c_a), veh/h				931	0	806	209	1883	0	0	615	614
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.4	0.0	21.8	31.2	9.8	0.0	0.0	22.6	22.6
Incr Delay (d2), s/veh				0.7	0.0	2.7	199.4	0.6	0.0	0.0	26.3	26.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	0.0	5.8	14.9	2.8	0.0	0.0	12.8	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.0	0.0	24.5	230.7	10.4	0.0	0.0	48.9	49.3
LnGrp LOS				C	A	C	F	B	A	A	D	D
Approach Vol, veh/h					671			1007			1172	
Approach Delay, s/veh					22.6			73.6			49.1	
Approach LOS					C			E			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			13.0	29.9		27.9				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 8.3	24.5		37.0				
Max Q Clear Time (g_c+I1), s		10.4			10.3	24.8		18.2				
Green Ext Time (p_c), s		11.5			0.0	0.0		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				51.5								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 2: SR-86 (4th St) & I-8 EB Ramps

Existing + Cumulative Projects + Project AM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↕	↕	↕	
Traffic Volume (veh/h)	39	0	263	0	0	0	0	722	218	235	771	0
Future Volume (veh/h)	39	0	263	0	0	0	0	722	218	235	771	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	47	0	317				0	870	263	283	929	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	36	0	246				0	1257	536	335	2229	0
Arrive On Green	0.18	0.00	0.18				0.00	0.35	0.35	0.19	0.63	0.00
Sat Flow, veh/h	200	0	1351				0	3647	1515	1781	3647	0
Grp Volume(v), veh/h	364	0	0				0	870	263	283	929	0
Grp Sat Flow(s), veh/h/ln	1551	0	0				0	1777	1515	1781	1777	0
Q Serve(g_s), s	10.0	0.0	0.0				0.0	11.5	7.5	8.4	7.3	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0				0.0	11.5	7.5	8.4	7.3	0.0
Prop In Lane	0.13		0.87				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	282	0	0				0	1257	536	335	2229	0
V/C Ratio(X)	1.29	0.00	0.00				0.00	0.69	0.49	0.84	0.42	0.00
Avail Cap(c_a), veh/h	282	0	0				0	1257	536	366	2229	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	0.0				0.0	15.2	13.9	21.6	5.2	0.0
Incr Delay (d2), s/veh	154.9	0.0	0.0				0.0	3.1	3.2	14.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	0.0				0.0	4.3	2.6	4.4	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	177.4	0.0	0.0				0.0	18.4	17.1	35.7	5.7	0.0
LnGrp LOS	F	A	A				A	B	B	D	A	A
Approach Vol, veh/h	364						1133			1212		
Approach Delay, s/veh	177.4						18.1			12.8		
Approach LOS	F						B			B		
Timer - Assigned Phs	1	2		4			6					
Phs Duration (G+Y+Rc), s	15.0	24.9		15.1			39.9					
Change Period (Y+Rc), s	4.7	5.4		5.1			5.4					
Max Green Setting (Gmax), s	18.5			10.0			34.5					
Max Q Clear Time (g_c+10), s	13.5			12.0			9.3					
Green Ext Time (p_c), s	0.0	4.1		0.0			14.4					

Intersection Summary

HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Existing + Cumulative Projects + Project AM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	267	76	122	41	49	118	76	444	53	271	381	252
Future Volume (veh/h)	267	76	122	41	49	118	76	444	53	271	381	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	314	89	144	48	58	139	89	522	62	319	448	296
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	397	140	226	224	236	455	115	817	97	299	743	487
Arrive On Green	0.22	0.22	0.22	0.13	0.13	0.13	0.06	0.26	0.26	0.17	0.37	0.37
Sat Flow, veh/h	1781	628	1016	1781	1870	1502	1781	3188	377	1781	2032	1333
Grp Volume(v), veh/h	314	0	233	48	58	139	89	290	294	319	391	353
Grp Sat Flow(s),veh/h/ln	1781	0	1644	1781	1870	1502	1781	1777	1788	1781	1777	1588
Q Serve(g_s), s	19.4	0.0	15.0	2.8	3.3	8.4	5.7	16.9	17.1	19.6	20.9	21.1
Cycle Q Clear(g_c), s	19.4	0.0	15.0	2.8	3.3	8.4	5.7	16.9	17.1	19.6	20.9	21.1
Prop In Lane	1.00		0.62	1.00		1.00	1.00		0.21	1.00		0.84
Lane Grp Cap(c), veh/h	397	0	366	224	236	455	115	455	458	299	649	580
V/C Ratio(X)	0.79	0.00	0.64	0.21	0.25	0.31	0.77	0.64	0.64	1.07	0.60	0.61
Avail Cap(c_a), veh/h	504	0	465	549	577	730	198	455	458	299	649	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	0.0	41.1	45.8	46.0	32.1	53.7	38.6	38.6	48.6	30.1	30.2
Incr Delay (d2), s/veh	7.6	0.0	2.6	0.2	0.2	0.1	4.1	6.7	6.8	70.7	4.1	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	6.2	1.2	1.5	3.0	2.7	8.0	8.2	14.4	9.4	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	43.7	46.0	46.2	32.2	57.8	45.3	45.4	119.3	34.2	34.9
LnGrp LOS	D	A	D	D	D	C	E	D	D	F	C	C
Approach Vol, veh/h	547			245			673			1063		
Approach Delay, s/veh	47.5			38.2			47.0			60.0		
Approach LOS	D			D			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.2		33.4	12.3	49.9		21.1				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 13	* 37		36.0				
Max Q Clear Time (g_c+Y), s	21.6	19.1		21.4	7.7	23.1		10.4				
Green Ext Time (p_c), s	0.0	5.0		3.3	0.0	7.8		0.5				

Intersection Summary

HCM 6th Ctrl Delay 51.7

HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	40	103	463	266	26
Future Vol, veh/h	90	40	103	463	266	26
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	47	120	538	309	30
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	853	344	349	0	-	0
Stage 1	334	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	313	698	1208	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	276	685	1196	-	-	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	24	1.5		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1196	-	338	-	-	
HCM Lane V/C Ratio	0.1	-	0.447	-	-	
HCM Control Delay (s)	8.3	-	24	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.3	-	2.2	-	-	

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕		↗	↗	
Traffic Vol, veh/h	0	0	5	0	0	45	0	325	1	72	453	10
Future Vol, veh/h	0	0	5	0	0	45	0	325	1	72	453	10
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	92	91	92	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	49	0	357	1	79	498	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	504	-	-	199	-	0	0	368	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	567	0	0	809	0	-	-	1189	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	567	-	-	794	-	-	-	1178	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		9.8		0		1.1					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT	SBR			
Capacity (veh/h)	-		-		567 794 1178		-	-				
HCM Lane V/C Ratio	-		-		0.01 0.062 0.067		-	-				
HCM Control Delay (s)	-		-		11.4 9.8 8.3		-	-				
HCM Lane LOS	-		-		B A A		-	-				
HCM 95th %tile Q(veh)	-		-		0 0.2 0.2		-	-				

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↗	
Traffic Vol, veh/h	60	5	5	59	5	121	4	316	29	34	244	10
Future Vol, veh/h	60	5	5	59	5	121	4	316	29	34	244	10
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	92	86	92	86	86	86	86	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	5	5	69	5	141	4	367	34	40	284	11
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	574	789	300	787	777	221	295	0	0	411	0	0
Stage 1	370	370	-	402	402	-	-	-	-	-	-	-
Stage 2	204	419	-	385	375	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	415	322	739	295	327	783	1265	-	-	1146	-	-
Stage 1	649	619	-	597	600	-	-	-	-	-	-	-
Stage 2	779	589	-	637	616	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	322	307	732	275	311	768	1265	-	-	1135	-	-
Mov Cap-2 Maneuver	322	307	-	275	311	-	-	-	-	-	-	-
Stage 1	647	597	-	589	592	-	-	-	-	-	-	-
Stage 2	622	581	-	599	594	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	18.9		18.6			0.1			1			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1265	-	-	334	477	1135	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.228	0.45	0.035	-	-				
HCM Control Delay (s)	7.9	-	-	18.9	18.6	8.3	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile O(veh)	0	-	-	0.9	2.3	0.1	-	-				

HCM 6th Signalized Intersection Summary
7: SR-86 (4th St) & McCabe Rd

Existing + Cumulative Projects + Project AM

03/07/2024

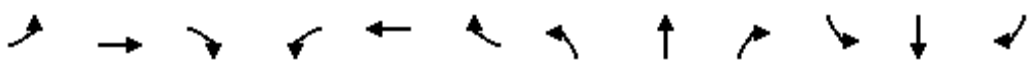
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	203	47	5	271	71	21	203	4	47	186	97
Future Volume (veh/h)	60	203	47	5	271	71	21	203	4	47	186	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	233	54	6	311	59	24	233	5	54	214	88
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	261	60	7	343	65	59	440	9	92	322	132
Arrive On Green	0.22	0.22	0.22	0.23	0.23	0.23	0.03	0.24	0.24	0.05	0.26	0.26
Sat Flow, veh/h	346	1168	271	29	1487	282	1781	1822	39	1781	1237	509
Grp Volume(v), veh/h	356	0	0	376	0	0	24	0	238	54	0	302
Grp Sat Flow(s),veh/h/ln	1785	0	0	1798	0	0	1781	0	1861	1781	0	1745
Q Serve(g_s), s	21.1	0.0	0.0	22.2	0.0	0.0	1.4	0.0	12.1	3.2	0.0	16.9
Cycle Q Clear(g_c), s	21.1	0.0	0.0	22.2	0.0	0.0	1.4	0.0	12.1	3.2	0.0	16.9
Prop In Lane	0.19		0.15	0.02		0.16	1.00		0.02	1.00		0.29
Lane Grp Cap(c), veh/h	398	0	0	415	0	0	59	0	450	92	0	454
V/C Ratio(X)	0.89	0.00	0.00	0.91	0.00	0.00	0.41	0.00	0.53	0.59	0.00	0.66
Avail Cap(c_a), veh/h	463	0	0	476	0	0	116	0	450	150	0	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	0.0	0.0	40.9	0.0	0.0	51.7	0.0	36.0	50.6	0.0	36.1
Incr Delay (d2), s/veh	17.7	0.0	0.0	19.4	0.0	0.0	1.7	0.0	4.4	2.2	0.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	0.0	12.0	0.0	0.0	0.7	0.0	5.9	1.5	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	0.0	60.3	0.0	0.0	53.4	0.0	40.4	52.8	0.0	43.6
LnGrp LOS	E	A	A	E	A	A	D	A	D	D	A	D
Approach Vol, veh/h		356			376			262			356	
Approach Delay, s/veh		58.8			60.3			41.6			45.0	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	34.3		31.9	8.3	36.3		32.7				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 9.2	* 26		28.3	* 7.1	28.1		28.9				
Max Q Clear Time (g_c+I1), s	5.2	14.1		23.1	3.4	18.9		24.2				
Green Ext Time (p_c), s	0.0	2.5		1.0	0.0	2.8		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				52.2								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Existing + Cumulative Projects + Project PM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↷	↶	↶↷			↶↷	
Traffic Volume (veh/h)	0	0	0	215	4	273	221	707	0	0	1106	87
Future Volume (veh/h)	0	0	0	215	4	273	221	707	0	0	1106	87
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				236	4	300	243	777	0	0	1215	96
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				480	8	420	197	2017	0	0	1283	101
Arrive On Green				0.27	0.27	0.27	0.11	0.57	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1753	30	1536	1781	3647	0	0	3418	262
Grp Volume(v), veh/h				240	0	300	243	777	0	0	648	663
Grp Sat Flow(s),veh/h/ln				1783	0	1536	1781	1777	0	0	1777	1810
Q Serve(g_s), s				7.5	0.0	11.6	7.3	8.0	0.0	0.0	23.3	23.5
Cycle Q Clear(g_c), s				7.5	0.0	11.6	7.3	8.0	0.0	0.0	23.3	23.5
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.14
Lane Grp Cap(c), veh/h				488	0	420	197	2017	0	0	686	698
V/C Ratio(X)				0.49	0.00	0.71	1.23	0.39	0.00	0.00	0.95	0.95
Avail Cap(c_a), veh/h				998	0	860	197	2017	0	0	686	698
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				20.1	0.0	21.7	29.4	7.9	0.0	0.0	19.6	19.7
Incr Delay (d2), s/veh				0.8	0.0	2.3	141.6	0.6	0.0	0.0	23.3	23.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	4.2	10.6	2.4	0.0	0.0	12.5	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.9	0.0	23.9	171.0	8.5	0.0	0.0	42.9	43.3
LnGrp LOS				C	A	C	F	A	A	A	D	D
Approach Vol, veh/h					540			1020			1311	
Approach Delay, s/veh					22.6			47.2			43.1	
Approach LOS					C			D			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			12.0	30.9		23.2				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 7.3	25.5		37.0				
Max Q Clear Time (g_c+I1), s		10.0			9.3	25.5		13.6				
Green Ext Time (p_c), s		12.6			0.0	0.0		2.6				
Intersection Summary												
HCM 6th Ctrl Delay				40.7								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

2: SR-86 (4th St) & I-8 EB Ramps

Existing + Cumulative Projects + Project PM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↕	↕	↕	
Traffic Volume (veh/h)	52	0	252	0	0	0	0	805	308	322	860	0
Future Volume (veh/h)	52	0	252	0	0	0	0	805	308	322	860	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	60	0	290				0	925	354	370	989	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	46	0	222				0	1205	513	420	2322	0
Arrive On Green	0.17	0.00	0.17				0.00	0.34	0.34	0.24	0.65	0.00
Sat Flow, veh/h	267	0	1291				0	3647	1513	1781	3647	0
Grp Volume(v), veh/h	350	0	0				0	925	354	370	989	0
Grp Sat Flow(s), veh/h/ln	1558	0	0				0	1777	1513	1781	1777	0
Q Serve(g_s), s	10.3	0.0	0.0				0.0	14.0	12.1	12.0	8.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	0.0				0.0	14.0	12.1	12.0	8.0	0.0
Prop In Lane	0.17		0.83				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	268	0	0				0	1205	513	420	2322	0
V/C Ratio(X)	1.31	0.00	0.00				0.00	0.77	0.69	0.88	0.43	0.00
Avail Cap(c_a), veh/h	268	0	0				0	1205	513	490	2322	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	0.0	0.0				0.0	17.7	17.1	22.1	5.0	0.0
Incr Delay (d2), s/veh	163.1	0.0	0.0				0.0	4.7	7.4	13.8	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.6	0.0	0.0				0.0	5.6	4.6	6.0	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	187.9	0.0	0.0				0.0	22.4	24.5	35.9	5.6	0.0
LnGrp LOS	F	A	A				A	C	C	D	A	A
Approach Vol, veh/h	350						1279			1359		
Approach Delay, s/veh	187.9						23.0			13.8		
Approach LOS	F						C			B		
Timer - Assigned Phs	1	2		4			6					
Phs Duration (G+Y+Rc), s	18.9	25.7		15.4			44.6					
Change Period (Y+Rc), s	4.7	5.4		5.1			5.4					
Max Green Setting (Gmax), s	18.0			10.3			39.2					
Max Q Clear Time (g_c+1.0), s	16.0			12.3			10.0					
Green Ext Time (p_c), s	0.2	1.8		0.0			16.8					

Intersection Summary

HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Existing + Cumulative Projects + Project PM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	321	100	195	97	88	222	181	476	69	235	605	266
Future Volume (veh/h)	321	100	195	97	88	222	181	476	69	235	605	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	365	114	222	110	100	252	206	541	78	267	688	302
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	138	271	313	329	506	210	716	103	268	637	280
Arrive On Green	0.24	0.24	0.24	0.18	0.18	0.18	0.12	0.23	0.23	0.15	0.27	0.27
Sat Flow, veh/h	1703	573	1130	1781	1870	1520	1781	3103	446	1781	2377	1043
Grp Volume(v), veh/h	383	0	318	110	100	252	206	309	310	267	514	476
Grp Sat Flow(s), veh/h/ln	1785	0	1621	1781	1870	1520	1781	1777	1772	1781	1777	1643
Q Serve(g_s), s	27.1	0.0	24.2	7.1	6.1	17.5	15.0	21.1	21.3	19.6	35.0	35.0
Cycle Q Clear(g_c), s	27.1	0.0	24.2	7.1	6.1	17.5	15.0	21.1	21.3	19.6	35.0	35.0
Prop In Lane	0.95		0.70	1.00		1.00	1.00		0.25	1.00		0.63
Lane Grp Cap(c), veh/h	429	0	389	313	329	506	210	410	409	268	477	441
V/C Ratio(X)	0.89	0.00	0.82	0.35	0.30	0.50	0.98	0.75	0.76	1.00	1.08	1.08
Avail Cap(c_a), veh/h	451	0	410	491	516	657	210	410	409	268	477	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	46.9	47.2	46.8	35.5	57.4	46.7	46.8	55.4	47.7	47.7
Incr Delay (d2), s/veh	19.6	0.0	12.5	0.2	0.2	0.3	55.9	12.1	12.4	54.4	64.2	65.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	0.0	10.9	3.1	2.8	6.4	9.9	10.6	10.6	12.7	23.6	22.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	0.0	59.4	47.5	47.0	35.8	113.3	58.8	59.2	109.8	112.0	113.6
LnGrp LOS	E	A	E	D	D	D	F	E	E	F	F	F
Approach Vol, veh/h	701			462			825			1257		
Approach Delay, s/veh	63.9			41.0			72.6			112.1		
Approach LOS	E			D			E			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.4		38.7	20.1	42.3		29.4				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 15	* 35		36.0				
Max Q Clear Time (g_c+Y), s	21.6	23.3		29.1	17.0	37.0		19.5				
Green Ext Time (p_c), s	0.0	3.6		1.9	0.0	0.0		0.8				

Intersection Summary

HCM 6th Ctrl Delay 81.5

HCM 6th LOS F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	66	59	318	558	112
Future Vol, veh/h	74	66	59	318	558	112
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	76	68	366	641	129
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1045	726	780	0	-	0
Stage 1	716	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	238	424	835	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	416	827	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	34.3	1.5		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	827	-	278	-	-	
HCM Lane V/C Ratio	0.082	-	0.579	-	-	
HCM Control Delay (s)	9.7	-	34.3	-	-	
HCM Lane LOS	A	-	D	-	-	
HCM 95th %tile Q(veh)	0.3	-	3.4	-	-	

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕		↗	↘	
Traffic Vol, veh/h	0	0	3	0	0	44	0	335	4	63	522	34
Future Vol, veh/h	0	0	3	0	0	44	0	335	4	63	522	34
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	48	0	364	4	68	567	37

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	586	-	-	204	-	0	0	378	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	509	0	0	803	0	-	-	1179	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	509	-	-	788	-	-	-	1168	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	9.9	0	0.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	-	-	509	788	1168	-	-
HCM Lane V/C Ratio	-	-	0.006	0.061	0.059	-	-
HCM Control Delay (s)	-	-	12.1	9.9	8.3	-	-
HCM Lane LOS	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	-	-	0	0.2	0.2	-	-

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	40	5	4	17	5	69	12	222	27	94	397	33
Future Vol, veh/h	40	5	4	17	5	69	12	222	27	94	397	33
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	92	87	92	87	87	87	87	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	5	4	20	5	79	13	255	31	108	456	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	856	1012	484	1012	1015	163	492	0	0	296	0	0
Stage 1	690	690	-	307	307	-	-	-	-	-	-	-
Stage 2	166	322	-	705	708	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	264	238	582	205	238	854	1070	-	-	1264	-	-
Stage 1	434	445	-	679	660	-	-	-	-	-	-	-
Stage 2	820	650	-	426	437	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	215	213	576	181	213	838	1070	-	-	1252	-	-
Mov Cap-2 Maneuver	215	213	-	181	213	-	-	-	-	-	-	-
Stage 1	429	407	-	664	645	-	-	-	-	-	-	-
Stage 2	720	636	-	378	399	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.8		15.2		0.4		1.5	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1070	-	-	226	457	1252	-
HCM Lane V/C Ratio	0.012	-	-	0.236	0.228	0.086	-
HCM Control Delay (s)	8.4	-	-	25.8	15.2	8.1	-
HCM Lane LOS	A	-	-	D	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.9	0.3	-

HCM 6th Signalized Intersection Summary

7: SR-86 (4th St) & McCabe Rd

Existing + Cumulative Projects + Project PM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	204	55	1	180	41	20	156	1	96	278	47
Future Volume (veh/h)	39	204	55	1	180	41	20	156	1	96	278	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.93	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	265	71	1	234	27	26	203	1	125	361	35
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	294	79	1	254	29	64	440	2	155	480	47
Arrive On Green	0.24	0.24	0.24	0.16	0.16	0.16	0.04	0.24	0.24	0.09	0.29	0.29
Sat Flow, veh/h	234	1217	326	7	1624	187	1781	1859	9	1781	1669	162
Grp Volume(v), veh/h	387	0	0	262	0	0	26	0	204	125	0	396
Grp Sat Flow(s),veh/h/ln	1777	0	0	1819	0	0	1781	0	1868	1781	0	1831
Q Serve(g_s), s	20.9	0.0	0.0	14.1	0.0	0.0	1.4	0.0	9.3	6.8	0.0	19.5
Cycle Q Clear(g_c), s	20.9	0.0	0.0	14.1	0.0	0.0	1.4	0.0	9.3	6.8	0.0	19.5
Prop In Lane	0.13		0.18	0.00		0.10	1.00		0.00	1.00		0.09
Lane Grp Cap(c), veh/h	430	0	0	284	0	0	64	0	442	155	0	526
V/C Ratio(X)	0.90	0.00	0.00	0.92	0.00	0.00	0.40	0.00	0.46	0.81	0.00	0.75
Avail Cap(c_a), veh/h	471	0	0	284	0	0	128	0	442	242	0	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	0.0	0.0	41.2	0.0	0.0	46.8	0.0	32.4	44.5	0.0	32.1
Incr Delay (d2), s/veh	19.1	0.0	0.0	33.5	0.0	0.0	1.5	0.0	3.4	5.1	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	0.0	8.9	0.0	0.0	0.6	0.0	4.5	3.1	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	0.0	0.0	74.8	0.0	0.0	48.3	0.0	35.9	49.5	0.0	41.7
LnGrp LOS	E	A	A	E	A	A	D	A	D	D	A	D
Approach Vol, veh/h		387			262			230			521	
Approach Delay, s/veh		55.5			74.8			37.3			43.6	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	31.4		31.5	8.3	36.4		23.0				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 14	* 23		26.3	* 7.1	28.5		15.5				
Max Q Clear Time (g_c+I1), s	8.8	11.3		22.9	3.4	21.5		16.1				
Green Ext Time (p_c), s	0.1	2.0		0.8	0.0	2.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				51.7								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

ATTACHMENT 5

CIRCULATION AND SCENIC HIGHWAYS ELEMENT REPORT EXCERPTS AND YEAR 2045 INTERSECTION ANALYSIS WORKSHEETS

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 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 CalxGP+ 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).

HCM 6th Signalized Intersection Summary

Year 2045 AM

1: SR-86 (4th St) & I-8 WB Ramps

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↶	↶	↶			↶	↶
Traffic Volume (veh/h)	0	0	0	240	10	360	220	550	0	0	860	120
Future Volume (veh/h)	0	0	0	240	10	360	220	550	0	0	860	120
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.95
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				316	13	474	289	724	0	0	1132	158
Peak Hour Factor				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				628	26	565	195	1760	0	0	1007	140
Arrive On Green				0.37	0.37	0.37	0.11	0.50	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1714	71	1544	1781	3647	0	0	3205	433
Grp Volume(v), veh/h				329	0	474	289	724	0	0	645	645
Grp Sat Flow(s),veh/h/ln				1785	0	1544	1781	1777	0	0	1777	1768
Q Serve(g_s), s				10.8	0.0	21.3	8.3	9.8	0.0	0.0	24.5	24.5
Cycle Q Clear(g_c), s				10.8	0.0	21.3	8.3	9.8	0.0	0.0	24.5	24.5
Prop In Lane				0.96		1.00	1.00		0.00	0.00		0.24
Lane Grp Cap(c), veh/h				654	0	565	195	1760	0	0	575	572
V/C Ratio(X)				0.50	0.00	0.84	1.48	0.41	0.00	0.00	1.12	1.13
Avail Cap(c_a), veh/h				872	0	754	195	1760	0	0	575	572
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.6	0.0	22.0	33.7	12.1	0.0	0.0	25.6	25.6
Incr Delay (d2), s/veh				0.6	0.0	6.3	241.6	0.7	0.0	0.0	75.7	78.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.3	0.0	8.1	16.5	3.5	0.0	0.0	21.3	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.3	0.0	28.3	275.3	12.8	0.0	0.0	101.3	103.8
LnGrp LOS				B	A	C	F	B	A	A	F	F
Approach Vol, veh/h					803			1013			1290	
Approach Delay, s/veh					24.6			87.7			102.5	
Approach LOS					C			F			F	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			13.0	29.9		32.8				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 8.3	24.5		37.0				
Max Q Clear Time (g_c+I1), s		11.8			10.3	26.5		23.3				
Green Ext Time (p_c), s		11.2			0.0	0.0		3.4				
Intersection Summary												
HCM 6th Ctrl Delay				77.6								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 2: SR-86 (4th St) & I-8 EB Ramps

Year 2045 AM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↕	↕	↕	
Traffic Volume (veh/h)	50	0	270	0	0	0	0	700	220	280	820	0
Future Volume (veh/h)	50	0	270	0	0	0	0	700	220	280	820	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	60	0	325				0	843	265	337	988	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	44	0	239				0	1195	509	366	2229	0
Arrive On Green	0.18	0.00	0.18				0.00	0.34	0.34	0.21	0.63	0.00
Sat Flow, veh/h	243	0	1314				0	3647	1513	1781	3647	0
Grp Volume(v), veh/h	385	0	0				0	843	265	337	988	0
Grp Sat Flow(s), veh/h/ln	1557	0	0				0	1777	1513	1781	1777	0
Q Serve(g_s), s	10.0	0.0	0.0				0.0	11.4	7.7	10.2	7.9	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0				0.0	11.4	7.7	10.2	7.9	0.0
Prop In Lane	0.16		0.84				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	283	0	0				0	1195	509	366	2229	0
V/C Ratio(X)	1.36	0.00	0.00				0.00	0.71	0.52	0.92	0.44	0.00
Avail Cap(c_a), veh/h	283	0	0				0	1195	509	366	2229	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	0.0				0.0	15.9	14.7	21.4	5.3	0.0
Incr Delay (d2), s/veh	183.3	0.0	0.0				0.0	3.5	3.8	27.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	0.0	0.0				0.0	4.3	2.7	6.5	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	205.8	0.0	0.0				0.0	19.4	18.5	49.0	5.9	0.0
LnGrp LOS	F	A	A				A	B	B	D	A	A
Approach Vol, veh/h	385						1108			1325		
Approach Delay, s/veh	205.8						19.2			16.9		
Approach LOS	F						B			B		
Timer - Assigned Phs	1	2		4			6					
Phs Duration (G+Y+Rc), s	16.0	23.9		15.1			39.9					
Change Period (Y+Rc), s	4.7	5.4		5.1			5.4					
Max Green Setting (Gmax), s	11.5	18.5		10.0			34.5					
Max Q Clear Time (g_c+1/2), s	12.2	13.4		12.0			9.9					
Green Ext Time (p_c), s	0.0	4.2		0.0			15.0					

Intersection Summary

HCM 6th Ctrl Delay 43.6
HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Year 2045 AM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	90	130	50	60	140	80	410	60	330	390	260
Future Volume (veh/h)	280	90	130	50	60	140	80	410	60	330	390	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	329	106	153	59	71	165	94	482	71	388	459	306
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	406	154	223	245	257	467	118	772	113	291	714	473
Arrive On Green	0.23	0.23	0.23	0.14	0.14	0.14	0.07	0.25	0.25	0.16	0.35	0.35
Sat Flow, veh/h	1781	677	977	1781	1870	1507	1781	3094	453	1781	2023	1340
Grp Volume(v), veh/h	329	0	259	59	71	165	94	276	277	388	403	362
Grp Sat Flow(s),veh/h/ln	1781	0	1653	1781	1870	1507	1781	1777	1771	1781	1777	1586
Q Serve(g_s), s	20.9	0.0	17.2	3.5	4.1	10.3	6.2	16.5	16.7	19.6	22.7	22.9
Cycle Q Clear(g_c), s	20.9	0.0	17.2	3.5	4.1	10.3	6.2	16.5	16.7	19.6	22.7	22.9
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.26	1.00		0.85
Lane Grp Cap(c), veh/h	406	0	377	245	257	467	118	444	442	291	627	560
V/C Ratio(X)	0.81	0.00	0.69	0.24	0.28	0.35	0.80	0.62	0.63	1.33	0.64	0.65
Avail Cap(c_a), veh/h	491	0	456	535	562	712	193	444	442	291	627	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	42.3	46.1	46.3	32.8	55.2	39.9	40.0	50.1	32.4	32.5
Incr Delay (d2), s/veh	9.3	0.0	4.1	0.2	0.2	0.2	4.7	6.4	6.6	170.7	5.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	7.3	1.6	1.9	3.7	2.9	7.8	7.9	22.4	10.3	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	0.0	46.4	46.3	46.5	33.0	59.8	46.3	46.6	220.7	37.4	38.2
LnGrp LOS	D	A	D	D	D	C	E	D	D	F	D	D
Approach Vol, veh/h	588					295		647		1153		
Approach Delay, s/veh	50.1					38.9		48.4		99.3		
Approach LOS	D					D		D		F		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	25.0	37.2	34.7		12.6	49.6	22.9					
Change Period (Y+Rc), s	5.4	7.3	7.4		* 4.7	* 7.3	6.4					
Max Green Setting (Gmax), s	19.6	29.9	33.0		* 13	* 37	36.0					
Max Q Clear Time (g_c+T1), s	21.6	18.7	22.9		8.2	24.9	12.3					
Green Ext Time (p_c), s	0.0	4.9	3.3		0.0	7.2	0.6					

Intersection Summary

HCM 6th Ctrl Delay 69.6
HCM 6th LOS E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	40	120	460	260	30
Future Vol, veh/h	100	40	120	460	260	30
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	47	140	535	302	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	888	340	347	0	-	0
Stage 1	330	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	298	702	1210	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	258	689	1198	-	-	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	28.2	1.7		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1198	-	314	-	-	
HCM Lane V/C Ratio	0.116	-	0.518	-	-	
HCM Control Delay (s)	8.4	-	28.2	-	-	
HCM Lane LOS	A	-	D	-	-	
HCM 95th %tile Q(veh)	0.4	-	2.8	-	-	

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕		↗	↘	
Traffic Vol, veh/h	0	0	0	0	0	50	0	290	10	90	490	0
Future Vol, veh/h	0	0	0	0	0	50	0	290	10	90	490	0
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	92	91	92	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	55	0	319	11	99	538	0

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	-	-	538	-	-	185	-	0
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-
Pot Cap-1 Maneuver	0	0	542	0	0	826	0	-
Stage 1	0	0	-	0	0	-	0	-
Stage 2	0	0	-	0	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	542	-	-	810	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.8	0	1.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	810	1205	-
HCM Lane V/C Ratio	-	-	-	0.068	0.082	-
HCM Control Delay (s)	-	-	0	9.8	8.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.2	0.3	-

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↕↵		↵	↵	
Traffic Vol, veh/h	0	0	0	70	0	150	0	350	40	40	240	0
Future Vol, veh/h	0	0	0	70	0	150	0	350	40	40	240	0
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	92	86	92	86	86	86	86	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	81	0	174	0	407	47	47	279	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	587	837	289	824	814	247	279	0	0	464	0	0
Stage 1	373	373	-	441	441	-	-	-	-	-	-	-
Stage 2	214	464	-	383	373	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	407	302	749	278	311	754	1282	-	-	1095	-	-
Stage 1	647	617	-	566	576	-	-	-	-	-	-	-
Stage 2	769	563	-	639	617	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	298	286	742	264	295	740	1282	-	-	1085	-	-
Mov Cap-2 Maneuver	298	286	-	264	295	-	-	-	-	-	-	-
Stage 1	647	590	-	560	570	-	-	-	-	-	-	-
Stage 2	582	557	-	605	590	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		21.4		0		1.2					
HCM LOS	A		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1282	-	-	-	470	1085	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.544	0.043	-	-				
HCM Control Delay (s)	0	-	-	0	21.4	8.5	-	-				
HCM Lane LOS	A	-	-	A	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	3.2	0.1	-	-				

HCM 6th Signalized Intersection Summary
7: SR-86 (4th St) & McCabe Rd

Year 2045 AM
03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	210	60	10	310	80	30	210	10	50	190	120
Future Volume (veh/h)	70	210	60	10	310	80	30	210	10	50	190	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	241	69	11	356	92	34	241	11	57	218	138
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	247	71	10	339	88	71	432	20	90	266	168
Arrive On Green	0.23	0.23	0.23	0.25	0.25	0.25	0.04	0.24	0.24	0.05	0.25	0.25
Sat Flow, veh/h	364	1096	314	43	1380	357	1781	1770	81	1781	1045	662
Grp Volume(v), veh/h	390	0	0	459	0	0	34	0	252	57	0	356
Grp Sat Flow(s),veh/h/ln	1773	0	0	1780	0	0	1781	0	1850	1781	0	1707
Q Serve(g_s), s	25.7	0.0	0.0	28.9	0.0	0.0	2.2	0.0	14.0	3.7	0.0	23.1
Cycle Q Clear(g_c), s	25.7	0.0	0.0	28.9	0.0	0.0	2.2	0.0	14.0	3.7	0.0	23.1
Prop In Lane	0.21		0.18	0.02		0.20	1.00		0.04	1.00		0.39
Lane Grp Cap(c), veh/h	400	0	0	437	0	0	71	0	451	90	0	434
V/C Ratio(X)	0.98	0.00	0.00	1.05	0.00	0.00	0.48	0.00	0.56	0.64	0.00	0.82
Avail Cap(c_a), veh/h	400	0	0	437	0	0	108	0	451	139	0	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.2	0.0	0.0	44.3	0.0	0.0	55.3	0.0	38.9	54.8	0.0	41.3
Incr Delay (d2), s/veh	38.6	0.0	0.0	56.6	0.0	0.0	1.8	0.0	4.9	2.8	0.0	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	0.0	0.0	19.5	0.0	0.0	1.0	0.0	6.9	1.7	0.0	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.8	0.0	0.0	100.9	0.0	0.0	57.1	0.0	43.8	57.6	0.0	57.1
LnGrp LOS	F	A	A	F	A	A	E	A	D	E	A	E
Approach Vol, veh/h		390			459			286			413	
Approach Delay, s/veh		83.8			100.9			45.4			57.2	
Approach LOS		F			F			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	36.6		34.0	9.4	37.8		36.4				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 9.2	* 28		26.5	* 7.1	29.9		28.9				
Max Q Clear Time (g_c+I1), s	5.7	16.0		27.7	4.2	25.1		30.9				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	1.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				74.7								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

1: SR-86 (4th St) & I-8 WB Ramps

Year 2045 PM

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↶	↶	↶			↶	↶
Traffic Volume (veh/h)	0	0	0	210	10	330	220	750	0	0	1220	110
Future Volume (veh/h)	0	0	0	210	10	330	220	750	0	0	1220	110
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				231	11	363	242	824	0	0	1341	121
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				522	25	472	188	1925	0	0	1210	109
Arrive On Green				0.31	0.31	0.31	0.11	0.54	0.00	0.00	0.37	0.37
Sat Flow, veh/h				1704	81	1540	1781	3647	0	0	3377	295
Grp Volume(v), veh/h				242	0	363	242	824	0	0	723	739
Grp Sat Flow(s),veh/h/ln				1785	0	1540	1781	1777	0	0	1777	1802
Q Serve(g_s), s				7.5	0.0	14.8	7.3	9.6	0.0	0.0	25.5	25.5
Cycle Q Clear(g_c), s				7.5	0.0	14.8	7.3	9.6	0.0	0.0	25.5	25.5
Prop In Lane				0.95		1.00	1.00		0.00	0.00		0.16
Lane Grp Cap(c), veh/h				547	0	472	188	1925	0	0	655	664
V/C Ratio(X)				0.44	0.00	0.77	1.29	0.43	0.00	0.00	1.10	1.11
Avail Cap(c_a), veh/h				954	0	823	188	1925	0	0	655	664
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.3	0.0	21.8	31.0	9.5	0.0	0.0	21.9	21.9
Incr Delay (d2), s/veh				0.6	0.0	2.7	163.6	0.7	0.0	0.0	67.0	70.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	5.3	11.4	3.1	0.0	0.0	21.3	22.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.8	0.0	24.5	194.5	10.2	0.0	0.0	88.9	92.5
LnGrp LOS				B	A	C	F	B	A	A	F	F
Approach Vol, veh/h					605			1066			1462	
Approach Delay, s/veh					22.6			52.0			90.7	
Approach LOS					C			D			F	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			12.0	30.9		26.3				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 7.3	25.5		37.0				
Max Q Clear Time (g_c+I1), s		11.6			9.3	27.5		16.8				
Green Ext Time (p_c), s		12.9			0.0	0.0		2.8				
Intersection Summary												
HCM 6th Ctrl Delay				64.4								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

2: SR-86 (4th St) & I-8 EB Ramps

Year 2045 PM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	250	0	0	0	0	800	340	390	870	0
Future Volume (veh/h)	60	0	250	0	0	0	0	800	340	390	870	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	69	0	287				0	920	391	448	1000	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	52	0	216				0	1066	452	490	2322	0
Arrive On Green	0.17	0.00	0.17				0.00	0.30	0.30	0.28	0.65	0.00
Sat Flow, veh/h	303	0	1261				0	3647	1508	1781	3647	0
Grp Volume(v), veh/h	356	0	0				0	920	391	448	1000	0
Grp Sat Flow(s),veh/h/ln	1564	0	0				0	1777	1508	1781	1777	0
Q Serve(g_s), s	10.3	0.0	0.0				0.0	14.7	14.7	14.6	8.1	0.0
Cycle Q Clear(g_c), s	10.3	0.0	0.0				0.0	14.7	14.7	14.6	8.1	0.0
Prop In Lane	0.19		0.81				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	268	0	0				0	1066	452	490	2322	0
V/C Ratio(X)	1.33	0.00	0.00				0.00	0.86	0.86	0.91	0.43	0.00
Avail Cap(c_a), veh/h	268	0	0				0	1066	452	490	2322	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	0.0	0.0				0.0	19.8	19.8	21.1	5.0	0.0
Incr Delay (d2), s/veh	170.3	0.0	0.0				0.0	9.2	19.2	21.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	0.0	0.0				0.0	6.5	6.8	8.1	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	195.2	0.0	0.0				0.0	29.1	39.1	42.4	5.6	0.0
LnGrp LOS	F	A	A				A	C	D	D	A	A
Approach Vol, veh/h	356							1311		1448		
Approach Delay, s/veh	195.2							32.1		17.0		
Approach LOS	F							C		B		
Timer - Assigned Phs	1	2	4		6							
Phs Duration (G+Y+Rc), s	21.2	23.4	15.4		44.6							
Change Period (Y+Rc), s	4.7	5.4	5.1		5.4							
Max Green Setting (Gmax), s	18.0	18.0	10.3		39.2							
Max Q Clear Time (g_c+10), s	16.7	16.7	12.3		10.1							
Green Ext Time (p_c), s	0.0	1.2	0.0		16.9							

Intersection Summary

HCM 6th Ctrl Delay 43.7
HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Year 2045 PM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	330	120	210	110	100	270	190	470	80	280	590	270
Future Volume (veh/h)	330	120	210	110	100	270	190	470	80	280	590	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	375	136	239	125	114	307	216	534	91	318	670	307
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	153	275	357	375	533	201	666	113	256	600	275
Arrive On Green	0.24	0.24	0.24	0.20	0.20	0.20	0.11	0.22	0.22	0.14	0.26	0.26
Sat Flow, veh/h	1635	634	1139	1781	1870	1526	1781	3021	512	1781	2340	1072
Grp Volume(v), veh/h	410	0	340	125	114	307	216	313	312	318	509	468
Grp Sat Flow(s),veh/h/ln	1789	0	1619	1781	1870	1526	1781	1777	1756	1781	1777	1636
Q Serve(g_s), s	30.8	0.0	27.5	8.2	7.1	22.6	15.4	22.8	23.0	19.6	35.0	35.0
Cycle Q Clear(g_c), s	30.8	0.0	27.5	8.2	7.1	22.6	15.4	22.8	23.0	19.6	35.0	35.0
Prop In Lane	0.91		0.70	1.00		1.00	1.00		0.29	1.00		0.66
Lane Grp Cap(c), veh/h	432	0	391	357	375	533	201	392	387	256	456	419
V/C Ratio(X)	0.95	0.00	0.87	0.35	0.30	0.58	1.07	0.80	0.81	1.24	1.12	1.12
Avail Cap(c_a), veh/h	433	0	392	470	493	630	201	392	387	256	456	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	49.7	46.9	46.5	36.8	60.5	50.3	50.4	58.4	50.7	50.7
Incr Delay (d2), s/veh	31.1	0.0	18.9	0.2	0.2	0.4	84.7	15.6	16.2	137.9	77.9	79.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	0.0	13.0	3.6	3.3	8.3	11.6	11.7	11.7	18.5	25.1	23.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.0	0.0	68.6	47.2	46.6	37.1	145.2	65.9	66.6	196.3	128.6	130.2
LnGrp LOS	F	A	E	D	D	D	F	E	E	F	F	F
Approach Vol, veh/h	750			546			841			1295		
Approach Delay, s/veh	75.9			41.4			86.5			145.8		
Approach LOS	E			D			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.4		40.3	20.1	42.3		33.7				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 15	* 35		36.0				
Max Q Clear Time (g_c+21), s	21.6	25.0		32.8	17.4	37.0		24.6				
Green Ext Time (p_c), s	0.0	2.8		0.1	0.0	0.0		0.9				

Intersection Summary

HCM 6th Ctrl Delay	99.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Int Delay, s/veh 7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	80	70	290	560	120
Future Vol, veh/h	90	80	70	290	560	120
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	92	80	333	644	138

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1060	733	792
Stage 1	723	-	-
Stage 2	337	-	-
Critical Hdwy	6.63	6.23	4.13
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.83	-	-
Follow-up Hdwy	3.519	3.319	2.219
Pot Cap-1 Maneuver	233	420	827
Stage 1	479	-	-
Stage 2	696	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	206	412	819
Mov Cap-2 Maneuver	206	-	-
Stage 1	428	-	-
Stage 2	689	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.2	1.9	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	819	-	269	-	-
HCM Lane V/C Ratio	0.098	-	0.726	-	-
HCM Control Delay (s)	9.9	-	47.2	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	5.1	-	-

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕↗		↗	↘	
Traffic Vol, veh/h	0	0	0	0	0	50	0	310	10	80	550	0
Future Vol, veh/h	0	0	0	0	0	50	0	310	10	80	550	0
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	54	0	337	11	87	598	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	598	-	-	194	-	0	0	358	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	501	0	0	815	0	-	-	1199	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	501	-	-	800	-	-	-	1188	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		9.8		0		1.1					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	-	-	-	800	1188	-	-					
HCM Lane V/C Ratio	-	-	-	0.068	0.073	-	-					
HCM Control Delay (s)	-	-	0	9.8	8.3	-	-					
HCM Lane LOS	-	-	A	A	A	-	-					
HCM 95th %tile O(veh)	-	-	-	0.2	0.2	-	-					

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	20	0	80	0	240	30	110	440	0
Future Vol, veh/h	0	0	0	20	0	80	0	240	30	110	440	0
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	92	87	92	87	87	87	87	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	23	0	92	0	276	34	126	506	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	906	1078	516	1071	1061	175	506	0	0	320	0	0
Stage 1	758	758	-	303	303	-	-	-	-	-	-	-
Stage 2	148	320	-	768	758	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	244	218	558	186	223	839	1057	-	-	1238	-	-
Stage 1	398	414	-	682	663	-	-	-	-	-	-	-
Stage 2	840	652	-	393	414	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	198	194	553	168	198	823	1057	-	-	1226	-	-
Mov Cap-2 Maneuver	198	194	-	168	198	-	-	-	-	-	-	-
Stage 1	398	371	-	675	656	-	-	-	-	-	-	-
Stage 2	739	645	-	349	371	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	15.4	0	1.7
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1057	-	-	-	462	1226	-
HCM Lane V/C Ratio	-	-	-	-	0.249	0.103	-
HCM Control Delay (s)	0	-	-	0	15.4	8.3	-
HCM Lane LOS	A	-	-	A	C	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1	0.3	-

HCM 6th Signalized Intersection Summary
7: SR-86 (4th St) & McCabe Rd

Year 2045 PM
03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	220	70	10	190	50	20	160	10	110	290	60
Future Volume (veh/h)	50	220	70	10	190	50	20	160	10	110	290	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	286	91	13	247	65	26	208	13	143	377	78
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	293	93	11	205	54	64	387	24	173	423	88
Arrive On Green	0.26	0.26	0.26	0.15	0.15	0.15	0.04	0.22	0.22	0.10	0.28	0.28
Sat Flow, veh/h	260	1144	364	71	1344	354	1781	1735	108	1781	1488	308
Grp Volume(v), veh/h	442	0	0	325	0	0	26	0	221	143	0	455
Grp Sat Flow(s),veh/h/ln	1768	0	0	1769	0	0	1781	0	1843	1781	0	1796
Q Serve(g_s), s	25.2	0.0	0.0	15.5	0.0	0.0	1.5	0.0	10.8	8.0	0.0	24.7
Cycle Q Clear(g_c), s	25.2	0.0	0.0	15.5	0.0	0.0	1.5	0.0	10.8	8.0	0.0	24.7
Prop In Lane	0.15		0.21	0.04		0.20	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	453	0	0	269	0	0	64	0	411	173	0	511
V/C Ratio(X)	0.98	0.00	0.00	1.21	0.00	0.00	0.41	0.00	0.54	0.83	0.00	0.89
Avail Cap(c_a), veh/h	453	0	0	269	0	0	124	0	411	236	0	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	0.0	43.1	0.0	0.0	48.0	0.0	34.9	45.1	0.0	34.9
Incr Delay (d2), s/veh	35.7	0.0	0.0	122.6	0.0	0.0	1.6	0.0	5.0	11.7	0.0	20.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	0.0	0.0	15.9	0.0	0.0	0.7	0.0	5.2	4.0	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.3	0.0	0.0	165.7	0.0	0.0	49.6	0.0	39.9	56.8	0.0	55.2
LnGrp LOS	E	A	A	F	A	A	D	A	D	E	A	E
Approach Vol, veh/h	442		325				247			598		
Approach Delay, s/veh	73.3		165.7				40.9			55.6		
Approach LOS	E		F				D			E		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	14.6	30.6	33.6		8.3	36.9	23.0					
Change Period (Y+Rc), s	* 4.7	* 7.9	7.5		* 4.7	7.9	7.5					
Max Green Setting (Gmax), s	* 14	* 23	26.1		* 7.1	28.7	15.5					
Max Q Clear Time (g_c+I1), s	10.0	12.8	27.2		3.5	26.7	17.5					
Green Ext Time (p_c), s	0.1	2.0	0.0		0.0	1.1	0.0					
Intersection Summary												
HCM 6th Ctrl Delay			80.4									
HCM 6th LOS			F									
Notes												

ATTACHMENT 6

YEAR 2045 + PROJECT INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary

Year 2045 + P AM

1: SR-86 (4th St) & I-8 WB Ramps

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	245	10	360	227	575	0	0	868	120
Future Volume (veh/h)	0	0	0	245	10	360	227	575	0	0	868	120
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.95
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				322	13	461	299	757	0	0	1142	158
Peak Hour Factor				0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				618	25	556	197	1776	0	0	1017	140
Arrive On Green				0.36	0.36	0.36	0.11	0.50	0.00	0.00	0.33	0.33
Sat Flow, veh/h				1715	69	1543	1781	3647	0	0	3209	430
Grp Volume(v), veh/h				335	0	461	299	757	0	0	650	650
Grp Sat Flow(s),veh/h/ln				1785	0	1543	1781	1777	0	0	1777	1768
Q Serve(g_s), s				11.1	0.0	20.4	8.3	10.2	0.0	0.0	24.5	24.5
Cycle Q Clear(g_c), s				11.1	0.0	20.4	8.3	10.2	0.0	0.0	24.5	24.5
Prop In Lane				0.96		1.00	1.00		0.00	0.00		0.24
Lane Grp Cap(c), veh/h				643	0	556	197	1776	0	0	580	577
V/C Ratio(X)				0.52	0.00	0.83	1.52	0.43	0.00	0.00	1.12	1.13
Avail Cap(c_a), veh/h				880	0	761	197	1776	0	0	580	577
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.9	0.0	21.9	33.4	11.9	0.0	0.0	25.3	25.3
Incr Delay (d2), s/veh				0.7	0.0	5.6	257.2	0.8	0.0	0.0	74.8	77.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.4	0.0	7.7	17.4	3.6	0.0	0.0	21.3	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.6	0.0	27.5	290.6	12.7	0.0	0.0	100.0	102.7
LnGrp LOS				B	A	C	F	B	A	A	F	F
Approach Vol, veh/h					796			1056			1300	
Approach Delay, s/veh					24.1			91.4			101.3	
Approach LOS					C			F			F	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			13.0	29.9		32.1				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 8.3	24.5		37.0				
Max Q Clear Time (g_c+I1), s		12.2			10.3	26.5		22.4				
Green Ext Time (p_c), s		11.7			0.0	0.0		3.5				
Intersection Summary												
HCM 6th Ctrl Delay				78.5								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 2: SR-86 (4th St) & I-8 EB Ramps

Year 2045 + P AM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↕	↕	↕	
Traffic Volume (veh/h)	50	0	273	0	0	0	0	732	234	280	833	0
Future Volume (veh/h)	50	0	273	0	0	0	0	732	234	280	833	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	60	0	329				0	882	282	337	1004	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	44	0	239				0	1195	509	366	2229	0
Arrive On Green	0.18	0.00	0.18				0.00	0.34	0.34	0.21	0.63	0.00
Sat Flow, veh/h	240	0	1316				0	3647	1513	1781	3647	0
Grp Volume(v), veh/h	389	0	0				0	882	282	337	1004	0
Grp Sat Flow(s), veh/h/ln	1557	0	0				0	1777	1513	1781	1777	0
Q Serve(g_s), s	10.0	0.0	0.0				0.0	12.0	8.4	10.2	8.1	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0				0.0	12.0	8.4	10.2	8.1	0.0
Prop In Lane	0.15		0.85				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	283	0	0				0	1195	509	366	2229	0
V/C Ratio(X)	1.37	0.00	0.00				0.00	0.74	0.55	0.92	0.45	0.00
Avail Cap(c_a), veh/h	283	0	0				0	1195	509	366	2229	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	0.0				0.0	16.1	14.9	21.4	5.3	0.0
Incr Delay (d2), s/veh	189.3	0.0	0.0				0.0	4.1	4.3	27.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.2	0.0	0.0				0.0	4.6	3.0	6.5	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	211.8	0.0	0.0				0.0	20.2	19.2	49.0	6.0	0.0
LnGrp LOS	F	A	A				A	C	B	D	A	A
Approach Vol, veh/h	389						1164			1341		
Approach Delay, s/veh	211.8						20.0			16.8		
Approach LOS	F						B			B		
Timer - Assigned Phs	1	2		4			6					
Phs Duration (G+Y+Rc), s	16.0	23.9		15.1			39.9					
Change Period (Y+Rc), s	4.7	5.4		5.1			5.4					
Max Green Setting (Gmax), s	11.5	18.5		10.0			34.5					
Max Q Clear Time (g_c+1/2), s	12.2	14.0		12.0			10.1					
Green Ext Time (p_c), s	0.0	3.7		0.0			15.1					

Intersection Summary

HCM 6th Ctrl Delay	44.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Year 2045 + P AM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	280	90	130	51	60	140	80	456	64	330	406	260
Future Volume (veh/h)	280	90	130	51	60	140	80	456	64	330	406	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	329	106	153	60	71	165	94	536	75	388	478	306
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	406	154	223	245	257	467	118	778	108	291	727	463
Arrive On Green	0.23	0.23	0.23	0.14	0.14	0.14	0.07	0.25	0.25	0.16	0.35	0.35
Sat Flow, veh/h	1781	677	977	1781	1870	1507	1781	3117	434	1781	2058	1311
Grp Volume(v), veh/h	329	0	259	60	71	165	94	305	306	388	412	372
Grp Sat Flow(s),veh/h/ln	1781	0	1653	1781	1870	1507	1781	1777	1775	1781	1777	1592
Q Serve(g_s), s	20.9	0.0	17.2	3.6	4.1	10.3	6.2	18.6	18.8	19.6	23.4	23.6
Cycle Q Clear(g_c), s	20.9	0.0	17.2	3.6	4.1	10.3	6.2	18.6	18.8	19.6	23.4	23.6
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.24	1.00		0.82
Lane Grp Cap(c), veh/h	406	0	377	245	257	467	118	444	443	291	627	562
V/C Ratio(X)	0.81	0.00	0.69	0.25	0.28	0.35	0.80	0.69	0.69	1.33	0.66	0.66
Avail Cap(c_a), veh/h	491	0	456	535	562	712	193	444	443	291	627	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	42.3	46.1	46.3	32.8	55.2	40.7	40.8	50.1	32.6	32.7
Incr Delay (d2), s/veh	9.3	0.0	4.1	0.2	0.2	0.2	4.7	8.4	8.6	170.7	5.3	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	7.3	1.6	1.9	3.7	2.9	9.0	9.1	22.4	10.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	0.0	46.4	46.3	46.5	33.0	59.8	49.1	49.3	220.7	38.0	38.7
LnGrp LOS	D	A	D	D	D	C	E	D	D	F	D	D
Approach Vol, veh/h	588			296			705			1172		
Approach Delay, s/veh	50.1			38.9			50.6			98.7		
Approach LOS	D			D			D			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.2		34.7	12.6	49.6		22.9				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 13	* 37		36.0				
Max Q Clear Time (g_c+Y), s	21.6	20.8		22.9	8.2	25.6		12.3				
Green Ext Time (p_c), s	0.0	4.6		3.3	0.0	7.1		0.6				

Intersection Summary

HCM 6th Ctrl Delay 69.7

HCM 6th LOS E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	40	120	520	280	30
Future Vol, veh/h	100	40	120	520	280	30
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	47	140	605	326	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	947	364	371	0	-	0
Stage 1	354	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	274	680	1186	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	236	667	1175	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	32.4	1.6		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1175	-	289	-	-	
HCM Lane V/C Ratio	0.119	-	0.563	-	-	
HCM Control Delay (s)	8.5	-	32.4	-	-	
HCM Lane LOS	A	-	D	-	-	
HCM 95th %tile Q(veh)	0.4	-	3.2	-	-	

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕		↗	↗	
Traffic Vol, veh/h	0	0	5	0	0	50	0	350	10	90	500	10
Future Vol, veh/h	0	0	5	0	0	50	0	350	10	90	500	10
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	92	91	92	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	55	0	385	11	99	549	11
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	-	-	555	-	-	218	-	0	0	406	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	530	0	0	787	0	-	-	1151	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	530	-	-	772	-	-	-	1140	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB		SB		SB	
HCM Control Delay, s	11.9		10		0		1.3		1.3		1.3	
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT	SBR			
Capacity (veh/h)	-		-		530 772 1140		-	-				
HCM Lane V/C Ratio	-		-		0.01 0.071 0.087		-	-				
HCM Control Delay (s)	-		-		11.9 10 8.5		-	-				
HCM Lane LOS	-		-		B B A		-	-				
HCM 95th %tile Q(veh)	-		-		0 0.2 0.3		-	-				

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↕		↙	↘	
Traffic Vol, veh/h	60	5	5	70	5	150	4	350	40	40	245	10
Future Vol, veh/h	60	5	5	70	5	150	4	350	40	40	245	10
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	92	86	92	86	86	86	86	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	5	5	81	5	174	4	407	47	47	285	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	609	857	301	849	839	247	296	0	0	464	0	0
Stage 1	385	385	-	449	449	-	-	-	-	-	-	-
Stage 2	224	472	-	400	390	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	393	294	738	267	301	754	1264	-	-	1095	-	-
Stage 1	637	610	-	560	571	-	-	-	-	-	-	-
Stage 2	759	558	-	625	607	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	283	278	731	247	284	740	1264	-	-	1085	-	-
Mov Cap-2 Maneuver	283	278	-	247	284	-	-	-	-	-	-	-
Stage 1	635	584	-	553	564	-	-	-	-	-	-	-
Stage 2	567	551	-	582	581	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	21.3		23.8		0.1		1.2					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1264	-	-	296	447	1085	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.257	0.584	0.043	-	-				
HCM Control Delay (s)	7.9	-	-	21.3	23.8	8.5	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile O(veh)	0	-	-	1	3.6	0.1	-	-				

HCM 6th Signalized Intersection Summary
7: SR-86 (4th St) & McCabe Rd

Year 2045 + P AM
03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	210	60	10	310	82	30	212	10	53	197	120
Future Volume (veh/h)	70	210	60	10	310	82	30	212	10	53	197	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	241	69	11	356	94	34	244	11	61	226	138
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	247	71	10	337	89	71	430	19	92	270	165
Arrive On Green	0.23	0.23	0.23	0.25	0.25	0.25	0.04	0.24	0.24	0.05	0.25	0.25
Sat Flow, veh/h	364	1096	314	42	1373	363	1781	1771	80	1781	1062	648
Grp Volume(v), veh/h	390	0	0	461	0	0	34	0	255	61	0	364
Grp Sat Flow(s),veh/h/ln	1773	0	0	1778	0	0	1781	0	1850	1781	0	1710
Q Serve(g_s), s	25.7	0.0	0.0	28.9	0.0	0.0	2.2	0.0	14.2	4.0	0.0	23.7
Cycle Q Clear(g_c), s	25.7	0.0	0.0	28.9	0.0	0.0	2.2	0.0	14.2	4.0	0.0	23.7
Prop In Lane	0.21		0.18	0.02		0.20	1.00		0.04	1.00		0.38
Lane Grp Cap(c), veh/h	400	0	0	437	0	0	71	0	449	92	0	435
V/C Ratio(X)	0.98	0.00	0.00	1.05	0.00	0.00	0.48	0.00	0.57	0.67	0.00	0.84
Avail Cap(c_a), veh/h	400	0	0	437	0	0	108	0	449	139	0	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.2	0.0	0.0	44.3	0.0	0.0	55.3	0.0	39.1	54.8	0.0	41.5
Incr Delay (d2), s/veh	38.6	0.0	0.0	58.3	0.0	0.0	1.8	0.0	5.1	3.1	0.0	17.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	0.0	0.0	19.7	0.0	0.0	1.0	0.0	7.0	1.8	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.8	0.0	0.0	102.6	0.0	0.0	57.1	0.0	44.2	57.9	0.0	58.8
LnGrp LOS	F	A	A	F	A	A	E	A	D	E	A	E
Approach Vol, veh/h		390			461			289			425	
Approach Delay, s/veh		83.8			102.6			45.7			58.6	
Approach LOS		F			F			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	36.4		34.0	9.4	37.8		36.4				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 9.2	* 28		26.5	* 7.1	29.9		28.9				
Max Q Clear Time (g_c+I1), s	6.0	16.2		27.7	4.2	25.7		30.9				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	1.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				75.5								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

Year 2045 + P PM

1: SR-86 (4th St) & I-8 WB Ramps

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↶	↶	↶	↶			↶	↶
Traffic Volume (veh/h)	0	0	0	225	10	330	225	766	0	0	1248	110
Future Volume (veh/h)	0	0	0	225	10	330	225	766	0	0	1248	110
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				247	11	343	247	842	0	0	1371	121
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				508	23	457	190	1951	0	0	1229	108
Arrive On Green				0.30	0.30	0.30	0.11	0.55	0.00	0.00	0.37	0.37
Sat Flow, veh/h				1709	76	1539	1781	3647	0	0	3385	289
Grp Volume(v), veh/h				258	0	343	247	842	0	0	737	755
Grp Sat Flow(s),veh/h/ln				1785	0	1539	1781	1777	0	0	1777	1803
Q Serve(g_s), s				8.1	0.0	13.8	7.3	9.6	0.0	0.0	25.5	25.5
Cycle Q Clear(g_c), s				8.1	0.0	13.8	7.3	9.6	0.0	0.0	25.5	25.5
Prop In Lane				0.96		1.00	1.00		0.00	0.00		0.16
Lane Grp Cap(c), veh/h				531	0	457	190	1951	0	0	663	673
V/C Ratio(X)				0.49	0.00	0.75	1.30	0.43	0.00	0.00	1.11	1.12
Avail Cap(c_a), veh/h				967	0	834	190	1951	0	0	663	673
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.7	0.0	21.7	30.5	9.1	0.0	0.0	21.4	21.4
Incr Delay (d2), s/veh				0.7	0.0	2.5	166.9	0.7	0.0	0.0	69.3	73.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	4.9	11.7	3.1	0.0	0.0	21.8	22.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.4	0.0	24.2	197.4	9.8	0.0	0.0	90.7	94.7
LnGrp LOS				C	A	C	F	A	A	A	F	F
Approach Vol, veh/h					601			1089			1492	
Approach Delay, s/veh					22.6			52.3			92.7	
Approach LOS					C			D			F	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.9			12.0	30.9		25.4				
Change Period (Y+Rc), s		5.4			* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		37.5			* 7.3	25.5		37.0				
Max Q Clear Time (g_c+I1), s		11.6			9.3	27.5		15.8				
Green Ext Time (p_c), s		13.2			0.0	0.0		2.8				
Intersection Summary												
HCM 6th Ctrl Delay				65.7								
HCM 6th LOS				E								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

2: SR-86 (4th St) & I-8 EB Ramps

Year 2045 + P PM
03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	258	0	0	0	0	821	350	390	913	0
Future Volume (veh/h)	60	0	258	0	0	0	0	821	350	390	913	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	69	0	297				0	944	402	448	1049	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	51	0	218				0	1066	452	490	2322	0
Arrive On Green	0.17	0.00	0.17				0.00	0.30	0.30	0.28	0.65	0.00
Sat Flow, veh/h	295	0	1268				0	3647	1508	1781	3647	0
Grp Volume(v), veh/h	366	0	0				0	944	402	448	1049	0
Grp Sat Flow(s),veh/h/ln	1562	0	0				0	1777	1508	1781	1777	0
Q Serve(g_s), s	10.3	0.0	0.0				0.0	15.2	15.3	14.6	8.7	0.0
Cycle Q Clear(g_c), s	10.3	0.0	0.0				0.0	15.2	15.3	14.6	8.7	0.0
Prop In Lane	0.19		0.81				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	268	0	0				0	1066	452	490	2322	0
V/C Ratio(X)	1.36	0.00	0.00				0.00	0.89	0.89	0.91	0.45	0.00
Avail Cap(c_a), veh/h	268	0	0				0	1066	452	490	2322	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	0.0	0.0				0.0	20.0	20.0	21.1	5.1	0.0
Incr Delay (d2), s/veh	186.2	0.0	0.0				0.0	10.8	22.0	21.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	0.0	0.0				0.0	6.9	7.3	8.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	211.1	0.0	0.0				0.0	30.8	42.1	42.4	5.8	0.0
LnGrp LOS	F	A	A				A	C	D	D	A	A
Approach Vol, veh/h	366						1346			1497		
Approach Delay, s/veh	211.1						34.2			16.7		
Approach LOS	F						C			B		
Timer - Assigned Phs	1	2	4		6							
Phs Duration (G+Y+Rc), s	21.2	23.4	15.4		44.6							
Change Period (Y+Rc), s	4.7	5.4	5.1		5.4							
Max Green Setting (Gmax), s	18.0	18.0	10.3		39.2							
Max Q Clear Time (g_c+10), s	17.3	17.3	12.3		10.7							
Green Ext Time (p_c), s	0.0	0.7	0.0		17.5							

Intersection Summary

HCM 6th Ctrl Delay 46.2
HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Wake Ave & SR-86 (4th St)

Year 2045 + P PM

03/07/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↑	↔	↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	330	120	210	114	100	270	190	501	82	280	641	270
Future Volume (veh/h)	330	120	210	114	100	270	190	501	82	280	641	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	375	136	239	130	114	307	216	569	93	318	728	307
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	153	275	357	375	533	201	671	109	256	618	260
Arrive On Green	0.24	0.24	0.24	0.20	0.20	0.20	0.11	0.22	0.22	0.14	0.26	0.26
Sat Flow, veh/h	1635	634	1139	1781	1870	1526	1781	3041	495	1781	2409	1016
Grp Volume(v), veh/h	410	0	340	130	114	307	216	332	330	318	537	498
Grp Sat Flow(s),veh/h/ln	1789	0	1619	1781	1870	1526	1781	1777	1760	1781	1777	1648
Q Serve(g_s), s	30.8	0.0	27.5	8.6	7.1	22.6	15.4	24.4	24.6	19.6	35.0	35.0
Cycle Q Clear(g_c), s	30.8	0.0	27.5	8.6	7.1	22.6	15.4	24.4	24.6	19.6	35.0	35.0
Prop In Lane	0.91		0.70	1.00		1.00	1.00		0.28	1.00		0.62
Lane Grp Cap(c), veh/h	432	0	391	357	375	533	201	392	388	256	456	423
V/C Ratio(X)	0.95	0.00	0.87	0.36	0.30	0.58	1.07	0.85	0.85	1.24	1.18	1.18
Avail Cap(c_a), veh/h	432	0	391	470	493	630	201	392	388	256	456	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	49.7	47.1	46.5	36.8	60.5	51.0	51.0	58.4	50.7	50.7
Incr Delay (d2), s/veh	31.1	0.0	18.9	0.2	0.2	0.4	84.7	19.7	20.4	137.9	100.9	102.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	0.0	13.0	3.8	3.3	8.3	11.6	12.8	12.9	18.5	28.0	26.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.0	0.0	68.6	47.3	46.6	37.1	145.3	70.6	71.4	196.4	151.7	153.2
LnGrp LOS	F	A	E	D	D	D	F	E	E	F	F	F
Approach Vol, veh/h	750			551			878			1353		
Approach Delay, s/veh	76.0			41.5			89.3			162.7		
Approach LOS	E			D			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	37.4		40.3	20.1	42.3		33.7				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 15	* 35		36.0				
Max Q Clear Time (g_c+2.0), s	21.6	26.6		32.8	17.4	37.0		24.6				
Green Ext Time (p_c), s	0.0	2.0		0.1	0.0	0.0		0.9				

Intersection Summary

HCM 6th Ctrl Delay 107.1

HCM 6th LOS F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	9.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	80	70	330	627	120
Future Vol, veh/h	90	80	70	330	627	120
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	230	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	92	80	379	721	138
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1160	810	869	0	-	0
Stage 1	800	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	202	379	773	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	177	372	766	-	-	-
Mov Cap-2 Maneuver	177	-	-	-	-	-
Stage 1	391	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	67.1	1.8		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	766	-	235	-	-	
HCM Lane V/C Ratio	0.105	-	0.831	-	-	
HCM Control Delay (s)	10.3	-	67.1	-	-	
HCM Lane LOS	B	-	F	-	-	
HCM 95th %tile Q(veh)	0.4	-	6.4	-	-	

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕		↗	↗	
Traffic Vol, veh/h	0	0	3	0	0	50	0	350	10	80	583	34
Future Vol, veh/h	0	0	3	0	0	50	0	350	10	80	583	34
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	54	0	380	11	87	634	37
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	653	-	-	216	-	0	0	401	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	466	0	0	789	0	-	-	1156	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	466	-	-	774	-	-	-	1145	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.8		10		0		1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT	SBR			
Capacity (veh/h)	-		-		466 774 1145		-	-				
HCM Lane V/C Ratio	-		-		0.007 0.07 0.076		-	-				
HCM Control Delay (s)	-		-		12.8 10 8.4		-	-				
HCM Lane LOS	-		-		B B A		-	-				
HCM 95th %tile O(veh)	-		-		0 0.2 0.2		-	-				

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	40	5	4	20	5	80	12	240	30	110	443	33
Future Vol, veh/h	40	5	4	20	5	80	12	240	30	110	443	33
Conflicting Peds, #/hr	0	0	0	10	0	10	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	92	87	92	87	87	87	87	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	5	4	23	5	92	13	276	34	126	509	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	956	1125	537	1123	1126	175	545	0	0	320	0	0
Stage 1	779	779	-	329	329	-	-	-	-	-	-	-
Stage 2	177	346	-	794	797	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	225	204	543	171	204	839	1022	-	-	1238	-	-
Stage 1	388	405	-	659	646	-	-	-	-	-	-	-
Stage 2	808	635	-	381	398	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	177	179	538	148	179	823	1022	-	-	1226	-	-
Mov Cap-2 Maneuver	177	179	-	148	179	-	-	-	-	-	-	-
Stage 1	383	363	-	645	631	-	-	-	-	-	-	-
Stage 2	696	620	-	331	357	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	31.7		17.6		0.3		1.6	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1022	-	-	187	405	1226	-
HCM Lane V/C Ratio	0.013	-	-	0.285	0.297	0.103	-
HCM Control Delay (s)	8.6	-	-	31.7	17.6	8.3	-
HCM Lane LOS	A	-	-	D	C	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	1.2	0.3	-

HCM 6th Signalized Intersection Summary
7: SR-86 (4th St) & McCabe Rd

Year 2045 + P PM
03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	220	70	10	190	54	20	168	10	112	295	60
Future Volume (veh/h)	50	220	70	10	190	54	20	168	10	112	295	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	286	91	13	247	70	26	218	13	145	383	78
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	294	94	11	201	57	64	382	23	176	422	86
Arrive On Green	0.26	0.26	0.26	0.15	0.15	0.15	0.04	0.22	0.22	0.10	0.28	0.28
Sat Flow, veh/h	260	1144	364	69	1320	374	1781	1740	104	1781	1493	304
Grp Volume(v), veh/h	442	0	0	330	0	0	26	0	231	145	0	461
Grp Sat Flow(s),veh/h/ln	1768	0	0	1763	0	0	1781	0	1844	1781	0	1797
Q Serve(g_s), s	25.2	0.0	0.0	15.5	0.0	0.0	1.5	0.0	11.3	8.1	0.0	25.1
Cycle Q Clear(g_c), s	25.2	0.0	0.0	15.5	0.0	0.0	1.5	0.0	11.3	8.1	0.0	25.1
Prop In Lane	0.15		0.21	0.04		0.21	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	454	0	0	269	0	0	64	0	405	176	0	508
V/C Ratio(X)	0.97	0.00	0.00	1.23	0.00	0.00	0.41	0.00	0.57	0.82	0.00	0.91
Avail Cap(c_a), veh/h	454	0	0	269	0	0	125	0	405	284	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	0.0	0.0	43.0	0.0	0.0	47.9	0.0	35.3	44.9	0.0	35.1
Incr Delay (d2), s/veh	35.1	0.0	0.0	130.0	0.0	0.0	1.5	0.0	5.7	4.5	0.0	22.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	0.0	0.0	16.4	0.0	0.0	0.7	0.0	5.6	3.7	0.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	0.0	0.0	173.0	0.0	0.0	49.4	0.0	41.1	49.4	0.0	57.7
LnGrp LOS	E	A	A	F	A	A	D	A	D	D	A	E
Approach Vol, veh/h		442			330			257			606	
Approach Delay, s/veh		72.4			173.0			41.9			55.7	
Approach LOS		E			F			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	30.2		33.6	8.3	36.6		23.0				
Change Period (Y+Rc), s	* 4.7	* 7.9		7.5	* 4.7	7.9		7.5				
Max Green Setting (Gmax), s	* 16	* 20		26.1	* 7.1	28.7		15.5				
Max Q Clear Time (g_c+I1), s	10.1	13.3		27.2	3.5	27.1		17.5				
Green Ext Time (p_c), s	0.1	1.5		0.0	0.0	0.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				81.7								
HCM 6th LOS				F								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

ATTACHMENT 7

EXISTING + CUMULATIVE + PROJECT WITH MITIGATION INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary Existing + Cumulative Projects + Project w/ Miti PM

3: Wake Ave & SR-86 (4th St)

03/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	100	195	97	88	222	181	476	69	235	605	266
Future Volume (veh/h)	321	100	195	97	88	222	181	476	69	235	605	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	391	77	154	110	100	184	206	541	10	267	688	234
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	702	107	213	264	277	485	188	937	17	293	846	288
Arrive On Green	0.20	0.20	0.20	0.15	0.15	0.15	0.11	0.26	0.26	0.16	0.33	0.33
Sat Flow, veh/h	3563	542	1083	1781	1870	1512	1781	3567	66	1781	2582	878
Grp Volume(v), veh/h	391	0	231	110	100	184	206	269	282	267	473	449
Grp Sat Flow(s),veh/h/ln	1781	0	1625	1781	1870	1512	1781	1777	1856	1781	1777	1683
Q Serve(g_s), s	11.5	0.0	15.5	6.5	5.6	11.1	12.3	15.3	15.3	17.1	28.4	28.4
Cycle Q Clear(g_c), s	11.5	0.0	15.5	6.5	5.6	11.1	12.3	15.3	15.3	17.1	28.4	28.4
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.04	1.00		0.52
Lane Grp Cap(c), veh/h	702	0	320	264	277	485	188	467	487	293	582	551
V/C Ratio(X)	0.56	0.00	0.72	0.42	0.36	0.38	1.09	0.58	0.58	0.91	0.81	0.81
Avail Cap(c_a), veh/h	1011	0	461	551	579	729	188	467	487	300	582	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	0.0	43.7	45.0	44.6	31.3	52.0	37.3	37.3	47.7	35.9	35.9
Incr Delay (d2), s/veh	1.0	0.0	4.4	0.4	0.3	0.2	92.8	5.1	4.9	28.9	11.8	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	6.5	2.9	2.6	4.0	10.2	7.2	7.5	9.8	13.8	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	48.1	45.4	44.9	31.5	144.9	42.4	42.2	76.7	47.7	48.3
LnGrp LOS	D	A	D	D	D	C	F	D	D	E	D	D
Approach Vol, veh/h		622			394			757			1189	
Approach Delay, s/veh		45.0			38.8			70.2			54.4	
Approach LOS		D			D			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.6	37.8		30.3	17.0	45.4		23.6				
Change Period (Y+Rc), s	5.4	7.3		7.4	* 4.7	* 7.3		6.4				
Max Green Setting (Gmax), s	19.6	29.9		33.0	* 12	* 38		36.0				
Max Q Clear Time (g_c+I1), s	19.1	17.3		17.5	14.3	30.4		13.1				
Green Ext Time (p_c), s	0.0	5.2		3.6	0.0	5.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay 54.4

HCM 6th LOS D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

PLANNING COMMISSION RESOLUTION NO. 24-__
FOR
WILLOW BEND TENTATIVE SUBDIVISION MAP AMMENDMENTS

WHEREAS, The City Council of the City of El Centro conducted a public hearing and approved a proposed request for the Willow Bend Tentative Subdivision, (hereinafter referred to as “the Project”, which proposed the subdivision of 38+ acres of land in order to create one hundred thirty-four (134) single family residential lots on property generally located west of South 4th Street (Highway 86) and about 630 feet south of Horne Road, further described as APN 054-370-011 on the 7th day of February, 2007 via Resolution No. 07-17; and

WHEREAS, The Planning Commission of the City of El Centro previously recommended approval of the project to the City Council subject to certain conditions specified via Planning Commission Resolution No. 06-39; and

WHEREAS, the Project, requires annexation which was never previously completed and has since changed ownership who requested amendments to the original conditions, specified here under Exhibit A, due to a reduction in units from one hundred thirty-four (134) single family residential lots to one hundred and twenty (120) single family residential lots; and

WHEREAS, a public hearing notice was sent to property owners within 500-feet of the subject property and was legally and duly noticed on November 29, 2024 in the *Imperial Valley Press*, a newspaper of general circulation; and

WHEREAS, the proposed map is consistent with the City’s General Plan; and

WHEREAS, the design or improvement of the proposed subdivision is consistent with the General Plan; and

WHEREAS, the site is physically suitable for the type of development; and

WHEREAS, the site if physically suitable for the proposed density of development; and

WHEREAS, the design of the subdivision of the proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat; and

WHEREAS, the design of the subdivision or type of improvements is not likely to cause serious public health problems; and

WHEREAS, the design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision; and

WHEREAS, Addendum to the 2007 Environmental Impact Report was prepared and considered for the proposal pursuant to California Environmental Quality Act (CEQA) and the CEQA Guidelines of 1970, as amended; and

NOW, THEREFORE, be it resolved that the Planning Commission recommends approval of the amendments to the original conditions of the Willow Bend Subdivision for a 38+-acre parcel of land located at the 300 linear feet west 4th Street (Highway 86) and about 630 feet south of Horne Road, further described as APN 054-370-011.

PASSED AND ADOPTED on December 05, 2024 by the following vote:

ROLL CALL: Ayes:
 Noes:
 Absent:
 Abstaining:

CITY OF EL CENTRO
PLANNING COMMISSION

By _____
Jorge Perez, Chairperson

ATTEST:

APPROVED AS TO FORM:

By _____
Angel Hernandez, AICP
Secretary-Director

By _____
Elizabeth Martyn Evans
City Attorney

EXHIBIT A

1. The project shall include the development of a maximum of 120 single-family residential lots with an average minimum lot size of 6,000 square feet.
2. Building permits shall not be issued for any construction related to the project until verification from the elementary and high school districts is received, certifying that the State mandated school impact mitigation fees have been paid or addressed as otherwise provided or authorized by law.
3. Removed
4. Removed
5. Removed
6. Removed
7. Removed
8. Removed
9. Removed

10. Prior to the recording of the first final map, the applicant shall complete or provide security for the widening of Highway 86 (4th Street) to a four-lane right-of-way width along the project frontage prior to recording of the first final map.

The widening, including any required deceleration and acceleration lanes north and south of the development frontage, shall be completed prior to the issuance of the 60th certificate of occupancy, as determined by the approved Caltrans ICE Study or other Caltrans requirements.

The No. 2 southbound lane shall merge into the No. 1 southbound lane such that the Countryside Drive and Highway 86 intersection transitions to a single southbound lane at the intersection.

11. Removed
12. Prior to the issuance of the 1st certificate of occupancy, and contingent upon approval by Caltrans, the applicant shall complete improvements to the intersection at Highway 86(4th Street) and Countryside Drive to provide full directional access to the development. Final intersection improvements shall be designed and constructed in accordance with the results of the Caltrans Intersection Control Evaluation (ICE) and

shall be completed no later than the issuance of the 60th certificate of occupancy, or as determined by the approved Caltrans ICE Study.

13. Prior to the issuance of a grading permit, the applicant shall provide construction contracts to the Community Development Director that specify that all construction equipment shall be equipped with mufflers and other suitable noise attenuation devices.
14. Prior to the issuance of a grading permit, the applicant shall notify residents within 100 feet of the project's site regarding the construction schedule of the proposed project. All notices shall indicate the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.
15. Prior to issuance of a grading permit, the applicant shall erect a sign, legible at a distance of 50 feet, posted at the construction site. The sign shall indicate the dates and durations of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.
16. The applicant agrees to pay standard Police and Fire Impact fees as part of building permit issuance unless deferred as approved by the City of El Centro.
17. Access to the Date Drain by the public shall be secured with a four-foot high three rail wood fence along the western project site boundary. Fencing shall be installed prior to the completion of Grass Street/6th Street. The applicant shall coordinate with the Imperial Irrigation District for maintenance access requirements.
18. Prior to the issuance of the first certificate of occupancy, a trunk sewer line shall be installed on Carl Street to connect to the existing lift station at Highway 86 (4th Street) and Willow Bend Drive. The trunk sewer line may be constructed within the right-of-way within the development (Carl Street) or adjacent to Highway 86 (4th Street). The Countryside Drive sewer line shall be sized and placed to allow connection from the development at the west. The developer shall be reimbursed for any additional costs incurred due to upsizing by the development to the west."
19. A six (6) foot high solid decorative block/masonry wall shall be provided along the western Highway 86 right-of-way line (eastern boundary of lots 1-14) and along the property lines abutting the park (eastern boundary of lots 81 and 70 and western boundary of lots 80 and 71). A vinyl or composite fencing shall be installed along the southern project boundary (southern boundary of lots 14-31 and western boundary of lot 31).

20. The proposed stormwater retention basin for the project site shall be developed in accordance with the City's design standard for retention basins. This requires a wrought iron fence with pilasters along the perimeter of the basin abutting and visible from the public right of way.
21. Prior to the issuance of the thirteenth certificate of occupancy, the applicant shall establish a Lighting and Landscape Maintenance District (LLMD) for the project. The LLMD shall pay for the maintenance of any lighting, landscaping, park, and recreation facilities, including graffiti abatement, within the public right-of-way, IID easement, retention basin and the park.
22. Prior to the grading permit, the applicant and the City of El Centro shall be required to conduct a preconstruction survey no more than 30 days prior to ground disturbing activity to ensure that owl burrows have not become established within the impact area. Should a burrowing owl move into the area prior to construction then mitigation should consist of passive relocation within a one-way door to avoid direct impacts to any burrowing owl on site. Passive relocation should be conducted during the non-breeding season (Sep.1-Jan.31) to ensure active nests are not lost as results of owl exclusion. The methodology for owl relocation should follow the guidelines set forth in the CDFG Staff Report on Burrowing Owl Mitigation.
23. In the event of the discovery of buried cultural resources, project activities in the vicinity of the resources shall be temporarily halted. A qualified archaeologist shall be consulted to access the significance of the resource and to provide proper management recommendations (e.g., resource avoidance or data recovery excavation).
24. Prior to issuance of building permit and during construction, if human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resource Code Section 5097.98. The County Coroner shall be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner shall notify the NAHC, which determine and notify and Most Likely Descendent (MLD). With the permission of the landowner of his/her authorized representative, the MLD may inspect the site of the discovery. The MLD may recommend scientific removal and nondestructive analysis of human and items associated with Native American burials.
25. The project shall be required to comply with regional rules, including the ICAPCD Rule VIII - Fugitive Dust Rules as well as ICAPCD CEQA Handbook Measures for Construction equipment and Fugitive PM10 control, that assist in reducing short-term air pollutant emissions. Applicable dust suppression techniques are summarized below. Implementation of these dust suppression technique will reduce the fugitive dust generation (and thus the PM 10 component).

26. The applicant shall be responsible for any costs associated with right-of-way acquisition for the purposes of ingress or egress to the project site along Willow Bend Drive and Countryside Drive, if necessary to accommodate required off-site improvements.
27. Prior to the approval of the final subdivision map, grading plan, or permit issuance, a site-specific retention basin design shall be conducted by a registered civil engineer and submitted for review and approval by the City.
28. The construction of Countryside Drive crossing over the IID Date Drain must be completed prior to the issuance of the 80th certificate of occupancy. The threshold for this condition may be extended prior to the issuance of the 100th certificate of occupancy if circumstances beyond the applicants control occur that delay this improvement, as approved by the City Engineer and the Community Development Director.

The road crossing shall consist of two travel lanes, with no parking lanes, and shall include curb, gutter, and sidewalks on each side. City participation on all costs related to the IID drain construction and Countryside Drive improvements will be three hundred twenty-five thousand dollars, through a reimbursement agreement between city and applicant.

29. The applicant shall construct or provide security for a 1.3-acre improved park. The park shall include a multi-use grass field, park lighting, hard surface court, multi-use path, picnic, and playground area. The park is to be completed prior to 50% of the certificates of occupancy are issued. The developer shall provide park renderings and construction plans and cost estimates to the City of El Centro for review prior to filing of the first final map. Park development impact fees shall be waived by the City if park costs are higher than the subdivisions' park development impact fees to the satisfaction of the Community Development Director.
30. The project shall provide the minimum building setbacks in accordance with the R1-Single Family Residential Zone development standards.
31. Prior to the issuance of the first certificate of occupancy of each phase of development, all street dedications and off-site improvements (curb, gutter, sidewalk, and paving) for each phase shall be provided in accordance with the City's Subdivision Ordinance.
32. Utilities shall be provided in accordance with the City's Master Water/Sewer Plan. The applicant may enter into reimbursement agreement with the City for any oversizing of water or sewer lines that may be required.

33. Prior to the issuance of the certificate of occupancy of each residence, the applicant shall provide a minimum of one tree within the parkway strip on Countryside Drive only and one tree within the front yard landscaped area per lot. Said trees shall be selected from the City's list and consist of variety of trees. The remaining lots shall provide two trees in the front yard.
34. Prior to the issuance of each building permit, the applicant shall pay the appropriate development impact and sewer and water capacity fees unless deferred to prior to the issuance of a certificate of occupancy in compliance with Ordinance 21-03 and subject to the approval of the City Manager. Payment must clear prior to the issuance of a certificate of occupancy.
35. Fire hydrants markers and water mains shall be provided in accordance with the Fire Department's specifications. Fire hydrants shall be on a looped water system. Any combustible construction shall not begin until a fire hydrant is in service within 150 feet of construction activity. Applicant shall provide a phasing plan to the Engineering Division showing compliance with this condition prior to the issuance of the certificate of compliance.
36. Grading and drainage plans shall be submitted to the City for review and approval prior to the approval of the final map.
37. The project shall comply with all applicable provisions of the California Code of Regulations Title 24 (ADA).
38. The developer shall work directly with IID to obtain an encroachment permit for project related improvements on IID system facilities.
39. Pursuant to Section 66474.9 of the California Government Code, the applicant shall defend, indemnify, and hold harmless the City of El Centro, its agents, officers and employees to attack, set aside, void, or annul, the approval of the Planning Commission concerning the tentative subdivision map, which action is brought within the time period provided for in California Government Code Section 66499.37. However, the City of El Centro shall promptly notify the applicant/subdivider of any claim, action or proceeding and that the City shall cooperate fully in defense.
40. Except as specified herein, all conditions applicable to a final map phase, as determined by the City Engineer, shall be met before its last certificate of occupancy is issued unless otherwise noted.
41. Applicable offsite improvements shall be completed or secured to the satisfaction of the City Engineer prior to the recordation of each final map.

42. Removed

43. Removed

44. Public landscaping improvements shall be installed along the northern side of Willow Bend Drive, West side of Carl Street, South of lot 13, North side of Lot 1, and West and East side of Grass (6th) Street in the side yards of the noted locations and homes. Public landscaping improvements shall be included in the lighting and landscape maintenance district.

45. A school bus loading area shall be installed in front of the park area, unless otherwise determined by the school districts that the location would be unfeasible for a school bus loading area.



PLANNING COMMISSION

City Hall
1275 W. Main Street
El Centro, CA 92243

SCHEDULED

Item: 3.

Meeting: 12/10/2024 5:30 PM
Department: Community Development
Category: Action Item
Prepared by: Angel Hernandez,
Director of Community Development

DISCUSSION AND ANY NECESSARY ACTION REGARDING ATTENDANCE OF CAL CITIES PLANNING COMMISSIONER'S ACADEMY

The League of California Cities (Cal Cities) will host the Planning Commissioner's Academy from March 5th to March 7th, 2025 in Santa Rosa, California. The Community Development Department was allocated funding for one Planning Commissioner to attend the event. Funding includes travel, hotel, and registration fees for the event. Further information regarding the event may be found on the event webpage at: <https://www.calcities.org/education-and-events/event/2025/03/05/default-calendar/planning-commissioners-academy>.

Staff is requesting that the Planning Commission open the item for discussion and select a member to attend.

ATTACHMENTS:

None



PLANNING COMMISSION

City Hall
1275 W. Main Street
El Centro, CA 92243

SCHEDULED

Item: 4.

Meeting: 12/10/2024 5:30 PM
Department: Community Development
Category: Presentation
Prepared by: Angel Hernandez,
Director of Community Development

COMMUNITY DEVELOPMENT DEPARTMENT MONTHLY REPORT

BACKGROUND & PROJECT DESCRIPTION

Service Area Plan Update – The project consultant is preparing minor changes based on LAFCo staff comments. Scheduled for City Council approval at the December 17, 2024 meeting.

Imperial Avenue Complete Streets Plan – The final Project Advisory Committee Meeting was held on December 4, 2024. The final plan is scheduled for Planning Commission review on January 14, 2025 and City Council adoption on January 21, 2025.

Mobile Food Facility Ordinance - Staff is preparing revisions to the Mobile Food Facility ordinance. A draft ordinance is expected to be submitted to the Planning Commission for review on February 11, 2025 and followed by City Council on March 4, 2025.

Project Report - Attached is the Planning and Zoning Division Project Report.

ATTACHMENTS:

1. Planning Projects - 12-5-2024

Planning and Zoning Projects

Owner	Project name	Status Summary	Project Type	Status	Description	MyGov ID
Sara Silva	LLA/LM 20-03 Ainza Lot Merger 1560 Pepper Dr.	Applicant preparing recordation documents on 06/23/2022. Staff is waiting for applicant to provide an update on project.	LLA/LM	Paused	Lot Merger at 1560 Pepper Drive	20-000001
Andrea Montaño	TPM 20-03 Menvielle 1571 Dogwood Ave	A 6 month extension was granted to the applicant which expired on December 2, 2024.	TPM	Paused	Subdivision of parcel at SWC of Dogwood and Imperial	20-000002
Sara Silva	LLA/LM 21-02 Lot Merger at Western Motel_1266 Adams Ave	Applicant submitted documents with new surveyor 4/9/24. Applicant is working on notarizing the closing packet as of 12/02/24.	LLA/LM	Paused	Merger of lots at 1266 Adams Avenue	21-000001
Andrea Montaño	Chelsea Apartments at NEC 6th Street and Spear Avenue	Staff received TSM Completeness Check comments from the Engineering Division and provided them to the Applicant on October 2, 2023. As of November 26, 2024 there has been no resubmittal.	CEQA TSM COZ GPA	Paused	288 unit apartment complex. Zone Change from CT to R3. Subdivision of 12.9 acre parcel.	22-000001
Andrea Montaño	TSM 22-03, CEQA 22-02, COZ 22-03, GPA 22-02, CUP 22-04 Town Center Single-Family/Industrial Subdivision	The applicant received the comment letter on September 6, 2024. Due to a potential change in this project, the applicant has put this project on hold until January 1, 2025.	CEQA GPA COZ TSM CUP	Paused	Planned Unit Development for Single Family Residential and Light Industrial Development.	22-000002
Sara Silva	LLA/LM 22-01 Saldivar Lot Line Adjustment 875 El Dorado Ave	Applicant was provided with corrections and was notified 8/5/24 for an update. Project has been closed due to inactivity 11/12/24.	LLA/LM	Canceled	Lot line adjustment at 875 El Dorado Ave	22-000005
Andrea Montaño	GPA 22-05, COZ 22-05, Vasquez Apartments at 1275 Pico Avenue	Staff is still pending resubmittal of this item. Staff last met with the applicant on October 11, 2024 to discuss the plans. Resubmittal of this item is expected by the end of the year.	CEQA GPA	Paused	Change of zone from R1 to R3 and environmental review.	22-000006
Angel Hernandez	Countryside South Subdivision Map Amendment	Applicant reviewing proposed revisions to COA. Planner contacted applicant on 6/25/2024 requesting the status. Followed up with applicant representative on 9/4/2024	TSM	Paused	Modifications of COA for Countryside South TSM	22-000007
Andrea Montaño	TSM Willow Bend Subdivision Map Amendment	Staff will present this item to the Planning Commission on December 10, 2024, and City Council on January 24, 2025.	TSM	In Progress	Modifications of COA for Willowbend South TSM will be presented to the Planning Commission on December 10, 2024 for a recommendation for City Council.	22-000008
Angel Hernandez	MND 17-02, GPA 17-02, COZ 17-02,Dogwood and Villa Annexation	Project approved at City Council meeting on 4/4/2023. Pending approval of the SAP.	Annexation CEQA	Paused	Annexation of 320 Acre parcel	23-000006
Sara Silva	TPM 17-02 ICOE McCabe and Sperber	Revision letter sent to applicant on 6/30/2021. Sent applicant email for update on 4/3/24. Staff sent applicant a letter to close the file due to inactivity on 9/17/24.	TPM	Paused	Subdivision of 80 acre property to create two parcels.	23-000007
Sara Silva	LLA/LM 23-01 Lot Line Adjustment Dahm 1425 Cypress Drive	Applicant was provided with corrections on 11/20/23. Applicant last updated on 9/17/24 to staff they are waiting on a document.	LLA/LM	Paused	Adjust lots between two residential parcels	23-000009
Andrea Montaño	LLA/LM 23-02 Lot Merger CR&R Dogwood and Ross	The surveying consultants are reviewing the Lot Merger and Right of Way acquisition recording documents.	LLA/LM	In Progress	Lot Merger required for the Construction and operation of waste transfer station per the Subdivision Map Act	23-000010

Planning and Zoning Projects

Owner	Project name	Status Summary	Project Type	Status	Description	MyGov ID
Andrea Montañó	CR&R Transfer Station Dogwood and Ross	This item was approved by the City Council on October 15, 2024. The notice of completion was filed on October 21, 2024.	CEQA SPR COZ GPA	Done	Construction and operation of waste transfer station	23-000012
Sara Silva	LLA/LM 23-03 Maruti Cons. Lot Line Adjustment WS Imperial Avenue b/t I-8 and Danenberg	As of 11/12/24 the project has been placed on hold.	LLA/LM	Paused	Lot line adjustment of parcels.	23-000021
Angel Hernandez	ZOTA 23-01 Cardroom Ordinance	Ordinance approved at the 11/19/24 City Council Meeting.	City Project ZOTA	Done	Amend Cardroom Ordinance and zoning code regarding cardrooms	23-000023
Andrea Montañó	COZ 23-01, TSM 23-01, SP 23-01 Galey Kennedy Investment Parkview Single Family Subdivision 1526 Clark	The project applicant received the formal comment letter on July 29, 2024. Staff is preparing the second comment letter. Staff reviewing submitted proposals for CEQA tasks.	CEQA TSM COZ SP Specific Plan	In Progress	The Parkview project proposes a Tentative Map, Specific Plan, Pre-Zoning and Annexation to allow for subdividing the approximately 26-acre project into 114 lots for development with single family homes.	23-000028
Sara Silva	LLA/LM 23-04 Gabriel Jimenez NE Corner of 4th St & Holt Ave.	Staff sent a letter to the applicant to close the file due to inactivity on 11/18/24.	LLA/LM	Canceled	Merge two lots into one.	23-000029
Andrea Montañó	SPR 23-21 - 2712 S. 4th Mobile Home Community	The plans have been deemed incomplete and the applicant has received notice on January 11, 2024. Due to inactivity this project will be considered expired should a resubmittal not be received by January 6, 2025.	SPR	Paused	SPR 23-21 Title-25 pre-manufactured homes	23-000049
Sara Silva	LLA 24-01_Fusco Engineering- IV Commons	The applicant notified staff on 11/19/24 that project has been canceled by their client.	LLA/LM	Canceled	Lot Line is being adjusted to accommodate a hotel.	24-000001
Sara Silva	LLA 24-03 LC Engineering Consultants, INC_ Hyundai Dealership-2202 Merrill Center Dr.	Project has been approved by consultant surveyor on 4/2/24. Staff is awaiting applicant to prepare documents for recording.	LLA/LM	In Progress	Merge two properties into one.	24-000006
Andrea Montañó	SPR 24-04 Jaqueline Rodriguez- Duplex House Dwelling- 182 W. State	Staff issued a notice of corrections on 5/8/2024. Due to inactivity, this project will be considered expired should an application not be received by January 6, 2024.	SPR	Paused	Build a new 1250 sq ft duplex house dwelling.	24-000022
Sara Silva	TPM 24-01 FUSCOE ENGINEERING SUBDIVISION OF PARCEL 2 AT IV COMMONS	Staff has sent out 2nd review comments to applicant on 11/13/24.	TPM	In Progress	TENTATIVE PARCEL MAP OF PARCEL 2 AT IMPERIAL VALLEY COMMONS.	24-000032
Sara Silva	SPR 24-08 Alfredo Hernandez- 25 Unit Apt. Complex at 1998 Barbara Worth Dr.	Staff sent a letter to the applicant to close the file due to inactivity on 11/20/24.	SPR	Canceled	Proposing a new 25-unit apartment complex.	24-000033
Andrea Montañó	SPR 24-10 Dubose Design Group, Inc- El Centro Shopping Center	A project incompleteness notice was provided to the applicant on June 28, 2024. Staff met with the applicant on July 25, 2024 to discuss next steps. As of September 5, 2024, the applicant has not resubmitted plans but has met periodically met with staff to discuss potential updates to the original site plan.	SPR	Paused	New Commercial/Retail Development with Restaurant Fast Food pads along South of Imperial between Wake & Danenberg Rd. 140,358 square feet. Retail and Fast Food Buildings 3500 sq. ft.	24-000039
Sara Silva	TPM 24-02 Efrain Espinosa_Subdivide to sell parcel at 280 E. Aurora Dr.	Staff sent 1st submittal on 10/16/24 to the Engineering Division for review.	TPM	In Progress	Subdivide to sell parcel	24-000040

Planning and Zoning Projects

Owner	Project name	Status Summary	Project Type	Status	Description	MyGov ID
Andrea Montaño	TSM 24-01 Dubose Design Group, Inc._ Courtyard Villas Subdivision	The first round of comments was completed, and the applicant received a comment letter on August 27, 2024. The consultants are beginning work on the Environmental Documents and the Traffic Study. Initial drafts are anticipated to be received within 6 weeks. Harris and Associates have completed the Biological and Cultural Studies surveys and are finalizing them. The traffic study is being completed by the LLG. Once the traffic study is found satisfactory by City Staff it will be provided to Harris and Associates who will complete the Addendum within 3 weeks.	TSM	In Progress	Vacant property that had an approved tentative map that expired Request re-approval for 50 single family lots in a R-1 zoned parcel. Layout is the same as the previous TM approved, including 2.38 ac. Retention Basin and 10.57ac, Park that will be next to an existing park in Desert Village West #5.	24-000041
Sara Silva	CUP 24-04 Tomas Ibarra_Parking for Cars at 1865 Adams Ave	Staff has closed project due to the use of the project being prohibited on the property 11/13/24.	CUP	Canceled	parking for cars on hold plus add a night vigilante manufacturing home.	24-000042
Sara Silva	SPR 24-12 Pink Hats Inc_56 Apartment Complex-898 Pico Rd.	Staff has placed project on hold as of 7/24/24. Applicant is making revisions to the application.	SPR	Paused	56 Apartment Complex	24-000044
Andrea Montaño	CUP 24-03 Kimley-Horn_Walmart Fuel Station at 2150 N. Waterman Ave.	Planning Staff preparing initial comment letter. Item is pending a Traffic Study to proceed to Planning Commission Hearings.	CUP	In Progress	The proposed project is a Walmart fuel station with 12 fuel dispensers and an overhead canopy, and a convenience store. Work includes pavement, landscape and associated utilities	24-000051
Andrea Montaño	SPR 24-15 DuBose Design Group, LLC_New Commercial Development-Corner of Imperial & Wake (053-807-007)	The applicant received comments on October 25, 2025.	SPR	Paused	Retail Commercial of 131,000 square feet of building space with 2 fast food pads for a total of 7,500 square feet.	24-000053
Andrea Montaño	LLA/LM 24-04 BJ Engineering & Surveying_ Separate 1690 W. Euclid and 436 W. Euclid	This lot line adjustment was sent by the Engineering Division to a Surveying Consultant.	LLA/LM	In Progress	Separate residence from mobile home park.	24-000054
Sara Silva	TUP 24-17 Franky's Hot Dogs_Hot dog cart at 705 4th Street.	Approval letter was provided to the applicant on 10/24/24.	TUP	Done	Sell Hot Dogs from 5PM to 11PM.	24-000055
Sara Silva	TUP 24-18 Carlos Lopez_FFA Pig_641 Woodward Ave.	Approval letter was provided to the applicant on 10/22/24.	TUP	Done	FFA Pig from mid-November to mid-March 2025	24-000056
Sara Silva	LLA/LM 24-05 T.Reilly & Associates_Lot Merger_2215 S. 4th Street	Staff sent applicant 1st redline comments on 11/18/24.	LLA/LM	Paused	Lot merger only. No proposed use or construction at this time.	24-000057
Andrea Montaño	TUP 24-19 Stiizy_Community Events_3009 S. Dogwood Ave.	The conditions of approval letter was completed prior to the event. However, the applicant failed to correct the code enforcement issues regarding the landscaping.	TUP	Paused	Two events one for October 26, 2024 from 3:30 PM to 8:30 PM and the next event for April 20, 2025.	24-000058
Sara Silva	SPR 24-16 Retail Store_460 State St.	Staff is reviewing the new site plan that was submitted on 11/25/24 with the corrections from the first review.	SPR	Paused	1356 sq. ft. first floor being improved to be used as a retail store.	24-000059
Angel Hernandez	SPR 24-17 Pepper Grind Coffee_Extend Hours of Operation_1560 Pepper Dr.	Approval letter sent on 11/25/24.	SPR	Done	Extend hours of operation to 6PM	24-000060
Andrea Montaño	TUP 24-20 SBHSS_Health Fair_1699 W. Main	This temporary use permit was issued on November 15, 2024.	TUP	Done	Health Fair on November 16, 2024 from 8am-12pm	24-000061
Sara Silva	ZVL 24-09 Partner Assessment Corporation_1204 Poplar Dr	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Zoning Verification Letter for 1204 Poplar Dr. APN: 053-511-003	24-000062

Planning and Zoning Projects

Owner	Project name	Status Summary	Project Type	Status	Description	MyGov ID
Sara Silva	ZVL 24-10 Partner Assessment Corporation_ 1455 Pepper Drive	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Zoning Verification Letter for 1455 Pepper Drive. APN: 053-502-002	24-000063
Sara Silva	ZVL 24-11 Partner Assessment Corporation_1285 Poplar Drive	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Zoning Verification Letter for 1285 Poplar Drive. APN: 053-501-025	24-000064
Sara Silva	ZVL 24-12 Partner Assessment Corporation_1295 Poplar Drive	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Zoning Verification Letter for 1295 Poplar Dr. APN: 053-501-024	24-000065
Sara Silva	ZVL 24-13 Partner Assessment Corporation_1215,1225,1243,1251,1271 Ross Ave.	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Verification Letter for 1215,1225,1243,1251, 1271 Ross Ave.	24-000066
Sara Silva	ZVL 24-14 Partner Assessment Corporation_1415 Ross Ave.	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Zoning Verification Letter for 1415 Ross Ave.	24-000067
Sara Silva	ZVL 24-15 Partner Assessment Corporation_1272 Poplar Drive	Staff is preparing Zoning Verification letter.	ZVL	In Progress	Zoning Verification Letter for 1272 Poplar Drive	24-000068
Andrea Montaña	SPR 24-18 Akbar Zadeh_Self Storage_044-220-110	Staff has reviewed this item for completeness and will begin circulation.	SPR	Not started	Self Storage: 2 buildings: 104 & 375 square feet, 1500 square feet office, 34 parking, and 29 covered RV parking.	24-000071
Sara Silva	TUP 24-21 Toy Drive_December 14, 2024 _ 950 N. Imperial	Staff is preparing determination letter.	TUP	In Progress	Toy Drive on 11/14/2024 from 11AM- 4PM	24-000072
Sara Silva	CUP 24-05 Duggins Construction_Humane Society Project_S. Hope Ave.	Staff is reviewing the new site plan that was submitted on 12/02/24 with the corrections from the first review.	CUP	In Progress	New 7,724 square feet building (2,051 square feet for office and 5,673 square feet for kennels) with landscaping, parking lot and site improvements.	24-000073