

**Final Environmental Impact Report
for the
Colony Commerce Center Specific Plan
Ontario, California**
State Clearinghouse No. 2015061023

Prepared for:



City of Ontario
303 East "B" Street
Ontario, California 91764
909.395.2036

Contact: Richard Ayala, Senior Planner

Prepared by:

AECOM
901 Via Piemonte, Suite 500
Ontario, California 91764, USA
909.579.3050

Contact: Jeffry Rice, AICP, Project Manager

August 2017



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1.0 INTRODUCTION

1.1 PROJECT TITLE

Colony Commerce Center Specific Plan

1.2 LEAD AGENCY NAME AND ADDRESS

City of Ontario
303 East “B” Street
Ontario, California 91764

1.3 CONTACT PERSONS AND PHONE NUMBERS

Lead Agency: Richard Ayala, Senior Planner
(909) 395.2036

Environmental Consultant: AECOM
Jeffrey Rice
(909) 579.3948

Applicant: CapRock Partners, LLC
Patrick Daniels, Principal & Chief Operating Officer
(949) 342.8000

1.4 SUMMARY OF THE PROPOSED PROJECT

CapRock Partners (the “Applicant”) proposes the Colony Commerce Center Specific Plan (Specific Plan) for the development of a master planned industrial development on approximately 123.17 acres of land (project site) in the City of Ontario (City). According to the Policy Plan (General Plan) Land Use Exhibit LU-01 of The Ontario Plan (TOP), the project site is designated Industrial (0.55 FAR), allowing for a total development of up to 2.95 million square feet at a floor area ratio (FAR) of 0.55. Project implementation would achieve the intent of the General Plan for the project site. The project site is zoned AG-Specific Plan. A specific plan is required by the City in order to comprehensively plan for development of the project site.

The Colony Commerce Center Specific Plan consists of two planning areas. Planning Area 1 (PA-1) includes approximately 57.58 gross acres of industrial development on the north portion of the site, allowing for a total development up to 1,379,501 square feet at a FAR of 0.55. Planning Area 2 (PA-2), the initial major phase of development, includes approximately 65.60 gross acres of industrial development on the south portion of the site, allowing for a total development up to 1,571,645 square feet at a 0.55 FAR.

The project also includes associated off-site infrastructure improvements that, when added to the 123.17-acre project site, totals approximately 139.14 acres (study area), the impacts to which are considered in this environmental impact report (EIR).

The project also includes applications for development entitlements for PA-2, including applications for a tentative tract map, development agreement, and development plan review that will be submitted in conjunction with the Specific Plan. No development at this time is proposed for PA-1.

This EIR will analyze PA-1 and PA-2 at a specific plan level of detail as part of the proposed adoption of the Colony Commerce Specific Plan, but will analyze PA-2 at a more detailed, project level in connection with consideration of the tentative tract map, development plan review, and development agreement applications that have been filed for this area of the specific plan.

1.5 CEQA ENVIRONMENTAL PROCESS

The City circulated a Notice of Preparation (NOP) for a 30-day review period, beginning June 11, 2015, and ending July 10, 2015. A public scoping meeting was conducted on June 23, 2015, at 6:30 p.m. at the Ontario Police Department (OPD) Community Room, located at 2500 South Archibald Avenue in Ontario. The NOP, letters, and comments received during the NOP comment period, as well as comment sheets from the public scoping meeting are included in Appendix A of this Draft EIR. In addition, this Draft EIR will be released for a 45-day public comment period. Following the public comment period, a Final EIR will be prepared that will include responses to the comments raised concerning the Draft EIR.

1.6 ORGANIZATION OF THE DRAFT EIR

This Draft EIR is composed of the following sections:

- **Executive Summary.** This section describes the purpose of the Draft EIR, Draft EIR focus and effects found not to be significant, Draft EIR organization, project summary, areas of controversy and issues to be resolved, public review process, summary of alternatives, and a summary of environmental impacts and mitigation measures.
- **Introduction.** This section identifies the proposed project, lead agency, and Contact Persons. Brief summaries of the proposed project and (California Environmental Quality Act (CEQA) Environmental Process are provided.
- **Project Description.** This section describes the project location, existing conditions, project objectives, project characteristics, and a description of the intended use of the Draft EIR.
- **General Description of Environmental Setting.** This section contains a description of the existing physical and built environment and a list of related projects anticipated to be built within the project vicinity.

- **Environmental Impact Analysis.** This section contains the environmental setting, project and cumulative impact analyses, mitigation measures, and conclusions regarding the level of significance after mitigation for each of the following environmental issues: aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazardous materials, hydrology and water quality, land use, noise, population and housing, public services (including police and fire), transportation and traffic, and utilities and service systems (including water supply, wastewater, and solid waste). The following environmental issue areas were determined by the City to have no potential to be significantly impacted by the project, and analyses were not included in this section: mineral resources and recreation.
- **Other Environmental Considerations.** This section provides a discussion of significant unavoidable impacts that would result from the proposed project and the reasons why the project is being proposed notwithstanding the significant unavoidable impacts. An analysis of the significant irreversible changes in the project is also presented here. This section analyzes growth-inducing impacts in which the project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Potential secondary effects caused by the implementation of the mitigation measures for the proposed project are also discussed. Last, a discussion of possible effects of the proposed project that were determined within the Initial Study not to be significant is provided.
- **Alternatives.** This section describes required content for an adequate analysis of alternatives to the proposed project (CEQA Guidelines Section 15126.6). Alternatives Considered and Rejected are identified. Analysis is provided of a No Project Alternative and other feasible alternatives capable of reducing the significant impacts of the proposed project. An Environmentally Superior Alternative is identified.
- **List of Preparers and References.** These sections list all the contributors, references, and sources used in the preparation of the Draft EIR.

1.7 PROJECT BACKGROUND

The Specific Plan area is part of 8,200 acres of land of the former San Bernardino County Agriculture Preserve (AG) annexed by the City in 1999. In 1998, the City adopted the New Model Colony (NMC) General Plan Amendment (GPA) for the portion of the City known at that time as the Sphere of Influence (SOI). This amendment established a comprehensive development strategy for the future development of the SOI that included 32 subplanning areas known as subareas. As described further in Section 2.3, the NMC GPA provided the basic framework for the development of the 8,200 acres of land and established the “rules” for subsequent specific plans, which provided for the entitlement for individual properties and projects within Ontario Ranch. Following this, the City adopted TOP in 2010, which serves as the general plan for the entire city including the NMC, which has since been renamed Ontario Ranch. The accompanying TOP EIR was certified by the City at the same time. TOP serves as the City’s new business plan and includes various components, including a long-term vision component and a principle-based Policy Plan that serves as the City’s General Plan. With the adoption of the Policy Plan (General Plan), a specific plan

and an Area Plan are required for development within Ontario Ranch (Ontario Development Code [ODC] 9-1.2700). Specific plans are required to ensure that sufficient land area is included to achieve unified districts and neighborhoods and incorporate a development framework for detailed land use, circulation, infrastructure (drainage, sewer, water, etc.), public services (parks, schools, etc.), and urban design/landscape plans.

The project site is zoned “Specific Plan” and is subject to an (AG) Agricultural Overlay. Consequently, preparation and adoption of a specific plan is required in connection with development of the project site. For additional information about the project background, refer to Section 2.3.

2.0 RESPONSE TO COMMENTS ON THE DRAFT EIR

This Section has been prepared in accordance with Section 15088 of the California Environmental Quality Act (CEQA) Guidelines.

2.1 INTRODUCTION

As the CEQA lead agency, the City of Ontario has reviewed each of the comments received on the Draft EIR for the proposed project and has prepared responses to the written comments received. The Draft EIR was circulated for a public review period that began November 15, 2016 and concluded on January 3, 2017. The comment letters (see Section 2.3) were submitted by agencies, organizations, and individuals. A total of 11 comment letters were received during the public review period.

The focus of the Lead Agency's responses to comments (see Section 2.5) is the disposition of environmental issues that are raised in the comments, as specified by Section 15088(b) of the State CEQA Guidelines. Detailed responses are not necessarily provided to comments on the merits of the proposed Project, unless the comment suggests deficiencies in the EIR's analysis. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR (Section 15204(a)).

The Draft EIR, as revised, and this Comments and Responses section collectively comprise the Final EIR for the Colony Commerce Center Specific Plan EIR. Any changes made to the text of the Draft EIR correcting information, data or intent, other than minor typographical corrections or minor working changes, as a result of comments received are noted in Section 2.5.

2.2 COMMENTERS ON THE DRAFT EIR

Commenters on the Draft EIR include agencies, organizations, and individuals. These various commenters are listed in Table 2-1; the actual letters are presented in Section 2.3.

Table 2-1: Commenters on the Draft EIR

Letter #	Commenter	Agency/Organization	Date
Agencies			
1	Scott Maass, REHS III	San Bernardino County Department of Public Health	November 15, 2016
2	Maria Christy, Planning and Development Technician	Jurupa Unified School District	December 1, 2016
3	Michael R. Perry, Supervising Planner	San Bernardino County Department of Public Works	December 19, 2016

Letter #	Commenter	Agency/Organization	Date
4	Gayle Totton, Associate Governmental Project Analyst	Native American Heritage Commission	December 21, 2016
5	Kim Le, Associated Planner	City of Chino Planning Department	December 29, 2016
6	Jillian Wong, Planning & Rules Manager	South Coast Air Quality Management District	January 3, 2017
Organizations			
7	Joe Bourgeois, Chairman of the Board	Golden State Environmental Justice Alliance	January 3, 2017
8	Rebecca L. Davis	Lozeau Drury LLP	January 3, 2017
Individuals			
9	Patrick A. Perry	Allen Matkins Leck Gamble Mallory & Natsis LLP	December 29, 2016
10	Alfred Fraijo Jr.	Sheppard, Mullin, Richter & Hampton LLP	January 3, 2017
11	Scott Mulkay, Vice President – Regional Development Manager*	Prologis LP	January 5, 2017

*Denotes comment letter received after the close of the public review period.

2.3 COMMENTS RECEIVED ON THE DRAFT EIR

The Notice of Availability of the Draft EIR indicates that the Draft EIR was circulated for a public review period that began November 15, 2016 and concluded on January 3, 2017.

The comment letters presented in the following pages were submitted by agencies, as well as organizations, and individuals. The numbers in brackets refer to the applicable comment number from the comment letters presented in this Section.

Each comment that the lead agency received during the Draft EIR comment period is included in this section. Responses to these comments have been prepared to address the environmental concerns raised by the commenters and to indicate where and how the Final EIR addresses pertinent environmental issues. Collectively, these revisions clarify or amplify the analysis in the Draft EIR and none of them would result in new significant environmental effects. Pursuant to State CEQA Guidelines Section 15088.5(b), recirculation of the Draft EIR is not required.

Comment Letter No. 1

From: Maass, Scott [<mailto:scott.Maass@snh.sbcounty.gov>]
 Sent: Tuesday, November 15, 2016 9:40 AM
 To: Richard Ayala <rayala@ontario.ca.gov>
 Subject: Colony Commerce Center Specific Plan Draft EIR/PSP 35-001

Hi Richard,

See attached.



Scott Maass
 Department of Public Health
 RMT 10
 Phone: (951) 422-2280 | Fax: (951) 391-4825
 330 N. Arcadia Road, Suite 300, San Bernardino, CA 92415
www.snh.sbcounty.gov

Our jobs to create a county in which those who need it most can prosper and thrive.

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California Environmental Quality Act**Notice of Completion**

City of Ontario
Planning Department
303 East "B" Street
Ontario, California
Phone: (909) 395-2036
Fax: (909) 395-2420



To: Office of Planning and Research
1400 Tenth Street, Room 222
Sacramento, California 95814

Project Title/File No.: Colony Commerce Center Specific Plan Draft EIR/ PSP 15-001

Project Location: The 123.17-acre project site is located in the southern portion of the City, near the San Bernardino County/Riverside County boundary. The project site is located north of Remington Avenue, south of Merrill Avenue, east of Carpenter Avenue and west of the Cucamonga Creek Flood Control Channel in the City of Ontario, San Bernardino County, California. The project site is located within the City's Ontario Ranch area, which makes up a portion of the former San Bernardino County Agricultural Preserve annexed by the City in 1999. The City of Eastvale is located southeast of Ontario in Riverside County. The City of Chino is located to the southwest and west in San Bernardino County.

Project Description: The proposed project is the Colony Commerce Center Specific Plan for the development of a master planned industrial development on 123.17 acres of land. The Colony Commerce Center Specific Plan consists of two (2) planning areas. Planning Area 1 (PA-1) includes 57.58 gross acres of industrial development on the north portion of the site allowing for a total development up to 1,379,501 square feet at a Floor Area Ratio (FAR) of 0.55. Planning Area 2 (PA-2) includes 65.60 gross acres of industrial development on the south portion of the site allowing for a total development up to 1,571,645 square feet at a 0.55 FAR. The Colony Commerce Center Specific Plan is comprised of one (1) land use designation, Industrial (0.55 FAR). It is anticipated that Tentative Tract Map application(s), Development Plan(s) and Development Agreement(s) will be submitted in conjunction with the Specific Plan.

Lead Agency: City of Ontario, Planning Department, 303 East B Street, Ontario, California 91764

Contact Person: Richard Ayala, Senior Planner; telephone: (909) 395- 2036 or e-mail rayala@ontarioca.gov

Review Period: A copy of the Draft Environmental Impact Report is available for review from November 15, 2016 to January 3, 2017 at the addresses listed below.

City of Ontario
Planning Department
303 East "B" Street
Ontario, California 91764

Ontario Main Library
215 East "C" Street
Ontario, CA 91764

City of Ontario
City Clerk
303 East B Street
Ontario, California 91764

Signature

Senior Planner

Title

November 8, 2016

Date

*Ents has well permit date
on 0218-261-24. 11/14/16*

1-1

Comment Letter No. 2

From: Maria Christy [mailto:maria_christy@usd.k12.ca.us]
Sent: Thursday, December 01, 2016 2:17 PM
To: Richard Ayala <rayala@ontarioca.gov>
Cc: Trenton T. Hansen <trenton_hansen@usd.k12.ca.us>; Paula Ford <pford@usd.k12.ca.us>; Robin Griffin <robin_griffin@usd.k12.ca.us>; Susan Fierro <susan_fierro@usd.k12.ca.us>
Subject: Comments for The Colony Commerce Center in Ontario



Hello Richard,

At this time, Junipia Unified School District has no comments to project: Colony Commerce Center Specific Plan Draft/ PRP 15-001.

Best regards,

Maria Christy
Planning and Development Technician
4850 Hadley Road
Junipia Valley, CA 92509
Tel: (952)361-6571 Fax (952)360-4360
[P&D Webpage](#) | [@usdplanning](#) (twitter)

2-1

Comment Letter No. 3	
825 East Third Street, San Bernardino, CA 92415-0835 Phone: 909.387.8109 Fax: 909.387.7876	
 <p style="text-align: center; font-weight: bold; font-size: 1.2em;">SAN BERNARDINO COUNTY</p>	<div style="text-align: right; font-size: 0.8em; color: #003366;"> www.SBCounty.gov </div> <div style="text-align: center; font-weight: bold; font-size: 1.1em; margin-bottom: 10px;"> Department of Public Works </div> <ul style="list-style-type: none"> Flood Control Operations Solid Waste Management Surveyor Transportation <div style="text-align: right; margin-top: 20px;"> Gerry Newcombe Director </div>
<div style="display: flex; justify-content: space-between;"> <div> <p>December 19, 2016</p> <p>City of Ontario Richard Ayala, Senior Planner 303 East "B" Street Ontario, CA. 91764 rayala@ontarioca.gov</p> </div> <div style="text-align: right;"> <p>File: 10(ENV)-4.01</p> </div> </div>	
<p>RE: NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COLONY COMMERCE CENTER PROJECT FOR THE CITY OF ONTARIO</p>	
<p>Dear Mr. Ayala,</p> <p>Thank you for allowing the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. We received this request on November 14, 2016 and pursuant to our review, the following comments are provided:</p>	
<p><u>General Comments</u></p>	<p>3-1</p>
<p>1. It should be noted that according to the most recent FEMA Flood Insurance Rate Map, Panel 06071C9375H, dated August 28, 2016, the project lies within Zone X, shaded (0.2 percent chance flood hazard).</p>	
<p><u>Operations</u></p>	<p>3-2</p>
<p>1. Since this project is near the District's Cucamonga Creek right-of-way, any work affecting this right-of-way would need a Flood Control Permit. If a permit is required, its necessity and any impacts associated with the construction should be addressed in the adopted EIR. Please note that any District facilities built by the Army Corps of Engineers (ACOE) will require the District to obtain approval (408-Permit) from the ACOE.</p>	
<p>We respectfully request to be included on the circulation list for all project notices and reviews. In closing, I would like to thank you again for allowing the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. Should you have any questions or need additional clarification, please contact me and I will forward the request to the Division that provided the specific comment as listed above.</p>	
<p>Sincerely,</p> <div style="text-align: center; margin-top: 20px;">  <p>Michael R. Perry Supervising Planner Environmental Management MRP:PE:sr</p> </div>	<p>3-3</p>
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>BOARD OF SUPERVISORS</p> <p>ROBERT A. LOVINGOOD Vice Chairman, First District</p> </div> <div style="text-align: center;"> <p>JANICE RUTHERFORD Second District</p> </div> <div style="text-align: center;"> <p>JAMES RAMOS Chairman, Third District</p> </div> <div style="text-align: center;"> <p>CURT HAGMAN Fourth District</p> </div> <div style="text-align: center;"> <p>JOSIE GONZALES Fifth District</p> </div> <div style="text-align: center; flex-grow: 1;"> <p>GREGORY C. DEVEREAUX Chief Executive Officer</p> </div> </div>	

Comment Letter No. 4

STATE OF CALIFORNIA
 NATIVE AMERICAN HERITAGE COMMISSION
 1550 Harbor Blvd., Suite 100
 West Sacramento, CA 95691
 Phone (916) 373-3710
 Fax (916) 373-5471
 Email: naahc@naahc.ca.gov
 Website: <http://www.nahc.ca.gov>
 Twitter: @CA_NAHC

Edmund G. Brown Jr., Governor



December 21, 2016

Richard Ayala
 City of Ontario
 203 East "B" Street
 Ontario, CA 91764

Re: SCH#2015061023, Colony Commerce Center Specific Plan Project, City of Ontario, San Bernardino County, California

Dear Mr. Ayala:

The Native American Heritage Commission (NAHC) has reviewed the Draft Environmental Impact Report prepared for the project referenced above. The review included the Project Description, the Executive Summary Section 4.5 Cultural Resources, the Environmental Setting, and Environmental Impacts Analysis, prepared by AECOM for the City of Ontario. We have the following concerns:

- Mitigation for inadvertent finds of human remains is incomplete. The potential for inadvertent finds of human remains exists with any groundbreaking. A lack of cemeteries or recorded burials does not preclude the existence of human remains. Please include mitigation that details the process in the event of a County Coroner's determination of Native American human remains.

4-1

The California Environmental Quality Act (CEQA)¹, specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.² If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.³ In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).⁴ **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"⁵, that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."⁶ Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.⁷ Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements.** Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966⁸ may also apply.

4-2

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: <http://naahc.ca.gov/resources/forms/>. Additional information regarding AB 52 can be found online

¹ Pub. Resources Code § 21000 et seq.

² Pub. Resources Code § 21084.1; Cal. Code Regs., tit. 14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)

³ Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd. (a)(1); CEQA Guidelines § 15064 (a)(1)

⁴ Government Code 65352.3

⁵ Pub. Resources Code § 21074

⁶ Pub. Resources Code § 21084.2

⁷ Pub. Resources Code § 21084.3 (a)

⁸ 154 U.S.C. 300101, 36 C.F.R. § 800 et seq.

at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3710 if you have any questions.

Sincerely,


Gayle Totton, B.S., M.A., Ph.D.
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

4-2
cont.

Pertinent Statutory Information:**Under AB 52:**

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.

A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project,⁹ and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18)."¹⁰

The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- a. Alternatives to the project.
- b. Recommended mitigation measures.
- c. Significant effects.¹¹

1. The following topics are discretionary topics of consultation:

- a. Type of environmental review necessary.
- b. Significance of the tribal cultural resources.
- c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency.¹²

With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.¹³

If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

- a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
- b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.¹⁴

Consultation with a tribe shall be considered concluded when either of the following occurs:

- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
- b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.¹⁵

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program,** if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.¹⁶

If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).¹⁷

An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
- b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

⁹ Pub. Resources Code § 21080.3.1, subds. (d) and (e).

¹⁰ Pub. Resources Code § 21080.3.1 (b).

¹¹ Pub. Resources Code § 21080.3.2 (a).

¹² Pub. Resources Code § 21080.3.2 (a).

¹³ Pub. Resources Code § 21082.3 (c)(1).

¹⁴ Pub. Resources Code § 21082.3 (b).

¹⁵ Pub. Resources Code § 21080.3.2 (b).

¹⁶ Pub. Resources Code § 21082.3 (a).

¹⁷ Pub. Resources Code § 21082.3 (e).

4-3

- c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.¹⁸
This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:

Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5097.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- * SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- * **Tribal Consultation:** if a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.**¹⁹
- * **There is no Statutory Time Limit on Tribal Consultation under the law.**
- * **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research,²⁰ the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.²¹
- * **Conclusion Tribal Consultation:** Consultation should be concluded at the point in which:
 - o The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
 - o Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.²²

4-3
cont.

NAHC Recommendations for Cultural Resources Assessments:

- * Contact the NAHC for:
 - o A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - o A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
 - The request form can be found at <http://nahc.ca.gov/resources/forms/>.
- * Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://chp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
 - o if part or the entire APE has been previously surveyed for cultural resources.
 - o if any known cultural resources have been already been recorded on or adjacent to the APE.
 - o if the probability is low, moderate, or high that cultural resources are located in the APE.
 - o 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.
 - o 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.
 - o The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

¹⁸ Pub. Resources Code § 21082.3 (d)

¹⁹ (Gov. Code § 65352.3 (a)(2)).

²⁰ pursuant to Gov. Code section 65040.2,

²¹ (Gov. Code § 65352.3 (b)).

²² (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
 - Planning and construction to avoid the resources and protect the cultural and natural context.
 - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - Protecting the cultural character and integrity of the resource.
 - Protecting the traditional use of the resource.
 - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.²³
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.²⁴

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.²⁵ In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

4-3
cont.

²³ (Civ. Code § 815.3 (c)).

²⁴ (Pub. Resources Code § 5097.981).

²⁵ per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

Comment Letter No. 5

DENNIS R. YATES
Mayor

EUNICE M. ULLOA
Mayor Pro Tem



CITY of CHINO

GLENN DUNCAN
EARL C. ELROD
TOM HAUGHEY
Council Members

MATTHEW C. BALLANTYNE
City Manager

December 29, 2016

Richard Ayala
City of Ontario, Planning Department
303 East B Street
Ontario, CA 91764

RE: Notice of Availability of a Draft Environmental Impact Report (DEIR) Colony Commerce Center – State Clearinghouse #2015061023

Dear Mr. Ayala,

Thank you for the opportunity to review the Notice of Availability of a DEIR Colony Commerce Center – State Clearinghouse #2015061023. Based upon our review, the City of Chino has the following comments:

Public Works Department

- | | |
|---|-----|
| 1. To the extent feasible, driveways from development on both the east and west side Carpenter Avenue should align to prevent conflicting turning movements. | 5-1 |
| 2. The Preserve Specific Plan doesn't include a Class II Bike Lane on Merrill Avenue from Euclid to Carpenter Avenue due safety concerns associated with Merrill being designated as a truck route. | 5-2 |
| 3. City staff doesn't concur with the assigned truck trip distribution. A larger percentage should be assigned to travel to and from the intersection of Merrill and Euclid Avenue. The TIA should include additional intersections on Euclid Avenue if there are more than 50 peak hour trips. | 5-3 |
| 4. The TIA should be updated to include additional study intersections on Merrill between Euclid and Carpenter that may be impacted by this project. These intersections include Merrill at Flight, Merrill at Baker, and Merrill at Hellman (south). | 5-4 |
| 5. The EIR doesn't adequately specify the project's fair share contribution towards mitigating impacts at intersections that are wholly or partially located within the City of Chino (e.g. Euclid at Merrill, Carpenter at Merrill). | 5-5 |

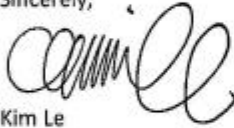


13220 Central Avenue, Chino, California 91710
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(909) 334-3250 • (909) 334-3720 Fax
Web Site: www.cityofchino.org

6. In accordance with CMP guidelines, the TIA should include a long-range (2040) scenario analysis. 5-6

Please let me know if you have any questions. I can be reached at (909) 334-3330 or via email at kile@cityofchino.org.

Sincerely,



Kim Le
Associate Planner

Comment Letter No. 6



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL:rayala@ontario.ca.gov

January 3, 2017

Mr. Richard Ayala, Senior Planner
City of Ontario – Planning Department
303 East "B" Street
Ontario, CA 91764

Draft Environmental Impact Report (Draft EIR) for the Proposed Colony Commerce Center

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the lead agency and should be incorporated into the Final EIR.

The lead agency proposes the construction and operation of approximately 2,951,146 square feet (sf) of warehouse/industrial uses on an approximately 123.17 acre site. The Draft EIR estimates approximately 2,818 diesel truck trips and 7,690 total vehicle trips. The project will be constructed in two phases with tenants that are unknown at this time. Phase PA-2 will consist of constructing two warehouse buildings totaling 1,571,645 sf and begin operation in 2017. PA-2 will generate an estimated 894 diesel truck trips and 3,595 total vehicle trips. Phase PA-1 will also consist of two warehouse buildings totaling 1,379,501 sf and begin operation in 2025. PA-1 is estimated to generate an additional 1,018 diesel truck trips and 4,095 total vehicle trips. The lead agency estimated that the project's operational air quality impacts in 2017 and 2025 would be significant and unavoidable.

The lead agency conducted a Health Risk Assessment (HRA) to determine the long-term air quality impacts from vehicles operating at the proposed project. The HRA found that maximum cancer risk from the project is 8 in one million, which is less than the SCAQMD significance threshold of 10 in one million. The SCAQMD staff has concerns about the assumptions used in the modeling, which likely underestimates the health risks. Additionally, SCAQMD staff has concerns about the effectiveness of the proposed mitigation measures. Since the lead agency has determined that project air quality impacts exceed the SCAQMD staff recommended daily significance thresholds operations, SCAQMD staff recommends additional mitigation measures in addition to the measures proposed by the lead agency in the Draft EIR. Details are included in the attachment.

6-1

Pursuant to Public Resources Code Section 21092.5, SCAQMD staff requests that the lead agency provide the SCAQMD with written responses to all comments contained herein prior to the adoption of the Final EIR. Further, staff is available to work with the lead agency to address these issues and any other questions that may arise. Please contact Jack Cheng, Air Quality Specialist, CEQA Section, at (909) 396-2448, if you have any questions regarding the enclosed comments.

6-1
cont.

Sincerely,

Jillian Wong

Jillian Wong Ph.D.
Planning & Rules Manager
Planning, Rule Development & Area Sources

JW:JC
SBC161115-08
Control Number

ATTACHMENT

Air Quality Analysis

- | | |
|--|-----|
| <p>1. The lead agency proposes the construction and operation of approximately 2,951,146 sf of warehouse/industrial uses. In the Traffic Study and CalEEMod models, the lead agency assumes 25% manufacturing and 75% High-cube warehousing. However, in the HRA and conceptual land use plan drawing, the lead agency assumes 100% warehousing. High-cube warehousing generates more diesel trucks that emit diesel particulate matter (DPM), which the California Air Resources Board (CARB) has determined to be carcinogenic. By assuming 25% manufacturing use, the lead agency underestimates the health risks. Since the future tenant is unknown, SCAQMD staff recommends that the lead agency conservatively assume 100% High-cube warehousing (since the proposed project is zoned for warehousing and industrial use).</p> | 6-2 |
| <p>2. In the Traffic Study, the Manufacturing land use does not include diesel truck trips. SCAQMD staff recommends disclosing the number of diesel truck trips and incorporating the additional truck trips into the Air Quality Analysis and HRA.</p> | 6-3 |
| <p>3. SCAQMD staff recommends the lead agency limit the land uses and daily number of trucks allowed at each facility to levels analyzed in the Final EIR. If higher daily truck volumes are anticipated to visit the site, the lead agency should commit to re-evaluating the project through CEQA prior to allowing this land use or higher activity level.</p> | 6-4 |
| <p>4. SCAQMD staff was not able to verify construction emissions or 2017 operational emissions. In Appendix A: CalEEMod Model Output – the lead agency only provided operational emissions for the completed 2025 build out year. SCAQMD staff recommends providing additional documentation to substantiate its claims.</p> | 6-5 |
| <p>5. The lead agency uses the Fontana Study fleet mixture percentages to estimate truck fleet mixture. The Fontana Study estimates 3.46 percent of the total fleet as 2-axle trucks; 4.64 percent as 3-axle trucks; and 12.33 percent as 4-axle and larger trucks with truck categories totaling 20.43 percent of the total vehicle fleet. Passenger Vehicles would therefore comprise 79.57 percent of total vehicles during operations. However, in Appendix A – CalEEMOD Model Output, the lead agency used 1 percent of the total fleet for 2-axle Trucks; 4.6 percent for 3-axle trucks; and 12.3 percent for 4-axle and larger trucks with truck categories totaling 18.5 percent of the total vehicle fleet. By rounding fleet mix percentages, the lead agency underestimates the trucks generated by the project and the truck emissions. SCAQMD staff recommends using the complete fleet mixture percentages to recalculate operational emissions.</p> | 6-6 |

Health Risk Assessment (HRA) Analyses

The SCAQMD staff is concerned that the HRA has underestimated the cancer risk from the proposed project. In the HRA, the lead agency used the AERMOD dispersion model to estimate DPM concentrations from the diesel vehicles generated by the proposed project and used the 2015 revised OEHHA guidelines to estimate the health risks to both residents and workers in the project vicinity. The 2015 revised OEHHA guidelines have been incorporated into SCAQMD health risk assessment procedures for Rules 1401, 1401.1, and 2122 and are used by SCAQMD for projects where SCAQMD is the CEQA lead agency. SCAQMD staff recommends the lead agency revise the HRA based on the following comments:

- | | |
|--|------|
| <p>6. Air dispersion models and emission rate calculations were unavailable at the time of review. SCAQMD staff was not able to review emission rate calculations, air dispersion modeling, or the HRA. As indicated in our comment letter on the Notice of Preparation/Initial Study dated June 18, 2015, SCAQMD requested all air quality modeling, health risk assessment files, and original emission calculation spreadsheets. SCAQMD staff recommends providing additional documentation to substantiate its claims.</p> | 6-7 |
| <p>7. The lead agency modeled exhaust emissions consistent with the methodology established by the San Joaquin Valley Air Pollution Control District (Page 4.3-17). In our comment letter on the Notice of Preparation/Initial Study dated June 18, 2015, SCAQMD staff recommended the lead agency follow SCAQMD's mobile source guidance. Since the project is located within SCAQMD's jurisdiction, SCAQMD staff reiterates its recommendation to the lead agency to conduct their HRA in accordance with SCAQMD's guidance. <i>Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis</i>: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis.</p> | 6-8 |
| <p>8. On-site travel emissions are not accounted for in the HRA. By not including on-site travel emissions, the lead agency likely underestimated health risks. SCAQMD staff recommends that the lead agency revise the HRA using a series of volume sources to account for the on-site travel emissions.</p> | 6-9 |
| <p>9. On-site idling point sources should span the entire docking area. SCAQMD staff recommends that the lead agency revise the HRA using a line volume that spans the entire docking area and include 15 minutes of idling to ensure that impacts are properly analyzed.</p> | 6-10 |
| <p>10. All truck routes terminate in residential neighborhoods. Truck routes should be modeled from the project site to where the trucks enter the freeway. SCAQMD staff recommends that the lead agency revise the model using appropriate source placement as well as additional grid receptors extending to the freeway.</p> | 6-11 |

11. In the HRA, the lead agency averaged the DPM emissions from 2017- 2024 for the 30-years of exposure and used that emission rate to estimate health risks. This is not an appropriate methodology to estimate emissions using the 2015 revised OEHHA guidelines. The 2015 revised OEHHA guidelines acknowledge that children are more susceptible to the exposure to air toxics and have revised the way cancer risks are estimated to take this into account. Since the emissions from the project generated trucks get cleaner with time due to existing regulations, it would not be appropriate to average out the emissions over the 30-year exposure duration since this would underestimate the health risks to children who would be exposed to higher DPM concentrations during the early years of project operation. Therefore, SCAQMD staff recommends that the DPM emissions for each year of operation be applied to each of the corresponding age bins (i.e. emissions from Year 1 of project operation should be used to estimate cancer risks to the third trimester to 0 year age bin; Year 1 and 2 of project operation should be used to estimate the cancer risks to the 0 to 2 years age bins; and so on).

6-12

12. SCAQMD Rule 403(e) – Large Operations – Since the Project is considered a large operation (50 acres or more of disturbed surface area; or daily earth-moving operations of 3,850 cubic yards or more on three days in any year) in the South Coast Air Basin, the lead agency is required to comply with all SCAQMD Rule 403(e) – Additional Requirements for Large Operations. This may include but not limited to Large Operation Notification, appropriate signage, additional dust control measures, and employment of a dust control supervisor that has successfully completed the Dust Control in the South Coast Air Basin training class. Therefore, the Final EIR should contain a detailed description of how the Project will comply with [Rule 403\(e\)](#). Please contact dustcontrol@aqmd.gov for more information.

6-13

Additional requirements include but are not limited to:

- Implementation of Table 2 of Rule 403 at all times and implementation of the actions specified in Table 3 of Rule 403 when applicable.
- Submittal of a fully executed Large Operation Notification to the Executive Officer.
- Maintenance of daily records to document the specific dust control actions taken.
- Installation and maintenance of project signage with project contact person that meets the minimum standards of Rule 403 Implementation Handbook.
- Identification of a dust control supervisor that has completed the SCAQMD Fugitive Dust Control Class.

Mobile Source Operational Mitigation Measures

13. If the health risks in the revised HRA exceed the SCQMD's CEQA significance thresholds, the increase in health risk can be reduced by implementing the following mitigation measures:

6-14

- Accelerating the introduction of cleaner trucks through a project requirement that all heavy duty trucks generated by the project will be required to meet or exceed

the U.S. EPA's 2010 heavy duty engine emission standards or be powered by natural gas, electricity, or other diesel alternative.

- Accelerated phase-in for non-diesel powered trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in health risks, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Final CEQA document, the lead agency should require a phase-in schedule for these cleaner operating trucks to reduce project impacts. SCAQMD staff is available to discuss the availability of current and upcoming truck technologies and incentive programs with the lead agency and project applicant.
- Use alternatively-fueled on-site equipment.

6-14
cont.

Additional Mobile Source Operational Mitigation Measures

14. Similar to the City of Los Angeles requirements for all new projects, the SCAQMD staff recommends that the lead agency require at least 5% of all vehicle parking spaces (including for trucks) include EV charging stations¹.

Trucks that can operate at least partially on electricity have the ability to substantially reduce the significant NOx impacts from this project. Further, trucks that run at least partially on electricity are projected to become available during the life of the project as discussed in the 2012 and 2016 Regional Transportation Plan. It is important to make this electrical infrastructure available when the project is built so that it is ready when this technology becomes commercially available. The cost of installing electrical charging equipment on-site is significantly cheaper if completed when the project is built compared to retrofitting an existing building. Therefore, the SCAQMD staff recommends the lead agency require the proposed warehouse and other plan areas that allow truck parking to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in.

6-15

¹ http://ladbs.org/LADBSWeb/LADBS_Forms/Publications/LAGreenBuildingCodeOrdinance.pdf.

Comment Letter No. 7

Page 1 of 4



January 3, 2016

VIA EMAIL

City Planning Commission & City Council
City of Ontario
303 East B Street
Ontario, CA 91764

Richard Ayala
RAyala@ontarioca.gov

SUBJECT: COMMENTS ON COLONY COMMERCE SPECIFIC PLAN

To whom it may concern:

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the proposed Colony Commerce Specific Plan. Please accept and consider these comments on behalf of Golden State Environmental Justice Alliance.

Project Description

As we understand it, the project proposes the adoption of the Colony Commerce Center Specific Plan within Ontario Ranch on a 123.17-acre site within the city of Ontario. The proposed project would develop a master planned industrial park in 2 phases up to 2,951,146 square feet (0.55 FAR). At this time, no development is proposed on PA-1 of the Specific Plan; however, development of two industrial buildings is proposed on PA-2 for two industrial buildings totaling approximately 1.3 million square feet. The EIR analyzes the proposed project at a specific plan

7-1

level of detail for both PA-1 and PA-2, but also provides a project-level analysis of development impacts for PA-2. The EIR details in 2.6.1 Specific Plan Land Uses that PA-1 consists of "Approximately 57.58 acres of industrial development on the north portion of the site allowing for a total development up to 1,379,501 square feet at a 0.55 FAR".

Other Agencies/Parties (Reviewing and/or Responsible Agencies)

Here the EIR identifies the city of Chino as requiring approval of developer funded off-site mitigation improvements within the City of Chino. The EIR does not mention the mitigation measures provided in the Transportation Analysis that also require Caltrans and city of Eastvale approvals for off-site mitigation improvements.

7-1
cont.

3.0 Project Description

3.21 Related Projects

The EIR only provides a list of projects in the immediate Ontario Ranch vicinity. Further, the project site is adjacent to the borders of Chino and Eastvale but only includes one project from each city. Those projects are not included in the map provided. There are many other projects the EIR should include with regard to cumulative impact analysis such as the Brewer Site Project (Chino). This does not comply with CEQA's requirements for meaningful disclosure.

7-2

4.3 Air Quality

The EIR states that PA-2 is assumed to be constructed before PA-1. Construction of PA-2 was anticipated to occur over 18 months with overlapping construction phases. Construction of PA-1 was assumed to begin in January 2018 and end April 2020, even though the EIR also states the project will not "be at full buildout until 2025". The EIR should provide additional extended analysis for additional 2, 3, and 5 year construction year periods beyond the analysis provided in order to fully analyze and disclose the potential air quality impacts.

7-3

The Air Quality Analysis of the EIR assumes an 8-hour, 5 day per week construction schedule. However, Section 5-29.09 (Construction activity noise regulations) of the Ontario Municipal Code indicates that the legal hours of construction in Ontario are Monday - Friday 7:00 a.m. to 6:00 p.m. and on Saturday or Sunday 9:00 a.m. to 6:00 p.m. The EIR does not provide a "worst-case scenario" analysis of construction equipment emitting pollutants for the legal 11 hours per weekday plus 9 hours on both Saturday and Sunday. The EIR continuously relies on the "market conditions" in relation to construction of the project and anticipates that phases will overlap. It is possible for market conditions to necessitate faster construction and it is legal for construction to occur for much longer hours than modeled in the EIR. The Air Quality modeling must be revised to account for these legally possible longer construction days and increased number of construction days.

7-4

4.8 Hazards and Hazardous Materials

Threshold 4

The project site is located within the Chino AIA and Chino Airport Overlay, specifically within Safety Zones 6, 4, and 2 of the Chino ALUCP. The EIR states that Zone 4 encompasses 5.2 acres of land and Zone 2 encompasses 4.14 acres of land; it does not provide how many acres are located in Zone 6 but it is assumed by the reader that it is the remainder of the project site. The EIR provides the following information regarding these zones:

7-5

Zone 6 – Traffic pattern zone. Approximately 10 percent of usable open land or an open area approximately every 0.25 mile to 0.5 mile should be provided.

Zone 4 – Outer approach/departure zone. Maintain approximately 15 percent to 20 percent open land within the overall zone, again with emphasis on areas along the extended runway centerline.

Zone 2 – Inner approach/departure zone. At least 15 percent to 20 percent of the zone should remain as open land.

Further, the EIR states that “due to the minimal sizes within both zones, Zone 6 open land standards are being applied to the entire project area”. The EIR does not provide a CEQA exemption or further explanation for this reasoning. The EIR should provide a map that demonstrates where each of the ALUCP zones are located on the project site in order to fully disclose the project’s consistency with the ALUCP. The EIR’s current analysis applies Zone 6 standards to the entire project site, which is the least restrictive of the applicable zones. The analysis presented does not comply with CEQA’s requirements for meaningful disclosure.

7-6

4.14 Transportation and Traffic

13 of the project’s significant impacts will be located at intersections outside of the Ontario city boundary. These impacts are located within the city of Eastvale, city of Chino, and Caltrans jurisdictions. Mitigation measures Trans 1, Trans 2, Trans 3 (Chino), Trans 5, Trans 6, Trans 17, Trans 18 (Caltrans), and Trans 11, Trans 12, Trans 13, Trans 14, Trans 15, Trans 16 (Eastvale) requires the applicant to put money in escrow in order to cover the costs of improvements to these intersections. The EIR states that “after a suitable time, if either or both of these other jurisdictions refuse to proceed with the improvements, the money should be returned to the applicant”. Payment of fees is not an acceptable mitigation measure when the impact is in a jurisdiction beyond the scope of the lead agency. An assessment of fees is appropriate when linked to a specific mitigation program. (Anderson First Coalition v. City of Anderson (2005) 130 Cal.App.4th 1173, Save our Peninsula Comm. v. Monterey County Bd. Of Supers. (2001) 87 Cal.App.4th 99, 141.) Payment of fees is not sufficient where there is no evidence mitigation will actually result. (Gray v. County of Madera (2008) 167 Cal.App.4th 1099, 1122.) The assessment of fees here is not adequate as there is no evidence mitigation will actually result. The 13 mitigation measures stated above are uncertain and improperly deferred in violation of CEQA.

7-7

6.0 - Alternatives

The EIR identifies the project objectives in a manner that makes the construction of the project a foregone conclusion. Objectives such as “provide for the development of warehousing facilities that utilize the site’s prime location in proximity to Chino Airport” and “provide industrial uses within the project boundaries that are compatible with surrounding uses” indicate that this project will be implemented as a certainty.

7-8

Further, CEQA requires analysis of a “reasonable range” of alternatives. Here, since the No Project Alternative is required, the EIR analyzes only two. This does not comply with a reasonable range of alternatives.

7-9

Conclusion

For the foregoing reasons, GSEJA believes the EIR is flawed and an amended EIR must be prepared for the proposed project and recirculated for public review. Golden State Environmental Justice Alliance requests to be notified via email at goldenstateeja@gmail.com regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project.

7-10

Sincerely,



Joe Bourgeois
Chairman of the Board
Golden State Environmental Justice Alliance



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www.lozeaudrury.com
rebecca@lozeaudrury.com

January 3, 2017

Via Email

Richard Ayala, Senior Planner
City of Ontario
303 East "B" Street
Ontario, California 91764

Re: Draft Environmental Impact Report for Colony Commerce Center Specific Plan (PSP15-001) - SCH No. 2015061023

Dear Mr. Ayala:

This letter is submitted on behalf of Laborers International Union of North America, Local Union No. 783, and its members living in and near the City of Ontario (collectively "LIUNA" or "Commenters") concerning the City of Ontario's (the "City") Draft Environmental Impact Report ("DEIR") prepared for the Colony Commerce Center Specific Plan (PSP15-001) (SCH No. 2015061023 (the "Project").

After reviewing the DEIR, together with our team of expert consultants, it is evidence that the document contains numerous errors and omissions that preclude accurate analysis of the Project. As a result of these inadequacies, the DEIR fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. Commenters request that the City address these shortcomings in a revised DEIR and recirculate the revised DEIR prior to considering approvals for the Project.

8-1

Commenters have submitted expert comments from air quality experts Soil Water Air Protection Enterprise ("SWAPE"), who concludes that the DEIR fails to adequately evaluate and mitigate the Project's air quality impacts. First, the DEIR fails to disclose the input numbers used for the analysis of the Project's construction-related air quality impacts, thereby failing to give the public an opportunity to verify and comment on the accuracy of the numbers. Second, the DEIR's air quality analysis improperly assumes only unrefrigerated land use, resulting in an underestimate of operational air emissions. Third, the DEIR makes inaccurate truck trip assumptions that are inconsistent with traffic guidelines set forth by the South Coast Air Quality Management District ("SCAQMD"). As a result, the DEIR significantly underestimate emissions from truck traffic generated by the Project. Fourth, the DEIR fails to incorporate all feasible mitigation measures to reduce the Project's significant operational air quality impacts.

SWAPE's comments and curriculum vitae are attached hereto as Exhibit 1 and are incorporated in their entirety.

Commenters also submit comments from expert transportation analyst Daniel Smith, Jr., P.E., a registered civil and traffic engineer, and Dr. Shawn Smallwood, a wildlife biologist. Mr. Smith and Mr. Smallwood point out numerous flaws and inconsistencies in the Traffic Impact Analysis and the Biological Resources Analysis that must be addressed in a revised DEIR. Mr. Smith's comments and CV are attached hereto as Exhibit 2 and are incorporated by reference in their entirety. Mr. Smallwood's comments and CV are attached hereto as Exhibit 3 and are incorporated by reference in their entirety.

8-1
cont.

Each of SWAPE's, Mr. Smith's, and Mr. Smallwood's comments require separate responses from the City. These experts and our own independent review demonstrate that the DEIR is inadequate and that a revised DEIR should be prepared prior to Project approval to analyze all impacts and require implementation of all feasible mitigation measures.

PROJECT DESCRIPTION

The Project is a proposed master planned industrial development to be located on approximately 123.17 acres of land in the City of Ontario. (DEIR, p. ES-2.) The Project consists of two planning areas. Planning Area 1 ("PA-1") includes approximately 57.58 gross acres of industrial development on the north portion of the Project site, allowing for the development of 1,379,501 square feet of industrial development. (*Id.*) Planning Area 2 ("PA-2") will be the initial phase of the Project, and includes approximately 65.60 gross acres of industrial development on the south portion of the Project site, allowing for up to 1,571,645 square feet of industrial development. (*Id.*) The Project will include wholesale and distribution, light manufacturing, and businesses with high-value, time sensitive merchandise that could benefit from proximity to the airport. (*Id.*)

8-2

LEGAL STANDARDS

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances). *See, e.g.,* Pub. Res. Code § 21100. The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Comms. for a Better Env't v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109.

8-3

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a)(1). "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'" *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to

environmental changes before they have reached ecological points of no return.” *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“Berkeley Jets”); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); *see also Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines §15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” Pub.Res.Code (“PRC”) § 21081; CEQA Guidelines § 15092(b)(2)(A) & (B).

The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. CEQA requires that a lead agency analyze all potentially significant environmental impacts of its proposed actions in an EIR. PRC § 21100(b)(1); CEQA Guidelines § 15126(a); *Berkeley Jets*, 91 Cal.App.4th 1344, 1354. The EIR must not only identify the impacts, but must also provide “information about how adverse the impacts will be.” *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831. The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692. “The ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” *Communities for a Better Env’t v. Calif. Resources Agency* (2002) 103 Cal.App.4th 98, 109.

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position. A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), quoting, *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 391 409, fn. 12. A prejudicial abuse of discretion occurs “if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.” *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722]; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946. As discussed below, and in the attached expert comment letters of expert hydrogeologist Matthew Hagemann, P.G., C. Hg., and expert urban planner Terry Watt, Ph.D, the EIR for this Project fails to adequately analyze and mitigate the Project’s impacts.

8-3
cont.

ANALYSIS

I. THE DEIR FAILS TO ACCURATELY ANALYZE AND MITIGATE THE PROJECT'S AIR QUALITY IMPACTS.

A. The DEIR Fails to Provide All Supporting Documentation for Air Quality Models.

The attached comments from SWAPE point out that the DEIR and appendices fail to include all air model output files, which are necessary to determine the accuracy of the modeling performed. According to the DEIR, CalEEMod was used to estimate the construction and operational criteria air pollutant emissions from the Project. (DEIR, p. 6-13.) CalEEMod provides recommended default values based on site specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. SWAPE determined that the CalEEMod output files for Project construction were completely omitted. The Air Quality Analysis contained in Appendix A of the DEIR only included output files for Project operations. Without the output files for the Project's construction emissions, SWAPE was unable to verify that the assumptions used within these models are correct and cannot determine what default values were used or changed, or if Project-specific information was omitted from the model.

As the California Supreme Court stated in *Laurel Heights Improvement Assn. v. Regents of University of California* (2988) 47 Cal. 3d 376, 405:

"The Regents miss the critical point that the public must be equally informed.... If the Regents considered various alternatives and found them to be infeasible, we assume, absent evidence to the contrary, that they had good reasons for doing so. Those alternatives and the reasons they were rejected, however, must be discussed in the EIR in sufficient detail to enable meaningful participation and criticism by the public."

8-4

Similarly, the court stated in *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 831:

"The county has attempted to remedy the inadequacies of the EIR by presenting evidence to the trial court to show that there are sufficient water resources available for the project. Indeed, the trial court made findings of fact to such effect. This, however, is beside the point. It is the adequacy of the EIR with which we are concerned, not the propriety of the board of supervisors' decision to approve the project. '[W]hatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.'"

Also, the EIR and all supporting documentation must be available for public review during the entire CEQA comment period. CEQA section 21092(b)(1) requires that the CEQA notice for an EIR must include "the address where copies of the proposed EIR and all documents referenced therein are available for review and readily accessible during the agency's normal working hours." (Emphasis added) As noted by a leading CEQA treatise:

The above-referenced section [21092(b)(1)] requires the agency to notify the public of the address at which “all documents referenced in a draft EIR” can be found (and presumably read). . . . seems to require agencies to make available for public review all documents on which agency staff or consultants expressly rely in preparing a draft EIR. In light of case law emphasizing the importance of ensuring that the public can obtain and review documents on which agencies rely for the environmental conclusions (see, e.g., *Emmington v. Solano County Redevel. Agency*, 195 Cal.App.3d 491, 502-503 (1987)), agencies should ensure that they comply literally with this requirement.

Remy, Thomas, Moose & Manley, Guide to the California Environmental Quality Act, p. 300 (Solano Press, 11th Ed. 2007). The courts have held that the failure to provide even a few pages of a CEQA documents for a portion of the CEQA review period invalidates the entire CEQA process. *Ultramar v. South Coast Air Quality Man. Dist.*, 17 Cal.App.4th 689 (1993).

CEQA requires that information or data cited by an EIR “as the source of conclusions stated therein . . . shall be reasonably available for inspection at a public place or building.” Pub. Resources Code § 21061. Thus, while an EIR may properly rely on third-party studies, it may do so only if it either appends the study in question or notifies the public of its location at the time it makes the EIR available for public review. *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1987) 193 Cal.App.3d 1544, 1549; *San Francisco Ecology Center v. City and County of San Francisco* (1975) 48 Cal.App.3d 584, 595; Pub. Resources Code § 21092(b) (1) (notice of preparation shall specify address where copies of all referenced documents are available for review); see also CEQA Guidelines § 15087(c)(5).

Since the EIR omits critical information necessary for accurate review of the document, the EIR is inadequate as a public information document. The City must make the CalEEMod data available and reopen the DEIR public review period once the information is made available to the public.

8-4
cont.

B. The DEIR Fails to Account for Emissions from Refrigerated Storage and Trucks.

The DEIR significantly underestimates the Project’s operational emissions by assuming that all warehouses at the Project will be unrefrigerated. The CalEEMod calculations were premised entirely on the notion that the Project will not include any refrigerated land use. This is inconsistent with the DEIR’s statement that the Project will “permit multiple types of uses that could conceivably require deliveries via refrigerated trucks and/or employ on-site refrigeration.” (DEIR, p. 4.3-29.) The DEIR also states that the operational phase of the Project would consume energy for multiple purposes, including refrigeration. (DEIR, p. 4.7-22.)

8-5

Failing to account for the Project’s potential partial use as refrigerated warehouse is a significant omission. By not including any refrigerated warehouse land uses in the Air Quality Analysis, the emissions from this potential land use are grossly underestimated. Refrigerated trucks tend to idle much longer than typical hauling trucks, even up to an hour. Energy usage from warehouses equipped with industrial size refrigerators and freezers is also much greater when compared to unrefrigerated warehouses. In addition, according to the July 2014 SCAQMD

Warehouse Truck Trip Study Data Results and Usage presentation, trucks that require refrigeration resulted in greater truck trip rates when compared to non-refrigerated trucks.¹ (SWAPE, p. 5.)

8-5
cont.

A revised DEIR must be prepared that includes an analysis of the environmental effects of the Project having tenants that require refrigeration. *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 396.

C. The DEIR Uses an Incorrect Truck Fleet Mix.

The DEIR also significantly underestimated the Project's operational mobile-source emissions by relying on an improper fleet mix percentage. Specifically, the DEIR's Final Traffic Impact Analysis (Appendix L) improperly relies on the August 2003 City of Fontana *Truck Trip Generation Study* ("Fontana Study") to determine the truck fleet mix of approximately 20 percent, compared to 80 percent passenger cars. (SWAPE, p. 6.) As SWAPE's letter details, SCAQMD has found numerous problems with the Fontana Study and has thus recommended specific figures to use for the truck fleet mix for a high-cube warehouse distribution center.

As SWAPE notes, the Fontana truck fleet mix "is not consistent with recommendations set forth by SCAQMD for High-Cube Warehouses, and does not accurately represent the percentage of trucks that access a High-Cube Warehouse on a daily basis." (SWAPE, p. 7.) To avoid underestimating the number of trucks visiting warehouse facilities, SCAQMD recommends a truck fleet mix of 40%. This number is double that used by the DEIR, and is a conservative value especially given that the future tenants of the Project are unknown. Reliance on a 20 percent truck fleet mix does not adequately assess and mitigate the Project's air quality and GHG impacts.

8-6

D. The DEIR Uses an Incorrect Truck Trip Length.

SWAPE concludes that the DEIR uses an improper truck trip length, disregarding guidance from the SCAQMD. This further underestimates air quality and greenhouse gas emissions from the Project. The DEIR relied on CalEEMod's default value of an average truck trip length of 16.6 miles. However, there is no substantial evidence to support use of this number. For High-Cube warehouse projects such as this one, SCAQMD recommends a much longer truck trip length of 40 miles. To conservatively evaluate the Project's air quality and GHG emissions, the DEIR should use the SCAQMD-recommended 40 mile truck trip length, or provide substantial evidence to support a shorter trip length.

8-7

E. The DEIR Fails to Account for Total Lot Acreage.

The CalEEMod analysis for the Project relies on a building acreage of 123.17 acres. (DEIR App. A, pp. 145, 161, 172.) This is inconsistent with the DEIR which states that "the project also includes off-site infrastructure improvements that, when added to the 123.17-acre project site totals approximately 139.14 acres." (DEIR, p. ES-2.) Because the total area of the

8-8

¹ <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finaltrucktripstudymc072514.pdf?sfvrsn=2>, p.7

Project is 139.14 acres, that value should have been used as the total lot acreage for the CalEEMod analysis. By underestimating the lot acreage, the CalEEMod model underestimated the Project's air quality and GHG emissions. (SWAPE, p. 10.)

8-8
cont.

F. A Corrected Emissions Calculation Results in Emissions Much Higher than Disclosed in the DEIR.

SWAPE corrected all of the above-mentioned errors and miscalculations. They included 16-acres of off-site improvements in the lot acreage, assumed 15% of buildings would be made up of refrigerated warehouses, assumed a 40% truck fleet mix, and used a truck trip length of 40 miles. (SWAPE, p. 10-11.)

Model	Operational Emissions (lbs/day)				
	ROG	NOx	CO	PM10	PM2.5
DEIR	37.0	92.0	289.0	64.0	19.0
SWAPE	207.0	1,112.4	1,329.0	163.0	58.3
Percent Increase	560%	1,110%	360%	155%	207%
SCAQMD Threshold	55	55	550	150	55
Exceeded?	Yes	Yes	Yes	Yes	Yes

8-9

(SWAPE, p. 11.)

As this table demonstrates, when the correct input parameters are used to model emissions from the Project, the Project's operational ROG, NOx, CO, PM10, and PM2.5 emissions all exceed the SCAQMD's significance thresholds (see table below). The exceedances of the threshold for ROG, CO, PM10, and PM 2.5 are not recognized by the DEIR. A revised DEIR must be prepared that includes an updated model that accurately estimates the Project's operational emissions, and additional mitigation measures must be proposed to mitigate these additional significant impacts.

G. The DEIR Fails to Propose All Feasible Mitigation Measures.

SWAPE concludes that the DEIR fails to propose all feasible mitigation measures. The City may not issue a statement of overriding considerations until all feasible mitigation measures are implemented. SWAPE identifies numerous feasible mitigation measures that should be required to reduce Project air quality impacts. Many of these measures have been implemented for other projects or are recommended by the SCAQMD or other public agencies.

Additional mitigation measures that could be implemented include, but are not limited to, the following:

- Maximize use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs and/or the Project side to generate solar energy for the facility.
- Limit the use of outdoor lighting to only that needed for safety and security purposes.
- Install solar lights or light-emitting diodes (LEDs) for outdoor lighting.

8-10

- Require use of electric or alternatively fueled sweepers with HEPA filters.
- Provide electric vehicle charging stations that are accessible for trucks.
- Require the proposed warehouse to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in.
- Limit the daily number of trucks allowed at the facility to levels analyzed in the DEIR. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the project through CEQA prior to allowing this higher activity level.
- Design the site such that any check-in point for trucks is well inside the facility to ensure that there are no trucks queuing outside of the facility.
- On-site equipment should be alternatively fueled.
- Provide food options, fueling, truck repair and or convenience stores on-site to minimize the need for trucks to travel through residential neighborhoods.
- Should the proposed Project generate significant emissions, the Lead Agency should require mitigation that requires accelerated phase-in for non-diesel powered trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in emissions, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Final CEQA document, the Lead Agency should require a phase-in schedule for these cleaner operating trucks to reduce project impacts.

8-10
cont

(SWAPE, pp. 11-12.) SWAPE's comments include many other additional mitigation measures that should be analyzed and implemented. (SWAPE, pp. 11-14.) These measures are more stringent and prescriptive than those identified in the DEIR. When combined together, these measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduces emissions released during Project operation. An updated DEIR must be prepared to include additional mitigation measures, as well as include an updated air quality and greenhouse gas analysis to ensure that the necessary mitigation measures are implemented to reduce operational emissions to below thresholds. Furthermore, the Project Applicant needs to demonstrate commitment to the implementation of these measures prior to Project approval, to ensure that the Project's operational emissions are reduced to the maximum extent possible.

H. The DEIR Fails to Evaluate the Health Risk from Project Construction-Related Diesel Particulate Matter.

Construction and operation of the Project will result in emissions of diesel particulate matter ("DPM"), which is a recognized Toxic Air Contaminant ("TAC") and known carcinogen. (SWAPE, p. 14.) While the DEIR includes a health risk assessment ("HRA") for Project operations, it does not include an assessment for Project construction. (*Id.*) Instead, the DEIR dismisses the need for one, concluding, without evidence, that "the greatest potential for health impacts would result from DPM emitted during the operations phase of the Project from the use of diesel-fueled trucks accessing the site." (DEIR, p. 4.3-32.) In other words, the health risks associated with DPM exposure resulting from construction activities was never evaluated.

8-11

Not preparing an HRA for construction activities is inconsistent with the most recent

guidance published by Office of Environmental Health Hazard Assessment (OEHHA), the organization responsible for providing recommendations and guidance on how to conduct health risk assessments in California. OEHHA recommends that all short-term projects lasting longer than two months be evaluated for cancer risks to nearby sensitive receptors.² Project construction will produce DPM emissions over a period of 18 months. (DEIR, p. 2-24.) Accordingly, an updated DEIR must be prepared that includes an analysis of the health risk from DPM emissions during Project Construction, and additional mitigation measures should be implemented if necessary. (SWAPE, p. 15.)

8-11
cont.

II. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE THE PROJECT'S GREENHOUSE GAS IMPACTS.

Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments. 14 CCR § 15126.4(a)(2). The DEIR fails to mitigate the Project's significant GHG impacts because it does not include any of the proposed measures to reduce GHG emissions as enforceable mitigation measures.

The City of Ontario's Climate Action Plan ("CAP") sets a significance threshold for greenhouse gases ("GHGs") of 3,000 MT CO₂e per year. The DEIR concludes that the Project will exceed this threshold. (DEIR, p. 4.7-19.) According to the CAP, if a project exceeds the threshold, it then can turn to a Screening Table that provides specific guidance for reducing GHG emissions. If a project incorporates and implements GHG-emission reducing measures from the Screening Table that amounts to 100 points, its GHG emissions impact will be considered less than significant under the CAP. (DEIR, p. 4.7-21.)

8-12

The DEIR identifies 18 mitigation measures set forth in the CAP, and concludes that implementation of those measures would achieve 103 points. (DEIR, 4.7-21.) Review of the Project's proposed mitigation measures in Table ES-1, however, makes clear that none of these measures are actually included as mitigation measures. As a result, they are unenforceable, and violate CEQA. The DEIR must be revised to include each of the proposed measures as enforceable mitigation measures. Without doing so, the DEIR fails to fully mitigate the Project's GHG emissions.

III. THE DEIR FAILS TO PROVIDE A MEANINGFUL BASELINE FOR POTENTIAL HEALTH RISKS FROM EXPOSURE TO HAZARDS AND HAZARDOUS MATERIALS.

The DEIR skirts several potentially significant impacts that may result from the project by failing to look for them and establish a baseline supported by substantial evidence. The CEQA "baseline" is the set of environmental conditions against which to compare a project's anticipated impacts. (*Communities for a Better Environment v. So. Coast Air Qual. Mgmt. Dist.* (2010) 48 Cal.4th 310, 321.) Section 15125(a) of the CEQA Guidelines states in pertinent part that a lead agency's environmental review under CEQA:

8-13

² "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf, p. 8-18.

must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.

CEQA Guidelines § 15125(a.) A reasonable hazardous risk baseline is not determined by failing to look.

In order to evaluate potential impacts associated with hazards and hazardous materials that could occur from construction or operation of future land uses at the Project site, a Phase I ESA was conducted for PA-2. (DEIR, pp. 4.8-8-9.) The Phase I ESA “is intended to identify the likelihood of past, present, or potential future release of hazardous materials at PA-2.” (DEIR, p. 4.8-9.) The DEIR’s entire analysis of hazards and hazardous material impacts is based on this report. (*Id.*) The problem is that no Phase I ESA was prepared for PA-1, which makes up nearly half of the Project site. As a result, there is no baseline, supported by substantial evidence, from which to assess the significance of potential impacts to workers exposed to disturbed soils, soil vapor, or groundwater that is potentially hazardous.

The DEIR contains a mitigation measure that requires a Phase I ESA for PA-1 upon grading (mitigation measure Haz-7), but this is insufficient. CEQA requires that a DEIR disclose a project’s environmental impacts *before* a project is approved and *before* an EIR is certified. A revised DEIR must be prepared that includes a Phase I ESA for PA-1.

8-13
cont.

Similarly, while a Phase I ESA was conducted for PA-2, additional sampling must be conducted to fully characterize the hazards at the Project site. Despite noting a potential for agricultural chemicals to be present on site, no soil samples were taken to evaluate whether residual pesticides remain in the soil at the Project site. The Phase I ESA dismissed the need for any further action because “[w]hen the proposed buildings and parking lots are constructed, the entire area of the subject property will either be paved over or covered by improvements that would make direct contact with any potentially remaining concentrations in the soil unlikely.” (Phase I ESA, p. 7.) This unsubstantiated conclusion fails to evaluate and disclose the potential for pesticide residues in the soil to pose a health risk to construction workers and nearby residents during construction. During earthmoving activities, construction workers and the public may be exposed to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled. Sampling results should be compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels³ and California Human Health Screening Levels.⁴

By failing to quantify the presence of persistent chemicals in the soil, the DEIR fails to identify any baseline supported by substantial evidence from which to assess the significance of potential impacts of workers’ exposure to disturbed soils potentially contaminated with pesticides or other agricultural chemicals.

³ <http://www.epa.gov/region9/superfund/prg/>

⁴ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSIsGuide.pdf>

IV. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE THE PROJECT'S TRAFFIC IMPACTS.

As detailed in the comments of Traffic Expert Dan Smith, Jr., P.E. (Exhibit 2), the DEIR fails to adequately analyze and mitigate the Project's traffic impacts. A revised DEIR must be prepared to fully address these inadequacies.

8-14

V. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE THE PROJECT'S BIOLOGICAL RESOURCE IMPACTS.

As detailed in the comments of biologist Shawn Smallwood (Exhibit 3), the DEIR fails to adequately analyze and mitigate the Project's impacts on biological resources. A revised DEIR must be prepared to fully address these inadequacies.

8-15

VI. THE CITY SHOULD PREPARE AND RECIRCULATE A REVISED DEIR.

Recirculation is required where "significant new information" has been added to an EIR. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 447.) New information is "significant" where it results in a change to the EIR's analysis or mitigation of a substantial adverse environmental effect to the EIR. (*Id.*) Recirculation of an EIR prior to certification is required "when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project's proponents decline to adopt; or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless." (CEQA Guidelines §15162; *Laurel Heights Improvement Assn. v. Regents of University of Cal.* (1993) 6 Cal. 4th 1112, 1130 (citing *Mountain Lion Coalition v. Fish & Game Comm'n* (1989) 214 Cal.App.3d 1043).) Here, the DEIR must be revised and recirculated to address the many deficiencies identified above.

8-16

CONCLUSION

For the foregoing reasons, LIUNA believes the Colony Commerce Specific Plan DEIR is wholly inadequate. LIUNA urges the City to make the above changes, and recirculate a revised DEIR to the public for review. Thank you for your attention to these comments.

Sincerely,



Rebecca L. Davis

EXHIBIT 1



Technical Consultation, Data Analysis and
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December 27, 2016

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Oakland, CA 94607

Subject: Comments on the Colony Commerce Center Project

Dear Ms. Davis:

We have reviewed the November 2016 Draft Environmental Impact Report (DEIR) for the proposed Colony Commerce Center Project ("Project") located in the City of Ontario ("City"). The Project proposes the development of a master planned industrial development on approximately 123.17 acres of land. The Colony Commerce Center Specific Plan consists of two planning areas. Planning Area 1 (PA-1) includes approximately 57.58 gross acres of industrial development on the north portion of the site, allowing for a total development up to 1,379,501 square feet. Planning Area 2 (PA-2), the initial major phase of development, includes approximately 65.60 gross acres of industrial development on the south portion of the site, allowing for a total development up to 1,571,645 square feet. The project also includes associated off-site infrastructure improvements that, when added to the 123.17-acre project site, totals approximately 139.14 acres.

Our review concludes that the DEIR fails to adequately evaluate the Project's Hazard and Hazardous Waste, Air Quality, and Greenhouse Gas impacts. Construction workers and future Project workers may be at risk from environmental contamination. Air emissions and health impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated DEIR should be prepared to adequately assess and mitigate these potential impacts.

Hazards and Hazardous Waste

Environmental Assessments are Incomplete

Conclusions reached in the DEIR are unreliable to determine if significant impacts from Hazards and Hazardous Waste exist at the Project site. The Project area has only been partially assessed by a Phase I Environmental Site Assessment (ESA). A Phase I ESA was only completed for the 66-acre Planning Area 2 (PA-2) portion of the Project site. A Phase I ESA has not been conducted for the 58-acre PA-1 area of the Project site. Although no development currently proposed for PA-1, a Phase I ESA is necessary prior to

8A-1

2.0 Response to Comments on the Draft EIR

Final EIR

EIR certification to ensure potential uses are consistent with environmental conditions. A Phase I ESA should be prepared for the entire Project site by a certified professional and included in a revised DEIR. Any conditions identified as hazardous in the Phase I should be addressed through mitigation in the DEIR.

Methods for performing a Phase I ESA have been established by the US EPA and the American Society for Testing and Materials Standards ("ASTM").¹ Activities undertaken during Phase I ESAs to identify conditions that would indicate releases of hazardous substances include:

- An evaluation of all known hazardous waste sites near the Project area that are on regulatory agency databases for assessment or cleanup activities;
- a site inspection in the field;
- interviews with people informed about the property; and
- recommendations for additional actions to address potential hazards.

Phase I ESAs culminate with the identification of any "recognized environmental conditions" ("RECs") and recommendations to address such conditions. A REC is the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

The DEIR provides only for the completion of a Phase I ESA for PA-1 upon grading (Mitigation Measure HAZ-7). This constitutes deferred mitigation. No disclosure of environmental conditions in the PA-1 area -- including potential soil, soil vapor or groundwater contamination -- is included in the DEIR because of the omission of the Phase I ESA. A DEIR needs to be prepared that includes the Phase I for PA-1 to properly disclose conditions that may pose hazards to the health of construction workers and future Project workers.

Conditions at Planning Area 2 Need to be Investigated

The Phase I ESA for PA-2 noted three conditions that need follow up in the form of sampling.

1. The Phase I noted staining in an area where five above ground fuel tanks were observed (p. 4.8-2). The fuel tanks are used for the storage of gasoline and diesel. The staining is likely the result of spillage of fuel from the tanks during filling (p. 4.8-2).

The area of petroleum staining should be sampled and the results of the sampling, and documentation of any necessary cleanup should be included in a revised DEIR.

2. A 0.5-acre pond, approximately 100 feet to the west of Cucamonga Creek flood control channel, was described in PA-2 in the DEIR (p. 4.8-3) as follows:

¹ <http://www.astm.org/Standards/E1527.htm>

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During the site reconnaissance, a strong caustic odor was noted in the vicinity of the pond and the water appeared to exhibit a dark red color with apparent areas of thick sludge. In addition, several animal carcasses and areas of distressed vegetation were observed in the immediate vicinity of the pond.

8A-3

The DEIR postpones sampling of the pond until issuance of grading permit (Mitigation Measure HAZ-1). This is deferred mitigation. Sampling needs to be undertaken now and any cleanup that is necessary should be documented in a revised DEIR.

3. The Phase I ESA for PA-2 considered pesticide use associated with agriculture, practiced since 1938, to be likely (p. 7). The potential for pesticide usage was not mentioned in the DEIR. An investigation, to include soil sampling, is necessary prior to certification of the EIR to ensure that concentrations of recalcitrant pesticides, to include DDT, do not pose health risks to construction workers or future residents.

8A-4

4. Methane surveys need to be completed now, not after construction (HAZ-8). The results of the survey and any necessary mitigation should be included in a revised DEIR.

8A-5

* Air Quality

Failure to Provide Complete CalEEMod Output Files

According to the DEIR, the California Emissions Estimator Model Version CalEEMod.2013.2.2 ("CalEEMod")³ was used to estimate the criteria air pollutant emissions generated during Project construction and operation (p. 6-13). CalEEMod provides recommended default values based on site specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act (CEQA) requires that such changes be justified by substantial evidence.⁴ Once all the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files, which can be found in Appendix A of the DEIR, disclose what parameters were utilized in calculating the Project's air pollutant emissions, and make known which default values were changed as well as provide a justification for the values selected.⁵

After review of the DEIR and associated appendices, we found that only a portion of the complete CalEEMod output files were provided. Specifically, we found that the Project's construction outputs were completely omitted from Appendix A. Without this information, we are unable to verify that all the assumptions used within these models are correct and cannot determine what default values were used. Additionally, we are unable to review the CalEEMod output files to determine if any other default

³ CalEEMod website, available at: <http://www.caleemod.com/>.

⁴ CalEEMod User's Guide, pp. 1, 9, available at: <http://www.caleemod.com/>.

⁵ CalEEMod User's Guide, pp. 7, 13, available at: <http://www.caleemod.com/> (A key feature of the CalEEMod program is the "remarks" feature, where the user explains why a default setting was replaced by a "user defined" value. These remarks are included in the report.)

values were changed or if Project-specific information was omitted from the model. As a result, the criteria air pollutant emission estimates provided in the DEIR and associated appendices for Project construction are unreliable and should not be used to determine Project significance, since there is limited documentation verifying the values.

8A-6

Without providing the entire CalEEMod report, the reviewer cannot fully understand the assumptions that were made about the Project, and cannot verify whether those assumptions are justified. An updated DEIR should be prepared that adequately addresses the air quality impacts associated with the proposed Project and provides the complete CalEEMod output files.

Unsubstantiated Input Parameters Used to Estimate Project Emissions

Even though the construction outputs were omitted from Appendix A of the DEIR, we were still able to review the remaining information provided in the modeling outputs. When we reviewed the output files, we found that several of the values inputted into the model were not consistent with information disclosed in the DEIR. As a result, the Project's operational emissions are greatly underestimated. An updated DEIR should be prepared to include an air quality analysis that adequately evaluates the impacts that the operation of the Project will have on local and regional air quality.

8A-7

Failure to Consider Cold-Storage Requirements for Warehouse Buildings

The DEIR assumes that all of the Project's warehouse land uses will be composed of unrefrigerated warehouses, exclusively, and as a result, the Project's operational emissions may be grossly underestimated.

According to the CalEEMod output files provided, the proposed industrial buildings were modeled as "Unrefrigerated Warehouse-No Rail" (see excerpt below) (Appendix A, pp. 145).

Category	Size	Area	Vol. Storage	Other Storage Area	Capacity
Warehouses	457.51	1,014,000	18.18	1,014,000	0
Refrigerated Warehouses	1,014.00	1,014,000	18.18	1,014,000	0
Warehouses	1,014.00	1,014,000	18.18	1,014,000	0

8A-8

Assuming that the proposed Project will be composed of unrefrigerated warehouses, exclusively, however, is inconsistent with information disclosed in the DEIR, and may result in an underestimation of the Project's operational emissions.

According to the DEIR, the proposed Project could have refrigeration requirements which would require the use of transport refrigeration units, which are needed to transfer refrigerated and frozen items to and from the site, and therefore, require refrigeration on the Project site. The DEIR states,

"The project proposes to permit multiple types of uses that could conceivably require deliveries via refrigerated trucks and/or employ on-site refrigeration. Given the uncertainty of leased refrigerated warehouse space and the percentage of transport refrigeration units (TRUs), the

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analysis did not estimate additional emissions that could occur with the idling of TRUs during loading and unloading activities at the project site" (p. 4.3-29).

The fact that the Project is allowing permits for multiple uses that could require refrigeration, and that there is "uncertainty" in how much warehouse space is leased for refrigeration uses, rather than if there will be warehouse refrigeration space at all, indicates that the Project site could include future on-site refrigeration. **Because the DEIR clearly states that on-site refrigeration may be used on the Project site and because CEQA requires that the most conservative analysis be conducted, these buildings should have been modeled as refrigerated warehouses.**

By modeling the Project's emissions assuming that only unrefrigerated warehouses will operate on-site, the DEIR greatly underestimates the actual emissions that would occur once the Project is operational. Refrigerated warehouses release more air pollutant emissions when compared to unrefrigerated warehouses for several reasons. First, warehouses equipped with cold storage (refrigerators and freezers, for example) are known to consume more energy when compared to warehouses without cold storage.⁵ Second, warehouses equipped with cold storage typically require refrigerated trucks, which are known to idle for much longer, even up to an hour, when compared to unrefrigerated hauling trucks.⁶ Lastly, according to a July 2014 *Warehouse Truck Trip Study Data Results and Usage* presentation prepared by the South Coast Air Quality Management District (SCAQMD), it was found that hauling trucks that require refrigeration result in greater truck trip rates when compared to non-refrigerated hauling trucks.⁷

As discussed by SCAQMD, "CEQA requires the use of 'conservative analysis' to afford 'fullest possible protection of the environment.'"⁸ As a result, the most conservative analysis should be conducted. With this in mind, because the DEIR and associated appendices indicate the need for refrigerated warehouses, the proposed buildings should be modeled as "Refrigerated Warehouse-No Rail," or at the very least, a portion of the buildings should be modeled as "Refrigerated Warehouse-No Rail," with the remaining portion of the buildings modeled as "Unrefrigerated Warehouse-No Rail," so as to take into consideration the possibility that the buildings use both cold storage and non-cold storage.

By not including refrigerated warehouses as a potential land use in the CalEEMod model, the Project's operational emissions may be grossly underestimated. Unless the Project Applicant can demonstrate that the proposed buildings will be limited to unrefrigerated warehouse uses, exclusively, it should be

8A-8

⁵ Managing Energy Costs in Warehouses, Business Energy Advisor, available at: <http://bizenergyadvisor.com/warehouses>.

⁶ "Estimation of Fuel Use by Idling Commercial Trucks," p. 8, available at:

<http://www.transportation.nrl.gov/pdth/TA/373.pdf>

⁷ "Warehouse Truck Trip Study Data Results and Usage" Presentation, SCAQMD Mobile Source Committee, July 2014, available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-study-for-air-quality-analysis/final-truck-trip-study-memo-07-2014.pdf?sfvrsn=2>, p. 7, 9.

⁸ "Warehouse Truck Trip Study Data Results and Usage" Presentation, SCAQMD Inland Empire Logistics Council, June 2014, available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-study-for-air-quality-analysis/final-iec-6-19-2014.pdf?sfvrsn=2>

assumed that a mix of cold and non-cold storage will be provided on-site. An updated DEIR should be prepared to account for the possibility of refrigerated warehouse needs by future tenants.

Incorrect Usage of Fontana Truck Trip Study for Fleet Mix

The DEIR also relies upon an artificially low truck fleet mix percentage to model the operational emissions associated with the proposed High-Cube Warehouse buildings, and as a result the Project's mobile-source emissions during operation are greatly underestimated.

The Project's Final Traffic Impact Analysis Report (Appendix L) uses a truck fleet mix of approximately 20 percent, which was taken from the August 2003 City of Fontana Study *Truck Trip Generation Study* ("Fontana Study")¹. Table 5-1 of the Final Traffic Impact Analysis demonstrates the vehicle mix used to model Project emissions (see excerpt below) (Appendix L, Table 5-1, pp. 1384).

Table 5-1
Colony Commerce Center Project Trip Generation Rates

Land Use	Units	ITE Land Use Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Manufacturing	KSF	140	0.569	0.161	0.730	0.263	0.467	0.730	3.828
High Cube Warehouse ²	KSF	152	0.076	0.034	0.110	0.037	0.093	0.120	1.680
75.57% Passenger Cars			0.090	0.027	0.090	0.030	0.060	0.090	1.337
3.40% 2-Axis Trucks (PCE ³ = 1.5)			0.004	0.002	0.006	0.002	0.004	0.006	0.087
4.64% 3-Axis Trucks (PCE ³ = 2.0)			0.007	0.003	0.010	0.003	0.006	0.011	0.156
12.25% 4-Axis Trucks (PCE ³ = 3.0)			0.028	0.013	0.041	0.014	0.031	0.044	0.621

1 - Vehicle Mix Source: City of Fontana Truck Trip Generation Study for ITE Land Use 150 - Warehousing, August 2003. PCE rates are per SANDAG.
2 - Passenger Car Equivalent (PCE)
3 - Passenger Car Equivalent (PCE)

The use of the Fontana Study to determine the Project's mobile-source impacts, however, is incorrect according to SCAQMD Staff, as it has limited applicability. The Fontana Study should not be relied upon to determine the Project's mobile-source emissions, specifically in regards to the High-Cube Warehouse buildings. As is disclosed in the DEIR and associated appendices, the proposed Project will consist of two industrial warehouse buildings (DEIR, p. 2-10). According to SCAQMD staff, the "Fontana Study, by itself,

¹ "Truck Trip Generation Study," City of Fontana, County of San Bernardino, State of California, August 2003, available at: <http://www.fontana.org/DocumentCenter/Item/View/622>

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is not characteristic of high cube warehouses.”¹⁰ The SCAQMD also staff finds the following additional issues with the Fontana Study:¹¹

- The overall trip rate is based on only four warehouses total, which includes two warehouses with zeros. In other words, the results of the Fontana Study were based on only two data points. As is disclosed in the Fontana Study, the daily trip rate was only based on data from a Target warehouse and a TAB warehouse.¹²
- The Fontana Study does not report any 24-hour daily truck trip rates. According to the Fontana Study, “Trip generation statistics for daily truck trips were not calculated because vehicle classifications counts could not be obtained from the driveway 24-hour counts.”¹³
- The trip rates using the Fontana study are calculated based on a 20 percent truck fleet mix, which is inconsistent with SCAQMD’s recommendation that agencies use a truck fleet mix of 40 percent.

The use of 20% truck fleet mix is not consistent with recommendations set forth by the SCAQMD for High-Cube Warehouses, and does not accurately represent the percentage of trucks that access a High-Cube Warehouse on a daily basis. Rather, the SCAQMD recommends that lead agencies assume a truck fleet mix of 40 percent for High-Cube Warehouses. According to Appendix E: Technical Source Documentation of the CalEEMod User’s Guide, “in order to avoid underestimating the number of trucks visiting warehouse facilities,” SCAQMD staff “recommends that lead agencies conservatively assume that an average of 40% of total trips are truck trips $[(0.48 \times 10 + 0.2 \times 4) / (10 + 4) = 0.4]$.”¹⁴ If Project-specific data is not available, such as detailed trip rates based on a known tenant schedule, this average of 40 percent provides a reasonably conservative value based on currently available data. Since the future tenant is unknown, the tenant schedule is also likely not known; therefore, a 40 percent truck fleet mix should also be assumed for the proposed High-Cube Warehouse buildings.

Specifically, the following fleet mix percentage should have been applied to the High-Cube Warehouse buildings proposed for the Project.

Parameter	DEIR Mix	SWAPE Mix
Passenger Cars (LDA)	79.60%	Passenger Cars (LDA) 59.14%

¹⁰ “Warehouse Truck Trip Study Data Results and Usage” Presentation, SCAQMD Mobile Source Committee, July 2014, available at: <http://www.aqmd.gov/docs/default-source/cema/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finaltrucktripstudymisc072514.pdf?sfvrsn=2>, p. 10.

¹¹ “Warehouse Truck Trip Study Data Results and Usage” Presentation, SCAQMD Mobile Source Committee, July 2014, available at: <http://www.aqmd.gov/docs/default-source/cema/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finaltrucktripstudymisc072514.pdf?sfvrsn=2>, p. 10.

¹² “Truck Trip Generation Study,” City of Fontana, County of San Bernardino, State of California, August 2003, available at: <http://www.fontana.org/DocumentCenter/Home/View/622>, p. 15.

¹³ “Truck Trip Generation Study,” City of Fontana, County of San Bernardino, State of California, August 2003, available at: <http://www.fontana.org/DocumentCenter/Home/View/622>, p. 6.

¹⁴ “Appendix E Technical Source Documentation,” CalEEMod User’s Guide, July 2013, available at: <http://www.aqmd.gov/docs/default-source/cema/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/high-cube-warehouse-cal-eemod-appendix-e.pdf?sfvrsn=2>, pp. 15.

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Operational Mobile Fleet Mix	2 Axle Trucks (LHD1, LHD2, MDV)	3.50%	2 Axle Trucks (LHD1)	6.92%
	3 Axle Trucks (MHD)	4.60%	3 Axle Trucks (MHD)	9.28%
	4+ Axle Trucks (HHDT)	12.30%	4+ Axle Trucks (HHDT)	24.66%

The "Operational Mobile Fleet Mix" percentages for trucks in the table above were adjusted to reflect a truck trip percentage of approximately 40 percent, which is consistent with recommended procedures set forth by SCAQMD staff for High-Cube Warehouses. This fleet mix more accurately represents the number of trips that are likely to occur in relation to the High-Cube Warehouse during Project operation. As such, an updated air quality analysis should be prepared in a DEIR that adequately assesses the Project's air quality impacts, assuming the correct fleet mix for the High-Cube Warehouse land use.

8A-9

Incorrect Truck Trip Length

According to the Trip Type Information table in Appendix A of the DEIR, the CalEEMod model used a default truck trip length of 16.6 miles to estimate Project emissions (pp. 152, pp. 167, pp. 179). This, however, is not only inconsistent with the 40-mile truck trip length recommended by the SCAQMD for High-Cube Warehouses, but is also inconsistent with trip lengths used for similar projects within southern California. As a result, the Project's operational mobile-source emissions are greatly underestimated.

Similar to the proposed Project, the Kimball Business Park Project proposes to construct approximately 1,203,050 square feet of warehouse and light industrial/business park uses within the City of China. The Air Quality Impact Analysis for the Kimball Business Park Project derives a trip length of approximately 50 miles using recommendations provided by the SCAQMD. The Air Quality Impact Analysis states,

8A-10

"In the last five years, the SCAQMD has provided numerous comments on the trip lengths for warehouse/distribution and industrial land use projects (33). The SCAQMD asserts that the model-default trip lengths in CalEEMod¹⁰ and the URBan EMISSIONS (URBEMIS) 2007 model (version 9.2.4) would underestimate emissions. The SCAQMD asserts that for warehouse, distribution center, and industrial land use projects, most of the heavy-duty trucks would be hauling consumer goods, often from the Port of Long Beach and Los Angeles (POLA and POLB) and/or to destinations outside of California. The SCAQMD states that for this reason, the CalEEMod¹⁰ and the URBan EMISSIONS model default trip length (approximately 12.6 miles) would not be representative of activities at like facilities. The SCAQMD generally recommends the use of a 40-mile one-way trip length¹¹.

Therefore, at the very least, the Project's Air Quality Analysis should have used a one-way trip length of 40 miles, as is recommended by the SCAQMD. This conclusion is further supported by the SCAQMD's comments on the Mitigated Negative Declaration (MND) for the Waterman Logistic Center Project. The Waterman Logistic Center proposes to construct a 426,858 square feet of logistics warehouse buildings

¹⁰ Kimball Business Park Air Quality Impact Analysis, Urban Crossroads, available at: <http://www.cityofchina.org/government-services/community-development/environmental-documents>

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within the City of San Bernardino, similar to the proposed Project.¹⁶ The Waterman Logistic Center's Air Quality Study utilized an internal truck trip length of 24.11 miles in accordance with the Southern California Association of Government Heavy Duty Truck Model. The SCAQMD, however, finds issue with this trip length, stating that most industrial land use types haul consumer goods from the Ports of Long Beach and Los Angeles as well as locations outside the SCAQMD boundaries, including Banning Pass, San Diego County line, and Cajon Pass (see excerpt below).

- Project site to Port of Los Angeles/Long Beach: 74 miles
- Project site to Banning Pass: 38 miles
- Project site to San Diego County line: 33 miles
- Project site to Cajon Pass: 24 miles
- Project site to downtown Los Angeles: 60 miles

Trip lengths from the Waterman Logistics Center project site to each of the locations listed by the SCAQMD are well over the 24.11-mile trip length utilized in the Waterman Logistic Center, as well as the 16.6-mile trip length utilized for the proposed Project. Using SCAQMD's recommended methodology, "Assuming that 50 percent of all delivery trips will travel to and from the project and the Port of Los Angeles/Long Beach, the use of 24.11 miles as an average internal truck trip greatly underestimates the air quality impact."¹⁷ The CalEEMod model's proposed trip length of 16.6 miles is substantially less than the 24.11-mile trip length used within the Waterman Logistics Center Air Quality Study. Furthermore, both of the proposed projects are located nearby each other, within San Bernardino County. Therefore, if the SCAQMD concludes that the use of a 24.11-mile trip length would underestimate the Waterman Logistics Center's operational emissions, then surely, the SCAQMD will also find the 16.6-mile trip length used for the proposed Project to be inadequate, resulting in an underestimation of emissions.

As is recommended by the SCAQMD to ensure that the DEIR conservatively evaluates the potential for air quality impacts, the Lead Agency should utilize a trip length that is reflective of the potential truck trips or limit the truck trip miles allowed to levels analyzed in the DEIR. If higher truck trip miles are anticipated or required, the Lead Agency should update the Final Traffic Impact Analysis Report and Final CEQA document to disclose this impact to the public.¹⁸

Failure to Account for Total Lot Acreage

The CalEEMod Analysis relies upon a building acreage of 123.17 acres (Appendix A, pp. 145, pp. 161, pp. 172). However, the DEIR states that "the project also includes off-site infrastructure improvements that, when added to the 123.17-acre project site, totals approximately 139.14 acres" (p. ES-7). This value represents the total area the proposed Project is anticipated to take up, and as such, should be used as the total lot acreage within the air pollution model. Review of the CalEEMod output files, however,

¹⁶ SCAQMD Comment Letter on the Mitigated Negative Declaration (MND) for the Proposed Waterman Logistics Center, January 8 2015, available at: <http://www.sqmd.org/docs/default-source/ceqa/comments-letters/2015/0109wv/mndwaterman.pdf>

¹⁷ *Ibid.*, p. 4.

¹⁸ *Ibid.*, p. 4.

8A-10

8A-11

demonstrates that the additional 16 acres resulting from off-site infrastructure improvements was not included in the model (see excerpt below) (Appendix A, pp. 145, pp. 163, pp. 172).

Land Use	Area	Notes	Lot Acreage	Other Surface Area	Population
Manufacturing	217.79	Off-site	21.10	70,700.00	9
Unimproved Warehouse/Big Box	3,314.50	Off-site	19.30	2,319,500.00	3
Parking Lot	3,315.20	On-site	18.82	3,338,000.00	3

8A-11

The inaccuracy in the "Lot Acreage" presents a critical error in the County's emissions analysis. Land uses, size features, and population are key components of the CalEEMod model that are fundamental to determining the correct default variables that pertain to an individual project, and to conduct accurate, Project-specific calculations. In order for an accurate calculation of the Project's air quality impacts to occur, an appropriate acreage must be used within the model. Therefore, by underestimating the actual "Lot Acreage", the emissions estimated by the CalEEMod model are underestimated and should not be relied upon to determine Project significance.

Updated Analysis Indicates Increase in Pollutant Emissions

To more accurately estimate the proposed Project's operational emissions, we prepared an updated air model using the most recent CalEEMod version, CalEEMod.2013.2.2. Consistent with the DEIR, we included 16 acres of off-site infrastructure improvements. Since it is unknown how many tenants will require cold-storage, we conservatively assumed that approximately 15 percent of the warehouse buildings will be made up of refrigerated warehouses. This percentage is consistent with studies conducted by the SCAQMD on composite warehouses within southern California¹⁹ and is consistent with assumptions used in other CEQA evaluations prepared for similar projects.²⁰ Also consistent with the SCAQMD, we assumed that 40% of the Project's High-Cube Warehouse vehicle trips would be made by trucks, and we applied the SCAQMD recommended fleet mix by axle type to the model for the proposed High-Cube Warehouse (LDA, LHDT1, MHD, and HHDT) (see table below).²¹

SCAQMD Recommended Fleet Mix	
Vehicle Type	Fleet Mix (%)
Passenger Cars (LDA)	59.34%
4+ Axle Trucks (HHDT)	24.66%
3 Axle Trucks (MHD)	9.28%
2 Axle Trucks (LHDT1)	6.92%

¹⁹ "Warehouse Truck Trip Study Data Results and Usage," SCAQMD Stakeholder Working Group, July 17, 2014, available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/finalswg071714.pdf?sfvrsn=2>, p. 15

²⁰ Kimball Business Park Air Quality Impact Analysis, Urban Crossroads, available at: <http://www.cityofchico.org/equipment-services/community-development/environmental/documents>

²¹ "Appendix E Technical Source Documentation," CalEEMod User's Guide, July 2013, available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/high-cube-warehouse-cal-eemod-appendix-e.pdf?sfvrsn=2>, pp. 15

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Total 100.0%

Finally, we utilized a truck trip length of 40 miles to represent the anticipated truck traffic associated with the proposed Project's buildings.

When correct input parameters are used to model emissions from the proposed Project, we find that the Project's operational emissions increase significantly when compared to the DEIR's model. Furthermore, we found that all the Project's operational emissions, except SO_x emissions, exceed the SCAQMD regional significance thresholds (see table below).

Model	Operational Emissions (lbs/day)				
	ROG	NO _x	CO	PM10	PM2.5
DEIR	37.0	92.0	289.0	64.0	19.0
SWAPE	207.0	1,112.4	1,329.0	163.0	58.3
Percent Increase	560%	1,110%	360%	155%	207%
SCAQMD Threshold	55	55	550	150	55
Exceeded?	Yes	Yes	Yes	Yes	Yes

8A-12

As demonstrated in the table above, all the operational criteria air pollutant emissions increase when correct input parameters are used to model emissions. ROG emissions increase by approximately 560 percent, NO_x emissions increase by approximately 1,110 percent, CO emissions increase by approximately 360 percent, PM10 emissions increase by approximately 155 percent, and PM2.5 emissions increase by approximately 207 percent. These updated emission estimates demonstrate that when the Project's operational emissions are estimated correctly, the Project would result in threshold exceedances for ROG, CO, PM10 and PM2.5 that were not identified in the DEIR. A DEIR should be prepared that includes an updated model to adequately estimate the Project's operational warehouse emissions, and additional mitigation measures, as identified below, should be incorporated to reduce the Project's emissions to a less-than-significant level.

Additional Feasible Mitigation Measures Available

Our updated CalEEMod model demonstrates that when Project activities are modeled correctly, operational ROG, NO_x, CO, PM10, and PM2.5 emissions would result in a potentially significant impact. Therefore, additional mitigation measures must be identified and incorporated in an updated DEIR to reduce these emissions to a less-than-significant level. The SCAQMD has previously recommended additional mitigation measures for operational ROG, NO_x, CO, PM10, and PM2.5 emissions that result primarily from truck activity emissions for similar projects. These measures would effectively reduce the Project's operational ROG, NO_x, CO, PM10, and PM2.5 emissions. Measures recommended for the Waterman Logistic Center that are also applicable for this Project include²²:

8A-13

²² SCAQMD Comment Letter in Response to MND for the Waterman Logistic Center, January 2018, available at: <http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndwaterman.pdf?sfvrsn=1>

- Provide electric vehicle charging stations that are accessible for trucks.
- Require the proposed warehouse to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in.
- Limit the daily number of trucks allowed at the facility to levels analyzed in the DEIR. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the project through CEQA prior to allowing this higher activity level.
- Design the site such that any check-in point for trucks is well inside the facility to ensure that there are no trucks queuing outside of the facility.
- On-site equipment should be alternatively fueled.
- Provide food options, fueling, truck repair and or convenience stores on-site to minimize the need for trucks to travel through residential neighborhoods.
- Should the proposed Project generate significant emissions, the Lead Agency should require mitigation that requires accelerated phase-in for non-diesel powered trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in emissions, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Final CEQA document, the Lead Agency should require a phase-in schedule for these cleaner operating trucks to reduce project impacts.

In addition to the mobile source mitigation measures above, the Lead Agency should incorporate the following on-site area source mitigation measures below, as suggested by the SCAQMD, to reduce the Project's operational ROG, NO_x, CO, PM₁₀, and PM_{2.5} emissions during operation.²³

- Maximize use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs and/or the Project side to generate solar energy for the facility.
- Limit the use of outdoor lighting to only that needed for safety and security purposes.
- Install solar lights or light-emitting diodes (LEDs) for outdoor lighting.
- Require use of electric or alternatively fueled sweepers with HEPA filters.

We also identified several additional mitigation measures that the DEIR did not incorporate, which would further reduce the Project's operational ROG, NO_x, CO, PM₁₀, and PM_{2.5} emissions. Additional mitigation measures that could be implemented to reduce emissions include, but are not limited to, the following:²⁴

- Use passive solar design, such as:^{25,26}

²³ SCAQMD Comment Letter in Response to MND for the Waterman Logistic Center, January 2018, available at: <http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/january/mndwaterman.pdf>

²⁴ http://se.ca.gov/efubshwrmfoc/pdf/GVW_mitigation_measures.pdf

²⁵ Santa Barbara Air Pollution Control District, Scope and Content of Air Quality Sections in Environmental Documents, September 1997.

²⁶ Butte County Air Quality Management District, Indirect Source Review Guidelines, March 1997.

8A-13

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- Orient buildings and incorporate landscaping to maximize passive solar; heating during cool seasons, and minimize solar heat gain during hot seasons; and
- Enhance natural ventilation by taking advantage of prevailing winds.
- Reduce unnecessary outdoor lighting by utilizing design features such as limiting the hours of operation of outdoor lighting.
- Develop and follow a "green streets guide" that requires:
 - Use of minimal amounts of concrete and asphalt;
 - Installation of permeable pavement to allow for storm water infiltration; and
 - Use of groundcovers rather than pavement to reduce heat reflection.¹⁷
- Implement Project design features such as:
 - Shade HVAC equipment from direct sunlight;
 - Install high-albedo white thermoplastic polyolefin roof membrane;
 - Install high-efficiency HVAC with hot-gas reheat;
 - Install formaldehyde-free insulation; and
 - Use recycled-content gypsum board.
- Provide education on energy efficiency to residents, customers, and/or tenants. Provide information on energy management services for large energy users.
- Meet "reach" goals for building energy efficiency and renewable energy use.
- Install solar, wind, and geothermal power systems and solar hot water heaters.
- Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.
- Plant low-VOC emitting shade trees, e.g., in parking lots to reduce evaporative emissions from parked vehicles.
- Use CARB-certified or electric landscaping equipment in project and tenant operations; and introduce electric lawn, and garden equipment exchange program.

Finally, the Kimball Business Park Project Final Environmental Impact Report includes various feasible mitigation measures that would reduce on-site area emissions that are applicable to the proposed Project and include, but are not limited to:¹⁸

- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure and/or within the heating and cooling distribution system.
- Use of energy-efficient space heating and cooling equipment.
- Installation of dual-paned or other energy efficient windows.

BA-13

¹⁷ See Irvine Sustainable Travelways "Green Street" Guidelines: www.ci. Irvine.ca.us/ichp/Planning/Historyand.asp?HistoryDoc=8994; and Cool Houston Plan: www.harc.edu/Projects/CoolHouston.

¹⁸ Mitigation Monitoring Plan for the Kimball Business Park Project Final Environmental Impact Report, July 2016, available at: <http://www.cityofchicago.org/home/showdocument?id=13744>

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- * • Use of interior and exterior energy efficient lighting that exceeds the California Title 24 Energy Efficiency performance standards.
- * • Installation of automatic devices to turn off lights where they are not needed.
- * • Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.
- * • Design buildings to accommodate photo-voltaic solar electricity systems or the installation of photovoltaic solar electricity systems.
- * • Installation of a photo-voltaic electrical generation system (PV system) capable of generating 565,000 kilowatt hours per year on the roofs of project buildings. The developer(s) may install the required PV system in phases on a pro rata square foot basis as each building is completed; or if the PV system is to be installed on a single building, all of the PV system necessary to supply the PV estimated electrical generation shall be installed within two years (24 months) of the first building that does not include a PV system receives a certificate of occupancy.

8A-13

These measures are more stringent and prescriptive than those measures identified in the DEIR. When combined together, these measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduces emissions released during Project operation. An updated DEIR must be prepared to include additional mitigation measures, as well as include an updated air quality analysis to ensure that the necessary mitigation measures are implemented to reduce operational emissions to below thresholds. Furthermore, the Project Applicant needs to demonstrate commitment to the implementation of these measures prior to Project approval, to ensure that the Project's operational emissions are reduced to the maximum extent possible.

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

Construction and operation of the proposed Project would result in emissions of Diesel Particulate Matter ("DPM"), a recognized Toxic Air Contaminant ("TAC") and known carcinogen. The DEIR fails to conduct a construction health risk assessment (HRA), however, and simply states that although TACs can be generated as a result of Project construction "the principal health risk addressed in this study was chronic health hazards and/or excess cancer risk due to increased diesel fuel combustion (or more specifically, DPM) emissions during the operations phase of the project" (p. 4.3-15). The DEIR later determines, without actually conducting a construction HRA, that "the greatest potential for health impacts would result from DPM emitted during the operations phase of the Project from the use of diesel-fueled trucks accessing the site" (p. 4.3-32). As a result, the risk associated with DPM exposure resulting from construction activities was not evaluated.

8A-14

The omission of a quantified HRA based on the unsubstantiated assumption that Project operation would result in greater DPM emissions than Project construction is inconsistent with the most recent guidance published by Office of Environmental Health Hazard Assessment (OEHA), the organization responsible for providing recommendations and guidance on how to conduct health risk assessments in California. In February of 2015, OEHA released its most recent *Risk Assessment Guidelines: Guidance*

Manual for Preparation of Health Risk Assessments, which was formally adopted in March of 2015.²⁶ This guidance document describes the types of projects that warrant the preparation of a health risk assessment. Construction of the Project will produce emissions of DPM, a human carcinogen, over a construction period of approximately 18 months, from July 2016 to December 2017, for construction of PA-2, and over a period of 28 months, from January 2018 to April 2020, for the construction of PA-1 (p. 2-24). OEHHA recommends that all short-term projects lasting longer than two months be evaluated for cancer risks to nearby sensitive receptors.²⁷ This recommendation reflects the most recent health risk assessment policy, and as such, the health risk for Project construction should be quantified and evaluated against the numerical significance threshold established by the SCAQMD.

8A-14

Due to the omission of the construction CalEEMod output files, we were unable to conduct a construction health risk assessment. However, given of the size of the Project and emissions resulting from Project construction, it is reasonable to assume that construction-related DPM emissions may result in a potentially significant health risk impact to nearby sensitive receptors. As such, an updated DEIR should be prepared to adequately assess this risk, and additional mitigation should be implemented where necessary.

Greenhouse Gas

Failure to Demonstrate Consistency with Climate Action Plan

The DEIR finds that the Project's annual operational greenhouse gas (GHG) emissions will significantly exceed the significance threshold of 3,000 MT CO₂e per year adopted by the City of Ontario ("City") (p. 4.7-19). To mitigate emissions that exceed this numeric threshold, the Project Applicant evaluates the Project's emissions against the City's Community Climate Action Plan (CAP) by using the CAP's Screening Tables, which assigns points for incorporating mitigation or project design features into the Project's plan (p. 4.7-20). The DEIR concludes that "compliance with the GHG reduction measures established under the CAP will reduce the project's GHG emissions to a less than significant level" (p. 4.7-19). While the DEIR claims that the Project will comply with applicable GHG regulations, it fails to actually demonstrate how this supposed consistency will be accomplished. Given the fact that the DEIR determined that Project emissions would exceed thresholds by 17,294 MT CO₂e per year, the Project will have a potentially significant impact on global climate change (p. 4.7-19). Additionally, the Project has the potential to conflict with other applicable plans, policies, or regulations for the purpose of reducing GHG emissions. For these reasons, we find the DEIR's greenhouse gas analysis to be inadequate, and require that an updated DEIR be prepared to include an adequate, more thorough evaluation of the Project's GHG emissions, in order to better demonstrate the Project's consistency with applicable GHG reduction targets and measures.

8A-15

In December of 2014, the City of Ontario adopted the Climate Action Plan (CAP), which was developed to reduce GHG emissions from activities within the region, consistent with reduction targets set forth by

²⁶ "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/that_spots/mrassmnts2015.html

²⁷ "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: http://oehha.ca.gov/air/that_spots/2015/2015GuidanceManual.pdf, p. 8-18.

Assembly Bill 32 (AB32), and in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5.¹⁰ Specifically, the CAP meets the requirements set forth in CEQA Guidelines Section 15183.5, whereby a lead agency (e.g., the City of Ontario) may analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce GHG emissions.¹¹

As stated above, the CAP sets a framework for reducing 2020 emissions that is consistent with AB32. The City of Ontario's CAP planning process includes three steps: (1) Quantify the amount of current GHGs and project future GHG emissions; (2) Select and quantify GHG reduction measures; (3) Implement GHG reduction measures.¹² The CAP provides specific guidance to reduce emissions by providing a Screening Table that includes GHG reduction measures that, if fully implemented, would reduce a Project's emissions to a less than significant level.¹³ According to the CAP, "Projects within the Specific Plan that garner at least 100 points will be consistent with the reductions quantities anticipated in the City's CAP" (Appendix B, pp. 389).

The DEIR's Greenhouse Gas Analysis identifies 18 mitigation measures set forth in the CAP and concludes that implementation of those mitigation measures would achieve 103 points (p. 4.7-21). Therefore, the measures proposed in the Screening Table should have also been included as mandatory conditions of approval or as mitigation in an effort to ensure that the proposed measures will be implemented once the Project is approved. Review of Table ES-1, which lists the Project's impacts and proposed mitigation measures, however, demonstrates that the proposed reduction measures outlined in the Screening Table were not included as mitigation measures and were not included as mandatory conditions of approval (p. 2-25, p. 2-27). As a result, it is unclear what measures will actually be implemented once the Project is approved, and it is unclear whether implementation of these measures would satisfy requirements set forth by the CAP. By failing to include the measures proposed in the Screening Table as mitigation or mandatory conditions of approval, these measures are not enforceable. Thus, the CAP consistency analysis conducted by the DEIR becomes an empty paper exercise, in which boxes are checked but the actual activities called for in those boxes do not occur. Until the Project includes the Screening Table reduction measures as mitigation or mandatory conditions of approval, the Project is not consistent with the CAP and cannot claim that it is.

Furthermore, the DEIR fails to quantify the Project's GHG emissions that will be avoided in 2020, assuming that all mitigation measures are implemented. According to the CAP, "new projects emitting

BA-15

¹⁰ "Community Action Plan," City of Ontario, December 16, 2014, available at:

http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/cap_12-16-2014.pdf p. ES-13.

¹¹ "Community Action Plan," City of Ontario, December 16, 2014, available at:

http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/cap_12-16-2014.pdf p. ES-13.

¹² "Community Action Plan," City of Ontario, December 16, 2014, available at:

http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/cap_12-16-2014.pdf p. 1-12.

¹³ "Community Action Plan," City of Ontario, December 16, 2014, available at:

http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/cap_12-16-2014.pdf p. 3-2.

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more than 3,000 MT CO₂e per year need to reduce emissions by 25%.¹⁵ Specifically, the CAP states that the amount of GHG emissions that will be avoided in 2020 due to implementation of the Project's design features should be quantified.¹⁶ The DEIR, however, fails to quantify how the Project will effectively implement applicable measures to reduce Project emissions to 25% below business as usual (BAU) levels.

Not only does the DEIR fail to include the CAP's reduction measures as mitigation or conditions of approval and fail to quantify the Project's mitigated GHG emissions, but it also fails to actually implement the GHG reduction measures discussed in the DEIR. According to the CAP,

"The success of the Community CAP will depend on cooperation, commitment, and participation by stakeholders and all City departments. To that end, the City has developed an implementation plan that creates an infrastructure for ensuring the goals of the Community CAP are achieved".¹⁷

8A-15

Furthermore, the CAP specifies that "implementation includes identification of responsible parties for each measure, identification of funding sources, scheduling and ongoing monitoring, and progress reporting".¹⁸ Review of the DEIR and its associated appendices demonstrates that discussion of responsible parties, funding, monitoring, and progress reporting for the proposed Project was omitted from the DEIR. This is inconsistent with regulations set forth in the City's CAP and as a result, an updated DEIR should be prepared to adequately demonstrate compliance with the CAP. Specifically, the updated DEIR should identify and include specific GHG reduction measures as conditions of Project approval or as mitigation, should quantify the Project's reduced GHG emissions to determine compliance with the 25% reduction requirement, and should adequately demonstrate consistency with the CAP's implementation plan.

Sincerely,



Matt Hagemann, P.G., C.Hg.

¹⁵ "Community Action Plan", City of Ontario, December 16, 2014, available at: http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/ccap_12-16-2014.pdf, p. 3-2

¹⁶ "Community Action Plan", City of Ontario, December 16, 2014, available at: http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/ccap_12-16-2014.pdf, p. 1-12

¹⁷ "Community Action Plan", City of Ontario, December 16, 2014, available at: http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/ccap_12-16-2014.pdf, p. ES-14

¹⁸ "Community Action Plan", City of Ontario, December 16, 2014, available at: http://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Applications/ccap_12-16-2014.pdf, p. 1-12



Jessie Jaeger

EXHIBIT 2



SMITH ENGINEERING & MANAGEMENT

December 28, 2016

Ms. Rebecca Davis
Lozeau Drury
410 12th Street, Suite 250
Oakland, CA 94607

**Subject: Colony Commerce Center Specific Plan DEIR (SCN
2015061023)** P 16132

Dear Ms. Davis:

At your request, I have reviewed the Draft Environmental Impact Report (the "DEIR") for the Colony Commerce Center Specific Plan ("the Project") in the City of Ontario ("the City"). My review is specific to the traffic and transportation section of the DEIR and its supporting documentation. It also considers the traffic and transportation inputs to the Air Quality and Greenhouse Gas sections.

My qualifications to perform this review include registration as a Civil and Traffic Engineer in California and over 48 years professional consulting engineering practice in the traffic and transportation industry. I have both prepared and performed adequacy reviews of numerous transportation and circulation sections of environmental impact reports prepared under the California Environmental Quality Act (CEQA) including those for modern warehouse developments. My professional resume is attached.

8B-1

Findings of my review are summarized below.

Use of the Fontana Truck Rates for the Proposed Project is Inappropriate

The DEIR and its supporting traffic study calculates the portion of the Project's trip generation that would be comprised of heavy trucks and the composition of that truck fleet based on the 2003 City of Fontana *Truck Trip Generation Study*.

8B-2

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While that study was path-blazing in its time, it was based on a small and localized data sample. The data was collected in 2002 and is now 14 years old. Based on much more extensive and recent study, the South Coast Air Quality Management District (SCAQMD) has issued its own guidance for analysis of truck traffic at warehouse facilities. The table below contrasts the guidance of the Fontana study versus that of SCAQMD¹.

Trips by Vehicle Type: Fontana vs. SCAQMD

	FONTANA	SCAQMD
% Trips By Auto	79.57	60.00
% Trucks 4+ Axle (PCE 3.0)	12.33	24.14
% Trucks 3 Axle (PCE 2.0)	4.64	9.08
% Trucks 2 Axle (PCE 1.5)	3.46	6.78
Total Vehicles	100%	100%

As can be seen from the table, use of the modern SCAQMD rates results in about twice as many heavy trucks and twice as many of the heaviest trucks than use of the Fontana rates that were relied on in the DEIR traffic analysis. This affects the total trip generation in passenger car equivalents (PCEs) which in turn affect the LOS calculations at intersections, the number of long vehicles (which affects queue storage requirements – particularly where entries are exclusively or predominantly by truck, and the air quality and greenhouse gas emissions analysis.

If the passenger car equivalent PCE trip generation had been compiled relying on the distribution of vehicle type percentages in accordance with the SCAQMD statistics for the high cube warehouse component of the Project, the net PCE trip generation rate for the high cube warehouse component would be 2.071 PCE trips per thousand square feet (KSF) daily, 0.177 PCE per KSF in the AM peak hour and 0.193 PCE per KSF in the PM peak. This compares to the net PCE trip generation rates reflected in the data on (but not actually compiled as such) in DEIR table 4.14- 7 as indicated in the table below.

Net PCE Trip Generation For High Cube Warehouse (per KSF)

	Total AM PK Hour	Total PM PK Hour	Total Daily
Per Fontana Data	0.145	0.156	2.201
Per SCAQMD Data	0.177	0.193	2.701
% SCAQMD higher	33%	23.7%	22.7%

¹ See <http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/high-cube-resource-caleemod-appendix-e.pdf?sfvrsn=2>, p. 15.

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If DEIR Table 4.14-8 had been compiled with the PCE trip generation for the high cube warehouse component based on the truck percentages indicated by SCAQMD instead of the aged and limited Fontana study, it would show that the grand total trip generation for the Project is 931 total PCE in the AM peak, 966 total PCE in the PM peak and 8797 total PCE daily. This is instead of the respective totals of 860, 884, and 7690 PCE trips indicated on Table 4.14-8. These trip differences may be sufficient to alter the conclusions of the impact analysis at some locations.

The City of Ontario is within the jurisdiction of the SCAQMD and should have relied upon the superior guidance of that agency's truck study instead of the aged and limited Fontana data. The entire traffic analysis should be redone using the SCAQMD data. This scale of difference in the trip generation could also alter the conclusions of the air quality/greenhouse gas studies.

8B-2
cont.

We checked the DEIR Appendices detailing the Air Quality and Greenhouse Gas impact evaluations. These make clear that the vehicle type distributions are the same as those in the traffic analysis - reflecting the Fontana data rather than that of SCAQMD. Hence, these analyses should also be redone using the proper modern data on truck share and truck fleet composition data.

We also note that the Air Quality and Greenhouse Gas analyses indicate that the default values for truck trip length in the related analysis programs were utilized. These default values may understate truck trip length in the subject Project area. The DEIR preparers should consult SCAQMD for appropriate truck trip length values.

Project Site Plan Dimensions Unclear; Layout May Increase Truck Traffic Over That Estimated Using ITE, Fontana and SCAQMD Rates

The dimensions on the site plans provided in the DEIR are unclear, even when the plans are blown up on a large-screen monitor. This renders the DEIR inadequate as an information document. However, to the best that we can determine based on the plans that have been provided, large tractor trailer units cannot conveniently maneuver to and from the loading dock bays with the adjacent bays occupied by similar large tractor-trailer units. This results in an operational situation where when a big-rig arrives at the site, the tractor unit is detached from the trailer and is staged off-site; when a trailer is to be removed from the site, a tractor unit must return from off site, attach the trailer and remove it.² Consequently, under this mode of operation, bringing a trailer unit to the site and later removing it involves 4 trips of the tractor unit instead of the 2 that would

8B-3

² In such operations, when trailer units are moved between dock bays and storage bays, the movement is performed by "yard-tractors", special short-wheelbase tractor units with small, high visibility cabs that are used almost exclusively for on-site movements.

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be the case when more generous apron layouts allow the tractor to remain attached while the trailer is at the dock bays. Operations involving off-site staging of the tractor units are generally not anticipated in the trip generation sources relied upon in the DEIR and would result in higher numbers of overall trips and higher percentages of trips by 3-axle trucks. This could affect the air quality and greenhouse gas analyses as well as the traffic impact analysis.

8B-3
cont.

Please provide a site plan that includes clear dimensions of the loading bays, maneuvering aprons and parking bays in fonts readable at normal page size. Please clarify whether off-site staging of tractor units is contemplated in the operation and, if so, how this has been reflected in the Project trip generation analysis.

It Is Unclear That Most of the Mitigation Measures Defined Will Actually Mitigate the Project's Traffic Impacts

The DEIR defines 18 Transportation/Traffic mitigation measures. On at least 13 of these, the narrative in the summary indicates that the mitigation is only a partial one - enough to offset the Project's contribution to impact, but not necessarily improvement enough to return operations to acceptable conditions. In virtually all of these situations, other projects are being counted-on to make fair share contributions to the same improvement. The DEIR gives no evidence that the net impact of these multiple projects counted on to fund the improvement(s) will actually be offset by the actual net benefit of the improvement.

We illustrate the problem by a hypothetical example. Presume that the Project impacts delay at a particular intersection by 3 seconds that in the cumulative condition will exceed acceptability level by a total of 20 seconds. A mitigation measure has been defined that would reduce delay by say 12 seconds. The Project is conditioned to make a fair share contribution toward implementing this mitigation which clearly would offset the impact of the Project and then some, but not return things to acceptable conditions. But if 5 other projects are also counted on to make fair share contributions to the specific mitigation and each of them adds 3 seconds of delay (making a total impact of the 6 projects of 18 seconds), then all six projects cannot be said to have their contribution to impact at this location mitigated by the partial measure. The City must assure in each instance that the combined impacts of the claimants to mitigation from a partial measure do not exceed the benefit of that measure. It has not done so in the DEIR.

8B-4

Cumulative Analysis Lacks Careful Current Definition of Reasonably Likely Projects.

The City and its consultants apparently performed no original research as to what reasonably likely projects should be included in the cumulative analysis. Both

8B-5

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DEIR page 4.14-27 and DEIR Appendix L (the Traffic Impact Analysis) at page 21 state that the cumulative projects list was taken from the Watson Industrial Park Traffic Impact Analysis, a component of an EIR for a project located in another city (Chino). Hence, the City and its consultants depended on the City of Chino and its consultants to have done an adequate review relative to developments in Ontario and other nearby jurisdictions up to the time of the Notice of Preparation (NOP) for this Colony Commerce Center EIR. Obviously, that was not the City of Chino's purpose in preparing the cumulative list for Watson.

The problem with this is that the NOP for Watson was circulated on or about April 10, 2014, more than a year before the NOP for Colony Commerce Center was circulated on June 8, 2015. Hence, over the 14 months that intervened, there is the potential that significant numbers of large projects close enough and large enough to Colony Commerce Center to alter cumulative conditions may have become reasonably likely.

One example is the Kimball Business Park project in the City of Chino. This project, the NOP for which was filed on July 10, 2015, is practically next door to Colony Commerce Center, and involves over 1.2 million square feet of warehouse, light industrial and business park uses and would impact many of the same intersections along Archibald and Limonite Avenues as the Colony Project as well as impacting SR 60 and I-15 in the same areas as the subject Project. Yet it is not considered among the cumulative projects in the Colony Project DEIR. Although the Kimball project NOP was issued roughly a month later than that for Colony, its proximity and the nature of its traffic as well as the fact that its DEIR was circulated in February, 2016, well before the Colony Project traffic analysis was completed in September, 2016 (to say nothing of the fact that the Kimball Final EIR was certified before the Colony TIA was completed) clearly indicates the subject DEIR is deficient in not having considered Kimball in the cumulative analysis.

Another example of a key project not included in the cumulative analysis is the World Logistics Center project in Moreno Valley. Although this project is located about 20 miles away from the subject Project site, its sheer size and nature, over 40 million square feet of high cube warehousing that would dump some 69,000 mostly heavy truck trips per day onto SR 60 and subsequently other elements of the State Highway System, dictate that it be considered in the cumulative analysis of the subject Project. World Logistics Center has been undergoing planning and environmental analysis since 2008 and, because of its enormous size and controversial nature, was known or should have been known to the City of Ontario and its consultants. In fact, the Notice of Determination certifying the World Logistics FEIR and approving the project was circulated prior to completion of the Appendix L Traffic Impact Analysis for the Colony DEIR. A

8B-5
cont.

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revised cumulative analysis using a more complete list of concurrent reasonably likely projects should be performed.

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Existing Conditions Traffic Counts Outdated

The Project area and neighboring areas of Chino and Eastvale are rapidly changing, both in terms of land use development and road network development. In reviewing DEIR Appendix L, we notice that many of the "existing conditions" traffic counts were obviously borrowed from other studies, because they are taken well before the Project's NOP date of June 8, 2015. This makes some of the "existing conditions" analysis as compiled in the DEIR and its supporting Appendix L inaccurate. For instance, the count at the intersection of Merrill and Archibald Avenues, just one block from the Project site, the counts were obviously taken in 2014 before the east leg of Merrill was developed as anything more than a dirt farm road being used as access in the initial grading stages for a residential subdivision and while the west leg of Merrill was impaired by ongoing construction (Merrill was completed as a four-lane divided road with its intersection with Archibald signalized sometime before March, 2015). There is no indication if or how the earlier counts were adjusted to reflect actual conditions that existed during the actual period of traffic study preparation. It is apparent that the City is prepared to cut cost of analysis by accepting obsolete data that is inaccurate. If the existing counts are not right, the entire foundation of the analysis is undermined and the DEIR fails to provide the good faith effort to disclose impact that CEQA demands.

8B-6

Conclusion

This concludes my current comments on the Colony Commerce Center DEIR. For the reasons stated above, the traffic analysis is inadequate and revised traffic, air quality and greenhouse gas analyses should be performed. Results should be recirculated in draft status for a full 45 day review period.

8B-7

Sincerely,

Smith Engineering & Management
A California Corporation

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Daniel T. Smith Jr., P.E.
President



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Attachment to Comment
Letter 8B

Attachment 1
Resume of Daniel T. Smith Jr., P.E.

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Transportation Centers. Project manager for Daly City Intermodal Study which developed a \$7 million surface bus terminal, traffic access, parking and pedestrian circulation improvements at the Daly City BART station plus development of functional plans for a new BART station at Colma. Project manager for design of multi-modal terminal (commuter rail, light rail, bus) at Mission Bay, San Francisco. In Santa Clara Long Range Transit Development Program, responsible for plan to relocate system's existing transit-transfer hub and development of three satellite transfer hubs. Performed airport ground transportation system evaluations for San Francisco International, Oakland International, Sea-Tac International, Oakland International, Los Angeles International, and San Diego Lindbergh.

Campus Transportation. Campus transportation planning assignments for UC Davis, UC Berkeley, UC Santa Cruz and UC San Francisco Medical Center campuses, San Francisco State University, University of San Francisco, and the University of Alaska and others. Also developed master plans for institutional campuses including medical centers, headquarters complexes and research & development facilities.

Special Event Facilities. Evaluations and design studies for football/baseball stadiums, indoor sports arenas, horse and motor racing facilities, theme parks, fairgrounds and convention centers, ski complexes and destination resorts throughout western United States.

Parking. Parking programs and facilities for large area plans and individual sites including downtowns, special event facilities, university and institutional campuses and other large site developments; numerous parking feasibility and operations studies for parking structures and surface facilities; also, resident preferential parking.

Transportation System Management & Traffic Restraint. Project manager on FHWA program to develop techniques and guidelines for neighborhood street traffic limitation. Project manager for Berkeley, (Calif.), Neighborhood Traffic Study, pioneered application of traffic restraint techniques in the U.S. Developed residential traffic plans for Menlo Park, Santa Monica, Santa Cruz, Mill Valley, Oakland, Palo Alto, Piedmont, San Mateo County, Pasadena, Santa Ana and others. Participated in development of photo-radar speed enforcement device and experimented with speed humps. Co-author of Institute of Transportation Engineers reference publication on neighborhood traffic control.

Bicycle Facilities. Project manager to develop an FHWA manual for bicycle facility design and planning, on bikeway plans for Del Mar, (Calif.), the UC Davis and the City of Davis. Consultant to bikeway plans for Eugene, Oregon, Washington, D.C., Buffalo, New York, and Skokie, Illinois. Consultant to U.S. Bureau of Reclamation for development of hydraulically efficient, bicycle safe drainage inlets. Consultant on FHWA research on effective retrofits of undercrossing and overcrossing structures for bicyclists, pedestrians, and handicapped.

MEMBERSHIPS

Institute of Transportation Engineers Transportation Research Board

PUBLICATIONS AND AWARDS

Residential Street Design and Traffic Control, with W. Homburger et al. Prentice Hall, 1989.

Co-recipient, Progressive Architecture Citation, *Mission Bay Master Plan*, with I.M. Pei WRT Associated, 1984.

Residential Traffic Management, State of the Art Report, U.S. Department of Transportation, 1979.

Improving The Residential Street Environment, with Donald Appleyard et al., U.S. Department of Transportation, 1979.

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Co-recipient, Progressive Architecture Award, *Livable Urban Streets, San Francisco Bay Area and London*, with Donald Appleyard, 1979.

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EXHIBIT 3

2.0 Response to Comments on the Draft EIR

Final EIR

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Richard Ayala, Senior Planner
City of Ontario
303 East "B" Street
Ontario, CA 91764

29 December 2016

RE: Colony Commerce Center DEIR

Dear Mr. Ayala,

I write to comment on the Draft EIR prepared for the Colony Commerce Center Specific Plan (AECOM 2016a), which I understand is to be industrial buildings totaling 2,950,000 square feet on 123.7 acres in the City of Ontario. The project appears to center around warehouse distribution, but the DEIR was a bit vague about the purpose of the buildings or the project.

My qualifications for preparing expert comments are the following. I earned a Ph.D. degree in Ecology from the University of California at Davis in 1990, where I subsequently worked for four years as a post-graduate researcher in the Department of Agronomy and Range Sciences. My research has been on animal density and distribution, habitat selection, habitat restoration, interactions between wildlife and human infrastructure and activities, conservation of rare and endangered species, and on the ecology of invading species. I have authored numerous papers on special-status species issues, including "Using the best scientific data for endangered species conservation," published in *Environmental Management* (Smallwood et al. 1999), and "Suggested standards for science applied to conservation issues" published in the *Transactions of the Western Section of The Wildlife Society* (Smallwood et al. 2001). I served as Chair of the Conservation Affairs Committee for The Wildlife Society - Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've been a part-time lecturer at California State University, Sacramento. I was also Associate Editor of wildlife biology's premier scientific journal, *The Journal of Wildlife Management*, as well as of *Biological Conservation*, and I was on the Editorial Board of *Environmental Management*.

I have performed wildlife surveys in California for thirty-two years. Over these years, I studied the impacts of human activities and human infrastructure on wildlife, including on golden eagle, Swainson's hawk, burrowing owl, mountain lions, San Joaquin kangaroo rat, and other species. I have also performed wildlife surveys at many proposed project sites. I performed mountain lion track surveys throughout California since 1985. I also collaborate with colleagues worldwide on the underlying science and policy issues related to anthropogenic impacts on wildlife.

My comments are numbered, including through my tables. My CV is attached.

8C-1

BIOLOGICAL IMPACTS ASSESSMENT

Comment 1. Under CEQA, ¹ "[A] paramount consideration is the right of the public to be informed in such a way that it can intelligently weigh the environmental consequences of any contemplated action and have an appropriate voice in the formulation of any decision." The public needs information that is thorough, relevant, unbiased, and honest; the public needs full disclosure of the environmental setting and possible cumulative impacts. If surveys in support of the environmental review are deficient due to budgetary or time constraints, then the analyst should err on the side of caution when predicting potential project impacts on rare and precious resources at issue (National Research Council 1986, O'Brien 2000, Shrader-Frechette and McCoy 1992). Doing so would be scientifically defensible, and it would be consistent with the goals and objectives of CEQA. The burden of proof is supposed to be on proving the absence of special-status species, not on proving presence.

8C-2

Comment 2. Unfortunately, the impacts determinations in the DEIR are based on insufficient baseline data, poor and often misleading characterizations of the ecology and habitat requirements of potentially occurring special-status species, and a misleading characterization of the environmental context in which this project is proposed. PCR (2016) and AECOM (2016a) characterize the project area as highly disturbed and devoid of natural vegetative cover, and therefore of little to no value to special-status species or to wildlife movement in the region. However, wild animals will live where they must and where they are able. Species such as Swainson's hawks, which are known to use grasslands and savannahs, have in recent decades taken to foraging and nesting around alfalfa fields, field crops and pastures where they can still find sufficient food (Smallwood 1995, Smallwood et al. 1996). Many other special-status species similarly have found ways to cope on rural landscapes in spite of the conversions of their natural habitats to agricultural uses. A more appropriate characterization of the project area would have been to point out the island-like nature of the rural setting in which the proposed project is situated, and how the encroachment of residential, commercial and industrial land conversions from all sides have transformed the project vicinity into the last remaining rural lowland in the region. A more appropriate characterization would have been to point out that the project area is the obvious stop-over habitat for multiple special-status species of birds during dispersal or migration, such as during Swainson's hawk migration.

8C-3

Comment 3. As an example of the approach the DEIR takes, AECOM (2016a:4.4-7) says of the Swainson's hawk, "The study area supports a few trees, primarily along the southern boundary and on the northwest corner, which may provide some suitable nesting habitat. However, these trees are limited and are directly adjacent to roads that likely contribute noise disturbance due to traffic." By characterizing these trees as limited, does AECOM (2016a) mean that the trees at the project site only have so many branches? I ask because in the context of assessing impacts to Swainson's hawk, this characterization makes no sense. I have documented many Swainson's hawk nests in

8C-4

¹ Environmental Planning and Information Council vs. County of El Dorado (1982) 131 Cal. App. 3d 350, 354.

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Eucalyptus trees and in other roadside trees, and I have also observed many Swainson's hawks perched in such trees during the non-nesting seasons. AECOM (2016a) lacks foundation for declaring these trees as limited or unsuitable for Swainson's hawks.

8C-4
cont.

Comment 4. Continuing to hint at bias in favor of the project, AECOM (2016a:4.4-7) says of Swainson's hawks, "The species is known to migrate long distances, however, and so has a potential to pass through the area. The agricultural fields within the study area supply open areas with some suitable habitat for burrowing animals and therefore may provide a limited food source for this species. Since the agriculture is currently active, it reduces the likelihood of an abundant food source. Based on the low quality of habitat and the absence of known records of this species in the area, the potential for this species to forage was determined as very low and likely limited to migrating birds." However, it is well known that Swainson's hawks forage and nest on agricultural landscapes (Bechard 1982; Estep 1989, 2008; Babcock 1995; Smallwood 1995; Smallwood and Geng 1993a, b; Smallwood et al. 1996; Swolgaard et al. 2008). They also nest in urban environments so long as the nests are near enough to natural or agricultural areas for the adult birds to efficiently forage (England et al. 1995).

8C-5

Comment 5. Furthermore, a quick look at eBird (<http://ebird.org/ebird/explore>) refutes AECOM's (2016a:4.4-7) claim of an absence of known records of Swainson's hawks in the area. A review of eBird reveals a pair of Swainson's hawks observed only one mile from the project site on 10 April 2016. On this same day another observer reported seeing a group of 44 Swainson's hawks only two miles away. Another pair of Swainson's hawks were reported within a few miles of the project site on 16 September 2016. In fact, there is a cluster of Swainson's hawk sightings going back years within the rural vicinity of the project, likely because this rural area is one of the last remaining open spaces in the region that is suitable for migrating or nesting Swainson's hawks. Even a low level of diligence contradicts AECOM's conclusion, and this conclusion concerns potential project impacts on a species listed as Threatened under the California Endangered Species Act.

8C-6

Comment 6. Not only does the baseline information inadequately support the DEIR, but the site surveys were not timed appropriately to detect Swainson's hawks. A reconnaissance-level site visit was made by a biologist on 23 April 2015 (PCR 2016:11), and four focused surveys for burrowing owl were performed 15 April through 25 June 2015. All of these survey dates followed the most likely end-date of migrating Swainson's hawks stopping over in the project area on their way to the Sacramento Valley and farther north. To be consistent with the Precautionary Principle in risk assessment while also lacking a suitable survey effort, it would be appropriate to conclude that Swainson's hawk likely use the project area and the project site as critically important stop-over habitat. Given the many records of Swainson's hawks indeed using the project area as stop-over habitat (see eBird), it would be appropriate to conclude that the project will significantly harm Swainson's hawks migrating north, and that the project will likely contribute to far-reaching, cumulative impacts on Swainson's hawk populations in California.

8C-7

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Comment 7. The aforementioned site surveys also miss the seasons when multiple other special-status species occur in the project area. These species include ferruginous hawk and merlin, which migrate to the region in winter. Many other species migrate through in early spring and fall – seasons missed by the surveys that were performed. Most of these species have been documented in the project area on eBird (Table 1).

8C-8

Comment 8. The DEIR is based on an environmental assessment that was much too dismissive of the likelihoods of occurrence of many special-status species known to occur in the region (see Table 1). PCR (2016) focused on only two special-status species: Delhi sands flower-loving fly and burrowing owl. However, the site is likely used by many other special-status species that were given only cursory consideration by PCR (2016) and AECOM (2016a). Of the 64 species listed in Table 1, PCR (2016) made no mention of 34 (53%) of them. PCR (2016) determined that another 23 (36%) of the species have no likelihood of occurring from the site, but I can agree with only 3 of these determinations. The rest of the species were determined to have occurrence likelihoods of low or very low, or “not expected” in the case of burrowing owl, but I can agree with none of these determinations. Such dismissals of the likelihood of occurrence of special-status species should be founded on suitable surveys and suitable survey effort, but none of these dismissals were so founded.

8C-9

Comment 9. For example, how can PCR (2016) and AECOM (2016a) make such determinations for bats without having surveyed for them? Did they deploy acoustic detectors along with Sonobat to detect species of bats? Did they do any evening or nocturnal surveys to detect bats at all? No. The occurrence potential of special-status species should not be dismissed in the absence of survey effort unless the site is obviously devoid of habitat suitable for foraging, refuge or reproduction.

8C-10

Comment 10. Even the focused surveys provided inadequate foundation for dismissing the occurrence likelihoods of the focal species. According to AECOM (2016a:4.4-14), “A habitat assessment has not been conducted on PA-1” for the Delhi Sands flower-loving fly. This means that half the project site has not been surveyed for this endangered species. Neither the readers of the DEIR nor the decision-makers know whether this endangered species is present on the project site, so their participation (including my participation) with the CEQA process is effectively curtailed as it pertains to the conservation of this species.

8C-11

Comment 11. As for the other focal species – burrowing owl, AECOM (2016a:4.4-8) claims “The subsequent surveys did not identify burrowing owls, burrowing owl burrows, or signs of burrowing owls within the study area or within approximately 500 feet of the project as required by the survey protocol. Therefore, the study area and adjacent area do not currently support burrowing owls.” However, these burrowing owl surveys largely did not follow the CDFW (2012) recommended guidelines (Table 2), contrary to the claim by PCR (2015) that the CDFW (2012) protocol was followed. The 2015 surveys on the main project site were not preceded by a habitat assessment, and the 2016 habitat assessment was not followed by surveys along the offsite infrastructure sites because the habitat assessment was too quick to dismiss the likelihood of burrowing owls occurring there. Photograph 6 in PCR (2016:22) looks like

8C-12

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burrowing owl habitat to me, and eBird includes many records of burrowing owls in the area.

8C-12
cont.

Comment 12. PCR's (2015) burrowing owl surveys met none of the CDFW (2012) standards on biologist qualifications (Table 2). The report provided no evidence that the biologists involved are familiar with burrowing owl ecology, research or conservation, as there are no references indicating such familiarity. The biologists might have been very familiar with burrowing owls, and highly experienced with searches, for all I know, but I cannot know this because the report provides no evidence that the biologists are qualified. CDFW (2012) clearly recommended standards on qualifications that PCR made no effort to report having achieved.

8C-13

Comment 13. Of CDFW's (2012) 11 relevant standards pertaining to the habitat assessment, PCR (2015) achieved one of them at the main project site (Table 2). There is no evidence in PCR (2015) that a preliminary site visit was made or that baseline information was compiled, nor was the project described along with the environmental setting. Furthermore, I disagree with the identification of only ruderal vegetation as available habitat for burrowing owls at the project site. In my opinion, this habitat assessment pigeon-holed burrowing owls into an overly narrow portion of the environment, and resulted in only a small portion of the project area being searched using pedestrian transects.

8C-14

Comment 14. The survey methods did not all comply with the CDFW (2012) standards, either (Table 2). The dates of surveys were compliant, as was the separation time between surveys, but there was no evidence that the biologists performed stop-and-scan surveys using binoculars, as recommended in the protocol. Furthermore, the inter-transect separation was up to 30+ m, which was 10 m farther than the widest transect separation recommended by CDFW (2012). None of the surveys were performed during the temperature and cloud cover conditions recommended by CDFW (2012). Finally, no mention was made in the report about the impact of California's historic drought on the outcome of the surveys. In my surveys of burrowing owls among 46 plots across a large portion of California (Smallwood et al. 2013), I documented a 90% decline in burrowing owl nesting pairs through 2015 corresponding with the drought (Smallwood unpublished data).

8C-15

Comment 15. The reporting also largely failed to meet the recommended standards in CDFW (2012) (Table 2). Only 2 of the 9 relevant reporting standards were met, and another was partially met.

8C-16

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Table 1. Occurrence likelihoods of 64 special-status wildlife species at the project site. Under occurrence likelihood, PCR refers to PCR (2016) and KSS refers to my own assessment. Each line of the table represents a comment on the DEIR, and is numbered under 'Com' and continuous with comments numbered in the main body of the comment letter.

Com	Common name, Species name	Status	Occurrence likelihood	
			PCR	KSS
16	Coast range newt <i>Taricha torosa</i>	SSC	None	Unlikely
17	Western spadefoot <i>Spea hammondi</i>	SSC	None	Unlikely
18	Orange-throated whiptail, <i>Aspidoscelis hyperythra</i>	SSC	None	Possible
19	Coastal whiptail, <i>Cnemidophorus tigris multiscutatus</i>	SSC	No mention	Possible
20	Silvery legless lizard, <i>Amniella p. pulchra</i>	SSC	None	Possible
21	Coast horned lizard <i>Phrynosoma blainvillii</i>	SSC	None	Possible
22	San Diego Banded gecko, <i>Coleonyx variegatus abbotti</i>	SSC	No mention	Possible
23	Two-striped garter snake <i>Thamnophis hammondi</i>	SSC	None	Possible
24	Coastal rosy boa, <i>Lichanura trivirgata</i>	FSC [1993]	No mention	Possible
25	Coast patch-nosed snake, <i>Salvadora hexalepis virgulata</i>	SSC	No mention	Possible
26	San Diego ringneck snake, <i>Diadophis punctatus similis</i>	CNDDB	No mention	Possible
27	San Bernardino ringneck snake, <i>Diadophis p. modestus</i>	CNDDB	No mention	Possible
28	Turkey vulture, <i>Cathartes aura</i>	CDFW 3503.5	Observed	Certain
29	Golden eagle, <i>Aquila chrysaetos</i>	CFP	Low	Probable; elbird posts, photos
30	Swinson's hawk, <i>Buteo swainsoni</i>	CT	Very low	Certain; nearby elbird postings
31	Ferruginous hawk, <i>Buteo regalis</i>	CDFW 3503.5	No mention	Probable; elbird postings
32	Red-tailed hawk, <i>Buteo jamaicensis</i>	CDFW 3503.5	No mention	Certain; nearby elbird postings
33	Red-shouldered hawk, <i>Buteo lineatus</i>	CDFW 3503.5	No mention	Certain; nearby elbird postings
34	Northern harrier, <i>Circus cyaneus</i>	SSC	No mention	Probable elbird postings
35	White-tailed kite, <i>Elanus leucurus</i>	CFP	None	Probable; elbird postings
36	Sharp-shinned hawk, <i>Accipiter striatus</i>	CDFW 3503.5	No mention	Probable; elbird posting nearby
37	Cooper's hawk, <i>Accipiter cooperi</i>	CDFW 3503.5	No mention	Probable; elbird posting nearby
38	American kestrel, <i>Falco sparverius</i>	CDFW 3503.5	No mention	Certain; nearby elbird postings
39	Merlin, <i>Falco columbarius</i>	CDFW 3503.5	No mention	Certain; nearby elbird post
40	Prairie falcon, <i>Falco mexicanus</i>	CDFW 3503.5	No mention	Certain; nearby elbird posts
41	Peregrine falcon, <i>Falco peregrinus</i>	CE, CFP	No mention	Certain; nearby elbird posts
42	Barn owl, <i>Tyto alba</i>	CDFW 3503.5	No mention	Probable

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Com	Common name, Species name	Status	Occurrence likelihood	
			PCR	KSS
70	Western mustellid bat, <i>Myotis perotis</i>	SSC	Very low	Possible
71	Pocketed free-tailed bat, <i>Nyctinomops femorosaccus</i>	SSC	None	Possible
72	Big free-tailed bat <i>Nyctinomops macrotis</i>	SSC	Very low	Possible
73	Southern grasshopper mouse, <i>Onychomys torridus ramona</i>	SSC	No mention	Possible
74	Los Angeles pocket mouse, <i>Perognathus longimembris brevisianus</i>	SSC	None	Possible
75	San Diego pocket mouse, <i>Chaetodipus f. fallax</i>	SSC	None	Possible
76	San Bernardino kangaroo rat, <i>Dipodomys merriami parvus</i>	SSC	None	Possible
77	Stephen's kangaroo rat <i>Dipodomys stephensi</i>	FE, CT	None	Unlikely
78	San Diego desert woodrat <i>Neotoma lepida intermedia</i>	SSC	None	Possible
79	San Diego black-tailed jackrabbit, <i>Lepus californicus bennettii</i>	SSC	Very low	Possible

¹ Listed as FE = federal endangered, FCC = U.S. Fish and Wildlife Service Bird of Conservation Concern, CE = California endangered, CT = California threatened, SSC = California species of special concern (not threatened with extinction, but rare, very restricted in range, declining throughout range, peripheral portion of species' range, associated with habitat that is declining in extent), CFP = California Fully Protected (CDFG Code 4700), CDFW 3503.5 = California Department of Fish and Wildlife Code 3503.5 (Birds of prey), and SSC1, SSC2 and SSC3 = California Bird Species of Special Concern priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), and TWL = Taxa to Watch List (Shuford and Gardali 2008), WBWG = Western Bat Working Group listing as moderate or high priority.

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cont.

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Table 2. Assessment of DEIR consistency with CDFW's (2012) recommended burrowing owl survey protocol. Each table row includes a comment, numbered under the leftmost column headed as 'Com' and continuous with comments numbered in the main body of the comment letter. Standards are numbered to match those in CDFW (2012).

Com	Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
Minimum qualifications of biologists performing surveys and impact assessments			
80	(1) Familiarity with the species and local ecology	No information or indication provided on familiarity with burrowing owls or local ecology.	No
81	(2) Experience conducting habitat assessments and breeding and non-breeding season surveys	No information provided.	Unknown
82	(3) Familiarity with regulatory statutes, scientific research and conservation related to burrowing owls	No information provided on knowledge of research or conservation of burrowing owls.	No
83	(4) Experience with analyzing impacts on burrowing owls	No information provided.	Unknown
Habitat assessment			
84	(1) Conduct at least 1 visit covering entire site and offsite buffer to 150 m	No habitat assessment visit reported.	No
85	(2) Prior to site visit, compile relevant biological information on site and surrounding area	No information reported.	No
86	(3) Check available sources for occurrence records	No indication that sources were checked.	No
87	(4) Identify vegetation cover potentially supporting burrowing owls on site and vicinity	Identified 7.04 acres of ruderal vegetation as potential habitat, but I disagree with the conclusion because it was too narrow; More than 7.04 acres potentially support burrowing owls at this site.	Partial
88	(5a) Describe project and timeline of activities	No such description appears in burrowing owl report, but DEIR vaguely described project as industrial, likely warehouse distribution; Timeline of activities was unreported.	No
89	(5b) Regional setting map showing project location	Provided.	Yes
90	(5c) Detailed map with project footprint, topography, landscape and potential vegetation-altering activities	Burrowing owl report did not provide this map, but DEIR did.	Partial

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Com	Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
91	(5d) Biological setting including location, acreage, terrain, soils, geography, hydrology, land use and management history	Burrowing owl report did not provide this map, but DEIR did.	Partial
92	(5e) Analysis of relevant historical information concerning burrowing owl use or occupancy	None provided.	No
93	(5f) Vegetation cover and height typical of temporal and spatial scales relevant to the assessment	Not provided.	No
94	(5g) Presence of burrowing owl individuals, pairs or sign	Not applicable.	---
95	(5h) Presence of suitable burrows or burrow surrogates	Potential burrows were mapped where surveys performed, but none were described. No burrow surrogates were mapped, suggesting surveyors might have been insufficiently familiar with burrowing owl ecology to identify these.	Unknown
Breeding season surveys			
96	Perform 4 surveys separated by at least 3 weeks	4 surveys were performed, separated by 3 weeks.	Yes
97	1 survey between 15 February and 15 April	First survey was on 15 April.	Yes
98	2-3 surveys between 15 April and 15 July	Achieved.	Yes
99	1 survey following June 15	Last survey was on 25 June.	Yes
100	Walk transects spaced 7 m to 20 m apart	Transect separation was <100 feet.	Unknown
101	Scan entire viewable area using binoculars at start of each transect and at 100 m intervals	Report did not describe this method being performed.	No
102	Record all potential burrow locations determined by presence of owls or sign	Not applicable.	---
103	Survey when temperature >20° C, winds <12 km/hr, and cloud cover <75%	All surveys performed when cloud cover was 100% and when temperatures were <20° C.	No
104	Survey between dawn and 10:00 hours or within 2 hours before sunset	All surveys between 06:10 and 09:30 hours.	Yes
105	Identify and discuss any adverse conditions such as disease, predation, drought, high rainfall or site disturbance	No mention of the historic California drought, which was at its peak during the surveys.	No

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Com	Standard in CDFW (2012)	Assessment of surveys performed	Was the standard met?
106	Survey several years at projects where activities will be ongoing, annual or start-and-stop to cover high nest site fidelity	Not applicable.	---
Reporting should include:			
107	(1) Survey dates with start and end times and weather conditions	Reported, dates, start and end times, wind speed, temperature and cloud cover.	Yes
108	(2) Qualifications of surveyor(s)	Not provided.	No
109	(3) Discussion of how survey timing affected comprehensiveness and detection probability	No such discussion.	No
110	(4) Description of survey methods including point count dispersal and duration	No point counts were mentioned, but duration was reported.	Partially
111	(5) Description and justification of the area surveyed	None provided.	No
112	(6) Numbers of nestlings or juveniles associated with each pair and whether adults were banded or marked	Not applicable.	---
113	(7) Descriptions of behaviors of burrowing owls observed	Not applicable.	---
114	(8) List of possible burrowing owl predators in the area, including any signs of predation of burrowing owls	None.	No
115	(9) Detailed map showing all burrowing owl locations and potential or occupied burrows	Map was provided showing transects walked and potential burrows found.	Yes
116	(10) Signed field forms, photos, etc.	No field forms provided.	No
117	(11) Recent color photos of project site	No photos provided.	No
118	(12) Copies of CNDOB field forms	Not applicable.	---

8C-18
cont.

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Wildlife Movement

Comment 119. Rather than relying on the Precautionary Principle in risk assessment to assess the project's potential impacts on wildlife movement, the DEIR relies on speculation and assumptions that happen to favor the a conclusion of no impact. For example, AECOM (2016a:4.4-6) speculates, "Due to the active crop and dairy fields within the study area and surrounding areas, as well as the developed nature of the adjacent Cucamonga Creek flood control channel, the study area likely provides little to no function to facilitate movement for wildlife species on a regional scale and it is not identified as a regionally important dispersal or seasonal migration corridor." However, such a corridor need not exist for a project to interfere with the movement of wildlife in the region, which is the CEQA standard at issue. It is also misleading to imply that active crop and dairy operations prevent wildlife movement. Further, AECOM (2016a) neglects to consider the movement of birds and how bird dispersal and migration requires stop-over habitat for rest and foraging.

8C-19

Comment 120. PCR (2016:26) contributes its own speculation by claiming, "Bird species may fly over the development and freeways to utilize the study area for foraging, although this is expected to be limited due to the high level of human activity in the region and higher quality foraging habitats in nearby open areas with less human disturbance, particularly Prado Basin the south and the Santa Ana River to the southeast." In other words, PCR speculates that birds would not occur in a disturbed area when they have perfectly fine habitat right over there... But this speculation is nonsense, and is readily refuted by an examination of eBird which includes many records and photos of special-status species of birds in the project vicinity. Whereas birds may prefer natural areas over anthropogenic landscapes, they often have to use anthropogenic landscapes for various reasons. They get pushed out of areas due to other human actions, or they are migrating directionally rather than along a river, or they need the food resources that are available on the anthropogenic landscapes.

8C-20

Comment 121. PCR (2016:25) claims "Regional movement through this area is unlikely due to limited vegetation and development present on the study area and surrounding vicinity." But again, this is another conclusion that lacks foundation and is refuted by the evidence one can easily compile on eBird or other sources. PCR's premise that limited vegetation prevents regional movement has no basis in science or human experience, but it is also a premise that is difficult to refute due to its vagueness. What does PCR really mean by 'limited vegetation?' A CEQA assessment of potential project impacts ought to rely on the Precautionary Principle and it ought to be given a more serious effort.

8C-21

Traffic Impacts on Wildlife

Comment 122. According to AECOM (2016b), the project will generate about 7,690 vehicle trips daily, of which will be 1,912 trips made by trucks. However, if this project is to be a centered around a distribution warehouse, then this daily trip estimate appears low for a 2.95 million square feet of industrial floor space. At a warehouse project nearby (I-210 Logistics Center IV project composed of 431,265 square feet of warehouse

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on 18.3 acres), Kimley-Horn and Associates (2016) predict 2,573 daily passenger car equivalent trips. Adjusted for the size of the warehouse ($2,950,000/431,265 = 6.84$), this traffic volume would translate to 17,600 average daily trips, or 2.29 times greater traffic volume than predicted by AECOM (2016b).

8C-22
cont.

Comment 123. Regardless of whether the traffic volume would be 7,690 or 17,600 average daily trips, the increase in traffic volume would be considerable. It is therefore surprising that no analysis of traffic impacts on wildlife is provided in the DEIR. Auto and truck traffic poses one of the most lethal and devastating effects to wildlife (Forman et al. 2003). Vehicle collisions have accounted for the deaths of many thousands of reptile, amphibian, mammal, bird, and arthropod fauna, and the impacts have often been found to be significant at the population level (Forman et al. 2003). The impact caused by the project's added traffic should be assessed and mitigated.

8C-23

Cumulative Effects Analysis

Comment 124. According to AECOM (2016a:4.4-21), "CEQA also states that no further cumulative impact analysis is necessary for impacts of a proposed project consistent with an adopted general, specific, master, or comparable programmatic plan [Section 15130(d)]. The proposed project will comply with the Colony Commerce Center Specific Plan and the City of Ontario NMC General Plan and, as such, no cumulative impacts are expected assuming project approval under those plans. Furthermore, biological resources within the study area are limited to potential migratory bird species and the jurisdictional Cucamonga Creek." In fact, no cumulative effects analysis is reported. However, cumulative impacts are highly likely to be significant and considerable, given the extensive habitat destruction that has already taken place in the region and the island-like setting of rural lands surrounded by residential, commercial and industrial land conversions. The loss of this site will contribute substantially to the loss of one of the last patches of stop-over habitat for migrating birds in the region, and one of the last patches of habitat for multiple special-status species. Excuses and legal justifications aside, the conversion of these rural land parcels to distribution warehousing and other industrial uses, along with the substantial increases in auto and truck traffic in the region needed to serve this project, will likely prove catastrophic to Swainson's hawks, burrowing owls and many other special-status species residing in the area or migrating across it. Significant cumulative impacts are likely, and they are likely to be more significant than were contributed by earlier projects because there is simply little habitat left for wildlife to survive in the region.

8C-24

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MITIGATION

Comment 125. BIO-1: Survey for Delhi Sands flower-loving fly on PA-1 A survey for Delhi Sands flower-loving fly should precede the DEIR rather than being planned as a preconstruction survey. The survey needed for assessing impacts and formulating mitigation needs to be performed prior to the EIR rather than afterwards. Therefore, this mitigation measure does not qualify as a mitigation measure. It is supposed to support the impacts assessment.

8C-25

Comment 126. BIO-4: Preconstruction survey for nesting raptors or songbirds Whereas such surveys should certainly be performed, these surveys should have also been performed prior to the circulation of the DEIR. By not performing these surveys in support of the EIR, the public and decision-makers lack the information needed to assess the proposed mitigation. Currently it remains whether birds nest on the project site, so no impact avoidance, minimization or compensatory mitigation is proposed. The EIR should inform the public about which species nest on or near the project site, and how many of each species do so.

8C-26

Comment 127. According to the DEIR (page 4.4-24), "*The proposed project, inclusive of mitigation measures, would have less than significant impacts to special-status wildlife species, special-status plant communities, jurisdictional features, and migratory and/or nesting birds.*" However, it is difficult to imagine how preconstruction surveys for Delhi Sands flower-loving fly and nesting birds will achieve this standard. The proposed surveys should have already been performed in support of the EIR, but they were not. The DEIR has presented insufficient information for concluding the project will have less than significant impacts on wildlife. My assessment leads me to conclude that the project will likely have devastating impacts on many special-status species of wildlife due to the loss of a substantial portion of the quickly diminishing rural island that can be used as nesting, foraging and stop-over habitat, and due to the huge increase in traffic volume that will put terrestrial wildlife and low-flying birds at risk of collision.

8C-27

Comment 128. It is inappropriate to propose impacts-assessment surveys as preconstruction mitigation measures. These surveys should be performed in support of a revised, recirculated EIR. Further, actual mitigation measures are needed. This DEIR proposes no real mitigation for the projects direct, indirect and cumulative impacts on many special-status species in the region and on wildlife movement in the region.

8C-28

Thank you for your consideration,



Shawn Smallwood, Ph.D.

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ALFALFA AS WILDLIFE HABITAT

K. Shawn Smallwood and Shu Geng, Department of Agronomy and Range Science, University of California, Davis, CA 95616-8515.

The development of modern, intensive agriculture has replaced most wildlife habitat with agricultural crops in the Sacramento Valley. This transition of land-use has occurred so rapidly that most growers in the Valley have witnessed dramatic decreases in the abundances of many wildlife species. Due to the rapidity of this land-use transition, and due to the natural productivity of agricultural lands, most native wildlife species still exist in the Valley, albeit as remnant populations that mostly inhabit nature reserves and the margins between crops. However, most of these species do use agricultural crops as food, cover and nesting resources. Some of these species damage particular commodities, but most are either beneficial or neutral to agricultural production. Together, native wildlife species improve the aesthetic value of the farming landscape; they provide another reason for people to appreciate farmland.

More important than the aesthetic value of farmland is the integrity of its life-support system -- the greater ecosystem. Critical to the stability of this system are functional populations of vertebrate predators, such as carnivores, snakes, insectivorous birds, hawks, owls and other birds that prey upon small mammals. These predatory animals prevent pest outbreaks in agriculture and in natural environments by consuming individuals and by regulating the behavior of prey animals with their mere presence. Prey forage and reproduce less when they must be more vigilant for predators. Perhaps the most effective predators of small mammals are hawks and owls.

Most hawk species migrate to the Great Central Valley, annually. Red-tailed Hawks (*Buteo jamaicensis*) winter in the Valley and then disperse to all the Western States and Mexico. Swainson's Hawks (*Buteo swainsoni*) winter in Argentina and migrate to the Valley for their springs and summers. The regional status of these species depend on their most limiting resources, and those are found in the remnant habitat of the Great Central Valley, where they must obtain sufficient food to live through their seasonal visits. If all small mammals were removed from the Valley, these two important hawk species would be nearly decimated throughout western North America. Farming in the Valley not only has a stake in maintaining this component of its life-support system, it has the means to do so.

METHODS

Since January 1990, we have conducted frequent wildlife surveys along a 128 mile road transect through Sacramento Valley farmland. We mapped our observations of bird and mammal locations, numbers, activities and associations with crops and natural areas, while also mapping crop type, cultural practices and other qualities of the farming landscape. We identified *selection* for crop types by wildlife species after relating the percentage of a species in a certain crop type to the percentage of that crop type in the sampled landscape. The resulting ratio is interpreted as the occurrence of species *A* in

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crop) as the multiple of that to be expected by chance. Because our results were estimated from the total observations on all transects during the sampling program, we regard our results as preliminary. We did not characterize the strong seasonal and location differences in wildlife species' selection for alfalfa.

RESULTS

Wildlife did not use the farming landscape in a random way. Wildlife species avoided most annual crops, and many selected irrigated, perennial crops. Out of 79 wild vertebrate species observed during the survey, we saw at least 29 of them (up to 36) on or above alfalfa, even though alfalfa was only 1.8-2.3% of the cumulative transect length. Alfalfa was visited by 18 times the number of species that would be expected if species partitioned themselves among land-uses in a mutually exclusive manner based on competition. In other words, wildlife aggregated in alfalfa. Predators of small mammals and of ground-dwelling invertebrates were most selective of alfalfa, including large hawks, Great Blue Heron, Dunlin, White-faced Ibis, Brewer's Blackbirds, American Crows, Yellow-billed Magpies, and European Starlings (Table 1). The larger prey of hawks, Black-tailed Jackrabbits and Desert Cottontail, were also observed as road-kills more often at alfalfa fields. Although probably domestic, dogs and cats also selected alfalfa for hunting voles and pocket gophers.

During the last four years, alfalfa was visited by Swainson's Hawk 10 times the number expected by chance (Table 1). The Swainson's Hawk is a state-listed threatened species and a candidate for the Federal Threatened Species list. Alfalfa was also strongly selected by the Northern Harrier and White-faced Ibis, which are state-listed species of special concern. Other state-listed species of special concern also occurred in alfalfa, including the California Gull, Golden Eagle, Merlin and Prairie Falcon. Also, most of the species that were observed in alfalfa are migratory. For example, vultures migrate into the Valley from the north during summer, Cliff Swallows breed in the Valley during spring/summer, and falcons, gulls and most shorebirds winter in the Valley. Even Starlings, Crows and Mourning Doves move around in the Valley, seasonally.

Some wildlife species in alfalfa eluded observation during our surveys, due partly to small size and to the small amount of alfalfa along the transect. Our survey did not include counts of voles or pocket gophers, even though alfalfa fields usually have more of these two species than any other land-use in the Valley. Many of the species missed during our wildlife surveys were observed during our landscape study of pocket gophers in alfalfa (Table 1). Counting these species, alfalfa was visited by at least 51 vertebrate species during our studies.

DISCUSSION

Our crude association analysis revealed a strong selection by wildlife for alfalfa. We would find stronger selection for alfalfa by more species (of the 29 observed in alfalfa during the transect surveys) if we divided the analysis by season, age of stand, and location with respect to natural areas. For example, 20-30 times more large hawks selected alfalfa during summer than would be expected by chance. Territoriality and the

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greater numbers of hawks in the Valley during winter saturated the alfalfa fields. Hence, many hawks were forced into fields of other crop types during winter. Alfalfa fields near natural areas had up to four times the number of hawks as other alfalfa fields. Also, older alfalfa stands were visited by a greater variety and abundance of wildlife species. Older fields offer wildlife a greater variety and abundance of invertebrate and vertebrate prey species.

Wildlife visitation into alfalfa fields can be improved with several strategies. First, wildlife movement corridors can be engineered in the landscape to facilitate wildlife infiltration into Sacramento Valley farmland from the surrounding foothills and mountains. Such corridors are best developed by restoring native vegetation along streams and other water channels. Natural vegetation along the margins of agricultural fields can be established and connected to these stream corridors so that a corridor "network" is established. Theoretically, a corridor network would dramatically increase wildlife visitation to agricultural fields, and it would provide farmers with a definable structure that they can manage for beneficials, recreation and ecosystem services such as erosion control and regulation of pest population dynamics.

More hawks could visit alfalfa by providing more perching. Because large hawks prefer to perch on telephone poles with multiple crossbeams, among which they prefer the lower beam, telephone poles along roads can have a crossbeam added under existing beams that support wires and equipment. Oaks, Cottonwood, willows, and American Elm make the best perches for hawks, and they provide nesting sites for owls and a variety of other beneficial birds. Owl nest boxes can also be added to solid, vertical structures around alfalfa stands (C. Ingles 1992, Birds of prey assist farmers. Sustainable Agriculture 5(1):5-8).

Finally, some management practices in alfalfa could be modified to improve wildlife visitation and abundance. For example, the first harvest in early spring could be made with a higher cut. During gopher survey work in March 1993, we noticed many nest attempts by Mallard Ducks, Ring-necked Pheasants and Red-winged Blackbirds. Many of these birds perceive alfalfa as an attractive habitat for nest establishment, but their nest season overlaps with the first cutting of alfalfa. Empty nests and crushed or unguarded eggs were left after the first spring swathing. Nest destruction is inevitable during the first spring swathing because these nests are hidden in the alfalfa. But even if they were visible, alfalfa growers can't move the nests nor could they go around them (there are too many) or stop production. What can be avoided during this first swathing is the destruction of the mother birds, many of which refuse to leave the nest as the swather approaches. These mother ducks and pheasants crouch into the nest and try to avoid the swather's blades. This strategy worked in fields where uneven ground or some other factor caused the cut to be made higher than the crouched birds. But in some fields, the alfalfa was cut so low to the ground (3-4"), these animals could not crouch low enough. Their deaths prevent establishment of a second nest, which is typical of birds after their first nests are destroyed (surviving birds do not attempt nest replacement in alfalfa). In these low-cut fields, we also noticed gopher snakes that had been killed by the blades of the swather. Most of these wildlife mortalities can be avoided by not swathing for maximum yield during the first cut.

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Most farmland present animals too many stresses, such as air pesticide applications. With natural areas, pasture and a few other land-uses, alfalfa provides important refugia and resource patches to many remnant populations of vertebrate species. This means that the animal component of our life-support system in the Sacramento Valley and surrounding areas depend on the acreage and management of alfalfa. Vertebrate pest control must be expected to have a negative effect on the predators of these pests, not just in a field, but regionally. A shorter rotation of alfalfa must also be expected to affect wildlife negatively. Of course, market conditions and profit margins have decided alfalfa acreage and management, but now public perception and ecosystem function are becoming major factors in the move toward sustainable agriculture, and in water- and land-use planning. The benefits of alfalfa production on wildlife populations need to be recognized so that this commodity group can be better supported with water allocation, land protection and research.

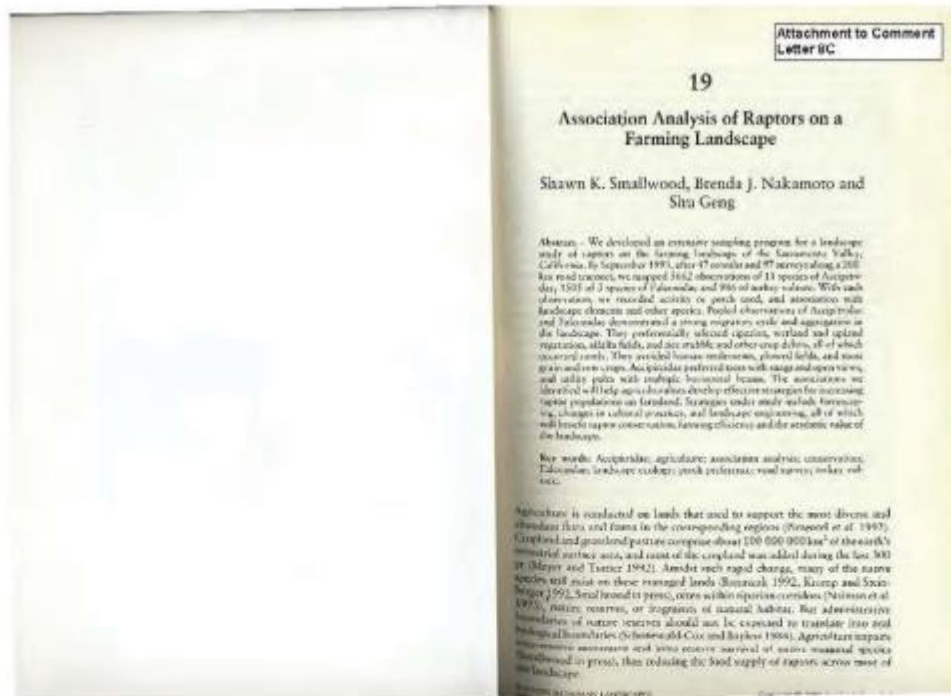
Table 1. Selection of alfalfa by wildlife species during the Sacramento Valley farmland survey from January 1990 until September 1993. Principal food resources for each species are denoted: V = vertebrate animals; I = invertebrate animals; S = scavengers of dead animals; P = plant matter (leaves, stems, roots, seeds); G = general. The symbol D identifies species as having caused damage to alfalfa.

SPECIES	COMMON NAMES	SELECTION	
		VALUE	FOOD
<i>Accipitridae</i>	All large hawks	2.4	
<i>Buteo spp.</i>	Hawks, unnamed	2.7	
<i>Buteo jamalcensis</i>	Red-tailed Hawk	1.1	V
<i>Buteo swainsoni</i>	Swainson's Hawk	10.0	V,I
<i>Buteo regalis</i>	Ferruginous Hawk	7.7	V
<i>Kite spp.</i>	All Kites	1.9	
<i>Circus cyaneus</i>	Northern Harrier	2.1	V,I
<i>Elanus caeruleus</i>	Black-shouldered Kite	1.3	V,I
<i>Falconidae</i>	All Falcons	1.1	
<i>Falco sparverius</i>	American Kestrel	1.4	I,V
<i>Cathartes aura</i>	Turkey Vulture	0.5	S
<i>Pica nuttalli</i>	Yellow-billed Magpie	1.7	G
<i>Corvus brachyrhynchos</i>	American Crow	2.4	G
<i>Amur huiusviscarius</i>	Loggerhead Shrike	0.6	I
<i>Tyrannus verticalis</i>	Western Kingbird	1.9	I
<i>Sturnus vulgaris</i>	European Starling	2.9	I
<i>Zenaidura macroura</i>	Mourning Dove	0.3	P
<i>Columba livia</i>	Rock Dove	0.2	P
<i>Larus californicus</i>	California Gull	0.01	G
<i>Calidris alpina</i>	Dunlin	49.3	I
<i>Charadrius vociferans</i>	Killdeer	50.8	I
<i>Phasianus colchicus</i>	Ring-necked Pheasant	0.3	G

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<i>Ardea herodias</i>	Great Blue Heron	1.2	V,I
<i>Casimirodia albus</i>	Great Egret	0.4	I,V
<i>Egretta thula</i>	Snowy Egret	0.3	I,V
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	50.8	I,V
<i>Plegadis chiliti</i>	White-faced Ibis	0.9	I
<i>Sturnella neglecta</i>	Western Meadowlark	0.2	G
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	6.7	I
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	1.7	P,D
<i>Lepus californicus</i>	Black-tailed Jackrabbit	3.9	P,D?
<i>Sylvilagus bachmani</i>	Desert Cottontail	13.5	V
<i>Canis familiaris</i>	Domestic Dog	2.8	V
<i>Felis catus</i>	House Cat		
Other species seen in alfalfa during the pocket gopher study:			
<i>Aquila chrysaetos</i>	Golden Eagle		V
<i>Buteo lagopus</i>	Rough-legged Hawk		V
<i>Falco columbarius</i>	Merlin		I,V
<i>Falco mexicanus</i>	Prairie Falcon		I,V
<i>Anas platyrhynchos</i>	Mallard Duck		G
<i>Numenius americanus</i>	Long-billed Curlew		I
<i>Myiarchus cinerascens</i>	Ash-throated Flycatcher		I
<i>Aphelocoma coerulescens</i>	Scrub Jay		I,P
<i>Corvus corax</i>	Common Raven		G
<i>Turdus migratorius</i>	American Robin		I
<i>Hirundo pyrrhonota</i>	Cliff Swallow		I
<i>Lophortyx californicus</i>	Valley Quail		I,P
<i>Recurvirostra americana</i>	American Avocet		I
<i>Bubulcus ibis</i>	Cattle Egret		I,V
<i>Canis latrans</i>	Coyote		V
<i>Urocyon cinereogensis</i>	Gray Fox (sign)		V,I
<i>Mephitis mephitis</i>	Striped Skunk (Dead)		I,V
<i>Procyon lotor</i>	Raccoon (sign)		I,V
<i>Spermophilus beecheyi</i>	California Ground Squirrel		P,D
<i>Thomomys bottae</i>	Pocket Gopher		P,D
<i>Microtus californicus</i>	California Vole		P,D
<i>Sceloporus occidentalis</i>	Western Fence Lizard		I
<i>Pituophis melanoleucus</i>	Gopher Snake		V
<i>Coluber constrictor</i>	Racer		V,I



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Prey-bearing habitat on the farmland of the Sacramento Valley, California, might limit raptor populations especially, because many raptors from western North America aggregate in the Valley during one phase of their annual migration (Blanco 1985), and because raptor populations respond to their prey population densities (Strain et al. 1991). Therefore, raptor populations can be conserved, and even augmented, by increasing the availability of prey-bearing habitat in the Sacramento Valley with changes in landscape structure and cultural practices. Such changes might be made most efficiently by learning how raptors use the existing landscape, given its structure, patches and management.

Previous studies have shown that populations of bird species benefit from greater structural complexity on farms (O'Connor and Muehle 1996) and roadside edges (Form 1979, van der Zande et al. 1980, Arnold and Whitham 1991). Insectivorous birds best influence corn fields that are adjacent to woodlands (Bee et al. 1996). Previous landscape engineering efforts in the Sacramento Valley (Stiggs 1991, Yuba County Farmland and Open Space Committee, May 8, 1995) are based on increasing the spatial extent of natural vegetation, mainly as a network (Joan Forman 1995) of natural riparian habitat and strips of natural vegetation between agricultural fields. These corridors are where the richest and most diverse assemblages of wildlife species occur in the Valley (Goggin 1993). However, the commodity type and cultural practices in agricultural fields can significantly affect the food base of raptors that would use the adjacent or nearby corridor network. Vernal pools, for example, provide a source of food for raptors in some agricultural fields but can also reduce the food supply of tanks. Ultimately, raptor conservation on the farming landscape requires more than open space; it also requires a suite of crops and cultural practices (or both) that provide resources for wildlife and that are non-destructive. Our goal is to provide these types of information by combining landscape ecology with conservation ecology (Forman 1995, Rouse 1988) and with conservation biology (Turner 1989).

We report on patterns of seasonal distribution, activity and peak use of functional/taxonomic raptor assemblages among landscape elements of the Sacramento Valley. A landscape is a spatially heterogeneous area in which its patch and corridor elements are structured by type, size, shape and configuration, and in which they function to store and channel the flow of energy, material and organisms (Forman 1995, Turner 1989). Landscape ecology can help identify how raptors interact with landscape elements, and with landscape structure, so long as the extent of the study is at a spatial scale large enough to recognize structure (Turner 1989). To achieve a sufficiently large spatial scale for a landscape study of raptors, we used two conventional, high-speed surveys, which provided large sample sizes across large areas, but also new types of error (Smallwood and Grogan 1995). Most other road surveys for raptors occurred only during winter in smaller areas with single categories of landscape elements (Williamson and Johnson 1990, Bauer 1982, Cole et al. 1986, Anderson and Rengard 1989).

METHODS

We conducted wildlife surveys along 200 km of road transect, which was in 7 parts along a 320 km loop in the Sacramento Valley (Fig. 1). One person drove a car at 84 km/h, while the other searched for wildlife and recorded observations into a tape recorder. Each survey was begun between 0800 h and 1000 h and ended by 1400 h. Surveys were conducted during all weather conditions, except during the rare winter storms when visibility was severely limited. Along the transect, we mapped crops, natural vegetation, the Sacramento River (containing 4 dams), creeks, canals, roads, housing, roadside vegetation height and width, and potential perches such as trees, utility poles, transmission towers, fences, windmills and artificial hawk perches. Landscape change and cultural

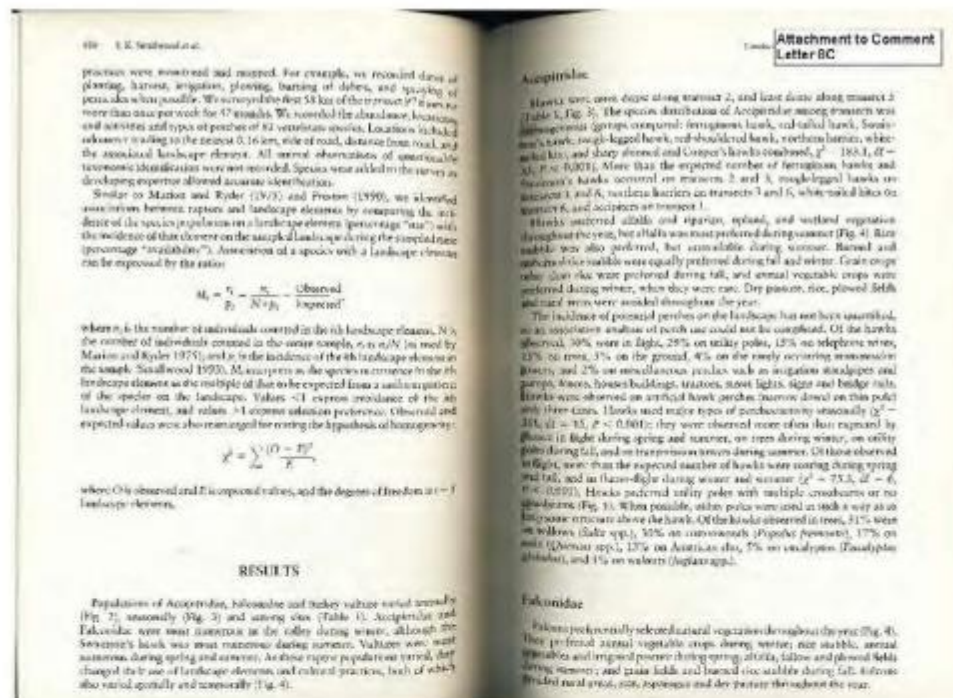


Figure 1. Locations of the 7 road transects for raptor survey in the Sacramento Valley, California. Downward landscape elements were reported and explained in the survey. Transect 1, 2, 3, and 4 were surveyed along transect 1, 2, 3, 4, 5, 6, and 7. Transect 4 was a mix of private, public, and state land.

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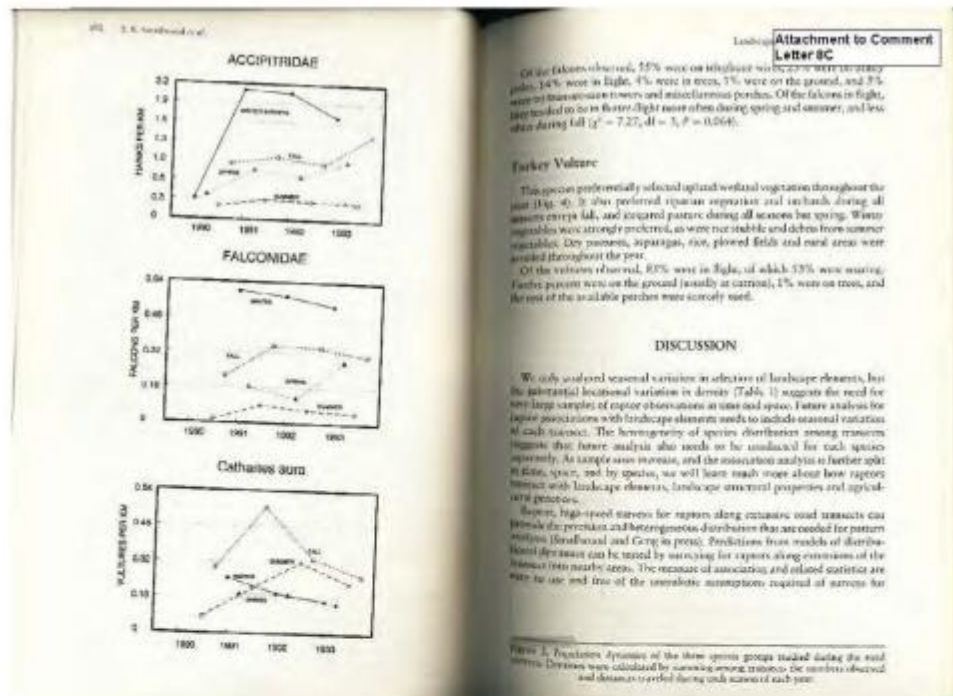
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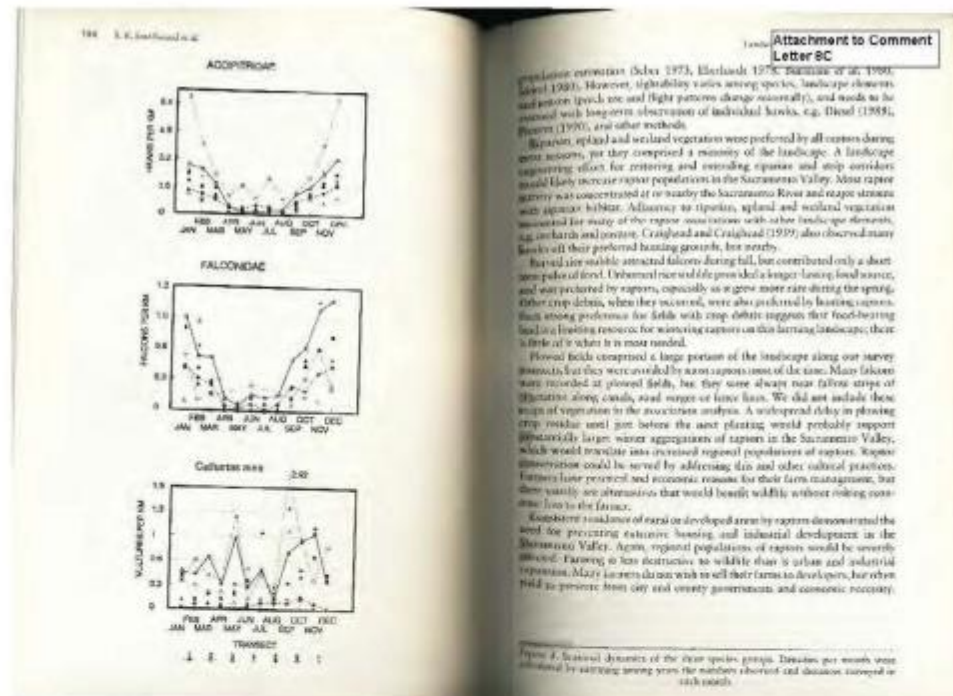
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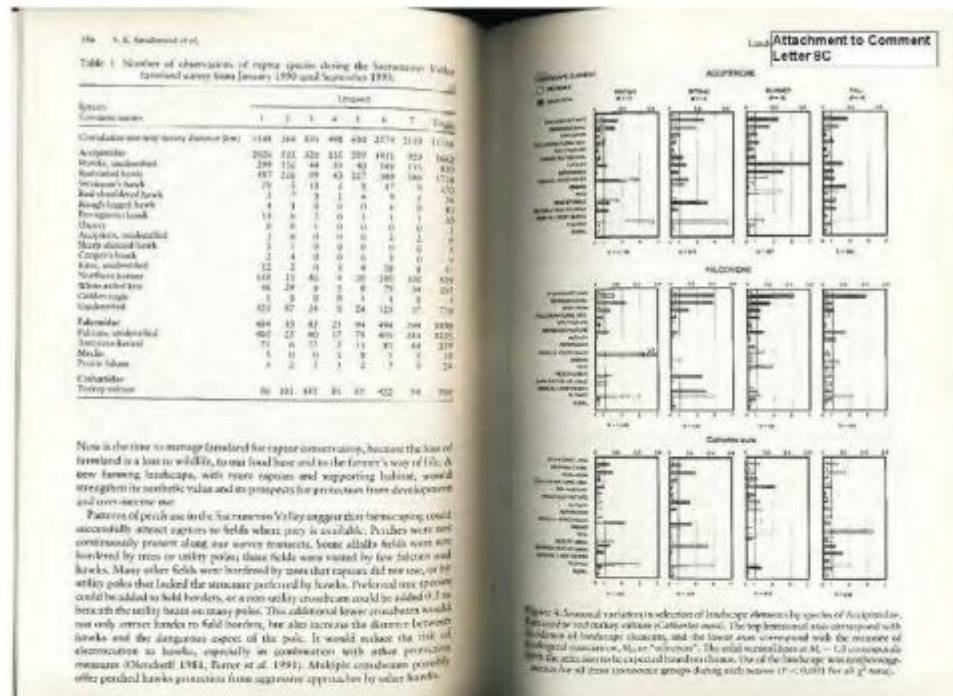
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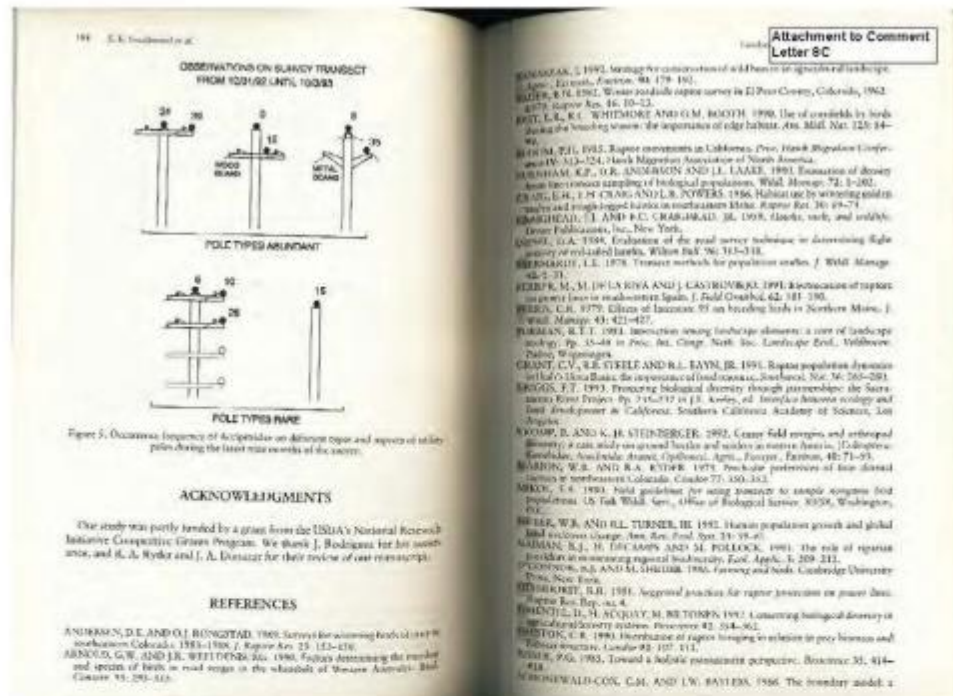
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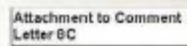


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Staff Report on Burrowing Owl Mitigation

State of California
Natural Resources Agency
Department of Fish and Game
March 7, 2012¹

¹ This document replaces the Department of Fish and Game 1995 Staff Report On Burrowing Owl Mitigation.

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INTRODUCTION AND PURPOSE

Maintaining California's rich biological diversity is dependent on the conservation of species and their habitats. The California Department of Fish and Game (Department) has designated certain species as "species of special concern" when their population viability and survival is adversely affected by risk factors such as precipitous declines or other vulnerability factors (Shuford and Gardali 2008). Preliminary analyses of regional patterns for breeding populations of burrowing owls (*Athene cunicularia*) have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced modest breeding range retraction (Gervais et al. 2008). In California, threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of suitable burrows required by burrowing owls for nesting, protection from predators, and shelter (See Appendix A).

The Department recognized the need for a comprehensive conservation and mitigation strategy for burrowing owls, and in 1995 directed staff to prepare a report describing mitigation and survey recommendations. This report, "1995 Staff Report on Burrowing Owl Mitigation," (Staff Report) (CDFG 1995), contained Department-recommended burrowing owl and burrow survey techniques and mitigation measures intended to offset the loss of habitat and slow or reverse further decline of this species. Notwithstanding these measures, over the past 15+ years, burrowing owls have continued to decline in portions of their range (DeSante et al. 2007, Wilkerson and Siegel, 2010). The Department has determined that reversing declining population and range trends for burrowing owls will require implementation of more effective conservation actions, and evaluating the efficacy of the Department's existing recommended avoidance, minimization and mitigation approaches for burrowing owls.

The Department has identified three main actions that together will facilitate a more viable, coordinated, and concerted approach to conservation and mitigation for burrowing owls in California. These include:

1. Incorporating burrowing owl comprehensive conservation strategies into landscape-based planning efforts such as Natural Community Conservation Plans (NCCPs) and multi-species Habitat Conservation Plans (HCPs) that specifically address burrowing owls.
2. Developing and implementing a statewide conservation strategy (Burkett and Johnson, 2007) and local or regional conservation strategies for burrowing owls, including the development and implementation of a statewide burrowing owl survey and monitoring plan.
3. Developing more rigorous burrowing owl survey methods, working to improve the adequacy of impacts assessments; developing clear and effective avoidance and minimization measures; and developing mitigation measures to ensure impacts to the species are effectively addressed at the project, local, and/or regional level (the focus of this document).

This Report sets forth the Department's recommendations for implementing the third approach identified above by revising the 1995 Staff Report, drawing from the most relevant and current knowledge and expertise, and incorporating the best scientific information

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available pertaining to the species. It is designed to provide a compilation of the best available science for Department staff, biologists, planners, land managers, California Environmental Quality Act (CEQA) lead agencies, and the public to consider when assessing impacts of projects or other activities on burrowing owls.

This revised Staff Report takes into account the California Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines (CBOC 1993, 1997) and supersedes the survey, avoidance, minimization and mitigation recommendations in the 1995 Staff Report. Based on experiences gained from implementing the 1995 Staff Report, the Department believes revising that report is warranted. This document also includes general conservation goals and principles for developing mitigation measures for burrowing owls.

DEPARTMENT ROLE AND LEGAL AUTHORITIES

The mission of the Department is to manage California's diverse fish, wildlife and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitats necessary to maintain biologically sustainable populations of those species (Fish and Game Code (FGC) §1802). The Department, as trustee agency pursuant to CEQA (See CEQA Guidelines, §15386), has jurisdiction by law over natural resources, including fish and wildlife, affected by a project, as that term is defined in Section 21065 of the Public Resources Code. The Department exercises this authority by reviewing and commenting on environmental documents and making recommendations to avoid, minimize, and mitigate potential negative impacts to those resources held in trust for the people of California.

Field surveys designed to detect the presence of a particular species, habitat element, or natural community are one of the tools that can assist biologists in determining whether a species or habitat may be significantly impacted by land use changes or disturbance. The Department reviews field survey data as well as site-specific and regional information to evaluate whether a project's impacts may be significant. This document compiles the best available science for conducting habitat assessments and surveys, and includes considerations for developing measures to avoid impacts or mitigate unavoidable impacts.

CEQA

CEQA requires public agencies in California to analyze and disclose potential environmental impacts associated with a project that the agency will carry out, fund, or approve. Any potentially significant impact must be mitigated to the extent feasible. Project-specific CEQA mitigation is important for burrowing owls because most populations exist on privately owned parcels that, when proposed for development or other types of modification, may be subject to the environmental review requirements of CEQA.

Take

Take of individual burrowing owls and their nests is defined by FGC section 86, and prohibited by sections 3503, 3503.5 and 3513. Take is defined in FGC Section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill."

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Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and Russia for the protection of migratory birds, including the burrowing owl (50 C.F.R. § 10). The MBTA protects migratory bird nests from possession, sale, purchase, barter, transport, import and export, and collection. The other prohibitions of the MBTA - capture, pursue, hunt, and kill - are inapplicable to nests. The regulatory definition of take, as defined in Title 50 C.F.R. part 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Only the verb "collect" applies to nests. It is illegal to collect, possess, and by any means transfer possession of any migratory bird nest. The MBTA prohibits the destruction of a nest when it contains birds or eggs, and no possession shall occur during the destruction (see Fish and Wildlife Service, Migratory Bird Permit Memorandum, April 15, 2003). Certain exceptions to this prohibition are included in 50 C.F.R. section 21. Pursuant to Fish & Game Code section 3513, the Department enforces the Migratory Bird Treaty Act consistent with rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

Regional Conservation Plans

Regional multiple species conservation plans offer long-term assurances for conservation of covered species at a landscape scale, in exchange for biologically appropriate levels of incidental take and/or habitat loss as defined in the approved plan. California's NCCP Act (FGC §2800 et seq.) governs such plans at the state level, and was designed to conserve species, natural communities, ecosystems, and ecological processes across a jurisdiction or a collection of jurisdictions. Complementary federal HCPs are governed by the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.) (ESA). Regional conservation plans (and certain other landscape-level conservation and management plans), may provide conservation for unlisted as well as listed species. Because the geographic scope of NCCPs and HCPs may span many hundreds of thousands of acres, these planning tools have the potential to play a significant role in conservation of burrowing owls, and grasslands and other habitats.

Fish and Game Commission Policies

There are a number of Fish and Game Commission policies (see FGC §2008) that can be applied to burrowing owl conservation. These include policies on: Raptors, Cooperation, Endangered and Threatened Species, Land Use Planning, Management and Utilization of Fish and Wildlife on Federal Lands, Management and Utilization of Fish and Wildlife on Private Lands, and Research.

GUIDING PRINCIPLES FOR CONSERVATION

Unless otherwise provided in a statewide, local, or regional conservation strategy, surveying and evaluating impacts to burrowing owls, as well as developing and implementing avoidance, minimization, and mitigation and conservation measures incorporate the following principles. These principles are a summary of Department staff expert opinion and were used to guide the preparation of this document.

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1. Use the Precautionary Principle (Noss et al.1997), by which the alternative of increased conservation is deliberately chosen in order to buffer against incomplete knowledge of burrowing owl ecology and uncertainty about the consequences to burrowing owls of potential impacts, including those that are cumulative.
2. Employ basic conservation biology tenets and population-level approaches when determining what constitutes appropriate avoidance, minimization, and mitigation for impacts. Include mitigation effectiveness monitoring and reporting, and use an adaptive management loop to modify measures based on results.
3. Protect and conserve owls in wild, semi-natural, and agricultural habitats (conserve is defined at FGC §1802).
4. Protect and conserve natural nest burrows (or burrow surrogates) previously used by burrowing owls and sufficient foraging habitat and protect auxiliary "satellite" burrows that contribute to burrowing owl survivorship and natural behavior of owls.

CONSERVATION GOALS FOR THE BURROWING OWL IN CALIFORNIA

It is Department staff expert opinion that the following goals guide and contribute to the short and long-term conservation of burrowing owls in California:

1. Maintain size and distribution of extant burrowing owl populations (allowing for natural population fluctuations).
2. Increase geographic distribution of burrowing owls into formerly occupied historical range where burrowing owl habitat still exists, or where it can be created or enhanced, and where the reason for its local disappearance is no longer of concern.
3. Increase size of existing populations where possible and appropriate (for example, considering basic ecological principles such as carrying capacity, predator-prey relationships, and inter-specific relationships with other species at risk).
4. Protect and restore self-sustaining ecosystems or natural communities which can support burrowing owls at a landscape scale, and which will require minimal long-term management.
5. Minimize or prevent unnatural causes of burrowing owl population declines (e.g., nest burrow destruction, chemical control of rodent hosts and prey).
6. Augment/restore natural dynamics of burrowing owl populations including movement and genetic exchange among populations, such that the species does not require future listing and protection under the California Endangered Species Act (CESA) and/or the federal Endangered Species Act (ESA).
7. Engage stakeholders, including ranchers; farmers; military; tribes; local, state, and federal agencies; non-governmental organizations; and scientific research and education communities involved in burrowing owl protection and habitat management.

ACTIVITIES WITH THE POTENTIAL TO TAKE OR IMPACT BURROWING OWLS

The following activities are examples of activities that have the potential to take burrowing owls, their nests or eggs, or destroy or degrade burrowing owl habitat: grading, disking, cultivation, earthmoving, burrow blockage, heavy equipment compacting and crushing burrow tunnels, levee maintenance, flooding, burning and mowing (if burrows are impacted), and operating wind turbine collisions (collectively hereafter referred to as "projects" or "activities")

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whether carried out pursuant to CEQA or not). In addition, the following comments may have impacts to burrowing owl populations: eradication of host burrowers; changes in vegetation management (i.e. grazing); use of pesticides and rodenticides; destruction, conversion or degradation of nesting, foraging, over-wintering or other habitats; destruction of natural burrows and burrow surrogates; and disturbance which may result in harassment of owls at occupied burrows.

PROJECT IMPACT EVALUATIONS

The following three progressive steps are effective in evaluating whether projects will result in impacts to burrowing owls. The information gained from these steps will inform any subsequent avoidance, minimization and mitigation measures. The steps for project impact evaluations are: 1) habitat assessment, 2) surveys, and 3) impact assessment. Habitat assessments are conducted to evaluate the likelihood that a site supports burrowing owl. Burrowing owl surveys provide information needed to determine the potential effects of proposed projects and activities on burrowing owls, and to avoid take in accordance with FGC sections 86, 3503, and 3503.5. Impact assessments evaluate the extent to which burrowing owls and their habitat may be impacted, directly or indirectly, on and within a reasonable distance of a proposed CEQA project activity or non-CEQA project. These three site evaluation steps are discussed in detail below.

Biologist Qualifications

The current scientific literature indicates that only individuals meeting the following minimum qualifications should perform burrowing owl habitat assessments, surveys, and impact assessments:

1. Familiarity with the species and its local ecology;
2. Experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor;
3. Familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation;
4. Experience with analyzing impacts of development on burrowing owls and their habitat.

Habitat Assessment Data Collection and Reporting

A habitat assessment is the first step in the evaluation process and will assist investigators in determining whether or not occupancy surveys are needed. Refer to Appendix B for a definition of burrowing owl habitat. Compile the detailed information described in Appendix C when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report.

Surveys

Burrowing owl surveys are the second step of the evaluation process and the best available scientific literature recommends that they be conducted whenever burrowing owl habitat or sign (see Appendix B) is encountered on or adjacent to (within 150 meters) a project site

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(Thomsen 1971, Martin 1973). Occupancy of burrowing owl habitat is confirmed as a one when at least one burrowing owl, or its sign at or near a burrow entrance, is observed within the last three years (Rich 1984). Burrowing owls are more detectable during the breeding season with detection probabilities being highest during the nestling stage (Conway et al. 2008). In California, the burrowing owl breeding season extends from 1 February to 31 August (Haug et al. 1993, Thompson 1971) with some variances by geographic location and climatic conditions. Several researchers suggest three or more survey visits during daylight hours (Haug and Diduik 1993, CBOC 1997, Conway and Simon 2003) and recommend each visit occur at least three weeks apart during the peak of the breeding season, commonly accepted in California as between 15 April and 15 July (CBOC 1997). Conway and Simon (2003) and Conway et al. (2008) recommended conducting surveys during the day when most burrowing owls in a local area are in the laying and incubation period (so as not to miss early breeding attempts), during the nesting period, and in the late nestling period when most owls are spending time above ground.

Non-breeding season (1 September to 31 January) surveys may provide information on burrowing owl occupancy, but do not substitute for breeding season surveys because results are typically inconclusive. Burrowing owls are more difficult to detect during the non-breeding season and their seasonal residency status is difficult to ascertain. Burrowing owls detected during non-breeding season surveys may be year-round residents, young from the previous breeding season, pre-breeding territorial adults, winter residents, dispersing juveniles, migrants, transients or new colonizers. In addition, the numbers of owls and their pattern of distribution may differ during winter and breeding seasons. However, on rare occasions, non-breeding season surveys may be warranted (i.e., if the site is believed to be a wintering site only based on negative breeding season results). Refer to Appendix D for information on breeding season and non-breeding season survey methodologies.

Survey Reports

Adequate information about burrowing owls present in and adjacent to an area that will be disturbed by a project or activity will enable the Department, reviewing agencies and the public to effectively assess potential impacts and will guide the development of avoidance, minimization, and mitigation measures. The survey report includes but is not limited to a description of the proposed project or proposed activity, including the proposed project start and end dates, as well as a description of disturbances or other activities occurring on-site or nearby. Refer to Appendix D for details included in a survey report.

Impact Assessment

The third step in the evaluation process is the impact assessment. When surveys confirm occupied burrowing owl habitat in or adjoining the project area, there are a number of ways to assess a project's potential significant impacts to burrowing owls and their habitat. Richardson and Miller (1997) recommended monitoring raptor behavior prior to developing management recommendations and buffers to determine the extent to which individuals have been sensitized to human disturbance. Monitoring results will also provide detail necessary for developing site-specific measures. Postovit and Postovit (1987) recommended an analytical approach to mitigation planning: define the problem (impact), set goals (to guide mitigation development), evaluate and select mitigation methods, and monitor the results.

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Define the problem. The impact assessment evaluates all factors that could affect burrowing owls. Postovit and Postovit (1987) recommend evaluating the following in assessing impacts to raptors and planning mitigation: type and extent of disturbance, duration and timing of disturbance, visibility of disturbance, sensitivity and ability to habituate, and influence of environmental factors. They suggest identifying and addressing all potential direct and indirect impacts to burrowing owls, regardless of whether or not the impacts will occur during the breeding season. Several examples are given for each impact category below; however, examples are not intended to be used exclusively.

Type and extent of the disturbance. The impact assessment describes the nature (source) and extent (scale) of potential project impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate.

Duration and timing of the impact. The impact assessment describes the amount of time the burrowing owl habitat will be unavailable to burrowing owls (temporary or permanent) on the site and the effect of that loss on essential behaviors or life history requirements of burrowing owls, the overlap of project activities with breeding and/or non-breeding seasons (timing of nesting and/or non-breeding activities may vary with latitude and climatic conditions, which should be considered with the timeline of the project or activity), and any variance of the project activities in intensity, scale and proximity relative to burrowing owl occurrences.

Visibility and sensitivity. Some individual burrowing owls or pairs are more sensitive than others to specific stimuli and may habituate to ongoing visual or audible disturbance. Site-specific monitoring may provide clues to the burrowing owl's sensitivities. This type of assessment addresses the sensitivity of burrowing owls within their nesting area to humans on foot, and vehicular traffic. Other variables are whether the site is primarily in a rural versus urban setting, and whether any prior disturbance (e.g., human development or recreation) is known at the site.

Environmental factors. The impact assessment discusses any environmental factors that could be influenced or changed by the proposed activities including nest site availability, predators, prey availability, burrowing mammal presence and abundance, and threats from other extrinsic factors such as human disturbance, urban interface, feral animals, invasive species, disease or pesticides.

Significance of impacts. The impact assessment evaluates the potential loss of nesting burrows, satellite burrows, foraging habitat, dispersal and migration habitat, wintering habitat, and habitat linkages, including habitat supporting prey and host burrowers and other essential habitat attributes. This assessment determines if impacts to the species will result in significant impacts to the species locally, regionally and range-wide per CEQA Guidelines §15382 and Appendix G. The significance of the impact to habitat depends on the extent of habitat disturbed and length of time the habitat is unavailable (for example: minor – several days, medium – several weeks to months, high – breeding season affecting juvenile survival,

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or over winter affecting adult survival).

Cumulative effects. The cumulative effects assessment evaluates two consequences: 1) the project's proportional share of reasonably foreseeable impacts on burrowing owls and habitat caused by the project or in combination with other projects and local influences having impacts on burrowing owls and habitat, and 2) the effects on the regional owl population resulting from the project's impacts to burrowing owls and habitat.

Mitigation goals. Establishing goals will assist in planning mitigation and selecting measures that function at a desired level. Goals also provide a standard by which to measure mitigation success. Unless specifically provided for through other FGC Sections or through specific regulations, take, possession or destruction of individual burrowing owls, their nests and eggs is prohibited under FGC sections 3503, 3503.5 and 3513. Therefore, a required goal for all project activities is to avoid take of burrowing owls. Under CEQA, goals would consist of measures that would avoid, minimize and mitigate impacts to a less than significant level. For individual projects, mitigation must be roughly proportional to the level of impacts, including cumulative impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 15355). In order for mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions. As set forth in more detail in Appendix A, the current scientific literature supports the conclusion that mitigation for permanent habitat loss necessitates replacement with an equivalent or greater habitat area for breeding, foraging, wintering, dispersal, presence of burrows, burrow surrogates, presence of fossorial mammal dens, well drained soils, and abundant and available prey within close proximity to the burrow.

MITIGATION METHODS

The current scientific literature indicates that any site-specific avoidance or mitigation measures developed should incorporate the best practices presented below or other practices confirmed by experts and the Department. The Department is available to assist in the development of site-specific avoidance and mitigation measures.

Avoiding. A primary goal is to design and implement projects to seasonally and spatially avoid negative impacts and disturbances that could result in take of burrowing owls, nests, or eggs. Other avoidance measures may include but not be limited to:

- Avoid disturbing occupied burrows during the nesting period, from 1 February through 31 August.
- Avoid impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid direct destruction of burrows through chaining (dragging a heavy chain over an area to remove shrubs), disking, cultivation, and urban, industrial, or agricultural development.
- Develop and implement a worker awareness program to increase the on-site worker's recognition of and commitment to burrowing owl protection.
- Place visible markers near burrows to ensure that farm equipment and other machinery does not collapse burrows.
- Do not fumigate, use treated bait or other means of poisoning nuisance animals in areas where burrowing owls are known or suspected to occur (e.g., sites observed with nesting

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owls, designated use areas).

- Restrict the use of treated grain to poison mammals to the months of January and February.

Take avoidance (pre-construction) surveys. Take avoidance surveys are intended to detect the presence of burrowing owls on a project site at a fixed period in time and inform necessary take avoidance actions. Take avoidance surveys may detect changes in owl presence such as colonizing owls that have recently moved onto the site, migrating owls, resident burrowing owls changing burrow use, or young of the year that are still present and have not dispersed. Refer to Appendix D for take avoidance survey methodology.

Site surveillance. Burrowing owls may attempt to colonize or re-colonize an area that will be impacted; thus, the current scientific literature indicates a need for ongoing surveillance at the project site during project activities is recommended. The surveillance frequency/effort should be sufficient to detect burrowing owls if they return. Subsequent to their new occupancy or return to the site, take avoidance measures should assure with a high degree of certainty that take of owls will not occur.

Minimizing. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, the use of buffer zones, visual screens or other measures while project activities are occurring can minimize disturbance impacts. Conduct site-specific monitoring to inform development of buffers (see Visibility and sensitivity above). The following general guidelines for implementing buffers should be adjusted to address site-specific conditions using the impact assessment approach described above. The CEQA lead agency and/or project proponent is encouraged to consult with the Department and other burrowing owl experts for assistance in developing site-specific buffer zones and visual screens.

Buffers. Holroyd et al. (2001) identified a need to standardize management and disturbance mitigation guidelines. For instance, guidelines for mitigating impacts by petroleum industries on burrowing owls and other prairie species (Scobie and Faminow, 2000) may be used as a template for future mitigation guidelines (Holroyd et al. 2001). Scobie and Faminow (2000) developed guidelines for activities around occupied burrowing owl nests recommending buffers around low, medium, and high disturbance activities, respectively (see below).

Recommended restricted activity dates and setback distances by level of disturbance for burrowing owls (Scobie and Faminow 2000).

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

Based on existing vegetation, human development, and land uses in an area, resource managers may decide to allow human development or resource extraction closer to these area/sites than recommended above. However, if it is decided to allow activities closer than

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the setback distances recommended, a broad-scale, long-term, ~~continuous~~ ^{comprehensive} monitoring program ensures that burrowing owls are not detrimentally affected by alternative approaches.

Other minimization measures include eliminating actions that reduce burrowing owl forage and burrowing surrogates (e.g. ground squirrel), or introduce/facilitate burrowing owl predators. Actions that could influence these factors include reducing livestock grazing rates and/or changing the timing or duration of grazing or vegetation management that could result in less suitable habitat.

Burrow exclusion and closure. Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. Exclusion in and of itself is not a take avoidance, minimization or mitigation method. Eviction of burrowing owls is a potentially significant impact under CEQA.

The long-term demographic consequences of these techniques have not been thoroughly evaluated, and the fate of evicted or excluded burrowing owls has not been systematically studied. Because burrowing owls are dependent on burrows at all times of the year for survival and/or reproduction, evicting them from nesting, roosting, and satellite burrows may lead to indirect impacts or take. Temporary or permanent closure of burrows may result in significant loss of burrows and habitat for reproduction and other life history requirements. Depending on the proximity and availability of alternate habitat, loss of access to burrows will likely result in varying levels of increased stress on burrowing owls and could depress reproduction, increase predation, increase energetic costs, and introduce risks posed by having to find and compete for available burrows. Therefore, exclusion and burrow closure are not recommended where they can be avoided. The current scientific literature indicates consideration of all possible avoidance and minimization measures before temporary or permanent exclusion and closure of burrows is implemented, in order to avoid take.

The results of a study by Trulio (1995) in California showed that burrowing owls passively displaced from their burrows were quickly attracted to adjacent artificial burrows at five of six passive relocation sites. The successful sites were all within 75 meters (m) of the destroyed burrow, a distance generally within a pair's territory. This researcher discouraged using passive relocation to artificial burrows as a mitigation measure for lost burrows without protection of adjacent foraging habitat. The study results indicated artificial burrows were used by evicted burrowing owls when they were approximately 50-100 m from the natural burrow (Thomsen 1971, Haug and Oliphant 1990). Locating artificial or natural burrows more than 100 m from the eviction burrow may greatly reduce the chances that new burrows will be used. Ideally, exclusion and burrow closure is employed only where there are adjacent natural burrows and non-impacted, sufficient habitat for burrowing owls to occupy with permanent protection mechanisms in place. Any new burrowing owl colonizing the project site after the CEQA document has been adopted may constitute changed circumstances that should be addressed in a re-circulated CEQA document.

The current scientific literature indicates that burrow exclusion should only be conducted by qualified biologists (meeting the Biologist's Qualifications above) during the non-breeding

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season, before breeding behavior is exhibited and after the burrow is colonized empty of one surveillance and/or scoping. The literature also indicates that when temporary or permanent burrow exclusion and/or burrow closure is implemented, burrowing owls should not be excluded from burrows unless or until:

- A Burrowing Owl Exclusion Plan (see Appendix E) is developed and approved by the applicable local DFG office;
- Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the Mitigating Impacts sections below. Temporary exclusion is mitigated in accordance with the item #1 under Mitigating Impacts below.
- Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season.
- Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight).

Translocation (Active relocation offsite >100 meters). At this time, there is little published information regarding the efficacy of translocating burrowing owls, and additional research is needed to determine subsequent survival and breeding success (Klute et al. 2003, Holroyd et al. 2001). Study results for translocation in Florida implied that hatching success may be decreased for populations of burrowing owls that undergo translocation (Nixon 2006). At this time, the Department is unable to authorize the capture and relocation of burrowing owls except within the context of scientific research (FGC §1002) or a NCCP conservation strategy.

Mitigating impacts. Habitat loss and degradation from rapid urbanization of farmland in the core areas of the Central and Imperial valleys is the greatest of many threats to burrowing owls in California (Shulford and Gardall, 2008). At a minimum, if burrowing owls have been documented to occupy burrows (see Definitions, Appendix B) at the project site in recent years, the current scientific literature supports the conclusion that the site should be considered occupied and mitigation should be required by the CEQA lead agency to address project-specific significant and cumulative impacts. Other site-specific and regionally significant and cumulative impacts may warrant mitigation. The current scientific literature indicates the following to be best practices. If these best practices cannot be implemented, the lead agency or lead investigator may consult with the Department to develop effective mitigation alternatives. The Department is also available to assist in the identification of suitable mitigation lands.

1. Where habitat will be temporarily disturbed, restore the disturbed area to pre-project condition including decompacting soil and revegetating. Permanent habitat protection may be warranted if there is the potential that the temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable depending on the time frame, resulting in reduced survival or abandonment. For the latter potential impact, see the permanent impact measures below.
2. Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the information provided in Appendix A. Note: A

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- minimum habitat replacement recommendation is not provided here as it has been shown to serve as a default, replacing any site-specific analysis and discounting the wide variation in natal area, home range, foraging area, and other factors influencing burrowing owls and burrowing owl population persistence in a particular area.
3. Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals. The mitigation lands may require habitat enhancements including enhancement or expansion of burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. If the mitigation lands are located adjacent to the impacted burrow site, ensure the nearest neighbor artificial or natural burrow clusters are at least within 210 meters (Fisher et al. 2007).
 4. Permanently protect mitigation land through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, for the purpose of conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is located within the service area of a Department-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.
 5. Develop and implement a mitigation land management plan to address long-term ecological sustainability and maintenance of the site for burrowing owls (see Management Plan and Artificial Burrow sections below, if applicable).
 6. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
 7. Habitat should not be altered or destroyed, and burrowing owls should not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to Department-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
 8. Mitigation lands should be on, adjacent or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present.
 9. Where there is insufficient habitat on, adjacent to, or near project sites where burrowing owls will be excluded, acquire mitigation lands with burrowing owl habitat away from the project site. The selection of mitigation lands should then focus on consolidating and enlarging conservation areas located outside of urban and planned growth areas, within foraging distance of other conserved lands. If mitigation lands are not available adjacent to other conserved lands, increase the mitigation land acreage requirement to ensure a selected site is of sufficient size. Offsite mitigation may not adequately offset the biological and habitat values impacted on a one to one basis. Consult with the Department when determining offsite mitigation acreages.
 10. Evaluate and select suitable mitigation lands based on a comparison of the habitat attributes of the impacted and conserved lands, including but not limited to: type and structure of habitat being impacted or conserved; density of burrowing owls in impacted and conserved habitat; and significance of impacted or conserved habitat to the species range-wide. Mitigate for the highest quality burrowing owl habitat impacted first and foremost when identifying mitigation lands, even if a mitigation site is located outside of

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- a lead agency's jurisdictional boundary, particularly if the lead agency is a city or special district.
11. Select mitigation lands taking into account the potential human and wildlife conflicts or incompatibility, including but not limited to, human foot and vehicle traffic, and predation by cats, loose dogs and urban-adapted wildlife, and incompatible species management (i.e., snowy plover).
 12. Where a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may enhance sustainability of the burrowing owl population onsite. Maintenance includes keeping lands grazed or mowed with weed-eaters or push mowers, free from trees and shrubs, and preventing excessive human and human-related disturbance (e.g., walking, jogging, off-road activity, dog-walking) and loose and feral pets (chasing and, presumably, preying upon owls) that make the environment uninhabitable for burrowing owls (Wesemann and Rowe 1985, Millsap and Bear 2000, Lincer and Bloom 2007). Items 4, 5 and 6 also still apply to this mitigation approach.
 13. If there are no other feasible mitigation options available and a lead agency is willing to establish and oversee a Burrowing Owl Mitigation and Conservation Fund that funds on a competitive basis acquisition and permanent habitat conservation, the project proponent may participate in the lead agency's program.

Artificial burrows. Artificial burrows have been used to replace natural burrows either temporarily or long-term and their long-term success is unclear. Artificial burrows may be an effective addition to in-perpetuity habitat mitigation if they are augmenting natural burrows, the burrows are regularly maintained (i.e., no less than annual, with biennial maintenance recommended), and surrounding habitat patches are carefully maintained. There may be some circumstances, for example at airports, where squirrels will not be allowed to persist and create a dynamic burrow system, where artificial burrows may provide some support to an owl population.

Many variables may contribute to the successful use of artificial burrows by burrowing owls, including pre-existence of burrowing owls in the area, availability of food, predators, surrounding vegetation and proximity, number of natural burrows in proximity, type of materials used to build the burrow, size of the burrow and entrance, direction in which the burrow entrance is facing, slope of the entrance, number of burrow entrances per burrow, depth of the burrow, type and height of perches, and annual maintenance needs (Belthoff and King 2002, Smith et al. 2005, Barclay et al. 2011). Refer to Barclay (2008) and (2011) and to Johnson et al. 2010 (unpublished report) for guidance on installing artificial burrows including recommendations for placement, installation and maintenance.

Any long-term reliance on artificial burrows as natural burrow replacements must include semi-annual to annual cleaning and maintenance and/or replacement (Barclay et al. 2011, Smith and Conway 2005, Alexander et al. 2005) as an ongoing management practice. Alexander et al. (2005), in a study of the use of artificial burrows found that all of 20 artificial burrows needed some annual cleaning and maintenance. Burrows were either excavated by predators, blocked by soil or vegetation, or experienced substrate erosion forming a space beneath the tubing that prevented nestlings from re-entering the burrow.

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Mitigation lands management plan. Develop a Mitigation Lands Management Plan for projects that require off-site or on-site mitigation habitat protection to ensure compliance with and effectiveness of identified management actions for the mitigation lands. A suggested outline and related vegetation management goals and monitoring success criteria can be found in Appendix E.

Mitigation Monitoring and Reporting

Verify the compliance with required mitigation measures, the accuracy of predictions, and ensure the effectiveness of all mitigation measures for burrowing owls by conducting follow-up monitoring, and implementing midcourse corrections, if necessary, to protect burrowing owls. Refer to CEQA Guidelines Section 15097 and the CEQA Guidelines for additional guidance on mitigation, monitoring and reporting. Monitoring is qualitatively different from site surveillance; monitoring normally has a specific purpose and its outputs and outcomes will usually allow a comparison with some baseline condition of the site before the mitigation (including avoidance and minimization) was undertaken. Ideally, monitoring should be based on the Before-After Control-Impact (BACI) principle (McDonald et al. 2000) that requires knowledge of the pre-mitigation state to provide a reference point for the state and change in state after the project and mitigation have been implemented.

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Appendix A. Burrowing Owl Natural History and Threats

Diet

Burrowing owl diet includes arthropods, small rodents, birds, amphibians, reptiles, and carrion (Haug et al. 1993).

Breeding

In California, the breeding season for the burrowing owl typically occurs between 1 February and 31 August although breeding in December has been documented (Thompson 1971, Gervais et al. 2008); breeding behavior includes nest site selection by the male, pair formation, copulation, egg laying, hatching, fledging, and post-fledging care of young by the parents. The peak of the breeding season occurs between 15 April and 15 July and is the period when most burrowing owls have active nests (eggs or young). The incubation period lasts 29 days (Coulombe 1971) and young fledge after 44 days (Haug et al. 1993). Note that the timing of nesting activities may vary with latitude and climatic conditions. Burrowing owls may change burrows several times during the breeding season, starting when nestlings are about three weeks old (Haug et al. 1993).

Dispersal

The following discussion is an excerpt from Gervais et al (2008):

"The burrowing owl is often considered a sedentary species (e.g., Thomsen 1971). A large proportion of adults show strong fidelity to their nest site from year to year, especially where resident, as in Florida (74% for females, 83% for males; Millsap and Bear 1997). In California, nest-site fidelity rates were 32%–50% in a large grassland and 57% in an agricultural environment (Ronan 2002, Catlin 2004, Catlin et al. 2005). Differences in these rates among sites may reflect differences in nest predation rates (Catlin 2004, Catlin et al. 2005). Despite the high nest fidelity rates, dispersal distances may be considerable for both juveniles (natal dispersal) and adults (postbreeding dispersal), but this also varied with location (Catlin 2004, Rosier et al. 2006). Distances of 53 km to roughly 150 km have been observed in California for adult and natal dispersal, respectively (D. K. Rosenberg and J. A. Gervais, unpublished data), despite the difficulty in detecting movements beyond the immediate study area (Koenig et al. 1996)."

Habitat

The burrowing owl is a small, long-legged, ground-dwelling bird species, well-adapted to open, relatively flat expanses. In California, preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils (Haug et al. 1993). Grassland, shrub steppe, and desert are naturally occurring habitat types used by the species. In addition, burrowing owls may occur in some agricultural areas, ruderal grassy fields, vacant lots and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat in proximity (Gervais et al 2008). Unique amongst North

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American raptors, the burrowing owl requires underground burrows for nesting during the breeding season and for roosting and cover, year round. Burrows used by the owls are usually dug by other species termed host burrowers. In California, California ground squirrel (*Spermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) burrows are frequently used by burrowing owls but they may use dens or holes dug by other fossorial species including badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox, *Vulpes macrotis mutica*; Ronan 2002). In some instances, owls have been known to excavate their own burrows (Thompson 1971, Barclay 2007). Natural rock cavities, debris piles, culverts, and pipes also are used for nesting and roosting (Rosenberg et al. 1998). Burrowing owls have been documented using artificial burrows for nesting and cover (Smith and Belthoff, 2003).

Foraging habitat. Foraging habitat is essential to burrowing owls. The following discussion is an excerpt from Gervais et al. (2008):

"Useful as a rough guide to evaluating project impacts and appropriate mitigation for burrowing owls, adult male burrowing owls home ranges have been documented (calculated by minimum convex polygon) to comprise anywhere from 280 acres in intensively irrigated agroecosystems in Imperial Valley (Rosenberg and Haley 2004) to 450 acres in mixed agricultural lands at Lemoore Naval Air Station, CA (Gervais et al. 2003), to 600 acres in pasture in Saskatchewan, Canada (Haug and Oliphant 1990). But owl home ranges may be much larger, perhaps by an order of magnitude, in non-irrigated grasslands such as at Carrizo Plain, California (Gervais et al. 2008), based on telemetry studies and distribution of nests. Foraging occurs primarily within 600 m of their nests (within approximately 300 acres, based on a circle with a 600 m radius) during the breeding season."

Importance of burrows and adjacent habitat. Burrows and the associated surrounding habitat are essential ecological requisites for burrowing owls throughout the year and especially during the breeding season. During the non-breeding season, burrowing owls remain closely associated with burrows, as they continue to use them as refuge from predators, shelter from weather and roost sites. Resident populations will remain near the previous season's nest burrow at least some of the time (Coulombe 1971, Thomsen 1971, Botelho 1996, LaFever et al. 2008).

In a study by Lutz and Plumpton (1999) adult males and females nested in formerly used sites at similar rates (75% and 63%, respectively) (Lutz and Plumpton 1999). Burrow fidelity has been reported in some areas; however, more frequently, burrowing owls reuse traditional nesting areas without necessarily using the same burrow (Haug et al. 1993, Dechant et al. 1999). Burrow and nest sites are re-used at a higher rate if the burrowing owl has reproduced successfully during the previous year (Haug et al. 1993) and if the number of burrows isn't limiting nesting opportunity.

Burrowing owls may use "satellite" or non-nesting burrows, moving young at 10-14 days, presumably to reduce risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Dechant et al. 1999). Successful nests in Nebraska had more active satellite burrows within 75 m of the nest burrow than unsuccessful nests (Desmond and Savidge

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1999). Several studies have documented the number of satellite burrows used by young and adult burrowing owls during the breeding season as between one and 11 burrows with an average use of approximately five burrows (Thompson 1984, Haug 1985, Haug and Oliphant 1990). Supporting the notion of selecting for nest sites near potential satellite burrows, Ronan (2002) found burrowing owl families would move away from a nest site if their satellite burrows were experimentally removed through blocking their entrance.

Habitat adjacent to burrows has been documented to be important to burrowing owls. Gervais et al. (2003) found that home range sizes of male burrowing owls during the nesting season were highly variable within but not between years. Their results also suggested that owls concentrate foraging efforts within 600 meters of the nest burrow, as was observed in Canada (Haug and Oliphant 1990) and southern California (Rosenberg and Haley 2004). James et al. (1997), reported habitat modification factors causing local burrowing owl declines included habitat fragmentation and loss of connectivity.

In conclusion, the best available science indicates that essential habitat for the burrowing owl in California must include suitable year-round habitat, primarily for breeding, foraging, wintering and dispersal habitat consisting of short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey within close proximity to the burrow.

Threats to Burrowing Owls in California

Habitat loss. Habitat loss, degradation, and fragmentation are the greatest threats to burrowing owls in California. According to DeSante et al. (2007), "the vast majority of burrowing owls [now] occur in the wide, flat lowland valleys and basins of the Imperial Valley and Great Central Valley [where] for the most part,...the highest rates of residential and commercial development in California are occurring." Habitat loss from the State's long history of urbanization in coastal counties has already resulted in either extirpation or drastic reduction of burrowing owl populations there (Gervais et al. 2008). Further, loss of agricultural and other open lands (such as grazed landscapes) also negatively affect owl populations. Because of their need for open habitat with low vegetation, burrowing owls are unlikely to persist in agricultural lands dominated by vineyards and orchards (Gervais et al. 2008).

Control of burrowing rodents. According to Klute et al. (2003), the elimination of burrowing rodents through control programs is a primary factor in the recent and historical decline of burrowing owl populations nationwide. In California, ground squirrel burrows are most often used by burrowing owls for nesting and cover; thus, ground squirrel control programs may affect owl numbers in local areas by eliminating a necessary resource.

Direct mortality. Burrowing owls suffer direct losses from a number of sources. Vehicle collisions are a significant source of mortality especially in the urban interface and where owls nest alongside roads (Haug et al. 1993, Gervais et al. 2008). Road and ditch maintenance, modification of water conveyance structures (Imperial Valley) and discing to control weeds in fallow fields may destroy burrows (Rosenberg and Haley 2004, Catlin and Rosenberg 2006) which may trap or crush owls. Wind turbines at Altamont Pass Wind Resource Area are known to cause direct burrowing owl mortality (Thelander et al. 2003). Exposure to

pesticides may pose a threat to the species but is poorly understood (Gervais et al. 2008).

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Appendix B. Definitions

Some key terms that appear in this document are defined below.

Adjacent habitat means burrowing owl habitat that abuts the area where habitat and burrows will be impacted and rendered non-suitable for occupancy.

Breeding (nesting) season begins as early as 1 February and continues through 31 August (Thomsen 1971, Zarn 1974). The timing of breeding activities may vary with latitude and climatic conditions. The breeding season includes pairing, egg-laying and incubation, and nestling and fledging stages.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls or permanently exclude burrowing owls and excavate and close burrows after confirming burrows are empty.

Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey.

Burrow surrogates include culverts, piles of concrete rubble, piles of soil, burrows created along soft banks of ditches and canals, pipes, and similar structures.

Civil twilight - Morning civil twilight begins when the geometric center of the sun is 6 degrees below the horizon (civil dawn) and ends at sunrise. Evening civil twilight begins at sunset and ends when the geometric center of the sun reaches 6 degrees below the horizon (civil dusk). During this period there is enough light from the sun that artificial sources of light may not be needed to carry on outdoor activities. This concept is sometimes enshrined in laws, for example, when drivers of automobiles must turn on their headlights (called lighting-up time in the UK); when pilots may exercise the rights to fly aircraft. Civil twilight can also be described as the limit at which twilight illumination is sufficient, under clear weather conditions, for terrestrial objects to be clearly distinguished; at the beginning of morning civil twilight, or end of evening civil twilight, the horizon is clearly defined and the brightest stars are visible under clear atmospheric conditions.

Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to California or federal Endangered Species Acts.

Contiguous means connected together so as to form an uninterrupted expanse in space.

Essential habitat includes nesting, foraging, wintering, and dispersal habitat.

Foraging habitat is habitat within the estimated home range of an occupied burrow, supports suitable prey base, and allows for effective hunting.

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Host burrowers include ground squirrels, badgers, foxes, coyotes, gophers, etc.

Locally significant species is a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or occurring in a unique habitat type.

Non-breeding season is the period of time when nesting activity is not occurring, generally September 1 through January 31, but may vary with latitude and climatic conditions.

Occupied site or occupancy means a site that is assumed occupied if at least one burrowing owl has been observed occupying a burrow within the last three years (Rich 1984). Occupancy of suitable burrowing owl habitat may also be indicated by owl sign including its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site.

Other impacting activities may include but may not be limited to agricultural practices, vegetation management and fire control, pest management, conversion of habitat from rangeland or natural lands to more intensive agricultural uses that could result in "take". These impacting activities may not meet the definition of a project under CEQA.

Passive relocation is a technique of installing one-way doors in burrow openings to temporarily or permanently evict burrowing owls and prevent burrow re-occupation.

Peak of the breeding season is between 15 April and 15 July.

Sign includes its tracks, molted feathers, cast pellets (defined as 1-2" long brown to black regurgitated pellets consisting of non-digestible portions of the owls' diet, such as fur, bones, claws, beetle elytra, or feathers), prey remains, egg shell fragments, owl white wash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.), possible owl perches, or other items.

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Appendix C. Habitat Assessment and Reporting Details

Habitat Assessment Data Collection and Reporting

Current scientific literature indicates that it would be most effective to gather the data in the manner described below when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report:

1. Conduct at least one visit covering the entire potential project/activity area including areas that will be directly or indirectly impacted by the project. Survey adjoining areas within 150 m (Thomsen 1971, Martin 1973), or more where direct or indirect effects could potentially extend offsite. If lawful access cannot be achieved to adjacent areas, surveys can be performed with a spotting scope or other methods.
2. Prior to the site visit, compile relevant biological information for the site and surrounding area to provide a local and regional context.
3. Check all available sources for burrowing owl occurrence information regionally prior to a field inspection. The CNDDDB and BIOS (see References cited) may be consulted for known occurrences of burrowing owls. Other sources of information include, but are not limited to, the Proceedings of the California Burrowing Owl Symposium (Barclay et al. 2007), county bird atlas projects, Breeding Bird Survey records, eBIRD (<http://ebird.org>), Gervais et al. (2008), local reports or experts, museum records, and other site-specific relevant information.
4. Identify vegetation and habitat types potentially supporting burrowing owls in the project area and vicinity.
5. Record and report on the following information:
 - a. A full description of the proposed project, including but not limited to, expected work periods, daily work schedules, equipment used, activities performed (such as drilling, construction, excavation, etc.) and whether the expected activities will vary in location or intensity over the project's timeline;
 - b. A regional setting map, showing the general project location relative to major roads and other recognizable features;
 - c. A detailed map (preferably a USGS topo 7.5' quad base map) of the site and proposed project, including the footprint of proposed land and/or vegetation-altering activities, base map source, identifying topography, landscape features, a north arrow, bar scale, and legend;
 - d. A written description of the biological setting, including location (Section, Township, Range, baseline and meridian), acreage, topography, soils, geographic and hydrologic characteristics, land use and management history on and adjoining the site (i.e., whether it is urban, semi-urban or rural; whether there is any evidence of past or current livestock grazing, mowing, disking, or other vegetation management activities);
 - e. An analysis of any relevant, historical information concerning burrowing owl use or occupancy (breeding, foraging, over-wintering) on site or in the assessment area;
 - f. Vegetation type and structure (using Sawyer et al. 2009), vegetation height, habitat types and features in the surrounding area plus a reasonably sized (as supported with logical justification) assessment area; (Note: use caution in discounting habitat based on grass height as it can be a temporary condition variable by season and conditions (such as current grazing regime) or may be distributed as a mosaic).

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- g. The presence of burrowing owl individuals or pairs or sign (see Appendix 1).
- h. The presence of suitable burrows and/or burrow surrogates (>11 cm in diameter (height and width) and >150 cm in depth) (Johnson et al. 2010), regardless of a lack of any burrowing owl sign and/or burrow surrogates; and burrowing owls and/or their sign that have recently or historically (within the last 3 years) been identified on or adjacent to the site.

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Appendix D. Breeding and Non-breeding Season Surveys and Reports

Current scientific literature indicates that it is most effective to conduct breeding and non-breeding season surveys and report in the manner that follows:

Breeding Season Surveys

Number of visits and timing. Conduct 4 survey visits: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Note: many burrowing owl migrants are still present in southwestern California during mid-March, therefore, exercise caution in assuming breeding occupancy early in the breeding season.

Survey method. Rosenberg et al. (2007) confirmed walking line transects were most effective in smaller habitat patches. Conduct surveys in all portions of the project site that were identified in the Habitat Assessment and fit the description of habitat in Appendix A. Conduct surveys by walking straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density (Rosenberg et al. 2007). At the start of each transect and, at least, every 100 m, scan the entire visible project area for burrowing owls using binoculars. During walking surveys, record all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls, so observers should also listen for burrowing owls while conducting the survey.

Care should be taken to minimize disturbance near occupied burrows during all seasons and not to "flush" burrowing owls especially if predators are present to reduce any potential for needless energy expenditure or burrowing owl mortality. Burrowing owls may flush if approached by pedestrians within 50 m (Conway et al. 2003). If raptors or other predators are present that may suppress burrowing owl activity, return at another time or later date for a follow-up survey.

Check all burrowing owls detected for bands and/or color bands and report band combinations to the Bird Banding Laboratory (BBL). Some site-specific variations to survey methods discussed below may be developed in coordination with species experts and Department staff.

Weather conditions. Poor weather may affect the surveyor's ability to detect burrowing owls, therefore, avoid conducting surveys when wind speed is >20 km/hr, and there is precipitation or dense fog. Surveys have greater detection probability if conducted when ambient temperatures are >20° C, <12 km/hr winds, and cloud cover is <75% (Conway et al. 2008).

Time of day. Daily timing of surveys varies according to the literature, latitude, and survey method. However, surveys between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight provide the highest detection probabilities (Barclay pers. comm. 2012, Conway et al. 2008).

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Alternate methods. If the project site is large enough to warrant an alternate method, conduct current literature for generally accepted survey methods and consult with the Department on the proposed survey approach.

Additional breeding season site visits. Additional breeding season site visits may be necessary, especially if non-breeding season exclusion methods are contemplated. Detailed information, such as approximate home ranges of each individual or of family units, as well as foraging areas as related to the proposed project, will be important to document for evaluating impacts, planning avoidance measure implementation and for mitigation measure performance monitoring.

Adverse conditions may prevent investigators from determining presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owls in any given year. Any such conditions should be identified and discussed in the survey report. Visits to the site in more than one year may increase the likelihood of detection. Also, visits to adjacent known occupied habitat may help determine appropriate survey timing.

Given the high site fidelity shown by burrowing owls (see Appendix A, Importance of burrows), conducting surveys over several years may be necessary when project activities are ongoing, occur annually, or start and stop seasonally. (See Negative surveys).

Non-breeding Season Surveys

If conducting non-breeding season surveys, follow the methods described above for breeding season surveys, but conduct at least four (4) visits, spread evenly, throughout the non-breeding season. Burrowing owl experts and local Department staff are available to assist with interpreting results.

Negative Surveys

Adverse conditions may prevent investigators from documenting presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owl in any given year. Discuss such conditions in the Survey Report. Visits to the site in more than one year increase the likelihood of detection and failure to locate burrowing owls during one field season does not constitute evidence that the site is no longer occupied, particularly if adverse conditions influenced the survey results. Visits to other nearby known occupied sites can affirm whether the survey timing is appropriate.

Take Avoidance Surveys

Field experience from 1995 to present supports the conclusion that it would be effective to complete an initial take avoidance survey no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Detection Surveys section above. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls.

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Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.

Survey Reports

Report on the survey methods used and results including the information described in the Summary Report and include the reports within the CEQA documentation:

1. Date, start and end time of surveys including weather conditions (ambient temperature, wind speed, percent cloud cover, precipitation and visibility);
2. Name(s) of surveyor(s) and qualifications;
3. A discussion of how the timing of the survey affected the comprehensiveness and detection probability;
4. A description of survey methods used including transect spacing, point count dispersal and duration, and any calls used;
5. A description and justification of the area surveyed relative to the project area;
6. A description that includes: number of owls or nesting pairs at each location (by nestlings, juveniles, adults, and those of an unknown age), number of burrows being used by owls, and burrowing owl sign at burrows. Include a description of individual markers, such as bands (numbers and colors), transmitters, or unique natural identifying features. If any owls are banded, request documentation from the BBL and bander to report on the details regarding the known history of the banded burrowing owl(s) (age, sex, origins, whether it was previously relocated) and provide with the report if available;
7. A description of the behavior of burrowing owls during the surveys, including feeding, resting, courtship, alarm, territorial defense, and those indicative of parents or juveniles;
8. A list of possible burrowing owl predators present and documentation of any evidence of predation of owls;
9. A detailed map (1:24,000 or closer to show details) showing locations of all burrowing owls, potential burrows, occupied burrows, areas of concentrated burrows, and burrowing owl sign. Locations documented by use of global positioning system (GPS) coordinates must include the datum in which they were collected. The map should include a title, north arrow, bar scale and legend;
10. Signed field forms, photos, etc., as appendices to the field survey report;
11. Recent color photographs of the proposed project or activity site; and
12. Original CNDDDB Field Survey Forms should be sent directly to the Department's CNDDDB office, and copies should be included in the environmental document as an appendix. (<http://www.dfg.ca.gov/bdb/html/cndddb.html>).

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Appendix E. Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans

Whereas the Department does not recommend exclusion and burrow closure, current scientific literature and experience from 1995 to present, indicate that the following example components for burrowing owl artificial burrow and exclusion plans, combined with consultation with the Department to further develop these plans, would be effective.

Artificial Burrow Location

If a burrow is confirmed occupied on-site, artificial burrow locations should be appropriately located and their use should be documented taking into consideration:

1. A brief description of the project and project site pre-construction;
2. The mitigation measures that will be implemented;
3. Potential conflicting site uses or encumbrances;
4. A comparison of the occupied burrow site(s) and the artificial burrow site(s) (e.g., vegetation, habitat types, fossorial species use in the area, and other features);
5. Artificial burrow(s) proximity to the project activities, roads and drainages;
6. Artificial burrow(s) proximity to other burrows and entrance exposure;
7. Photographs of the site of the occupied burrow(s) and the artificial burrows;
8. Map of the project area that identifies the burrow(s) to be excluded as well as the proposed sites for the artificial burrows;
9. A brief description of the artificial burrow design;
10. Description of the monitoring that will take place during and after project implementation including information that will be provided in a monitoring report;
11. A description of the frequency and type of burrow maintenance.

Exclusion Plan

An Exclusion Plan addresses the following including but not limited to:

1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
2. Type of scope and appropriate timing of scoping to avoid impacts;
3. Occupancy factors to look for and what will guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape i.e., look for sign immediately inside the door);
4. How the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
5. Removal of other potential owl burrow surrogates or refugia on site;
6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;

7. Monitoring of the site to evaluate success and, if needed, to ~~implement remedial~~ measures to prevent subsequent owl use to avoid take;
8. How the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.

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Appendix F. Mitigation Management Plan and Vegetation Management Goals

Mitigation Management Plan

A mitigation site management plan will help ensure the appropriate implementation and maintenance for the mitigation site and persistence of the burrowing owls on the site. For an example to review, refer to Rosenberg et al. (2009). The current scientific literature and field experience from 1995 to present indicate that an effective management plan includes the following:

1. Mitigation objectives;
2. Site selection factors (including a comparison of the attributes of the impacted and conserved lands) and baseline assessment;
3. Enhancement of the conserved lands (enhancement of reproductive capacity, enhancement of breeding areas and dispersal opportunities, and removal or control of population stressors);
4. Site protection method and prohibited uses;
5. Site manager roles and responsibilities;
6. Habitat management goals and objectives:
 - a. Vegetation management goals,
 - i. Vegetation management tools:
 1. Grazing
 2. Mowing
 3. Burning
 4. Other
 - b. Management of ground squirrels and other fossorial mammals,
 - c. Semi-annual and annual artificial burrow cleaning and maintenance,
 - d. Non-natives control – weeds and wildlife,
 - e. Trash removal;
 7. Financial assurances:
 - a. Property analysis record or other financial analysis to determine long-term management funding,
 - b. Funding schedule;
 8. Performance standards and success criteria;
 9. Monitoring, surveys and adaptive management;
 10. Maps;
 11. Annual reports.

Vegetation Management Goals

- Manage vegetation height and density (especially in immediate proximity to burrows). Suitable vegetation structure varies across sites and vegetation types, but should generally be at the average effective vegetation height of 4.7 cm (Green and Anthony 1989) and <13 cm average effective vegetation height (MacCracken et al. 1985a).
- Employ experimental prescribed fires (controlled, at a small scale) to manage vegetation structure;

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- Vegetation reduction or ground disturbance timing, extent, and configuration should be avoided. While local ordinances may require fire prevention through vegetation management, activities like disking, mowing, and grading during the breeding season can result in take of burrowing owls and collapse of burrows, causing nest destruction. Consult the take avoidance surveys section above for pre-management avoidance survey recommendations;
- Promote natural prey distribution and abundance, especially in proximity to occupied burrows; and
- Promote self-sustaining populations of host burrowers by limiting or prohibiting lethal rodent control measures and by ensuring food availability for host burrowers through vegetation management.

Refer to Rosenberg et al. (2009) for a good discussion of managing grasslands for burrowing owls.

Mitigation Site Success Criteria

In order to evaluate the success of mitigation and management strategies for burrowing owls, monitoring is required that is specific to the burrowing owl management plan. Given limited resources, Barclay et al. (2011) suggests managers focus on accurately estimating annual adult owl populations rather than devoting time to estimating reproduction, which shows high annual variation and is difficult to accurately estimate. Therefore, the key objective will be to determine accurately the number of adult burrowing owls and pairs, and if the numbers are maintained. A frequency of 5-10 years for surveys to estimate population size may suffice if there are no changes in the management of the nesting and foraging habitat of the owls.

Effective monitoring and evaluation of off-site and on-site mitigation management success for burrowing owls includes (Barclay, pers. comm.):

- Site tenacity;
- Number of adult owls present and reproducing;
- Colonization by burrowing owls from elsewhere (by band re-sight);
- Evidence and causes of mortality;
- Changes in distribution; and
- Trends in stressors.

Research Article

Burrowing Owl Mortality in the Altamont Pass Wind Resource Area

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ABSTRACT We captured wild burrowing owls in the Altamont Pass Wind Resource Area (APWRA), California, USA, and 100 burrowing owls (*Atotus unicollaris hyogaea*) were banded, or about the same number likely existing in the APWRA. Turbine-caused mortality was up to 12 times greater in areas of wind turbines, where flight close to the rotor plane was disproportionately more common, and fatalities more as frequent as expected. Mortality was highest during January through March. Burrowing owls flew within 50 m of turbines about 15 times longer than expected, and they flew close to wind turbines disproportionately longer within the sparser turbine fields, by turbines on ridges more, at the edges of gaps in the turbine rows, in canyons, and at lower elevations. They perched, flew close to operating turbine blades, and collided disproportionately more often at turbines with the most cables than within 20 m, with the highest densities of ground squirrel (*Spermophilus beecheyi*) burrow systems within 75 m, and with burrowing owl burrows located within 50 m of turbines. A model of relative collision threat predicted 29% of the 4,874 turbines in our sample to be more dangerous, and these killed 71% of the burrowing owls in our sample. This model can help select the most dangerous turbines for shutdown or relocation. All turbines in the APWRA could be shut down and blades locked during winter, when 35% of the burrowing owls were killed but only 14% of the annual electricity was generated. Terminating nocturnal and landing flight directions at the ends of turbine rows might also reduce burrowing owl mortality, as might replacing turbines with non-generation turbines mounted on taller towers. (JOURNAL OF WILDLIFE MANAGEMENT 71(1):153-156, 2007)

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KEY WORDS Altamont Pass, *Atotus unicollaris hyogaea*, behavior, burrowing owl, fatalities, mitigation, mortality, nest density, wind turbines.

The western burrowing owl (*Atotus unicollaris hyogaea*, hereafter owl) in California, USA, has declined in number and spatial distribution (DeSante et al. 1996, Klute et al. 2003). Nesting pairs occur individually or in small groups scattered among remnant habitat patches across their former geographic range, and previously known populations were extirpated in recent years (e.g., Johnson 1997). Owls residing in the Altamont Pass were omitted from the last statewide assessment of burrowing owls (DeSante et al. 1996). Researchers studying avian collisions with wind turbines observed many burrowing owls in the Altamont Pass Wind Resource Area (APWRA), as well as numerous owl carcasses under wind turbines (Rugge 2001, Thelander et al. 2003; Smallwood and Thelander 2004, 2005). Owls appeared so numerous in the APWRA that we concluded the population there must be regionally significant, and there appeared to be sufficiently high mortality to wonder whether the APWRA functions as an ecological sink.

Recent data suggested owls collide with wind turbines more often where owl burrows are more numerous: nest turbines (Smallwood et al. 2001). Smallwood et al. (2001) found the number of owl burrows (i.e., all burrows showing fresh signs of use, such as whitewash, pellets, decorations, or flushed owls) increased with the number of ground squirrel (*Spermophilus beecheyi*) burrow systems within 55 m of turbines. Owl nest sites close to wind turbines may expose owls to a greater threat of collision with wind turbines.

Therefore, wind turbines located on the landscape away from owl burrows may reduce turbine-caused owl mortality.

Our research objectives in the APWRA, as they related to burrowing owl, were to 1) compare human-caused mortality to the predicted habitat capacity of owls in the APWRA, 2) identify key patterns of owl mortality and behavior in the APWRA, and 3) relate management practices to owl behavior and mortality patterns, and suggest mitigation measures to reduce turbine-caused owl fatalities in the APWRA.

STUDY AREA

The APWRA was in central California's eastern Alameda and southeastern Contra Costa counties, including about 16,450 ha of annual grassland. Our study area ranged from 78 m to 470 m above mean sea level, was composed of hills, ridges, and valleys, and included stock ponds, small seasonal ponds, and marshes. Most ridges were oriented northwest to southeast and were bisected by seasonal streams.

Vegetation was predominantly nonnative annual grassland, including soft chess (*Bromus hordeaceus*), rip gut broom (*Bromus diandrus*), foxtail barley (*Hordeum murinum leporinum*), Italian ryegrass (*Lolium multiflorum*), and wild oats (*Avena fatua*). Common forbs included black mustard (*Brassica nigra*), fiddle-neck (*Astrachia menziesii intermedia*), chick legume (*Lupinus micropus var. densiflorus*), bush lupine (*Lupinus albus*), and willy baskets (*Tritelia lutea*). Grasses and forbs grew during the rainy months of January through March, then died or went dormant by early June. Physiographic elements of the APWRA included annual

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grassland, alkali meadow, emergent marsh, riparian woodland and scrub, creeks and drainages, stock ponds, cultivated land, and rock outcrops.

Landowners in the APWRA principally grazed livestock but also leased land to wind turbine owners. When our study began, the APWRA included about 5,400 wind turbines of various models with a total rated capacity of about 580 MW. These wind turbines were mounted on various types of tower and at heights ranging from 4 m to 43 m aboveground. Many were on ridge crests or on ridgelines that descend into ravines from the ridge crests. About 11% of the wind turbines were within large drainage basins we referred to as canyons, which included gullies, ridges, and some ridge crests occurring at lower elevations than the canyon boundary. Other turbines were on hill slopes away from ridges and drainages. Smallwood and Thelander (2004, 2005) provided additional detail on land uses in the APWRA, wind turbine attributes, and other aspects of the study area.

METHODS

Habitat Capacity of the APWRA

We obtained owl population density estimates and study area sizes used to estimate the density estimates from Coulombe (1971), Thomsen (1971), Martin (1973), Burns (1976), Gleason and Johnson (1985), Haag and Oliphant (1990), Rodriguez-Estrella and Ortega-Rubio (1993a, b), Truho (1993), Lepich (1994), Desmond and Savidge (1996), Botelho and Arrowood (1998), and Wiley (1998). Following the methods of Smallwood (1995, 1998) and Smallwood and Schonewald (1996), we regressed \log_{10} density on \log_{10} study area size using linear regression analysis because most of the variation in intraspecific density estimates can be explained by study area size due to mathematical artifact of the predictor variable appearing as the denominator of the density estimate. We relied on the root mean-square error in the regression model to estimate the uncertainty range applied to the nesting pair density estimate to be applied to the spatial area of the APWRA. We multiplied the estimate of owl nesting pair density for the APWRA by the area of the APWRA to arrive at an abundance estimate in lieu of directed field research. To this number we added the number of fledglings/pair averaged from Thomsen (1971), Martin (1973), Haag and Oliphant (1990), Johnson (1997), Botelho and Arrowood (1998), Rosenberg and Hiley (2004), Lantz (2005), Lutz and Plumpton (1997), and Teaschner (2005), and the number of floaters averaged from Thomsen (1971) and Botelho and Arrowood (1998).

Owl Fatalities

From March 1998 through September 2002, we searched for bird carcasses within 50 m of 1,526 wind turbines, hereafter set 1. We periodically added groups of wind turbines as we obtained access. By September 2002, set 1 included 182 rows of mostly regularly spaced wind turbines, which were all the wind turbines available to us. From November 2002 until May 2003, we added 2,548 turbines

arranged in 380 rows, hereafter set 2. We systematically selected the set 2 turbine strings to ensure full representation of the north-south and east-west extents of the APWRA. In total, we sampled about 75% of the wind turbines in the APWRA. Fatality search intervals varied intraspecifically and among groups of wind turbines, averaging 53 ± 11.6 days among set 1 wind turbines and >90 days for set 2 turbines. Search intervals were longer for set 2 because we gained access to them late in our study, and we decided to reduce search frequency per turbine in order to minimally sample more wind turbines in the APWRA.

Two people explored the ground around each wind turbine row, maintaining a zigzag pattern about 4 m between each turn. Previous studies reported about 77% of all bird carcasses were found ≤ 40 m from the wind turbines (Odloff and Flannery 1992, Munsters et al. 1996, Howell 1997), so we decided to use 50 m as our search radius.

We examined all carcasses or body parts found, such as groups of flight feathers, head, wings, tail, and tail feathers, to determine species, age, sex, and probable cause of death. We determined cause of death by evidence of injuries, when available, such as burn marks or singed feathers typical of electrocution, and cut or twisted torsos, dismemberment, and other forms of blunt force trauma typical of collisions with wind turbine blades. Otherwise we relied on proximity of the carcass to the likely cause of death. We estimated days since death by analyzing carcass condition (e.g., fresh, weathered, dry, bleached bones) and decomposition level (e.g., flesh color, presence of maggots, odor). We used time-since-death estimate in which season the fatality occurred and to decide whether to use the fatality in our estimation of mortality.

We expressed wind turbine-caused mortality as the number of fatalities per megawatt (MW) per year, where MW was the sum of the rated power output of all wind turbines composing a row of turbines, and the number of years or fractions of a year were the time spans over which we performed searches at that wind turbine row. We derived our mortality estimates only from wind turbine-caused fatalities ≤ 90 days before the search. We added 0.25 (3 months) to the number of years we used in each mortality calculation to represent the time period when fresh carcasses could have accumulated prior to our first search. We assumed we would have found the same number of fatalities during a given year regardless of whether we performed 12 searches or 8 searches, but it is likely that the reduced search frequency at set 2 wind turbines yielded lower carcass detection rates.

We multiplied our raw mortality calculation by 1.164 to account for carcasses we did not find beyond our search radius only because we did not see them. While searching ≤ 50 m from turbines, we found 16.4% of the owl carcasses > 50 m from turbines, and we assumed we missed as many of the carcasses as we found outside the search radius. We relied on other studies for searcher detection and scavenging removal rates. Odloff and Flannery (1992) estimated searcher detection of 85% of raptor carcasses in the APWRA, so we

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conservatively used this value for owls and divided mortality by 0.85. We regarded the mortality estimate adjusted for search detection rates as the low end of an uncertainty range. The high end of the uncertainty range included an adjustment for rate of carcass removal by scavengers.

Erickson et al. (2003) estimated that after 40 days scavengers removed 58.6% of carcasses of large-bodied species and 80.2% of carcasses of small-bodied species. We considered burrowing owl a small-bodied species. Also, our average search interval was 53 days for set 1 wind turbines, and 90 days for set 2 wind turbines, so we adopted the carcass removal rate of Erickson et al. (2003) for set 1, assuming scavenger removal rates were similar between 40 days in their study and 53 days in ours, and we added 10% to these rates for set 2, assuming a 90.2% rate of carcass removal. To adjust our mortality estimates to include the carcasses removed by scavengers and undetected by us, we divided our raw mortality estimates by twice the proportion of carcasses detected by Erickson et al. (2003) after 40 days, which effectively halved their scavenger removal rate. Based on our experience observing raptor carcasses in the APWRA, we halved the scavenging rate of Erickson et al. We divided owl mortality in set 1 and set 2 wind turbines by 0.396 and 0.196, respectively, to adjust the estimates for carcasses we did not detect due to scavenger removal. We examined only unadjusted mortality estimates interannually because we assumed scavenger removal rates and searcher detection error did not vary interannually.

We related owl fatalities to the spatial distributions of mammal and owl burrows. We mapped burrows using a Trimble Pro XR Global Positioning System within 90 m of 571 wind turbines composing 70 rows. We selected turbine rows representing a wide range of raptor mortality recorded during our fatality searches, as well as a variety of physiographic conditions and levels of rodent control ongoing in the APWRA (we did not participate in the rodent control program). Levels of rodent control were none, intermittent, and intense, where intense control effectively eliminated ground squirrels from the treated areas. We used a pacing method to separate burrow systems when continuity of sign rendered inter-burrow system distinctions difficult (Smallwood and Erickson 1995). We walked transects 0 m, 15 m, 30 m, 45 m, 60 m, 75 m, and 90 m away from the turbine string, thus covering increasingly larger areas around the turbine strings.

Owl Behavior

Two biologists collected bird behavior data within 28 study plots during 1,958 behavior-observation sessions (979 hr) from 26 March 1998 through 18 April 2000. The study-plot boundaries encompassed wind turbines easily visible to the observers from a fixed observation point, resulting in a mosaic of irregularly shaped, nonoverlapping plots, each about 3 km². The plots contained 1,165 turbines, with 10–67 turbines per plot, representing the majority of the turbines accessible to us at the time. Each observer carried plot maps to identify each turbine by its number designation and to link it to recorded bird activities. A single observer

performed circular visual scans (360°) to 300 m using 8×40 binoculars. After the 30-minute observation session, the observer moved to another sampling plot to begin another 30-minute session.

We sampled all 28 plots at least once per week stratified by morning and afternoon sessions. Morning sessions spanned 0700 hours to 1200 hours, and afternoon sessions spanned 1201 hours to dusk. We observed behaviors throughout the year in nearly every weather condition, unless rain or fog reduced observer visibility to <60%, which was too poor to track bird activity accurately. We completed 2 sessions simultaneously, averaging 6–8 sessions per field day. We conducted all simultaneous 30-minute sessions on non-adjacent plots to improve our degree of independence among sessions.

We continuously followed a bird until it left the plot. For each sighting, we recorded the species, number of birds in a group, the times when the bird was detected and last seen, predominant flight behavior, flight direction, distance to the nearest wind turbine, type of wind turbine, number of flights through a turbine string, and flight height relative to the rotor zone, which is the height aboveground from the lowest to the highest reaches of the turbine blades and extending laterally to 50 m from the rotor.

Behavior and Fatality Association Analysis

We tested measured variables for association with owl fatalities and with behaviors using chi-square analysis (Smallwood 1993, 2002). Observed values were either the number of minutes of activity of a particular behavior or the number of fatalities, and observed values were related to expected values for both statistical hypothesis testing and for deriving a measure of effect. We calculated the measure of effect as the observed divided by the expected values, and we measured the number of times greater or fewer each observed value deviated from the corresponding expected value. We calculated expected values as a product of the total sample size of the dependent variable and the incidence, or relative frequency of occurrence expressed as a proportion, of the *i*th condition of the association variable, where we also factored sampling effort into the incidence of the *i*th condition of the association variable. We caution, however, that the behavior observations are not independent events, so chi-square tests based on minutes of observation are prone to Type I error. For these reasons, we highlighted only the behavior associations with large measures of effect and significant test results. See Smallwood and Thelander (2004, 2005) for additional detail of the analytical methods.

Predictive Model

We developed a simple predictive model of each wind turbine's relative threat to owls:

Accountable mortality

$$= (\text{obs} - \text{exp}) / \text{total fatalities} \times 100\%$$

Positive values expressed the percentage of total fatalities likely killed at wind turbines due to the attribute associated

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with the value, and negative values expressed the percentage of total expected to have been killed but not killed. Thus, accountable mortality ranged from -100% to 100% and expressed the percentage of the fatalities attributable to a particular category of an association variable.

We calculated accountable mortality only for variables whose chi-square tests for association with fatalities were significant with most expected cell values >5 . These variables also were either categorical (e.g., tower type) or graded in value with accountable mortality. For those variables included in the model, we summed accountable mortality values across the variables to arrive at a score:

$$\text{Predicted impact} = \sum \text{accountable mortality.}$$

Predicted impact values >0 represented wind turbines more likely to kill owls, whereas values ≤ 0 represented wind turbines less likely to kill owls. Predicted impacts were additional to impacts we could not account for based on the data we collected, which probably included a baseline level of impact simply because all wind turbines pose an inherent danger to birds because turbines are tall structures with moving parts into which birds can collide.

We compared model predictions of impact to the number of fatalities we recorded at the particular wind turbine. We assessed model effectiveness by the percent correct classification of the wind turbines that killed owls. We also assessed the model based on the percent of wind turbines whose predicted impact was >0 but at which we found no fatalities. These wind turbines will more likely kill birds, even though we did not find them yet, and this percentage represents the level of effort needed to modify wind turbines and range management practices to substantially reduce owl collisions.

Lastly, we examined the percentage of fatalities corresponding with wind turbines correctly classified as more likely to kill owls. This percentage represented the degree to which mortality could be reduced by modifying conditions expressed by the variables composing the model, assuming no interaction effects between predictor variables.

RESULTS

Turbine-Caused Mortality and Habitat Capacity in the APWRA

According to our model of owl density regressed on study area size, the APWRA should support about 35–75 nesting pairs of owl (Fig. 1). If 35–75 pairs produced on average 3.08 fledglings per pair per year (the average reported from 10 studies across the western United States and Canada), and if the number of floaters average 43 per 100 nesting adults (the average reported from 2 studies in California and New Mexico, USA), then about 208–446 owls would be present as the breeding season ended. We estimated APWRA wind turbines kill 99–380 owls per year, or between 22% and 183% of the APWRA's estimated population.

Wind turbine-caused, unadjusted mortality estimates based on fatalities found May 1998 through September

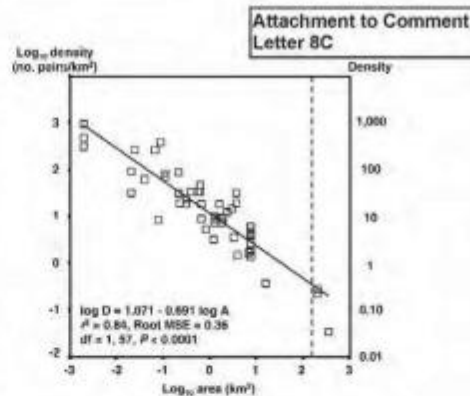


Figure 1. Nesting density estimates of *Bubo virginianus* related to study area size as an inverse power function among studies published 1971–1998 from throughout the species' geographic range. The vertical dashed line represents the geographic size of the Altamont Pass Wind Resource Area, California, USA. The observation MSE stands for mean square error, expressing the percent error in the raw data.

2002 were 0.014 fatalities/MW, 0.163 fatalities/MW, and 0.087 fatalities/MW per year, respectively, among 118.02 MW, 65.33 MW, and 206.30 MW of rated capacity in areas of no rodent control (120 turbine rows), intermittent control (87 rows), and intense control (240 rows). These estimates differed (analysis of variance [ANOVA]: $F = 4.45$, $df = 2$, 445, $P = 0.012$). Mortality estimates adjusted by searcher detection and scavenger removal rates were 0.019–0.047 in areas of no rodent control, 0.224–0.564 in areas of intermittent rodent control, and 0.119–0.301 in areas of intense control.

Owl mortality increased from the first through third years of the study, according to the comparison including all turbine rows searched ≥ 1 year (ANOVA: $F = 3.20$, $df = 3$, 639, $P = 0.023$; Fig. 2), but it did not change among turbine rows searched all 4 years and where rodent control was applied all 4 years (ANOVA: $F = 1.24$, $df = 3$, 247, $P = 0.296$). At 10 turbine rows searched only during the first and second years in an area of intermittent rodent control, unadjusted owl mortality increased from 0 collisions/MW to 0.43 collisions/MW (ANOVA: $F = 5.05$, $df = 1$, 19, $P = 0.005$). Unadjusted owl mortality decreased between the third and fourth years in turbine fields where intense rodent control had been applied during the fourth year, from 0.42 fatalities/MW to 0.05 fatalities/MW (ANOVA: $F = 4.44$, $df = 1$, 75, $P = 0.039$).

Owl Fatalities and Behavior

Of the owl carcasses found during fatality searches in the APWRA, we attributed the cause of death of 79% (60 carcasses) to wind turbine collision, 13% (10 carcasses) to unknown causes we later assumed to be wind turbine

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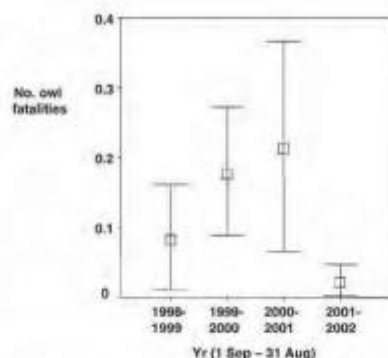


Figure 2. Barrowing and mortality (no. fatalities/MW) of wind turbines in turbine rows, ± and 95% CI during 1998-2003 among 160 turbine strings searched ≥1 year in Altamont Pass Wind Resource Area, California, USA.

collisions based on carcass locations, and 5% (4 carcasses) to predation. One owl collided with an automobile on an access road, and another collided with an electric distribution line. Field biologists searching for fatalities did not report the type of injury of most owl fatalities, but nearly half of the injury reports described broken or severed wings (Table 1). Most (76%) of the owl carcasses had been extensively scavenged, even though all but 2 appeared to have died ≤90 days before (Fig. 3).

Dead owls included 20 adults, 3 immature birds, and 53 of unknown age. Wind turbines killed 18 adults, 2 immature owls, and 50 of undetermined age. Most wind turbine-killed owls died September through December (Table 2). Owl mortality relative to seasonal APWRA power output was highest during January, February, and March (Fig. 4), which is when blades often move fast enough to kill birds but not fast enough to generate electric power. Generally, wind turbine-caused owl fatalities increased with energy gener-

Table 1. Number of wind turbine-caused barrowing owl fatalities and levels of scavenging by types of injury reported during 1998-2003 in the Altamont Pass Wind Resource Area, California, USA.

Type of injury	Barrowing owl fatalities (n = 70)	Reported scavenging (n = 54)		
		No evidence	Some	Extensive
Not reported	18	0	7	30
Neck exposed	2	1	0	0
Head	3	1	0	1
Neck	2	1	0	0
Decapitated	5	1	3	2
Torso cut or missing	4	1	0	0
Torso cut in half	1	0	0	0
Broken wing	5	0	1	2
Severed wing	4	1	1	1
Disemboweled	6	0	0	5

Smallwood et al. • Barrowing Owls in Altamont Pass

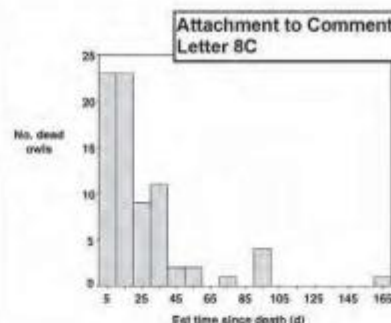


Figure 3. Number wind turbine-caused barrowing owl fatalities by the estimated number of days since death in the Altamont Pass Wind Resource Area, California, USA, 1998-2003.

ation ($\chi^2 = 0.51$, $df = 1$, $P < 0.05$) after holding from the analysis fatalities in December, January, and March (Fig. 5). Wind turbine-caused owl fatalities associated with month of the year differently than did perch time or near-turbine flight time (Fig. 6).

Vertical axis turbines (i.e., Flowline turbines) killed disproportionately more owls, as did turbines on tubular towers (Table 3). Owls also flew close by and perched disproportionately more often near turbines on tubular towers. Turbines on lattice towers killed only half the owls expected.

Wind turbines with slower moving blades killed 1.6-1.8 times more owls than expected, and turbines with faster-moving blades killed fewer than half the expected number ($\chi^2 = 42.26$, $df = 2$, $P < 0.005$). Similarly, wind turbines with the least rotor plane (in m^2) swept/second killed 1.7-1.8 times the owls expected ($\chi^2 = 24.83$, $df = 3$, $P < 0.005$). Wind turbines with blades reaching as low as 4.0-5.1 m

Table 2. Percentage of annual power output, barrowing owl fatalities (n = 70), and fatalities per age group by month of the year during 1998-2003 in the Altamont Pass Wind Resource Area, California, USA.

Month	% of annual power output	Turbine-caused deaths	Age of bird at death		
			Ad.	Immature	Unknown
Jan	1.9	8	0	0	8
Feb	1.4	2	0	1*	1
Mar	1.7	3	1	0	2
Apr	2.2	1	0	0	1
May	4.6	0	0	0	0
Jun	9.4	2	1	0	1
Jul	17.7	10	2	0	8
Aug	15.8	6	1	1	4
Sep	16.5	14	6	0	8
Oct	15.5	4	0	0	4
Nov	8.9	8	4	0	4
Dec	3.8	12	3	0	9

* Assignment of the month of the fatality is uncertain because we estimated the carcass as 1 month old when we found it in May. Given its state of decomposition, we might have misclassified the bird as immature or as having been killed in Feb.

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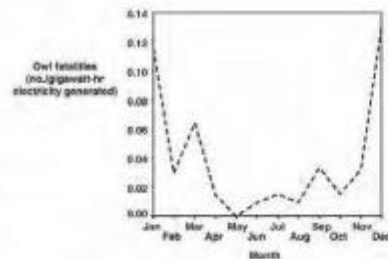


Figure 4. Number of wind turbine-caused bat deaths (no./1,000 searches) per gigawatt-hour of electricity generated in 1999 in the Alameda-Paso Wind Resource Area, California, USA. Note that owl fatalities per gigawatt-hour peaks during winter and March.

aboveground killed 2.2 times the number of owls expected, and turbines whose low reach of blade was 11.1–14.9 m aboveground killed 1.5 times the number of owls expected ($\chi^2 = 22.01$, $df = 4$, $P < 0.005$).

Whereas owls flew within 50 m and perched nearby turbines at the edges of gaps in turbine rows nearly 1.7 times longer than expected, they collided with those turbines about as often as expected (Table 3). End-of-row turbines killed owls 2.1 times more often than expected, and interior turbines killed them disproportionately less often.

During the 1,958 behavior-observation sessions, we reported 100 owl sightings totaling 1,622 minutes, of which owls flew 193 minutes and perched 1,438 minutes. Owls averaged 117 m to the nearest wind turbine and we never saw them flying through turbine rows. However, we saw them flying within the rotor zone 31 times.

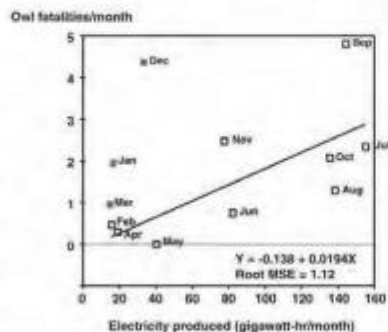


Figure 5. The number of bat deaths (no./1,000 searches) per month as a function of power output in 1999 in the Alameda-Paso Wind Resource Area, California, USA. The filled squares represent outliers we held out of the analysis. The observation MSE stands for mean square error, representing the percent error in the one data.

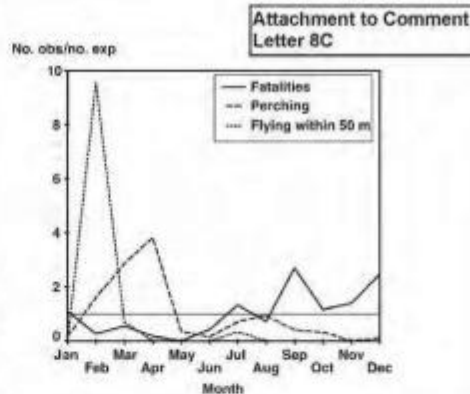


Figure 6. Number observations/minutes expected for owl fatalities caused by wind turbines, owl perching on turbines, and owl flying within 50 m of wind turbines versus month of the year in the Alameda-Paso Wind Resource Area, California, USA, 1999–2003.

We observed owls flying ≤ 50 m from wind turbines about 10 times more often than expected ($\chi^2 = 1,358.15$, $df = 2$, $P < 0.005$), whereas we saw them perched 50–100 m from turbines > 4 times longer than expected ($\chi^2 = 2,454.02$, $df = 2$, $P < 0.005$; Fig. 7). To wind turbines most sparsely distributed in the APWRA, owls flew ≤ 50 m from wind turbines ($\chi^2 = 711.56$, $df = 3$, $P < 0.005$) and perched ($\chi^2 = 278.77$, $df = 3$, $P < 0.005$) 6 times longer than expected (Fig. 8). However, owl collisions with turbines did not associate significantly with the number of turbines within 300 m ($\chi^2 = 6.04$, $df = 3$, $P > 0.05$).

Nearly all owls killed by wind turbines were outside wind walls (wind walls are turbines mounted on lattice towers of 2 heights to achieve a greater height domain of wind exposure within a single row of turbines), as were all observations of owls flying close by and perching nearest wind turbines (Table 3).

Most owls were killed outside canyons, but they were killed in canyons 1.4 times more often than expected (Table 3). In canyons they also flew within 50 m of turbines and perched nearest turbines 2.6 times and 1.9 times more than expected, respectively. At the APWRA's lowest elevations, 85–235 m above mean sea level, owls collided with wind turbines 1.6–2.5 times more than expected (Table 3). We observed disproportionately longer close-by flights and perching between 135 m and 185 m elevation. Owls collided with turbines uniformly among landscape features, even though they flew close by wind turbines and perched 2.5 times longer than expected on ridge crests (Table 3).

Disproportionately more owls were killed by wind turbines with the most cattle dung within 20 m, which was also where we observed owls perching and flying close to turbines 3.3 times longer than expected (Table 3).

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Owls collided with wind turbines nearly twice as often as expected in areas of intermittent rodent control, which were also where we saw them for disproportionately longer periods flying within 50 m of turbines and perching (Table 3). Disproportionately fewer collisions occurred in areas of intense rodent control. Owl mortality was greater at wind turbines with higher densities of burrow systems of fossorial mammals within 90 m (Table 4). Mortality was disproportionately greater at wind turbines with intermediate densities of ground squirrel and desert cottontail (*Sylvilagus auduboni*) burrow systems within 90 m, and it tended to be greater at the highest densities of ground squirrel burrow systems within 15 m (Table 4). Owl mortality was also significantly greater at wind turbines with owl burrows within 90 m, and the occurrence of these burrows could account for 23% of the owl fatalities in our sample (Table 4).

Predictive Model of Turbine Threat

Various wind turbine attributes contributed to model predictions of threat posed to owls by wind turbines (Table 5). We did not use some variables that related significantly to owl fatalities to construct the predictive model because they were limited in scope and we could not measure them at all wind turbines in our sample.

The model correctly predicted wind turbines to be greater collision threats where 71% of the owl fatalities actually occurred (Fig. 9). It predicted 1,215 (30%) of the wind turbines to be more dangerous, including 70% of the turbines we documented as having killed owls. The more dangerous wind turbines were distributed mostly along a low-elevation band across the wind farm, but also between the Patterson Pass and the Highway 205 corridor.

DISCUSSION

Our results suggest APWRA wind turbines annually kill somewhere between one-fifth and nearly twice the number of estimated owls in the available habitat area. We do not know the population-level impact of wind turbine-caused mortality on owls in the Altamont Pass, but it is potentially substantial. Future research in the APWRA is needed to test the following 4 alternative hypotheses stemming from our uncertain impact estimates and from the potentially paradoxical result of equal or greater adults killed compared to the number nesting in the APWRA.

Hypothesis 1: The APWRA Is an Ecological Sink for Owls

Mortality might equal or exceed production in the APWRA because owls dispersing from natal populations outside the APWRA quickly replace wind turbine-killed owls. Generally, population densities can be relatively high in ecological sinks even though mortality is high, which is one reason density is considered a poor indicator of habitat quality (Lidicker 1975, Van Home 1983, Smallwood 2002). Although local numbers of owls might not decline in the face of wind turbine-caused mortality, other populations lose recruitment from the owls dispersing to and never leaving the APWRA.

Hypothesis 2: Many Turbine-Killed Owls Are Migrants

Many of the adults killed by APWRA wind turbines might be migrants moving through but not nesting in the APWRA. The Altamont Pass is a migration route for multiple species of raptor, and might be a route for owls because it is the low spot in the hills between the Central Valley and San Francisco Bay area populations. Most of the collisions occurred during fall and early winter when migration movements would be expected.

Hypothesis 3: We Underestimated Local Population Abundance

Our regression model (Fig. 1) might have underestimated owl abundance in the APWRA, but if it did, then spatial patterns of owl in the APWRA differ from those at study sites used to generate the published density estimates. Either the higher densities typical of smaller study areas extend to a larger portion of the APWRA than observed in similar-sized areas elsewhere, or the APWRA includes multiple high-density clusters of owls. Based on our incidental observations of owls in the APWRA, we suspect our model underestimated the number of nesting pairs, but focused research will be needed to test our suspicion.

Hypothesis 4: We Overestimated Turbine-Caused Mortality

Our mortality estimate might be too high, but if it is, then our searcher detection rates must be greater than those used by Erickson et al. (2003) or the scavenger removal rate must be lower. Mounting evidence (K. S. Smallwood, unpublished data) indicates we may have underestimated the scavenger removal rate of owls, which means we likely underestimated owl mortality. On the other hand, if we erroneously attributed a substantial portion of the owl fatalities to wind turbine collision, then we would have overestimated owl mortality. In our experience performing field work around owls in environments lacking wind turbines, however, we have not found nearly the number of owl carcasses as we found around APWRA wind turbines.

Fatality Associations

Wind turbine-caused owl fatalities were more numerous during fall and early winter, the latter season corresponding with the APWRA's reduced energy output. K. S. Smallwood and L. Spiegel (California Energy Commission, unpublished data) estimated shutting down wind turbines November through February should reduce annual owl fatalities 35% while giving up only 14% of annual electricity generation in the APWRA.

Wind turbines with lowest reach of blades ≤ 15 m aboveground killed disproportionately more owls. Replacing the older wind turbines with new-generation turbines mounted on much taller towers might reduce the collision rate by raising the rotor blades above most owl flights.

Owl perception of the turbine field might affect collision rate. Owls appeared to favor areas of lesser wind turbine presence and operations, flying and perching 6 times more than expected among turbines most sparsely distributed.

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Table 3. Number of (burning out) fatalities and observed number/expected number of fatalities, flight observations: within or not in canyon, and observations of perching by wind turbine model, tower type, the turbine's position in the row, whether the turbine was in a wind wall, whether in a canyon, by elevation, landscape feature, level of rodent control, and abundance of cattle pads within 20 m of turbines during 1998–2003 in the Altamont Pass Wind Resource Area, California, USA.

Association variable	Turbine-caused deaths	Obs/exp		
		Collisions	Flights close <50 m from turbines	Perch time
Wind turbine model ^a				
Micon	8	1.63		
Barnes	31	1.60	2.13	2.16
Duron	0	0.00	0.00	0.00
Flowind	10	7.54	0.00	0.00
Windmatic	0	0.00		
Enercon	6	1.67		
KCS-56 and Vane	14	0.40	0.04	0.00
KVS-33	0	0.00	0.00	0.00
Flowden	0	0.00		
Nordmank	0	0.00		
W.E.G.	0	0.00		
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$
Tower type:				
Vertical axis	10	3.54	0.16	0.26
Tubular	39	1.40	1.37	1.53
Lattice	20	0.50	0.00	0.61
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$
Turbine position in row:				
End of row	32	2.12	0.05	0.00
Gap	7	1.15	1.66	1.69
Interior	29	0.52	0.00	0.00
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$
Wind wall				
Not in wind wall	68	1.15	1.33	1.13
In wind wall	1	0.10	0.00	0.00
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$
Whether in canyon				
Not in canyon	54	0.92	0.30	0.47
In canyon	15	1.43	2.63	1.94
χ^2 test result		$P < 0.10$	$P < 0.05$	$P < 0.05$
Elevation (in three areas in level)				
95–134	17	1.55	0.00	0.00
135–194	24	1.65	6.74	4.05
195–234	23	2.48	0.00	0.00
235–284	2	0.46	0.22	0.00
285–334	0	0.00	0.00	0.00
335–384	3	0.38	0.00	0.00
385–514	0	0.00	0.00	0.00
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$
Landscape feature				
Peak	0	0.00	0.00	0.00
Plains	5	1.00	0.00	0.00
Sage scrub	22	1.01	2.40	2.52
Sagebrush	8	0.58	0.00	0.00
Slope	29	1.25	0.03	0.00
Sedge	3	1.00	0.00	0.00
Spruce	1	1.90	0.00	0.00
χ^2 test result		ns^b	$P < 0.05$	$P < 0.05$
Rodent control				
Unknown	2	2.40		
None	13	0.52	0.00	0.00
Intermediate	35	1.90	1.83	1.12
Intense	19	0.50	0.00	0.99
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$
No. of cattle pads ≤ 20 m from turbines				
0–2	4	0.47	0.00	0.00

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Table 3. Continued.

Association variable	Turbine- causal deaths	Collisions	Obs/exp	
			Flight time ≤ 50 m from turbines	Perch time
3-9	15	0.68	0.05	0.00
10-25	25	1.18	0.00	0.00
>25	21	1.59	3.27	3.32
χ^2 test result		$P < 0.05$	$P < 0.05$	$P < 0.05$

* Manufacturers: Micon = Micon Manufacturing Co., Roskilde, Denmark; Bonus = Bonus Wind Turbines, Inc., Brøndby, Denmark; Darwin = Darwin A/S, Helsingør, Denmark; Flowind = FloWind Corp., San Rafael, CA; Windmatic = Windmatic, Hørning, Denmark; Enercon = Enercon Corporation, Norwich, VT; KCS-56 and KVS-33 = Kiewit Windpower Inc., Livermore, CA; Vestas = Vestas Wind System A/S, Roskilde, Denmark; Howden = James Howden and Company, Renfrew, Scotland; Nordtank = Nordtank Energy Group, Billst, Denmark; W.E.G. = Wind Energy Group, Ltd., Southall, Middlesex, England.

* ns = not significant.

Flights, perching, and collisions occurred primarily among wind turbines on tubular and vertical axis towers, secondarily among lattice towers, and least among wind walls, corresponding with a declining gradient of visibility through to the other side of a wind turbine row. Owls perched and flew more often in the rotor zone of turbines with slower-moving blades. Furthermore, owls perched on turbines or their towers only while the turbines did not operate, indicating the owls' awareness of turbine operations. Our findings indicate owls avoid areas they perceive as busy with fast-moving turbines, and they instead fly through areas of sparsely distributed turbines with slower-moving blades mounted on tubular towers they can more readily see around. Owls may perceive these turbine fields as safer, making them more dangerous.

Compared to expected frequencies, owls flew more often through gaps in turbine rows and were killed more often by end-of-row turbines. Owls may have approached closer and died more often at turbines in canyons because they use canyons for flight pathways or because turbines in canyons

are often at row's end and their blades obscured by hills. Placing flight diverters at the ends of turbine rows, especially those extending into canyons, might encourage owls to fly farther from operating turbines while maneuvering around turbine rows. Smallwood and Thelander (2004, 2005) proposed flight diverters as tall poles erected in parallel beyond the rotor planes of the end-of-row turbines.

Despite owls staying well away from wind turbines most of the time, they still flew into the rotor zone 10 times more than expected. Flights into the rotor zone and collisions were disproportionately more common among wind turbines with the most cattle dung within 20 m. We noticed cattle congregate at the wind turbines (see photos in Smallwood and Thelander 2004, 2005) and spend more time close to the wind turbines than in the grasslands between the turbine rows. As a result, most turbine rows have shorter grass and more cattle dung. Shorter grass has often been associated with owl habitat selection, and the cattle dung fuels a food web utilized by owls, such as large

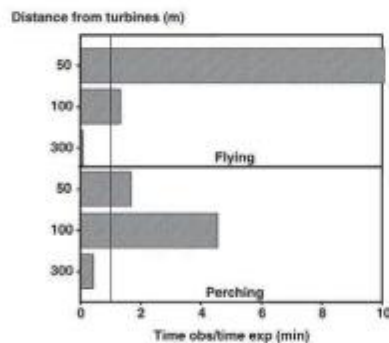


Figure 7. We observed barnowing owls longer than expected flying within 50 m and perching 100–300 m from turbines in the Altamont Pass Wind Resource Area, California, USA, 1998–2003.

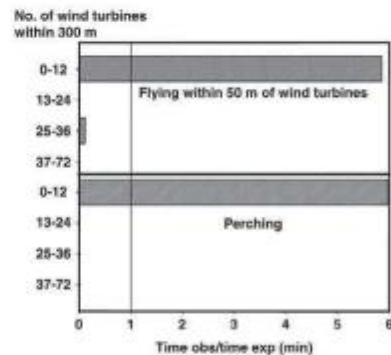


Figure 8. We observed barnowing owls longer than expected flying within 50 m of turbines and perching in areas of lower turbine density in the Altamont Pass Wind Resource Area, California, USA, 1998–2003.

Smallwood et al. • Barnowing Owls in Altamont Pass

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Table 4. Observed number, expected number, and observed number/expected number of collision-causal fatalities of burrowing owls by range of density and degree of clustering of burrowed mammals and burrowing owl burrows among 22 rows of turbines in the Altamont Pass Wind Resource Area, California, USA, 1998–2003.

Variable and attribute ^a	Obs. collisions	Exp. collisions	Obs/exp collisions
Burrow systems/ha of all species to 90 m ²			
0–5	4	10.73	0.32
5–10	15	9.77	1.54
10–22.5	6	6.41	1.23
Ground squirrel burrow systems/ha to 90 m ²			
0–2	3	12.61	0.40
3–7	17	8.91	1.91
7–19.2	3	5.44	0.92
Desert cottontail burrows/ha to 30 m ²			
0	9	8.71	1.03
0.1–0.7	17	10.10	1.49
0.8–3.7	3	8.18	0.37
Ground squirrel burrow systems/ha to 15 m from turbines ^{ab}			
0	2	4.83	0.42
0.1–5.2	14	15.88	0.88
5.3–26.6	11	6.36	1.75
Obs/exp no. of ground squirrel burrow systems/ha ≤ 15 m from turbines ^c			
0	2	4.67	0.43
0.1–1.6	13	16.78	0.78
1.7–5.2	12	5.43	2.23
Burrowing owl burrows/ha to 30 m ²			
0	12	18.16	0.66
0.02–0.88	15	8.84	1.70

^a * $P < 0.05$, ^{ab} $P < 0.005$, ^{abc} $0.05 < P < 0.10$.

numbers of grasshoppers (Acrididae) covering the cattle dung and lizards (*Uta stansburiana* and *Sceloporus undulatus*) that feed on the grasshoppers. Owls may visit wind turbine rows to prey upon grasshoppers and lizards, and to

Table 5. Magnitude (%) of increase or decrease in burrowing owl mortality associated with attributes of independent variables measured during 1998–2003 in Altamont Pass Wind Resource Area, California, USA.

Variable	Magnitude of increase or decrease in mortality
Seed/rope sweep at blade tip	30% at turbines with longer time per rotor sweep at blade tip
Tower type	19% at tubular towers, 10% at vertical axis towers
Tower lit	16% at towers of medium height
Whether in wind wall	13% at turbines not in wind walls
Position in turbine row	24% at the end of turbine row
Whether in canyon	6% in canyon
Elevation	84% at lowest elevation
Rodent control	24% in areas with intermittent control
Cattle dung at wind turbines	18% at turbines with more cattle dung

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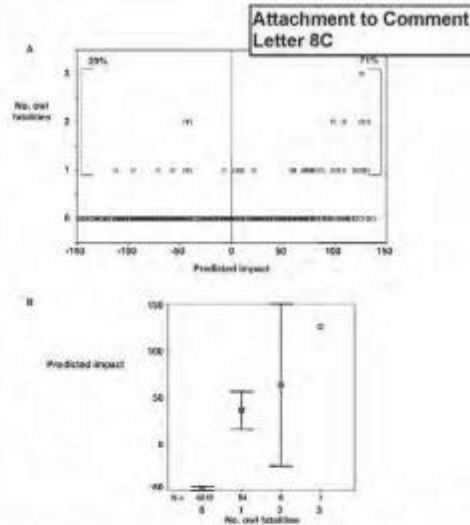


Figure 9. Using our empirical model, we predicted 71% of the wind turbines known to have killed burrowing owls were more likely to kill owls, that is, (A) predicted impact > 0, and (B) our predicted impacts (y and 95% CI) increased with the actual number of owls killed by the wind turbine in the Altamont Pass Wind Resource Area, California, USA, 1998–2003.

collect cattle dung for display around their burrow entrances as dung beetle lures (Levey et al. 2004) or to mask scent from mammalian carnivores (Green and Anthony 1989), though Smith (2004) supported the former hypothesis but not the latter. We hypothesize that encouraging cattle to congregate other than around the bases of wind turbines would reduce owl flights in the more zone, and collisions.

Owl fatalities at wind turbines positively associated with densities of ground squirrel burrow systems and presence of owl burrows within 90 m. We found owl mortality decreased the year rodent control was implemented but eventually increased after it was implemented intermittently for >1 year. Repetitive, intense control would likely eliminate this pattern, however, because vacant squirrel burrows eventually collapse and become unavailable to owls. In fact, we did not find evidence of active owl burrows within the areas of intense control. Intense rodent control might reduce owl collisions, but results in habitat loss not only for the owl, but also for California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), and San Joaquin kit fox (*Neotoma lepida*), which are threatened and endangered species under the federal Endangered Species Act. Ceasing intermittent rodent control might reduce turbine-caused mortality, and ceasing intensive control might increase the habitat capacity of the APWRA.

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Our model predicted 29% of the 4,074 sampled wind turbines pose greater collision threat. This 29% of the turbines killed 71% of the turbine-killed owls we found. These turbines occurred in a low-elevation band along the east side of the wind farm, where we saw disproportionately more owls flying within the rotor zone. This model can be used along with other scientific information to select a relatively small set of wind turbines for shutdown, relocation, installation of flight diverters, or other mitigation measures. We hypothesize that a small set of turbines selected in this manner could reduce owl mortality while only minimally reducing APWRA power generation.

MANAGEMENT IMPLICATIONS

In the APWRA, and to the extent managers feel comfortable extending our results to other wind farms, our results can guide the selection of wind turbine design, where to locate wind turbines in the project area, when not to operate wind turbines, and how to manage other resources to minimize owl collisions with wind turbines. To minimize collisions in the APWRA, new wind turbines should be mounted on taller towers as close together as feasible, and outside canyons, ravines, and valleys, and where rodent and owl burrows are relatively scarce. Gearing practices should be modified to prevent accumulations of dung around wind turbines. Understanding biological impacts through additional research can provide the basis of equitable compensatory mitigation for unavoidable impacts.

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California Bird Species of Special Concern

*A Ranked Assessment of Species, Subspecies, and Distinct Populations
of Birds of Immediate Conservation Concern in California*

W. DAVID SHUFORD AND THOMAS GARDALI, EDITORS

WITH THE ASSISTANCE OF THE PROJECT MANAGER
Lyann A. Comrack

IN COLLABORATION WITH THE
BIRD SPECIES OF SPECIAL CONCERN
TECHNICAL ADVISORY COMMITTEE

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Kimball L. Garrett, Kevin Hunting, Tim Manolis, Michael A. Patten,
W. David Shuford, John Sterling, Philip Unitt, Brian J. Walton

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FOREWORD

The publication of *Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California* marks the culmination of a synergistic collaboration among California's top field and museum ornithologists, wildlife biologists, and conservationists to produce a definitive treatment of the status of declining and vulnerable bird populations in California. Since 1978, when the Western Field Ornithologists' J. V. Remsen Jr. prepared the first report on bird species of special concern for the Department of Fish and Game, information on the state's bird populations has expanded exponentially. The current project grew out of recognition by the Department and its partners of the pressing need for a rigorous and comprehensive evaluation of this recent information. We offer this volume as a product of success in achieving that vision and believe it sets a new standard for assessing the status of bird populations in California.

Through commitment to technical excellence, this volume ties together the threads of bird conservation in California by capturing elements of the most important current bird conservation initiatives. From the habitat-based California Partners in Flight bird conservation plans to the fundamental baseline bird population studies conducted by the Department and its partners, *Bird Species of Special Concern* combines the best of our collective knowledge and stands as a testament to the enormous potential of collaboration.

In producing this monograph, the Department worked closely with PRBO Conservation Science and Western Field Ornithologists. This project would not have been completed, however, without the extraordinary dedication and participation of California's ornithological and birding communities.

The Department remains committed to a continued investment in population assessment and adaptive management as tools for effective conservation of the state's bird populations. *Bird Species of Special Concern* will focus these efforts on the varied, ongoing challenges facing at-risk birds and their habitats.

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Western Field Ornithologists is proud to unveil the first volume of its new monograph series, *Studies of Western Birds*, particularly with a work dedicated to the conservation of at-risk birds within California. We hope that this will stimulate other comparable works on at-risk birds elsewhere or additional lengthy treatises on any aspect of field ornithology within the region of interest of the organization—the Rocky Mountain and Pacific states and provinces, including Alaska and Hawaii, western Texas, northwestern Mexico, and the northeastern Pacific Ocean. Western Field Ornithologists strives for excellence in its publications. Of primary concern is the advancement of the long tradition of field ornithology in this region, both for pursuit of scientific understanding and to promote conservation of the region's varied and stimulating avifauna. Such efforts, including the present publication, are possible only with the participation of our membership, readership, and many partners. We invite you to join us and we seek your insights and help to further these goals.

David Krueper
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PREFACE

The system used in this volume to rank the conservation needs of at-risk birds—*Bird Species of Special Concern*—in California is new for the state but builds on an impressive foundation of prior ranking schemes developed elsewhere in North America and the world. The diversity of such systems reflects not only the varying needs and scales for which they were devised but also the difficulty of crafting a system that will be universally accepted for any particular purpose. Just as gut-level impressions of what constitutes an at-risk bird in need of immediate conservation action can vary widely among knowledgeable biologists, so too can opinions of what elements are desirable in an objective ranking scheme meant to reduce the biases inherent in a purely subjective assessment of conservation need and priority. The present system, unlike most, supports the rankings by the inclusion of thorough species accounts for all birds on the ranked special concern list. Although the decision to include these accounts greatly lengthened the time required to prepare this document, we judge the extra effort well worth it, both to document the state of, and limits to, current knowledge relevant to the conservation of at-risk birds and to provide guidance in management, research, and monitoring that will enable effective actions beneficial to these birds and their habitats.

Serving as the technical editors of this volume has been a humbling experience on many levels. The knowledge contributed to this process by a technical advisory committee of our peers, dedicated managers and technical experts at California Department of Fish and Game, authors of species accounts, and a wide array of field, quantitative, and conservation biologists who provided unpublished information, insights, and thoughtful reviews has been deep and impressive, strengthening this document far beyond what our own capabilities would allow. Conversely, we

have been struck by how limited our collective knowledge is for many at-risk birds in California, reflecting their biological characteristics—such as patchy distributions, occurrence in low densities, naturally fluctuating populations, or cryptic behaviors—and the limited resources allocated for their study or conservation.

During the course of the preparation of this document, climate change has become a household word and the dominant conservation issue discussed in the media. Although the present volume acknowledges the importance of the long-term effects of climate change on birds, it focuses rather on the short- and medium-term threats to birds, particularly habitat loss and degradation as the direct result of human endeavors. Such activities will continue to have readily visible and cumulatively enormous effects on many bird populations. To varying degrees, the predicted indirect effects of progressive climate change will further complicate and exacerbate matters.

Despite declining populations and continuing threats to many at-risk birds, there is cause for cautious optimism in the many new habitat- or taxonomic-based conservation initiatives for birds that have begun or expanded their reach in the last decade. In concert with these efforts, lists of at-risk species can be powerful drivers of conservation, especially when restoration and management measures take a species-to-ecosystem approach, the one typically championed by these newer initiatives. We hope this volume will support and inspire bold measures of conservation for at-risk birds and for others now less threatened so they will not one day too receive the dodoesque distinction of being of special concern in California.

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ACKNOWLEDGMENTS

The revision of California Department of Fish and Game's (CDFG) Bird Species of Special Concern list was a collaborative effort between CDFG, the Bird Species of Special Concern Technical Advisory Committee, and PRBO Conservation Science (PRBO, founded as Point Reyes Bird Observatory). We especially thank all of the members of the advisory committee for their dedication to the conservation of California's birds and for their many insights, without which this document would not have been possible. Brian Walton sadly did not live to see this work completed. Still, his contributions to the advisory committee will long be remembered, particularly his extensive knowledge of California raptors and his persistent emphasis of the importance of thorough species accounts to evaluate the conservation status of potentially at-risk birds. CDFG biologists Lyann Comrack and Kevin Hunting were indispensable in guiding the deliberations of the advisory committee, facilitating the production and revision of range maps, supporting the authorship of the overview text and species accounts of this document, and performing various behind-the-scenes but vital administrative duties (in which they were also aided by Esther Burkett and Bill Kindred). Notably, Lyann Comrack's unwavering dedication to this project greatly elevated its overall quality. Advisory committee members and other authors contributed the heart of the document by writing the individual species accounts. Unpublished county breeding bird atlas data were kindly provided by Larry Allen (Los Angeles County), Bill Bousman (Santa Clara County), Tom Edell (San Luis Obispo County), Steve Glover (Contra Costa County), Bill Grummer (Napa County), John Hunter (Humboldt County), Rick Johnson (San Mateo County), Tim Manolis (Sacramento County), Rusty Scalf (Alameda County), Dan Singer (San Francisco County), and Philip Unitt (San Diego County). From maps hand-drafted by species account authors, Kristi Fien, Nicholas Hansen, and Kiffanie Stahle of CDFG digitized distribution maps, summarized data from them, and prepared the cartography used in the final publication. Richard Erickson and John Sterling ensured the quality of these maps by serving as technical editors for their production. Kimball Garrett and Philip Unitt provided technical advice regarding taxonomic issues and distributions of subspecies. Tim Manolis and Michael Patten scored the bulk of the nominated taxa; Manolis

also drafted a preliminary version of the ranking criteria. Sam Fitton provided a perspective on the use of state lists of at-risk species for management and conservation planning by federal agencies. Grant Ballard helped with computer and website support. Diana Stralberg and Lars Pomara prepared the maps for Bird Conservation Regions and geographic subdivisions of California. David Compton copy-edited the entire draft manuscript. Philip Unitt assisted by copy-editing some of the front matter added later and by providing invaluable insight throughout. On short notice, Jaime Jahncke kindly translated the abstract to a Spanish resumen, which was copy-edited by Karen Levy-Sapiro. Catherine Waters graciously provided moral support and help in resolving behind the scene issues related to publication and distribution of the monograph. Special thanks to Andy Birch and Tim Manolis for their splendid line drawings interspersed in the text and to Keith Hansen for the stunning color plate used on the cover. Tim Brittain expertly typeset the text and designed the layout and cover.

We greatly appreciate the contributions of the following individuals who made helpful comments on the draft special concern list, reviewed species accounts or maps, shared unpublished data and observations, checked proofs, or otherwise freely offered information, insights, and encouragement, all of which collectively greatly enhanced the quality of this document: Angela Aarhus, Sue Abbott, Ken Able, Josh Adams, Linda Adams, David Ainley, Dan Airola, John Alexander, Matt Alexander, Bob Allen, Larry Allen, Lewis Allen, Sarah Allen, Robert Aleman, Jon Amsden, Bertin Anderson, Dan Anderson, Carlos Arce, Keith Axelsson, Kate Baird, Allan Baker, Grant Ballard, Jack Barclay, Bob Barnes, Alan Barron, Sean Bechta, Ted Beedy, Teresa Benson, Murray Berner, James Bland, Sam Blankenship, Clark Bloom, Pete Bloom, Robert Blumenthal, William Boorman, Bill Bousman, Gerald Braden, Russ Bradley, Clait Braun, Amedee Brickey, Bev Brock, Steve Brueggemann, Jennifer Buck, Joelle Buffa, Esther Burkett, Ryan Burnett, Ken Burton, Tom Cade, Kurt Campbell, Eugene Cardiff, Harry Carter, Michael Casazza, Ed Cassano, L. Ochikubo Chan, Yvonne Chan, Sal Chinnick, Dan Christy, Steve Clay, Andy Cohen, Luke Cole, Brian Collins, Charlie Collins, Josh Collins, Paul Collins, Dave Compton, Lyann Comrack, Chris Conard, Tamara Conde, Courtney Conway, Bea Cooley, Dan Cooper,

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ACRONYMS AND ABBREVIATIONS

AB	American Birds	NAB	North American Birds
AFN	Audubon Field Notes	NABCI	North American Bird Conservation Initiative
AI scores	area importance scores	NASFN	National Audubon Society Field Notes
AOU	American Ornithologists' Union	NCCP	Natural Community Conservation Planning (act/program)
BBA	breeding bird atlas	NEPA	National Environmental Policy Act
BBS	Breeding Bird Survey	NWR	National Wildlife Refuge
BCR	Bird Conservation Region	PC	population concentration (ranking criterion)
BLM	Bureau of Land Management	PIF	Partners in Flight
BSSC	Bird Species of Special Concern	PRBO	PRBO Conservation Science (formerly Point Reyes Bird Observatory)
CalPIF	California Partners in Flight	PS	population size (ranking criterion)
CAS	California Academy of Sciences	PT	population trend (ranking criterion)
CBC	Christmas Bird Count	RS	range size (ranking criterion)
CBRC	California Bird Records Committee	RT	range trend (ranking criterion)
CDFG	California Department of Fish and Game	SBMNH	Santa Barbara Museum of Natural History
CEQA	California Environmental Quality Act	SDNHM	San Diego Natural History Museum
CWHR	California Wildlife Habitat Relationships	SPCR	Southern Pacific Coast (Southern California) region of NAB
EN	percentage of entire range within California (ranking criterion)	THR	impact of threats (ranking criterion)
HCP	Habitat Conservation Plan	UCLA	University of California, Los Angeles
IPCC	Intergovernmental Panel on Climate Change	USDC	U.S. Department of Commerce
GIS	Geographic Information System	USDI	U.S. Department of Interior
LACM	Natural History Museum of Los Angeles County	USFWS	U.S. Fish and Wildlife Service
MAPS	Monitoring Avian Productivity and Survivorship	USGS	U.S. Geological Survey
MCZ	Museum of Comparative Zoology (Harvard University)	USNM	U.S. National Museum (Smithsonian National Museum of Natural History)
MPCR	Middle Pacific Coast (Northern California) region of NAB	WA	(state) Wildlife Area
MVZ	Museum of Vertebrate Zoology	WTVZ	Western Foundation of Vertebrate Zoology

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SCALING SWAINSON'S HAWK POPULATION DENSITY FOR ASSESSING HABITAT USE ACROSS AN AGRICULTURAL LANDSCAPE

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ABSTRACT.—By integrating population density estimates of Swainson's hawk (*Buteo swainsoni*) from other studies, I found that the areas within study boundaries consistently support much higher densities of Swainson's hawk than do the surrounding areas, and most of the variation in density was explained by the spatial extent of study. Therefore, I designed a sampling program to express habitat use across multiple potential clusters of home ranges, thereby representing the population-level interaction with the agricultural landscape of the Sacramento Valley, CA. I mapped 162 observations of Swainson's hawk in 5 yr of surveys (110 surveys) along a 204-km road transect from a car traveling at 80–88 kph. Based on use and availability of landscape elements along the transect, Swainson's hawk "preferred" riparian habitat, grassland, alfalfa stands >2 yr old during irrigation and mowing, and annual field crops during harvest. Hawks "avoided" most other crops, tilled fields, and built-up areas.

KEY WORDS: Agriculture; alfalfa; *Buteo swainsoni*; density; road survey; Sacramento Valley; Swainson's hawk.

Escalamiento de la densidad poblacional de *Buteo swainsoni* para evaluar uso de hábitat a través de un paisaje agrícola.

RESUMEN.—Por integración de densidades poblacionales de *Buteo swainsoni* estimadas en otros estudios, encontré que áreas de borde, en estudio, consistentemente soportaban mayores densidades de esta especie que las áreas vecinas y la mayoría de la variación en densidad era explicada por la extensión espacial del estudio. De manera que diseñé un programa de muestreo para expresar uso de hábitat a través de racimos potenciales múltiples de rangos de hogar, representando así, la interacción a nivel poblacional con el paisaje agrícola de Valle de Sacramento, California. Se mapearon 162 observaciones de *B. swainsoni* en cinco años de recorridos (110 recorridos) a lo largo de un transecto carretero de 204 km, realizado en un vehículo viajando a 80–88 kph. Basados en el uso y disponibilidad de elementos del paisaje a lo largo del transecto, *B. swainsoni* "prefirió" hábitat ribereños, praderas y campos de alfalfa mayores a dos años de antigüedad durante la irrigación, corte y durante la cosecha anual de los campos. *Buteo swainsoni* "evitó" otros tipos de cosechas, campos cultivados y áreas de construcción.

[Traducción de Ivan Lazo]

Knowledge of the ecological resources needed by the Swainson's hawk (*Buteo swainsoni*) is important because the species is thought to have declined radically in California (Bloom 1980), and is now listed as threatened there. This knowledge is also important because Swainson's hawk management decisions, including mitigation for development, and state and federal recovery plans, affect large investments in agriculture and construction. Swainson's hawk populations are threatened by land conversions and management decisions that leave enough ecological resources for only a minimum existence (Wilcox 1989).

Most Swainson's hawk habitat-use studies occurred within small areas immediately around nest trees or within home ranges (e.g., Gilmer and Stew-

art 1984, Estep 1989, Bechard et al. 1990). These intensive studies were typically constrained to small geographic areas because they were expensive and thus were required to be focused on a small number of individuals. The results of these local studies sometimes have been extrapolated to estimate habitat use in larger regions (e.g., Bloom 1980, Bednars and Hoffman 1988), which then could be used for management decisions, without making adjustments for changes in landscape attributes nor for changes in Swainson's hawk spatial pattern.

The regional context is usually excluded from analyses during population and habitat-use studies. Such intensive studies of most species usually occur where the investigator(s) had a *priori* knowledge of high density (Schonewald and Smallwood in press).

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The home range is often viewed as the spatial requirement of a species, so habitat associations are derived from observations within the home ranges. But nesting pairs choose locations for their home ranges from among many potential locations within their historic geographic range. Studies at high-density sites might not provide all the information that is needed for management of the Swainson's hawk at a regional scale. Density estimates and habitat use at small study sites could be reliably extrapolated to the region only if Swainson's hawks and habitats (and land use) are uniformly distributed across the landscape. Distribution maps of nesting pairs suggest that Swainson's hawks in California are highly aggregated (Bloom 1980, Schlorff and Bloom 1984, Estep 1989). The clusters of nest sites are where most investigations have been conducted (Schmutz et al. 1980, Gilmer and Stewart 1984, and Estep 1989).

In this paper I first test whether Swainson's hawks are uniformly distributed across studied landscapes, which would be a necessary condition for extending the results of population and habitat-use studies to larger areas. Then I complement results of intensive studies with those of a survey along an extensive road transect in the Sacramento Valley, California. The road transect was designed to sample a geographic area that was much larger than conventional population and habitat-use study areas of the valley's largest birds and mammals, and the types of agriculture that occur in the valley (Smallwood et al. in press). By exceeding the areas of conventional habitat-use studies, I was able to critically analyze the effects of agricultural crops and practices on a Swainson's hawk population.

METHODS

Scaling Population Density. From 26 population estimates in 16 research reports of Swainson's hawk studies, I recorded every estimate of nesting density within each geographic area defined for study. I used the geometric mean for multi-annual estimates made at a site. Schmutz (1984) was not used because he sampled only 4.4% of his 74,686 km² study area. Log₁₀ transformed estimates of nesting density (pairs per square kilometer) were tested for linear relationships with the spatial extent of studies with the equation:

$$\text{Log}_{10}(\text{nesting density}) = a - b \times \text{Log}_{10}(\text{area}), \quad (1)$$

where a and b are the intercept and slope coefficients to be estimated with least squares regression. Model precision was assessed by examining the coefficient of determination (R^2), the root mean square error of the residuals (RMSE), and the pattern of residuals plotted against study

area. The spatial pattern of Swainson's hawks across studied landscapes is increasingly homogenous (aggregated to random to uniform) as the regression slope approaches 0 in equation (1). If the hawks' spatial pattern is found to be far from homogenous, then density estimates and habitat associations cannot be reliably extrapolated to areas that are larger than the conventional study areas.

Habitat Associations. My road transect was designed to sample wildlife populations across a large geographic area in which interactions between species and the landscape could be measured. It was designed to sample interspersed landscape elements in the Sacramento Valley, including the major types of agriculture produced (field crops, rice, orchards, and pasture), along with urban and rural areas, riparian habitat, and grassland and wetland habitats in protected areas. It was also designed to provide extensive north-to-south and east-to-west coverage. The road transect was 204 km in seven segments (to provide rest periods for the investigator) along a 320-km loop around the Sutter Buttes (described further in Smallwood et al. in press).

I surveyed for wildlife from the passenger seat of a car driven at 80–88 kph at 1 wk to 1 mo intervals. Surveys always began 0700–0930 H, and typically lasted 5 hr. For multiple bird and mammal species, I recorded the species, activity, land-use/habitat association, location to the nearest 0.16 km, and side of road where the observation occurred. I mapped the crops immediately along the transect, including tilled fields, crop residues, and agricultural activities such as harvest, irrigation, and tillage. Swainson's hawk observations from 3306 km of survey (37 surveys) along the first 58 km of the transect (Davis to Sutter National Wildlife Refuge) were related to land-use and habitat elements based on the proportional occurrence of each (after Smallwood 1993, Smallwood et al. in press).

Swainson's hawk's use of alfalfa fields was further investigated during a 2-yr (1992–94) study of pocket gopher (*Thomomys bottae*) spatial dynamics in 36 Sacramento Valley alfalfa fields (Smallwood and Geng 1993b). While mapping gopher burrows by walking along borders of irrigated fields, I recorded Swainson's hawk visits from 0630–1200 H, March to September. I compared the number of visiting Swainson's hawks with my time spent in alfalfa fields of various ages and harvest phases, i.e., mowing, raking, baling hay, collecting bales.

RESULTS

Scaling Population Density. Nesting Swainson's hawks were aggregated across studied landscapes. The regression slope was significantly different from 0 ($P < 0.0001$) and substantially different from corresponding with homogeneity (Fig. 1A). The nesting density at the smallest study area was 124 times greater than the density at the largest study area when calculated from the regression, and the real difference was 310-fold. Also, the average number of pairs per 1 km² was calculated from the regression to be 2.2, which is more than can be expected at any randomly selected site across the Swainson's hawk

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nesting range. Therefore, the Swainson's hawk studies used in the regression analysis were consistently conducted at sites where Swainson's hawk population densities were much higher than across the surrounding, unstudied areas.

All of the density estimates were made after intensive ground searches for nests, although Platt (1971) included aerial searches and Littlefield et al. (1984) searched from the road. The searches were reported to be complete or inclusive of all nests in 56% of the studies and 70% of the density estimates. However, whether or not the search was reported to be complete did not influence the residual variation that remained after density was regressed against study area (independent samples $T = 0.59$, $df = 19$, $P = 0.56$). Instead, this residual variation appeared to cycle with a periodicity of about 10 yr (Fig. 1B). This possible, range-wide population cycle could not have been recognized from the existing data without removing the variation in density due to the spatial extent of study area.

Habitat Associations. I made 162 Swainson's hawk observations during the entire road survey, but only 130 were used in the habitat-use analysis from the cumulative 3306 km along the first 58 km of transect during March to October. My observations were nearly evenly distributed among months from March ($N = 24$) until October ($N = 13$). Most (82%) were of birds in flight, 11 (7%) were on trees, five (3%) were on the ground, and 7% were on artificial structures such as utility poles and fence posts. Swainson's hawks occurred more often than expected by chance in alfalfa, riparian, and grassland habitats, where they occurred throughout the breeding season (Fig. 2A). The remainder of the landscape elements were used by Swainson's hawks preferentially only during brief periods of opportunity; e.g., in tomato fields 21.7 times more often during harvest than expected by chance. The 16 Swainson's hawks I saw at tilled fields were during early spring and fall when most of the landscape was tilled or being tilled (Fig. 2B). Rice stubble left through the winter was used by Swainson's hawks during early spring, but overall rice stubble was avoided by Swainson's hawks. Safflower and some other crops were never used, not even after harvest (Fig. 2A).

Both the road survey and gopher sampling revealed that Swainson's hawks used alfalfa most often while those fields were being irrigated, and secondarily during hay harvesting (Figs. 3 and 4). These preferences were greatest in alfalfa that was 3–4 yr old

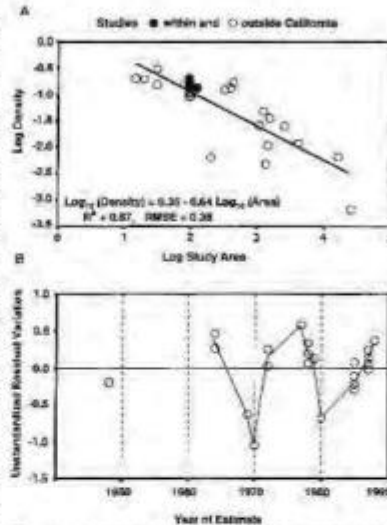


Figure 1. Log-transformed estimates of Swainson's hawk population density decrease linearly with increasing log spatial extent of study area (A), and the residuals suggest an approximately 10-yr population cycle (B) fit by lowest smoothing on 70% of the data. Estimates were from Craighead and Craighead (1956), Platt (1971), Smith and Murphy (1973), Otendoff (1975), Dunkle (1977), Finner (1978), Bloom (1980), Schmutz et al. (1980), Bechard (1983), Littlefield et al. (1984), Bednars and Hoffman (1988), Gilmer and Stewart (1984), Enepe (1989), Kenani (1991), and Bonakowski and Ramsey (unpubl. data).

(Figs. 3 and 4B). All of the 31 Swainson's hawks seen in alfalfa fields during the road survey were at fields being irrigated, which comprised 0.02% of the transect. Thus, Swainson's hawks were 858 times more likely to occur at mowed and irrigated alfalfa fields than if they occurred randomly along the transect.

DISCUSSION

Scaling Population Density. Most of the variation in Swainson's hawk density was explained by

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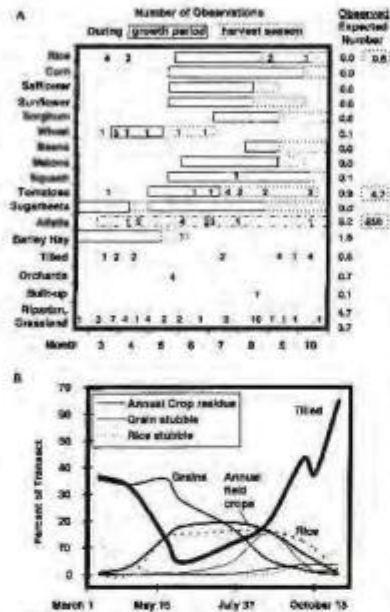


Figure 2. The Swainson's hawk distribution among habitats during the nesting seasons of 1990-94 (A) and the 1993-94 moving average of agricultural field conditions expressed as a percent of the southern 58 km of the road survey (B). Expected values are the total number of hawks observed multiplied by the proportion of each habitat in the sample.

the spatial extent of study, consistent with results for other species (Schoups and Smallwood in press). This means that most study methods have little influence on density estimates, if the methods are rigorous. Except for Schmutz (1984), the residual variation in density estimates based on different methods plotted precisely along the lowest curve that suggests a population cycle (Fig. 1B). Clearly, results from conventional studies cannot be extrapolated to larger geographic areas without at least making analytical adjustments for the change in spatial scale.

Judging from the scientific literature, investigators were previously unaware of the magnitude to which density changes with the spatial extent of study. Bloom (1980) multiplied his density estimate in the Klamath Basin by 0.25 (25% of the then known maximum density in California) to estimate the population size across the Swainson's hawk's historical range in California, which was estimated from topographic maps, field surveys, and the literature. Bloom's minimum estimate was 4284 pairs and his maximum estimate was 17,136 pairs. Using the model in Fig. 1, I calculated a mean population 404 pairs (SD = 166) across this historic range, which falls between the estimates of 375 and 550 pairs for 1979 (Bloom 1980) and in 1988 (California Department of Fish and Game 1990), respectively, and which is much less than Bloom's historic estimates. But my calculation should not be expected to be a reliable estimate of the historic Swainson's hawk population. The regression model in Fig. 1 can provide precise estimates within the data range (high to low values of densities and study areas), but is less reliable for an estimate across the historic distribution, because we do not know whether the log-log relationship between density and area remains infinitely linear. The habitat conditions have been altered radically, so there could have been more Swainson's hawks based on habitat availability. Nevertheless, the population might not have been much larger because it was naturally aggregated despite habitat availability, and the regression model showed that study areas such as Bloom's (1980) typically have much higher densities than areas not studied.

Study areas may be fundamentally different from the surrounding areas. The average square kilometer of land does not support 2.2 pairs of Swainson's hawks as predicted by the regression model in Fig. 1. Study areas are probably dissimilar to unstudied areas in terms of habitat conditions, but habitat-use studies only occur within the boundaries of study areas. Little connection has been made between habitat conditions on study areas and those beyond the study boundaries. Therefore, different habitats on study areas are used significantly more and less than if the study boundary encompassed a much larger geographic area. My road survey was designed to complement conventional habitat-use studies by linking habitats in areas of Swainson's hawk aggregations with habitats in the surrounding landscape. Other road surveys have been conducted for Swain-

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son's hawk habitat use, but the transects were arranged for a more intensive survey within the area of aggregations.

Habitat Associations. My survey design resulted in conclusions about habitat use by Swainson's hawks which differed from other reported studies. Swainson's hawk use of riparian habitat, grassland, and alfalfa were greater in my study, probably because the greater spatial extent of study provided a much lower estimate of the availability of these habitat types. In my study Swainson's hawks seemed to avoid irrigated pasture, tilled fields, annual field crops, and developed areas, probably because the availability of these habitat types was much greater across the larger landscape.

My results also show that the majority of the agricultural landscape is inhospitable to nesting Swainson's hawks most of the time (Fig. 3). Prey availability is usually greater during crop harvest when prey are exposed by the removal of the canopy that persisted during the growth period. Swainson's hawks opportunistically forage over field crops during or just following harvest or irrigation. But these opportunities occur briefly at each field. The brief foraging opportunities in alfalfa occur mostly in fields at least 2.5 yr old, after prey populations have increased to sufficient levels (Smallwood and Geng 1993a,b).

Conservation Implications. The most effective opportunities for Swainson's hawk conservation might be in the management of agricultural landscapes where nesting and foraging habitat limit population size. Swainson's hawk nesting density increased in cultivated areas where tree density (Schmutz 1984) and prey availability (Bechard 1982) were highest. Swainson's hawk conservation would benefit substantially from the protection and restoration of riparian forests with large cottonwoods and oaks, and by managing field borders, road verges, and canal banks as strip corridors of grasses and shrubs. The lack of movement corridors for small mammals in the Sacramento Valley probably decreased populations of small mammals (Smallwood 1994) which are prey of Swainson's hawks. Pocket gophers, one of the important prey species (Bechard 1982, 1983, Gilmer and Stewart 1984, Restani 1991), are controlled in many alfalfa fields because they are thought to reduce alfalfa yields. Vertebrate pest management could be altered to the benefit of Swainson's hawk by better understanding the relationship

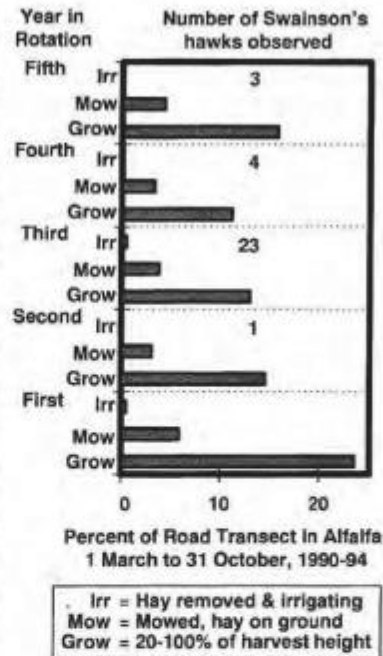


Figure 3. Swainson's hawk occurrences at alfalfa fields along the road transect.

between "pests" and agricultural crops. Van Vuren and Smallwood (in press) described many alternative vertebrate pest management strategies, most of which are not currently used. Even orchards and vineyards, which are generally considered to be poor Swainson's hawk foraging areas, can provide habitat for prey when cover crops are grown. Cover crops serve as habitat and alternative food (rather than the commercial crop) for small mammals, which will disperse into habitats that are more accessible to foraging Swainson's hawks. Thus, agriculture might actually benefit Swainson's hawks so long as the critical resources are maintained and/or enhanced.

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SUGGESTED STANDARDS FOR SCIENCE APPLIED TO CONSERVATION ISSUES

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ABSTRACT: The Conservation Committee of The Wildlife Society (TWS)-Western Section (WS) commenced activities during the summer of 1999, and quickly encountered a profusion of conservation issues in the Western Section, reviewing environmental documents, determinations, decisions, and claims made by government agencies, political bodies, news media, and citizen groups. The Committee recognized that it could address only a fraction of these issues. In our experience, recognizing and debating each issue through both the Conservation Committee and the Executive Board will often require more time than allowed by government comment periods and the period during which the news media remain interested. We believe that it will be more effective to establish and re-affirm the standards of professional and scientific conduct that should generally found the issues. This way, TWS-WS members who are more familiar with the issues can use these standards as a collective benchmark to judge the adequacy of professional and scientific foundation underlying documents, determinations, decisions, and claims related to each issue.

We recommended to the Executive Board that we develop standards and present them at the Annual Meeting in January, 2000. On October 15th, 1999, the Executive Board moved to have our Committee act on its recommendation. This paper summarizes the preliminary standards developed by members of the Conservation Committee. These standards presented herein are preliminary, and have not been sanctioned by the Executive Board. We expect that this document is just the beginning of a debate on standards that are acceptable to TWS-WS for using scientific and other information when making conclusions that affect wildlife. We invite feedback on the standards presented herein.

Key Words: Conservation, environmental documents, science, standards, The Wildlife Society.

2000 TRANSACTIONS OF THE WESTERN SECTION OF THE WILDLIFE SOCIETY 36:40-49

Conservation issues have proliferated in the western U.S. as population and economic demands have increased the pressures and impacts on natural resources, including wildlife. Members of TWS-WS participate in these issues, oftentimes struggling against each other over a particular issue. Debates over decisions, conclusions and claims often have been contentious and fractious amongst wildlife professionals. Whether a conclusion or opinion is justified biologically is too often secondary to socio-economics and political expediency (Wilkinson 1998). These realities point not just to the diminished value given natural resources by decision-makers despite overwhelming public support to do otherwise, but also demonstrate

our inability to convey our message consistently. Different backgrounds, disciplines, and philosophies can lead one to different interpretations of the data, and subsequently, to different conclusions. Disagreement amongst professionals is reasonable and not unexpected. Where we fail and consequently lose credibility as a profession is in our inconsistency to adequately support and justify our conclusions, and in the errant advocacy of wildlife biology from a non-biological inclination.

Environmental documents, decisions, determinations, and claims involving wildlife usually pertain to some *action* (or lack of action) and an *impact* to the wildlife due to that action. The action may encompass management,

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"take" of species, mitigation, or some combination of all these. The impact may be positive or negative, and it may be specific to one or more species of wildlife involving one of several demographic units such as individuals, family groups, populations, or metapopulations. The impact also can be specific to some other part of the environment (including humans) as a result of changed regulatory or real-world status of the particular species of wildlife. The impacts are direct, indirect, and cumulative. All of these actions, impacts, and the related conclusions drawn by different sectors of our society bear on the interests of wildlife biologists.

Wildlife biologists have rendered conclusions (or opinions) in countless environmental documents that have justified projects and management actions affecting wildlife. Many of these projects have resulted in net losses of habitat areas, degradation of habitat, "takings," and ineffective mitigation. The majority of Habitat Conservation Plans (HCPs) result in incidental, and increasingly, direct take of listed species, net loss of habitat areas, and involve conclusions about project impacts and mitigation effectiveness that are often poorly founded in science (Kareiva et al. 1999, Smallwood et al. 1999, Smallwood 2000e). Natural Community Conservation Plans (NCCPs), are California's version of HCPs, and also result in takings and net losses in habitat areas. California Environmental Quality Act (CEQA) documents often justify projects in the form of "negative declarations" or determinations of "no significant effect" due to project actions. These CEQA documents have preceded and made legal the destruction of many thousands of acres of wildlife habitat. Virtually all of the large-scale conversions of wildlife habitat require assessments and conclusions from wildlife biologists, including projects such as housing developments, construction of industrial sites, construction of hazardous waste storage and treatment sites, dredging of shipping channels in coastal bays, construction of new roads, and the clear-cutting of large tracts of late seral Redwood forests.

The conclusions of wildlife biologists affect policies, management decisions, and management prescriptions in federal and state agencies responsible for wildlife, native plants, water resources, forestry, and transportation. Decisions by these agencies affect many thousands of hectares of wildlife habitat, including livestock stocking rates, predator control and other types of animal damage management, timber harvest rates and practices, water conveyance and storage systems, pesticide usage, the locations and design of roads, and game harvest seasons and quotas. These agencies also affect wildlife habitat by listing species as threatened or endangered, designating critical habitat, and preparing and implementing recovery plans. Many additional examples could be used to support our argument that wildlife biologists pro-

foundly influence wildlife conservation issues by contributing to, or rendering, conclusions. Not necessarily the fault of wildlife biologists (see Wilkinson 1998), many of their conclusions conflict with the objectives of TWS by leading to the degradation of wildlife and wildlife habitat and by being rendered without sound scientific foundation.

That these issues bear on the interests of TWS is clear enough in the Bylaws of TWS, as well as in the program for certification of professional wildlife biologists. The principal objectives of TWS "are:

- (1) to develop and promote sound stewardship of wildlife resources and of the environments upon which wildlife and humans depend;
- (2) to undertake an active role in preventing human-induced environmental degradation;
- (3) to increase awareness and appreciation of wildlife values; and
- (4) to seek the highest standards in all activities of the wildlife profession."

The other TWS objectives might follow if objective (4) is met, so long as we can agree about what are the highest standards. Additionally, the Bylaws describe a Code of Ethics, which asks that each member "pledges to:

- (1) Subscribe to the *highest standards* of integrity and conduct;
- (2) Recognize *research and scientific management* of wildlife and their environments as primary goals; ...
- (5) *Promote competence* in the field of wildlife management by supporting high standards of education, employment and performance;
- (6) Encourage the use of *sound biological information* in management decisions ... " (*emphasis added*).

The program for certification of professional wildlife biologists re-emphasizes these same objectives and code of ethics. Also, we point out that the TWS objectives do not pertain to only endangered species of wildlife, but to all species of wildlife. The objectives of TWS are likely shared by most professional wildlife biologists, including non-members of TWS.

Obviously, many conclusions of wildlife biologists or of their supervisors conflict with TWS objectives, as the actions that followed have resulted in many takings, widespread losses and fragmentation of habitat, habitat degradation, and declines of many species of birds, mammals, reptiles and amphibians. Given the numerous conclusions affecting wildlife deleteriously, and the many that seem to be poorly founded in science, there may be different opinions about what qualifies as sound stewardship, high standards, research and scientific management, and sound biological information. The purpose of this paper is to begin a dialogue amongst biologists as to

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what they should expect, at a minimum, of themselves and others in the wildlife profession. The TWS-WS Executive Board established this dialogue as an action item for the Conservation Affairs Committee in its meeting of 15 October, 1999, but we present these preliminary standards as individuals, rather than as a Committee action.

STANDARDS

Our goals for establishing standards were:

- 1) To identify the standards by which to gauge the reliability of our own and others' premises and conclusions;
- 2) To improve the consistency in the use of our key terms and reporting methods;
- 3) To identify which conclusions are scientific and which are not;
- 4) To decide whether the conclusions are consistent with the TWS objective of conserving wildlife; and,
- 5) To encourage more people to involve themselves with conservation issues.

To meet these goals, we prepared a draft worksheet (Table 1) to assist preparation or review of environmental documents. Table 1 is divided into several sections, each of which follows from one of the key phrases in the objectives of the TWS Bylaws, and is discussed below. Table 1 is proposed to stimulate discussion on how best to achieve our goals. Perhaps the final analysis, including the stated goals and objectives, will take a much different form than what we have proposed here. We will, however, continue to refine our thinking through thoughtful input from wildlife biologists, in hopes of furthering the credibility and effectiveness of our profession.

Consequences of action based on conclusion(s)

The TWS Bylaws require members to steward wildlife and to prevent their degradation, meaning that wildlife biologists are expected to protect or conserve wildlife. We are expected to promote the persistence of healthy wildlife populations and their habitats for the long term. Given this stewardship role, our standards should first assist the reviewer in putting the conclusion(s) at issue into perspective. In judging the importance of a conclusion, wildlife biologists first need to clearly identify what is at stake in terms of our stewardship role. The magnitude of the likely consequences to wildlife should determine how closely wildlife biologists follow our proposed standards when rendering conclusions.

For example, one could use Table 1 to check off whether the proposed action would restore habitat for a net gain, or whether it would degrade or remove habitat. The former consequence would lessen the reviewer's level of concern over standards not being met. However, the degra-

dation or removal of habitat for a net loss to wildlife ought to heighten the vigilance of those preparing or reviewing the environmental document(s). Similarly, one could use Table 1 to check off whether the project is likely to have no consequence for the survival or behavior of individuals, or whether the project would displace or kill all the individuals composing a population or metapopulation. The former consequence probably warrants little concern over the soundness of the supporting documents, but the latter demands the use of the highest standards of our profession.

The consequences of an action based on a conclusion has two aspects related to health and integrity: one involving habitat and the other involving demographic units. To restore habitat for a net gain or to have no impact on the health of individual animals would qualify proposed actions as achieving the highest standards relative to the conservation goals of TWS, whereas the net loss of habitat or the loss of one or more metapopulations would qualify proposed actions as achieving the lowest standards. Lower standards for these aspects of a conclusion warrant a closer examination of the scientific foundation and the soundness of the biological information leading to the conclusion.

Scientific foundation of conclusion

By expecting wildlife biologists to recognize research and scientific management as primary goals, the TWS Bylaws attach great importance to using the scientific method to understand more about wildlife and habitat, founding management decisions, and integrating them into management prescriptions. Management decisions can be founded in the scientific method by basing them on data collected as part of a scientific research program. Such data might come from a monitoring program that scientists designed or used for testing hypotheses, or they might be from scientific reports, and collected using methods that are widely accepted by scientists. Habitat determinations can be an example of scientifically derived data pulled from published reports. So long as the hypotheses in the report are consistent with the management context, the use of data from published reports can contribute to scientific management.

Adaptive management is an example of integrating science into management prescriptions (Holling 1978, Lancia et al. 1996). Hypotheses are described prior to the management implementation, and are the bases for the monitoring program. Hypotheses that are tested while management is implemented determine future management prescriptions. Whether basing management decisions on scientific data or integrating scientific methods into them, TWS prefers conclusions that are scientifically founded. Environmental documents should be clear

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Table 1. Worksheet for identifying the standards applied to conclusions that have consequences for wildlife conservation. Each conclusion can be composed of 19 aspects organized under 3 key phrases in the TWS Bylaws. Each aspect of a conclusion can then be assigned a standard, which is represented by a phrase. When only *one* phrase can characterize an aspect of a conclusion, the highest standard is that phrase at the top of the list, and the lowest standard is at the bottom of the list. When *all* phrases can characterize an aspect of a conclusion, the highest standard applies when all the phrases can be checked off. The highest standards are denoted by brackets encompassing the check space: [].

*Consequences of action based on conclusion(s)*1. Conclusion can lead to action that would (check *one* applicable phrase):

Restore habitat for a net gain

[]

Enhance habitat for a net gain

[]

Protect all existing habitat at issue

[]

Protect a portion of the habitat at issue to mitigate for take

Replace habitat to mitigate for take

Pay into a conservation bank as mitigation for take

Degrade habitat

Remove habitat, or compensate financially for habitat loss

2. Conclusion can lead to action that, through habitat loss or otherwise (including a sanctioned game harvest), would likely or certainly kill or remove (check *one* applicable phrase):

No individuals, and it would not affect their behaviors or physical health

[]

No individuals, but it would affect behaviors or sicken one or more individuals

[]

No individuals, but it would affect behaviors or sicken all of a population

[]

No individuals, but it would affect behaviors or sicken individuals across a region

[]

Individuals

[]

One or more reproductive groups (i.e., mated pair)

[]

A population

[]

One or more metapopulations

[]

*Scientific foundation of conclusion*1. Uncertainty in the conclusion was (check *one* applicable phrase):

Specified using a quantitative method

[]

Specified using a qualitative method

Specified as a list of alternative outcomes

Not specified

2. Presence and condition of the species were based on (check *one* applicable phrase):

Scientific study involving an area that is larger than the project area

[]

Scientific study involving the entire jurisdiction or project area

Scientific study involving a small portion of the jurisdiction or project area

Presence of habitat, which was described elsewhere using scientific methods

Non-scientific data, such as NDDB or cursory walk-over site visits

No study or data indicated

3. Conclusion was based on (check *one* applicable phrase):

Quantitative data collected from the site and species at issue

[]

Quantitative data collected from offsite or for another species

Qualitative data collected from the site and species at issue

Qualitative data collected from offsite or for another species

No data collected

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Table 1 (continued)

4. Conclusion was based on methods, in which (check all phrases that apply):

Temporal scale of data collection was specified

Spatial scale of data collection was specified

The hypotheses being tested or the assessment's objectives were clearly described

Experimental or research design was specified and described

Assumptions were identified and discussed

The conditions of the study site were described relative to the full range of conditions experienced or likely to occur at the site

5. Conclusion was reported in a document that described (check all phrases that apply):

All methods used to collect data

All methods used to aggregate data

All methods used to analyze the data

The time periods during which observations were made or data collected

6. Conclusion was based on statistical tests upon which (check all phrases that apply):

The test was appropriate for the data and the hypothesis

The assumptions of the test were met

Type II error was established, if warranted

7. Conclusion was based on research design that included (check all phrases that apply):

A control treatment, if manipulation of the study units was involved

Replicates

Interspersion of treatments, whether they be mensurative or manipulative

Soundness of biological information leading to conclusion

1. Referenced source information consisted of (check one applicable phrase):

Published reports subjected to independent scientific review

Published reports that were not peer-reviewed

Personal communications, opinions, and anecdotes

No referencing of source

2. Personal communications and opinions were (check all phrases that apply):

Supported by contact information of the individual(s) cited

Accompanied by a statement of uncertainty

3. Referencing of source information was (check all phrases that apply):

Comprehensive

Balanced according to the competing arguments

4. For each reference, check off whether it was (check all phrases that apply):

Accurate

Relevant

Fully described

Readily accessible in a library or other location

5. Document quality (check all phrases that apply):

All species names are spelled correctly and scientific names are current

All important terms, such as ecosystem, habitat, population, community, corridor, and net benefits were either defined or a definition referenced

All important terms were accurately used

The qualifications of the analyst or assessor were described (if not peer-reviewed)

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Table 1 (continued)

6. Conclusion invoked population study including (check *all* phrases that apply):

Numbers (density)

Demography

Gender ratio

Genetics

Condition of food resources

Condition of habitat

☐
☐
☐
☐
☐
☐
7. Conclusion invoked habitat study (check *all* phrases that apply):

At the scale of the population or larger

Spanning at least one generation of the species

Based on use and availability analysis

At a scale smaller than the population

Spanning <1 generation of the species

Based on presence of only "optimal" or "preferred" habitat

☐
☐
8. Conclusion of impacts due to management was based on (check *one* applicable phrase)

Quantitative, empirical evidence from multiple examples

Quantitative, empirical evidence from one example

Qualitative, empirical evidence from multiple examples

Qualitative, empirical evidence from one example

No empirical evidence

☐
9. Management impacts in conclusion were specific to (check *one* applicable phrase):

Each species or species' habitat

Taxonomically or functionally related species or their habitats

Umbrella species, umbrella habitat, or some other indicator of the species

Not specified

☐
10. Management impacts in a conclusion followed consideration of (check *all* phrases that apply):

A full range of project and mitigation alternatives, including 'no project' alternative

The benefits and disadvantages of each project and mitigation alternative

Spatial requirements of the species

PVA

Appropriately designed monitoring program

Impacts on ecosystem processes that affect the species (indirect effects)

Cumulative impacts on the species

☐
☐
☐
☐
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☐

about the extent to which science was part of the conclusion or management decision. Table 1 is intended to promote this clarity.

Scientific methods are designed to reduce human uncertainty in natural phenomena (Popper 1969, Kuhn 1970). Statements of uncertainty are therefore critical to scientists, because they help maintain an honest account of scientific progress. Scientists prefer uncertainty statements that are quantitative, consisting of confidence intervals or error terms (National Research Council 1986), but often qualitative statements are the best that can be expected under the circumstances (Morgan and Henrion

1990, Cooke 1991). When the magnitude of negative impact to wildlife is high, risk assessment is warranted, along with uncertainty statements. Population Viability Analysis (PVA) is one form of risk assessment that is appropriate for application to wildlife.

Scientific generalizations depend largely on the scope of the investigation, with more confidence in generalizations stemming from studies encompassing larger areas and longer time periods. Larger-scale studies can include wider ranges of variation in measured variables, thereby expanding the portion of the environment that may be experienced by the study units and considered in the

conclusion. Scientific conclusions are considered more accurate and reliable when they are derived from methods and data that are specific to the study units at that particular place and most recently. The more grossly an indicator represents the study units, or the less the indicator has been functionally related to the study units, the less reliable are hypothesis tests or assessments stemming from the use of indicators (Simberloff 1998). Therefore, the scientific merits of a conclusion should be examined more closely when the assessment or hypothesis test involved a keystone species, umbrella species, sensitive species, or indicator species. They should also be examined more closely when species' numerical trends are determined from the trends in anecdotal, indicator data such as the frequency of road-kills, sightings, issuance of depredation permits, or hunter harvests.

Scientific conclusions are considered more reliable when the methods used to derive them are fully and clearly described so that the reader has the opportunity to repeat the study. When a project proponent or their consultants claim that the species in question has not been observed on the project site, the project proponent should explain the types of observations employed, when and how often the observations occurred, and how long of a time period was involved. Scientists also attach greater reliability to conclusions from experiments that suffer less from pseudoreplication (Harlbert 1974). Many population studies are autonomous and involve no replication or interspersed of treatments. Relating the results of these studies to environmental conditions at the study site is a form of pseudoreplication, and should be interpreted conservatively. Also, some scientists expect more conservative conclusions from hypothesis-testing by considering Type II error or by conducting power analysis of trend data (Shrader-Frechette and McCoy 1992, Gerrodette 1987). A Type II error — not rejecting the null hypothesis when in fact it was false — can lead to no management actions being taken to halt the decline of a species or its habitat (Shrader-Frechette and McCoy 1992).

The accepted scientific methods for wildlife biologists are described in numerous publications, including Dasmann (1981), Verner et al. (1986), and Morrison et al. (1998), as examples. Some methods for reducing uncertainty are described by the National Research Council (1986), for example.

The scientific foundation of a conclusion has seven aspects that we identified. The highest standards would be, for example, to report the uncertainty of the conclusion quantitatively (aspect 1), assess the presence of the species across a larger area than the project area (aspect 2), and to use a research design that incorporates replication, control, and interspersed of treatments (aspect 7). The lowest standards correspond with no uncertainty specified for the conclusion (aspect 1), no study or data

apparently used to assess presence or absence of the species (aspect 2), and no experimental or research design principles used to make the conclusion (aspect 7).

Soundness of biological information leading to conclusion

Not all conclusions or actions are scientific. The TWS Bylaws expect wildlife biologists to use sound biological information and the highest standards in all aspects of our profession. These standards pertain to many aspects of conclusions that are both scientific and non-scientific. The credibility of a conclusion can be judged based on the quality of the document reporting it, including the writing, the relevance and accuracy of premises, and the rigor in referencing source information. The following standards are intended to foster document preparation based on sound biological information.

Source material in environmental documents and decisions needs to be identified and referenced. So long as the reference is relevant to the conclusion, scientists usually prefer source material to consist of independently reviewed scientific documents (Smallwood et al. 1999), followed by scientific documents that were not reviewed, and personal communications or anecdotes. We recommend that personal communications be backed up by contact information of the individual(s) cited. Opinions should be accompanied by a statement of uncertainty (see above). All references of source information should be accurately represented. Referencing should also be comprehensive and balanced according to the arguments or anticipated counter arguments.

Evidence of sound biological information may be the qualifications of the analyst or assessor who prepared the conclusion, although qualifications are no guarantee that the conclusion was sound. Using correct spelling and accurate names of species also improves the soundness of the conclusion, as does clear and accurate use of key terms in the wildlife profession.

A conclusion involving wildlife can be considered more sound if greater thoroughness was applied to the issue. Thoroughness is increased by including data of more population or demographic parameters routinely studied by wildlife biologists, as well as more aspects of habitat or resources needed by the species. Thoroughness is also increased when inter-generation dynamics in demographic parameters are considered, when the entire region is included in the assessment or analysis, and when the species' use of habitat elements or food resources is compared to the available habitat elements or food resources.

Thoroughness bears on the soundness of biological information leading to conclusions of management impacts. Such conclusions can be considered more sound when the analysts have considered a full range of project

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and mitigation alternatives, including a 'no project' alternative and all the benefits and disadvantages of each alternative (O'Brien 2000). Conclusions can be considered more sound when analysts rely upon risk analysis (PVA) of the proposed actions and alternatives, as well as the spatial requirements of specific demographic units. Conclusions of management impact are more sound when the analysts consider the indirect effects on ecosystem processes that affect the species (Ricklefs et al. 1984) and when they consider cumulative impacts (McCold and Holman 1995).

The soundness of biological information leading to a conclusion has 10 aspects that we identified. The highest standards include, for example, referencing of peer-reviewed scientific reports as sources of a conclusion (aspect 1), referencing of source information that is both comprehensive and balanced to the arguments (aspect 3), and estimated management impacts that consider the full range of project alternatives, spatial requirements of the species, PVA, an appropriately designed monitoring program, impacts on ecosystem processes that affect the species (indirect effects), and cumulative impacts (aspect 10). The lowest standards correspond with no referencing of source information (aspect 1) or biased, selective referencing (aspect 3), and the management impacts make no consideration of project alternatives or spatial or numerical requirements of the species, monitoring, ecosystem processes, nor cumulative impacts.

DO WE REALLY NEED THESE STANDARDS?

We have witnessed poorly prepared environmental documents, containing loosely founded, questionable conclusions and extraordinary claims regarding wildlife and their habitats. Examples illustrating this point are unfortunately all too commonplace, often relying on "gray literature", "white papers", "draft" documents, and personal communications when peer-reviewed research reports are available. Specific examples have the potential to perhaps embarrass rather than instruct, and will therefore be avoided here. Suffice it to say, the reliance on non-scientific opinion, anecdotal information, speculation, and the misuse of published literature, unpublished literature, and personal communications have an embarrassing effect on the profession.

Wildlife biologists often lack the funding and time needed to make *sound* or *scientific* biological conclusions. Project proponents will not wait, and neither will the news media or concerned citizens. The interests of wildlife biologists are also often at odds with the agendas of others who have substantial influence over the conclusions, such as politicians, attorneys, and non-biologist administrators or bosses. Wildlife biologists are often asked to provide hastily prepared conclusions or opinions, and they usually do the best they can under

less than ideal circumstances. Nevertheless, the conclusions of wildlife biologists, made under these kinds of circumstances, have consequences for wildlife and for the wildlife profession.

Hastily prepared documents do not reflect well on the wildlife profession when species names are out-dated or misspelled, when citations do not appear in the list of references, when references listed in the back of the document were not cited in the main body of the document, or when scientific sources are misrepresented. Conclusions of species' absence reflect poorly on the profession when they are based on lack of records in California's Natural Diversity Data Base (NDDDB), or when they are based on only GIS habitat maps (no ground searches) or cursory walkover searches of the project sites. Conclusions of species' absence reflect poorly on the profession when species are pigeon-holed into "preferred" or "optimum" habitat associations and then deemed absent for lack of these habitats on a project site (Lidicker 1995). Such mistakes evoke a sense of carelessness and inappropriate haste in coming to conclusions, and they suggest bias.

Unsupported conclusions of project impacts and mitigation effectiveness reflect poorly on the wildlife profession. Substantial support is warranted for conclusions that the project and its mitigation will provide protection or net benefits to the species, or that they will be conserved under the rubric of adaptive management or ecosystem management, or that they will produce no significant impact, no cumulative impact, and no indirect or synergistic effects. The quality of the supporting documents not only bears on the wildlife profession, but also bears on the credibility of the conclusions and ultimately the consequences to the species.

The wildlife profession does not benefit from careless or inconsistent use of its central terms, such as *habitat* (Hall et al. 1997), *corridor* (Beier and Loe 1992), *ecosystem* (Faith 1997), and *population* (Smallwood 2000b). These terms endured rigorous scientific debate, which attributed specific definitions to them. Inconsistent use of definitions for such important terms creates confusion among wildlife biologists and others, and this confusion can have dire consequences for wildlife. If wildlife biologists present confusing arguments, then their case is weakened and the TWS objectives are vulnerable.

Conclusions can be embarrassing to the wildlife profession when they are said to be scientific or scientifically founded, but do not involve hypothesis testing, nor data or well accepted methods for reducing scientific uncertainty. The application of critical thinking is not necessarily the same as scientific thinking, although science relies largely on critical thinking. Scientific conclusions, in the form of estimates or assessments, should be accompanied by some statement of uncertainty, which can be quantitative, qualitative, or consist of a list of

alternative outcomes based on a likely range of conditions or different assumptions. Data that were considered, but then excluded from the analysis, need to be identified and an explanation provided for their exclusion. *Scientific conclusions must be accompanied by a description of the data, the data collection methods, the analytical methods, and the assumptions leading to the conclusion. A conclusion can qualify as scientific when the reader has sufficient information in the document to repeat the methods and possibly come to the same conclusion.*

We do not suggest that standards can be broadly agreed upon and implemented for every nuance of our profession. We suggest that there are core aspects of our profession that possibly could be ascribed standards upon which most of us could agree are appropriate (Table 1). We expect that a set of standards will improve our profession by being available as reminders to wildlife biologists of the factors they need to consider, and by being available for anybody to judge the credibility of environmental documents, decisions, determinations, and claims made by wildlife biologists or others. With such a set of standards, a reviewer of documents or conclusions could readily describe what TWS would expect as foundation for a particular conclusion. Standards established by wildlife biologists could empower many people in forming opinions about conclusions regarding actions and impacts involving wildlife. It could also promote better adherence to relevant environmental laws, such as the Endangered Species Act, National Environmental Policy Act, California Environmental Quality Act, and California Endangered Species Act, and be used to assess the conclusions of EIRs, EISs, EAs, HCPs, court or other public declarations or testimonies (depositions), press releases, commissioned reports, progress reports, and even scientific reports.

By publicly establishing standards we, as professional wildlife biologists, can ensure our work products meet or exceed these standards. Knowing that a more clearly and generally agreed-upon set of standards exists, the analyst is more likely to be vigilant in applying these standards. We believe wildlife biologists will provide conclusions that are more sound and scientific by having the ability to systematically check whether they or their colleagues employed a widely agreed-upon set of standards when establishing the foundation or support documentation for their conclusions. Others within and outside our profession can readily identify if and when deviations from the standards occur. We believe our standards will foster sound stewardship, sound biological information, and scientific management. These standards are broadly applicable to conclusions that bear on the welfare of wildlife. However, those who use Table 1 to

criticize the foundation of others' conclusions should themselves be qualified to do so, and their credentials should accompany the critique.

IMPLEMENTING THE STANDARDS

When conclusions are made that grossly fall short of the standards of the wildlife biology profession, then professional colleagues, and even the Western Section itself, should use Table 1 to bring the shortfall to the attention of the interested parties. TWS-WS members could challenge an EIR in court by relying largely on the standards in Table 1. A judge could be convinced that the EIR is, in fact, not an informative document, which is a requirement for EIRs under CEQA. (Under CEQA law, "the court does not pass upon the correctness of the EIR's environmental conclusions, but only upon its sufficiency as an informative document" (County of Inyo v. City of Los Angeles (3rd Dist. 1977) 71 Cal. App. 3d 185, 189 [139 Cal. Repr. 396, 399]), meaning that any conclusion in the EIR can be considered valid by the courts so long as foundation for the conclusion is summarized in the EIR.) Conversely, those who prepared an EIR could attach Table 1, along with all the items checked-off, thereby demonstrating the extra step they took to prepare the EIR. In either case, an explanation of the items checked should be provided so that careless use of Table 1 can be avoided.

These standards, or some later version of them, also could be codified into standard practice by case law, or by revisions to environmental laws or to the operations manuals of government agencies. However these standards might be used, they are a statement of what we currently believe is appropriate. Indeed, we expect the standards to change as our knowledge, methods, and technologies improve.

Biologists could also use Table 1 to support their arguments for additional time and funding to arrive at scientifically sound conclusions. The public could better assess what we are able and unable to do, given our funding and time constraints. These standards can also benefit our profession by inspiring debate over particular standards or their descriptions, ultimately leading to an improved set of standards.

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FORUM

Using the Best Scientific Data for Endangered
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ABSTRACT / The Endangered Species Act calls for the use of the best scientific data in conserving threatened or endangered species and the ecosystems upon which they depend. The language of this act and other environmental laws and relevant judicial rulings also require assessments based on modern scientific standards that are routinely applied in ecological research. Particularly for the Endangered Species Act, "take" decisions should be made only after the supporting documents provide: (1) designation of critical habitat based on use and availability methods; (2) risk as-

essment(s) for proposed take and other project impacts; (3) ecosystem assessment by trained ecosystem ecologists; (4) a description of an adaptive management program involving more than post hoc adjustments to problems in mitigation design; (5) a description of the proposed scientific monitoring along with thresholds for application of adaptive management; (6) uncertainty analysis along with estimates of species' abundance and project impacts; (7) nonselective, academic-quality referencing of data, methods, and theory supporting the conclusions; and (8) reviews of the assessment by independent scientists. These standards have been rarely applied to assessments of environmental take, due to lack of incentives for cooperation among academic scientists, environmental consultants, and the government regulatory agencies. Particularly important is requiring the type of independent review used by academic scientists. Such review would help ensure that take decisions are based on use of the appropriate scientific standards, thereby qualifying the supporting data as scientific and the best available, no matter how limited the data. Until these standards are applied prior to political trade-off and pragmatism, the environmental laws will continue to have little bearing on conservation.

Government and judicial chambers across the United States are rife with struggles between citizen groups, take permit applicants, and the multijurisdictional regulatory agencies responsible for implementation and enforcement of the Endangered Species Act (ESA) of 1973 [16 U.S.C. §§1531–1544 (1988)] and other environmental laws protecting biological species. The ESA is also at the center of debate over how it should be reauthorized by the US Congress. These struggles have often been complex and confusing. Implementation and enforcement of the ESA have been subjective and inconsistent (Taylor 1995, Gordon and others 1997), thereby leaving the interested parties bitter in its wake. ESA compliance issues have arisen frequently across the United States as human population and land-use changes have expanded during the last 25 years since the ESA was enacted. These latest land-use changes follow a

rapid global change in land-use cover and hydrology (Meyer and Turner 1992, Dynesius and Nilsson 1994) that have disturbed ecosystems worldwide (Hannah and others 1994), leaving many biological species vulnerable to extinction where areas with high levels of endemism are under anthropogenic pressure (Karr 1995, Dobson and others 1997).

Specific applications of the ESA include listings of species as threatened or endangered, development of recovery plans, biological or environmental assessments (EAs), and habitat conservation plans (HCPs). The HCP is becoming a popular ESA application and, along with other agreements, involves issuance of permits for incidental take. Environmental impact statements (EISs) are developed to comply with the National Environmental Policy Act (NEPA), and there are similar documents required by state governments. The environmental consulting industry has developed many of the EA, EIS, and HCP documents, and the Fish and Wildlife Service and the National Marine Fisheries Service have developed some as well (hereinafter referred to as the

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Services). Although there are federal guidelines for the ESA applications (US Departments of Interior and Commerce) (USDI and USDC 1996), the confusion and inconsistency has been impressive. In a thorough review of US Fish and Wildlife Service Reports to Congress on the Endangered and Threatened Species Recovery Program, Gordon and others (1997) concluded recently that conservation under the ESA has failed to recover species due to: (1) subjective listing standards with poor use of taxonomic standards; (2) disproportionate application of funding across the United States; (3) use of unreliable in-house reporting and monitoring methods; and (4) high incidence of "data errors," which were mistakes or inapplicable listings and reporting of recovery status. Beside these problems, failed conservation could also be due to misapplications of scientific data and conservation measures.

Except for listings and funding allocations, the struggles over ESA applications have centered on the scientific rationale for making any of the following conclusions: (1) whether the proposed project will significantly reduce the likelihood of survival and recovery in the wild; (2) the extent or magnitude of the impacts; and (3) the type and extent of impact avoidance or mitigation to be implemented. The scientific rationale for these conclusions largely determines ESA effectiveness and credibility. This rationale also bears on the integrity of modern environmental science, due process under the law, and the public trust.

Pragmatism and political trade-off should follow, rather than precede, the use of the best scientific information in making take decisions. According to Gordon and others (1997), "The problems within the ESA are profound and require drastic revisions or wholesale replacement to create an endangered species program that will result in real conservation achievements." However, we suggest that the conservation failures have more to do with the Services than with the ESA. The intent of the ESA is clear enough, although its translation into modern scientific standards and enforceable statutes requires consideration by trained environmental scientists.

The purpose of our paper is to describe the modern scientific standards that are applicable and should be implemented to biological assessments prior to, and following, the issuance of take permits. These are the standards that would apply to implement the intent of the ESA using current scientific principles and methods. We specifically do not address scientific standards applicable to listings, recovery plans, or specific mitigation measures. The appropriate standards for implementing each of these aspects of the ESA should be

proposed and debated in the scientific literature and then implemented by the Services. For example, the National Research Council (NRC 1995), Carroll and others (1996), Kennedy (1997), and Smallwood (1998) provided initial scientific discussions of listing standards, and the NRC (1995) and Gordon and others (1997) did so for recovery standards. The standards we present are applicable to other environmental compliance issues, although regulations vary in specific wording. No matter how politics influences the language of these environmental laws, the best scientific data should be used for assessing impacts and mitigation effectiveness (NRC 1995).

Science Applied to the ESA

The intent of the ESA was amply demonstrated in several of its phrases. For example, the direct and incidental taking of threatened and endangered species "shall not appreciably reduce the likelihood of their survival and recovery in the wild" [Sections 7(a)(2) and 10(a)(2)(B)]. Federal agencies are supposed to demonstrate that their actions and consultations are "not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species" [Section 7(a)(2)]. To this end, "each agency shall use the best scientific and commercial data available" [Section 7(a)(2)]. Furthermore, the take permit applicant and the Services need to assess the proposed project's "impact which will likely result from such taking" [Section 10(a)(2)(A)(i)]. The risk assessments must not be limited to the defined project area, because Section 4(a)(3)(A) of the ESA requires the designation of critical habitat, which can include all specific areas "on which are found those physical or biological features essential to the conservation of the species" at the time of listing [Section 3(5)(A)]. One purpose of the ESA is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" [Section 2(b)]. Therefore, the intent of the ESA is to assess the likely project impact on the species by including the larger spatial and systemic context in which the species exists, and this should include a cumulative impact assessment.

ESA Sections 2(c)(1) and 7(a)(1) declared Congressional policy to be that all federal agencies use their authorities to conserve listed species. The ESA defined conservation as the use of all methods and procedures necessary to recover listed species, including use of "scientific resources management such as research, census . . ." [Section 3(3)]. Science was put at the core

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of the ESA statutory scheme. Science is a structured process by which humans gain understanding of nature (Popper 1969, Kuhn 1970). It includes testing hypotheses in an attempt to refute conjectures generated by previous experience and theory, and it includes a methodology for dealing with uncertainty. Given the structure of science, scientific assessments of impacts and risks due to proposed take also require scientific monitoring plans integrated with adaptive management strategies.

Implementing the ESA's intent of using the best scientific data requires several other standards, as well as a basic understanding and use of the scientific method. Scientific data are meaningless without proper use and interpretation by scientists. The data need scientific evaluation of their limitations and uncertainties, and their interpretation requires existing theory and method. Congress certainly did not intend that ESA decisions should use bad science to interpret data. Therefore, the best scientific data are those codified into scientific theory and based on use of the best scientific methods.

Scientific Standards for ESA Compliance

To meet the intended use of science in the ESA, take decisions should be made only after designating critical habitat, assessing risks for populations and their supporting ecosystems, detailing a scientifically founded adaptive management plan with an integrated monitoring program, conducting uncertainty analyses, properly referencing source data and analytical methods, and undergoing independent scientific review. The NRC (1995) also recommended risk assessment and uncertainty analysis, but their recommendations differed from ours in several ways. For example, they recommended designation of "survival habitat" as a stop-gap measure to designating critical habitat; they did not explicitly recommend adaptive management and did not consider source referencing and independent scientific review as qualifiers for using the best scientific data. In the following section, we will describe our eight recommended standards.

Identify and Designate Critical Habitat

Habitats are defined by the species' use of the environment, and therefore use and availability of environmental resources must be considered (Smallwood 1993, Morrison and others 1998). Vegetation and soil types are not habitat unless they can be directly identified as resources required by a particular species (Hall and others 1997). Resource patch structure varies

among spatial scales of observation (Kotler and Wiens 1990, Levin 1992), so spatial scale of observation can influence interpretation of habitat, because as the scale of observation changes, our measures of availability and use likely also change (Smallwood 1995, Riltner and others 1997). Therefore, multiple spatial and temporal scales need consideration for identifying and designating critical habitat.

Critical habitat was not defined explicitly in the ESA, although examples were provided (also see USDI and USDC 1996). Bogert (1994) interpreted ESA's critical habitat as the geographic area occupied by a species at the time of its listing, as well as areas outside the range that are essential to the conservation of the species. However, this critical habitat definition erroneously assumes species are statically distributed only at places where their populations can persist. The NRC (1995) corrected this misinterpretation of critical habitat, but they misused the terms "habitat" and "critical habitat" as consisting of particular vegetation types. Hall and others (1997) clarified the situation by defining critical habitat as areas that can provide resources for population persistence, consistent with the concept of high-quality habitat. Therefore, not only does a species' preference for available environmental elements require quantification, but reproductive success also needs to be linked to the preferred environmental elements before they are designated critical habitat. Most listed species lack scientifically founded critical habitat designations (US NRC 1995, Gordon and others 1997).

Knowledge of habitat for legally rare species is usually limited to primarily qualitative natural history observations. Such observations are indeed important, but inadequate for reducing the uncertainty about which condition is preferable among those claimed by multiple naturalists. The strongest scientific foundation for designating critical habitat is the scientific field experiment. Such experiments can be mensurative or manipulative (sensu Hurlbert 1984). Mensurative experiments involve counts of species' individuals or their signs along with each environmental resource thought to possibly comprise habitat. These counts are then related to the availability of environmental elements that might be habitat. Manipulative experiments involve replication and interspersal of multiple sets of environmental conditions that possibly serve as habitat. Such experiments can help reduce the uncertainty in critical habitat designations.

Smallwood and Morrison (1997) synthesized opinions from multiple naturalists to design an experiment for the giant garter snake (*Thamnophis gigas*), which is listed by the US Fish and Wildlife Service as threatened and which is proposed to be taken incidentally due to

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the development of the Natomas Basin, near Sacramento, California (US Fish and Wildlife Service 1997a). Nearly all natural history observations of the giant garter snake were made along the water edge, usually along narrow channels (ditches) and the banks of sloughs. However, these observations varied in bank slope, vegetative cover and composition along banks, flow rates, and water depth. In our experiment, we proposed that water channels be arranged hierarchically for water depth management and in parallel for replicating and interspersing treatments representing the range of habitat conditions believed by naturalists to be important for the snake. This and other types of appropriately and rigorously designed experiments can be used by the Services as one tool to develop and implement recovery plans or mitigation designs that need to reduce high uncertainty of success, as per the adaptive management approach to be described later.

Attempting to demonstrate rigor in habitat designation, many geographic information system (GIS) maps of vegetation types and other environmental variables have been presented to the public in support of HCPs. These maps usually look impressive but are very often flawed with inappropriate categorization (e.g., "habitat types" rather than vegetation complexes), data aggregation at scales too coarse for the intended analysis, inaccuracy, and inappropriately hard ecological boundaries (Rejesky 1993). It is also important not to carelessly replace the terms "vegetation" and "vegetation type" with "habitat" or "habitat type," because such replacement is inappropriate (Hall and others 1997), and the wording has ramifications for land-use decisions and policy (Rejesky 1993). Thus, the "habitat" depicted in a GIS map may not be the critical habitat that still needs to be identified and designated for ESA compliance.

Conduct Risk Assessment

Population viability analysis (PVA) is a relevant risk assessment method for environmental documents such as EISs and HCPs. PVA is a flexible approach to estimating time to extinction, probability of extinction by a given date or period of time, probability of persistence, and minimum viable population size for persistence (Boyce 1992). All of these estimates have corresponding error rates or uncertainty ranges, because their parameter values are founded on assumptions with implicit uncertainty. The negative version of PVA is population vulnerability analysis, which is more appropriate for assessing whether or not mitigation will comply with the ESA recovery standard. Until 1992, PVA had been applied to only 35 species (Boyce 1992); it has been applied numerous times since then. It is

growing in acceptance among ecologists and conservation biologists and is intended for use with rare, vulnerable species. Connell and Sousa (1983) recommended that the minimum area for population or community persistence be estimated, and Schonesald-Cox and Borchner (1991) furthered this recommendation by providing methodology to do so. Soulé (1991) recommended a viability analysis be performed for nature reserves. Gilpin (1996) recommended georeferencing the population data used in PVA. All these recommended variations of PVA would provide useful risk assessments, so long as the appropriate high-quality data are collected and used to build the models.

Environmental documents rarely make use of the necessary data for PVA, including estimates of abundance and abundance patterns through time and space, reproductive rates, survival rates, dispersal distances, and in some cases, genetic variability. Even quantitative impact assessments are rarely provided. Without use of these data, however, scientifically defensible PVAs are impossible, so the risk to survival and recovery of species due to project impacts would not be assessed using all the methods available to the Services, as per ESA Sections 2(c)(1) and 7(a)(1).

The PVA parameter values are especially relevant to assessing extinction risk in the face of declining habitat space for the listed species (Shaffer 1981). Based on the theoretical foundations of ecology and the tenets of conservation biology (MacArthur and Wilson 1967, Soulé and Wilcox 1980, Verner and others 1986), ecological space is one of the most important resources for all listed species. Habitat fragmentation, which is the physical restructuring of the landscape producing habitat patches of smaller average size and greater average separation (Wilcox and Murphy 1985), is the principal threat to species conservation. Without a full-scale PVA, to conclude that listed species are not in jeopardy of extinction due to the level of take proposed in many HCPs is to ignore scientific knowledge. Such conclusions are unscientific when made with no empirical evidence to support them and give the impression they were driven by some process other than environmental science. The existing uncertainty in the parameter values used for PVA will be exacerbated as ecological space and spatial contiguity are lost due to project take and cumulative impacts. Space and contiguity of habitat influence many aspects of species' natural history, population dynamics, genetics, as well as the impacts of environmental stochasticity (Wilcox and Murphy 1985, Morrison and others 1998).

Reduced habitat area due to project take can translate to reductions in species distributions and abundance within the planning area. Wide geographic distri-

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bution appears to be critical for the persistence of rare species (Goodman 1987), so reduced geographic ranges of rare species may contribute significantly to cumulative impacts. Without careful analysis of the nature of the reduction in habitat area, the planners would be prudent to assume, as a starting point, at least a proportional reduction in distribution and abundance along with reduction in habitat area. Time to extinction decreases with smaller spatial areas on which the population can occur (Schoener and Schoener 1983, Pimm and others 1988). That smaller populations are more vulnerable to extinction is fundamental to population viability analysis (Boyce 1992).

For PVA, estimating distribution and abundance of legally rare species must involve multiple spatial and temporal scales, the minimum spatial scale being the area encompassing a persistent, natural population or community, and the minimum temporal scale, typically spanning at least six years (Cyr 1997). Smaller spatial scales are unlikely to reveal spatial requirements. The largest scale considered should include the species' recent and current geographic range of distribution, so as to assess cumulative impacts and collateral take (losses). Estimates of population size and project impact due to foreseeable take must represent at least several generations of each species (for estimates of variance) and must account for dynamic spatial and temporal patterns (Hunsaker and others 1990). Populations are typically clustered in space (den Boer 1981, Greig-Smith 1983, Hanski 1994), and these clusters tend to shift locations through time (Taylor and Taylor 1979). Furthermore, population density estimates decline with increasing spatial extent of study area, thereby requiring the relation of density with spatial scale (Blackburn and Gaston 1996, Smallwood and Schone-wald 1996). Extrapolating local population density estimates to larger geographic areas is inappropriate without adjusting the estimate down to include the inevitable space that is devoid of the species. When lacking data from sufficiently large spatial and temporal scales, PVA parameter values should be very conservative.

In developing data for an ESA take decision, it is important to consider the cumulative impacts on the species due to other land conversion and water diversion projects, both those in the planning stages and those likely to arise as a normal outgrowth of economic development. To this end, an assessment must be made of projected land conversions in the species' range. Projections should be made of growth in population and development, as well as relevant demographic shifts. Specific plans of industry and government need also be addressed, and long-range transportation and energy plans should be given high priority. Assessing

cumulative impacts for ESA take decisions should be done much more rigorously and defensibly than is typical of its use in many National Environmental Policy Act applications (McCold and Holman 1995).

At a minimum, the cumulative impact assessment should extend over the amortized life of the project or any permit duration. An assessment should also be made of how long facilities of the type under consideration generally last. In the case of a housing development, the projected lifetime is likely to be indefinite. Thus, in such a case, a cumulative impact assessment should extend to such a time that all unprotected land is converted due to development or resource extraction.

Among the 19 HCPs we have examined, we have not yet seen a risk assessment for any of the species to be permitted for incidental take. Except for the San Bruno Mountain Area HCP (Thomas Reid Associates 1982, Palo Alto, California), population estimates with error ranges and other population parameters relevant to a risk assessment have not been provided in the HCPs we examined. Once the methodological steps are routinely applied, PVAs should escape the common perception of the Services that PVAs unfairly delay or stop projects (US Fish and Wildlife Service 1997b).

Conduct Ecosystem Assessment

If the Services are to conserve the ecosystem upon which listed species depend, then they must describe and assess ecosystems for project impacts. Drawing from multiple ecosystem definitions (O'Neill and others 1986, Blew 1996, Fauth 1997), we consider an ecosystem to be an open system with inputs, outputs, and recycling of energy and material resources through hierarchically organized biological interactions. Such a conceived system need not have geographic boundaries, but research and management goals often require them. The interactions between organisms and their environment that are key to any definition of an ecosystem require landscape structures that facilitate the movement of both raw and embodied energy and material resources through environmental media such as soil, water, and the atmosphere (Turner 1989). Conservation of an ecosystem requires protection of the landscape structure, its natural disturbance regime, the endemic biological community, and the levels of resource inputs that maintain its functionality (Ricklefs and others 1984, Holling 1986). Its conservation also requires an effort to avoid disruption of its interactions and reductions of its resource assimilation efficiencies due to intrusion by invasive species, chemical pollutants, and physical barriers placed on streams and terrestrial landscapes (Rapport and others 1985).

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According to Karr (1994), ecosystem integrity is jeopardized by reduced capacity of the landscape to support biological communities with a species composition and organization similar to the region under natural hydrologic processes. As terrestrial landscapes are altered by the expansion of human activities, some native species lose their capacity to move across the landscape and interact, which is critical for maintaining ecosystem integrity (Karr 1994). Fragmented habitats also fragment species' distribution patterns, and in combination with the resources provided by human activities, fragmentation provides opportunities for exotic species to invade (Smallwood 1994). Exotic species interact with local species and possibly dilute their resource assimilation rates. ESA documents such as HCPs will have made no contribution to conserving ecosystems upon which listed species depend without addressing habitat fragmentation and the intrusive effects of invasive species.

Conserving ecosystems is possible when ESA documents such as HCPs include assessments of the principal environmental media in which raw and embodied resources flow, are stored, and cycle. These principal media are water and soil (Ricklefs and others 1984). The character of soil depends fundamentally on the regional geology, topography, and the past and current hydrology influencing inundation and sediment deposition patterns. The spatial patterns of these media and their associated biota determine terrestrial landscape structure, its change, and its function (Turner 1989). Through time, assemblages of biological species have adapted to the character and structure of these media on the landscape, such as riparian forests along major streams, vernal pools in seasonally inundated patches of clay soils, and grasslands on loam and sandy soils lacking seasonal inundation. Complex symbiotic relationships have developed among species that enhance the chemical characteristics of water and soil media so as to increase assimilation efficiencies and productivity (Maser and others 1978, Ricklefs and others 1984). Conserving ecosystems requires the conservation of their functional landscape structures and healthy water and soil conditions, especially those most often associated with rarity and listed species. Ecosystem conservation can be guided by known system stability principles (Watt and Craig 1986).

By requiring conservation of the supporting ecosystem of listed species, the intent of the ESA was clearly to leave the Services with no room for developing narrowly defined statutes to justify actions that would in any way jeopardize the goal of recovery. Like critical habitat designation, ecosystem assessments must be made at multiple scales because ecosystems are conceptually

organized hierarchically (Klijn and Udo de Haes 1994) and are best examined from the top-down of the hierarchy (O'Neill and others 1986, Bedford and Preston 1988). Ecosystems also are not predisposed to convenient description within project boundaries, even though they are arbitrary assignments of the environmental elements into conceptual compartments. Assessments of project impact on ecosystem function will likely differ according to whether they are done at the scale of the project area or the region.

The EIP Associates' (1996) ecosystem assessment for the Yolo County HCP consisted of a brief reference to Yolo County's "functioning ecosystem" (p. 6-1). However, although the term ecosystem was frequently used in the Yolo County and Natomas Basin HCPs (EIP Associates 1996, US Fish and Wildlife Service 1997a), neither HCP was based on any form of ecosystem assessment. Neither HCP assessed the influences of stream barriers, agricultural diversions, stream channelization, riparian vegetation removal from both within and outside the channels, and loading of agricultural chemicals and nutrients. Furthermore, of the 22 animal species to be permitted for take under the Yolo County HCP, and of the 18 to be permitted for take under the Natomas Basin HCP, 10 each rely on burrowing rodents as prey resources or on their burrows as habitat. These rodents, principally pocket gophers (*Thomomys talpae*) and ground squirrels (*Spermophilus beecheyi*), are now restricted to remnant patches of soils suitable for their burrowing, which are loams and sands lacking seasonal inundation and at the thin margins of agriculture. Despite knowing these relationships, and despite the availability of spatially referenced soils data, this part of the ecosystem was not assessed in any way (EIP Associates 1996, US Fish and Wildlife Service 1997a).

A trend among HCPs has been to represent the status of multiple species and their habitats by a single "umbrella," "indicator," "flagship," or "keystone" species (the latter two representations being more implicit). For example, the status and take levels of 29 rare species were represented by the status of Swainson's hawk (*Buteo swainsoni*) foraging habitat in the Yolo County HCP (EIP Associates 1996). The status and take levels of 32 species were represented by the status of the giant garter snake in the Natomas Basin HCP (US Fish and Wildlife Service (1997a). The status and take levels of 85 species were represented by the status of the coastal California gnatcatcher (*Icthyophila californica californica*) in the San Diego Multi-species Conservation Program (Fed Reg. 62[60]:14938-41). Scientific foundation is lacking for these and many other representations of multiple species and their habitats by a single species or a portion of its habitat (Morrison and others 1998,

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Simberloff 1998). Such scientifically unfounded representations are contrary to using the best scientific data, pursuant to the ESA.

Assessments of ecosystem condition and likely project impacts require scientists who are trained in ecological theory and method with an emphasis on ecosystems. Assessments cannot be made without carefully integrating and aggregating the detail in many environmental elements comprising the ecosystem. Ecosystems are more reliably assessed using indicators of landscape structures influencing biological and physical transport and storage of material and energy (O'Neill and others 1986, Bedford and Preston 1988). Ecosystem assessments can and should be made using carefully chosen and designed ecological indicators (Cairns and McCormick 1992, O'Neill and others 1994) based on known relationships between anthropogenic pressures and their impacts (Karr and others 1986).

Modern risk assessments of ecosystem function require use of indicators expressing sensitivity, vulnerability, and impact (Rapport and others 1985, USDA 1994). Sensitivity is the predisposition of the system to degrade due to changes in the conditions. Vulnerability is the likelihood of degradation when particular anthropogenic activities pressure the sensitive parts of the system. Impact is the consequence of the pressure to the system. Assessments of the risk of project impacts on ecosystem function are now possible, at least in part, using GIS and landscape ecology (Turner 1988, Graham and others 1991, Bactaglin and Goolsby 1995), and the ecosystem indicators approach (Bedford and Preston 1988, Cairns and McCormick 1992, Rotmans and others 1994, Schulze and others 1994). Using this approach, sensitive and vulnerable parts of the ecosystem can be identified and mapped along with the pressures (Smallwood and others 1998), and these maps can be compared to maps of realized impacts for validation (Karr and others 1986, Zhang and others 1998). These modern assessment methods should be used to conserve the ecosystems upon which the listed and other species depend. Just stating that the ecosystem will be conserved by reserve establishment or other types of mitigation is inadequate for decision makers.

Conduct Adaptive Management

Adaptive resource management (ARM) is an approach to management that acknowledges uncertainty and the need to learn (Holling 1978, Walters 1986). The term "adaptive" refers to managers learning about systems as they attempt to manage them. Recently, Lancia and others (1996) described the core failures of managers to properly implement ARM. They noted that managers typically base their decisions on intuition and

experience and contend that enough is known to proceed with management. To make matters worse, when the need for quick action is perceived, solutions may be implemented in ways that make it difficult to evaluate what was done (e.g., no or inadequate replication and controls). ARM offers a potential solution to these dilemmas by encouraging research and management to be conducted simultaneously as one coordinated effort. ARM is not equivalent, however, to trial-and-error approaches that recognize error and then apply some post hoc remedial action. ARM requires that sound management experiments are planned prior to implementation of a plan. ARM then permits administrators and managers to hedge their bets because they can consider several different models simultaneously. Costly problems, unforeseen when management is initiated, may be discovered. Thus, higher short-term costs should be recouped over the long term.

Adaptive management incorporates the ecological indicators approach, described earlier under ecosystem assessments, as one of multiple steps towards achieving a range of alternative objectives (Holling 1978, Walters 1986). The first step involves the formulation of a clear set of alternative objectives, and step 2 involves designing effective policies to achieve them. Adaptive management then involves the generation of relevant indicators for decision-making; evaluation of each policy in terms of the spatiotemporal behavior of the indicators; synthesis of indicator information for screening of the most important policies; and communication among the staff, decision-makers, and citizens for policy formulation. According to Haney and Power (1996), the essential steps in any project developed around adaptive resources management are to: (1) compile all existing data, (2) develop project goals, (3) develop working hypotheses, (4) implement the prescriptions, (5) monitor results, (6) evaluate and test monitoring data, and (7) return to step #3. Either way, adaptive management is a structured process designed to incorporate learning about the managed resources through management actions that enable hypothesis testing, much like the description provided in the HCP Guidelines (USD1 and USDC 1996).

Halbert (1993, p. 262) noted that the original intent of ARM was to apply "experimentation to the design and implementation of natural resource and environmental management policy." ARM is not an excuse to follow a trial-and-error or wait-and-see approach. It requires a rigorous, biologically and statistically valid approach. McLain and Lee (1996) noted that an essential element of ARM was development of a model to simulate key relationships among components of the system being managed. This model is used to test a

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range of hypotheses and identify those policy options likely to achieve management objectives.

Adaptive management was proposed for the Natomas Basin HCP in a manner recently defended by the US Fish and Wildlife Service as "typical" (W. Lehman, personal communication, 16 October 1997). According to the US Fish and Wildlife Service (1997a), "adaptive management is a process that allows conservation programs and land use decisions under a given plan to be adopted through time." This statement shows that the Service is violating the most basic tenet of the adaptive management concept. As reviewed above, adaptive management is not a trial-and-error process that, in the words of the Service, can simply be adopted through time. The Natomas Basin HCP did not describe an operating model of ecosystem functioning. It did not develop testable hypotheses or describe specific tests, experiments, or other designed evaluations of the proposed mitigation. It also did not describe a quantitative monitoring plan. The only description of how the HCP could be modified states that the controlling authorities (i.e., the Service) can submit proposed changes, and the "affected permittees" may review the changes. This is a post hoc, trial-and-error process that uses no conceptual model and tests no hypotheses. The Natomas Basin HCP describes a single mitigation strategy developed around rice fields and "managed marsh." The HCP notes that, "Apparently, giant garter snakes can survive in this artificial ecosystem." The HCP goes on to state, "Although it is unproven, there is good reason to believe that constructed marshes and their supporting delivery canal and ditch/drain infrastructure can support large populations." No alternative hypotheses were proposed for testing in case this supposition was false. The failure to provide alternatives for testing is both scientifically unsound and in violation of adaptive management tenets.

Following stakeholder meetings, adaptive management should proceed with the design of replicated and interspersed treatments, including controls, at a meaningful, large scale (Lee 1991, Simberloff 1998). As hypotheses are tested, the results are supposed to be transmitted to the involved policy-makers and other stakeholders so that the most appropriate of multiple objectives can be targeted for new management prescriptions. However, even the best-known attempts at implementing adaptive management have suffered fundamental shortfalls (McLain and Lee 1996). The regulatory agencies have been unable to respond to new information produced by scientific hypothesis testing, sometimes due to: (1) poor coordination between the agencies and stakeholders, (2) lack of consistent funding or personnel involvement throughout the adaptive manage-

ment process, (3) aversion of agency staff to risking political consequences of failed experiments, and (4) greater agency focus on scientific analysis than on differing viewpoints on how the ecosystem ought to be managed (McLain and Lee 1996). Adaptive management is encouraging in its use of experimentation and monitoring to reduce uncertainty in system behavior under management (Haney and Power 1996, Lancia and others 1996), but the approach requires careful application and changes in how regulatory agencies are involved in the process.

Conduct Monitoring for Impacts

Monitoring for rare species is difficult and requires a detailed, rigorous design. Sampling to detect trends in rare animal species requires special sampling designs and analytical techniques (Gerrodette 1987, Green and Young 1993). Nevertheless, these methods are now well published and available in scientifically reviewed books (Heyer and others 1993, Sutherland 1996, Wilson and others 1996, Morrison and others 1998).

A broad range of conceivable take, mitigation, and conservation impacts need to be considered, particularly for applicants seeking take of multiple listed species. However, the conceivable impacts do not always match the realized impacts. Therefore, adequate, scientific monitoring needs to be implemented along with an adaptive management strategy that details adaptive management practices to be implemented when monitoring reveals particular impacts. Monitoring of legally rare species and functionally important ecosystem conditions (indicators) needs to be conducted at a spatial scale large enough to detect meaningful patterns of change through time. Meaningful patterns of change will be those informing of likely impact. The monitoring also should be adequate for conducting power analysis (Gerrodette 1987, Morrison and others 1998). Monitoring for impacts should rely more on preventing type II errors than type I errors (Shrader-Frechette and McCoy 1992). Type I errors can lead to unnecessary, but harmless, management actions, whereas type II errors can result in no action to halt the decline of a species or its habitat. Concluding lack of statistical significance based on, for example, a >5% chance of committing a type I error, does not translate into lack of impact.

We have yet to see an adequate monitoring program in any of the HCPs we have examined, even though monitoring measures were fairly well described in the HCP Guidelines (USDI and USDC 1996). Monitoring for mitigation effectiveness typically involves monitoring of the habitat area developed relative to the habitat area conserved, thereby meeting the so-called minimum statutory requirements. Habitat area is an inad-

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equale representation of species population status, although it is important. Scientific monitoring for impacts due to implementation of HCPs and agreements should be described in the planning and take authorization documents. Appropriate goals and standards should be detailed for implementation of adaptive resources management practices.

Conduct Uncertainty Analyses

To be scientific, data must contain an assessment of their uncertainty. If one uses data to develop a PVA or other quantitative combination of data, uncertainties should be propagated through to the final calculation of interest. Uncertainty distributions can be assigned to each parameter and the resulting output distribution computed. Monte Carlo techniques can be useful for this purpose (US EPA 1996). When data in the literature on a parameter are limited, risk analysts normally fit the data to an uncertainty distribution with long tails, such as a log-normal distribution, to avoid excluding low and high values from the analysis.

Sometimes professional judgment is necessary to fill data gaps or extrapolate data to the current situation. It is inadequate to hide professional judgment in phrases such as, "it is believed that." These terms reflect an implicit, subjective probability assessment on the part of the analysts. Analysts should quantify the confidence and uncertainty range to be attached to these subjective probabilities. The use of expert judgments and subjective probability has been studied at length in human risk assessment (Cooke 1991, Morgan and Henrion 1990, US EPA 1996) and in developing clinical trials in medicine (Berry and Stangl 1996). Both the methodology and lessons learned from these fields should be applied to ESA analyses. Some of these lessons are: (1) Expert assessments can suffer from clustering and poor calibration; (2) an elicitation from a set of experts is to be preferred to the judgment of an individual; (3) expert views should be used to develop a broad subjective probability distribution for uncertain parameters, rather than be used as point data; (4) experts tend to be overconfident in predicting events at low probability; and (5) policy pressures can influence the judgment of experts or lead to their assessments being ignored (Cooke 1991).

If the standards for ESA analysis are to be raised as we recommend, then it is likely, based on analogy with the development of the field of human risk assessment (NRC 1995), that quantitative uncertainty analysis will one day become standard in the record for ESA decisions. Such a development will present decision makers with a new question, namely how confident should they be in the scientific data before reaching a conclusion

under the ESA. Should they be protecting species with 10%, 50%, 95%, or 99% confidence? The ESA gives no guidance on this issue. Agency staff will have to use their own judgment until such time as the courts, Congress, or environmental scientists give some definitive guidance.

The confidence limit should depend on the reversibility of the take decision. If many opportunities exist for adaptive management, then it seems reasonable to tolerate a lower confidence level. Confidence levels beyond 95% are not likely to be reliable based on experience in calibrating among experts (Cooke 1991). Thus, it seems reasonable to take 95% as the decision break-point. Unless a species can be protected at a 95% confidence level, a take permit or other request under the ESA should be denied. Such a standard would doom 1 in 20 species to extinction, so should only be implemented in cases where adaptive management is a realistic possibility.

For tort litigation regarding toxins in the United States, uncertainty analysis is required for the admissibility of scientific expert testimony, which also cannot consist of unsubstantiated speculation (William Daubert and others, *Petitioners v. Merrell Dow Pharmaceuticals, Inc.*, No. 92-102, Supreme Court of the United States). Although it remains to be seen whether the Daubert decision applies to ESA compliance issues, its requirements are consistent with the ESA intent of using the best scientific data. Scientific testimony in ESA documentation needs to be founded on the best scientific principles and methods, as described earlier, and sources and magnitudes of uncertainty need clear description.

Uncertainty analysis should be routinely applied to critical habitat designation, to PVA for assessing risks to survival and recovery, to ecosystem assessments, and to monitoring results for use in adaptive resources management. In assessing habitat and ecosystem conditions, the spatial data in GIS maps need to be analyzed for error rates at least in part by conducting ground-truth surveys (verification analysis) and iterative reassignment of derived values per land unit (sensitivity analysis). Using modern research methods, an accuracy assessment with error rates can be applied to predicted species' ranges based on habitat designations and vegetation and landform maps, thereby meeting ESA requirements, biological reality, and US court standards. Uncertainty in the estimates of project and cumulative impacts can then be characterized and reduced using simulations.

Error rates should accompany PVAs, as well as the parameter value estimates such as population abundance, reproductive rates, and dispersal distances. These

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error rates must be attributed to sources such as variability in the data (uncertainty analysis) and measurement error. The same is needed of the indicators used in ecosystem risk assessments, and it has already been demonstrated using the index of biotic integrity for assessing stream resources (Fore and others 1994). An honest description of all the sources of uncertainty and model limitations must be represented (Rejesky 1993). Uncertainty ranges will sometimes require expert guesses, but when done this way, the rationale should be provided for the ranges provided. Using modern scientific standards, a PVA can be accomplished to satisfy the level of assessment rigor needed to qualify it as the best scientific data, pursuant to the ESA and justified by the stakes at issue.

Improve Referencing

To comply with the ESA's intent of using the best scientific data, referencing the sources of scientifically based conclusions must always be included in planning and take authorization documents, whether these documents were prepared by environmental consultants or the Service's Section 10 support staff biologists. Document writers are not being scientific when they use phrases such as "it is believed that," without any reference to the source of such belief. It is believable only when the source of the belief is provided along with an uncertainty range or confidence interval. Referencing will be more scientifically defensible and useful when the following standards are met: (1) preference is given to empirically based reports, reviews of empirical reports, and scientific principles; (2) balanced or comprehensive use of data analyses, scientific ideas, and anecdotal evidence supporting different sides of an argument, rather than tactical, selective referencing; and (3) accurate representation of referenced scientific research reports or published opinions. Standard protocols for referencing in scientific document preparation are described in numerous books, papers, and scientific journal guidelines to authors.

As an example of improper referencing, the US Fish and Wildlife Service (1997a) recently claimed land cultivated for rice also serves as important habitat for the giant garter snake. In their Natomas Basin HCP, they proposed mitigating for development of 7088 ha of habitat by conserving 3544 ha with 75% maintained in rice production and 25% constructed into open water marsh (US Fish and Wildlife Service 1997a). However, the HCP contained no references to data or previous research demonstrating that rice serves as habitat for the giant garter snake. When asked to supply their annotated bibliography of source documents that led to

designating rice as important habitat of the giant garter snake, the Service produced a bibliography of nine reports. However, three of the referenced reports were focused on taxonomy, and five of the remaining six did not identify rice as giant garter snake habitat in any way. One unpublished report speculated that rice may be important for newborn snakes, but snake observations in rice were not reported. Not only did the Service lack quantitative evidence in designating rice as habitat for the giant garter snake, but their supporting bibliography was inappropriate.

Until proper referencing has been recognized to qualify scientific and commercial data as the best available, we think that planning and mitigation for take of legally rare species will be unlikely to comply with the intent of the ESA.

Conduct Independent Scientific Review

Scientific research results are usually subjected to peer review. If not, then they are published in what scientists refer to as the "gray literature." Scientists find value in gray literature where expedience in publication is useful or where the author is targeting a select audience. However, scientists usually prefer to rely on peer-reviewed research results for building theory. Some scientific journals require reference only to peer-reviewed research results. Peer review is an important quality of scientific research that keeps the process credible (Woolf 1981, Heath 1989) and effective.

Because the ESA requires use of the best scientific data in biological assessments and HCPs, independent scientific review should be a standard step preceding the issuance of any take permit. Public review periods do not constitute independent scientific review, just as scientists do not obtain independent peer review by making their draft manuscripts available to the public. Rather, scientists solicit peer review, and usually the process is administered by professional editors. Without independent review, modern science cannot work. If this academic peer review process is slower than pragmatism will tolerate, then independent scientific review can be obtained in other ways. For example, although not yet in existence, professional editors of environmental assessment documents could designate reviewers in advance of the assessments and their documentation. Using this approach, the consultants or the Services support staff biologists would also know in advance that their work is going to be reviewed, which by itself would ensure better quality work.

Independent scientific review would greatly improve the public's confidence in assessments and HCPs developed by environmental consultants, who usually are

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hired by the take-permit applicant. The environmental consultants have a vested interest in pleasing the take-permit applicant, so these consultants are vulnerable to bias. The Services and local government agency biologists should not serve as independent scientific reviewers, because they must issue the permits and oversee the plan's implementation—they are not independent from the projects under consideration, and could conceivably be biased. By implementing independent scientific review, the process would become more open and consistent with scientific and democratic ideals.

The need for independent scientific review was made all too clear by the reviews of the Yolo County HCP (EIP Associates 1996), which were solicited from scientists at the University of California at Davis, and summarized in a paper published in the journal *Science* (Shilling 1997). Just as the HCP appeared close to approval by all the city governments in the county, Shilling asked some of his colleagues at UC Davis to review the scientific foundations of the Final Draft Yolo County HCP document. All 12 of these scientists concluded that the science was flawed and the HCP should not be approved.

Independent scientific review should be standard and mandatory of HCPs and other biological assessments used to justify issuance of take-permits. With so much at stake in the government's issuance of take permits, the supporting science is in greater need of independent review than is academic science. Not only are biodiversity and ecosystem functionality at stake, but also legal integrity, allocation of public funds, the public trust, and the integrity of the environmental sciences. Environmental consultants and the Services' support staff biologists should not only be required to obtain independent scientific review, but they also should be expected to eventually publish their assessments in professional, scientist-reviewed outlets (NRC 1986). Making such reviewed publications routine would help prevent errors and scientific fraud in its several forms (Woolf 1981, Chubin 1985). Sufficient detail of the research should be published to facilitate replication of the research (Chubin 1985), and raw data should be kept available for independent scientific review. Perhaps a clearinghouse of HCPs and supporting data would provide the openness needed for the process to work properly. Such a clearinghouse and the cost of the reviews should be funded by the take-permit applicants, much as scientists fund their own professional journals. These reviews and their availability in a clearinghouse would: (1) promote economic efficiency by serving as templates for future assessments, and (2) help establish a track record for the consultants.

Why are Scientific Standards Missing from ESA Take Decisions?

Environmental consultants often lack incentives to apply scientific standards to their biological assessments of project impacts. Their employers are often the developers who want to reduce or obviate the regulatory requirements of the ESA. The scientific standards required for ESA compliance are the project barriers that take permit applicants want their environmental consultants to overcome. Therefore, take-permit applicants are more likely to seek repeat business with environmental consultants who bring low scientific standards to their biological assessments or who have particular biases that suit developers or the resource-extraction industries. Additionally, independent scientific review is not required by the Services or by other government agencies, even though the ESA requires use of the best scientific information.

By raising the standards for everyone in the environmental consulting industry to the appropriate levels described herein, this industry will probably get the job done properly and at a profit. The cost to the developers will appear higher at first, but the increased certainty in assessing project impacts and mitigation effectiveness will, in the long run, save everyone time and money. Projects that have a weak scientific base will likely be terminated early, but that is indeed the intention of the ESA.

Academic scientists are usually not engaged in ESA compliance projects or evaluations of agency policies because such activities are unlikely to provide funding or research results needed by academics for publication and career advancement. In our experience, when academics are involved in biological assessments, they are usually invited only to lend post-facto or pseudocredibility to the assessments, and they are not the lead on the contract. They are rarely involved in overall assessments of the project or its environmental documentation. Academic scientists are too busy conducting the scientific investigations that form the basis for decision-making. However, some of these scientists are unaware of the standards to which environmental consultants and the Services are held. They are also unaware of the uses that these consultants often make of scientific research results in addressing ESA compliance.

Conclusion

A recent review of the ESA has found it severely wanting in its ability to protect species and has called for a major overhaul (Gordon and others 1997). Perhaps a

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first, less drastic, step is for agency personnel to adhere to the intent of the ESA and raise the standards under which data are collected and interpreted. A major reason for the limitations of the ESA is failure to live up to the language in the statute to rely on "the best scientific data." In this paper, we describe standards that should be applied to habitat conservation plans and environmental impact statements affecting endangered species, if the scientific standards adhered to at universities and research laboratories are to be met. It is difficult to see how anything less could allow decisions to be made based on the "best scientific data." We suggest that the best scientific data should be used prior to the pragmatism and political trade-off that are sought in making take decisions.

Based on the historical success of the scientific method, the implementation of explicit scientific standards should help solve some of the problems facing ESA compliance in the development of HCPs and EAs. The ESA provided no internal statutory guidance as to what are the best available scientific and commercial data (Bogert 1994), so it is up to environmental scientists to decide on them. Applying explicit scientific standards will require greater involvement from academic and research scientists in the development and approval of the environmental documents. Many scientific investigations have provided strong theory and method in identifying critical habitat designations, ecosystem assessments, risk assessments, environmental monitoring and adaptive resources management. Decision-makers must also know of the uncertainties when choosing among HCP and other ESA agreement alternatives, and they and the public should have access to independent review comments, the data, and the scientific reports used to make conclusions. The stakes are too high to justify issuing take permits without having used the best scientific data.

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2.0 Response to Comments on the Draft EIR

Final EIR

Science Applied

Attachment to Comment
Letter 8C

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Comment Letter No. 9

Allen Matkins

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**Via Electronic and
First Class Mail**

December 29, 2016

Mr. Richard Ayala
Senior Planner
City of Ontario
Planning Department
303 East "B" Street
Ontario, California 91764

**Re: Notice of Completion and Availability of Draft Environmental
Impact Report (SCH No. 2015061023) and Colony Commerce
Center West Specific Plan.**

Dear Mr. Ayala:

This firm represents the Joseph and Doleen Borba Administrative Trust (the "Trust"), owner of the property (the "Trust Property") which is designated as part of Planning Area No. 1 ("PA-1") in the draft Colony Commerce Center West Specific Plan prepared by CapRock Partners, dated December 2015 (the "Specific Plan"). The purpose of this letter is to comment on both the Specific Plan and the above-referenced Draft Environmental Impact Report for the Specific Plan project (the "Project"), prepared by AECOM, dated November 2016 (the "DEIR"). The Trust is currently under contract to ground-lease the Trust Property to a prospective developer. The Trust therefore has a vested interest in the Specific Plan and DEIR analysis and, as such, is taking this opportunity to provide comments for the City's consideration.

A. Technical Studies for PA-1 Support the DEIR Assumptions and Conclusions.

9-1

1. The DEIR discloses that several technical studies were not prepared for PA-1 due to alleged access issues. Any allegations regarding inability to access to the Trust Property are simply not true. There were no access issues that would have precluded these reports from being prepared. The Trust received one request for access and responded that access would be granted if the results of such reports were shared with it. CapRock Partners was unwilling to accommodate the request to share the results of studies conducted on the Trust Property, and the Trust did not receive any further requests to provide access for technical studies to the DEIR consultant. Nonetheless, the

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prospective developer of the Trust Property in PA-1 commissioned the preparation of the missing technical studies, which are attached to this comment letter and listed below. Our review of the studies indicates that the information and conclusions contained therein match the assumptions and conclusions drawn by the DEIR for these subject areas. We respectfully request that these reports be included in the Administrative Record, attached to the Final EIR, and that the mitigation measures requiring these studies be deleted or updated in the Final EIR to recognize their content and conclusions.

- Phase I Environmental Assessment: Partner Engineering and Science, Inc. *Phase I Environmental Site Assessment Report*. October 24, 2016.
- Geotechnical: Southern California Geotechnical. *Geotechnical Investigation South Ontario Business Park*. November 16, 2016.
- Delhi Sands Flower-Loving Fly Habitat Suitability Analysis: Osborne Biological Consulting. *Habitat conditions for Delhi Sands Flower-loving Fly on the site of proposed industrial development located at the southeastern intersection of Carpenter Avenue and Merrill Avenue, Ontario*. December 19, 2016.

9-1
cont.

2. There also appears to be a typographical error on page 4.8-1 of the DEIR, which states:

The project Applicant's ownership interest is limited to PA-2 and, although requested from the owner of PA-1, access to PA-1 has not been granted to the lead agency and therefore site-specific technical studies have only been prepared for PA-1.

9-2

It appears that the reference to "PA-1" at the end of the sentence should have actually been PA-2 in the DEIR. As stated above, however, access to PA-1 was never denied to the lead agency, and the foregoing statement is therefore also incorrect in that regard.

B. The DEIR is Based on an Incomplete and Inaccurate Project Description.

CEQA requires an EIR to contain an accurate, complete, and stable Project Description. Our review of the Specific Plan and DEIR has revealed several problems with the Project Description, which gives an incomplete view of the Project as a whole and which may have led to the DEIR's failure to disclose all direct and indirect impacts of the Project.

3. Page 1-2 in Section 1.2 of the Specific Plan states that development of the Project will be governed by a Development Agreement. As such, the Development Agreement is an inherent part of the Project that must be analyzed in the DEIR. The terms of the Development Agreement are not disclosed in the DEIR's Project Description, and thus are not analyzed in the DEIR. Failure to describe even the general terms of the Development Agreement in the DEIR's Project Description has deprived the Trust of a

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meaningful opportunity to comment on this aspect of the proposed Project, its potential impacts on the environment, and the physical and financial feasibility of development in PA-1. Without knowledge of what the Development Agreement will require of the PA-2 developer, it is not known with any certainty what would then be required of the Trust or the prospective developer of the Trust Property in PA-1 (presumably all Specific Plan obligations that are not in the PA-2 Development Agreement and not required of the party who owns the northwest corner of PA-1). The Trust requests that the terms of the PA-2 Development Agreement be disclosed in the DEIR and requests to receive a copy of the PA-2 Development Agreement with sufficient time to review and comment before public hearings on the Project commence.

9-3
cont.

4. Section 5.2 of the Specific Plan discusses utility improvements. Due to the fact that there will be at least two different developers in the Specific Plan area (one for each Planning Area), more specificity is required regarding which Planning Area (PA-1 or PA-2) will be obligated to install which utility improvements (i.e. water, recycled water, sewer, and storm drain). Clear disclosure of the phasing of these improvements is important, because there are aspects of the phasing sequence that the DEIR may not have adequately analyzed. Failure to describe the infrastructure obligations of PA-1 has deprived the Trust of a meaningful opportunity to comment on this aspect of the proposed Project, its potential impacts on the environment, and the physical and financial feasibility of development in PA-1.

9-4

5. Specific to the proposed public storm drain and double 12 x 12 boxes in Merrill Avenue, which the Specific Plan and DEIR allude will be the responsibility of the PA-1 developer to install, the DEIR fails to analyze and disclose the environmental effects associated with the installation of this major regional master planned improvement. The installation of this improvement in Merrill Avenue will likely require the temporary closure of all or some of the vehicular travel lanes of Merrill Avenue and the re-routing of traffic by detours. The DEIR does not include any analysis of traffic impacts, safety impacts, and other vehicular-related environmental effects associated with temporary lane closures. Moreover, this major regional improvement will undoubtedly have a growth inducing effect on the City and the region and the growth-inducing effects of this aspect of the Project have not been fully disclosed.

9-5

In addition, and perhaps most importantly, to the extent this regional master planned improvement and the remaining Project improvements do in fact create growth inducing impacts, such impacts must be mitigated by either the first development to proceed or through the required joint cooperation of all affected landowners and parties. In the absence of conditions either (i) imposed upon the first development to proceed requiring such development to construct such improvements, or (ii) the requirement of joint cooperation of all affected parties, these impacts will not be properly mitigated, and the

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true "fair share" obligations of the affected parties may be distorted, thus further placing in doubt whether such necessary infrastructure will ultimately be constructed. 9-6 cont.

Lastly, regarding the DEIR's implication that the developer of PA-1 will be responsible for the installation of this public storm drain and two 12 x 12 boxes, we contend that this is a regional master planned storm drain improvement, and the cost of its installation has no proportional nexus to the impact caused by PA-1 or even PA-1 and PA-2 collectively, further evident by the fact that neither development project will utilize this installation. It is an undue hardship for the applicant for PA-1 to bear the entire cost and responsibility of the regional master planned public storm drain and box culvert improvement. 9-7

6. The DEIR's Transportation and Traffic Section discloses that interim improvements will be required of the PA-2 developer at the Merrill Avenue/Carpenter Avenue intersection. This aspect of the Project (interim improvements) is not clearly disclosed in the DEIR's Project Description. The DEIR fails to evaluate whether such interim improvements constitute a hazardous design feature under the Transportation and Traffic Section, Threshold 4, "Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?" Interim improvements have the potential to be hazardous if they are not designed to adequately accommodate the volumes and turning movements of large trucks that will service the Project site and other properties in the area. A safety analysis of interim improvements is required under Transportation and Traffic Threshold 4. Also, refer to Comment No. 19 of this letter. 9-8

7. Page 4-1 in Section 4.2 of the Specific Plan alludes to an air travel component of the Project, which is likely inaccurate. As stated "[t]he planned industrial area will include wholesale and distribution, light manufacturing and businesses with high value, time-sensitive merchandise that would benefit from proximity to an airport." This statement should be stricken from the Specific Plan as it is inconsistent with the DEIR analysis which correctly assumes that the Project does not include an air travel component. 9-9

8. We question why building layout detail is shown only for PA-2 on Specific Plan Exhibits 5.12 and 5.13. The Specific Plan is a policy document and, as such, both Planning Areas should be treated with an equal level of detail in the Specific Plan. 9-10

9. Specific Plan Appendix B1 contains a table indicating how the Specific Plan will meet the City's Climate Action Plan ("CAP") point allocations. We assume that this table was prepared by the Specific Plan Applicant, who is also the developer of PA-2. As the owner of PA-1, to the extent that the Trust Property is developed, the Trust and/or a purchaser or developer will undoubtedly comply with the CAP by meeting the CAP's 9-11

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minimum total point requirement, but not in the same way as indicated in Specific Plan Appendix B1, Table 2. Thus, the Specific Plan and DEIR Project Description should be revised to allow deviation from the Table 2 point allocations. The DEIR relies on the specific point allocations specified in Table 2 (and presumably prepared by the PA-2 developer) as Project Design Features (see DEIR Section 2.8 "Project Design Features," the "Project Design Features" subheading under DEIR Section 4.7.4.3 in the Greenhouse Gas Emissions Section, and the "Energy Efficiency" subheading under DEIR Section 4.7.4.5 in the Greenhouse Gas Emissions Section). These subsections should be revised in the Final EIR to indicate that a future PA-1 developer may select to include different design features to meet the CAP point allocations.

9-11
cont.

C. The DEIR Recommends Several Unenforceable and/or Unclear Mitigation Measures.

CEQA Guidelines Section 15126.4(2) states: "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments." Due to the fact that there will be at least two different developers in the Specific Plan area (one for each Planning Area), more specificity is required regarding which mitigation measures apply to each Planning Area. Otherwise, the mitigation measures cannot be appropriately enforced.

9-12

10. DEIR Table ES-1, *Summary of Environmental Impacts and Mitigation Measures*, must clearly specify which mitigation measures apply to PA-1 and/or PA-2. Because there will be at least two different developers for the Specific Plan area (one for each Planning Area), clarification regarding responsibility for mitigation by Planning Area is essential to ensure enforcement.

11. Pages ES-30, ES-31, and 4.11-27 of the DEIR set forth Mitigation Measure NOI-1. This measure states that the field erection or assembly of a temporary noise barrier should be considered. Please clarify the circumstances under which such a barrier would be required, and evaluate the physical feasibility of installing such a barrier in the needed location(s) in the Final EIR. Our experience shows that the erecting of such barriers is not always physically feasible, due to safety challenges (structural stability against wind loads) and placement challenges (to avoid interference with utility installation, road improvements, and grading activity).

9-13

12. Pages ES-34 through ES-48 and pages 4.14-58 through 4.14-64 of the DEIR specify mitigation measures for traffic impacts that involve fee payments. It is unclear how these mitigation measures will be enforced as they pertain individually to each developer in the Specific Plan area (the portion of PA-1 owned by the Trust, the portion of PA-1 not owned by the Trust, and PA-2). Fee payment responsibilities must be equitably allocated based on each planning area's proportion of the impact. Mitigation measures imposed by the lead agency must have a nexus to and be roughly proportional to the

9-14

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impact. Thus, because PA-1 and PA-2 will be developed by different entities, and the northwest corner of PA-1 is owned by a third entity, in order to effectively enforce this measure, the fee payments must have a nexus to the impacts caused individually by the portion of PA-1 owned by the Trust, the portion of PA-1 owned by a third party, and PA-2 that will be developed by CapRock Partners.

9-14
cont.

a. Page 4.14-55 of the DEIR states that "detailed fair share calculations, for each peak hour, are provided in Table 11-5 in the *Final Traffic Impact Analysis Report*..." Table 11-5 from the *Traffic Impact Analysis Report* contains traffic percentages based on the Project as a whole, and not by individual Planning Area. Calculations by Planning Area are required in order to effectively enforce the traffic mitigation measures involving fair share fee payments.

9-15

b. Further, because there will be at least two different developers in the Specific Plan area (one for each Planning Area), the listing of "Applicant" as the responsible party in many of the mitigation measures is problematic. For example, the wording of "[t]he City will require the Applicant to put money in escrow in order to cover the costs of these improvements...." does not define "Applicant," and without such clarification all of these measures could be inequitably applied to either PA-1 or PA-2. Clarification is required in the Final EIR.

9-16

13. Several of the Transportation and Traffic mitigation measures that require fee payments state that "...after a suitable time ... the money should be returned to the Applicant." Please provide definition in the Final EIR of "a suitable time" in terms of months or years. Otherwise, the City could hold these monies indefinitely.

9-17

14. Mitigation Measure TRANS-19 implies that there will be no Development Impact Fee payment obligation above and beyond the fair share fee payments noted in the other Transportation and Traffic mitigation measures. Please confirm the accuracy of this mitigation measure.

9-18

D. Several Aspects of the DEIR's Analyses are Based on Unreasonable Assumptions.

CEQA Guidelines Section 15151, Standards for Adequacy of an EIR, states: "An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible." To achieve this, CEQA requires that an EIR apply reasonable assumptions. Analysis throughout the DEIR assumes that construction activity in PA-1 and PA-2 will not overlap, that PA-2 will be built out by 2017, that PA-1 (for the purpose of analyzing traffic impacts) will not be built out until 2025, and that PA-1 would be developed with two north/south oriented buildings. It is completely unreasonable to assume that there would be an eight-year gap between the buildout of PA-2 and PA-1 given the high demand for industrial warehouse space in this area of the City. This is further evident by the

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submission of a Pre-application submittal to the City of Ontario by Prologis (the prospective developer of the Trust Property in PA-1) on October 24, 2016 (City application #PPRE16-001). The DEIR's analyses should be revised to apply more reasonable assumptions, so as not to minimize the Project's near-term environmental impacts.

9-19
cont.

15. Page 5-22 in Section 5.8 of the Specific Plan states that "...all infrastructure improvements shall be funded and designed for the phase in progress before any new phase may begin." The Trust requests that this phrase be stricken from the Specific Plan. Because the Specific Plan area is divided into two Planning Areas (PA-1 and PA-2) that will be built-out by at least two different developers, the exact timing of development cannot be determined. This Specific Plan requirement could put PA-1 and PA-2 in a schedule competition to begin construction and preclude the developer of the other Planning Area from beginning construction. This is a potential issue for both the PA-1 and PA-2 developers.

9-20

16. The prospective developer of the Trust Property intends to start construction in PA-1 in 2017, with building operation beginning in 2018. The DEIR's traffic analysis and other vehicular-related analyses should thus be revised to analyze this more realistic timing assumption.

9-21

17. Construction activities in PA-1 and PA-2 may overlap, and construction overlap was not analyzed in the DEIR.

9-22

18. The DEIR's methodology for air emissions and diesel particulate matter (health risk) assumed that two north-south oriented buildings would be developed in PA-1, with loading docks facing toward the east and west. Given the rectangular configuration of the Trust Property in PA-1, a more reasonable assumption is the development of one large east-west oriented building with loading docks facing north and south as reflected in City application PPRE16-001. A larger building oriented east-west would likely not change the conclusions of the DEIR, which we request be verified in the Final EIR.

9-23

19. Under existing conditions, a single-family residence is located in the northwestern corner of PA-1. The Trust does not own this property. The DEIR did not evaluate the potential scenario of that residence being retained as an interim use on the property, which is reasonably foreseeable. The existing residential development of this property may preclude road improvements and utility improvements proposed by the Specific Plan and required as DEIR mitigation measures.

9-24

E. Inconsistency Between Traffic Technical Report and DEIR.

20. Many of the Exhibits contained in the DEIR's Transportation and Traffic Section do not match the Exhibits bearing the same titles that are contained in the technical traffic

9-25

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report appended to the DEIR. For this reason, we had difficulty relating the DEIR's traffic analysis to the analysis contained in the technical study. This is evident by the fact that Edison Avenue in the DEIR Exhibits is called Ontario Ranch Road in the technical study. This road is depicted as installed (solid line) in the technical study for year 2017, yet is shown as a future road (dashed line) in the DEIR. The Final EIR should be updated to accurately reflect the technical study. If the DEIR did not adequately convey the technical study analysis in the DEIR, we reserve the right to submit additional comments on this topic.

9-25
cont.

Thank you for the opportunity to review the above referenced documents and provide our comments and observations. Please include the Trust in all future notifications regarding this Project.

In addition, please include Prologis in all future communications at (909)673-8727 or at daustin@prologis.com and donahue@prologis.com.

9-26

We look forward to receiving the City's response.

Very truly yours,



Patrick A. Perry

PAP

cc: Joan M. Borba and James Borba,
Co-Trustees of The Joseph and Doleen Borba Administrative Trust

Enclosures

Enclosure 1: Phase I Environmental Site Assessment Report
Enclosure 2: Geotechnical Report
Enclosure 3: Delhi Sands Fly Habitat Suitability Assessment

Comment Letter No. 10



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January 3, 2017

File Number: 0100-922636

VIA ELECTRONIC MAIL ONLY

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Re: Comments on Draft Environmental Impact Report ("DEIR") for the Colony Commerce Center Specific Plan

Dear Mr. Ayala:

On behalf of Ontario Land Ventures, LLC and its partners, The Harold and Pamela Tillema Trust, The Vander Meulen Trust, Inland Harbor LLC, Inland Harbor.Com, LLC and GH Dairy (collectively, "OLV"), I am writing to provide the following comments on the DEIR for the Colony Commerce Center Specific Plan ("Colony Project") in the City of Ontario, California. As a general matter, OLV supports the growth and development of the area as contemplated by the Colony Project and future projects proposed for the area. OLV looks forward to working with the City to address these important issues to ensure this future growth is adequately evaluated for the benefit of the project proponents, the City and its current and future residents.

10-1

1. General Comments

a. Various sections in the DEIR rely on the analyses and conclusions in The Ontario Plan Environmental Impact Report, certified January 26, 2010 ("TOP EIR"). It appears this is an attempt to use CEQA streamlining provisions for the analysis of some impacts discussed in the DEIR. The City should follow the appropriate streamlining provisions in CEQA, including Public Resources Code sections 21093 and 21094, CEQA Guidelines section 15152, and other applicable CEQA and CEQA Guidelines provisions. If the City intends to use the TOP EIR for tiering purposes, this process should be clearly and fully explained and the specific tiering requirements followed. In particular, the DEIR should explain how all applicable requirements for tiering are met and support this analysis with substantial evidence.

10-2

b. The DEIR states that PA-1 and PA-2 will be analyzed at a Specific Plan level and PA-2 will be analyzed in greater detail. (DEIR, p. 1-2) What are the CEQA

10-3

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implications of this analytical approach? This analytical approach is not consistently implemented throughout the document. For certain topical areas, some additional information and supporting technical studies are provided for PA-2. It doesn't appear, however that there is any difference in the analysis, conclusions, or mitigation measures with respect to the two Planning Areas. Each topical section should identify the differences, if any, in the analysis, conclusions, or mitigation measure resulting from this approach.

10-3
cont.

- c. The cumulative analysis for each section must identify the geographic scope of the area subject to potential cumulative impacts and provide an analysis of the past, present, and reasonably foreseeable development that contributes to the cumulative impact. Please identify whether the analysis is based on growth projections in a planning document or whether, based on the limited geographic scope of an impact, the analysis is based on a smaller group of past, present and reasonably foreseeable projects. Most sections in the DEIR do not meet the CEQA and the CEQA Guidelines' requirements for cumulative analysis and primarily contain conclusions without supporting data and analysis. These sections should be revised.

10-4

2. Project Description

- a. Page 2-10-11: The DEIR lists the types of uses allowed in the project, including agricultural, manufacturing, commercial, warehouse/distribution, and printing. Generally, the project description refers to industrial or warehouse uses despite the long list of other allowable uses. It appears that the two buildings proposed on PA-2 are general warehouses. Please confirm that other types of industrial uses would not occupy these buildings. Some sections in the EIR identify use assumptions for the project, but other sections do not. Were consistent assumptions made about the allocation of square footage for various uses in the analysis of environmental impacts? Please describe these assumptions in the project description and confirm that the analysis of impacts in the DEIR uses consistent assumptions about the project uses for the analysis of each environmental topic.

10-5

- b. Page 2-12: Please explain what right-of-ways (locations and area) are needed for additional traffic lanes and how these right-of-ways will be acquired. What are ½ width improvements for the project frontage? Is the project sponsor responsible for the entire costs of all roadway improvements required for the project? If not, how will these improvements be financed?

10-6

- c. The DEIR does not include the tentative tract map or a development agreement or a summary of the provisions of the development agreement that relate to physical improvements. These documents are listed as project approvals but are not described or discussed in the DEIR analysis. Please revise the DEIR to discuss the CEQA implications of the information in these documents and to add

10-7

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sufficiently detailed environmental analysis to support the project-level entitlements.	10-7 cont.
d. Is the project sponsor proposing to finance and construct all of the infrastructure and utility improvements described on pp. 2-15 to 2-22?	10-8
e. Are the project design features listed on pp. 2-26 to 2-28 included as requirements in the Specific Plan? If not, it would not be appropriate to include them in the assessment of project impacts. If required, these features should be imposed as mitigation measures.	10-9
3. General Description of Environmental Setting	
a. Section 3.21 appears to establish the basis for analyzing cumulative impacts in the DEIR. The cumulative analyses in many of the topical sections, however, do not discuss Table 3-1 or the Exhibit 3-1. Some sections use projections from regional and local plans. This discussion is not accurate or consistent in terms of the cumulative analysis in each topical section and should be revised.	10-10
4. Agriculture	
a. Page 4.2-1: The Introduction states that the analysis in this section is based on the New Model Colony ("NMC") EIR and TOP EIR and other documents. See General Comment (a) regarding the appropriate use of tiering under CEQA.	10-11
b. On p. 4.2-7 and under Threshold 5, the DEIR concludes that the project impacts are significant and then concludes because the project is consistent with the TOP, the impact is not significant. While it might be appropriate to tier from TOP if the DEIR provides the analysis to support tiering, this DEIR has not established that it is appropriately tiered from the TOP EIR. If the City chooses not to tier the DEIR, or cannot make the appropriate findings to tier from the TOP EIR, then a significant physical impact of this project must be acknowledged as such. If the DEIR is revised to appropriately tier from the TOP EIR, then the requirements of CEQA and the CEQA Guidelines must be followed with respect to the treatment of significant impacts. The DEIR does not provide an analysis consistent with these provisions.	10-12
c. Page 4.2-8: The DEIR should be revised to provide a factual analysis of how the Agricultural Overlay District standards would reduce the potential for the project to have an impact on existing agricultural uses.	10-13
5. Biological Resources	
a. Page 4.4-1: Please confirm whether the Biological Resources Assessment and related biological studies included PA-1 and the offsite work areas. Other DEIR	10-14

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chapters indicate that supporting technical studies did not cover PA-1 because access to the property was unavailable, and page 4.4-9 indicates that at a minimum the Delhi Sands Flower-Loving Fly ("DSFLF") habitat assessment did not cover PA-1. If the biological studies did not cover PA-1 or the offsite work areas, the DEIR should include other substantial evidence to support the impact analysis and/or impose appropriate mitigation measures.	10-14 cont.
b. Page 4.4-21: The DEIR does not include a cumulative impact analysis for biological resources and instead relies on CEQA Guidelines section 15130(d) to conclude that no cumulative analysis is necessary. First, this approach to cumulative impacts is not consistent with other sections in the DEIR which include an assessment of cumulative impacts. Second, use of this Guidelines section requires formal tiering from another EIR and a finding, supported by substantial evidence, that the cumulative impacts have been adequately addressed as required by Guidelines section 15152(f). The tiering provisions of CEQA and the CEQA Guidelines have not been satisfied for this DEIR. The biological resources section should provide an adequate cumulative analysis for this project.	10-15
6. Cultural Resources	
a. Page 4.5-1: Please confirm whether the Cultural Resources Assessment included PA-1 and the offsite work areas. Other DEIR chapters indicate that supporting technical studies did not cover PA-1 because access to the property was unavailable. If the assessment did not cover PA-1 or the offsite work areas, the DEIR should include other substantial evidence to support the impact analysis and/or impose appropriate mitigation measures.	10-16
b. Pages 4.5-3, 4.5-5 to -6: The DEIR does not address the new CEQA requirements for tribal consultation and tribal cultural resources, as established by AB 52 and codified at Public Resources Code sections 21080.3.1 <i>et seq.</i> Did any tribes, including the Gabrieleño Band of Mission Indians who commented on the project, request formal consultation under the new provisions? Did the City engage in a formal consultation with any tribes pursuant to the statute? Did any tribes propose mitigation measures as part of the consultation process, and in particular, did the Gabrieleño Band recommend mitigation measures in connection with its submission of evidence that the project site is located within the tribe's traditional territories and villages? The DEIR should explain the AB 52 requirements in the regulatory background section, and explain how the City complied with them in the methodology section.	10-17
c. Page 4.5-9: The DEIR does not analyze the Project's potential impacts on "tribal cultural resources," as defined in Public Resources Code section 21074. AB 52	10-18



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established tribal cultural resources as a new category of environmental resources that must be evaluated under CEQA. Public Resources Code section 20184.2 provides that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." The DEIR should include a threshold of significance for tribal cultural resources; it should analyze the Project's potential impacts on tribal cultural resources; and it should impose appropriate mitigation measures consistent with the requirements of Public Resources Code section 21084.3. In particular, the DEIR should account for the information provided by the Gabrieleño Band, including the fact that the project site is located within the traditional territories and villages occupied by the Gabrieleño, and the map depicting the approximate locations of the Gabrieleño communities within the present-day area.	10-18 cont.
d. Pages 4.5-1, 13 to 19: The DEIR states that: "For the most part, the additional acres on which off-site infrastructure improvements are proposed consist mostly of existing paved and unpaved roads that front the perimeter of the site, as well as a short segment of Moon Place and an unpaved farm road that extends from the project's southeast corner to Archibald Avenue." Beyond this, the DEIR does not appear to analyze potential impacts from off-site infrastructure improvements, such as the water line extension, and the mitigation measures for accidental finds do not appear to cover the offsite work. For example, CUL-1 applies to the "project site," not the "study area." The DEIR should clarify and revise the analysis and mitigation measures, as appropriate, to cover all onsite and offsite work.	10-19
e. The cumulative impact analysis is deficient and should be revised as discussed in General Comment (c).	10-20
7. Geology and Soils	
a. Page 4.6-1: Please confirm whether the geotechnical report included PA-1 and the offsite work areas. Page 4.6-6 suggests that the geotechnical report did not cover PA-1, and that impacts for PA-1 were assessed using information from the investigation into PA-2. The DEIR should provide additional details and substantial evidence to support the use of this methodology and the impact analysis and mitigations for PA-1.	10-21
b. Page 4.6-9: The DEIR should explain how the relevant TOP policies will be imposed and made enforceable, and it should explain how the Specific Plan design guidelines will reduce the potential impact.	10-22
c. Page 4.6-10: With respect to landslides, the less-than-significant impact conclusion appears to depend on implementation of recommendations set forth in the geotechnical investigation report. The DEIR, however, does not impose	10-23

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those recommendations as mitigation measures, making it uncertain whether they would be implemented and whether impacts would actually be reduced to less than significant. The DEIR should be revised to impose the recommendations as enforceable mitigation measures.	10-23 cont.
d. Page 4.6-11: With respect to expansive soils, the DEIR concludes that impacts as to PA-2 will be less than significant because: "For development of PA-2, the project would implement moisture conditioning of all building pad subgrade soils to a moisture content of 2 to 4 percent above the Modified Proctor optimum during site grading. All imported fill soils would be required to have low expansive characteristics. In addition to adequate moisture conditioning of the subgrade soils and fill soils during grading, soil moisture content of these must be maintained at 2 to 4 percent above the Modified Proctor optimum. This would require the contractor to frequently moisture condition soils throughout the grading process, unless grading occurs during a period of relatively wet weather. Compliance with the CBC, review of grading plans for individual projects by the City Engineer, and adherence to the project Geotechnical Investigation recommendations related to expansive soils would ensure that impacts would be less than significant." These requirements/design features are not imposed as mitigation measures, and with the exception of the CBC requirements, it is unclear how they would be enforced. The DEIR should be revised to impose the geotechnical recommendations as enforceable mitigation measures.	10-24
e. Page 4.6-11: The cumulative impact analysis is deficient and should be revised as discussed in General Comment (c).	10-25
f. Page 4.6-12: The DEIR does not include any mitigation measures for PA-2. It should be revised to include appropriate mitigation measures as identified in the impact analysis.	10-26
8. Greenhouse Gas Emissions and Energy	
a. Page 4.7-20: With respect to the GHG-reducing "project design features," see Project Description Comment (e). The DEIR should be revised where appropriate to incorporate these features as enforceable mitigation measures, consistent with the requirements of CEQA and <i>Lotus v. Dept. of Trans.</i> (2014) 223 Cal.App.4th 645.	10-27
b. Page 4.7-22 to -24: The energy analysis does not include all of the information required by Appendix F and is deficient in light of <i>Ukiah Citizens for Safety First v. City of Ukiah</i> (2016) 248 Cal.App.4th 256. Among other things, the analysis should quantify the project's energy use resulting from construction and new vehicle trips.	10-28



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9. Hazards and Hazardous Materials

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| a. Page 4.8-1 to 2: The DEIR explains that the Phase 1 ESA only covers PA-2 because the consultant did not have access to PA-1. It then states, however, that the consultant was able to make observations of PA-1 from adjacent properties, and that no items of concern were observed on PA-1. How was the consultant able to make this determination without accessing or investigating the PA-1 property? Was any investigation made of the offsite work areas? The DEIR should provide more explanation and substantial evidence to support the impact analysis as to PA-1. The DEIR does not appear to include any evaluation of offsite work areas. | 10-29 |
| b. Page 4.8-10: The DEIR should describe the City's Environmental Performance Standards and explain how they will reduce potential impacts from hazardous materials during construction and operation. How does the City enforce its Environmental Performance Standards? | 10-30 |
| c. Page 4.8-12: The airport safety analysis appears to rely on information and analysis from the TOP. See General Comment (a) re tiering. The DEIR should provide a more detailed explanation of the approvals required from the FAA, Ontario International Airport, and Chino Airport Authority, and it should evaluate the project's consistency with the land use plans adopted for these airports. The DEIR should explain the implications of the Chino AIA and Chino Airport Overlay. | 10-31 |
| d. Page 4.8-13: The cumulative impact analysis is deficient and should be revised as discussed in General Comment (c). | 10-32 |

10. Hydrology and Water Quality

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| a. Page 4.9-1: Please confirm whether the supporting technical studies included PA-1 and the offsite work areas. The impact analysis appears to rely on information and analysis from the TOP. See General Comment (a) re tiering. | 10-33 |
| b. Page 4.9-13: The DEIR includes a detailed list of hazardous materials that may be used during construction. This information should also be evaluated in the Hazards and Hazardous Materials chapter. | 10-34 |
| c. Page 4.9-15: The cumulative impact analysis is deficient and should be revised as discussed in General Comment (c). | 10-35 |
| d. Page 4.9-17: Many of the mitigation measures and standard conditions do not differentiate between PA-1 and PA-2. The DEIR should explain how the mitigation measures and standard conditions will be imposed on the various phases of development. | 10-36 |



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11. Land Use and Planning

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| a. Cumulative Analysis: The Draft EIR analysis consists of general conclusions and does not fulfill the requirements of CEQA. See General Comment above and revise the cumulative analysis consistent with this comment. | 10-37 |
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12. Noise

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| a. Page 4.11-27, Mitigation Measure 4.11.8.1: This mitigation measure should include a requirement to submit a plan to the City for review and approval that uses one or more of the identified strategies to ensure that construction noise is mitigated. | 10-38 |
| b. Page 4.11-29: The cumulative analysis for construction noise does not analyze whether other projects could be constructed within .25 miles of the project (including off-site infrastructure improvements) and result in a cumulative impact. No facts are provided with respect to other potential construction in the area during the time when the project would be constructed. The DEIR should be revised to include this analysis. | 10-39 |

13. Population and Housing

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| a. Page 4.12-2: The methodology description does not reflect the analysis of the potential impacts, which does not involve a consistency review of the identified plans. The analysis uses information from SCAG plans regarding projected growth to evaluate whether the project would induce substantial population growth and the TOP is not mentioned in the analysis under any of the thresholds. The DEIR should be revised to describe a methodology for the analysis that is related to the significance thresholds. | 10-40 |
| b. Page 4.12-3: How are the statements in this analysis about the project not inducing population and housing growth consistent with other statements in the DEIR about the substantial increase in population and housing units projected for the City? | 10-41 |
| c. Page 4.12-4: How would the homes on this site "relocate" to other areas in the City or the region? The analysis under this threshold of significance requires examining whether the construction of replacement housing would be required because of the displacement of substantial numbers of housing units. The DEIR should be revised to address this threshold. | 10-42 |
| d. Page 4.12-4: See General Comment above regarding the analysis of cumulative impacts. | 10-43 |



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14. Public Services

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| a. Page 4.13-7: The police impact analysis does not appear to account for additional police that might be required to respond to the needs to the project operation. The analysis focuses on the unsupported assumption that workers would reside in the City of San Bernardino and thus no increase in police personnel would be needed. Additionally, the analysis does not discuss the significance threshold – the need for new or altered facilities that might result in significant impacts. This threshold requires an assessment of the project's police needs (how many calls likely at the site), current police staffing, whether additional officers would be needed, and whether additional officers could be accommodated at existing facilities. The DEIR should be revised to provide this analysis. A similar analysis must be provided for fire protection. | 10-44 |
| b. Page 4.13-9: The DEIR includes an independent fire flow impact analysis and reaches a significance conclusion but there is no corresponding threshold of significance for measuring this potential impact. The DEIR should either revise the analysis to incorporate the discussion of fire flow into the fire services impact in accordance with the comment above, establish a fire flow significance threshold, or provide the information on fire flow as an informational item. | 10-45 |
| c. Page 4.13-9: See General Comment above regarding the analysis of cumulative impacts. Additionally, the cumulative analysis should address the identified significance criteria for these impacts. | 10-46 |
| d. Page 4.13.5: The section includes a discussion of Level of Significance After Mitigation but no mitigation is provided in this section. This adds to the confusion in the analysis in this section. | 10-47 |

15. Transportation and Traffic

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| a. Pages 4.14-55-56: The analysis in Thresholds 4 and 5 concludes that the project will have a less than significant impact related to traffic hazards and emergency access. These conclusions are based on the project's presumed compliance with unspecified City regulations and standards and general statements about elements included in the project without reference to the applicant's submitted plans or requirements included in the Specific Plan. Without appropriate citation to specific City requirements, Specific Plan requirements, or other documentation/plans in the application filed by the project applicant, the conclusions under these threshold discussions are unsupported by substantial evidence. | 10-48 |
| b. Page 4.14-64: TRANS-19 states: "The City will ensure that the improvements identified in mitigation measures TRANS-1 through TRANS-18 will be | 10-49 |



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constructed pursuant to the fee program at that point in time necessary to avoid identified significant impacts." Most of the improvements called for in these mitigations require the approval of other jurisdictions and uncertain funding. How will the City ensure the construction of these improvements at the appropriate time? Even implementation of the mitigations within the City's jurisdiction require the collection of uncertain fair share fees and likely other uncertain funding sources. How will the City ensure the construction of these improvements? Unless substantial evidence is provided in the DEIR to support this statement, it should be revised to acknowledge that implementation of all the identified mitigation measures is uncertain. Is TRANS-19 a separate impact statement? What is the significance conclusion for TRANS-19?	10-49 cont.
c. Page 4.14-64: TRANS-19 states: "Further the project shall coordinate with the City for the implementation of mitigation to address for [sic] project-level impact[s] not included in the fair share program" All of the mitigation measures listed under TRANS-1 through TRANS-18 call for the project sponsor to contribute to a "fair share" program. What mitigation is "not included in the fair share program"? How will the project sponsor and the City coordinate implementation of the mitigation referred to in this statement? This mitigation measure does not meet CEQA standards for adequate mitigation.	10-50
d. Page 4.14-65: The bullet points summarizing the cumulative mitigated intersection LOS as shown in Table 4.14-24 are not accurate. The mitigated condition for Hammer/Limonite in the PM peak will be LOS E, not LOS C. The mitigated condition for I-1-5 Ramps/Limonite in the PM peak will be LOS E, not LOS D.	10-51
e. Page 4.14-66: The DEIR states that 12 of the project traffic impacts are outside the City's jurisdiction. Based on the 18 impacts listed above in TRANS 1-18, it appears that 13 of the impacts are outside the City's sole jurisdiction. This paragraph concludes that "the Project's traffic impacts would be considered significant and unavoidable." Does this conclusion apply to all impacts identified in TRANS 1-18? Does it apply to TRANS-19? For intersection impacts, the DEIR does not clearly and consistently identify the significant and unavoidable impacts and the less than significant impacts after mitigation. The DEIR should adequately inform the public and decision makers about the project's significant impacts and therefore should be revised.	10-52
16. Utilities and Service Systems	
a. Page 4.15-19: The discussion of wastewater relies on the 2012 NMC Sewer Master Plan to support the conclusion that adequate infrastructure and facilities would serve the Ontario Ranch in the future. The DEIR should include additional information from the 2012 NMC Sewer Master Plan to support this	10-53



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conclusion. No information is provided about the planned future facilities and the ability of those facilities to adequately serve planned growth. 10-53 cont.

17. Other Environmental Considerations

- a. Page 5-4: The conclusion that project mitigation measures, which presumably includes those measures involving physical improvements such as the transportation improvements required by the transportation mitigation measures, is unsupported by any factual analysis or other substantial evidence. The DEIR should be revised to adequately analyze the potential impacts of mitigation measures. 10-54

18. Alternatives

- a. Given the range of uses allowed on the site by the proposed Specific Plan, the reasonable range of alternatives as required by CEQA should include an alternative with a different combination of uses as allowed by the Specific Plan to evaluate whether a different combination of uses would reduce the significant effects of the project. 10-55
- b. Page 6-10, 2nd paragraph: The conclusion regarding the impacts of Alternative 2 that the significant and unavoidable cumulative traffic impacts would be the same as those for the project conflicts with the finding reported in Table 6-1, which should be revised. 10-56
- c. Page 6-10, Aesthetics: The DEIR does not include an analysis of the visual impacts of this alternative and focuses only on light and glare. The DEIR should be revised to expand this analysis to assess the view impacts. 10-57
- d. Page 6-10, Air Quality: The DEIR should be revised to provide factual documentation to support the conclusions in this section. 10-58
- e. Page 6-12, Public Services: The DEIR only addresses fire services and should be revised to also address police services. 10-59
- f. Page 6-13, Transportation: Without factual data, the conclusions in this section are unsupported and the DEIR should be revised to include the results of traffic modeling for this alternative. 10-60
- g. Alternative 3: Both the air quality and traffic sections should be revised to provide factual data to support the conclusions. 10-61



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We look forward to your responses to these comments.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Alfred Fraijo Jr.", with a stylized flourish at the end.

Alfred Fraijo Jr.
for SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

SMRH:480359246.2

Comment Letter No. 11



January 5, 2017

Richard Ayala, Senior Planner
City of Ontario
Planning Department
303 East "B" Street
Ontario, CA 91764

Re: Notice of Completion and Availability of Draft Environmental Impact Report (SCH No. 2015061023) and Specific Plan for the Colony Commerce Center Specific Plan Project

Dear Mr. Ayala:

As you are aware, Prologis, L.P. ("Prologis") is under contract to enter into a ninety-nine year ground lease with the Borba Family ("Borba") for approximately 56 acres of real property located in the City of Ontario ("City").

The City's draft Colony Commerce Center Specific Plan ("Specific Plan") and related environmental impact report ("EIR"), if ultimately adopted and certified, will govern the property in question. More specifically, all of the property that will be subject to the ground lease will be included in Planning Area 1 contained in the Specific Plan.

Prologis supports the City's efforts to transition the land uses in this part of the City to more productive urban uses. In this regard, we commend the City's leadership over the past many years for bringing tremendous economic growth to the City.

11-1

We also commend the City's leadership for recognizing that the City's region-leading economic growth has been fostered, in part, by the City's understanding of the critical importance of ensuring that the public infrastructure that serves private development is managed and apportioned in a manner that is equitable to affected parties. The City has historically implemented this guiding planning principle and this principle has served as an important hedge against the risk that vacant land will not serve the City's redevelopment goals but will instead sit idle due to overburdened infrastructure obligations that were not apportioned in a more thoughtful and equitable manner.

In this regard, while Prologis supports, in concept, the redevelopment envisioned in the Specific Plan, we question whether the infrastructure obligations set forth in the Specific Plan and EIR adhere to the planning principles set forth above. For example, the EIR's implication that the developer of Planning Area 1 will be ultimately responsible for the development of a regional storm drain and two 12' by 12' boxes in Merrill Avenue does not appear to be apportioned in a manner that reflects traditional "fair share" principles. The EIR and Specific Plan contain other, similar examples.

11-2

As a potentially affected lessee, Prologis respectfully requests a meeting with the appropriate City staff and representatives from the applicant to discuss these issues well in advance of any public hearings scheduled for the proposed project. We believe resolution of these issues can best (and perhaps only) be achieved prior to the City's consideration of the project.

11-3

www.prologis.com

We look forward to your response and we look forward to working with the City and the applicant to resolve these issues.

11-3
cont.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Scott Mulkay", is written over a large, loopy circular mark.

Scott Mulkay
Vice President - Regional Development Manager

cc: Al Boling, City Manager
Scott Murphy, Planning Department
Jonathan Pharris, CapRock
Russell Fenton, CapRock

Comment Letter 1 – San Bernardino County Department of Public Health

- 1-1** This comment notes that the County of San Bernardino Division of Environmental Health Services has well permit data on 0218-261-24 (parcel within the project site, north of Merrill Access Avenue and Merrill Avenue) and does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the Draft EIR. Notwithstanding, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Comment Letter 2 – Jurupa Unified School District

- 2-1** This comment does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the Draft EIR. No further response to this comment is required. Notwithstanding, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Comment Letter 3 – San Bernardino County Department of Public Works

- 3-1** Text on page 4.9-2 and 4.9-16 of the Draft EIR has been revised to include an updated reference of August 28, 2016 for the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area, FIRM No. 06071C9375H. Additionally, text on page 4.6-4 of the Draft EIR has been revised to correctly identify the project site's flood zone designation (Zone X), which is now consistent with the discussion on page 4.9-2 and 4.9-16. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.
- 3-2** Domestic water lines in Merrill Avenue, from Carpenter Avenue to Archibald Avenue, and in Remington Avenue, from Carpenter Avenue and Archibald Avenue, would be constructed within the Cucamonga Creek right-of-way. Additionally, a recycled water line in Merrill Avenue, from Carpenter Avenue to Archibald Avenue, would also be constructed within the Flood Control District's Cucamonga Creek right-of-way. The Applicant would be responsible for obtaining all required permits from the Flood Control District and U.S. Army Corps of Engineers prior to the construction of the above-mentioned domestic water and recycled water lines, as well as any other encroachment that may occur into the Cucamonga Creek flood control channel. The Draft EIR analyzes the potential impacts associated with these improvements.
- 3-3** Comment noted. The commenter was notified during the public review period for the Draft EIR and will continue to be notified of the availability of the Final EIR and future project hearings.

Comment Letter 4 – Native American Heritage Commission

- 4-1** This comment states that mitigation for the inadvertent find of human remains was incomplete and that mitigation measures should be included that details the process if Native American remains are identified during construction. Mitigation Measures CUL-1 through CUL-3 included in Section 4.5.5 of the draft EIR identify the processes for the

discovery of any cultural resources during construction, including Native American unanticipated discoveries. In addition, the following language has been added to CUL-2 to clarify the process:

“In the event that any humans remains or related resources are discovered during ground disturbing activities, such resources would be handled in compliance with the provisions of California Health and Safety Code § 7050.5 and Public Resources Code § 5097.98 et seq. and in coordination with the County Coroner. Compliance with these laws would ensure that potential impacts to human remains, if unearthed, would be less than significant.”

Further analysis of this issue in the required EIR is not necessary. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

- 4-2** This comment discusses the applicability of AB-52 and SB-18 to the project, and requests that the City consult with legal counsel regarding the compliance of these laws and any other applicable laws. Information regarding the applicable cultural resources regulations are included in Section 4.5.3 of the Draft EIR.

For this project, AB-52 was not applicable since the City first circulated a Notice of Preparation (NOP) on June 11, 2015, and AB-52 would only apply to projects for which an NOP or Notice of Negative Declaration or Notice of Mitigated Negative Declaration was issued on or after July 1, 2015.

As noted in Section 4.5.2 of the Draft EIR, the City complied with SB18 as part of the project and sent letters to Native American groups and individuals identified by the NAHC. Copies of these letters and correspondence with the tribes are included in the cultural resources technical report included in Appendix E, Exhibit B.

- 4-3** This comment includes information regarding how agencies can comply with AB-52 and SB-18, and does not identify any deficiencies in the cultural resources analysis.

Comment Letter 5 – City of Chino Planning Department

- 5-1** The comment first generally acknowledges the commenter’s review of the NOE and Draft EIR. The comment’s discussion of driveway alignment does not identify any potential environmental issue or alleged deficiency in the analysis of the Draft EIR. It should also be noted that there are only two driveways on the west side of Carpenter Avenue, and the proposed project’s access points are largely aligned with those driveways. (See Draft EIR Exhibit 2-6, Circulation Plan.) There is no evidence that the location of the project’s driveways will result in conflicting movements.
- 5-2** This comment does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the Draft EIR. No further response to this comment is required. The commenter states that the City of Chino Preserve Specific Plan does not include a Class II bike lane on Merrill Avenue from Euclid Avenue to Carpenter Avenue.

This comment will be forwarded to the decision-making bodies for their review and consideration.

- 5-3** The truck distribution assumptions were subject to a very thorough review and approval process from City of Ontario. Assigning a larger percentage of truck traffic through Euclid Avenue was deemed not logical since there are closer and more direct arterials to access the project site. **Truck trip distribution is based on the shortest truck route rather than assigning trips to all feasible routes and thereby diminishing the level of impact and subsequent mitigation for the likely truck route.** The commenter has not provided any evidence that the assumptions used in the Draft EIR are incorrect or unreasonable.
- 5-4** The three additional City of Chino intersections that the comment asked to be included in the study were not identified to be significant major intersections during scoping for the study. The three intersections were not considered significant because the crossing streets all have low traffic volume generation and are not signalized intersections that could result in excessive delays. [Citation] Moreover, when preparing the scope of the Traffic Impact Analysis, both the City of Ontario and City of Chino transportation staff reviewed the intersections proposed for study, and concurred in the approach/methodology. The commenter has not presented any evidence that the identified intersections would be significantly impacted by the project. Additionally, it is noted that these locations were not studied in the City of Chino - Majestic Chino Gateway EIR and Traffic Study.
- 5-5** The Draft EIR's TIA identifies the project's percentage share of the impacts to area intersections, including those wholly within the City of Chino and those within both the City of Chino and City of Ontario. These fair share fees will be collected prior to issuance of building permits, and will be apportioned consistent with the mitigation measures in the Draft EIR. Please also refer to Topical Response #2 regarding traffic mitigation.
- 5-6** The comment states that the TIA should include a long-range (2040) scenario. The City of Ontario specified that Future 2025 Conditions Analysis is consistent with the TOP Model Year and, therefore, represents an appropriate future long-range analysis. The commenter does not provide any evidence that the Draft EIR's analysis underrepresented potential impacts or is otherwise factually inadequate.

Comment Letter 6 – South Coast Air Quality Management District

- 6-1** The comment provides a summary of the project, results of the air quality analysis, and overview of SCAQMD comments. The comment's statement that the Draft EIR estimates approximately 2,818 diesel truck trips is incorrect. Daily truck trips generated are discussed in Table 4.14-8 of the Draft EIR, *Project Trip Generation Summary*. The total 7,690 daily trips that would result from the project, as identified in Table 4.14-8, *Project Trip Generation Summary*, are inclusive of both (1) passenger cars associated with each respective use and (2) trucks associated with each use, but converted to passenger cars using PCE. This does not indicate the actual number of truck trips used for the emission estimates and the air quality analysis. PCEs are used to estimate the traffic impacts of the project by converting all vehicle types to one standard.

- 6-2** The comment questions the assumption regarding potential uses at the project site between manufacturing and warehouse uses. First, it should be noted that the HRA did not assume 100% warehousing uses. The HRA relied upon the same breakdown of land uses as did the air quality and traffic analyses. Please see Response to Comment 10-5.

The commenter appears to suggest that the Draft EIR's air quality analysis underestimated the project's health risks by assuming that 25% of the uses would be for manufacturing. With respect to the air quality analysis, HRA, and the analysis throughout the Draft EIR, the Draft EIR makes reasonable assumptions about future uses associated with the project. CEQA does not require analysis of a worst case scenario, but rather requires a sufficient degree of analysis to provide decision makers with information that enables them to make a decision which intelligently takes account of environmental consequences of the project. (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1068.) The Draft EIR expressly identifies the uses permitted within the Specific Plan area, which generally include agricultural uses, commercial uses, communication uses, eating establishments, manufacturing, and warehousing. (Draft EIR Table 2-2.) All of these uses have different operational characteristics, including with respect to vehicle trips and air emissions. The permitted land uses allow some flexibility in the location, mixture, and intensity of industrial uses to respond to changes in market demand. (Draft EIR at 2-10.) However, CEQA does not require an analysis of all hypothetical scenarios that include a mixture of the permitted uses. CEQA requires a good faith effort at disclosure, and lead agencies may rely on reasonable assumptions when conducting its environmental analysis. Here, the mixture of uses assumed in the Draft EIR – (1) 25% manufacturing and (2) 75% warehousing – represents a reasonable allocation of possible uses given the array of uses permitted within the Specific Plan.

- 6-3** Please refer to Response to Comments 6-1 and 6-2 for a discussion of the truck trip assumptions used in the Draft EIR's analysis. The estimate of truck trips for the project description, traffic analysis and HRA are consistent when accounting for the conversion of PCE, as discussed in Response to Comment 6-1. The CalEEMod input file used for the criteria pollutant emission estimates in Section 4.3 of the Draft EIR was adjusted to account for both passenger vehicle and truck trips. However, the version (2013.2.2) of CalEEMod used in the analysis of criteria pollutant emissions did not allow the user to provide different fleet mixes for different land uses in the same model run. The analysis of criteria pollutant emissions applied the same fleet mix (based on the warehouse land use) to both the warehouse and manufacturing land uses, resulting in a higher estimate of overall truck trips for those emission estimates.
- 6-4** Comment noted. The commenter recommends that the City of Ontario (1) limit the land uses and daily number of trucks allowed at each facility to levels analyzed in the Draft EIR and (2) commit to conduct further environmental analysis uses change or trucks increase. This comment is a recommendation, but does not raise any issue with the environmental analysis or conclusions in the Draft EIR. Nevertheless, it will be included in the Final EIR and provided to the decision makers for consideration.

Please refer to Response to Comment 6-2 for a discussion of why the Draft EIR's analysis of air emissions from trucking operations is reasonable and supported by substantial evidence.

- 6-5** The Draft EIR inadvertently omitted the CalEEMod outputs for construction-related emissions. Appendix B of the Final EIR now includes all emission estimates.
- 6-6** Please refer to Response to Comment 6-3, which indicates that the air quality analysis for criteria pollutant emissions applied the same truck percentages to both the warehouse and manufacturing land uses, rather than default assumptions in the model. Moreover, the CalEEMod output for trucks equals 20.3%, consisting of: (1) #2.4 2-axle trucks, (2) 5.6 3-axle trucks, and (3) 12.3% 4-axle trucks. While that does include minor rounding, it is generally consistent with the estimate of 20.43% in the traffic study. In addition, refer to Response to Comment 8-6 for details regarding the Fontana Truck Trip Generation Study truck rate.
- 6-7** As requested by SCAQMD, additional modeling documentation was provided for SCAQMD staff review in December 2016. The modeling data is also available upon request.
- 6-8** The comment states that “the lead agency modeled exhaust emissions consistent with the methodology established by the San Joaquin Valley Air Pollution Control District.” However, the text on Page 4.3-17 states “Volume sources were modeled consistent with the methodology established by the [SJVAPCD's 2006 guidance].” (Emphasis added.) The SJVAPCD guidance was primarily used as supplemental information for the detailed modeling parameters (e.g., stack parameters, truck modeling). The HRA relied upon only very specific suggestions related to modeling of truck emissions from SJVAPCD guidance.

The air quality analysis was based on OEHHA and SCAQMD guidance relevant for a CEQA analysis. The 2015 OEHHA guidance, with which the HRA is consistent (Draft EIR at 4.3-15), is not currently required pursuant to SCAQMD CEQA guidance and provides a conservative estimate of health risk.

Furthermore, the commenter did not allege, or state any facts suggesting, that the use of SJVAPCD's 2006 guidance was inappropriate, resulted in erroneous conclusions, or otherwise undermined the validity of the Draft EIR. The SJVAPCD's methodology is well-recognized and has been utilized in numerous environmental documents throughout California. When a study supports the conclusions of a Draft EIR, the relevant issue is only whether the study is sufficiently credible to support the Draft EIR. (*City of Maywood v. City of Los Angeles* (2012) 208 Cal.App.4th 362, 425-426.)

- 6-9** See Response to Comment 6-2. Since no specific development is proposed on PA-1, detailed assumptions for on-site travel would be speculative. However, as shown in Figures 3 and 7 of Appendix C of the Draft EIR, point sources were included for conceptual truck bay locations and a line source was included for travel through the center of the project site. Appendix C notes that “[l]ine sources, represented in AERMOD using “lines” of adjacent volume sources, were developed both on site and along nearby local truck haul

roads....” (Draft EIR, Appendix C at 33.) This on-site line of volume sources is shown as a solid green line running north-south bisecting the subject property in Figures 3 and 4 of Appendix C. The truck counts of varying axle numbers were assigned emissions factors from a CARB EMFAC2014 model run for San Bernardino County Calendar Year 2017 using an on-site speed of 15 mph. Therefore, on-site travel emissions have been accounted for in the Draft EIR’s analysis.

- 6-10** See Response to Comment 6-9. The Draft EIR reasonably analyzed idling of trucks in trucking bays, which resulted in 40 point-sources for PA-2 and 80 point-sources for PA-1 and PA-2 together. (Draft EIR at 4.3-17.) The comment does not state why this analysis was unreasonable, or why point-sources should span the entire docking area, rather than individual docking bays. The project is designed with individual docking bays, and trucks would not be permitted to dock outside of those bays.

In addition, the comment suggests using “15 minutes of idling to ensure that impacts are properly analyzed.” However, as referenced in Mitigation Measure AQ-1, idling would be limited based on CCR Title 13, Division 3, Chapter 10, Article 1, Section 2485, which generally restricts idling to a maximum of five minutes.

- 6-11** The commenter appears to be referencing HRA Figure 7, which shows a line source for purposes of the HRA. Per Figure 7, the sensitive receptor with the Maximum Individual Cancer Risk is located along Merrill Avenue. This conclusion is based upon the truck distribution and assignment figures identified in the TIA, specifically TIA Figure 5-4. TIA Figure 5-4 shows that the majority of truck traffic associated with the proposed project would travel eastbound on Merrill Avenue, thus exposing the Maximum Individual Cancer Risk sensitive receptor to the greatest potential health risks. However, because the project’s truck trips are anticipated to dissipate (i.e., use different routes) after the intersection of Archibald Avenue and Merrill Avenue, sensitive receptors farther from the project site would be exposed to lesser emissions than the Maximum Individual Cancer Risk sensitive receptor. As such, additional grid receptors beyond those identified in the Draft EIR would not aid the analysis and are not required. CEQA does not require that a lead agency conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. (CEQA Guidelines § 15204.)

Moreover, diesel particulate matter concentrations were estimated at ground-level sensitive receptors within 1,500 feet of the project site, which represents a conservative approach to the analysis, since emissions from both the project site and on-road travel would be concentrated in that area.

- 6-12** Construction and operation of PA-1 is anticipated to begin construction after the development of PA-2 and would be based on market conditions. The analysis is considered conservative because an average emissions rate was not used as an input to the HARP2 model. Rather, the 2017 emissions rate was used for the entire period (2017 – 2024), meaning it does not account for technological advances and substantial changes to truck emission factors that could occur by 2023. The 30-year estimated cancer risk presented is consistent with the OEHHA guidance and is conservative (i.e., as opposed to 70-year risk).

Moreover, commenter has not provided any evidence that the HRA's methodology underestimated the potential health risks associated with the project. CEQA does not require that a lead agency conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. (CEQA Guidelines § 15204.) What is required, and what is provided in the Draft EIR, is sufficient information and analysis to enable the public to discern the analytical route the agency traveled from evidence to action. The approach in the Draft EIR is considered appropriate for the proposed project.

- 6-13** The comment states that because the project is considered a "Large Operations" it is required to comply with SCAQMD Rule 403. Page 4.3-36 of the Draft EIR states "the project will be required to comply with SCAQMD rules and regulations, including, but not limited to, SCAQMD Rules 402 and 403." The comment lists various measures that are set forth in Rule 403. The project is required to comply with these measures because it is required to comply with Rule 403. Although additional revisions to the Draft EIR are not required, the measures stated in the comment provide additional details regarding the components and requirements of Rule 403 and are incorporated by reference.
- 6-14** The comment recommends several additional mitigation measures for implementation by the proposed project if the HRA were to be revised and identified significant impacts. However, as discussed in Response to Comment 6-12, the City does not believe the HRA is required to be revised because the HRA prepared for the project was reasonable, supported by substantial evidence and did not underestimate potential health risks. Because the HRA did not identify significant impacts (see Draft EIR at 4.2-33, Table 4.3-14), the additional mitigation measures identified in the comment to reduce significant impacts are not required.
- 6-15** The comment recommends that the project require "at least 5% of all vehicle parking spaces (including for trucks) include EV charging stations." As discussed in Chapter 2 of the Draft EIR and Section 4.7, the provision of public charging stations for use by electric vehicles is included as a project design feature. These stations could include charging stations for trucks. The project, could condition the terms of a lease to require its tenants or the businesses serving the future occupants of the project to use trucks that operate either wholly or partially on electricity, and therefore, while the infrastructure will be provided, the actual number, location and design of those stations will be determined when specific tenants are identified and more detailed information is known regarding the vehicle mix, including the potential for trucks operating on electricity to utilize the proposed facilities.

Comment Letter 7 – Golden State Environmental Justice Alliance

- 7-1** Comment noted. This comment contains project background information and notes a correction to be made in the Final EIR. Text on page 2-28 in Section 2.9, Required Permits and Approvals, of the Draft EIR has been revised to include City of Eastvale as necessary approvals for off-site mitigation improvements. The California Department of Transportation was already included as a reviewing and/or responsible agencies in the Draft EIR. The Draft EIR also does specifically identify those traffic mitigation

improvements within the jurisdiction of other agencies. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

- 7-2** Exhibit 3-1 has been updated to show the Watson Industrial Park and the Ranch at Eastvale related projects. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

With respect to the commenter's suggestion that the Brewer Site Project be included in the list of cumulative projects, the Draft EIR's cumulative project's list is reasonable and appropriate under CEQA. The Draft EIR's cumulative project list is based upon a study area within which the project could cause traffic impacts, unless otherwise specified. This area represents reasonable study area within which to analyze potential cumulative impacts. An agency has the discretion to apply its expertise in selecting an appropriate area for cumulative impact assessment. (CEQA Guidelines § 15130(b)(3).) The commenter has not provided any evidence that the Draft EIR's cumulative list of projects was too limited. Finally, the project to which the commenter refers – the Brewer Site Project – is located approximately six miles from the project site, within another jurisdiction, and across multiple major highways and thus the lead agency concluded that it was sufficiently distant such that it would not contribute to cumulative impacts affecting the project.

- 7-3** The comment requests that additional extended analysis for construction build out periods should be included in the Draft EIR. As stated in the Draft EIR, “since construction equipment emissions will decrease with time due to technological advancements, this estimate would represent a worst-case analysis should construction begin anytime thereafter.” In addition, if emissions were modeled over a longer period of time as suggested by the comment, the maximum daily emissions would also decrease. Therefore, the construction schedule was used to provide a conservative estimate of project impacts. If construction occurs after the timing assumed in the Draft EIR, technological advancements in construction methods and equipment would result in lesser impacts than those identified in the Draft EIR. The ultimate scope of construction would not change from the assumptions used in the Draft EIR (i.e., numbers and types of equipment, and total square footage).

- 7-4** The comment references the noise ordinance for construction hours and days and suggests that the Draft EIR should have analyzed construction during those periods. The emission estimates in the Draft EIR used land uses and detailed assumptions specific to the project, as well as default assumptions for construction in CalEEMod. Those default assumptions include hour per day and days per week for construction equipment, which are based on actual construction activity used for CalEEMod development and are considered reasonable for the analysis when detailed information is not available. The City's Noise Ordinance does not dictate when construction will occur; it simply identifies those days and hours that are regulated by the ordinance, and therefore the CalEEMod assumptions provide a more accurate assessment of construction equipment emissions than the broad scope of a City's noise ordinance.

- 7-5** Comment noted. Language on page 4.8-12 of the Draft EIR has been added to the Threshold 4 discussion to clearly convey that Zone 6 encompasses the remainder of the project site (113.83 acres). Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.
- 7-6** This comment includes the descriptions of Zone, 6, 4, and 2, which were included the Draft EIR. A new exhibit (Exhibit 4.8-1) has been added to the Final EIR to show the Chino Airport safety zones in relation the project site. In addition, as discussed in the Draft EIR, while Zone 4 and 2 also exist within the project site, Zone 6 requirements were applied to the entire project site due to the minimal acreage designated as zones 4 and 2. Zone 6 open land standards were applied to the entire project site pursuant to direction from the City of Ontario Airport Planning Division.

The open land requirements for various zones in the Caltrans Airport Land Use Planning Handbook represent suggested guidelines that regarding the provision of open land within airport environs; however, they are not mandates.

An Airport Land Use Compatibility Planning Consistency Determination Report (“Consistency Report”), was prepared by the City of Ontario Planning Department, Airport Planning Division. The Consistency Report, which is included in the Final EIR as Appendix D, evaluated the project’s consistency with the Ontario Airport ALUCP, as well as consistency with the Airport Influence Areas of the Chino Airport. The Consistency Report concluded that the project would be consistent with the subject to compliance with four conditions, which are set forth as HAZ-10 – HAZ-14, which are added to the Final EIR. With compliance with HAZ-10 through HAZ-14, the proposed project will be consistent with the Chino Airport AIA requirements.

As discussed in the Consistency Report, the project will need to provide a minimum of 10% open land. This determination reflects the determination that the provision of 10% open space, which is consistent with the recommendations of the Caltrans Airport Land Use Planning Handbook for Zone 6, would ensure consistency and safety for PA-2. Furthermore, although the Consistency Report is specific to PA-2, its conclusions can be reasonably applied to PA-1 because PA-1 has a lesser amount of land within other zones.

- 7-7** Please refer to Topical Response #2, which discusses the Draft EIR’s traffic conclusions and mitigation measures.
- 7-8** As discussed in CEQA Guidelines Section 15124(b), “a clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid decision makers in preparing findings or statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project.” The proposed project’s objectives to provide for the development of warehousing facilities and to provide industrial uses within the project boundaries that are compatible with surrounding uses are adequate in conveying the underlying purpose of the project and are clearly written to guide the lead agency in developing a reasonable range of alternatives.

A lead agency has broad discretion to formulate project objectives, and CEQA does not restrict an agency's discretion to identify and pursue a particular project designed to meet a particular set of objectives. (*San Diego Citizenry Group v. County of San Diego* (2013) 219 Cal.App.4th 1, 14.)

The commenter is incorrect that approval of the project is a foregone conclusion, and ignores the reasonable range of alternatives that are included in the Draft EIR. The decision makers, in their ultimate discretion, may decide to approve an alternative, a variation of an alternative, or deny the project. The commenter has not provided any evidence that the range of alternatives included in the Draft EIR is unreasonable.

- 7-9** The commenter alleges that a reasonable range of alternatives was not considered in the Draft EIR because only two alternatives were considered in addition to the No Project Alternative. The commenter does not provide any factual evidence supporting that conclusion. The Draft EIR thoroughly analyzed three alternatives to the proposed project – (1) the No Project Alternative, (2) the Reduced Density Alternative, and (3) the Agricultural Retention Alternative. Together, these alternatives constitute a reasonable range. There is no affirmative requirement that a greater number of alternatives be considered when the range included in the Draft EIR is reasonable. (*Mount Shasta Bioregional Ecology Center v. County of Siskiyou* (2012) 210 Cal.App.4th 184, 199.) As discussed on pages 6-1 to 6-3 of the Draft EIR, the lead agency considered an alternative site, but identified the reasons why that alternative was not included for further consideration. As to the three alternatives that were selected, the Draft EIR identified alternatives that could “avoid or substantially lessen any of the significant effects of the project.” (CEQA Guidelines § 15126.6(a).) The Reduced Density Alternative was selected because it could potentially reduce the project's significant impacts with respect to traffic and air quality (Draft EIR at 6-9), and the Agricultural Retention Alternative was selected to address the potential loss of agricultural land. Each of these alternative was evaluated with respect to their impacts as compared to the project, their ability to meet the project objectives and feasibility.
- 7-10** The comment states the belief that an amended EIR should be prepared and recirculated for public review. Each of the comments presented in this comment letter and other comment letters have been responded to in these Responses to Comments. No new significant information or new significant impacts have been identified in the Responses to Comments that were not previously discussed in the Draft EIR. Substantial evidence in the Draft EIR supports the conclusions of the document. Therefore, none of the conditions that would require recirculation of a Draft EIR are applicable. Golden State Environmental Justice Alliance's email address has been added to the project mailing list and will be notified of the availability of the Final EIR and future project hearings.

Comment Letter 8 – Lozeau Drury LLP

- 8-1** This comment includes introductory remarks, generalized assertions, and summarizes the comments contained within the comment letter and included appendices. The commenter is referred to Responses to Comments 8B-1 through 8B-6 below, which include responses

to transportation comments, Responses to Comments 8C-1 through 8C-27 below, which include responses to biological resources comments, Responses to Comments 8A-1 through 8A-#, which includes the attached letter from Soil Water Air Protection Enterprise (SWAPE), and Responses to Comments 8-2 through 8-11 below. As outlined in those responses, the Draft EIR's analysis of the potential environmental impacts of the project was appropriate and complied with the requirements of CEQA.

- 8-2** The comment summarizes the proposed project, including its acreage and square footage, which is taken from the Draft EIR. The comment does not allege any inadequacy in the environmental analysis in the Draft EIR and, therefore, does not require an additional response.
- 8-3** The comment generally sets forth the requirements of the CEQA through references to court decisions and statutes. The comment, however, does not identify any alleged deficiency with the analysis in the Draft EIR, or any other alleged noncompliance with CEQA. To the extent such argument is asserted, the Draft EIR thoroughly and appropriately evaluated the project's potential environmental impacts, and the conclusions of the Draft EIR are supported by substantial evidence, including expert opinion.
- 8-4** See Response to Comment 6-5. Appendix B to the Final EIR includes all emission estimates. The commenter is incorrect that the omission of the air quality modeling analysis requires recirculation of the Draft EIR, and the cases cited by commenter are inapposite. Here, the Draft EIR thoroughly and appropriately summarized the analysis and conclusions of the CalEEMod outputs for both construction and operation. (*Mount Shasta Bioregional Ecology Center v. County of Siskiyou* (2012) 210 Cal.App.4th 184, 217-219 [holding that new noise reports did not constitute significant new information because the studies were summarized in the Draft EIR].) Likewise, the CalEEMod output information does not change the conclusions of the Draft EIR, but merely confirms that the analysis in the Draft EIR was accurate and supported by substantial evidence. (*San Francisco Baykeeper, Inc. v. California State Lands Commission* (2015) 242 Cal.App.4th 202, 221 [supplemental modeling and analysis that was incorporated into the Final EIR and supported the conclusions of the Draft EIR was appropriate and did not require recirculation].)
- 8-5** See Responses to Comments 6-1 and 6-2. CEQA does not require analysis of a worst case scenario, but rather requires a sufficient degree of analysis to provide decision makers with information that enables them to make a decision which intelligently takes account of environmental consequences of the project. (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1068.) The analysis in the Draft EIR accomplishes this mandate by providing decision makers with information about the proposed project's potential air quality and greenhouse gas emissions resulting from construction and operation. It would be speculative to assume that the project would be occupied by tenants requiring the use of refrigerated trucks. Moreover, as noted in Response to Comment 6-3, the Draft EIR's criteria pollutant and greenhouse gas emissions analysis conservatively applied the truck fleet mixture assumptions to the manufacturing use, which is a higher generator of trips than warehousing. Section 4.3 of the Draft EIR states: "The project proposes to permit multiple types of uses that could conceivably require

deliveries via refrigerated trucks and/or employ on-site refrigeration. Given the uncertainty of leased refrigerated warehouse space and the percentage of transport refrigeration units (TRUs), the analysis did not estimate additional emissions that could occur with the idling of TRUs during loading and unloading activities at the project site. NOX is the primary pollutant associated with the TRU diesel engines. Therefore, any additional emissions associated with idling would not change the findings for the criteria pollutants presented in Table 4.3-11.”

- 8-6** The use of the City of Fontana Truck Trip Generation Study (Fontana Truck Study) truck rates is reasonable and appropriate as that study, and the truck rate percentages, was based upon data collected from similar operations within the Inland Empire. The Draft EIR’s TIA includes a substantial evidence demonstrating that the Fontana Truck Study is a reasonable basis upon which to assess trip/truck generation. It is a primary tool in the preparation of TIAs, as well as regional and sub-regional transportation studies to help determine the impact of truck traffic on circulation. Moreover, the ITE Trip Generation Manual specifically notes that, for the high cube warehouse land use, truck trips accounted for 9%-20% of the peak hour traffic at the sites that provided truck trip information. (ITE Trip Generation Manual 9th Edition at 266.) The Fontana Truck Study is, therefore, consistent with the ITE Trip Generation Manual, another well-respected source of trip generation information. The City has accepted the use of the Fontana Truck Study for calculating the trucks anticipated to be generated by the project. This is consistent with the project trip generation assumptions used in the nearby Majestic Chino Gateway Project Traffic Study and Supplemental Traffic Impact Analysis. Thus, the Draft EIR’s use of the Fontana Truck Study is supported by substantial evidence.
- 8-7** The comment states that the Draft EIR’s reliance on the CalEEMod default value of an average truck trip length of 16.6 miles is not supported by substantial evidence. The default assumptions included in CalEEMod are based on surveys and studies of existing land uses or provided by the air districts, and therefore, are considered appropriate for the assumptions in the analysis. It is also worth noting that the SCAQMD did not allege that the Draft EIR’s trip length assumptions were inappropriate or would underrepresent the project’s potential impacts. Please also refer to Response to Comment 8A-10.
- 8-8** The emission estimates in CalEEMod are primarily based on the square footage of the project, construction equipment and schedule. Therefore, any updates to the acreage would not substantially affect the construction-related emission estimates in the Draft EIR. In addition, there would not be an increase in operational emissions associated with the off-site improvements.
- 8-9** The comment provides what the commenter alleges is a “corrected emissions calculation” table, which is based upon the assumptions commenter alleges should have been included in the Draft EIR’s air quality and emissions analysis. However, as discussed in the preceding responses to comments – Responses to Comments 8-4, 8-5, 8-6, 8-7, and 8-8, the Draft EIR’s analysis is based upon substantial evidence and is proper under CEQA. The commenter is referred to those prior responses to comments, as well as the analysis in the Draft EIR.

Moreover, the commenter's calculations are based upon a number of unsupported assumptions, including among others, (1) assuming a 2017 operational year for all land uses, (both PA-1 and PA-2), and (2) a one-way trip length of 40 miles for all trip types (e.g., C-C, C-W, and C-NW). With respect to the operational year assumptions, the commenter is referred to Response to Comment 9-19, which discusses the phasing assumptions for the proposed project. The commenter's assumptions fail to account for significant improvements in truck emissions factors. Also, regarding one-way trip length, applying the trip length to all trips fails to account for trips to local areas or related to employee commutes. The City acknowledges that various methodologies may be employed for analysis, but that this does not affect the overall findings and reasoning made in the Draft EIR.

- 8-10** The comment suggests a variety of mitigation measures to reduce impacts associated with operational emissions. Some of these measures have already been incorporated in the project description, and other measures (e.g. solar panels) would not reduce the significant impact associated with NOx emissions. In addition, some of the suggested measures (e.g., on-site fueling, truck repair) could actually increase emissions associated with additional trips and on-site criteria pollutants.
- 8-11** The comment states that the HRA should include analysis of construction-related impacts. While the 2015 OEHA guidance does suggest evaluating risks associated with construction projects greater than 2 months, the SCAQMD is still reviewing how that guidance relates to CEQA projects. In addition, there are other factors in determining the need for a HRA, including the project location, total emissions, and distance to sensitive receptors. Since the project site is greater than 100 acres, emissions would be distributed over that area and would not occur in the vicinity of sensitive receptors for the entire construction period. As shown in Exhibits 4.3-1 and 4.3-2, there are a few sensitive receptors located within 1,000 feet to the south and west of the project site. However, the majority of project emissions would occur at varying distances from the receptors. As shown in Tables 4.3-9 and 4.3-10, construction-related emissions would not result in a localized air quality impact. Therefore, it was determined that a HRA for construction emissions was not required.
- 8-12** The comment indicates that the measures in the CAP Screening Table must be included in the Draft EIR as mitigation measures. Please refer to Responses to Comments 9-11 and 10-9. These measures not unenforceable, as the Project Design Features will also be included in the Mitigation Monitoring and Reporting Program.
- 8-13** The commenter alleges that the Draft EIR's baseline for purposes of potential hazards analysis is inappropriate because the Draft EIR does not include a Phase I ESA for PA-1. Please refer to Topical Response #1, which discusses the PA-1 Phase 1 ESA submitted by another commenter and incorporated into the Final EIR. Topical Response #1 discusses the substance of that Phase 1 ESA, which confirms the analysis and conclusions in the Draft EIR, as well as revisions to the mitigation measures included in the Draft EIR. The commenter is also referred to Response to Comment 9-1, which discusses the inability to access PA-1 at the time of preparation of the Draft EIR.

The commenter also alleges that additional soil sampling was required for PA-2 because the PA-2 Phase I ESA notes that there was a potential for agricultural chemicals to be present on the project site. First, the Phase I ESA did not recognize the potential presence as potential environmental hazard. The majority of the surrounding area is comprised of agricultural uses, all of which either likely employed or currently employ the use of such agricultural chemicals. Second, although the project does include grading activities, which would disturb existing soils, the project does not include any export of soils that could expose people beyond the project site to agricultural chemicals. Further detail is provided in the Project Description. With respect to grading activities that will occur on the project site, the project is required to comply with multiple SCAQMD rules and regulations to reduce fugitive dust during construction activities. (Draft EIR at 4.3-36.) Those measures include, among other things, (1) a dust control plan, (2) the application of soil stabilizers, and (3) general watering. Also, the Mitigation Measure HAZ-2, which was incorporated into the Draft EIR, requires the project applicant to hire an environmental consultant to ensure that any contaminated soil is excavated and disposed of in accordance with applicable regulatory requirements (and the preparation of a Soil Management Plan). Given the conclusions of the Phase I ESA, along with the grading proposed for the project, the fugitive dust control measures to be utilized by the project, and Mitigation Measure HAZ-2, the Draft EIR's conclusions about potential hazardous impacts were reasonable and no additional analysis is required. (*Association of Irrigated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1396 [CEQA does not require a lead agency to conduct every recommended test and perform all recommended research to evaluate the impacts of a proposed project].)

- 8-14** The commenter is referred to Response to Comment 8-6 above, as well as Responses 8B-1 through 8B-6, below, which include responses to the comments submitted by Smith Engineering & Management.
- 8-15** The commenter is referred to Responses 8C-1 through 8C-27 below, which include responses to the comments submitted by Shawn Smallwood.
- 8-16** The comment requests revisions to, and recirculation of, the Draft EIR. The responses to comments received, and the new materials provided do not reveal any undisclosed environmental impact, do not increase any identified impact to a level of significance, nor does it fundamentally change the adequacy or conclusions of the Draft EIR. Therefore, the City of Ontario does not believe it is necessary to recirculate the Draft EIR. The commenter is also referred to Responses to Comments 7-10, 10-12, and Topical Responses #1 and #2.
- 8A-1** This comment generally describes the proposed project and alleges that the Draft EIR's analysis fail to comply with CEQA. There are no specific allegations of inadequacy, and no further response is required. The commenter is referred to Responses to Comments for comment letter 8A.

- 8A-2** The commenter is referred to Response to Comment 8-13 and Topical Response #1, which discuss the PA-1 Phase 1 ESA which was added to the Final EIR, as well as revisions to the mitigation measures included in the Draft EIR.
- 8A-3** The commenter incorrectly asserts that there were conditions identified in the PA-2 Phase I ESA that require sampling. The commenter is incorrect. Please refer to Response to Comment 8-13, which notes that not every recommended test and perform all recommended research to evaluate the impacts of a proposed project. (*Association of Irrigated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1396.) What is required, however, is that an EIR include detail sufficient to enable those who did not participate in its preparation to understand and consider meaningfully the issues raised by the proposed project. (*Association of Irrigated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390.) The Draft EIR satisfies this requirement. The PA-2 Phase I ESA identifies, for instance, that there is an existing collection pond on the project site that may contain contamination. As such, the Phase I ESA identifies the collection pond as a REC. To ensure that impacts associated with the collection pond are reduced to a less than significant level, Mitigation Measure HAZ-1 is incorporated into the Draft EIR. That measure requires, prior to the issuance of a grading permit, a subsurface investigation of the collection pond by a qualified testing firm. If contamination is encountered at levels above risk thresholds, the contamination must be investigated, and removed or remediated to the satisfaction of the City. Thus, the analysis in the Draft EIR identifies the potential environmental impact, and Mitigation Measure HAZ-1 ensures that such impact would be mitigated to a less than significant level.
- The Draft EIR's analysis of the five ASTs on the project site was likewise appropriate and complies with CEQA. First, the Phase I ESA specifically identified the soil staining in the AST area, which the Phase I ESA characterized as likely from filling operations, not any active or past leak. Because the staining was of a "surficial" nature, the Phase I ESA concluded that it did not represent a significant environmental concern. The commenter does not provided any evidence contradicting the conclusions of the Phase I ESA with respect to the observed staining.
- 8A-4** Please refer to Response to Comment 8-13 regarding past pesticide use at PA-2.
- 8A-5** The Draft EIR's analysis of potential methane at the project site complies with CEQA. The Draft EIR did conduct an analysis of the potential for methane, and concluded that, although no government records suggested methane existing on the project site, the organic-rich soil present could generate methane that could accumulate under or within structures "following implementation of the Specific Plan." Thus, the Draft EIR concluded that there was currently no risk of methane one the project site. However, to ensure that impacts associated with potential future methane and buildout of the Specific Plan, Mitigation Measure HAZ-7 is required. That measure would ensure that the project is not subject to methane hazards post-construction.
- 8A-6** Please refer to Responses to Comments 6-5 and 8-4.

- 8A-7** The commenter generally asserts that the Draft EIR's operational air quality analysis was inappropriate, but does not identify any specific concerns. The commenter is referred to Responses to Comments 8A-8 through 8A-13. As demonstrated in those responses, the Draft EIR's analysis of the project's operational air quality impacts was reasonable and complied with CEQA.
- 8A-8** Please refer to Responses to Comments 6-1, 6-2, 6-3, and 8-5. The project does not propose refrigerated warehouse space and, although the Draft EIR acknowledges that refrigeration could conceivably be used at the project site, the potential for such use is uncertain. Also, the commenter has not provided evidence that the use of the project site with refrigeration is probable. As such, the project description and operational inputs used throughout the Draft EIR's analysis are reasonable and appropriate, and provide the decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences of the project. (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1068.) CEQA does not require an EIR to engage in speculation to analyze a worst-case scenario. (*Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal.App.4th 1437, 1450.)
- 8A-9** Please refer to Response to Comment 8-6 for a discussion of why the use of the Fontana Truck Study was reasonable and appropriate to evaluate the potential air quality impacts of the proposed project.
- 8A-10** Please refer to Response to Comment 8-7. The commenter identifies two separate projects, (1) the Kimball Business Park Project and (2) the Waterman Logistics Center Project as evidence that the project's truck trip length assumptions are incorrect. The commenter's reference to those projects does not establish that any of the assumptions used in the Draft EIR are unreasonable, or that the assumption in those projects have any relevance to the proposed project. Those projects are distinct and independent from the project, and cannot be compared to the proposed project. The Kimball Business Park Project, for instance, is within a different jurisdiction than the proposed project and proposes multiple smaller buildings comprised of different uses. Moreover, it should be noted that the commenter's reference to SCAQMD comments on the trip length used for the Waterman Logistics Center Project are inapplicable here, as the SCAQMD did not identify any issue with the proposed project's truck trip length assumptions.
- 8A-11** Please refer to Response to Comment 8-8, which discusses why the project's reliance upon a building acreage of 123.17 acres was appropriate and complies with CEQA.
- 8A-12** Please refer to Response to Comment 8-9, which discusses why the commenter's proposed analysis does not accurately reflect the emissions of the proposed project and why the Draft EIR's assumptions and analysis were reasonable and supported by substantial evidence.
- 8A-13** The commenter provides a generalized, extensive list of potential mitigation measures that, according to commenter, should be incorporated into the proposed project. First, CEQA does not demand that an EIR explain why suggested mitigation measures that are described in general terms and are not specific to the project are infeasible or inapplicable. (*Santa*

Clarita Org. for Planning the Env't v. City of Santa Clarita (2011) 197 Cal.App.4th 1042, 1055.) Second, as discussed in the Draft EIR, and as further supported in the responses to comments and Final EIR, the project would only have a significant impact with respect to emissions of NO_x during project operations. The matrix below, nevertheless, individually responds to the proposed mitigation measures.

The commenter suggested a wide variety of mitigation measures that, according to the commenter, would reduce emissions of ROG, NO_x, CO, PM₁₀, and PM_{2.5} from the project. However, it should be noted that these suggested mitigation measures are taken from various sources, including the SCAQMD comments on the Waterman Logistic Center MND, and the Attorney General, and are not described with any reference to the particular characteristic of the proposed project. An EIR need not explain why suggested mitigation measures that are described in general terms and are not specific to the project are infeasible. (*Santa Clarita Org. for Planning the Env't. v. City of Santa Clarita* (2011) 197 Cal.App.4th 1042, 1055.) For example, the suggested mitigation measures are generally described to reduce various types of emissions. However, the Draft EIR concluded, based upon substantial evidence and thorough analysis, that the project would only have a significant and unavoidable impact with respect to NO_x emissions. The commenter has not specified whether these measures would reduce the project's significant impact. Nevertheless, each proposed measure is addressed below.

Suggested Mitigation Measure	Response
Provide electric vehicle charging stations that are accessible for trucks.	This recommended measure has been included in the proposed project. The provision of public charging stations for use by electric vehicles is included as a project design feature. These stations could include charging stations that are accessible for trucks. The project, however, has no ability to require its tenants or the businesses serving the future occupants of the project to use trucks that operate either wholly or partially on electricity, and therefore, while the infrastructure will be provided, the actual number, location and design of those stations will be determined when specific tenants are identified and more detailed information is known regarding the vehicle mix, including the potential for trucks operating on electricity to utilize the proposed facilities.

Require the proposed warehouse to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in.	This recommended measure has been addressed by the proposed project. The project includes provision of public charging stations for use by electric vehicles is included as a project design feature. These stations could include charging stations accessible for trucks. While the infrastructure will be provided, the actual number, location and design of those stations will be determined when specific tenants are identified and more detailed information is known regarding the vehicle mix, including the potential for trucks operating on electricity to utilize the proposed facilities.
Limit the daily number of trucks allowed at the facility to levels analyzed in the Draft EIR. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the project through CEQA prior to allowing this higher activity level.	The measure would not lessen the emissions of the project, which were appropriately analyzed in the Draft EIR, and all but NOx were reduced to less than significant. This measure is not applicable.
Design the site such that any check-in point for trucks is well inside the facility to ensure that there are no trucks queuing outside of the facility.	The site is designed to provide a number of entry driveways and access to the site and truck docks such that queuing on external roadways is minimized and not anticipated. There are five entry points for PA-2 and at least three conceptual entry points for PA-1. PA-2 also provides onsite drive aisles to avoid queuing outside the project. A maximum of 86 inbound truck trips is assumed during the morning peak hour period on both PA-1 and PA-2 which will be spread out over eight driveways and allow for distribution of the truck traffic throughout the project site. Assuming 10-11 trucks entering each driveway over a 1-2 hour period, no significant queuing is anticipated. Also, to the extent there is any queuing, MM AQ-2 requires the placement of signs at access gates, loading docks, and truck parking areas that identify anti-idling regulations. In light of project design and MM AQ-2, this measure is not necessary as the potential impact has already been addressed.
On-site equipment should be alternatively fueled.	The selection of on-site equipment used will be determined by the future tenants of the project who are currently not known. As such, it cannot be determined at this time what equipment would be used and whether alternative fueled equipment would meet their needs. For this reason, this measure is not applicable.
Provide food options, fueling, truck repair and or convenience stores on-site to minimize the need for trucks to travel through residential neighborhoods.	The project site is located in a primarily agricultural area of the City that is transitioning to industrial uses. The location of existing food, fueling and convenience stores is not in areas such that trucks would be required to go through residential neighborhoods. The general path of truck travel would take trucks by these facilities. For these reasons, this measure is not applicable.
Should the proposed project generate significant emissions, the Lead Agency should require mitigation that requires accelerated phase-in for non-diesel powered	The developer does not have control over the trucks that would be used by future tenants who are currently not known. Also, CARB has established regulations on diesel truck emissions and, by 2023, nearly all trucks

trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in emissions, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Final CEQA documents, the Lead Agency should require a phase-in schedule for these cleaner operating trucks to reduce project impacts.	and buses will need to have cleaner 2010 model year engines or equivalents. For these reasons, this measure is not applicable.
Maximize use of solar energy including solar panels, installing the maximum possible number of solar energy arrays on the building roofs and/or the Project side to generate solar energy for the facility.	The use of solar panels is generally tailored to the electrical demands of the tenant. The tenants for the project are currently unknown. PA-2 has committed, through its PDFs, to using light-colored roofing with high solar reflectance to reduce heat island effects. For these reasons, this measure is not applicable. It should also be noted that the commenter suggested these measures in order to reduce emissions of ROG, NOx, CO, PM10, and PM2.5 – all of which are less than significant, with the exception of NOx. The provision of solar panels is GHG reducing, not NOx reducing, which was the intended effect of the recommendation.
Limit the use of outdoor lighting to only that needed for safety and security purposes.	The project already incorporates measures to address this recommendation. The project will not install more lighting than needed for safety, security, and signage. PA-2 has committed as a project design feature to install high-efficiency lighting system with advance lighting controls. Also, the project is required to comply with the lighting regulations of the City of Ontario Municipal Code, which restricts lighting to minimize impacts. For these reasons, this measure is not applicable.
Install solar lights or light-emitting diodes (LEDs) for outdoor lighting.	The project already incorporates measures to address this recommendation. The project will comply with all lighting measures and requirements in the City of Ontario Municipal Code. Also, PA-2 will install high-efficiency lighting system with advance lighting controls. For these reasons, this measure is not applicable.
Require use of electric or alternatively fueled sweepers with HEPA filters.	The project would use a PM10-efficient street sweeper during construction. It is not anticipated that the project will use a street sweeper during the operations phase. The project construction phase will use equipment which complies with SCAQMD rules and regulations for street sweepers. This measure is not applicable.
Use passive solar design, such as: <ul style="list-style-type: none"> • Orient buildings and incorporate landscaping to maximize passive solar; heating during cool seasons, and minimize solar heat gain during hot seasons; and • Enhance natural ventilation by taking advantage of prevailing winds. 	PA-2 consists of large warehouses and industrial development which will occupy the majority of the project site. The north/south orientation of the buildings on PA-2 was designed to optimize conditions for natural heating, cooling, and lighting, consistent with the PA-2 PDFs and the City's Climate Action Plan. With respect to PA-1, the future orientation of any building is not currently known; however, development of PA-1 would also require consistency with the City's Climate Action Plan. The Specific Plan

	likewise includes a section on Sustainable Design Strategies for future development, including passive design strategies such as building shape and orientation and the use of natural lighting. In addition to building orientation, PA-2 includes the use of light-colored roofing with high solar reflectance, and will provide adequate ventilation and high-efficiency in-duct filtration systems. Because PA-1 will incorporate similar measures identified in the City's Climate Action Plan, this measure is inapplicable.
Reduce unnecessary outdoor lighting by utilizing design features such as limiting the hours of operation of outdoor lighting.	The planned outdoor lighting is already energy efficient, as required by applicable regulations, and would only operate at night. For this reason, this measure is not applicable.
Develop and follow a "green streets guide" that requires: <ul style="list-style-type: none"> • Use of minimal amounts of concrete and asphalt. • Installation of permeable pavement to allow for storm water infiltration. • Use of groundcovers rather than pavement to reduce heat reflection. 	PA-2 does not include any streets, only parking and access that surround the proposed buildings. It is anticipated that PA-1 would be developed similar to PA-2, and consistent with the Specific Plan, which does not include any internal streets. The project only includes sufficient paving to accommodate the mandated amount of parking. PA-2 incorporates best management practices for managing runoff, including the infiltration basins with a large underground system to maximize soil infiltration. PA-2 also includes the use of swaled landscape areas for storm runoff capture and retention/infiltration. The Specific Plan's Conceptual Landscape Master Plan shows that all areas that can feasibly have ground cover does so. For these reasons, this measure is inapplicable.
Implement Project design features such as: <ul style="list-style-type: none"> • Shade HVAC equipment from direct sunlight; • Install high-albedo white thermoplastic polyolefin roof membrane; • Install high-efficiency HVAC with hot-gas reheat; • Install formaldehyde-free insulation; • Use recycled-content gypsum board. 	The project, which is an industrial and warehouse facility, will only use minimal insulation. The commenter is also referred to PDF GHG-2, which includes specific design measures included in PA-2 similar to the measures proposed, including, among others, (1) using construction materials and interior finish products with zero or low emissions, (2) implementing distribution loss reduction with insulation in the heating and cooling distribution system, and (3) use of light-colored roofing with high solar reflectance to reduce heat island effects. All HVAC equipment will meet CBC Title 24 standards, which includes mandatory efficiency requirements. Generally, the area of the facility that will be air conditioned will be extremely small, as warehouses typically do not require significant air conditioning. All roof-mounted HVAC equipment will be at least temporarily screened from direct sunlight during the day because of roof parapets and other mechanical features. The Specific Plan also requires that ground-mounted equipment (such as transformers and heating units) should be screened by landscaping where they would be within public view. Also, with respect to hot-gas reheating, hot-gas reheat is designed to control humidity during cooler temperatures. In Southern California, humidity is generally not a problem and no equipment will be installed to control humidity.

	Regarding formaldehyde-free insulation, minimal insulation would be installed in the distribution warehouse, and this measure would not substantially reduce GHG emissions. The use of recycled-content gypsum board is anticipated to be minimal in the warehouse, thus this measure would not substantially reduce emissions. These measures are not applicable.
Provide education on energy efficiency to residents, customers, and/or tenants. Provide information on energy management services for large energy users.	The suggested measure is incorporated into the project as PDF AQ-1.
Meet “reach” goals for building energy efficiency and renewable energy use.	The buildings will be constructed to all requirements of the California Building Code. The 2016 CBC achieves more than 30% better energy efficiencies than the 2013 CBC. For this reason, this measure is not applicable.
Install solar, wind, and geothermal power systems and solar hot water heaters.	As discussed above, the use of solar panels is generally tailored to the demand of the tenant. The tenants for the project are currently unknown. Also, PA-2 has committed, through its PDFs, to using light-colored roofing with high solar reflectance to reduce heat island effects. The project is located within the highly developed Southern California region, and wind energy development is inconsistent with such development. Likewise, geothermal power is not reasonably available in the area. For these reasons, this measure is not applicable.
Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.	Like renewable energy, energy storage is tailored to the demands of tenants. As the future energy demands for tenants is currently unknown, the feasibility of such measures would be speculative. For these reasons, this measure is not applicable.
Plant low-VOC emitting shade trees, e.g., in parking lots to reduce evaporative emissions from parked vehicles.	This recommended measure has been addressed by the proposed project. The Specific Plan includes numerous landscaping measures that would reduce emissions, control heat, and provide other project benefits, including: (1) the use of drought-tolerant species, (2) project entry drives and corner intersections shall receive intensified landscape treatment, (3) grouping plants into designated hydrozones with similar irrigation requirements, (4) the use of large parking lot and street trees to screen views, and (5) the use of deciduous trees to shade paved areas and building walls on the south and west sides of the project. The Specific Plan’s landscaping requirements, which requires extensive landscaping of the project site, would help reduce emissions.
Use CARB-certified or electric landscaping equipment in project and tenant operations; and introduce electric lawn, and garden equipment exchange programs.	This suggested measure is incorporated into the project as PDF AQ-1. The project proponent will provide information on the availability of CARB-certified and electric landscaping equipment to project tenants as part of the energy efficiency information program identified in PDF AQ-1.
Increase in insulation such that heat transfer and thermal bridging is minimized.	The project will be constructed consistent with the California Building Code, which includes specific

	<p>efficiency measures designed to limit energy usage and associated emissions. Also, PA-2 includes development of warehousing and industrial uses, which generally do not utilize significant insulation for purposes of regulating temperature in the facility. PA-1 is anticipated to be developed with similar uses, as analyzed in the Draft EIR. The Specific Plan's sustainable design strategies includes promoting the use of a properly sized and energy-efficient heat/cooling system in conjunction with a thermally efficient building shell. PA-2 also includes the installation of enhanced window insulation (0.4U-factor, 0.32 SHGC). This measure is not applicable.</p>
Limit air leakage through the structure and/or within the heating and cooling distribution systems.	<p>The project will be constructed consistent with the California Building Code, which includes specific efficiency measures designed to limit energy usage and associated emissions, including limiting air leakage. PA-2 is also required to implement distribution loss reduction with inspection in the heating and cooling distribution system. It is anticipated that PA-1 would implement similar measures to comply with the City's CAP, as required by PDF GHG-1. For these reasons, this measure is not applicable.</p>
Use of energy-efficient space heating and cooling equipment.	<p>The project will be constructed consistent with the California Building Code, which includes specific efficiency measures designed to limit energy usage and associated emissions, including requiring energy-efficient heating and cooling equipment. Similarly, PA-2 would implement distribution loss reduction with inspection in the heating and cooling distribution system. PA-2 would also orient buildings to take advantage of natural heating, cooling, and lighting conditions. It is anticipated that PA-1 would implement similar measures to comply with the City's CAP, as required by PDF GHG-1. This measure is not applicable.</p>
Installation of dual-paned or other energy efficient windows.	<p>PA-2 already includes as a PDF the use of energy efficient windows (i.e., enhanced window insulation (0.4U-factor, 0.32 SHGC)). The project will be constructed consistent with the California Building Code, which includes specific efficiency measures designed to limit energy usage and associated emissions, including the use of efficient windows.</p>
Use of interior and exterior energy efficient lighting that exceeds the California Title 24 Energy Efficiency performance standards.	<p>The project already includes measures that address this recommendation. The project will comply with all lighting measures and requirements in the City of Ontario Municipal Code. Also, PA-2 will install a high-efficiency lighting system with advance lighting controls. The planned outdoor lighting is already energy efficient, as required by applicable regulations, and would only operate at night.</p>
Installation of automatic devices to turn off lights where they are not needed.	<p>The Specific Plan's sustainable design strategies encourage the use of high-efficiency lighting systems with advance lighting controls, which may include occupancy controls. Also, advance lighting controls are designed to ensure efficiency and performance, and</p>

	can gather data and report on power usage, which can be used to design the lighting system at the highest efficiency. CBC Title 24 also requires the installation of shutoff controls in certain instances (see CBC Title 24, Section 130(c)). The project will comply with the CBC.
Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.	The suggested measure is incorporated into the project as PDF AQ-2.
Design buildings to accommodate photo-voltaic solar electricity systems or the installation of photovoltaic solar electricity systems.	As discussed above, the use of solar panels is generally tailored to the demand of the tenant. The tenants for the project are currently unknown. Also, PA-2 has committed, through its PDFs, to using light-colored roofing with high solar reflectance to reduce heat island effects. This measure is not applicable.
Installation of a photo-voltaic electrical generation system (PV system) capable of generating 565,000 kilowatt hours per year on the roofs of project buildings. The developer(s) may install the required PV system in phases on a pro rata square foot basis as each building is completed; or if the PV system is to be installed on a single building, all of the PV system necessary to supply the PV estimated electrical generation shall be installed within two years (24 months) of the first building that does not include a PV system receives a certificate of occupancy.	As discussed above, the use of solar panels is generally tailored to the demand of the tenant. The tenants for the project are currently unknown. Also, PA-2 has committed, through its PDFs to using light-colored roofing with high solar reflectance to reduce heat island effects. This measure is not applicable.

8A-14 Please refer to Response to Comment 8-11.

8A-15 The commenter takes issue with the Draft EIR's analysis of greenhouse gas emissions and the conclusion that compliance with the City's CAP reduces impacts to a less than significant level. The California Supreme Court has expressed that compliance with the reduction measures of an adopted Climate Action Plan is a reasonable basis upon which to conclude that greenhouse gas impacts are less than significant. (*Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204.) The commenter correctly notes that the City's CAP meets the requirements set forth in CEQA Guidelines Section 15183.5 and sets a framework for reducing emissions consistent with AB 32. Thus, the Draft EIR's conclusion that compliance with the City's CAP would reduce project impacts to a less than significant level is reasonable and complies with CEQA.

With respect to the commenter's assertion that the City CAP measures that were incorporated into the project should have been included as mitigation measures, the commenter is referred to Responses to Comments 9-11 and 10-9.

The commenter also asserts that the project's GHG emissions should have been quantified after implementation of the City's CAP measures. However, this analysis is not required by CEQA. The Draft EIR quantified the project's GHG emissions and concluded that,

without compliance with the City's CAP, the project would have a significant impact. However, through compliance with the City's CAP, the project would implement measures that would ensure consistency with the City's CAP and AB 32. While the commenter seeks additional information, that information is not required by CEQA. Also, it should be noted that commenter's reference to quantification of GHG reductions in the City's CAP refers to reductions throughout the City.

- 8B-1** The comment includes introductory comments about the commenter's background and review of the Draft EIR. It does not raise any environmental issues with the analysis of the Draft EIR and, therefore, does not require a detailed response.
- 8B-2** Please refer to Response to Comment 8-6 for a discussion of why the use of the Fontana Truck Study was reasonable and appropriate. The City understands that there are alternate methodologies for calculating vehicle and truck trips. However, as discussed in Response to Comment 8-6, the use of the Fontana Truck Study was reasonable, based upon substantial evidence, and proper under CEQA. The commenter's assertion that an alternative method of study should be conducted does not undermine the substantial evidence that supports the Draft EIR's conclusions.

The commenter is also referred to Responses to Comments 8-7 and 8A-10 for a discussion of the appropriateness of the Draft EIR's trip length assumptions.

- 8B-3** The project site plan as provided in Draft EIR was the most current at the time of the preparation of the Draft EIR. The project would not store tractors or require the staging of equipment/trucks off-site, but would accommodate all truck operations on-site. The project's final design will ensure that trucks would be able to maneuver appropriately on-site to access loading docks.
- 8B-4** The mitigation measures were developed according to City of Ontario Traffic Impact Analysis procedures and requirements. Please refer to Topical Response #2, which discusses the Draft EIR's traffic analysis and mitigation measures. Also, the City is bound by legal principles to impose mitigation that is roughly proportional to the impacts of the project. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 364.) Thus, the City cannot mandate that the developers of either PA-1 or PA-2 fund entire roadway improvements that are caused by multiple projects. The Draft EIR and TIA do mandate the payment of mitigation fees consistent with the impact created by the proposed project. The improvements identified in the Draft EIR are sufficient to mitigate the impact from cumulative conditions, inclusive of future growth. (See TIA Table 11-4.) The commenter is erroneously assuming that a mitigation measure requiring improvements is insufficient to mitigate the future impact. That is not the case here.
- 8B-5** Furthermore, the City-approved traffic study approach of using The Ontario Plan (TOP) Model for 2025 Cumulative Plus Project conditions ensures that proposed project anticipated trips, as well as other trips from planned development in the area, were accounted under 2025 Buildout conditions. The use of TOP Model, which is based on the

Ontario Airport Ground Access Model and the Southern California Association of Governments Riverside-San Bernardino Comprehensive Transportation Plan traffic model, adequately covers the potential influence of regionally significant projects outside of the City. Please refer to Draft EIR Section 3.21, which discusses the basis for the cumulative impacts analysis in the Draft EIR. As discussed therein, the cumulative analysis uses a list of related projects based upon information on file at the City of Ontario, the majority of which are within the New Model Colony (now known as Ontario Ranch). The related project's list also includes a project in the City of Chino and a project in the City of Eastvale. The Draft EIR's cumulative project list is based upon a study area within which the project could cause traffic impacts, unless otherwise specified. This area represents reasonable study area within which to analyze potential cumulative impacts. An agency has the discretion to apply its expertise in selecting an appropriate area for cumulative impact assessment. (CEQA Guidelines § 15130(b)(3).) Here, the World Logistics Center is located a significant distance (more than 30 miles) from the project site. An EIR is also permitted to select a reasonable cutoff date to determine which projects should be included in the cumulative impacts analysis. (*Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1128.) Otherwise, a cumulative impacts list would require constant revision. Thus, the City was reasonable in utilizing the cumulative projects list from the Watson Industrial Park TIA (June 2015). Also, the World Logistics Center is located more than 30 miles from the project site

- 8B-6** The existing traffic counts account for future conditions and City of Ontario staff had reviewed and approved the traffic volume assumptions for use in evaluating future 2017 and 2025 conditions.
- 8B-7** See Response to Comment 8-16 above.
- 8C-1** The comment includes introductory remarks about the commenter's qualifications and background. The comment does not allege any inadequacy in the analysis of the Draft EIR. Therefore, no further response is required.
- 8C-2** The comment is noted, but does not identify any specific inadequacy with the analysis in the Draft EIR. Therefore, no further response is required. Nevertheless, the commenter's assertion about the applicable burden of proof is incorrect. CEQA mandates that the analysis and conclusions in an EIR be supported by substantial evidence. That standard is satisfied by the Draft EIR.
- 8C-3** The commenter takes issue with the characterization of the site as highly disturbed, and instead suggests characterizing the site as an "obvious stopover" for multiple species. The commenter does not present any evidence that the Draft EIR's characterization of the site's conditions is inappropriate – the site has been used for historic farming and is largely disturbed with low-quality habitat. Including the general reconnaissance survey, special-status plant species survey, and burrowing owl protocol survey visits, biologists conducted approximately six site visits between April and July 2015, with an additional March 2016 survey of the water line extension area. During these visits, biologists documented the existing conditions described in Section 4 of the BRA as being composed primarily of past

and present agriculture-related anthropogenic disturbances with generally a sparse vegetation cover dominated by non-native species. Of the few native plant species identified on-site (refer to Appendix A of the BRA), only two were native tree/shrub species, including blue elderberry and mulefat. These observations reflect a site generally considered unsuitable for special-status species. Regardless, a survey focused on special-status plant species and protocol surveys for burrowing owl were performed and none were detected.

Similar agriculture-disturbed conditions with little to no native vegetation exists on adjacent parcels and in the generally vicinity. The study area is situated along the perimeter of a much larger area in the southern portion of the City of Ontario that covers approximately 12 square miles, where agricultural land uses have prevailed for decades. Such land uses affect the prey base for raptors. Often times, agricultural practices are targeted to dissuade small mammals and insects from becoming established which reduces the potential prey base for raptors that may use the area.

Although collectively the site and this larger agriculture-dominated area may serve as a rural island surrounded by intense urbanization, characteristics of the site do not make it more attractive or suitable for migrating birds than other parcels in the vicinity. Also, the Draft EIR notes the potential for migratory species to use the project site, and incorporates mitigation (MM BIO-4) to ensure any impacts to such species are less than significant. The commenter has not presented any evidence that this conclusion is unsupported or erroneous.

- 8C-4** The intent in assessing the eucalyptus and other road-side trees as “limited” refers to the amount of trees present in the study area, not to the amount of branches present on these trees. The City’s consultant agrees with the commenter that on-site eucalyptus and other road-side trees are potentially suitable for nesting Swainson’s hawk. However, Swainson’s hawks are known to breed within arid regions within the Central Valley and Mojave Desert, with very limited breeding reported from Antelope Valley (CDFW 2006). Migrating individuals move south through the southern and central interior of California in September and October, and north March through May (CDFW 2006). Based on a review of the CNDDDB, the nearest documented occurrence of Swainson’s hawk was observed nesting near Chino (exact location unknown) in 1920 (CDFW 2017). This nest was located within a cottonwood tree. Moreover, in a study conducted by Peter Bloom (1979) the four most frequently used nest trees include cottonwood (*Populus* sp.), oak (*Quercus* sp.), sycamore (*Platanus racemosa*), and willow (*Salix* sp.). None of these species are present on the project site. The Draft EIR acknowledges that the eucalyptus trees provide “some suitable nesting habitat.” Riparian habitat generally preferred by the species for nesting is not present. It is also acknowledged that the species could forage on-site.

As indicated in the BRA and Draft EIR, there are no recent records in the California Natural Diversity Database (CNDDDB) of Swainson’s hawk from the general project vicinity (last documented occurrence was in 1920), supporting the assessment that the potential for nesting or foraging Swainson’s hawk to occur in the study site is low. Regardless, should the species occur on-site during project implementation, Mitigation Measure BIO-4

requires pre-construction nest surveys should the removal of vegetation occur during the raptor breeding season and avoidance buffers should the species nest on-site during construction. Implementation of this measure would bring potential impacts to Swainson's hawk that may occur on-site to a less than significant level.

- 8C-5** Swainson's hawk are known to forage and nest in agricultural landscapes. Regardless, implementation of Mitigation Measures BIO-4 would reduce potential direct and indirect impacts to foraging and/or nesting Swainson's hawk to a level below significance. The commenter does not present any evidence that this conclusion is not supported by substantial evidence.
- 8C-6** The statement that there are no records of Swainson's hawk in the vicinity of the study area is based on a review of the CNDDDB. Records of Swainson's hawk within a mile of the study site have been recorded in eBird; however, eBird is not a peer-reviewed database and, instead is based on citizen science and not maintained by a federal or state agency with regulatory jurisdiction over special-status species. As a result, records from eBird are typically not included in a literature review. Regardless, implementation of Mitigation Measure BIO-4 would ensure that impacts to foraging and/or nesting Swainson's hawk would be reduced to a level below significance.
- 8C-7** Field surveys did not directly coincide with the period that Swainson's hawk may migrate through southern California. Although records of the species in eBird are not acknowledged in the text (for the reason stated above in #5), it is presented in the Draft EIR that the species has potential, although low, to nest and/or forage in the study area. The commenter's conclusion that the project will significantly harm Swainson's hawk migrating north is incorrect, as a large amount of potentially suitable habitat similar to that on the study site occurs in the project vicinity. Although migrant Swainson's hawks could opportunistically forage on the project site while migrating through, they would not be dependent on the project site for foraging habitat. Additionally, more suitable nesting and foraging habitats exist a few miles to the south at Prado Dam, along the Santa Ana River, and in the Chino Hills. CEQA does not require that a lead agency conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. (CEQA Guidelines § 15204.) What is required, and what is provided in the Draft EIR, is sufficient information and analysis to enable the public to discern the analytical route the agency traveled from evidence to action. The analysis and conclusions in the Draft EIR satisfy this evidentiary requirement.
- 8C-8** It is acknowledged that field surveys did not cover all possible raptor migration period for raptors moving through the study area. As is the case with most surveys supporting an environmental analysis, an attempt is made to conduct surveys at the most appropriate time of year to detect the presence of special-status species; however, it is not realistic or expected that surveys coinciding with all possible migration would be conducted. It is also not standard procedure to include eBird records in a literature review documenting the presence of a species in the vicinity of the study site. Regardless, implementation of Mitigation Measure BIO-4 would reduce potential direct and indirect impacts to other raptor species, as well as passerine species, to a level below significance. The commenter

also mentions that other special-status species occur within the vicinity of the project as documented via eBird, specifically mentioning ferruginous hawk and merlin. However, these two species are not protected special status species, but only on the CDFW watch list. CEQA does not require that a lead agency conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. (CEQA Guidelines § 15204.) What is required, and what is provided in the Draft EIR, is sufficient information and analysis to enable the public to discern the analytical route the agency traveled from evidence to action. The analysis and conclusions in the Draft EIR satisfy this evidentiary requirement.

- 8C-9** The likelihood assessments for special-status species were prepared by professional biologists that conducted the site visits, as well as on thorough research of the project site and project vicinity. During these site visits, disturbed conditions were documented across the study area, conditions that are generally unsuitable for special-status species. The commenter does not identify specific species that were mistakenly characterized, or provide any evidence that species identified as having no likelihood or a low-likelihood of occurring on-site actually would occur on-site. No changes to the likelihood assessments will be made. Appropriate mitigation measures are included in the Draft EIR to ensure that potential impacts to special-status species are reduced to a level below significance.
- 8C-10** Surveys focused on bats using acoustic detectors were not conducted. It is acknowledged in bat species accounts presented in Appendix C of the BRA and in Section 4.4.2.5 of the Draft EIR that bats may roost elsewhere and forage across the site. Professional biologists conducting the site visits did not observe suitable roosting habitat for bats on-site and no indication of the presence of bats was observed during surveys conducted by PCR biologists. Project construction would occur during day-time hours, avoiding evening/night foraging activities by bats that may forage in the vicinity.
- 8C-11** Please refer to Topical Response #1, which includes the findings of a DSFLF survey for PA-1 which are also included in the FEIR. A survey of the southern portion (PA-2) of the site revealed that agricultural land uses in the study area have altered soils and habitat so that they are not suitable for DSFLF, and no individuals of the species were detected. Similar agricultural uses and soil conditions occur on PA-1. The Draft EIR concluded that it was unlikely that there was suitable habitat on PA-1, and that conclusion was confirmed by the DSFLF survey that was performed for PA-1.
- 8C-12** Due to the presence of burrowing owl recorded within the vicinity of the project site in CNDDB and PCR's extensive experience with other projects in the vicinity of the study area, a separate site visit to determine suitability of the habitat prior to conducting focused surveys was not necessary, and PCR began conducting the first of the four protocol surveys on April 15, 2015. As the commenter points out, Photograph 6 appears like burrowing owl habitat to him. A habitat assessment was conducted in the off-site area by an experienced biologist on March 23, 2016 and it was determined that the soil was too compact for any species to burrow in and no burrow or burrow surrogates were observed within the area (PCR, 2016).

The burrowing owl surveys were conducted in accordance to appropriate survey protocol, albeit not identical to CDFW guidelines. Irrespective, there were no signs of burrowing owls nor individuals burrowing owl observed Within the site Together, the on-site surveys and habitat assessments constitute substantial evidence supporting the conclusions of the Draft EIR.

8C-13 Commenter notes that the burrowing owl survey report does not include surveyor qualifications, per CDFW guidelines. The 2015 and 2016 Burrowing Owl Surveys were conducted by biologists with extensive avian experience, including performing burrowing owl protocol surveys in Los Angeles, Orange, San Bernardino, and Riverside Counties. As required under the 2012 CDFW staff report guidelines, each of the three biologists are 1) familiar with the species and its local ecology, 2) have experience with conducting habitat assessments, non-breeding and breeding season protocol and pre-construction burrowing owl surveys, 3) are familiar with the state and federal statutes pertaining to this species, and 4) have experience with analyzing the impacts of development on burrowing owls and their habitat.

8C-14 Comment noted. Please see 8C-12 regarding habitat assessment (baseline). As stated in the burrowing owl report, surveys were conducted within the project site plus a 500-foot survey buffer around the project site perimeter. CDFW requires that transects be 7-20 meters apart, adjusting for vegetation height and density and scanning for burrowing owls with the use of binoculars at the start of each transect and every 100 meters. At the start of each transect, biologists made sure to scan the area for burrowing owl. The southern and northern half of the study area are active agriculture and/or active discing that occurs. As a result, this area was scanned as the constant discing would destroy any burrows, and burrowing owls are generally not found in dense or tall vegetation (typically low growing vegetation). The central and northeastern portion of the study area include active dairy farms with constant movement of dairy cows throughout the property. During each survey, a biologist scanned the dairy farms from the property line. No suitable burrows were observed on the active dairy farm, but suitable burrows located along the property lines of the dairy farms were recorded using a handheld GPS device. Moreover, the transect lines were adjusted to account for the vegetation height in density in the active agriculture fields. During the surveys, the biologist stopped every 20 feet or so, and made sure to thoroughly scan the active agriculture fields and dairy farms. The surveys focused on the detection of small fossorial mammal burrows potentially suitable for burrowing owls, burrows, or any diagnostic sign of their occurrence. No burrows exhibiting recent use were observed. No sign of burrowing owl or individuals of the species were observed during the surveys. The commenter does not provide any evidentiary support for the assertion that he disagrees with the “identification of only ruderal vegetation as available habitat for burrowing owls...” or present any evidence that other habitat may support burrowing owls.

8C-15 As discussed in 8C-14, biologists stopped approximately every 20 feet and scanned the study area using binoculars. Moreover, prior to starting each transect, biologists made sure to scan the transect ahead. The commenter notes that the inter-transect separation was greater than 30+ meters. At all times, the biologist walked slowly side by side and in line with one another, assuring that the interstitial space between the two parallel biologist were scanned using binoculars. Therefore, all suitable areas were adequately surveyed. The

comment was made the surveys were not conducted during cloud and temperature recommendations from CDFW. The protocol suggests that >20 degree Celsius, <12 km/hr winds, and cloud cover <75% allows for greater probability to detect burrowing owl. This is not a set standard where these conditions would be the only conditions that permit detection of burrowing owl but conditions that may result in “greater detection probability” as clearly stated in the staff report. The biologists each have extensive burrowing owl survey experience and understand when a survey would need to be rescheduled if conditions were not ideal to perform burrowing owl surveys. The habitat assessments and surveys conducted for burrowing owls were thorough and represent substantial evidence supporting the conclusions of the Draft EIR. As indicated in the letter reports on Burrowing Owl, the authors indicated that they prepared their report consistent with the CDFW 2012 Staff Report on Burrowing Owl Mitigation. Commenting on the drought situation, without clearly published and CDFW accepted findings on the effects of drought on the owls, would be anecdotal speculation. The drought may indeed have impacted the current numbers of owls on the properties, however that supposition would not change the fundamental conclusions of the surveys. The commenter has not provided any evidence that the factual findings and conclusions of the surveys/habitat assessments for burrowing owls are not accurate.

8C-16 Commenter notes that the burrowing owl report failed to meet recommended CDFW reporting standards. As previously noted, in the letter reports on Burrowing Owl, the authors indicated that they prepared their report consistent with the CDFW 2012 Staff Report on Burrowing Owl Mitigation. Please see responses to comments 8C-12– through 8C-15 for more details about the burrowing owl survey and surveyor qualifications. The comment has not presented any evidence that the results of the habitat assessments and surveys performed for burrowing owls on the project site do not constitute substantial evidence.

8C-17 The list of special-status species assessed by PCR in Appendices B and C of the BRA were derived from a search of the CNDDDB and California Native Plant Society (CNPS) database, which are standard database reviews presented in a BRA. In addition, numerous regional flora and fauna field guides were utilized to assist in the identification of species and suitable habitats. The assessment of a species’ likelihood to occur on-site were made by professional biologists who conducted the site surveys and provided their best professional assessment of a species’ potential to occur.

Many of the species added to the list by the commenter are relatively common bird species which, while nesting, are protected under the Migratory Bird Treaty Act and California Fish and Game Code Section 3503, are generally not included in the list of special-status species determined for the project vicinity from the database reviews. Common species, such as those added by the commenter, are addressed collectively in the BRA under the discussion of “Protection of Birds” (Section 4.7.2) and “Migratory Birds and Raptors” (Section 6.3.4.2) and under similar headings in the Draft EIR. The commenter also again references eBird as the source of records for many of the common bird species in the study area that the commenter believes should have been considered as having a potential to occur on-site. eBird records were not included for reasons previously stated (see Response to Comment 8C-6). Also, aside from references to eBird, the commenter has not provided any evidence supporting conclusions as to the likelihood of species occurring on-site.

The comment does not warrant any update or revision to the tables of special-status species (Appendices B and C in the BRA) assessed for the project. The best professional judgement of biologists were reflected in the BRA and Mitigation Measures BIO-1 and BIO-4, and are included in the Draft EIR to bring the potential direct and indirect impacts of the project on special-status species and common migratory bird species covered under federal and state codes to a less than significant level. The comment does not present any evidence of a potential significant impact to a special-status species that was not identified or analyzed in the Draft EIR.

8C-18 Please refer to the Responses to Comments 8C-12 through 8C-16 above. The surveys and report were conducted and prepared by professional biologists who utilized well-accepted survey techniques and habitat assessment tools to determine whether burrowing owls existed on site, and could be impacted by the project. The Draft EIR and associated appendices include the methodology and results of the assessments and surveys. The biologists did not detect any sign or individuals of the species. Moreover, the commenter has not presented any factual evidence that the analysis and conclusions of the Draft EIR are incorrect.

8C-19 The Draft EIR does not state that such land uses (i.e. crops and dairy operations) prevent wildlife movement, but instead states that such uses provide little to no function to facilitate wildlife movement. This is largely because ongoing operations and human activity result in disturbance across the property. Nevertheless, the Draft EIR notes that the study area supports limited potential live-in and marginal movement habitat for species on a local scale but it does not function to facilitate wildlife movement for terrestrial species on a regional scale, and is not identified as a regionally important dispersal or seasonal migration corridor. Additionally, the site may serve as stop-over habitat for resting and foraging migratory birds; however, the site constitutes a very small piece of the rather substantial amount of agricultural land areas that provide resting and foraging habitat in the vicinity. For example, there are at least 10,000 acres of rural and agricultural lands in the area south of SR-61, east of Central Avenue, north of Kimball, and west of Hamner Avenue in the just the local vicinity. There are many other open space areas that may serve as stop over opportunities for migratory birds in the region (e.g., Prado Basin, Chino Hills State Park, Lake Matthews, Lake Perris, etc.). Thus implementation of the project would not significantly impact regional wildlife movement. On a local scale, movement of species adapted to an urban and disturbed environment that may presently occur would be expected to persist. The commenter has not presented any evidence counter to the conclusions and analysis in the Draft EIR.

8C-20 The comment is incorrect. PCR does not speculate that birds would not occur in a disturbed area as the language that the commenter cited clearly states that bird species flying over the site may use the study area for foraging. Furthermore, a list of birds observed within the study area is included in Appendix A of the BRA. Rather, PCR qualifies that foraging by birds is expected to be limited due to high level of human activity as compared to native habitat with less human disturbance. The commenter is directed to the fact that the Draft EIR included discussion and thorough analysis of various species' potential to occur on the project site, notwithstanding the disturbed nature of the site and alternative less-disturbed lands nearby. Thus, the Draft EIR did not make its conclusions based upon speculation, but

substantial evidence in the form of investigation, research, and surveys. Moreover, the commenter does not present any factual evidence that disputes the conclusions of the Draft EIR.

8C-21 Comment noted. PCR does not conclude in the BRA that regional movement across the study area is prevented. The text the commenter remarks on indicates that regional movement through the study area is unlikely due to limited vegetation. Vegetation provides wildlife with habitat, foraging resources, and cover from predators. By stating “limited vegetation,” PCR implies that the developed nature, dominance of non-native vegetation and lack of natural communities that provide suitable resources to support regional movement are generally absent from the study area, making the study area less conducive for regional movement. Regardless, should special-status species occur in the study area during regional or local wildlife movement, direct and indirect impacts to these species would be mitigated to a level less than significant through implementation of Mitigation Measures BIO-4. The commenter is also referred to Response to Comment 8C-20, which discusses the extensive analysis conducted for the project site and the conclusions of the Draft EIR.

8C-22 Commenter remarks that vehicle trips estimated in the Draft EIR are underestimated. The characteristics of the proposed uses, and the permitting activities within the proposed Specific Plan are such that utilization of a linear extrapolation of trips improperly characterizes the project. See the traffic impact analysis for details on how the trip generation was developed. Also, the reference to a separate, individual project does not undermine the analysis in the Draft EIR. The project referenced has different characteristics than the project and, therefore, cannot be appropriately compared for purposes to trip generation.

8C-23 Comment noted. Impacts to wildlife have been assessed against the CEQA guidelines. There is no CEQA threshold related to such an analysis. A traffic impact analysis of a developed site on fauna that would not exist on the developed industrial development site that is not anticipated to have any wildlife would be an irrelevant exercise. Furthermore, the study area does not lie within support a wildlife corridor and no large-scale movement of wildlife is associated with the area. For local species, the majority of species observed within the study area were avian species whose movement would not be impeded by additional traffic. Regarding the limited terrestrial wildlife that may occur on-site or in the immediate vicinity, project-related vehicle traffic would utilize existing roadways that are already heavily traveled and constitute an existing hazard to all terrestrial wildlife species. This is typical of developed communities, including rural agricultural areas. The change in traffic volume due to the proposed project’s traffic is would represent a small, marginal increase above existing traffic volumes in the area, and any potential increase in impacts to wildlife would likewise be incrementally small. The concern for roadkill frequency is noted.

8C-24 Comment noted. The cumulative impact section has been revised to provide a further analysis. The commenter states opinions that the loss of the site would contribute substantially to the loss of one of the last patches of stop-over habitat for migrating birds in the region. This opinion is not supported by a cursory inspection of aerial photography

of the region. As noted above in Response to Comment 8C-19, it should be noted that there are at least 10,000 acres of rural and agricultural lands in the area south of SR-61, east of Central Avenue, north of Kimball, and west of Hamner Avenue in the local vicinity. There are many other open space areas that may serve as stop over opportunities for migratory birds in the region (e.g., Prado Basin, Chino Hills State Park, Lake Matthews, Lake Perris, etc.). Therefore, the replacement of less than 140-acres of intensively cultivated or disturbed lands with active commercial uses would not constitute more than a relatively small incremental contribution to such land use changes that may be occurring in the region. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

- 8C-25** As previously stated in Response to Comment 8C-11 above, the pre-construction survey for DSFLF is specified in Mitigation Measure BIO-1 because at the time that the focused survey for DSFLF was performed, the northern portion of the study area (PA-1) was not included in the project. However, as discussed in Topical Response #1, Mitigation Measures BIO-1 is no longer required, as a DSFLF survey was conducted for PA-1 and included in the Final EIR. A survey of the southern portion (PA-2) of the site revealed that agricultural land uses in the study area have altered soils and habitat so that they are not suitable for DSFLF, and no individuals of the species were detected. Similar agricultural-use and soil conditions occurs on PA-1. The Draft EIR concluded that it was unlikely that there was suitable habitat on PA-1, and that conclusion was confirmed by the DSFLF survey that was performed for PA-1.
- 8C-26** At least six site visits, including a general reconnaissance site visit, four visits to conduct protocol burrowing owl surveys, and a survey for special-status plant species were conducted between April and July 2015. PCR biologists did not document any nesting activities in the study area during any of these site visits; however, the BRA and Draft EIR acknowledge that nesting could occur on-site, although habitat potential suitable for nesting birds is limited to a few eucalyptus trees in the study area. In the event that nesting birds are detected during pre-construction surveys during the breeding bird season, Mitigation Measure BIO-4 would ensure that direct and indirect impacts to nesting birds would be reduced to a level below significance.
- 8C-27** The commenter is referred to Responses to Comments 8C-15 and 8C-26, as well as Topical Response #1. The intent of pre-construction surveys is to determine if any protected/regulated resource occur on-site that weren't detected before, and may happen to occur on-site once the project starts. The measures provide actions that would be taken to ensure that direct and indirect impacts are avoided and minimized. For example under Mitigation Measure BIO-4, should nesting birds be detected, no-disturbance buffers would be established and the nests would be monitored to ensure impacts are not occurring during construction. Along with Mitigation Measure BIO-2 (related to jurisdictional features) and Mitigation Measure BIO-3, this mitigation measures are in place to bring potential significant impacts to special-status species to a level below significance. In regard to the loss of a substantial portion of habitat used for nesting, foraging, and stop-over habitat, the study area represents a small area of the larger semi-rural area dominated by agricultural and developed land uses that occur in the project vicinity. The project would not preclude wildlife from using adjacent habitats for nesting, foraging, and as stop-over habitat.

8C-28 The Draft EIR's conclusions are based upon substantial evidence in the form of factual research, investigation, and surveys. However, with respect to migratory species that may occur onsite, Mitigation Measure BIO-4 proposes real mitigation for nesting birds. Under Mitigation Measure BIO-4, should nesting birds occur, which cannot be known until the project is ready for implementation, avoidance buffers would be specified that would avoid and minimize impacts. As such, this measures do mitigate potential impacts. Regarding surveys for DSFLF, as discussed in Topical Response #1, Mitigation Measures BIO-1 is no longer required, as a DSFLF survey was conducted for PA-1 with findings included in the Final EIR.

Comment Letter 9 – Allen Matkins Leck Gamble Mallory & Natsis LLP

9-1 The comment initially includes introductory comments about the firm's representation and property ownership. However, these comments are unrelated to the adequacy of the environmental analysis in the Draft EIR, and do not allege any violation of CEQA.

The commenter's assertions about access issues are not a comment on the adequacy of the analysis or conclusions in the Draft EIR. Nevertheless, the comment is mistaken, because, as the commenter notes, the owner of the PA-1, the Joseph and Doleen Borba Administrative Trust ("Borba Trust"), conditioned access on the sharing of any reports and/or results. Because the project applicant and the Borba Trust could not come to an agreement regarding access, access was not granted to the project applicant. Recent studies prepared by a potential developer of PA-1 during the public review period for this Draft EIR included a Phase 1 Environmental Site Assessment, a Geotechnical Report, and a Delhi Sands Flower-Loving Fly Habitat suitability analysis. The provision of these reports are appreciated and although provide further clarity of issues already highlighted in this EIR, they do not provide substantial new information, change any conclusion, or provide a level of information not disclosed in the Draft EIR. Therefore, no recirculation of this Draft EIR is warranted with the provision of this information.

Please refer to Topical Response #1 regarding the studies provided by commenter, and their inclusion in the Final EIR.

9-2 Comment noted, the reference should have read, "...and therefore site-specific technical studies have only been prepared for PA-2." Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

9-3 The commenter asserts that the terms of the Development Agreement proposed as part of the project must be disclosed in the EIR. CEQA does not require disclosure of the specific terms of a development agreement as part of the project description except as they relate to the potential environmental impacts of the project. CEQA requires a project description to identify, to the extent known by the lead agency, a list of permits and other approvals required to implement the project. (CEQA Guidelines § 15124.) It does not, however, require the applications for such approvals or documents associated with such approvals to be included in an EIR. Here, the Draft EIR expressly identifies the required approvals and permits, including the Development Agreement, in Section 2.9. (*East Sacramento*

Partnership for a Livable City v. City of Sacramento (2016) 5 Cal.App.5th 281, 291 [EIR is sufficient if it makes reference to a required development agreement to alert persons interested in the document to its relevance, but need not include the development agreement].)

To the extent the Development Agreement contemplates improvements or other physical changes in the environment, those improvements are identified and analyzed in the Draft EIR. However, the Draft EIR is not required to analyze financial terms of the Development Agreement, as such terms do not result in physical changes to the environment. (CEQA Guidelines § 15378 [a project is the “whole of the action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change...”]).

A draft of the proposed Development Agreement will be made available to the public before approval consistent with the requirements of the Government Code and applicable law.

- 9-4** The commenter does not allege a specific inadequacy with the analysis of the Draft EIR, but rather suggests that the Draft EIR “may not” have addressed certain impacts. A general comment of this nature, which does not specifically identify any alleged inadequacy, requires only a general response. The Draft EIR thoroughly and appropriately analyzes the utility improvements proposed by the project. As the comment notes, the Colony Commerce Center Specific Plan identifies all of the infrastructure that will be installed for the development of the Specific Plan area and the impacts of infrastructure construction is addressed in the Draft EIR. The commenter does not identify any improvements that were not adequately analyzed. The commenter is also referred to Draft EIR Section 2.7, which discusses the phasing of development (including infrastructure). The financial feasibility of development of PA-1 is not an environmental issue that is addressed in the Draft EIR or required by CEQA.

The City anticipates the utilities will be appropriately phased as indicated in the Draft EIR and fair share reimbursement agreements between the developing parties within the Specific Plan boundary will be created.

- 9-5** Construction of the proposed public storm drain and double 12 x 12 boxes in Merrill Avenue would require the temporary closure of vehicular travel lanes on Merrill Avenue. Discussion has been added to page 4.14-56, under Threshold 5, of the Draft EIR. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes. In addition, the comment states that the proposed public storm drain and double 12 x 12 boxes in Merrill Avenue would undoubtedly have a growth inducing effect on the City and the region, and states that the growth-inducing effects of this aspect of the Project have not been fully disclosed. The commenter is referred to the Response to Comment 9-6, below, which addresses growth inducement associated with the project.
- 9-6** Growth-inducing impacts are addressed in Section 15126.2(d) of the CEQA Guidelines. Sections 4.12.4.3 and 5.3 of the Draft EIR describes growth inducement associated with the project. The project would have a significant impact if it would induce substantial

population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example through extension of roads or other infrastructure). Although the project would create new infrastructure on the site, this would not directly or indirectly induce substantial population growth, as described in Section 4.12.4.3 of the Draft EIR. The extension of roads, water, and sewer lines to serve the project has been anticipated in the City's Circulation element and Ontario Ranch infrastructure master plans. No substantial new unplanned growth would occur and cumulative population growth impacts are less than significant.

Implementation of this project will involve the extension of roads or other infrastructure into areas off-site that will facilitate additional planned growth pursuant to TOP. The indirect effects of increased public services (i.e., police, fire, schools, parks) to support new population growth derived from such employment growth is not anticipated to be substantial, nor beyond service levels anticipated by TOP. Finally, to the extent the 12 x 12 RBC could indirectly contribute to future growth by installing a necessary improvement, it is not itself a catalyst for further development as additional approvals and/or improvements would be required. (*Clover Valley Foundation v. City of Rocklin* (2011) 197 Cal.App.4th 200, 227 [no violation when sole reason for pipeline was not to provide catalyst for further development, contemplated growth was indirect and only one obstacle to growth was removed, and additional development was subject to CEQA]. Also, it would be highly speculative to attempt to predict future buildout of sites that could utilize the 12 x 12 RCB.) Finally, the phasing of infrastructure is addressed in the Project Description and requires that various infrastructure improvements be constructed prior to or concurrent with development of each Planning Area, such that the impacts would be mitigated prior to development occurring.

- 9-7** The comment submitted by the representative for the owners of PA-1 asserts that the cost of the installation of the 12 x 12 RBC improvement is a regional infrastructure improvement, the cost of which should not be borne by PA-1. This comment does not present a comment regarding the environmental impacts of the project or the adequacy of the analysis of environmental impacts in the Draft EIR. This comment is directed only to the fairness of the cost of an infrastructure improvement which is not an environmental issue. No response to this economic concern is required under CEQA. This comment will be provided to the City decision makers for its consideration in connection with the proposed project.
- 9-8** The commenter is referred to Response 9-5, which discusses the regulatory and review requirements applicable to encroachments into the public right-of-way. To the extent such encroachment is required to install roadway improvements, compliance with these regulatory requirements would ensure all potential hazards would be reduced to a less than significant level. Also, with respect to roadway improvements, the City has standards with which the project must comply. For instance, the Circulation Plan for the Colony Commerce Center reinforces the objectives of moving vehicles, pedestrians, cyclists, and public transit safely and efficiently through and around the project. The Circulation Plan, which establishes a hierarchy and general location of roadways within the Specific Plan area, includes minimum design speeds to be used for center line curve radii, super

elevation, corner and approach site distances, vertical and horizontal alignment, and sight distances that will comply with City standards for Merrill Avenue (45 mph), Carpenter Avenue (40 mph), and Remington Avenue (40 mph).

Also, construction of streets and other circulation elements will comply with City regulations applicable to minimum standards of streets, which are available from the City's website.¹ The project would also be required to comply with the City's Traffic and Transportation Guidelines (August 2013), which includes standards relate to street improvements.² The City's Master Plan of Streets and Highways also regulates roadway improvements. Through compliance with these standards, any potential hazards associated with roadway improvements or project features will be less than significant.

Through compliance with these standards, any potential hazards associated with roadway improvements or project features will be less than significant.

- 9-9** As listed on Table 6-2 of the Draft EIR, one of the project objectives is to provide for the development of warehousing facilities that utilize the site's prime location in proximity to Chino Airport. The project does not include an air travel component, but rather, as stated in Section 2.6.1 of the Draft EIR, will include wholesale and distribution; light manufacturing; and business with high-value, time sensitive merchandise that would benefit from proximity to an airport.
- 9-10** The Specific Plan is a policy level document and, at the time of the Notice of Preparation, the ownership or potential developer of PA-1 had not provided any indication of the nature of any development of that parcel. Therefore, the Specific Plan proceeded at a policy plan level of analysis for that site and a more development level of analysis for PA-2. As stated in Section 2.6 of the Project Description: "At this time, no development is proposed on PA-1 of the Specific Plan; however, development of two industrial buildings is proposed on PA-2 and applications for a tentative tract map, development agreement and development plan review have been submitted for two industrial buildings totaling approximately 1.3 million square feet. Therefore, the EIR analyzes the proposed project at a specific plan level of detail for both PA-1 and PA-2, but also provides a project-level analysis of development impacts for PA-2 based upon the entitlement applications that are being considered by the City." Specific Plan Exhibit 5.12, Drainage Plan/Hydrology, includes the building outlines for PA-2 for illustrative purposes only. The drainage improvements shown on that exhibit, however, are a part of the Specific Plan. Specific Plan Exhibit 5.13, Conceptual Grading Plan, is also included for informational purposes and only applies to PA-2. As outlined in the Specific Plan, grading plans for each tract within the project shall be reviewed and approved by the City.
- 9-11** As indicated in Appendix B1 of the Specific Plan, the "purpose of this Screening Table is to provide preliminary guidance for the Colony Commerce Center Specific Plan in measuring the reduction of greenhouse gas emissions. The actual design features, choices,

¹ Available at <http://www.ontarioca.gov/engineering/design-guidelines-reqs-master-plans/standard-drawings-streets>.

² Available at <http://www.ontarioca.gov/mwg-internal/de5fs23hu73ds/progress?id=PD3cg4ou5VxJrDdOtAY8s6Az2ih00zmvbuc0R6Dv4XM>.

and construction measures to be incorporated into the development projects will be presented during the Development Plan submittal process to the City.”

The purpose of the Screening Table is to identify those measures that can be incorporated into projects to provide consistency with the City’s CAP. However, the Specific Plan also notes that “the actual design features, choices, and construction measures to be incorporated into the development projects will be presented during the Development Plan submittal process to the City.” The Screening Table in Appendix B1 of the Specific Plan does also identify those measures which the developer of PA-2 is proposing to voluntarily implement, and which therefore have also been incorporated into the project as identified in the Draft EIR.

The Specific Plan does not mandate that the PA-1 developer implement the same measures as the PA-2 developer to achieve the necessary 100-points. Pursuant to PDF GHG-1, however, the PA-1 developer must implement measures that are sufficient to exceed the 100-point threshold, and thus compliance with the CAP. Please refer to Response to Comment 10-9.

- 9-12** The commenter has not specifically identified any mitigation measures that are not clear and, to the extent a measure is silent as to its applicability, it applies to (and is enforceable against) both PA-1 and PA-2. The City has identified mitigation measures appropriate for the Specific Plan and the development of PA-2. The allocation of responsibility will be further defined at the time of building permits related to the successful mitigation of impacts based on the specifics of the development plans submitted for plan check review and when permits are pulled. Further certainty as to responsibilities of the individual developers/applicants within the Specific Plan boundary can be further solidified within the PA-2 Development Agreement and any future development for PA-1, which is required prior to any development.
- 9-13** Mitigation Measure NOI-1 has been revised as outlined in Section 2.5, Revisions to the Draft EIR, of this Final EIR. With the revisions, Mitigation Measure NOI-1 requires the project applicant (developer of PA-1 or PA-2) to implement on or more specific measures to ensure that outdoor ambient sound levels associated with site preparation construction activities at NMS-2 are reduced by at least 2 dBA. The measure identifies a menu of options a developer may use to meet this reduction requirement, including a temporary noise barrier. The feasibility of installing a noise barrier is not an effective noise mitigation given the size of the site and buildings, the site configuration, and the proximity to the nearest sensitive receptors. Since there is a menu of approaches to dampen sound from the project in the EIR, the project can effectively mitigate while not relying on a measure that is less than effective in addressing the issue. NOI-1 also requires the developer to measure noise levels to ensure compliance, and report the relevant data to the City.
- 9-14** The commenter questions the allocation of fees associated with the traffic improvements required by the Draft EIR, but does not allege the mitigation measures are deficient or fail to mitigate an environmental impact. The City concurs that an appropriate and balanced allocation of mitigation based on each developer’s share of the environmental impact is

important. As such, the fair share allocation of fees (and, separately, the required Development Impact Fees to be paid pursuant to the City's DIF Program for each planning area) is dependent upon the proposed development. However, the allocation of fees is not an environmental issue under CEQA, but an economic issue that does not require analysis in the Draft EIR. Please refer to Topical Response #2 for a discussion of implementation of the traffic mitigation measures in the Draft EIR.

- 9-15** Please refer to Topical Response #2 for a discussion of the traffic mitigation measures. The mitigation measures are enforceable, and commenter has not presented any evidence to the contrary. Furthermore, the Draft EIR analyzed the project, inclusive of PA-1 and PA-2 based upon development proposals and realistic development assumptions. However, the finalization of any "fair share" allocation among parcels within the Specific Plan boundary will be determined by proposed uses, building types and configurations, trip generation characteristic, and building sizes. The allocation and implementation of the mitigation fees and responsibilities within the Specific Plan boundary will occur at the time of issuance of building permits. To the extent the overall development proposed for either PA-1 or PA-2 is lesser than what was analyzed in the Draft EIR, the fair share mitigation total for the entire project may be reduced to the level necessary to mitigate for the project's impacts. There is no issue with enforceability of the mitigation measures.
- 9-16** See Response to Comment 9-15 above. The City is bound by legal principles to impose mitigation that is roughly proportional to the impacts of the project. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 364.) Thus, any fair share fees imposed on either PA-1 or PA-2 will be directly related to the impact created by the development proposed for the respective planning areas. As discussed in Response to Comment 9-15, the Draft EIR's traffic analysis and calculation of fair share fees is based upon reasonable assumptions about future development of the planning areas. Further, the developers of each individual planning area, PA-1 or PA-2, will be responsible to pay for the fees assigned to those development areas at the time of building permit issuance.
- 9-17** Funds, or fees, placed in deposit in escrow and to be used for mitigation outside of the City's jurisdiction are required under State Law to be encumbered to implement the mitigation or refunded to the developer after 5 years if encumbered.
- 9-18** The City's Development Impact Fee Program (DIF) is separate from the fair share allocations identified in the Draft EIR's transportation mitigation measures. The DIF Program includes fees associated with impacts beyond just traffic and transportation impacts.
- 9-19** The commenter asserts that the Draft EIR made unreasonable assumption about the phasing of development that impacts the analysis. First, the Draft EIR's assumptions with respect to timing of buildout (PA-2 in 2017 and PA-1 in 2025) were not unreasonable. The TOP requires that a specific plan be prepared prior to development to ensure that sufficient land area is included to achieve unified districts and neighborhoods. The Colony Commerce Center Specific Plan proposes to fulfill this requirement. Because PA-1 could not be

developed until a specific plan (Colony Commerce Center Specific Plan) is approved, it was not unreasonable to assume that a development application would only be submitted after the Colony Commerce Center Specific Plan is formally approved. If such an application were submitted after approval of the Specific Plan, a reasonable timeline assumes full buildout of PA-1 in 2025 (because the application would have to ensure consistency with the Specific Plan, obtain the necessary approvals from the City, and commence and finish construction). PA-2 was assumed to be developed sooner because the project applicant's specific applications would be considered in conjunction with the Specific Plan. Also, it would have been speculative to assume that the Borba Trust, as owners of the majority of PA-1, were willing to enter into a ground lease with a potential lessee on such a constrained timeline. The assumptions of the Draft EIR with respect to phasing are reasonable and constituted a good faith effort at disclosure.

Further, the pre-application process is considered by the City as a pre-screening for property owners to understand the standards and processes they would encounter during development; however, the pre-application process (and the application process generally) is not a predictor of whether or when a project would be approved or constructed. The submission of a pre-application by Prologis does not indicate immediate project submittal.

- 9-20** This comment is requesting a change to the Specific Plan, not the Draft EIR and does not respond to the content of the Draft EIR. This comment does not present a comment regarding the environmental impacts of the project or the adequacy of the analysis of environmental impacts in the Draft EIR. This comment is directed only to the phasing of infrastructure improvements which is not an environmental issue. This comment will be provided to the City decision makers for its consideration in connection with the proposed project
- 9-21** The comment requests revisions to the Traffic Impact Analysis to analyze alternative timing assumption. The Traffic Analysis scenarios evaluated included existing conditions, project opening (2017) scenarios, and Future Buildout (2025) scenarios. The traffic analyses were prepared in accordance with City of Ontario traffic study requirements. As discussed in Response to Comment 9-19, the Draft EIR's assumptions about the phasing of development of PA-1 were reasonable.
- 9-22** Please refer to Response to Comment 9-19, the Draft EIR's assumptions about the phasing of development of PA-1 were reasonable.
- 9-23** The Draft EIR's assumptions about building orientation were reasonable, and commenter does not provide any substantial evidence suggesting otherwise. The Draft EIR is not required to include an analysis of the impacts for all possible development scenarios for PA-1 as at this time, no development applications have been submitted for PA-1 and as stated previously, PA-1 is analyzed at a specific plan level as opposed to a project-level analysis given the lack of a specific development application proposal. Since the specific development scenario was not available at the time of the analysis, the assumptions and emission estimates in the Draft EIR includes an analysis based on general designs for the planning area. The Draft EIR reasonably assumed that development would be similar to that proposed for PA-2, which included two north/south oriented buildings.

- 9-24** The comment states that the Draft EIR did not evaluate retention of the existing single-family residence onsite, which the comment states is reasonably foreseeable. The comment also states that the existing residence may preclude road improvements and utility improvements proposed by the Specific Plan and required in the mitigation measures of the Draft EIR. As stated in Section 2.6 of the Project Description: “At this time, no development is proposed on PA-1 of the Specific Plan; however, development of two industrial buildings is proposed on PA-2 and applications for a tentative tract map, development agreement and development plan review have been submitted for two industrial buildings totaling approximately 1.3 million square feet. Therefore, the EIR analyzes the proposed project at a specific plan level of detail for both PA-1 and PA-2, but also provides a project-level analysis of development impacts for PA-2 based upon the entitlement applications that are being considered by the City.” Therefore, implementation of a specific development proposal on PA-1 was not considered as this level of detail is not currently before the City. At this time it is speculative to assess whether the existing residence remains and its impact on the future development of PA-1. This project-level analysis will be conducted when the City considers an application for this site.
- 9-25** Exhibits within the Transportation and Traffic section of the Final EIR have been revised to match the figures within the Traffic Impact Analysis. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for updated figures.
- 9-26** Comment noted. The Joseph and Doleen Borba Administrative Trust and Prologis has been added to the project mailing list and will be notified of the availability of the Final EIR and future project hearings.

Comment Letter 10 – Sheppard Mullin LLP

- 10-1** This comment includes introductory remarks and does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the Draft EIR. No further response to this comment is required.
- 10-2** The comment questions whether the Draft EIR’s reference and inclusion of information from the TOP EIR is intended to invoke the tiering provisions of CEQA, and if so, CEQA’s streamlining/tiering provisions must be followed. CEQA does permit lead agencies to “tier” EIRs. CEQA defines tiering as “the coverage of general matters and environmental effects in an [EIR] prepared for a policy, plan or program or ordinance followed by narrower or site-specific [EIR] ... which concentrate[s] on the environmental effects which (a) are capable of being mitigated, or (b) were not analyzed as significant effect on the environment in the prior EIR.” (Pub. Res. Code § 21068.5.) The premise of tiering is that a lead agency “need not examine those effects which the lead agency determines were ... examined at a sufficient level of detail in the prior [EIR].” (Pub. Res. Code § 21094.) Thus, tiering is used to limit or narrow the scope of analysis for a particular project when a policy, plan or program covering the project was previously analyzed in an EIR.

Here, the Draft EIR does not attempt to tier off of the TOP EIR, nor is any such tiering required. The Draft EIR does not eliminate or narrow relevant analysis on the basis that the TOP EIR thoroughly and adequately analyzed the project's impacts. However, the TOP and TOP EIR are relevant to the project as the City of Ontario's policy document applicable to the project (TOP) and the associated environmental analysis (TOP EIR). The Draft EIR describes the documents and their relevance in Chapter 1, *Introduction*, and Chapter 2, *Project Description*, and both are included in Chapter 8, *References*.

It should be noted that the *Initial Study*, Appendix A of the Draft EIR, does suggest that the Draft EIR is tiered from the TOP EIR. (Appendix A at 34.) However, that discussion mistakenly identifies how the TOP EIR, and other prior analyses, are used in the Draft EIR. Moreover, as discussed above, notwithstanding the Initial Study's statement that certain impacts were adequately analyzed in the TOP EIR, the Draft EIR thoroughly analyzed all potential impacts of the proposed project. For instance, with respect to potential Population and Housing impacts, the Draft EIR did not defer to the analysis in the TOP EIR, but rather independently analyzed whether the project could result in any impacts.

Because the TOP, TOP EIR (State Clearinghouse No. 2008101140), and NMC EIR include valuable information relevant to the analysis of the project's environmental impacts, both documents are discussed thoroughly in the Draft EIR. To the extent the environmental analysis of the TOP EIR includes factual information that aids the Draft EIR's analysis, that information is referenced and discussed. For instance, the Draft EIR's analysis of potential agricultural and forestry resources utilizes factual information contained in the TOP and TOP EIR, among other documents. CEQA permits this type of analysis, and reliance on previously certified EIRs for factual information is proper. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 442 [lead agency may rely on information from a previously certified EIR as long as it is either incorporated "or described and referenced" in the project EIR]; *Habitat and Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1292-1293 [EIR may rely on information contained in previously certified EIRs, even if not tiering].) Furthermore, the Draft EIR's analysis, which does not tier from the TOP EIR (or other EIRs), is a more conservative approach than tiering because it analyzes all potential project impacts at a project-specific level.

- 10-3** The Draft EIR approach that PA-1 and PA-2 will be analyzed at a specific plan level and PA-2 will be analyzed in greater detail is a common CEQA approach to analyzing specific plans that have an imminent development proposal such as the case here. The commenter is correct that, for certain resource areas, additional information and technical studies were provided for PA-2. This additional information was provided because it is relevant to PA-2's analysis at a project-specific level to allow for proper consideration of PA-2's entitlements (tentative tract map, development plan, and development agreement), rather than a specific plan level. Because exact, concrete details about future development of PA-1 are not available, such studies and information could not be prepared. Thus, it is analyzed at a specific plan level in the Draft EIR.

The commenter is referred to Topical Response #1 for a discussion of technical studies and analyses that cover PA-1 that were added to the Final EIR.

Finally, the Draft EIR does distinguish between both planning areas in specific resource analyses, mitigation measures, and conclusions, to the extent necessary. With respect to biological resources, for instance, the Draft EIR includes mitigation measures specific to PA-1 to ensure impacts will be less than significant. Because the impacts associated with PA-2 are also less than significant, the Draft EIR concluded that the project, as a whole, would have less than significant biological resource impacts. For purposes of disclosure of impacts, the Draft EIR provides an appropriate and thorough disclosure of impacts and potential mitigation for decision makers to fully consider issues, impacts, and mitigation for both the discretionary policy documents, as well as the specific site issues.

- 10-4** Please refer to Draft EIR Section 3.21, which discusses the basis for the cumulative impacts analysis in the Draft EIR. As discussed therein, the cumulative analysis uses a list of related projects based upon information on file at the City of Ontario, the majority of which are within the New Model Colony (now known as Ontario Ranch). The related project's list also includes a project in the City of Chino and a project in the City of Eastvale. This methodology is expressly permitted by CEQA. (CEQA Guidelines § 15130.) To the extent there are documents that are relevant to the cumulative impacts associated with implementation of the New Model Colony (New Model Colony Water Master Plan, for instance), those documents are utilized to assess possible cumulative impacts. This is not the same as relying on a summary of projections contained in an adopted general plan or related planning document, as seemingly suggested by commenter. (CEQA Guidelines § 15130 [providing an alternative method of analyzing cumulative impacts].) Moreover, the commenter provides only general assertions, but fails to provide specific examples of alleged deficiencies in the cumulative analysis.
- 10-5** The Draft EIR analyzes the potential environmental impacts of the project, which includes a Specific Plan that allows certain uses at the project site. There are number of resource areas that are not impacted by the proposed uses at the project site. For instance, the biological resources and cultural resources analyses would not be impacted by the specific use of the project site, but rather are largely dependent upon project construction and ultimate development. However, to the extent assumptions about project uses are relevant to the environmental analysis (e.g., air quality, transportation, GHGs), those assumptions are consistently used throughout the Draft EIR. As discussed in the Project Description, PA-2 would be developed with approximately 1.3 million square feet of industrial warehouse buildings, along with necessary infrastructure, while PA-1 allows for a total development of up to 1,379,501 square feet of industrial development. (Draft EIR at 2-10.) Please refer to Response to Comment 6-2 for a discussion of why the assumptions in the Draft EIR were reasonable and appropriate. Chapter 2, Project Description, of the Draft EIR, included the types of uses consistent with the Specific Plan prepared for the project.
- 10-6** As noted in the Draft EIR, the frontage of roadway segments of Merrill Avenue, Carpenter Avenue, and Remington Avenue will be improved to their ultimate widths per the exiting City of Ontario Functional Roadway Classification Plan. (Draft EIR at 5-3.) Please also refer to Specific Plan Exhibit 5.1, *Circulation Plan*, which establishes the hierarchy and general location of roadways within Colony Commerce Center, and Specific Plan Exhibit

5.2, *City of Ontario Roadway Classification Plan*. All required street right-of-ways and improvement are required to be consistent with the City's General Plan, New Model Colony Plan, Public Works design standards for arterial highways, and the proposed Specific Plan. The term "1/2 width improvements" means that the project is responsible for the road improvements along its frontage up to the centerline of the roadway (i.e., 1/2 the width of the roadway). Pursuant to the Specific Plan, developers of the project site will be responsible for those improvements as determined by the City Engineer and pursuant to the mitigation measures identified in the Draft EIR and/or conditions of approval established on the approved tentative maps for the project. The developers of PA-1 and PA-2 will each be responsible for the improvements fronting the respective planning areas.

10-7 Please refer to Response to Comment 9-3 for a discussion of why the text of the Development Agreement is not included in the Draft EIR. CEQA requires a project description to identify, to the extent known by the lead agency, a list of permits and other approvals required to implement the project. (CEQA Guidelines § 15124.) It does not, however, require the applications for such approvals or documents associated with such approvals to be included in an EIR. Here, the Draft EIR expressly identifies the required approvals and permits in Section 2.9. To the extent the Development Agreement, Tentative Tract Map, or other approvals or permits could result in physical impacts to the environment, those aspects are identified and thoroughly analyzed in the Draft EIR.

10-8 The comment relates to financing of project improvements, which is not a comment on the adequacy of the analysis of the physical impacts of the project in the Draft EIR.

The Draft EIR specifically notes which improvement will be constructed as part of the project. Exhibit 2-8, for instance, specifically identifies both (1) water lines to be constructed by the project and (2) future public water lines. Those improvements identified as associated with the project will be constructed, at developer's cost, consistent with the required entitlements, Draft EIR, and Specific Plan. The commenter is referred to the discussion and exhibits in the Project Description.

10-9 The individual project design features listed in the Draft EIR as applicable to the development of PA-2 were included as sustainability measures to be incorporated into PA-2 consistent with the City's CAP. The Draft EIR has been revised to classify the GHG reduction measures that will be incorporated into PA-2 a PDF GHG-2. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR. Please also refer to Response to Comment 9-11 for additional information about the measures incorporated to comply with the City's CAP. Also, the Draft EIR has been revised to include PDF GHG-1, which mandates that the PA-1 developer incorporate GHG reduction measures to achieve or exceed the 100 point threshold in the City's CAP. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR. The Draft EIR's inclusion of project design features is appropriate. CEQA permits design features of a project, which are considered part of the proposed project, to be considered when analyzing potential impacts. (*Banker's Hill, Hillcrest, Park W. Community Preservation Group v. City of San Diego* (2006) 193 Cal.App.4th 249 [planters incorporated into the project's design were appropriately considered a part of the project for environmental review purposes].) Here, the project design features "define the project itself" and are appropriately not required as mitigation.

(*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 657 fn. 8.) The measures are not avoidance, minimization, or mitigation measures, but features of the project that ensure compliance with various regulatory requirements.

- 10-10** Given the regional nature of some of the environmental resource topics, a consistent application of the cumulative project list is inappropriate. The air quality and greenhouse gas emissions analyses, for example, rely on modeled analyses and conclusions, so it is therefore appropriate to analyze those topical areas in a broad, more regional, manner. The cumulative impact analysis has been conducted at the scale appropriate for the topical area.

Also, please refer to Response to Comment 10-4, which discusses the basis for the cumulative impacts analysis of the Draft EIR. The EIR is not required to reassert the basis for the cumulative impacts analysis in each section. (CEQA Guidelines § 15130(b) [the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone...].) Also, although not specifically referenced, the Draft EIR does discuss incorporation of the substance of Table 3-1 into its cumulative impact analyses when necessary. (See Draft EIR at 4.14-27 [“...other cumulative projects were then manually added to those Opening Year Cumulative interpolated forecasts...].)

The commenter does not provide any evidence, or site to a specific section of the Draft EIR, supporting the assertion that the cumulative impacts discussion is not accurate or consistent with CEQA.

- 10-11** The comment discusses the Draft EIR’s use/incorporation of analyses from the NMC EIR and TOP EIR, and refers the reader to Comment 10-2 (noted as “General Comment (a)” in the comment). Therefore, please see the Response to Comment 10-2, above.
- 10-12** Please refer to Response to Comment 10-2 regarding the Draft EIR’s reference, discussion, and use of the NMC EIR and TOP EIR. With respect to agricultural resources, the Draft EIR concludes that, based upon the LESA Model, the loss of agricultural land from implementation of the project would have a significant impact on farmland and agricultural resources. (Draft EIR at 4.2-7.) The Draft EIR then, as an additional evaluation, considered whether the project’s conversion of agricultural and farmland would be consistent with the TOP and TOP EIR. As discussed in the Draft EIR, the project is consistent with the TOP and, therefore, the loss of agricultural land would not be a significant impact with respect to consistency with the TOP. To ensure these conclusions are accurately represented in the Draft EIR, the Draft EIR will be revised. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR. The revisions discussed below do not require recirculation of the Draft EIR, as they are clarifications to the conclusions of the Draft EIR. The Draft EIR explicitly acknowledges that based upon the LESA Model, a well-accepted model for evaluating potential impacts to agricultural land, the project was determined to have a significant impact to farmland and agricultural resources. (Draft EIR at 4.2-7). Please also see Draft EIR, Appendix B, *Land Evaluation and Site Assessment (LESA) Model*, which calculates and evaluates the project’s impact on agricultural resources. Similarly, after identifying the project’s impact as significant, the Draft EIR considered the feasibility of

various potential mitigation measures. (See Draft EIR Section 4.2.5.) Because no mitigation measures were feasible, the Draft EIR concluded that the “loss of agricultural lands is considered significant and unavoidable on the project site and is also considered cumulatively considerable from a regional perspective.” (Draft EIR Section 4.2.6.)

10-13 As discussed on page 4.2-8 of the Draft EIR, the project would be required to adhere to the Agricultural Overlay District standards. As discussed in the City of Ontario Development Code, the Agricultural Overlay District contains site development standards and separation requirements for new development, that the project would be required to adhere to. For example, a minimum 100 feet separation shall be required between a new residential, commercial, or industrial development or structure used for public assembly and an existing animal feed trough, corral/pen or an existing dairy/feed lot including manure stockpiles and related wastewater detention basins. The 100-foot separation requirement may be satisfied by an off-site easement acceptable to the Planning Director with adjacent properties, submitted with the initial final map and recorded prior to or concurrent with the final map. Adherence to Agricultural Overlay District standards would ensure the proposed project would be consistent with surrounding agricultural uses and reduce the potential for impacts related to existing agricultural uses.

10-14 A survey of biological resources was conducted by PCR biologists across the entire approximate 123-acre site, including PA-1 and PA-2 in 2015, and off-site work areas in 2016. The DSFLF Survey that was included in the Draft EIR (“2013 DSFLF Survey”), however, was only conducted on PA-2, due to site inaccessibility at the time of the survey in 2013. The Draft EIR nevertheless concluded, based upon site observation and area characteristics (and environmental evidence from the 2013 DSFLF Survey), that it was unlikely that there was any suitable DSFLF habitat on PA-1. For instance, the Draft EIR’s Biological Resources Assessment notes that there was no potential for the DSFLF to occur on either PA-1 or PA-2 because the sites were both highly disturbed and soils had been extensively modified. (Draft EIR Appendix D at C-1.)

To ensure such impacts were less than significant, the Draft EIR included Mitigation Measure BIO-1, which required a site-specific analysis of the potential for DSFLF on PA-1. However, the commenter is also referred to Topical Response #2, which discusses additional studies prepared for PA-1, including a new DSFLF survey, provided by a separate commenter, and which confirm the conclusion in the Draft EIR. As discussed in Topical Response #1, Mitigation Measure PA-1 is no longer required.

10-15 The cumulative impact section has been revised. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes (specifically see Text Revision 7). As discussed in that revision, with the implementation of mitigation measures, the project would not have a significant impact to biological resources, and impacts would not be cumulatively considerable. The comment also discusses the Draft EIR’s use/incorporation of analyses from the NMC EIR and TOP EIR. Please see Response to Comment 10-2 above,

10-16 This comment requests the City confirm whether the cultural resources assessment includes PA-1 and the offsite work areas. The Draft EIR cultural resources section and cultural

resources technical report included in Appendix E does include PA-1 and the offsite work areas. AECOM staff archaeologist Dustin Kay visited the project site and off-site areas on May 14, 2015 and conducted a pedestrian survey. AECOM also conducted a record search with a ½ mile buffer around the project site, which includes the off-site work areas. In total, 40 previously recorded cultural resources were identified through the record search. In addition, AECOM staff conducted desktop survey and review of literature of the study area and general vicinity through review inventories of the NRHP, the CRHR, the California Historical Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, the Historic Resources Inventory (HRI), historic aerial photographs and topographic maps, and other standard sources of information for these areas. Therefore, a good faith effort has been made to identify and assess cultural resources within the project site and its off-site work areas.

10-17 Refer to Response to Comment 4-2 above. For this project, AB-52 was not applicable since the City first circulated a Notice of Preparation (NOP) on June 11, 2015, and AB-52 would only apply to projects for which an NOP or Notice of Negative Declaration or Notice of Mitigated Negative Declaration was issued on or after July 1, 2015. Information and copies of correspondence with Native American tribes and individuals tribes are included in the cultural resources technical report included in Appendix E, Exhibit B.

10-18 See Response to Comment 10-17 above.

10-19 This comment questions if impacts were analyzed for the project site and the off-site areas. As noted in Section 4.5.2 of the Draft EIR, the Draft EIR analyzed the project consisting of the project site, as well as the off-site improvement areas. Mitigation measures CUL-1 through CUL-3, included in Section 4.5.5, are applicable to the project, as a whole, where ground disturbance may occur and is not limited to the project site or excludes the off-site work areas.

See Draft EIR Executive Summary, page ES-2: “The project also includes associated off-site infrastructure improvements that, when added to the 123.17-acre project site, totals approximately 139.14 acres (study area), the impacts to which are considered in this Draft EIR.” The term “study area” encompasses both the project area and offsite work areas. Mitigation measures in the EIR cover the project site and offsite work areas. In addition, the following language has been added to CUL-1 to clarify the process (see underlined text).

“Cultural resources monitoring is required on the project site and off-site areas, once project-related excavations reach 4 feet below current grade during all project-related earthmoving in the Specific Plan.”

Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

10-20 This comment states the cumulative impact analysis is deficient. Please refer to Response to Comment 10-4 regarding the cumulative analysis in the Draft EIR. As noted in Section 4.5.4.4 of the Draft EIR, given that project implementation would not result in significant

impacts to cultural resources or unique archaeological resources, project would not have significant cumulative effects on cultural resources. The reasonably anticipated future projects within the region including those within areas under the jurisdiction of the City that are subject to CEQA level environmental review are required to mitigate impacts to cultural resources and/or unique archaeological resource to a less-than-significant level. Therefore, cumulatively considerable impacts to cultural resources that would result from implementation of the project are not expected to occur.

- 10-21** PA-2 was analyzed in the geotechnical report. As discussed on page 4.6-7 of the Draft EIR, because of the proximity of PA-1 and PA-2 and the similarity of existing physical conditions, information from the geotechnical investigation conducted on the PA-2 portion of the project site was also used to assess potential geologic and geotechnical aspects of PA-1 at a specific plan level of analysis. Also, the geotechnical investigation was not the only source of information used in the Draft EIR, and the Draft EIR's analysis is supported by substantial evidence. Moreover, prior to consideration of any structural development on PA-1 pursuant to the specific plan, site-specific geologic and geotechnical studies would be required to be submitted to the City.

Also, please refer to Topical Response #1, which discusses new studies added to the Draft EIR, including a site-specific geotechnical report for PA-1. As discussed in Topical Response #1, the site-specific geotechnical report covering PA-1, which was submitted by a separate commenter, confirms the analysis and conclusions of the Draft EIR with respect to PA-1.

- 10-22** The TOP policies and the Specific Plan design guidelines (which will require adherence/consistency with the Uniform Building Code and California Building Code regulations related to wind) discussed in the Draft EIR are legal regulations applicable to the project. An agency may rely on generally applicable regulations when analyzing whether the project will result in a significant impact. (*San Francisco Beautiful v. City and County of San Francisco* (2014) 226 Cal.App.4th 1012, 1033.) Further, the Specific Plan design guidelines guide the form and shape of the actual land development rather than mitigate their impacts, and the projects are reviewed for compliance in the design review and entitlement processes. The relevant TOP policies are identified in the Draft EIR, and available on the City's website. The Draft EIR also explains that the Specific Plan's design guidelines would ensure adherence to the UBC/CBC requirements.

- 10-23** The recommendations in the Geotechnical Report prepared for PA-2 are part of the proposed project and, therefore, compliance is required. The recommendations of the Geotechnical Report, though not specifically identified as such, are design features of the project. (*Banker's Hill, Hillcrest, Park W. Community Preservation Group v. City of San Diego* (2006) 193 Cal.App.4th 249; *Berkeley Hillside Preservation v. City of Berkeley* (2015) 241 Cal.App.4th 943, 961.) Moreover, to further ensure adherence to such recommendations, compliance with the Geotechnical Report will be included as a condition of approval. Nevertheless, the Draft EIR has been revised to include PDF GEO-1, which mandates compliance with the PA-2 Geotechnical Report. The addition of PDF GEO-1 is not a significant revision to the Draft EIR, which already analyzed the project's compliance with the recommendations of the PA-2 Geotechnical Report. Also, the

inclusion of PDF GEO-1 is proper and complies with CEQA as the recommendations are part of the project, not a proposed subsequent action taken to mitigate any significant effect of the project. (*Berkeley Hillside Preservation v. City of Berkeley* (2015) 241 Cal.App.4th 943, 961.) Thus, the recommendations in the PA-2 Geotechnical Report define the project itself, as opposed to measures taken to lessen the impact of the project. (*Trisha Lee Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 656 fn. 8.) Likewise, PDF GEO-1 requires that the developer of PA-1 comply with and implement the recommendations in the geotechnical report prepared for that planning area (refer to Topical Response #1). PDF GEO-1 will be added to the Mitigation Monitoring and Reporting Program. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR.

10-24 See Response to Comment 10-23 above.

10-25 See Response to Comment 10-4 above.

10-26 The comment requests mitigation measures be added for PA-2 in the geology and soils section. However, as evidenced by the analysis in the Draft EIR, mitigation measures are unnecessary. The Draft EIR found a less than significant impact for the project, including accounting for construction and operation of PA-2. Therefore, no mitigation measures are required.

10-27 See Response to Comment 10-9 above.

10-28 The Draft EIR was being developed when the *Ukiah Citizens for Safety First v. City of Ukiah* decision became available. As mentioned on Page 4.7-23 of the Draft EIR, the project would result in an estimated use of 15,580 megawatt hours of electricity and 292,976 therms of natural gas each year. The Final EIR has been revised to include additional estimates associated with construction and operation trip generation. Refer to Section 2.5, Revisions to the Draft EIR, for the list of changes and Appendix C of the Final EIR for energy consumption estimates.

The Draft EIR includes a discussion of the project's use of energy, and whether such use would be wasteful, inefficient, or unnecessary, as required by Appendix F. Draft EIR Section 4.7.4.5. Importantly, courts have recognized that "neither Appendix F, itself, nor any other authority requires that an EIR discuss every possible energy impact or conservation measure listed in Appendix F." (*Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 935.) What is required, is that an EIR include substantial evidence supporting its conclusions about energy use. Here, that standard is satisfied because the Draft EIR identifies the project's sources of energy use and identifies measures that will be implemented to reduce inefficient or wasteful energy use. The Draft EIR notes that the project would incorporate multiple measures, beyond compliance with applicable building codes, that would increase efficiency. The majority of these measures are a result of compliance with the City's Climate Action Plan ("CAP"). (CAP at ES-5.) The CAP, which was adopted in 2014, recognizes that building energy use is a significant contributor to GHG emissions, and includes measures designed to improve building energy efficiency,

among other things. (CAP at ES-6.) The project, consistent with the CAP, incorporates a number of these measures that serve to minimize energy usage, including (1) using modestly enhanced insulation, (2) installing enhanced window insulation, (3) identifying opportunities to provide natural light to reduce reliance on artificial light, (4) using energy start commercial appliances, and using light-colored roofing with high solar reflectance to reduce heat island effects, among other things. (EIR at 4.7-23.) These measures include considerations related to the building design and siting, among other things, all of which contribute to an overall energy usage reduction. Thus, as required by Appendix F, the Draft EIR includes a discussion of energy conservation measures.

Please refer to the revisions to the Draft EIR, as well as the analysis in the Draft EIR, for a discussion of the energy consumption associated with construction of the proposed project and measures that would be implemented to ensure efficient energy use. Additionally, the project would be constructed using tilt-up concrete construction. This method, where vertical concrete walls are poured and cured horizontally prior to being tilted up into place, requires less construction time and equipment compared to conventional warehouse construction, which utilizes masonry or wood frames.

The project's total operational energy use, inclusive of mobile source and direct energy use from building operations, is estimated to be 360,866 MMBTU per year. This would increase peak energy demand from current baseline conditions. However, as discussed in the Draft EIR, the project would implement measures and features designed to ensure that energy is not wasted or utilized inefficiently.

- 10-29** With respect to off-site improvements, such improvements are located within close proximity (i.e., immediately adjacent or bordering) to the project site, which was analyzed in two separate Phase I ESAs. Those ESAs, which include, among other things, observations of the site and immediately adjacent areas, interviews with key personnel, a review of regulatory agency records, and a review of regulatory agency database reports for nearby potential hazards or recorded hazardous sites, provide substantial evidence about environmental conditions at the project site, as well as the immediately adjacent off-site improvement areas. Through these methods, the ESAs did not identify any items of environmental concern on adjacent properties. (See e.g., Draft EIR, Appendix G at 25.) Moreover, the off-site improvements are located in areas that are already developed (i.e., roadways and along the Cucamonga Creek channel), and would not result in the disturbance of unimproved land that could have unidentified hazards. Finally, as discussed in the Draft EIR, any discovered environmental conditions would be subject to strict cleanup and remediation requirements imposed by local and state regulations (particularly the California Department of Toxic Substances regulations).

Please refer to Topical Response #1 for a discussion of the Draft EIR's analysis of hazards and hazardous substances on PA-1, as well as information about the Phase I ESA performed for PA-1 and included in the Final EIR.

- 10-30** The City's Environmental Performance Standards have been updated so that performance standards are now included under their respective development standard. Mandatory

compliance with these standards would ensure the project would have no impact related to the routine transport, use, or disposal of hazardous materials. Additional details regarding the Environmental Performance Standards, and the change in where they are now located, have been added to the Final EIR in Section 4.8.3, Regulatory Setting. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

CEQA does not require a lead agency to conduct every test or perform all research, study, or experimentation suggested. CEQA Guidelines § 15204. An EIR need not be encyclopedic. An EIR must, however, include a level of analysis that provides decision makers and the public with adequate information. That standard is satisfied here, through reference to the City's Environmental Performance Standards and citation to their location in the City's Municipal Code.

10-31 Please refer to Response to Comment 10-2 regarding tiering. Regarding nearby airports, the commenter does not allege that the Draft EIR's analysis of consistency with applicable airport planning documents and/or hazardous impacts analysis is inappropriate and, instead, requests additional information. As discussed in the Draft EIR, the Specific Plan requires that all development proposals be consistent with the Airport Land Use Compatibility Plans of Chino Airport and Ontario International Airport. (Specific Plan Section 2.9.) In fact, the Specific Plan was "prepared in conformance with the goals and policies of the ALUCP, including the compatibility zones that place land use restrictions on properties located within AIAs." (Draft EIR 4.10-9.) Therefore, impacts were determined to be less than significant. The commenter is referred to Draft EIR Section 4.10, *Land Use and Planning*, for a discussion of consistency with applicable airport plans. Also, please refer to Response 7-6 for a discussion of consistency with applicable airport land use plans.

10-32 Please refer to Response to Comment 10-4 regarding the adequacy of the cumulative impacts analysis.

10-33 Please refer to Response to Comment 10-2 regarding tiering.

For the hydrology impact analysis, the Draft EIR analyzed both PA-1 and PA-2 at a specific plan level of detail, referencing broader information presented in the TOP EIR, which is available for public review at the City of Ontario Planning Department. The WQMP and Preliminary Drainage Report, both of which were included in the Draft EIR, did not cover PA-1. The Water Supply Assessment included as Draft EIR Appendix J, however, did include the entire project site. Also, as explicitly noted in the Draft EIR, the "analysis also includes the on-site and off-site drainage improvements that will be implemented" for the proposed project. The Draft EIR also analyzed PA-2 at a more detailed project level in connection with the applications that have been filed for this area of the specific plan by the applicant. The analysis also considered the on-site and off-site drainage improvements that will be implemented pursuant to the specific plan for the proposed project. Development of PA-1, although reasonably foreseeable, has not been submitted to the City with detailed drainage proposal for consideration in this Draft EIR and is left at a programmatic level. Further, although peak flows and the regulatory setting for both PA-1 and PA-2 have been provided, the Draft EIR clearly acknowledges that "at such time that

development plans are completed for PA-1 (Specific Plan Phase 2), site-specific drainage studies will be required. Such studies will need to identify any increase in developed condition peak flows, measures to manage any incremental increase in storm flows (e.g., detention/retention basins, stormwater BMPs), and the timing of additional Master Plan improvements needed to serve Specific Plan buildout.”

- 10-34** The Draft EIR discusses hazardous materials in the context of sediment run-off. In the short term, the proposed project will involve storing limited quantities of petroleum products on-site during construction-related activities. These materials would remain within the project site during the period of construction. The accidental release of hazardous materials during construction activities could have negative impacts; however, the contractor’s compliance with federal, state and local requirements related to storage, use, and disposal of hazardous materials during construction would reduce any impacts related to the inadvertent release of hazardous material to a less than significant level. The constituent materials that may be considered hazardous are discussed in Section 4.8 of the Draft EIR. The regulatory structure currently in place prohibits the discharge of sediments through structural and operational BMPs. Therefore, impacts on water quality due to project construction are identified as less than significant with implementation of applicable construction phase BMPs identified in the SWPPP and Erosion/Sediment Control Plans, included in the Grading Plans for the projects.
- 10-35** Please refer to Response to Comment 10-4 regarding the cumulative impacts analysis.
- 10-36** The comment states that many of the mitigation measures and standard conditions within Section 4.9, Hydrology and Water Quality, do not differentiate between PA-1 and PA-2. Other than mitigation measure HWQ-1, which states that additional project drainage studies shall be prepared and submitted for approval by the City Engineer when future development plans are available for Specific Plan Phase 2 (PA-1), the additional mitigation measures apply to the entire Specific Plan area.
- 10-37** The comment states that the Draft EIR’s cumulative land use analysis consists of general conclusions and does not fulfill CEQA requirements. For cumulative impacts in the land use section, consideration of the cumulative impact list occurs. As discussed in the Draft EIR, all future development, within and outside of the City of Ontario, would be subject to development review, appropriate discretionary actions, CEQA review, and compliance with the regulatory setting of each applicable jurisdiction. Therefore, cumulative land use impacts are not anticipated to result in significant impacts. This analysis complies with CEQA. (*City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 902 [cumulative impacts analysis must be reasonable and practical].) Please also refer to Response to Comment 10-4.
- 10-38** Please refer to Response to Comment 9-13 for a discussion of revisions to Mitigation Measure NOI-1.
- 10-39** Clarification of the cumulative impact analysis has been added to the Final EIR to include discussion of whether other projects could be constructed within 0.25 miles of the project

(including off-site infrastructure improvements). Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

10-40 The comment states that the Population and Housing section of the Draft EIR should be revised to describe a methodology for the analysis that is related to significance thresholds. The population and housing impacts analysis methodology, which looks at regional growth plans as well as the local general plan (TOP), is the generally accepted approach to understanding whether growth is anticipated and acceptable rather than out of context, and therefore encouraging unanticipated population growth or housing. This methodology then creates a framework for addressing the thresholds of significance in Section 4.12.4.2. Please refer to Draft EIR Section 4.10.4.3 for a discussion of the project's consistency with the TOP and RTP/SCS. A discussion of the project's consistency with the Regional Housing Needs Assessment has been added to the Final EIR. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

10-41 As laid out above in Response to Comment 10-40, and described in the assessment of the regional planning documents and the TOP, growth of this scale and intensity of this development is consistent with SCAG's planning, the City of Ontario's planning efforts for Ontario Ranch, and anticipated and accepted growth patterns in the vicinity. There is no "leap-frog" or out of context development which would induce unanticipated growth, but rather the proposed development is consistent with an orchestrated development pattern throughout the Ontario Ranch vicinity.

The project itself is not anticipated to result in population and housing growth because new jobs are anticipated to be filled by existing workforce within the subregion. The City's future population and housing growth is the result of a number of factors, not necessarily new industrial development, including the buildout of new housing developments within the City. This is evidenced by the fact that, as noted in the TOP EIR, the City's population and housing numbers have been growing slower than jobs. Therefore, as discussed in the Draft EIR, there are factors that suggest that new jobs do not equal new population. Also, the TOP EIR notes that the TOP plan, itself, accommodates growth by designating specific areas for development.

10-42 The comment requests Draft EIR revisions to address the construction of replacement housing threshold. The relocation or demolition of two residences on a voluntary basis on the former dairy and agriculture site does not raise to a level of significant impact related to the threshold of significance which is the displacement of "substantial numbers" of housing. Because there are housing opportunities elsewhere in the City, and region, the displacement of two houses is not a "substantial number of people" and would not necessitate the construction of replacement housing elsewhere.

10-43 The comment refers to a general comment in the same letter regarding the analysis of cumulative impacts. Please refer to Response to Comment 10-4 above.

10-44 The comment states that the analysis does not account for additional police and fire services which may be needed to respond to the needs of project operation. As referenced in the

Draft EIR, a representative for the Ontario Police Department concluded that the project (construction and operations) is not anticipated to result in a reduction in the current level of police services within the City. Moreover, the Draft EIR notes that the project would not result in the need for new officers to maintain current service levels. Thus, because existing service would not be impacted by the project, new officers are not required and new facilities are also not required. Therefore, the project would not necessitate the construction of new or physical altered police facilities.

With respect to fire protection services, the Draft EIR explains that the project would not result in significant impacts because (1) a new fire stations, including Fire Station No. 9, is projected to be constructed in the near future, (2) the nearest currently operating fire station is approximately 4.5 miles from the project site, and (3) the Ontario Fire Department has agreements with adjacent jurisdictions for mutual aid for fire suppression and emergency medical services. Also, consistent with police services, the increase in workforce is not anticipated to require additional fire services because project workers will likely come from within the surrounding vicinity.

- 10-45** The comment requests that the Draft EIR either revise the analysis to incorporate discussion of fire flow, establish a fire flow significance threshold, or provide the information on fire flow as an informational item. The comment is on the organization of the Draft EIR, not the substance of the analysis. The discussion of fire flow, however, is included generally under the threshold questioning whether the project would necessitate the construction of new and/or expanded fire facilities that would cause a significant impact. Because adequate fire flow exists to serve the project, no significant impact would result.
- 10-46** The comment refers to the general comment regarding the analysis of cumulative impacts. Refer to Response to Comment 10-4 above.
- 10-47** Each section in Chapter 4 of the Draft EIR contains a discussion of Level of Significance After Mitigation whether or not mitigation is required. If no mitigation is required, the subsection summarizes the impacts and their level of significance. No further response is required.
- 10-48** As discussed in Response to Comment 10-6 above, all required street right-of-ways and improvements required to be consistent with the City's General Plan, New Model Colony Plan, Public Works design standards for arterial highways, and the proposed Specific Plan. Also, please refer to Response to Comment 9-8, which outlines additional regulatory requirements applicable to the design of roadways and other improvements.
- 10-49** Funds, or fees, placed in deposit at the City to be used for mitigation in conjunction with other developer's fees, with other City funds, and funds deposited at adjacent cities for mitigation to be developed in other jurisdictions are required under State Law to be encumbered or refunded to the developer after 5 years if encumbered. The City maintains regular communication with adjacent communities on mitigation projects from both Cities in the other City. There is mutual benefit for both Cities to implement mitigation measures programmatically and systemically to ensure little delay in the opening of development

projects. The City of Chino and the City of Ontario work together on reviewing proposed mitigation and programming their implementation.

Please refer to Topical Response #2 for a discussion of the Draft EIR's traffic mitigation measures.

- 10-50** Please refer to Topical Response #2 for a discussion of the Draft EIR's traffic mitigation measures. Also, Mitigation Measure TRANS-19 will be revised to reflect that there are no additional transportation mitigation measures beyond those identified in the Draft EIR (i.e., TRANS-1 – TRANS-18) that require coordination with the City. The project does contemplate additional improvements such as driveways and other right-of-way improvements, but those features are part of the project or otherwise required by applicable regulations. Also, the project applicant is required to pay fees into the City's DIF Program, which will be used to fund improvements throughout the City. There are no "project-level impact[s]" not identified in the traffic section that require additional mitigation beyond those specifically outlined in the Draft EIR.
- 10-51** The bullet points that follow Table 4.14-27 have been revised in the Final EIR. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.
- 10-52** Please refer to Topical Response #2 for a discussion of the Draft EIR's traffic analysis and mitigation.
- 10-53** As identified by the commenter, the discussion of wastewater in the Draft EIR does rely on the 2012 NMC Sewer Master Plan which is available at the City of Ontario Planning Department for review. The Master Plan and EIR assessment supports the conclusion that adequate infrastructure and facilities would serve the full buildout of the Ontario Ranch in the future, including the proposed project. The EIR indicates that the full build out of the Ontario Ranch would generated 246,340 gpd of wastewater, which is a conservative estimate. That generation load would not require the construction of new wastewater treatment facilities because the existing facilities have adequate remaining capacity. RP-1 has a current treatment capacity of 44 mgd, but currently treats an average of 28 mgd (leaving a remaining capacity of 16 mgd). Other than trunk and feeder facilities, no major treatment plant facilities are require in Ontario Ranch. The information requested by commenter (i.e., future facilities) is not required. The Draft EIR's analysis appropriately notes that there would be adequate wastewater capacity to serve the project, and reasonably uses the conclusions and analyses 2012 NMC Sewer Master Plan to reach its conclusion.
- 10-54** As discussed in the Draft EIR, the project's responsibility for impacts is the payment of fair share fees. This is consistent with the fair share, proportionality limitations that govern the imposition of mitigation measures. However, the responsibility for the timing, construction, and implementation of future roadway improvements rests with the City of Ontario (or other respective cities within which improvements would be constructed). Moreover, timing of construction of the improvements is unknown, as acknowledged in the Draft EIR. The City will, at the time it implements the improvements, be responsible for analyzing the improvements.

- 10-55** The commenter suggests that the Draft EIR include an additional alternative that assumes a different mixture of uses allowed by the Specific Plan. First, the Draft EIR analyzes a reasonable range of alternatives, and commenter does not state that the alternative's analysis fails to comply with CEQA. Second, an alternative that assumed a different use mixture would, ultimately, not be significantly different than the proposed project because the Specific Plan's allowed uses would not change. Thus, the project may be developed with different uses and an alternative that assumed a different use mix could be developed consistent with the proposed project (i.e., a 75%-25% split between warehousing and manufacturing). CEQA does not require multiple variations of different alternatives to be considered. (*Village Laguna of Laguna Beach, Inc. v. Board of Supervisors* (1982) 134 Cal.App.3d 1022, 1029.) Finally, an alternative that would limit the uses allowed within the Specific Plan would not comply with a number of the project objectives.
- 10-56** The commenter points out that the conclusion regarding Alternative 2 as it related to traffic impacts is inconsistent with the finding report in Table 6-1. Table 6-1 has been revised to correctly state the level of significance. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.
- 10-57** Text has been added to Section 6.3.2.2 of the Draft EIR to include additional aesthetic impact discussion for Alternative 2. The discussion now includes impact analysis related to views. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.
- 10-58** The Draft EIR notes that, under Alternative 2, development would be reduced by approximately 20%. Consistent with that reduction, it is anticipated that truck trips and other effects resulting from truck trips (e.g., air emissions) would also be incrementally reduced. This analysis is appropriate. (CEQA Guidelines § 15126.6 [alternatives need not be analyzed at the same level of detail as the project].) Moreover, using the information from Draft EIR Section 4.3, Air Quality, a 20% reduction in emissions would not reduce the project's significant and unavoidable air quality impacts. (See Draft EIR Table 4.3-12.)
- 10-59** Text has been added to Section 6.3.2.2 of the Draft EIR to include additional public services impact discussion for Alternative 2. The discussion now includes impact analysis related to police services. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.
- 10-60** CEQA specifies that alternatives need not be analyzed with the same degree of specificity as the proposed project. CEQA Guidelines Section 15126.6(d) states that an EIR shall include sufficient information about project alternatives to allow for meaningful evaluation, analysis, and comparison with the proposed project. The Draft EIR satisfies this standard by identifying that Alternative 2 would result in a 20% reduction in development and a similar reduction in truck trips. By referring to the discussion in Draft EIR Section 4.14, *Transportation and Traffic*, the public and decision makers can see that Alternative 2 would have lesser impacts than the proposed project. (*Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 547 [an alternatives analysis is sufficient if it assesses the relative merits of the project and the alternatives].)

- 10-61** The comment requests that the air quality and traffic sections be revised to provide factual data to support the conclusions. Please refer to Responses to Comments 10-58 and 10-60, above. The Draft EIR includes a specific breakdown of traffic generation from each planning area, which can be used to determine the traffic that would result from Alternative 3. Moreover, that traffic information is also reflective of the potential air quality impacts from Alternative 3, which would exclude air emissions from PA-1 which, under Alternative 3, would not be developed with industrial/warehousing uses.

Comment Letter 11 - Prologis LP

- 11-1** This comment includes introductory remarks and does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the Draft EIR. No further response to this comment is required.
- 11-2** The comment states that the Draft EIR does not demonstrate traditional “fair share” principles, and uses as an example the Draft EIR’s implication that the developer of PA-1 would ultimately be responsible for the development of a regional storm drain and two 12-foot x 12-foot boxes in Merrill Avenue. The comment is not a comment on the environmental analysis, or raise any alleged inadequacy with the analysis in the Draft EIR.
- 11-3** The commenter requests meetings with the City in advance of public hearings to resolve issues. The City will communicate with Prologis as appropriate in the future. The comment is noted and no further response is required.

2.4 TOPICAL RESPONSES

Topical Response #1 – New Studies

As the Draft EIR notes, PA-1 was not analyzed site-specific study was not conducted due to access issues. However, PA-1 was analyzed at a specific plan level, using available studies, research, observations, and other resources to analyze the potential impacts associated with future development of PA-1. This analysis was reasonable, and complied with CEQA. (*City of Maywood v. Los Angeles Unified School Dist.* (2012) 208 Cal.App.4th 362, 405-406.) The Draft EIR included thorough analysis of the project’s impacts in light of what was reasonably feasible. (CEQA Guidelines § 15151.)

As a comment on the Draft EIR, the Joseph and Doleen Borba Administrative Trust, owner of PA-1, submitted three technical reports prepared for PA-1:

1. *Phase I Environmental Site Assessment Report*, prepared by Partner Engineering and Science, Inc. (October 24, 2016)
2. *Geotechnical Investigation South Ontario Business Park*, prepared by Southern California Geotechnical. (November 16, 2016)

3. *Habitat conditions for Delhi Sands Flower-loving Fly on the site of proposed industrial development located at the southeastern intersection of Carpenter Avenue and Merrill Avenue, Ontario*, prepared by Osborne Biological Consulting. (December 19, 2016).

Those technical reports are available for review at the City. These reports do not trigger EIR recirculation because the reports confirm the analysis and conclusions of the Draft EIR. (*California Oak Foundation v. Regents of the University of California* (2010) 188 Cal.App.4th 227, 267 [a report that merely confirms and/or provides further reassurance regarding what had already been disclosed in a Draft EIR does not trigger recirculation].) A Draft EIR need not be recirculated when new information merely clarifies or amplifies a previously Draft EIR, but is required when it reveals, for example, a new substantial impact or a substantially increased impact on the environment. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 446.) Here, the technical reports, while providing additional information, confirm the analysis and conclusions of the Draft EIR.

Also, as discussed below, the new technical reports include additional analysis that warrants deleting or revising mitigation measures included in the Draft EIR, or adding a new mitigation measure. These revisions do not trigger recirculation because they do not change the Draft EIR in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 446.)

Delhi Sand-Loving Fly

With respect to potential impacts to the Delhi Sand-Loving Fly, for instance, the Draft EIR, while it did not include a site-specific assessment for PA-1, nevertheless noted that the potential for Delhi Sand-Loving Fly to exist on the project site (PA-1) but concluded that it was unlikely that there was any suitable habitat because the site conditions (soils) and uses of PA-1 and PA-2 are similar. (Draft EIR Appendix D at 40.) The Draft EIR's Biological Resources Assessment notes that there was no potential for the Delhi Sand-Loving Fly to occur on either PA-1 or PA-2 because the sites are "highly disturbed from ongoing agriculture ... and cattle activity. As such soils have been modified and the habitat is considered unsuitable" for the Delhi Sand-Loving Fly (Draft EIR Appendix D at C-1.)

The Delhi Sands Flower-Loving Fly habitat assessment prepared by Osborne Biological Consulting – *Habitat conditions for Delhi Sands Flower-loving Fly on the site of proposed industrial development located at the southeastern intersection of Carpenter Avenue and Merrill Avenue, Ontario* – provides further site-specific evidence in support of the Draft EIR's analysis of PA-1. It concludes, after a detailed survey of the site conditions, that PA-1 is unsuitable to support the Delhi Sand-Loving Fly because of the long history of active agricultural use, landscaping, equipment parking, and other historical uses. This is consistent with the conclusions of the Draft EIR.

Mitigation Measure BIO-1, which was included in the Draft EIR, requires that, prior to any ground-disturbing activities at PA-1, a habitat assessment for the Delhi Sands Flower-Loving Fly shall be

conducted. As a habitat assessment was prepared for PA-1 and concluded that PA-1 does not provide any Delhi Sands Flower-Loving Fly habitat, Mitigation Measure BIO-1 is no longer required and will be deleted from the Final EIR.

Phase I Environmental Site Assessment Report

The Draft EIR's analysis of potential hazards and hazardous material impacts included an analysis of PA-2, for which a Phase I Environmental Site Assessment ("PA-2 ESA") was prepared, and PA-1. The PA-2 ESA included observations of and research about adjacent properties, including PA-1. The Draft EIR notes, for instance, that the PA-2 ESA concluded that no properties within or adjacent to the Specific Plan area are listed in government hazardous materials databases. (Draft EIR at 4.8-12.) The PA-2 ESA, which is included as Appendix G of the Draft EIR, provides the following discussion regarding PA-1:

The adjacent property reconnaissance consisted of observing the adjacent properties from the subject property premises. No items of environmental concern were identified on the adjacent properties during the site inspection, including hazardous materials, petroleum products, ASTs, USTs, evidence of releases, PCBs, strong or noxious odors, pools of liquids, sumps or clarifiers, pits or lagoons, stressed vegetation, or any other potential environmental hazards. (Draft EIR Appendix G at 25.)

Although the site observations did not identify any potential hazards on PA-1, the Draft EIR included Mitigation Measure HAZ-7, which requires the preparation of a Phase I ESA for PA-1, and demonstrated compliance with the recommendations of the Phase I ESA, prior to the issuance of grading or building permits for PA-1. This measure, among others, would reduce the potential for hazardous impacts from PA-1 to a less than significant level.

A Phase I ESA for the majority of PA-1 ("PA-1 ESA") was prepared by Partner Engineering and Science, Inc., and submitted as a comment on the Draft EIR. The PA-1 ESA covered APN Nos. 0218-292-05 and 0218-311-11, which comprise 56.52 acres of PA-1 (which totals 57.58 acres). The only parcel within PA-1 not covered by the PA-1 ESA is APN No. 0218-261-24.

The PA-1 ESA does not identify any new potential impacts or any new significant impacts that were not disclosed in the Draft EIR. Rather, the PA-1 ESA confirms the analysis in the Draft EIR, namely that there were no items of significant concern or presenting a substantial environmental hazard on PA-1. The PA-1 ESA concludes, for instance, that there are no recognized environmental conditions (REC), controlled recognized environmental condition (CREC), or historical recognized environmental condition (HREC) on PA-1. There were two environmental issues identified, however. First, PA-1 is located within an area that has a 0.2% annual chance of flooding. This potential impact was discussed in Draft EIR Section 4.9, Hydrology and Water Quality. The second environmental issue identified by the PA-1 ESA was the presence of two inactive irrigation wells on PA-1. The PA-1 ESA notes that, although these wells do not represent an environmental concern, they should be abandoned in accordance with regulatory requirements. Please refer to the Phase I on file at the City Planning Department, for a complete discussion of the Phase I analysis.

The PA-1 ESA did not cover a minor portion of the project site, APN NO. 0218-261-24. However, pursuant to Mitigation Measure HAZ-7, to the extent construction is to occur on that parcel, a Phase I ESA is required. Moreover, Mitigation Measure HAZ-7 also requires that the PA-1 applicant implement all the recommendations in the PA-1 ESA.

Geotechnical Investigation

The Draft EIR analyzed the potential for geologic and soils impacts at PA-1. To do so, it relied upon historical information about the project site area, as well as information and data in the geotechnical investigation conducted on PA-2. Draft EIR at 4.6-7. This analysis was proper because PA-1 and PA-2 are immediately adjacent and the existing physical conditions of the planning areas are similar. Nevertheless, because no site-specific geotechnical investigation was conducted for PA-1, the Draft EIR's analysis was at a specific plan level and required further site specific geotechnical investigation of PA-1 (Mitigation Measures GEO-1 and GEO-2). With implementation of these measures, the Draft EIR concluded that potential geologic and soil impacts associated with the project (on both PA-2 and PA-1) would be less than significant.

The geotechnical investigation prepared by Southern California Geotechnical (*Geotechnical Investigation South Ontario Business Park*) for PA-1 ("PA-1 Geotechnical Report") provides site-specific analysis of the majority of PA-1 (excluding APN No. 0218-261-24) and confirms the analysis and conclusions of the Draft EIR. The PA-1 Geotechnical Report confirmed, among other things:

- Liquefaction: That PA-1's historic groundwater levels are consistent with the California Geological Survey maps, and that liquefaction is not considered to be a concern for PA-1.
- Fault Rupture: The PA-1 Geotechnical Report found no evidence of faulting during the investigation. Therefore, the possibility of significant rupture is low.
- Subsidence: PA-1 and PA-2 both have an estimated subsidence of approximately 0.10 feet, which is minor and no significant impacts would result with compliance with the California Building Code and other regulatory measures.
- Expansive Soils: The soils on PA-1, like PA-2, have a generally low expansion potential. However, as with PA-2, foundation subgrade soils will be moisture conditions to 2% to 4% above the Modified Proctor optimum during site grading.

Please refer to the revised discussion in Final EIR Section 2.5, Revisions to the Draft EIR, for a complete discussion of the analysis in the PA-1 Geotechnical Report. However, to the extent development is proposed to occur on that parcel, Mitigation Measure GEO-1 requires the project applicant to obtain and submit a detailed geotechnical investigation, and implement all the recommendations in that report.

Topical Response #2 – Traffic Mitigation Measures

The Draft EIR requires that the payment of a fair share of the costs of improvements necessary to mitigate the project's contribution to cumulative traffic impacts. Please refer to Table 11-3 of the Final Traffic Impact Analysis Report ("TIA"), which is included as Appendix L of the Draft EIR, for a summary of the improvements recommended for each of the study area intersections. However, while these improvements are recommended to reduce impacts at the study intersections, the TIA further demonstrates that the proposed project is not solely responsible for the future intersection deficiencies. Therefore, because lead agencies are limited to imposing mitigation measures that are roughly proportional to the impacts of the project (i.e., a lead agency cannot mandate that a project applicant install an intersection improvement when the project only contributes a minimal amount to the traffic necessitating the improvement), the Draft EIR requires the payment of fair share fees for the necessary improvements prior to building permit issuance for any proposed development within the Specific Plan. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 364 [holding that an agency could not insist that the developers shoulder the bulk of the expenses needed for highway improvements when the project would only cause a small percentage of the impact].)

With respect to payment of fair share fees for intersections outside the jurisdiction of the City of Ontario, the Draft EIR acknowledges that construction of those improvements cannot be guaranteed (Draft EIR at 4.14-66). As such, the Draft EIR recognized those impacts, even with the payment of fair share fees, as significant and unavoidable (Draft EIR at 4.14-66). Similarly, with respect to improvements within the City of Ontario, the Draft EIR concludes that ultimate construction/implementation is dependent upon the payment of similar fees by other projects that contribute to the impact. For instance, the Draft EIR states, for each mitigation measure for City of Ontario intersections, that "[d]ue to the potential fair share contributions from other cumulative projects, specific construction dates cannot be ascertained at this time." (Draft EIR at 4.14-61.) The Draft EIR, therefore, acknowledges that the exact timing of implementation of mitigation measures is uncertain. Mitigation Measure TRANS-19 provides that where mitigation improvements cannot be implemented in the near term, "the impacts may *remain significant and unavoidable* until such time that adequate funding is collected from fair share fees and other funding sources." (Draft EIR at 4.14-64.) The City does earmark fair share funds paid for traffic improvements, meaning that any fair share fees paid for a certain improvement will necessarily be spent on that specific improvement (i.e., fair share fees cannot be spent on alternative improvements or other items). This type of structure has been found to comply with CEQA. (*East Sacramento Partnership for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 304 [EIR was valid when it included mitigation that required payment of fair share fees to mitigate traffic impacts and the lead agency described the fair share contributions as being collected at the plan check phase and placed into a special fund that will be used to fund the required improvements].) Notwithstanding this commitment to use the funds for the specified improvements, given the uncertainty regarding timing of improvements, the Draft EIR concluded (as evidenced by the above) that the project's traffic impacts were significant and unavoidable. (See Draft EIR Table ES-1 [identifying a significant and unavoidable transportation impact].)

The City acknowledges, however, that the Draft EIR requires minor clarification consistent with its analysis and conclusions. Therefore, the text on page 4.14-66 has been clarified. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes. The revisions made to the Draft EIR, as included in Section 2.5, do not trigger recirculation of the Draft EIR. CEQA

generally requires recirculation if significant new information is added to an EIR. The California Supreme Court has determined that new information is “significant” within the meaning of Public Resources Code Section 21092.1 only if, as a result of the new information, the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse effect of the project or a feasible way to mitigate or avoid such an effect. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 446.) Likewise, where new information does not materially implicate the public’s right to participate, the environmental review process should not be unnecessarily prolonged. (*Silverado Modjeska Recreation and Parks Dist. v. County of Orange* (2011) 197 Cal.App.4th 282, 308.)

Here, the changes to the Draft EIR are clarifications and, as evidenced from the citations above, is not “significant” under CEQA. First, the Draft EIR identified the project’s transportation impacts as significant and unavoidable. See Draft EIR Table ES-1 noting that the impact is “**significant and unavoidable**” and MM TRANS-19, which expressly acknowledges that where mitigation “cannot be implemented in the near term, the impacts may **remain significant and unavoidable** until such time that adequate funding is collected” to fund construction of the improvements. The Draft EIR likewise identifies in Section 5.1, *Significant and Unavoidable Adverse Impacts*, that eighteen (18) study intersections are projected to be cumulatively significantly impacted by the proposed project. (Draft EIR at 5-1.)

The clarifications added to the Draft EIR, therefore, do not require recirculation. The revisions do not change the project’s contribution to the intersections, the impacts that would occur with the project and cumulative projects, or the mitigation measures to be implemented. Therefore, the clarifications do not alter the Draft EIR in a manner that deprives the public of a meaningful opportunity to comment upon a substantial adverse impact of the project, as the impact was identified in the Draft EIR, or a feasible way to mitigate such impacts, as fair share mitigation which is proportional to the impact is required in the Draft EIR.

2.5 REVISIONS TO THE DRAFT EIR

This section presents clarification and modifications to information contained in the Draft EIR, based on the comments submitted to the City. Indicated additions to the EIR are underlined (underlined) where text is added and deletions are strike-through (~~strike-through~~) type. The numbers in brackets refer to the applicable comment number from the comment letters presented in Section 2.3.

1. Text Revision [Response to Comment 3-1]:

The following language has been revised on page 4.6-4 in Section 4.6.2.1 of the Draft EIR.

Flooding Hazards

According to Flood Insurance Rate Map (FIRM) No. 06071C9375H for San Bernardino County, the project site is located within a Zone ~~A-X~~ designation. ~~Zone A signifies an area with a 1 percent annual chance of flooding.~~ Zone X refers to areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent annual chance flood. As the

project site is approximately 650 feet amsl and approximately 40 miles from the Pacific Ocean, seismically induced flooding from seiches or tsunamis would not occur. The Cucamonga Creek flood control channel, which is adjacent to the project site, is a major drainage facility. Stormwater runoff is conveyed southward via Cucamonga Creek, and as further described in Section 4.9, Hydrology and Water Quality, the City, through Policy S2-5, would maintain and improve the storm drain system to minimize flooding, thus reducing the impacts of any increases in surface water flows that did reach drainage systems. The proposed modification to the Master Plan of Drainage for Colony Commerce Center is shown in Chapter 2, Project Description, in Exhibit 2-11, Drainage Master Plan. Flooding hazards are further described in Section 4.9.

The following language has been revised on page 4.9-2 in Section 4.9.2.2 of the Draft EIR,

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the project area, FIRM No. 06071C9375H (last updated August 28, ~~2008~~ 2016), the western portion of the project site is located within an area designated as Zone X. Zone X refers to areas of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1 percent annual chance flood (FEMA 2016).

The following language has been revised on page 4.9-16 in Section 4.9.4.3 of the Draft EIR,

According to FEMA FIRM for the project area, FIRM No. 06071C9375H (last updated August 28, ~~2008~~ 2016), the project site is located within an area designated as Zone X. Zone X, as described above, is an area of minimal flood hazard and refers to areas of 0.2 percent annual chance flood, areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1 percent annual chance flood (FEMA Map Service Center Map Search ~~2012~~ 2016). The construction of any facilities in a 100-year flood zone, even areas of minimal flood hazard, could result in the interference of flood flows. The project would be constructed in accordance with applicable regulations in order to minimize potential flood damage. As described below, adherence to mitigation measures and standard conditions HWQ-1 through HWQ-6, which include adequate stormwater control facilities, stormwater quality management, and adherence to BMPs, would ensure impacts would be reduced to a less than significant level. These measures are identified below and must be included as part of project implementation.

2. Text Revision [Response to Comment 4-1]:

The following language has been added to Mitigation Measure CUL-2 in Section 4.5.5 of the Draft EIR.

CUL-2 If, during the implementation of CR-2, any historic-period or prehistoric cultural resources are inadvertently discovered by the Project Archaeologist or designated archaeological monitor(s), the find(s) must be blocked off from further construction-related disturbance by at least 50 feet, and the Project Archaeologist must then determine whether the find is a historical resource as defined under Section 15064.5(a)(3) of the CEQA Guidelines. If the find(s) is not found to be a historical resource, it must be recorded onto DPR 523 forms and project-related

excavation may continue. If the find(s) is/are determined to be a historical resource, appropriate measures associated with impacts to such resources could include avoidance; capping; incorporation of the site in greenspace, parks or open space; or data recovery excavation of the find(s). No further grading shall occur in the area of the discovery until the lead agency approves the measures to protect or appropriately mitigate the significant resource. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by the lead agency where they would be afforded long-term preservation to allow future scientific study. In the event that any humans remains or related resources are discovered during ground disturbing activities, such resources would be handled in compliance with provisions of California Health and Safety Code §7050.5 and Public Resources Code §5097 et seq. and in coordinate with the County coroner. Compliance with these laws would ensure that potential impacts to human remains, if unearthed, would be less than significant. Further analysis of this issue in the required EIR is not necessary.

3. Text Revision [Response to Comment 7-1]:

The following language has been added to Section 2.9, Required Permits and Approvals, of the Draft EIR.

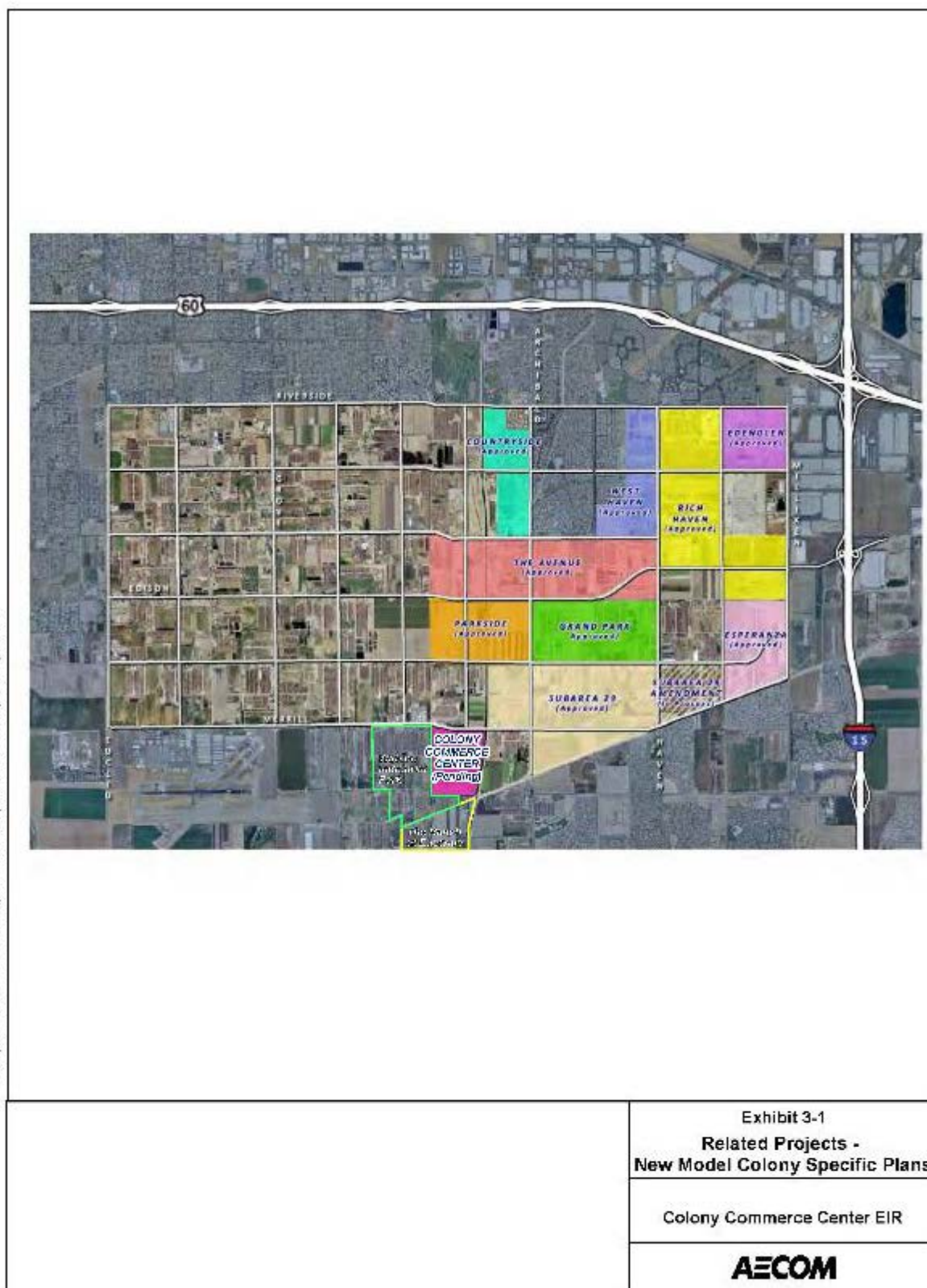
Other Agencies/Parties (Reviewing and/or Responsible Agencies):

- City of Chino (requires approval of developer funded off-site mitigation improvements within the City of Chino)
- City of Eastvale (requires approval of developer funded off-site mitigation improvements within the City of Chino)
- Regional Water Quality Control Board
- South Coast Air Quality Management District
- California Department of Transportation
- San Bernardino County Flood Control Department
- San Bernardino County Airports Commission
- Riverside County Airport Land Use Commission
- Southern California Edison Company
- U.S. Army Corps of Engineers
- Inland Empire Utilities Agency

4. Text Revision [Response to Comment 7-2]:

Exhibit 3-1 has been updated to show the Watson Industrial Park and Ranch at Eastvale related projects.

Exhibit 3-1 Related Projects - New Model Colony Specific Plans



5. Text Revision [Response to Comment 7-5]:

The following text has been added to page 4.8-12 of the Draft EIR.

The project site is located within the Chino AIA and Chino Airport Overlay, as discussed in the TOP EIR. Therefore, mandatory coordination with the Chino Airport authority would determine appropriate land uses, maximum population density, maximum site coverage, height restrictions, and required notification/disclosure areas based upon the noise contours and runway protection, approach, and Federal Aviation Administration (FAA) Part 77 zones. As discussed above, the project site is located within Safety Zones 6, 4, and 2. In the case of the proposed Specific Plan, Zone 4 encompasses 5.2 acres of land and Zone 2 encompasses 4.14 acres of land. Zone 6 encompasses 113.83 acres of land, the remainder of the project site. Due to the minimal sizes within both zones, Zone 6 open land standards are being applied to the entire project area. Exhibit 4.8-1 shows the safety zones in relation to the project site.

6. Text Revision [Response to Comment 7-6]:

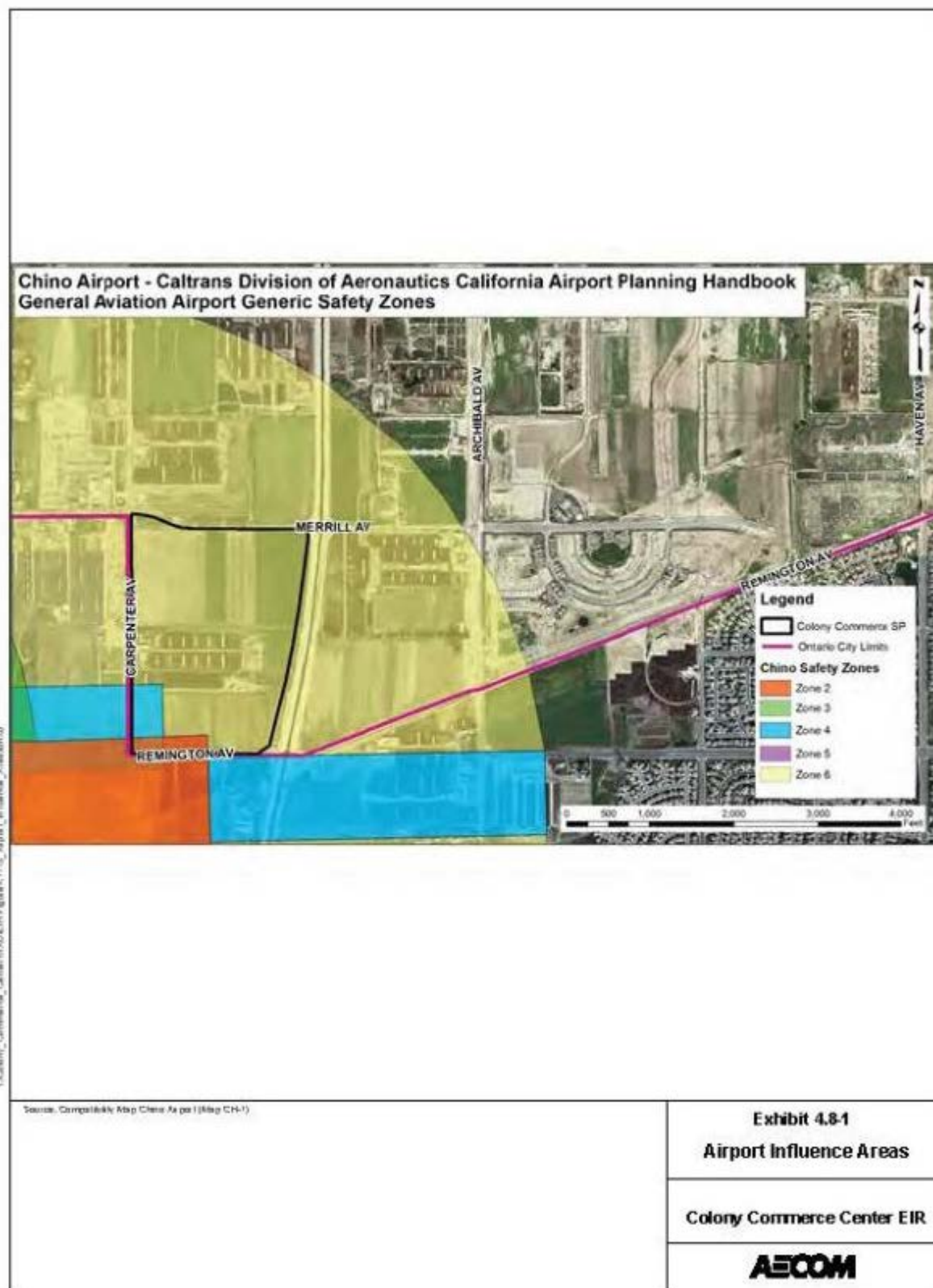
Exhibit 4.8-1 has been added to the Final EIR to show the safety zones in relation to the project site.

7. Text Revision [Response to Comment 8A-13]:

The following project design features have been added to Section 4.3.5 of the Draft EIR.

PDF AQ-1	<u>The project proponent/lessor of any building square footage shall require that any tenant(s) devise and implement an education program to inform employees on energy efficiency strategies, behaviors and benefits. The program shall including information on energy management services for large energy users. The project proponent/lessor shall also provide information regarding the availability of CARB-certified and electric landscaping equipment to project tenants.</u>
PDF AQ-2	<u>The project shall utilize only a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.</u>

Exhibit 4.8-1 Airport Influence Areas



8. Text Revision [Response to Comment 8C-24 and 10-15]

The two paragraphs in Section 4.4.4.4, Cumulative Impacts, of the Draft EIR have been replaced with the following text.

The intent of a cumulative impacts analysis and discussion is to understand cumulative project impacts in a regional context. Due to the potential for further development in the southern portion of Ontario and further south into the Prado Basin, the cumulative analysis takes into account potential impacts that would occur as a result of implementation of the regional cumulative projects presented in Table 3-1 and depicted on Exhibit 3.1. Similar to the study area, the majority of the cumulative impact areas consist of development and agricultural land uses. Thus, the cumulative impact area is, like the study area, largely disturbed and not a source of suitable habitat for biological resources. As the proposed project would not have significant impacts on species (plants and animals), the project's impact is not considered cumulatively considerable and would not contribute to a cumulative impact.

Cumulative Impacts to Plants

As presented in the BRA, decades of agricultural land uses in the cumulative impact area (i.e. dairy operations, row crops) has resulted in disturbed and ruderal habitats generally devoid of natural vegetation communities. Because of the disturbed nature of the project site, potential adverse cumulative impacts to plant communities within the project site are less than significant. Additionally, due to the absence of special-status plant species determined from a focused plant survey of the project site, significant impacts to special-status plant species are not anticipated. As a result, no cumulative impacts to natural vegetation communities and special-status plant species would occur upon implementation of the cumulative projects.

Cumulative Impacts to Wildlife

Per the BRA, the CNDDDB contains 43 special-status wildlife species within the 9-quad regional area around the project site. Of these, seven species were determined to have some, although low, potential to occur on-site including: golden eagle, Swainson's hawk, burrowing owl, San Diego black-tailed jackrabbit, western mastiff bat, big free-tailed bat, and DSFLF. With implementation of the mitigation measures, potential impacts to these species are anticipated to be reduced to a level less than significant, thereby reducing cumulative impacts to these species to a level less than significant.

The eucalyptus windbreak, along with other shrubs, ground cover, and limited trees, provides potential nesting and foraging habitat for raptors and migratory birds protected under the MBTA and California Fish and Game Code, would be removed by the project. However, as discussed in the Draft EIR, the project's compliance with Mitigation Measure BIO-4, which requires specific procedures for vegetation removal activities.

Also, it should be noted that the NMC Development Impact Fees include a habitat mitigation fee for proposed development within the NMC, such as the project. The fees are used to acquire, restore, enhance, maintain, or manage mitigation lands.

As previously discussed, the proposed project would not have a significant impact on regional wildlife movement due to the absence of regional corridors associated with the site. Local wildlife movement could be impacted; however, those species adapted to urban areas would likely persist on-site following construction. Since the study area does not function as a regional wildlife corridor and is not known to support wildlife nursery area(s), no cumulative impacts to wildlife movement would occur.

9. Text Revision [Response to Comment 9-2]:

The following language has been added to page 4.8-1.

The project Applicant's ownership interest is limited to PA-2 and, although requested from the owner of PA-1, access to PA-1 has not been granted to the lead agency and therefore site-specific technical studies have only been prepared for ~~PA-1~~ PA-2. At this time, the only entitlement sought for PA-1 is the adoption of the Colony Commerce Specific Plan, which will guide future development of the site. With respect to PA-2, however, site-specific development entitlements are sought and project-specific details are known, and therefore development of PA-2 is analyzed at a project-specific level.

10. Text Revision [Response to Comment 9-5]:

The following language has been added to page 4.14-56, under Threshold 5, of the Draft EIR.

Installation of the proposed public storm drain and double 12 x 12 boxes would require temporary lane closures during the construction period, which could have an effect on emergency access. However, it is not anticipated that full roadway closures would be necessary and the operation of existing roadways would be preserved throughout construction. Additionally, it is anticipated that lane closures would be effective and access would be restricted during working hours only and would reopen at the end of each work day. Recessed steel plates would be used to cover any open trenches during non-work hours. Furthermore, the City of Ontario would consult with emergency service providers regarding construction schedules and worksite traffic control and detour plans.

To the extent temporary closure is required, an encroachment permit would first have to be obtained from the City. Also, compliance with Ontario Municipal Code Section 7-3.07 would ensure that any potential hazards created by such closure would be less than significant. Section 7-3.07 requires that, prior to any activity or encroachment on a right-of-way which is hazardous, creates a hazard, or is in conflict with the normal use of a right-of-way shall be adequately safeguarded through the installation of safety devices, subject to the review and discretion of the City.

Also, along with any encroachment permit, an applicant must submit traffic handling plans showing all work in the right-of-way and how traffic will be controlled consistent with California Manual on Uniform Traffic Control Devices, Part 6, Temporary Traffic Control. A traffic control permit may also be required from the City.

Finally, any closure of Merrill Avenue would be limited and would only coincide with development of the project.

Development of such plans and consultation with emergency service providers would ensure that impacts related to emergency response and access during construction would be less than significant.

For project operation, The City of Ontario Municipal Code, the City's development standards, and OFD standards, which include roadway, lighting, and site access standards, require adequate provisions for emergency access for all new development. The project's internal circulation system will be connected to Carpenter Avenue and Remington Avenue via access points distributed along the project site's western and southern boundaries. This internal circulation system will be designed to allow emergency vehicles, including fire trucks, to make turning maneuvers within the project site and to access all points throughout the site without restriction. With required adherence to City requirements for emergency vehicle access, impacts would be less than significant.

11. Text Revision [Response to Comment 9-13 and 10-38]:

The following language has been added to Mitigation Measure NOI-1 in Section 4.11.8 of the Draft EIR.

Mitigation Measure NOI-1:

The proposed project contractors shall ensure project-attributed temporary construction noise during the Site Preparation phase of construction activity received at noise-sensitive receiver (NSR) NMS-2 does not exceed a fifteen-minute L_{eq} of 67 dBA, which is 2 dBA less than the predicted construction noise level. To yield this required 2 dBA noise reduction and thus comply with this noise level limit, the contractors must implement noise control and/or sound abatement means that could include one or more of the following options:

- Administrative noise controls – schedule construction activity, when it would occur at its closest distance to NMS-2, during periods of time when the owner/occupant of the impacted land use is scheduled to not be present.
- Engineering noise controls – to the extent practical, locate stationary and/or continuous major noise producers (e.g., air compressors, generators) as far as possible from the potentially impacted residential receiver. In other words, gain more naturally occurring noise attenuation via increasing distance between source and receiver. For example, if the approximate distance between these stationary sources and NMS-2 was 250 feet instead of 200 feet as shown in Table 4.11-7, the noise from these sources would be reduced by the needed 2 dBA.
- Equipment noise controls –a number of practices can be employed as follows:
 - Ensure that all engine-driven vehicles and stationary equipment feature factory-approved exhaust silencers/mufflers that are in proper working order.
 - Do not let operating vehicles or equipment idle for long periods of time. Reducing the time that a vehicle or piece of equipment operates by half enables a 3 dBA reduction of that noise source.

- As certain equipment may have a “louder” side or facing (e.g., an air intake that produces the most noise), position the equipment on-site so that said louder facings are directed away from the noise-sensitive receiver. Utilizing source acoustical directivity in this manner can, under the right conditions, yield at least 3 dBA of noise reduction with respect to a receiver location.
- ~~Consider field erection or assembly of~~ Sound abatement – install a temporary noise barrier, such as the types shown in Exhibit 4.11-5. A properly designed and implemented noise barrier that can provide linear path occlusion between the receiver and the sound source(s) of concern should be able to reliably yield at least 3 to 5 dBA of noise reduction. If needed, and because installation of an effective temporary noise barrier involves features such as its height, extent, material and location with respect to both the noise-producing sources of interest and the intended benefited receiver, a proposed temporary barrier layout and specification—including consideration of non-interference with respect to grading activity, road improvements, utility installation, site safety, etc.—would be submitted as part of the construction activity permitting process.

To demonstrate that NOI-1 has been implemented, the project contractors shall conduct noise level monitoring at NMS-2 during one representative sample daytime work shift within the Site Preparation phase of project construction progress and submit a summary report of the collected data to the City showing that 67 dBA L_{eq} attributed to the project construction activity was not exceeded during any consecutive chronological 15-minute duration interval, starting with the work shift commencement (e.g., 7:00 a.m.).

12. Text Revisions [Response to Comment 9-25]:

The following exhibits have been updated in Section 4.14, Transportation and Traffic, of the Draft EIR.

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Exhibit 4.14-1 Project Location and Study Intersections

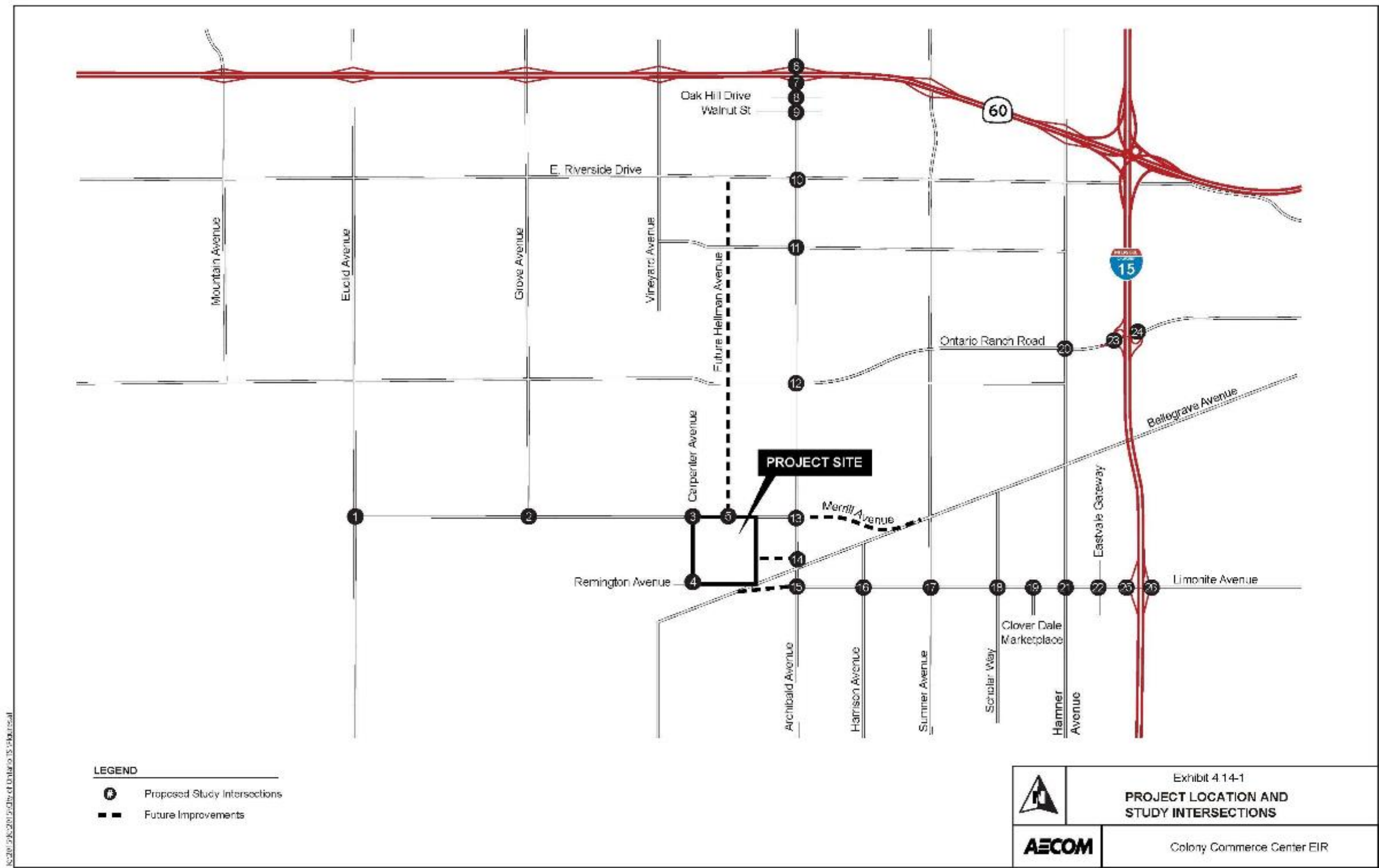


Exhibit 4.14-2 Existing Lane Geometry and Intersection Control – Intersection 1 to 4 and 6 to 13

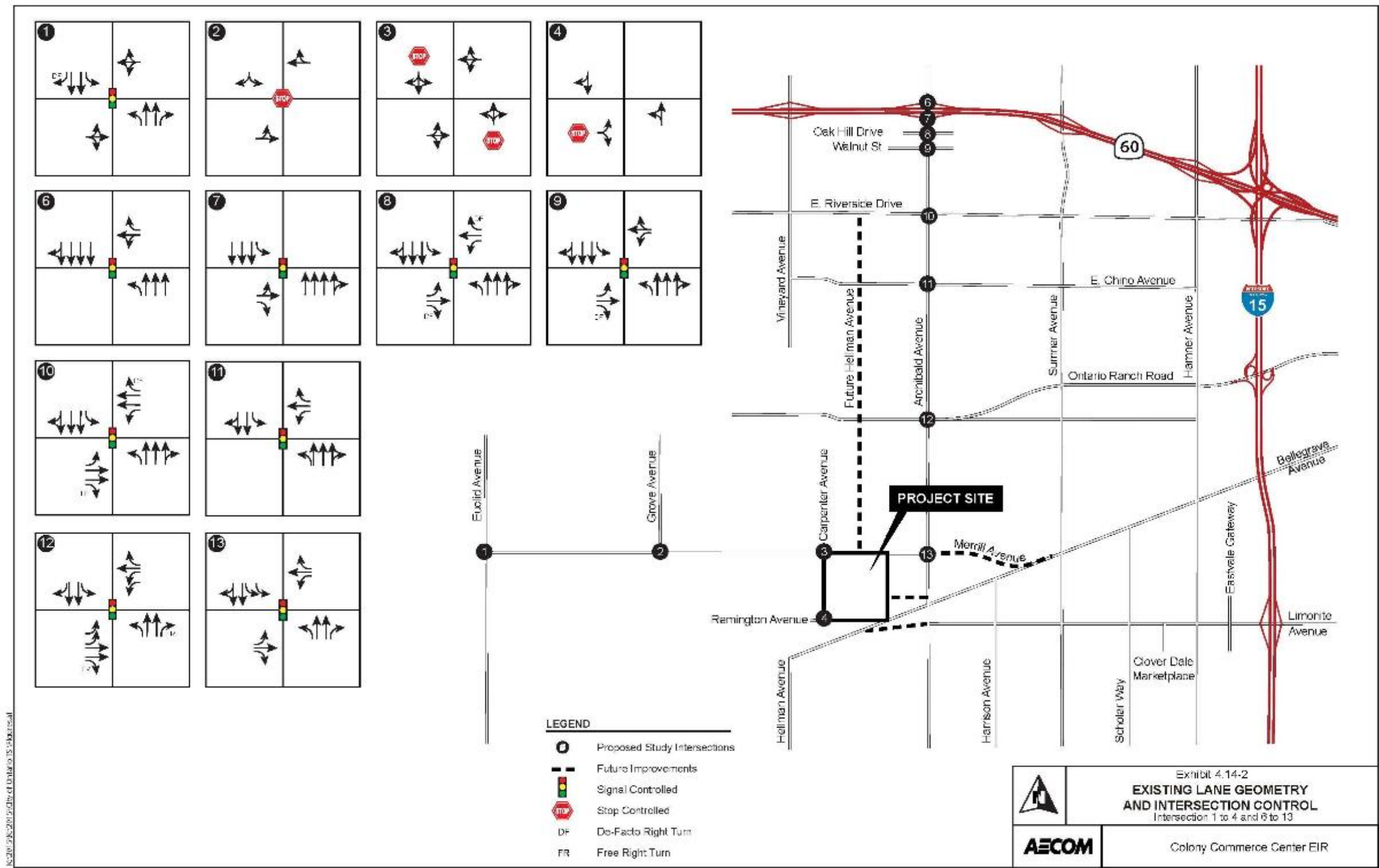


Exhibit 4.14-3 Existing Lane Geometry and Intersection Control – Intersection 15 to 26

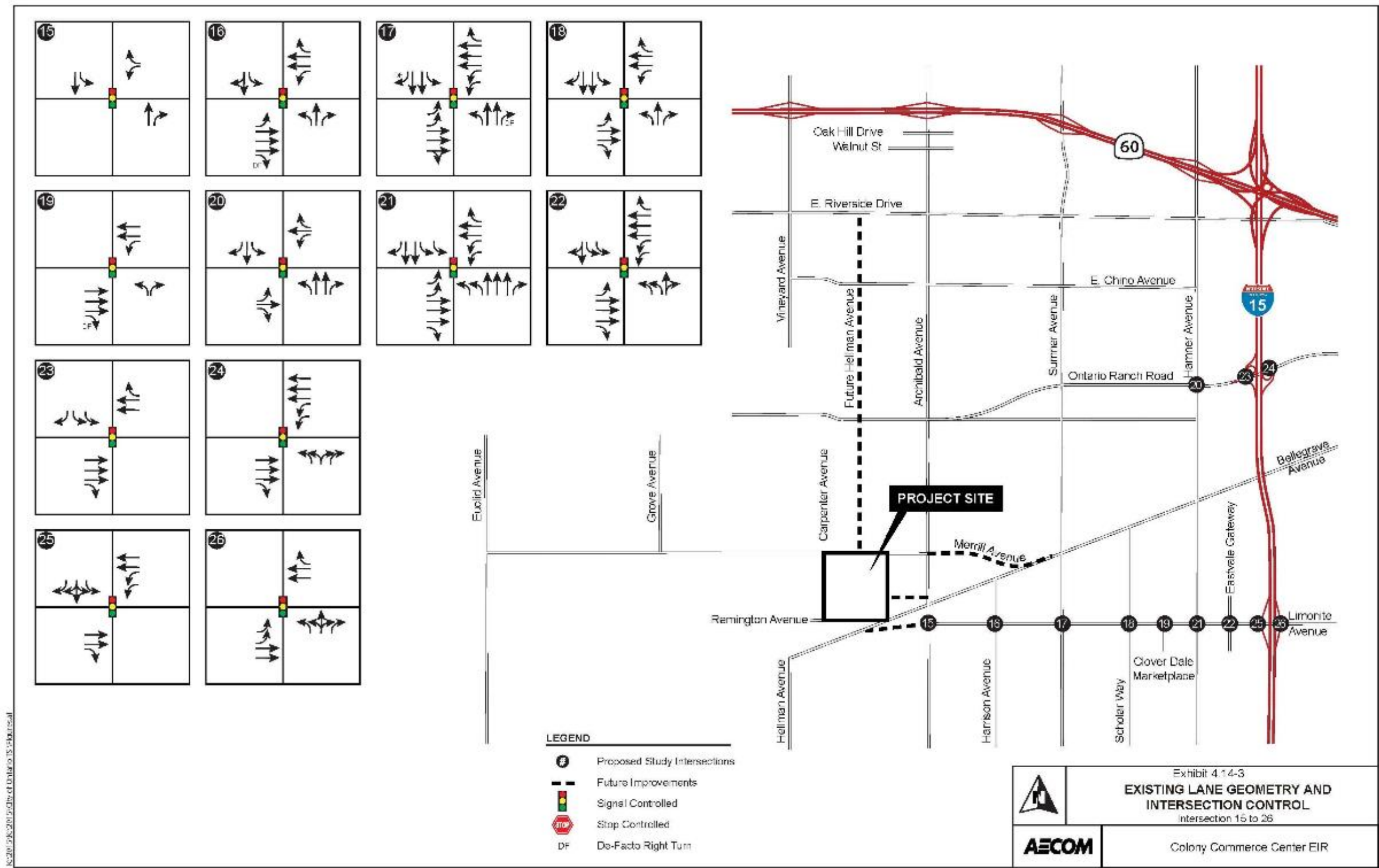


Exhibit 4.14-4 Existing Traffic Volumes – Intersection 1 to 4 and 6 to 13

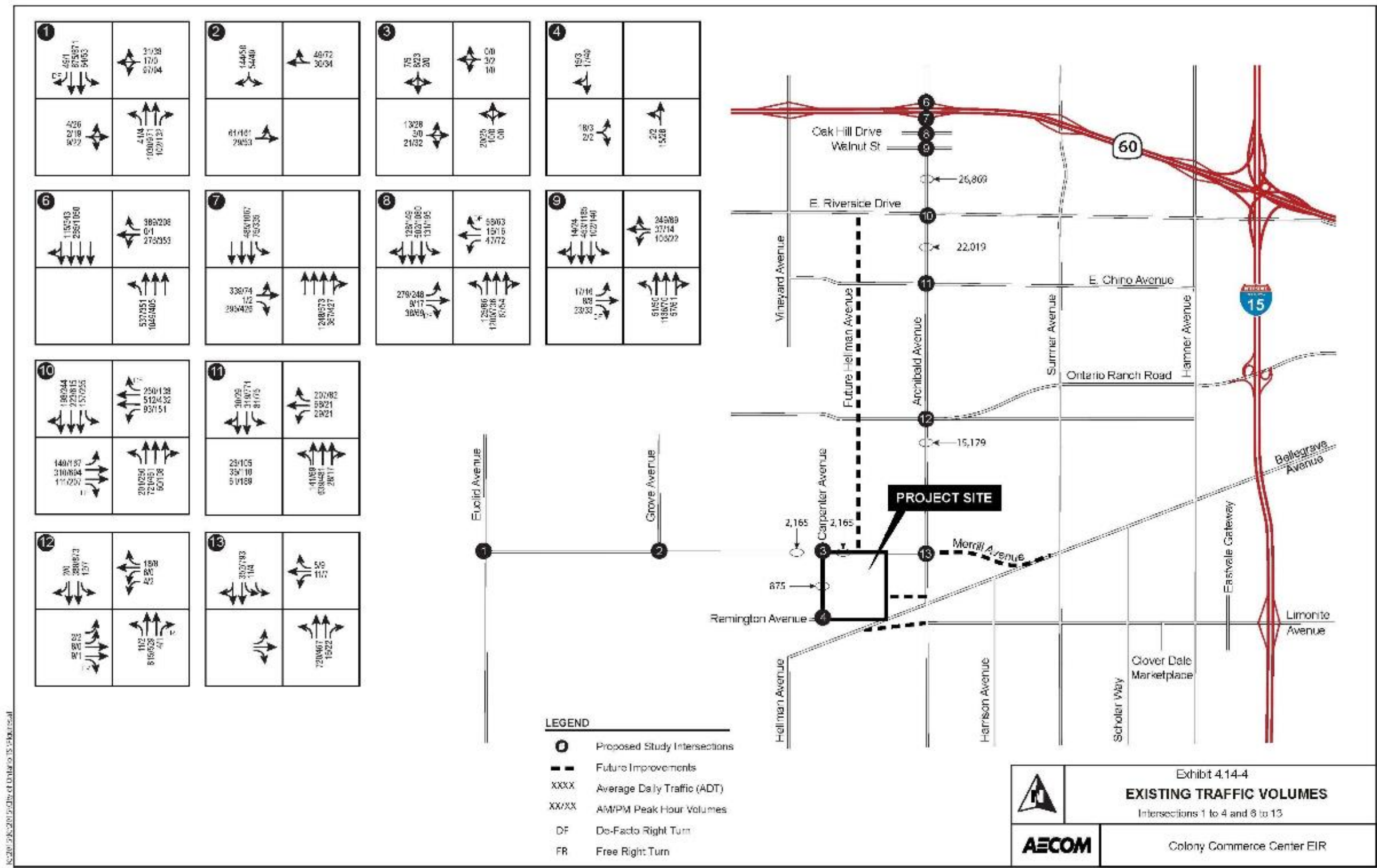


Exhibit 4.14-5 Existing Traffic Volumes – Intersection 15 to 26

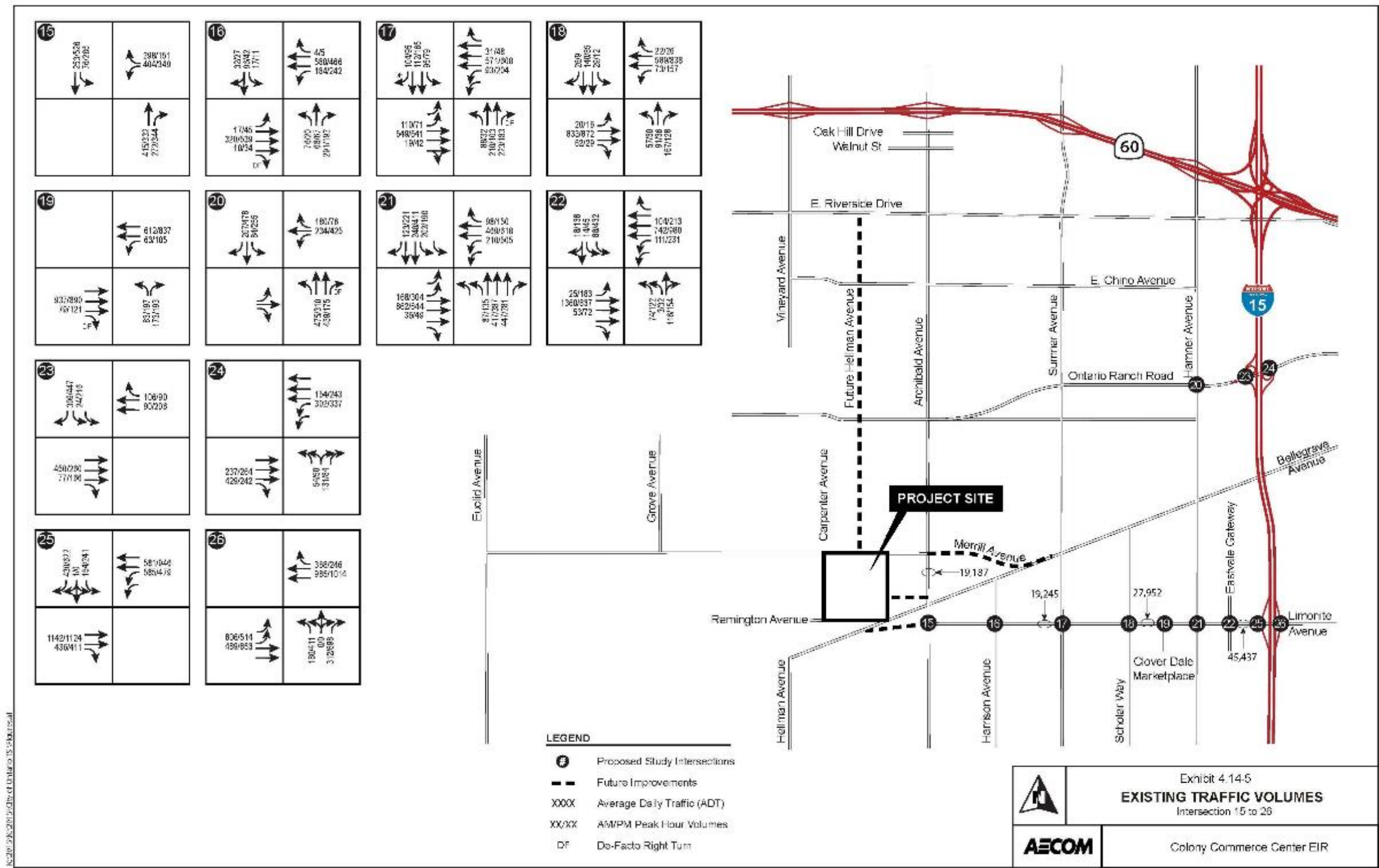


Exhibit 4.14-6 Existing Plus Project Traffic Volumes – Intersection 1 to 4 and 6 to 13

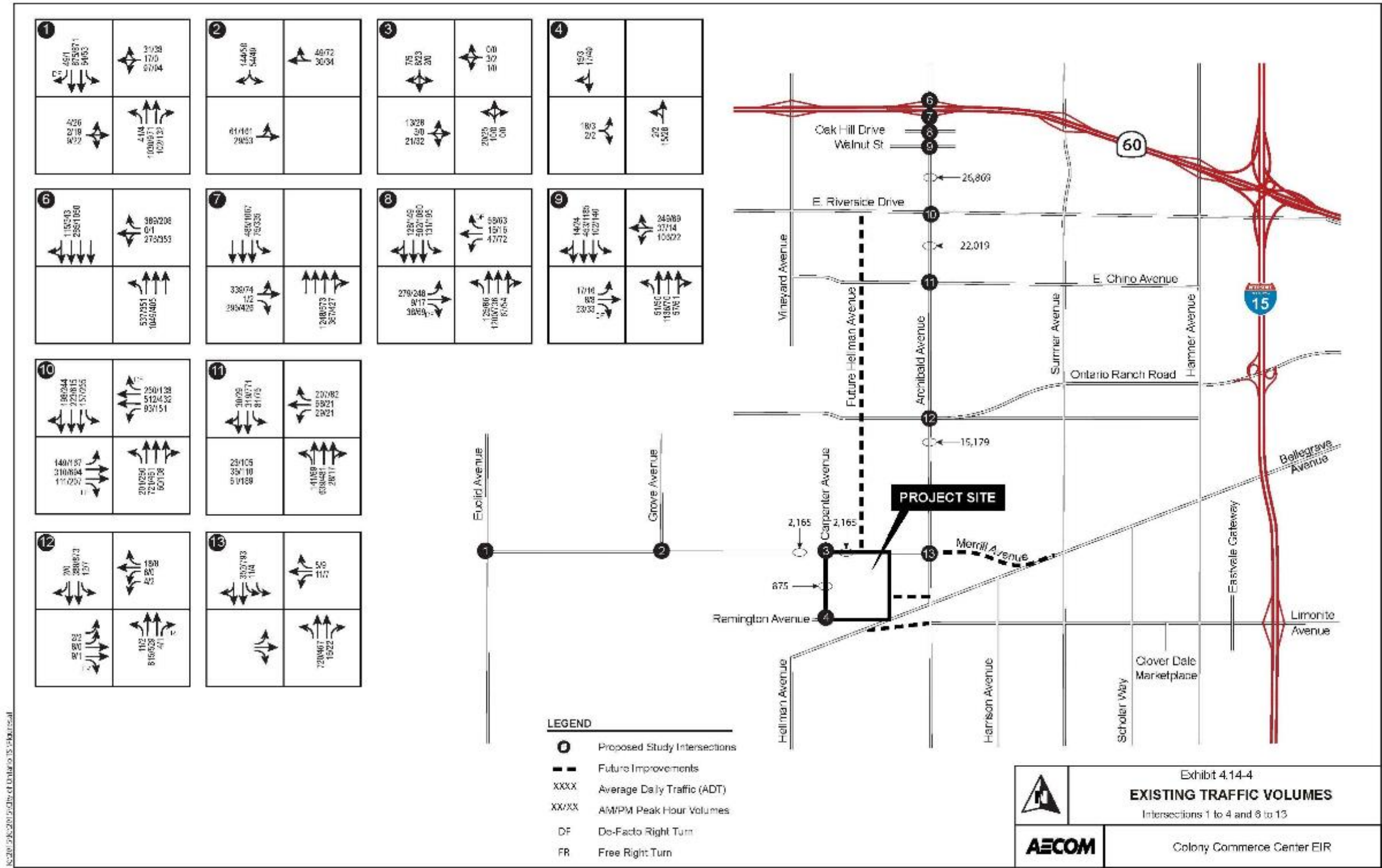


Exhibit 4.14-7 Existing Plus Project Traffic Volumes – Intersection 15 to 26

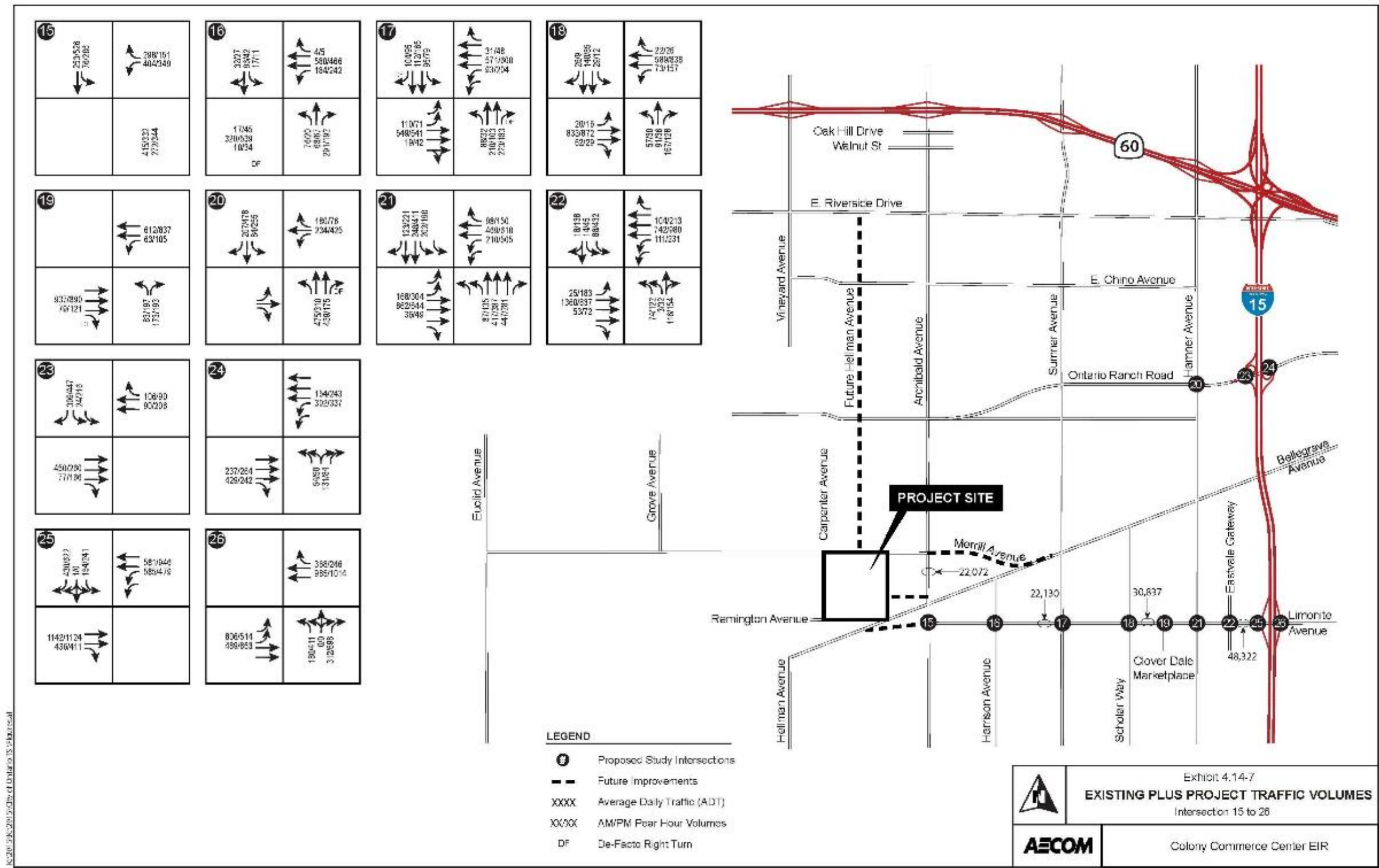


Exhibit 4.14-8 2017 Plus Cumulative Traffic Volumes – Intersection 1 to 4 and 6 to 13

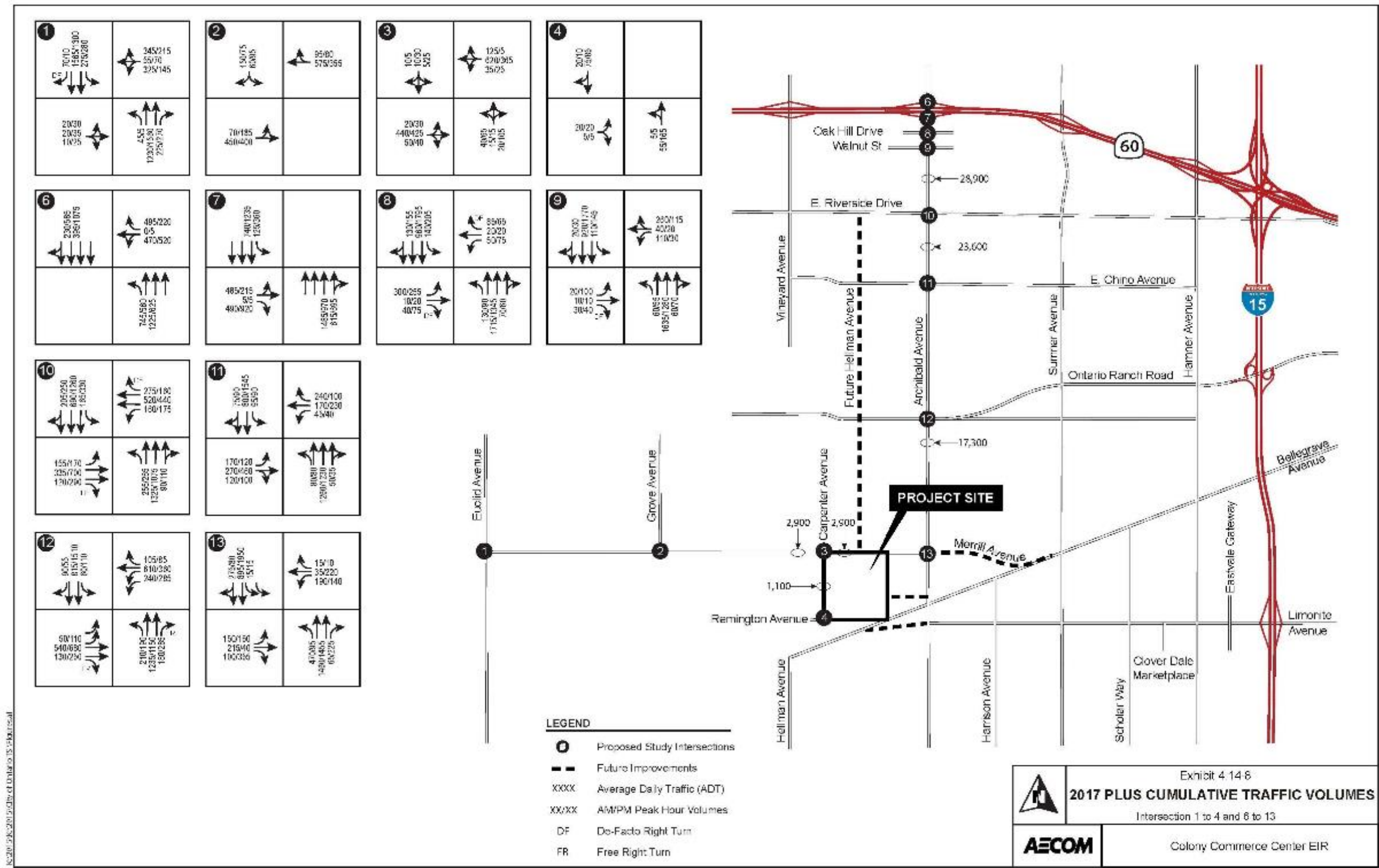


Exhibit 4.14-9 2017 Plus Cumulative Traffic Volumes – Intersection 15 to 26

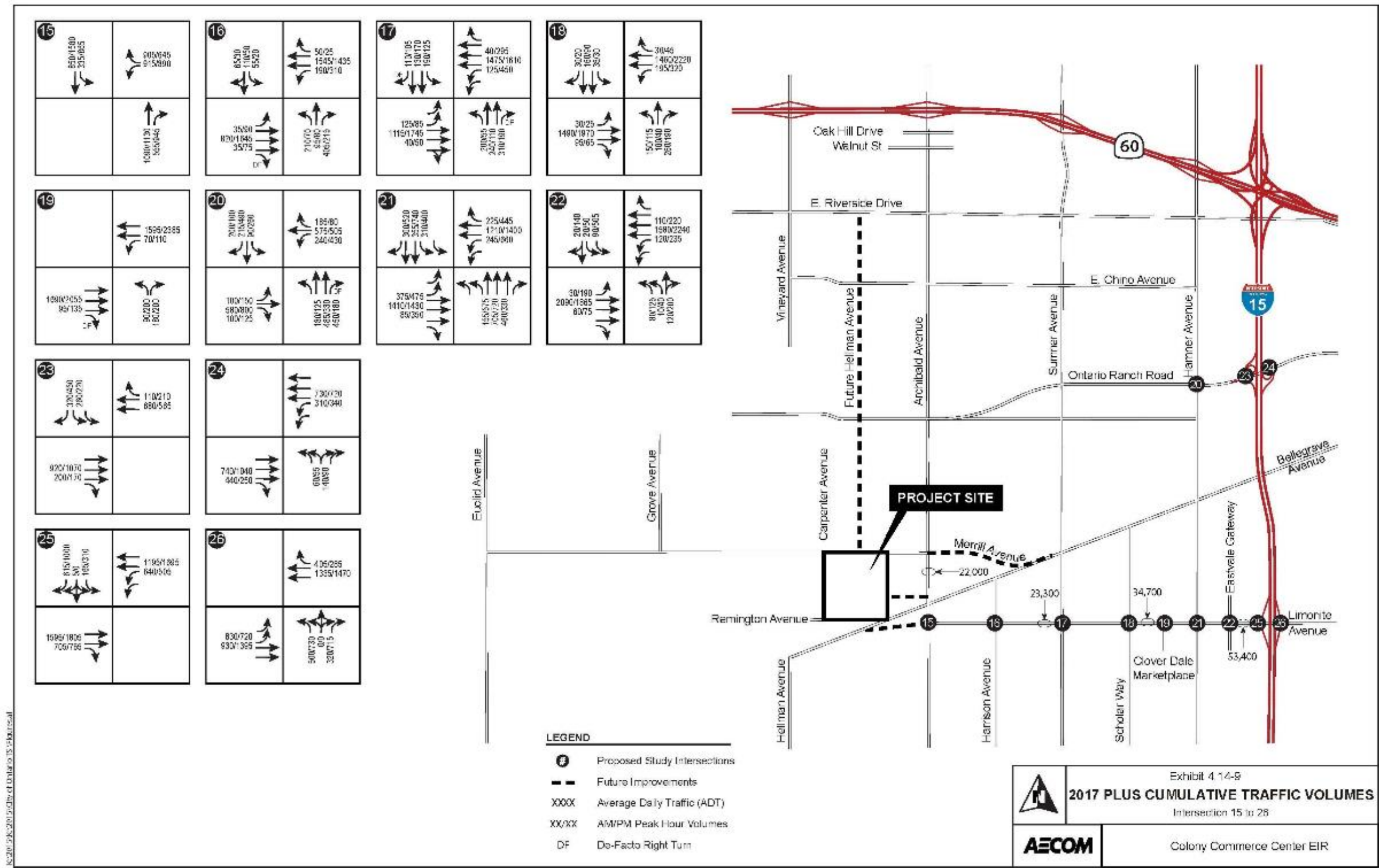
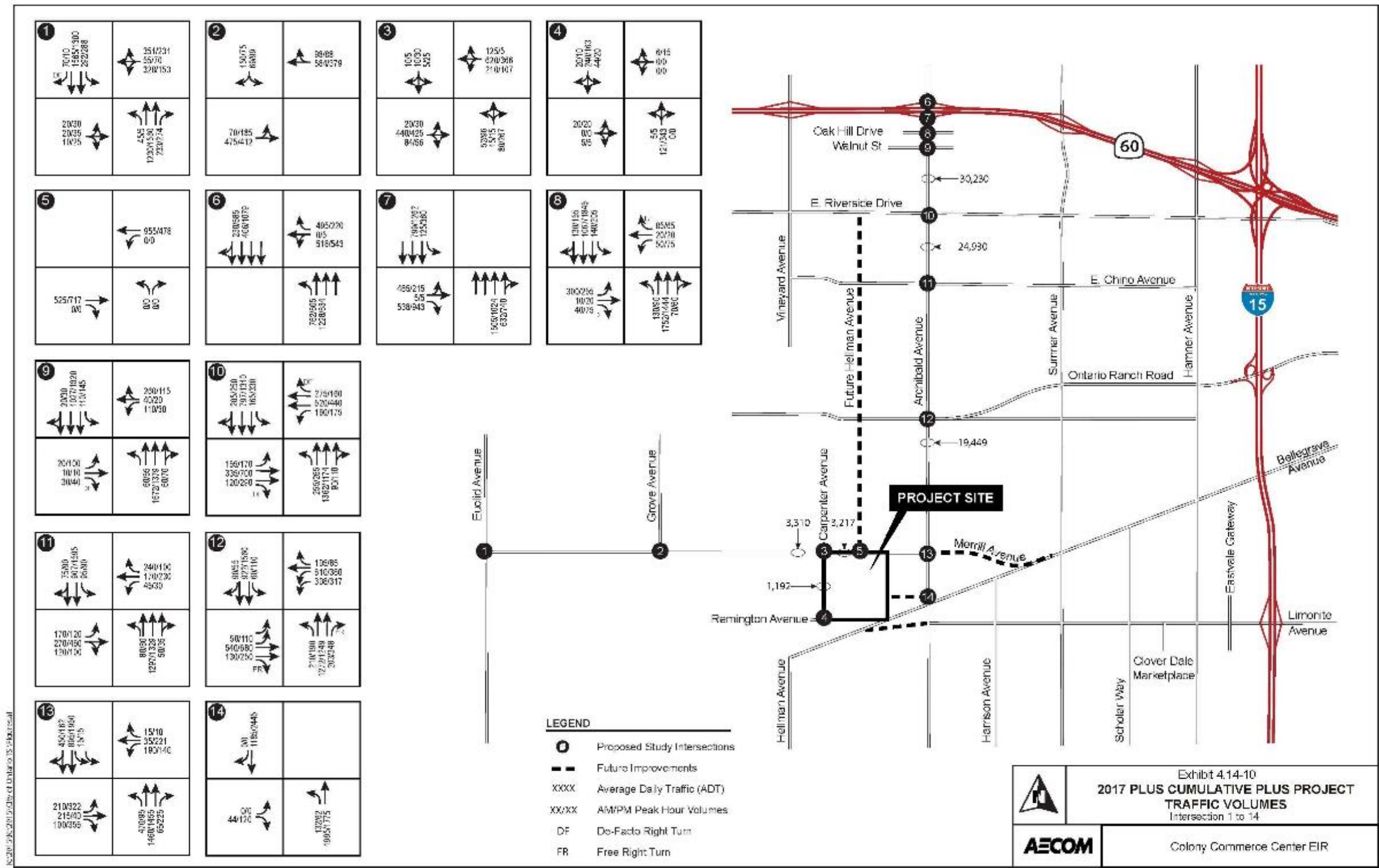


Exhibit 4.14-10 2017 Plus Cumulative Plus Project Traffic Volumes – Intersection 1 to 14



LEGEND

- # Proposed Study Intersections
- Future Improvements
- XXXX Average Daily Traffic (ADT)
- XX/XX AM/PM Peak Hour Volumes
- DF De-Facto Right Turn

2017 PLUS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES
Intersection 15 to 26

Exhibit 4 14-11

AECOM

Colony Commerce Center EIR

Exhibit 4.14-12 2025 Plus Cumulative Traffic Volumes – Intersection 1 to 13

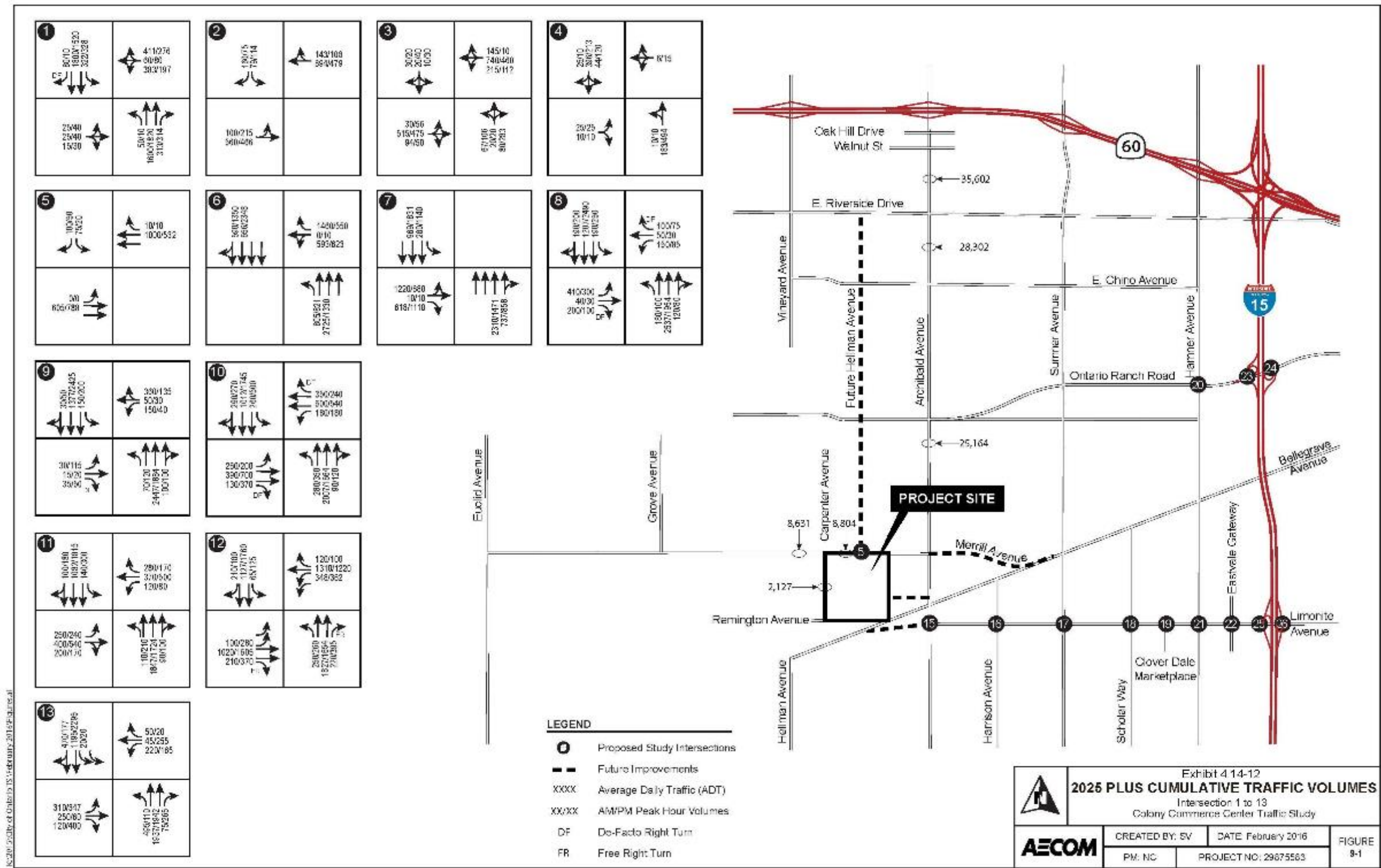


Exhibit 4.14-13 2025 Plus Cumulative Traffic Volumes – Intersection 15 to 26

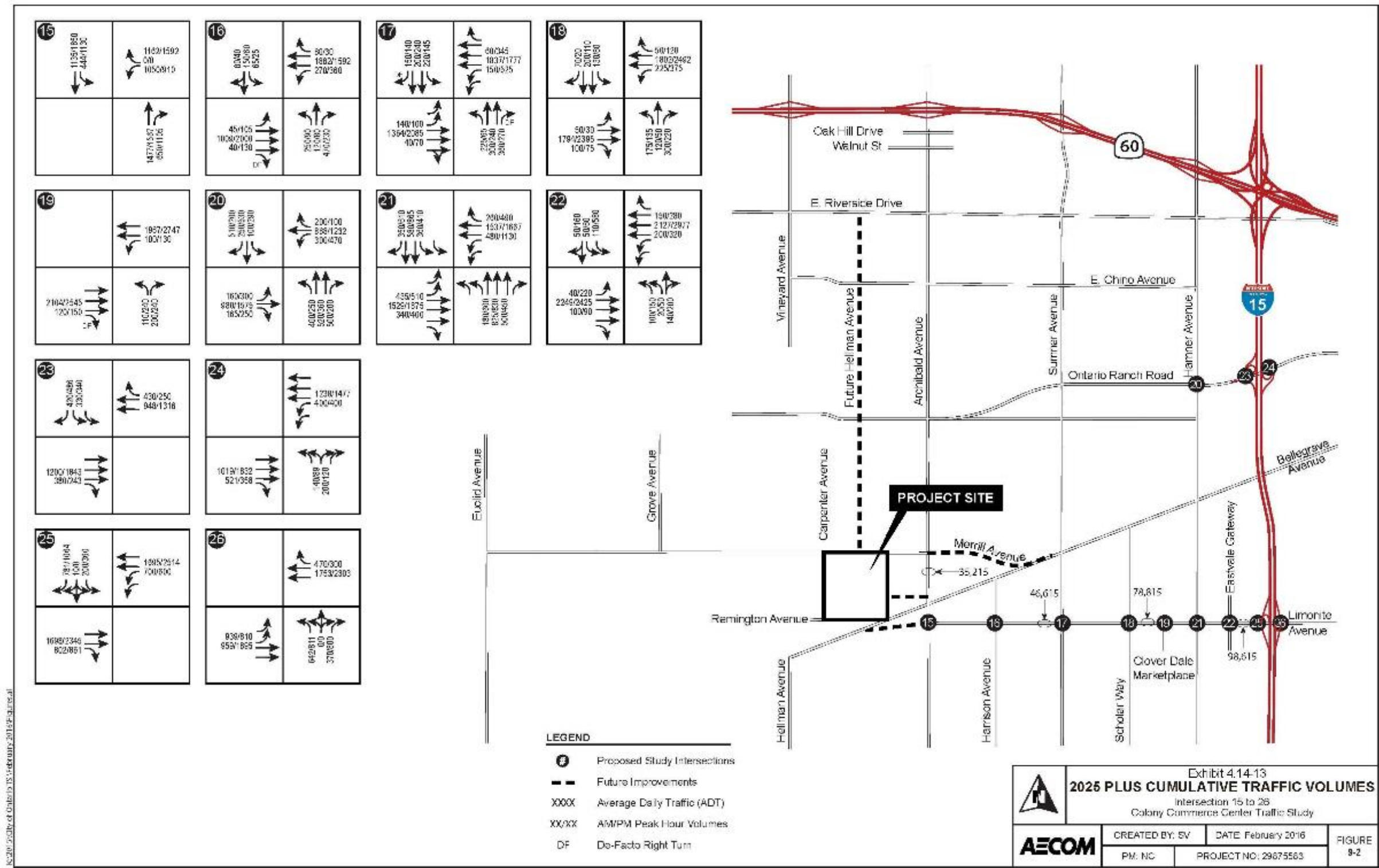


Exhibit 4.14-14 2025 Plus Cumulative Plus Project Traffic Volumes – Intersection 1 to 14

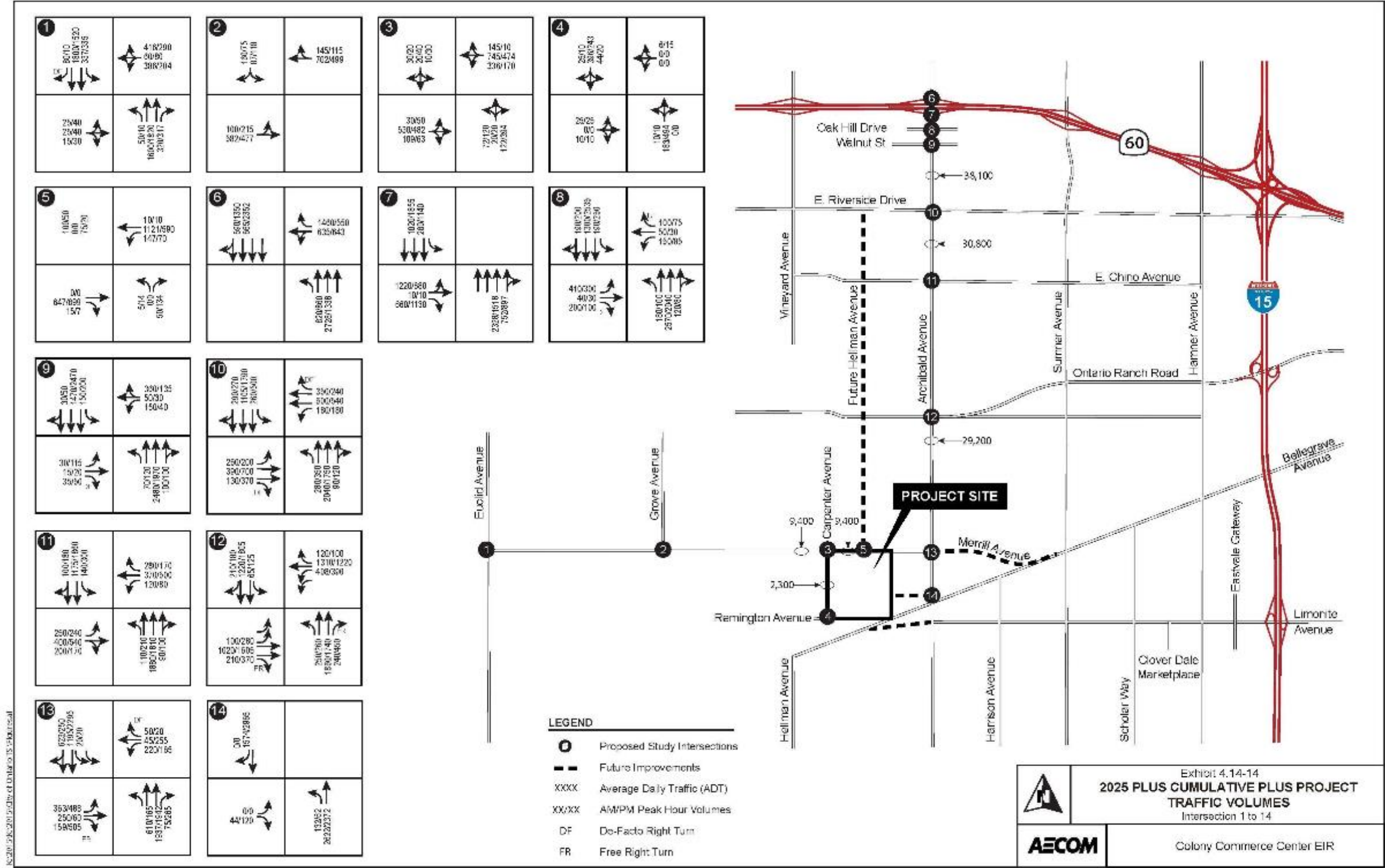
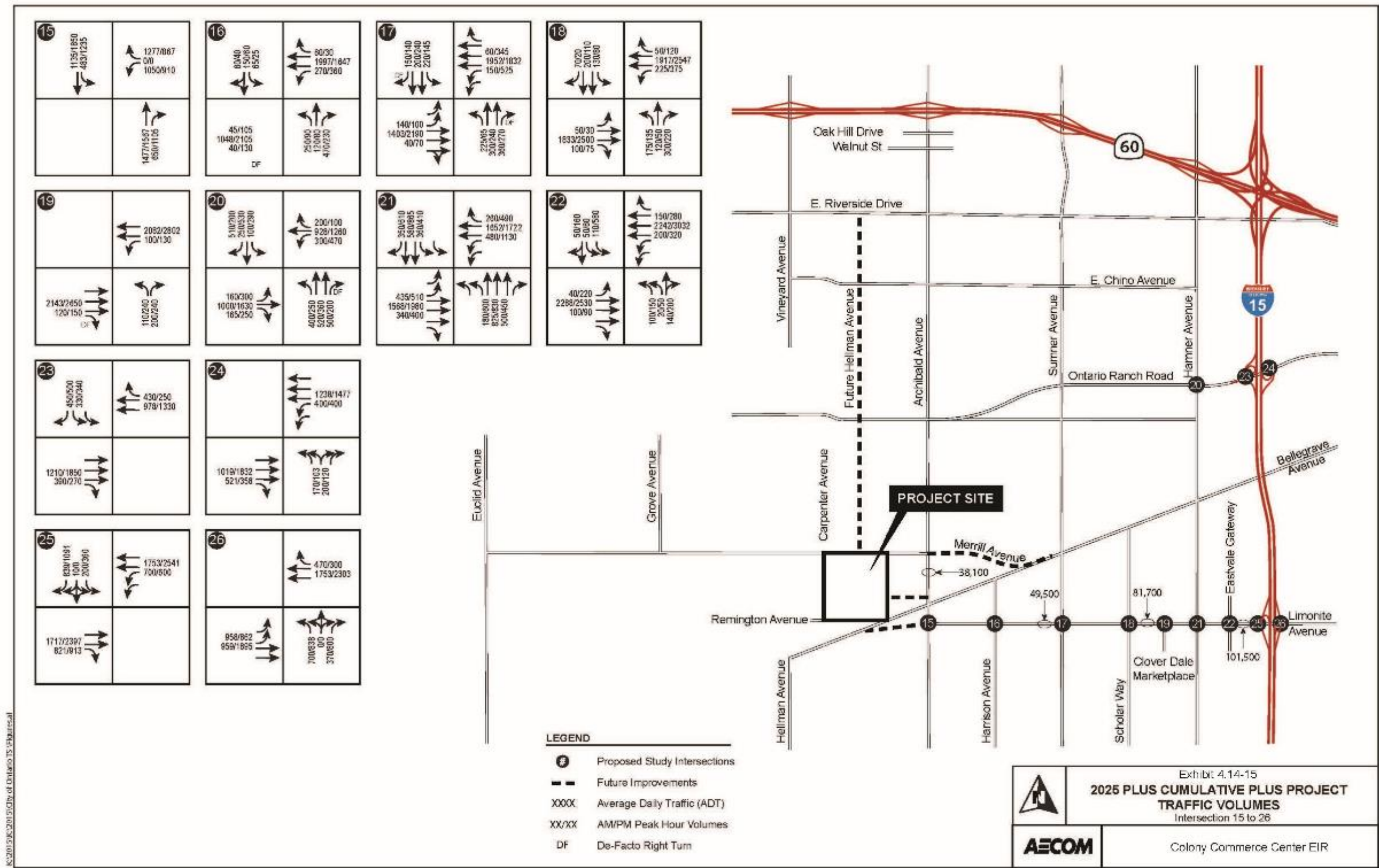


Exhibit 4.14-15 2025 Plus Cumulative Plus Project Traffic Volumes – Intersection 15 to 26



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13. Text Revision [Response to Comment 10-9]:

The following language has been updated in Section 4.7.4.3 of the Draft EIR.

The project proposes to pursue various design and construction techniques compatible with Green Building design and sustainability principles. The project ~~would~~ implements measures set forth in the Ontario CAP. The City's CAP was adopted to identify measures that, if implemented, will reduce GHG emissions from new development.

To ensure compliance with the City's CAP, the following Project Design Feature is added to the EIR:

PDF GHG-1 All developers within the Specific Plan area, inclusive of both PA-1 and PA-2, must implement a sufficient number of GHG reduction measures identified in the City's CAP to garner a total of 100 points or greater, which would make any development consistent with the reduction quantities anticipated in the City's CAP.

~~The project~~ PA-2 implements a number of GHG reduction measures identified in the CAP and is consistent with the reduction quantities anticipated in the City's CAP, (Colony Commerce Center Specific Plan, Appendix B1 is provided as an appendix to the technical report provided as Appendix C).

PDF GHG-2 The various project design features that will be implemented within PA-2 to reduce GHG emissions, consistent with the CAP, include the following:

- Use of Modestly Enhanced Insulation for energy efficiency
- Installation of Enhanced Window Insulation (0.4U-factor, 0.32 SHGC)
- Use of swaled landscape areas for storm runoff capture and retention/infiltration
- Identify opportunities to provide natural lighting to reduce reliance on artificial lighting
- Install high-efficiency lighting systems with advanced lighting controls
- Use light-colored roofing with high solar reflectance to reduce heat island effects (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance)
- Implement distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent) in the buildings' heating/cooling distribution system
- Use energy star commercial appliances in the development including water efficient appliances
- Align building orientation to take advantage of natural heating, cooling and lighting conditions
- Use low VOC paints and wallpapers

- Use recycle base, crushed concrete base, recycle content asphalt, shredded tires in base and asphalt roads, parking areas and drive aisles where feasible and economically available
- Use ultra low-flush toilets, low-flow shower heads and other water conserving fixtures
- Use smart irrigation controllers that automatically adjust frequency/duration of irrigation of landscape areas in response to changing weather conditions
- Use recycled water to irrigate project landscape areas
- Choose construction materials and interior finish products with zero or low emissions to improve indoor air quality
- Provide adequate ventilation and high-efficiency in-duct filtration system
- Use low- or medium water use, and native plant materials where appropriate; minimize turf areas
- Provide public charging stations for use by electric vehicles

Together, implementation of these measures will result in ~~the project~~ PA-2 reaching a total of 103 points in terms of the GHG reduction measures consistent with the CAP. Also, as required by PDF GHG-1, the PA-1 developer would be required to implement reduction measures sufficient to achieve a total of 100 points of greater under the CAP. Therefore, in accordance with the two-step process applied by the City:

The following language has been updated in Section 2.8 of the Draft EIR.

2.8 GREENHOUSE GAS PROJECT DESIGN FEATURES

The project proposes to pursue various design and construction techniques compatible with Green Building design and sustainability principles. The project implements measures set forth in the Ontario Climate Action Plan (CAP). The City's CAP was adopted to identify measures that, if implemented, will reduce greenhouse gas (GHG) emission from new development. The project will implements a number of GHG reduction measures identified in the CAP and is consistent with the reduction quantities anticipated in the City's CAP (see Colony Commerce Center Specific Plan, Appendix B1). ~~The various design features that will be implemented by the project to reduce GHG emissions consistent with the CAP include the following:~~

To ensure consistency with the CAP, and that the project achieves a 100 point or greater score through implementation of GHG reduction measures, the following Project Design Features are incorporated into the project:

PDF GHG-1 All developers within the Specific Plan area, inclusive of both PA-1 and PA-2, must implement a sufficient number of GHG reduction measures identified in the City's CAP to garner a total of 100 points or greater, which would make any development consistent with the reduction quantities anticipated in the City's CAP.

PDF GHG-2 The various project design features that will be implemented within PA-2 to reduce GHG emissions, consistent with the CAP, include the following:

- Use of Modestly Enhanced Insulation for energy efficiency
- Installation of Enhanced Window Insulation (0.4U-factor, 0.32 SHGC)
- Use of swaled landscape areas for storm runoff capture and retention/infiltration
- Identify opportunities to provide natural lighting to reduce reliance on artificial lighting
- Install high-efficiency lighting systems with advanced lighting controls
- Use light-colored roofing with high solar reflectance to reduce heat island effects (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance)
- Implement distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent) in the buildings' heating/cooling distribution system
- Use energy star commercial appliances in the development including water efficient appliances
- Align building orientation to take advantage of natural heating, cooling and lighting conditions
- Use low VOC paints and wallpapers
- Use recycle base, crushed concrete base, recycle content asphalt, shredded tires in base and asphalt roads, parking areas and drive aisles where feasible and economically available
- Use ultra low-flush toilets, low-flow shower heads and other water conserving fixtures
- Use smart irrigation controllers that automatically adjust frequency/duration of irrigation of landscape areas in response to changing weather conditions
- Use recycled water to irrigate project landscape areas
- Choose construction materials and interior finish products with zero or low emissions to improve indoor air quality
- Provide adequate ventilation and high-efficiency in-duct filtration system
- Use low- or medium water use, and native plant materials where appropriate; minimize turf areas
- Provide public charging stations for use by electric vehicles

14. Text Revision [Response to Comment 10-12]:

The following language has been updated in Section 4.7.4.3 of the Draft EIR.

This conversion from agriculture to industrial activity, however, is consistent with the Top, the TOP EIR, and its findings related to the loss of agriculture. The project is consistent with TOP and the loss of agriculture therefore is ~~not~~ significant.

The following language has been updated in Section 4.7.4.3 of the Draft EIR.

~~Although~~ implementation of the proposed Specific Plan would result in the conversion of farmland, ~~it~~ and is occurring consistent with that previously identified in the TOP EIR. The project is consistent with TOP and the loss of agriculture therefore is ~~not~~ significant.

15. Text Revision [Response to Comment 10-19]:

The following language has been added to Mitigation Measure CUL-1 in Section 4.5.5 of the Draft EIR.

CUL-1 Cultural resources monitoring is required on the project site and off-site areas once project-related excavations reach 4 feet below current grade during all project-related earthmoving in the Specific Plan. The monitoring must be headed by a City-approved Project Archaeologist, who may choose to use qualified field representatives (monitor) during earthmoving. The Project Archaeologist must create a Mitigation Monitoring Plan (MMP) prior to a City-approved pre-grade meeting. The MMP must contain a description of archaeological monitoring requirements (including who can decide if monitoring is not necessary due to disturbance or a lack of potential for resources), communication protocols on the project site and with the lead agency, protocols for the treatment of unanticipated discoveries, and a description of how and where historical and/or prehistoric artifacts will be curated if found during archaeological monitoring.

16. Text Revision [Response to Comment 10-23]

The following Project Design Feature has been added to Draft EIR Section 4.6.4.3.

PDF GEO-1 The developer of PA-2 is required to comply with and implement all of the recommendations of the site-specific geotechnical report prepared for PA-2 (Geotechnical Investigation Proposed Commercial/Industrial Development 15133 Carpenter Avenue, Prepared by Southern California Geotechnical (December 23, 2013).)

17. Text Revisions [Response to Comment 10-28]:

The following language has been updated in Section 4.7, Greenhouse Gas Emissions and Energy, of the Draft EIR.

Fossil fuels used for construction vehicles, on-road construction vehicles, and worker commute vehicles, ~~and other energy-consuming equipment~~ would be used during grading, water, sewer, and recycled water infrastructure construction, stormwater conveyance and circulation improvements, and building construction. Energy consumption estimates were based on hours of use, horsepower, and VMT for worker commutes and haul trips. Total energy consumption for construction of the project was estimated at 113,184 million Btu (MMBtu).

Accordingly, the project would result in an estimated use of 15,580 megawatt hours of electricity and 292,976 therms of natural gas each year. To provide a summary of overall energy use, the analysis also combines electricity and natural gas into a common unit of energy usage, BTU. A BTU is a traditional unit of energy that is the amount of energy needed to cool or heat one pound of water by one degree Fahrenheit. Total energy consumption for building operations was estimated at 79,375 MMBtu per year.

Energy consumption directly attributable to operation of the project is also related to the fuel consumption associated with on-road motor vehicles. VMT is a component of the direct energy analysis, because VMT can be used to determine energy consumption based on assumptions of fuel economy and fleet mix. Fuel consumption would be primarily related to vehicle use by employees and truck trips associated with the project. Total energy consumption for mobile sources was estimated at 281,491 MMBtu per year. The combined mobile source and direct energy use for building operations was estimated at 360,866 MMBtu per year.

18. Text Revision [Response to Comment 10-30]:

The following language has been added to Section 4.8.3, Regulatory Setting.

4.8.3.4 City of Ontario Development Code, Environmental Performance Standards

The City of Ontario Development Code includes Environmental Performance and Sustainable Development Standards contained within their respective development code. The revision to the Ontario Development Code was adopted by the City Council on December, 1 2015 and became effective January 1, 2016.

19. Text Revision [Response to Comment 10-39]:

The following language has been added to Section 4.11.10, Cumulative Impacts.

Noise attenuates logarithmically with distance from its source at a conservative rate of 6 dBA per doubling of distance, i.e., 75 dBA at 50 feet, which would be 69 dBA at 100 feet, 63 dBA at 200 feet, 57 dBA at 400 feet, 51 dBA at 800 feet, and 46 dBA at 1,600 (greater than 0.25 mile). Therefore, construction noise is localized in proximity to the construction site. Construction noise from the construction activity of other projects that may be developed concurrently with the proposed project would need to occur in proximity (e.g., less than 0.25 mile away) from the proposed project to have the potential for a cumulative effect on noise related to the construction of the proposed project.

According to Exhibit 3-1, the western portion of Subarea 29 extends to the same canal that forms the eastern border of the Project area and thus creates an opportunity for NMS-1 and NMS-5 to be within 0.25 miles away from potentially concurrent construction activity on both sites. Each of these two locations would experience a logarithmic combination of construction noise levels emanating from each of the concurrent projects.

If one were to assume that site grading and other construction activities for the Subarea 29 project were similar to those considered in this analysis for the Project, and these activities were concurrent

in schedule (e.g., site grading at both project sites), then NMS-1 would be expected to experience a cumulative construction noise level of 69 dBA L_{eq} —the same as shown in Table 4.11-7, because the predicted noise from Subarea 29 would travel over 2,000 feet to arrive at this receiver and thus have a negligible additive contribution per understood acoustical principles. Under this same concurrent condition, and although 1,200 feet from the Project boundary, location NMS-5 would likely see a much higher cumulative construction noise level than the Project-only prediction shown in Table 4.11-7 because it would be immediately adjoining construction activity on the Subarea 29 site. For instance, if the distance between NMS-5 and Subarea 29 site grading was 200 feet, one would predict 69 dBA L_{eq} under this concurrence scenario. Since NMS-5 has a baseline level of 66 dBA L_{eq} , a predicted concurrent construction noise level of 69 dBA L_{eq} would cause the ambient to rise to 71 dBA L_{eq} and thus be only represent a 5 dBA increase—not over 10 dBA, and thus not considered a significant impact with respect to this impact significance criterion discussed in Section 4.11.7.2.

Other projects in the larger vicinity of the proposed project, including those currently under construction in the surrounding cities of Eastvale, Chino, and Ontario, may result in the introduction of added ADT to traffic volumes and thus create a net increase in the ambient noise level that is greater than that of the contribution of the proposed project alone. However, this analysis expects that the traffic data (upon which it has relied) for opening year (2017) and buildout (2025) accounts for, to a reasonable degree, regional transportation growth associated with these three cities and growth of residential, commercial, and industrial development within them. Thus, such cumulative noise would be considered a less than significant impact.

20. Text Revision [Response to Comment 10-40]:

The following language has been added to Section 4.12.4.3, Project Impacts, under Threshold 1 of the Draft EIR.

RHNA requires that each city and county plan to meet their fair share of regional housing market need. As a result, the City has identified potential sites for additional residential development in their Housing Element. The proposed project does not involve the construction of residential units. The proposed project site is not included within the City's land inventory sites identified to accommodate the number and type of dwelling units that have been allocated to the City (<http://www.ontarioplan.org/wp-content/uploads/sites/4/2016/06/Housing-Element-Land-Inventory-June-2016-Map-and-List.pdf>). RHNA also requires that sufficient land capacity be incorporated to support improved job housing balance. While the proposed project has the potential to increase the number of jobs in the area, the City's Housing Element and compliance with RHNA would ensure adequate job housing balance. Therefore, the proposed project would not conflict with RHNA.

21. Text Revision [Response to Comment 10-50]

The following revisions have been made to Mitigation Measure TRANS-19 in the Draft EIR.

The City will ensure that the improvements identified in mitigation measures TRANS-1 through TRANS-18 will be constructed pursuant to the fee program at that point in time necessary to avoid identified significant impacts. ~~Further, the project shall coordinate with the City for the~~

~~implementation of mitigation to address for project level impact not included in the fair share program.~~

22. Text Revision [Response to Comment 10-51]:

The following level of service callouts have been revised in Section 4.14.6, Level of Significance After Mitigation, of the Draft EIR.

As shown in Table 4.14-24, all impacted study area intersections are forecast to operate at LOS D or better with the recommended mitigation except for the following intersections:

- Hamner Avenue Ontario Ranch Road (AM/PM Peak – LOS E/F)
- Hamner Avenue/Limonite Avenue (PM Peak – LOS ~~C~~ E)
- I-15 SB Ramps/Limonite Avenue (PM Peak – LOS ~~D~~ E)

23. Text Revision [Response to Comment 10-56]:

Table 6-1 has been revised to correctly identify the Alternative 2 transportation and traffic impacts.

Table 6-1: Comparison of Proposed Project Impacts with Alternatives

Environmental Issue	Proposed Project	Alternative 1 – No Project/ No Build	Alternative 2 – Reduced Intensity	Alternative 3 – Agricultural Retention
Aesthetics	Less than significant impact	No impact	Less than significant impact	Less than significant impact
Agriculture and Forestry	Significant impact	No impact	Significant impact	No impact
Air Quality	Significant impact	No impact	Significant impact	Significant impact
Biological Resources	Less than significant impact	No impact	Less than significant impact	Less than significant impact
Cultural Resources	Less than significant impact	No impact	Less than significant impact	Less than significant impact
Geology and Soils	Less than significant impact	No impact	Less than significant impact	Less than significant impact
Greenhouse Gas Emissions	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Hazards and Hazardous Materials	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Hydrology and Water Quality	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Land Use and Planning	Less than significant impact	Significant impact	Less than significant impact	Significant impact
Noise	Less than significant impact	No impact	Less than significant impact	Less than significant impact
Population and Housing	Less than significant impact	No impact	Less than significant impact	Less than significant impact
Public Services	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact

Table 6-1: Comparison of Proposed Project Impacts with Alternatives

Environmental Issue	Proposed Project	Alternative 1 – No Project/ No Build	Alternative 2 – Reduced Intensity	Alternative 3 – Agricultural Retention
Transportation and Traffic	Significant impact	Less than significant impact	Less than significant impact Significant impact	Less than significant impact
Utilities and Service Systems	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact

24. Text Revision [Response to Comment 10-57]:

The following text in Section 6.3.2.2 of the Draft EIR has been added to discuss the view impacts under Alternative 2.

Aesthetics

Under Alternative 2, the project site would be developed with approximately 20 percent less square footage than the proposed project, which would still permanently alter the physical character of the site relative to existing conditions. It is assumed that development under Alternative 2 would be subject to development standards and design guidelines similar to those of the proposed project, as these standards are comparable to those under the ODC. As such, building heights, setbacks, and landscape requirements are expected to be similar to the proposed project and to result in similar impacts to the visual character of the site and views of scenic resources in the area.

Under Alternative 2, which analyzes a 20 percent reduction in development, development would still cover the majority of the project site. As the project site is currently developed with agricultural uses, Alternative 2 would, like the project, introduce new, substantial development on the project site that would alter the existing environment. However, like the proposed project, Alternative 2 would not impact scenic vistas because the scale and design of development would not deter view of the mountain backdrop, would comply with applicable design standards, and would introduce an industrial development that is consistent with future plans to develop the area with urban uses. Finally, the project site is not considered to have a unique or special aesthetic value.

Under Alternative 2, a reduction in the number of buildings and associated parking stalls would occur, reducing the amount of light and glare that would be associated with the project as currently proposed. Under Alternative 2, the project would still be subject to Specific Plan and City Design Standards, ensuring that the project would not substantially contribute to cumulative light pollution in the project area; therefore, impacts to aesthetics would be less than significant, similar to those associated with the proposed project.

25. Text Revision [Response to Comment 10-59]:

The following text in Section 6.3.2.2 of the Draft EIR has been added to discuss impacts related to police services under Alternative 2.

Public Services

As discussed in Draft EIR Section 4.13, the project would not create a need for additional police services or facilities. Thus, the impact is less than significant. Alternative 2 proposes a marginal decrease (20 percent) in overall development at the project site. Therefore, consistent with the analysis of the project, Alternative 2 would not result in a reduction in the current level of police services and would not result in a significant impact.

Under Alternative 2, the Applicant would be required to pay developer fees for fire and police services and facilities similar to what would be required from the proposed project. As such, impacts associated with fire and police services and facilities for Alternative 2 would be similar to those of the proposed project and less than significant.

26. Text Revision [Topical Response #2]:

The following text has been clarified in Section 4.14.6 of the Draft EIR.

As stated above, although the implementation of the traffic mitigation measures for the above three intersections did not result in attaining LOS D or better conditions, the mitigation resulted in the same or better LOS and reduced delay when compared to the 2025 Plus Cumulative conditions resulting in the elimination of significant traffic impacts following mitigation. However, as discussed above, the mitigation measures would only reduce the significant impacts at intersections when the improvements are constructed. Because the improvements for intersections within the City may not be implemented in the near future, as acknowledged by the Draft EIR above, impacts would remain significant and unavoidable until such improvements are constructed. Also, because there is no guarantee that the improvement will be constructed prior to the impact occurring given full funding is dependent upon additional projects and the City is responsible for ultimate construction, the Project's impact is considered significant and unavoidable.

~~However~~ Moreover, as detailed above, 12 of the Project's traffic impacts would be located outside of the City's jurisdiction within the City of Eastvale, City of Chino, and Caltrans boundary. As such, the City cannot ensure that the necessary improvements to address the impacts would be constructed since payment to its DIF fund would not provide funds to the jurisdiction or compel the jurisdiction to construct the necessary improvements. As such, the Project's traffic impacts to intersections outside the City would be considered significant and unavoidable.

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3.0 CLARIFICATIONS TO FINAL EIR

This section presents clarification to information contained in the Final EIR. Indicated additions to the EIR are underlined (underlined) where text is added and deletions are strike-through (~~strike-through~~) type. The numbers in brackets refer to the applicable page number from the Final EIR.

1. Response to Comment 5-3 [Final EIR page 2-214]:

The following language has been revised on page 2-214 in Section 2.0 of the Final EIR.

- 5-3** The truck distribution assumptions were subject to a very thorough review and approval process from City of Ontario. Assigning a larger percentage of truck traffic through Euclid Avenue was deemed not logical since there are closer and more direct arterials to access the project site. Truck trip distribution is based on the shortest, and therefore most likely, truck route rather than assigning trips to all feasible routes ~~and thereby diminishing the level of impact and subsequent mitigation for the likely truck route.~~ The commenter has not provided any evidence that the assumptions used in the Draft EIR are incorrect or unreasonable.

2. Response to Comment 5-4 [Final EIR page 2-214]:

The following language has been revised on page 2-214 in Section 2.0 of the Final EIR.

- 5-4** The three additional City of Chino intersections that the comment asked to be included in the study were not identified to be significant major intersections during scoping for the study. The three intersections were not considered significant because (1) the crossing streets all have low traffic volume generation, thus vehicles traveling on those roadways are not considered likely to encounter significant delays and (2) are not signalized intersections that could result in excessive delays along Merrill Avenue because trucks and other project-generated vehicular trips are not required to stop at the intersections. ~~[Citation]~~ Moreover, when preparing the scope of the Traffic Impact Analysis, both the City of Ontario and City of Chino transportation staff reviewed the intersections proposed for study, and concurred in the approach/methodology. The commenter has not presented any evidence that the identified intersections would be significantly impacted by the project. Additionally, it is noted that these locations were not studied in the City of Chino - Majestic Chino Gateway EIR and Traffic Study.

3. Response to Comment 6-1 [Final EIR pages 2-214 and 2-215]:

The following language has been revised on pages 2-214 and 2-215 in Section 2.0 of the Final EIR.

- 6-1** The comment provides a summary of the project, results of the air quality analysis, and overview of SCAQMD comments. The comment's statement that the Draft EIR estimates approximately 2,818 diesel truck trips is incorrect. This 2,828 trip number appears to be

derived from adding the total manufacturing vehicle trips for PA-1 (1,317) and PA-2 (1,501). Daily truck trips generated are discussed in Table 4.14-8 of the Draft EIR, *Project Trip Generation Summary*. The total 7,690 daily trips that would result from the project, as identified in Table 4.14-8, *Project Trip Generation Summary*, are inclusive of both (1) passenger cars associated with each respective use and (2) trucks associated with ~~each~~ the warehousing use, but converted to passenger cars using PCE. This does not indicate the actual number of truck trips used for the emission estimates and the air quality analysis. PCEs are used to estimate the traffic impacts of the project by converting all vehicle types to one standard. The commenter's other references to diesel truck trips (i.e., "PA-2 will generate an estimated 894 diesel truck trips...") also fail to recognize that those numbers reflect truck trips converted using PCE. For total project trips, the commenter is referred to Table 4.14-8 of the Draft EIR, *Project Trip Generation Summary*.

The commenter also makes general assertions about the HRA, but does not include specific concerns. Any specific issues subsequently identified in later comments are thoroughly addressed in the responses to comments below.

4. Response to Comment 6-3 [Final EIR page 2-215]:

The following language has been revised on page 2-214 in Section 2.0 of the Final EIR.

- 6-3** Please refer to Response to Comments 6-1 and 6-2 for a discussion of the truck trip assumptions used in the Draft EIR's HRA and traffic analysis. For air quality, the CalEEMod input file used in the Draft EIR analysis accounts for both passenger vehicle and truck trips because that model does not permit different fleet mixture assumptions for different land uses. The analysis conservatively assumed that the same truck percentages applied to both the warehouse and manufacturing land uses. Therefore, diesel truck trips for the manufacturing land uses were incorporated into the air quality analysis. This analysis is reflective of the fact that the air quality model used to estimate air emissions could not be adjusted to account for separate uses. Thus, the truck percentage (20.3%) was necessarily applied to both uses. The HRA and traffic analysis, however, did not make the same assumptions because both could be analyzed using the project's assumed use mixture (75% warehousing and 25% manufacturing) and account for the fact that the manufacturing use is not a truck trip generator. Therefore, while the air quality analysis is an extremely conservative analysis based upon model necessities, both the HRA and traffic assumptions, while different, also represent an appropriate and reasonable analysis supported by substantial evidence. The estimate of truck trips for the project description, traffic analysis and HRA are consistent when accounting for the conversion of PCE, as discussed in Response to Comment 6-1. The CalEEMod input file used for the criteria pollutant emission estimates in Section 4.3 of the Draft EIR was adjusted to account for both passenger vehicle and truck trips. However, the version (2013.2.2) of CalEEMod used in the analysis of criteria pollutant emissions did not allow the user to provide different fleet mixes for different land uses in the same model run. The analysis of criteria pollutant emissions applied the same fleet mix (based on the warehouse land use) to both the warehouse and manufacturing land uses, resulting in a higher estimate of overall truck trips for those emission estimates.

5. Response to Comment 6-6 [Final EIR page 2-216]:

The following language has been revised on page 2-216 in Section 2.0 of the Final EIR.

- 6-6** Please refer to Response to Comment 6-3, which indicates that the air quality analysis for criteria pollutant emissions applied the same truck percentages to both the warehouse and manufacturing land uses, rather than default assumptions in the model. Moreover, the CalEEMod output for trucks equals 20.3%, consisting of: (1) 2.4% 2-axle trucks, (2) 5.6% 3-axle trucks, and (3) 12.3% 4-axle trucks. While that does include minor rounding, it is generally consistent with the estimate of 20.43% in the traffic study. In addition, refer to Response to Comment 8-6 for details regarding the Fontana Truck Trip Generation Study truck rate.

6. Response to Comment 6-8 [Final EIR page 2-216]:

The following language has been revised on page 2-216 in Section 2.0 of the Final EIR.

- 6-8** The comment states that “the lead agency modeled exhaust emissions consistent with the methodology established by the San Joaquin Valley Air Pollution Control District.” However, the text on Page 4.3-17 states “Volume sources were modeled consistent with the methodology established by the [SJVAPCD’s 2006 guidance].” (Emphasis added.) The SJVAPCD guidance was primarily used as supplemental information for the detailed modeling parameters (e.g., stack parameters, truck modeling) that better reflect the project’s air emissions. The HRA relied upon only very specific suggestions related to modeling of truck emissions from SJVAPCD guidance. The SCAQMD guidance referenced in the comment does not provide any specific suggestions as to how volume sources, including stack parameters, should be modeled. Therefore, the SJVAPCD guidance, which does include such information, was consulted as a reliable and reasonable source of assumptions for volume sources that would be created by the project.

The air quality analysis was based on OEHHA and SCAQMD guidance relevant for a CEQA analysis. The 2015 OEHHA guidance, with which the HRA is consistent (Draft EIR at 4.3-15), is not currently required pursuant to SCAQMD CEQA guidance and provides a conservative estimate of health risk.

Furthermore, the commenter did not allege, or state any facts suggesting, that the use of SJVAPCD’s 2006 guidance was inappropriate, resulted in erroneous conclusions, or otherwise undermined the validity of the Draft EIR. The SJVAPCD’s methodology is well-recognized and has been utilized in numerous environmental documents throughout California. When a study supports the conclusions of a Draft EIR, the relevant issue is only whether the study is sufficiently credible to support the Draft EIR. (*City of Maywood v. City of Los Angeles* (2012) 208 Cal.App.4th 362, 425-426.)

7. Response to Comment 6-15 [Final EIR page 2-218]:

The following language has been revised on page 2-218 in Section 2.0 of the Final EIR.

- 6-15** ~~The comment recommends that the project require “at least 5% of all vehicle parking spaces (including for trucks) include EV charging stations.” As discussed in Chapter 2 of the Draft EIR and Section 4.7, the provision of public charging stations for use by electric vehicles is included as a project design feature. These stations could include charging stations for trucks. The project, could condition the terms of a lease to require its tenants or the businesses serving the future occupants of the project to use trucks that operate either wholly or partially on electricity, and therefore, while the infrastructure will be provided, the actual number, location and design of those stations will be determined when specific tenants are identified and more detailed information is known regarding the vehicle mix, including the potential for trucks operating on electricity to utilize the proposed facilities. Please refer to Response to Comment 8A-13. The provision of public charging stations for use by electric vehicles is included as a project design feature. These stations could include charging stations that are accessible for trucks. The project, however, has no ability to require its tenants or the businesses serving the future occupants of the project to use trucks that operate either wholly or partially on electricity, and therefore, while the infrastructure will be provided, the actual number, location and design of those stations will be determined when specific tenants are identified and more detailed information is known regarding the vehicle mix, including the potential for trucks operating on electricity to utilize the proposed facilities.~~

8. Response to Comment 7-6 [Final EIR page 2-220]:

The following language has been revised on page 2-220 in Section 2.0 of the Final EIR.

- 7-6** This comment includes the descriptions of Zone, 6, 4, and 2, which were included the Draft EIR. A new exhibit (Exhibit 4.8-1) has been added to the Final EIR to show the Chino Airport safety zones in relation the project site. In addition, as discussed in the Draft EIR, while Zone 4 and 2 also exist within the project site, Zone 6 requirements were applied to the entire project site due to the minimal acreage designated as zones 4 and 2. Zone 6 open land standards were applied to the entire project site pursuant to direction from the City of Ontario Airport Planning Division.

The open land requirements for various zones in the Caltrans Airport Land Use Planning Handbook represent suggested guidelines that regarding the provision of open land within airport environs; however, they are not mandates.

An Airport Land Use Compatibility Planning Consistency Determination Report (“Consistency Report”), was prepared by the City of Ontario Planning Department, Airport Planning Division. The Consistency Report, which is included in the Final EIR as Appendix D, evaluated the project’s consistency with the Ontario Airport ALUCP, as well as consistency with the Airport Influence Areas of the Chino Airport. The Consistency Report concluded that the project would be consistent with the Chino Airport AIA provided the project complies the subject to compliance with four conditions, compliance with which is required by Mitigation Measure HAZ-10 ~~which are set forth as HAZ-10—HAZ-~~

~~14~~, which ~~are~~ is added to the Final EIR. With compliance with HAZ-10 ~~through HAZ-14~~, the proposed project will be consistent with the Chino Airport AIA requirements.

As discussed in the Consistency Report, the project will need to provide a minimum of 10% open land. This determination reflects the determination that the provision of 10% open space, which is consistent with the recommendations of the Caltrans Airport Land Use Planning Handbook for Zone 6, would ensure consistency and safety for PA-2. Furthermore, although the Consistency Report is specific to PA-2, its conclusions can be reasonably applied to PA-1 because PA-1 has a lesser amount of land within other zones.

MM HAZ-9 is amended as follows:

HAZ-9 As directed by the City of Ontario Planning Department, Airport Planning Division, the following would be required:

- Prior to project approval of PA-1 and PA-2, the project Applicant shall demonstrate to the satisfaction of the City Planning Department, Airport Planning Division that sufficient open land is being provided on-site.
- Obtain FAA approval for building/structure height limitations exceeding 50 feet in height within Zones 4 and 2.
- Obtain FAA approval for any object/temporary structure such as construction crane equipment that exceed 50 feet in height within Zones 4 and 2.
- Obtain FAA approval for building/structure height limitations exceeding 70 feet in height within Zone 6.
- Obtain FAA approval for any object/temporary structure such as construction crane equipment that exceeds 70 feet in height within Zone 6
- Urban land use category shall be utilized to calculate the people per acre intensity requirements for Zones 4, 2 and 6
- The development of PA-2 must comply with the project conditions outlined in the Airport Land Use Compatibility Planning Consistency Determination Report, dated April 6, 2016.

A complete copy of the Consistency Determination is included as Appendix E.

9. Response to Comment 8-1 [Final EIR page 2-222]:

The following language has been revised on page 2-222 in Section 2.0 of the Final EIR.

- 8-1** This comment includes introductory remarks, generalized assertions, and summarizes the comments contained within the comment letter and included appendices. The commenter is referred to Responses to Comments 8B-1 through 8B-6 below, which include responses to transportation comments, Responses to Comments 8C-1 through 8C-27 below, which include responses to biological resources comments, Responses to Comments 8A-1 through 8A-15, which includes the attached letter from Soil Water Air Protection Enterprise (SWAPE), and Responses to Comments 8-2 through 8-11 below. As outlined in

those responses, the Draft EIR's analysis of the potential environmental impacts of the project was appropriate and complied with the requirements of CEQA.

10. Response to Comment 8-5 [Final EIR pages 2-222 and 2-223]:

The following language has been revised on pages 2-222 and 2-223 in Section 2.0 of the Final EIR.

- 8-5** ~~See Responses to Comments 6-1 and 6-2. CEQA does not require analysis of a worst case scenario, but rather requires a sufficient degree of analysis to provide decision makers with information that enables them to make a decision which intelligently takes account of environmental consequences of the project. (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1068.) The analysis in the Draft EIR accomplishes this mandate by providing decision makers with information about the proposed project's potential air quality and greenhouse gas emissions resulting from construction and operation. It would be speculative to assume that the project would be occupied by tenants requiring the use of refrigerated trucks. Moreover, as noted in Response to Comment 6-3, the Draft EIR's criteria pollutant and greenhouse gas emissions analysis conservatively applied the truck fleet mixture assumptions to the manufacturing use, which is a higher generator of trips than warehousing. Section 4.3 of the Draft EIR states: "The project proposes to permit multiple types of uses that could conceivably require deliveries via refrigerated trucks and/or employ on-site refrigeration. Given the uncertainty of leased refrigerated warehouse space and the percentage of transport refrigeration units (TRUs), the analysis did not estimate additional emissions that could occur with the idling of TRUs during loading and unloading activities at the project site. NOX is the primary pollutant associated with the TRU diesel engines. Therefore, any additional emissions associated with idling would not change the findings for the criteria pollutants presented in Table 4.3-11." The project will not include any refrigeration or handle refrigerated trucks. A condition of approval prohibiting any such uses will be imposed on the project. Therefore, the Draft EIR's analysis of air quality impacts associated with non-refrigerated uses is appropriate.~~

11. Response to Comment 8-7 [Final EIR page 2-223]:

The following language has been revised on page 2-223 in Section 2.0 of the Final EIR.

- 8-7** The comment states that the Draft EIR's reliance on the CalEEMod default value of an average truck trip length of 16.6 miles is not supported by substantial evidence. The default assumptions included in CalEEMod were prepared by the SCAQMD and are based on surveys and studies of existing land uses, vehicle types, trip types, trip locations, and other factors. Thus, reliance on the default assumption of the CalEEMod are considered appropriate and reasonable for the assumptions in the analysis. ~~or provided by the air districts, and therefore, are considered appropriate for the assumptions in the analysis.~~ It is also worth noting that the SCAQMD did not allege that the Draft EIR's trip length assumptions were inappropriate or would underrepresent the project's potential impacts.

The trip length assumptions are supported by substantial evidence. Please also refer to Response to Comment 8A-10.

12. Response to Comment 8-10 [Final EIR page 2-224]:

The following language has been revised on page 2-224 in Section 2.0 of the Final EIR.

- 8-10** The comment suggests a variety of mitigation measures to reduce impacts associated with operational emissions. Some of these measures have already been incorporated in the project description, and other measures (e.g. solar panels) would not reduce the significant impact associated with NO_x emissions. In addition, some of the suggested measures (e.g., on-site fueling, truck repair) could actually increase emissions associated with additional trips and on-site criteria pollutants. Please also refer to Response to Comment 8A-13.

13. Response to Comment 8-11 [Final EIR page 2-224]:

- 8-11** The comment states that the HRA should include analysis of construction-related impacts. While the 2015 OEHA guidance does suggest evaluating risks associated with construction projects greater than 2 months, the SCAQMD is still reviewing how that guidance relates to CEQA projects. In addition, there are other factors in determining the need for a HRA, including the project location, total emissions, and distance to sensitive receptors. Since the project site is greater than 100 acres, emissions would be distributed over that area and would not occur in the vicinity of sensitive receptors for the entire construction period. As shown in Exhibits 4.3-1 and 4.3-2, there are a few sensitive receptors located within 1,000 feet to the south and west of the project site. However, the majority of project emissions would occur at varying distances from the receptors. As shown in Tables 4.3-9 and 4.3-10, construction-related emissions would not result in a localized air quality impact. Therefore, it was determined that a HRA for construction emissions was not required. Table 4.3-9, specifically, shows that air pollutant emissions generated by project construction would not exceed SCAQMD's LSTs, which are used to determine whether sensitive receptors would be exposed to substantial air pollutant emissions. Also, concentration of mobile source diesel PM emissions are typically reduced by 70% at a distance of approximately 500 feet from freeways, a continuous emissions source, and 80% at a distance of 1,000 feet from distribution centers. Because construction, and associated emissions, would be dispersed across the entire 123-acre project site, project construction could occur at various distances from the nearest sensitive receptors (ranging from approximately 100 feet to more than 2,000 feet at the nearest sensitive receptor). It should also be noted that the nearest sensitive receptor identified in the Draft EIR has subsequently been demolished. Therefore, because the project criteria pollutant emissions would not exceed the LSTs, off-road equipment would be operated intermittently and at various locations throughout the project site, and diesel PM emissions would disperse over the distance to the sensitive receptors, a construction-related health risk assessment is not required.

14. Response to Comment 8A-5 [Final EIR pages 2-226 and 2-227]:

The following language has been revised on pages 2-226 and 2-227 in Section 2.0 of the Final EIR.

- 8A-5** The Draft EIR's analysis of potential methane at the project site complies with CEQA. The Draft EIR did conduct an analysis of the potential for methane, and concluded that, although no government records suggested methane existing on the project site, the organic-rich soil present could generate methane that could accumulate under or within structures "following implementation of the Specific Plan." Thus, the Draft EIR concluded that there was currently no risk of methane on the project site. However, to ensure that impacts associated with potential future methane and buildout of the Specific Plan, Mitigation Measure ~~HAZ-8~~ HAZ-7 is required. That measure would ensure that the project is not subject to methane hazards post-construction.

15. Response to Comment 8A-8 [Final EIR page 2-227]:

The following language has been revised on page 2-227 in Section 2.0 of the Final EIR.

- 8A-8** ~~Please refer to Responses to Comments 6-1, 6-2, 6-3, and 8-5. The project does not propose refrigerated warehouse space and, although the Draft EIR acknowledges that refrigeration could conceivably be used at the project site, the potential for such use is uncertain. Also, the commenter has not provided evidence that the use of the project site with refrigeration is probable. As such, the project description and operational inputs used throughout the Draft EIR's analysis are reasonable and appropriate, and provide the decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences of the project. (Citizens for a Sustainable Treasure Island v. City and County of San Francisco (2014) 227 Cal.App.4th 1036, 1068.) CEQA does not require an EIR to engage in speculation to analyze a worst case scenario. (Save Round Valley Alliance v. County of Inyo (2007) 157 Cal.App.4th 1437, 1450.) The project will not include any refrigeration or handle refrigerated trucks. A condition of approval prohibiting any such uses will be imposed on the project. Therefore, the Draft EIR's analysis of air quality impacts associated with non-refrigerated uses is appropriate.~~

16. Response to Comment 8B-6 [Final EIR page 2-236]:

The following language has been revised on page 2-236 in Section 2.0 of the Final EIR.

- 8B-6** ~~The existing traffic counts account for future conditions and City of Ontario staff had reviewed and approved the traffic volume assumptions for use in evaluating future 2017 and 2025 conditions.~~

The commenter asserts that the Draft EIR's traffic counts are outdated and were based upon, in some instances, 2014 conditions. However, the commenter is referred to Appendix A of Appendix L, Traffic Impact Analysis, of the Draft EIR which includes traffic counts for the project-study intersections that were taken in May 2015. The City did not accept obsolete data.

17. Response to Comment 8C-12 [Final EIR page 2-239]:

The following language has been revised on page 2-239 in Section 2.0 of the Final EIR.

8C-12 Due to the presence of burrowing owl recorded within the vicinity of the project site in CNDDDB and PCR's extensive experience with other projects in the vicinity of the study area, a separate site visit to determine suitability of the habitat prior to conducting focused surveys was not necessary, and PCR began conducting the first of the four protocol surveys on April 15, 2015. As the commenter points out, Photograph 6 appears like burrowing owl habitat to him. A habitat assessment was conducted in the off-site area by an experienced biologist on March 23, 2016 and it was determined that the soil was too compact for any species to burrow in and no burrow or burrow surrogates were observed within the area (PCR, 2016).

The burrowing owl surveys were conducted in accordance to appropriate survey protocol, albeit not identical to CDFW guidelines. Irrespective, there were no signs of burrowing owls nor individuals burrowing owl observed. ~~Within the site~~ Together, the on-site surveys and habitat assessments constitute substantial evidence supporting the conclusions of the Draft EIR.

18. Response to Comment 9-13 [Final EIR page 2-249]:

The following language has been revised on page 2-249 in Section 2.0 of the Final EIR.

9-13 Mitigation Measure NOI-1 has been revised as outlined in Section 2.5, Revisions to the Draft EIR, of this Final EIR. With the revisions, Mitigation Measure NOI-1 requires the project applicant (developer of PA-1 or PA-2) to implement on or more specific measures to ensure that outdoor ambient sound levels associated with site preparation construction activities at NMS-2 are reduced by at least 2 dBA. The measure identifies a menu of options a developer may use to meet this reduction requirement, including a temporary noise barrier. ~~The feasibility of installing a noise barrier is not an effective noise mitigation given the size of the site and buildings, the site configuration, and the proximity to the nearest sensitive receptors.~~ Since there is a menu of approaches to dampen sound from the project in the EIR, the project can effectively mitigate while not relying on a measure that is less than effective in addressing the issue. NOI-1 also requires the developer to measure noise levels to ensure compliance, and report the relevant data to the City.

19. Response to Comment 9-16 [Final EIR page 2-250]:

The following language has been revised on page 2-250 in Section 2.0 of the Final EIR.

9-16 This comment is not an environmental comment on the Draft EIR and does not allege any inadequacy in the analysis or conclusions of the Draft EIR with respect to environmental impacts. See Response to Comment 9-15 above. The City is bound by legal principles to impose mitigation that is roughly proportional to the impacts of the project. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 364.) Thus, any fair share fees imposed on either PA-1 or PA-2 will be directly related to

the impact created by the development proposed for the respective planning areas. As discussed in Response to Comment 9-15, the Draft EIR's traffic analysis and calculation of fair share fees is based upon reasonable assumptions about future development of the planning areas. Further, the developers of each individual planning area, PA-1 or PA-2, will be responsible to pay for the fees assigned to those development areas at the time of building permit issuance.

20. Response to Comment 10-15 [Final EIR page 2-258]:

The following language has been revised on page 2-258 in Section 2.0 of the Final EIR.

- 10-15** The cumulative impact section has been revised. Please refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes (specifically see Text Revision 8 7). As discussed in that revision, with the implementation of mitigation measures, the project would not have a significant impact to biological resources, and impacts would not be cumulatively considerable. The comment also discusses the Draft EIR's use/incorporation of analyses from the NMC EIR and TOP EIR. ~~Please see Response to Comment 10-2 above.~~ Please refer to Response to Comment 10-2 regarding why the Draft EIR did not tier off of any prior EIRs.

21. Response to Comment 10-30 [Final EIR page 2-262]:

- 10-30** The City's Environmental Performance Standards have been updated so that performance standards are now included under their respective development standard. Mandatory compliance with these standards would ensure the project would have no impact related to the routine transport, use, or disposal of hazardous materials. Additional details regarding the Environmental Performance Standards, and the change in where they are now located, have been added to the Final EIR in Section 4.8.3, Regulatory Setting. Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes.

CEQA does not require a lead agency to conduct every test or perform all research, study, or experimentation suggested. CEQA Guidelines § 15204. An EIR need not be encyclopedic. An EIR must, however, include a level of analysis that provides decision makers and the public with adequate information. That standard is satisfied here, through reference to the City's Environmental Performance Standards and citation to their location in the City's Municipal Code.

Hazardous waste facilities are not permitted within the Colony Commerce Center West Specific Plan. The routine transport, use, or disposal of hazardous materials is regulated by the Uniform Fire Code and enforced by the Ontario Fire Department and San Bernardino County Fire Department, acting as the Certifying Unifying Permitting Agency (CUPA). Business plans and emergency plans are required as part of their operational permitting, which identify the type and quantity of materials registered with State.

22. Response to Comment 10-39 [Final EIR page 2-264]:

The following language has been revised on page 2-264 in Section 2.0 of the Final EIR.

- 10-39** Clarification of the cumulative impact analysis has been added to the Final EIR to include discussion of whether other projects could be constructed within 0.25 miles of the project (including off-site infrastructure improvements). Refer to Section 2.5, Revisions to the Draft EIR, of this Final EIR for a list of changes. The additional analysis in the Revisions to the Draft EIR section of this EIR does not trigger recirculation because (1) no new significant impacts are identified and (2) there is no substantial increase to a previously identified significant impact. The added analysis merely supports the conclusions of the Draft EIR with respect to cumulative noise impacts.

23. Topical Response # 1 –New Studies [Final EIR pages 2-269 through 2-272]:

The Borba Trust studies were evaluated and, as reflected in the Final EIR, and contained no new significant information. For greater clarity, a copy of those studies is included as Appendix E.

24. Text Revision 8 in Draft EIR [Final EIR pages 2-280 and 2-281]:

The following language has been revised on pages 2-280 and 2-281 in Section 2.0 of the Final EIR.

Cumulative Impacts to Wildlife

Per the BRA, the CNDDDB contains 43 special-status wildlife species within the 9-quadrant regional area around the project site. Of these, seven species were determined to have some, although low, potential to occur on-site including: golden eagle, Swainson's hawk, burrowing owl, San Diego black-tailed jackrabbit, western mastiff bat, big free-tailed bat, and DSFLF. With implementation of the mitigation measures, potential impacts to these species are anticipated to be reduced to a level less than significant, thereby reducing cumulative impacts to these species to a level less than significant.

The eucalyptus windbreak, along with other shrubs, ground cover, and limited trees, provides potential nesting and foraging habitat for raptors and migratory birds protected under the MBTA and California Fish and Game Code, would be removed by the project. However, as discussed in the Draft EIR, the project's compliance with Mitigation Measure BIO-4, ~~which~~ requires specific procedures for vegetation removal activities.

Also, it should be noted that the NMC Development Impact Fees include a habitat mitigation fee for proposed development within the NMC, such as the project. The fees are used to acquire, restore, enhance, maintain, or manage mitigation lands. The Species, Habitat Conservation and Open Space Mitigation Development Impact Fee is \$4,320/acre, collected at grading permit issuance.

8. Text Revision [Response to Comment 8C-24 and 10-15]

The two paragraphs in Section 4.4.4.4, Cumulative Impacts, of the Draft EIR have been replaced with the following text.

The intent of a cumulative impacts analysis and discussion is to understand cumulative project impacts in a regional context. Due to the potential for further development in the southern portion of Ontario and further south into the Prado Basin, the cumulative analysis takes into account potential impacts that would occur as a result of implementation of the regional cumulative projects presented in Table 3-1 and depicted on Exhibit 3.1. Similar to the study area, the majority of the cumulative impact areas consist of development and agricultural land uses. Thus, the cumulative impact area is, like the study area, largely disturbed and not a source of suitable habitat for biological resources. As the proposed project would not have significant impacts on species (plants and animals), the project's impact is not considered cumulatively considerable and would not contribute to a cumulative impact.

Cumulative Impacts to Plants

As presented in the BRA, decades of agricultural land uses in the cumulative impact area (i.e. dairy operations, row crops) has resulted in disturbed and ruderal habitats generally devoid of natural vegetation communities. Because of the disturbed nature of the project site, potential adverse cumulative impacts to plant communities within the project site are less than significant. Additionally, due to the absence of special-status plant species determined from a focused plant survey of the project site, significant impacts to special-status plant species are not anticipated. As a result, no cumulative impacts to natural vegetation communities and special-status plant species would occur upon implementation of the cumulative projects.

Cumulative Impacts to Wildlife

Per the BRA, the CNDDDB contains 43 special-status wildlife species within the 9-quad regional area around the project site. Of these, seven species were determined to have some, although low, potential to occur on-site including: golden eagle, Swainson's hawk, burrowing owl, San Diego black-tailed jackrabbit, western mastiff bat, big free-tailed bat, and DSFLF. With implementation of the mitigation measures, potential impacts to these species are anticipated to be reduced to a level less than significant, thereby reducing cumulative impacts to these species to a level less than significant.

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Also, it should be noted that the NMC Development Impact Fees include a habitat mitigation fee for proposed development within the NMC, such as the project. The fees are used to acquire, restore, enhance, maintain, or manage mitigation lands. The Species, Habitat Conservation and Open Space Mitigation Development Impact Fee is \$4,320/acre, collected at grading permit issuance.

As previously discussed, the proposed project would not have a significant impact on regional wildlife movement due to the absence of regional corridors associated with the site. Local wildlife movement could be impacted; however, those species adapted to urban areas would likely persist on-site following construction. Since the study area does not function as a regional wildlife corridor and is not known to support wildlife nursery area(s), no cumulative impacts to wildlife movement would occur.

25. Text Revisions [Response to Comment 10-28]:

The following language has been updated in Section 4.7, Greenhouse Gas Emissions and Energy, of the Draft EIR.

Fossil fuels used for construction vehicles, on-road construction vehicles, and worker commute vehicles, and other energy-consuming equipment would be used during grading, water, sewer, and recycled water infrastructure construction, stormwater conveyance and circulation improvements, and building construction. Energy consumption estimates were based on hours of use, horsepower, and VMT for worker commutes and haul trips. Total energy consumption for construction of the project was estimated at 113,184 million Btu (MMBtu).

Accordingly, the project would result in an estimated use of 15,580 megawatt hours of electricity and 292,976 therms of natural gas each year. To provide a summary of overall energy use, the analysis also combines electricity and natural gas into a common unit of energy usage, BTU. A BTU is a traditional unit of energy that is the amount of energy needed to cool or heat one pound of water by one degree Fahrenheit. Total energy consumption for building operations was estimated at 79,375 MMBtu per year.

Energy consumption directly attributable to operation of the project is also related to the fuel consumption associated with on-road motor vehicles. VMT is a component of the direct energy analysis, because VMT can be used to determine energy consumption based on assumptions of fuel economy and fleet mix. Fuel consumption would be primarily related to vehicle use by employees and truck trips associated with the project. Total energy consumption for mobile sources was estimated at 281,491 MMBtu per year. The combined mobile source and direct energy use for building operations was estimated at 360,866 MMBtu per year.

26. Text Revision

The following language has of Mitigation Measure CUL-2 been revised on pages ES-15 and 4.5-18 of the Draft EIR.

If, during implementation of CUL-1 PA-2, any historic-period or prehistoric cultural resources are inadvertently discovered by the Project Archaeologist or designated archaeological monitor(s), the find(s) must be blocked off from further construction disturbance by at least 50 feet, and the Project Archaeologist must then determine whether the find is a historical resource as defined under Section 15064.5(a)(3) of the CEQA Guidelines.

Appendix A

Draft EIR and Appendices

Appendix B

Updated CalEEMod

Appendix C

Energy Consumption Estimates

Appendix D

Airport Land Use Compatibility Planning Consistency Determination Report

Appendix E

Borba Trust Studies

