AMENDED AGENDA - TRANSMITTAL MEMO ADDED TO ITEM F-1

CITY OF OXNARD
PLANNING COMMISSION
AGENDA

REGULAR MEETING
Council Chambers, 305 West Third Street
Thursday, October 20, 2022, 6:00 p.m.

The public may view the meeting from home on the City's website at Oxnard.org/city-meetings, Spectrum Channel 10, Frontier Channel 35, or YouTube at Youtube.com/oxnardnews. Video recordings are typically available online following the meeting at the City's website at http://www.oxnard.org/city-meetings

YOU MAY PARTICIPATE IN THE MEETING IN THE FOLLOWING WAYS:

1. ATTEND THE MEETING AT THE LOCATION LISTED ABOVE: Submit a speaker card.

2. EMAILING COMMENTS OR REQUESTS TO SPEAK BEFORE THE MEETING
   a. Submit an email to Planning@oxnard.org no later than 3:00 p.m. on the day of the meeting (Please indicate the agenda item number in the subject line). All email correspondence will be forwarded to the Planning Commission prior to the start of the meeting and made part of the legislative record.
   b. Submit a request to speak by no later than 3pm on the day of the meeting by using the form https://forms.gle/SBS9cE1kGkW5LZWs7, emailing the Planning office at planning@oxnard.org, or calling (805) 385-7878.

3. PROVIDING PUBLIC COMMENTS DURING THE MEETING
   a. Speakers shall have up to three minutes to speak.
   b. If you wish to speak during public comments or a particular item on the agenda, please follow the below instructions:
      1. Dial phone number (888) 475-4499
      2. Enter the meeting ID: 835 3847 4860
      3. Enter the meeting passcode: 481019
      4. Wait in the Zoom waiting room. Once the Chair calls for public speakers, press *9 to raise your hand to inform the recording secretary you would like to speak..
   c. Public comments on items not on the agenda shall be taken at the beginning of the meeting. If there are more speakers than can be accommodated during thirty minutes, additional speakers who will be given an opportunity to speak at the end of the meeting. After all public speakers have been given an opportunity to speak, the public comment period shall be held open for three minutes to allow additional speakers to register or otherwise be recognized for the purpose of providing public comment. During this three minute time period, the Planning Commission or staff may briefly respond to comments on items not appearing on the agenda.
   d. Public comments on items on the agenda shall be taken following the announcement of the item. After all public speakers have been given an opportunity to speak on an agenda item, the public comment period shall be held open for three minutes to allow additional speakers to register or otherwise be recognized for the purpose of providing public comment. During this three minute time period, the Planning Commission or staff may discuss the item being considered.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in a meeting, you should contact the office of the City Clerk at (805) 385-7803. Notification 72 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to the meeting.

Written materials relating to an item on this agenda that are distributed to the Planning Commission within 72 hours before the item is to be considered at its regularly scheduled meeting will be made available for public inspection at 214 South C Street, during customary business hours.

In the event of a disruption which prevents a legislative body of the City of Oxnard from broadcasting a meeting using a call-in option or internet-based service option, or in the event of a disruption within the City's control which prevents members of the public from offering public comment using the call-in option or internet-based service option, the legislative body shall take no further action on items appearing on a meeting agenda until public access to the meeting via the call-in option or internet-based service option is restored. However, if any of the broadcast options are disrupted, but any of the other broadcast options is still available to the public, the legislative body may take further action on items appearing on a meeting agenda without waiting for the disrupted broadcast option(s) to be restored.

A. ROLL CALL

B. PLEDGE OF ALLEGIANCE TO THE FLAG OF THE UNITED STATES

C. PUBLIC COMMENTS - On Items Not On The Agenda

At this time, a person may address the Planning Commission on matters within the jurisdiction of the Planning Commission, including information/consent items and any item not appearing on the agenda. The Chair shall limit public comments to three (3) minutes. The Planning Commission cannot take action on any item presented during public comments that is not on the agenda and such item may only be referred to the Commission Secretary. Persons wishing to speak on public hearing items should do so at the time of the public hearing.

D. CONSENT AGENDA

1. None

E. EX PARTE DECLARATIONS FOR PUBLIC HEARING ITEMS

F. PUBLIC HEARING

1. **Project Name: Port of Hueneme - Temporary Outdoor Vehicle Storage Facility -** PLANNING AND ZONING PERMIT No. 18-500-02 (Special Use Permit); Located at southeast corner of Hueneme Road and Perkins Road (APNs: 231-0-092-105 and 231-0-092-245). A request for a Special Use Permit to construct and operate a temporary outdoor vehicle storage facility for a maximum of five years on the approximately 34-acre project site. Upon expiration of the Special Use Permit, the vehicle parking area, the guard house, portable restroom, perimeter site lighting, and gravel surface would be removed. The fencing, landscaping, and drainage and associated infrastructure improvements would remain on-site and be maintained by the property owner. The project site is located within the Light Manufacturing with Planned Development Additive Zone (M-1-PD). The request includes certification of the proposed Final Environmental Impact Report (EIR) (State Clearinghouse No. 2020069039) and adoption of the Mitigation Monitoring and Reporting Program (MMRP) which has been prepared pursuant to the California Environmental

Quality Act (CEQA). As mandated by the CEQA Guidelines, the EIR has been subject to the City's internal review process and reflects the Lead Agency's independent review and judgment and objectivity with regard to the scope, content, and adequacy of analysis. Filed by Christina Birdsey, 333 Ponoma Street, Port Hueneme, California 93044-0608, designated agent (the "Applicant") on behalf of A&J Oxnard LLC, 18980 Ventura Boulevard, Unit 200, Tarzana, California 91356 (the "Property Owner").
City Staff: Jay Dobrowalski, Planning Supervisor

Recommendation: That the Planning Commission:

a. Adopt a Resolution certifying Final Environmental Impact Report (EIR) No. 22-01 for the Port of Hueneme - Temporary Outdoor Vehicle Storage Facility (Governor's Office of Planning and Research State Clearinghouse No. 2020069039); and

b. Adopt a Resolution approving Planning and Zoning Permit No. 18-500-02 (Special Use Permit) for a vehicle storage facility, subject to certain findings and conditions.

Please click the following link to view the required Measure M pre-recorded presentation video: https://youtu.be/38OaqLALYpw

G. STUDY SESSION/REPORTS

H. PLANNING COMMISSION BUSINESS

I. COMMUNITY DEVELOPMENT STAFF UPDATES

J. ADJOURNMENT

FUTURE MEETINGS

Regular Meeting: Thursday, November 3, 2022, 6:00 p.m., Council Chambers

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in a meeting, you should contact the office of the City Clerk at (805) 385-7803. Notification 72 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to the meeting.

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COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION
214 SOUTH C STREET
OXNARD, CALIFORNIA 93030

MEMORANDUM

Agenda Item No.: F.1

Date: October 19, 2022

To: **Planning Commission**

From: **Joe Pearson II, Planning Manager, (805) 385-8272**

Subject: **Transmittal Memo No. 1 – Port of Hueneme - Temporary Outdoor Vehicle Storage Facility -** PLANNING AND ZONING PERMIT No. 18-500-02 (Special Use Permit); Located at southeast corner of Hueneme Road and Perkins Road (APNs: 231-0-092-105 and 231-0-092-245). A request for a Special Use Permit to construct and operate a temporary outdoor vehicle storage facility for a maximum of five years on the approximately 34-acre project site. Upon expiration of the Special Use Permit, the vehicle parking area, the guard house, portable restroom, perimeter site lighting, and gravel surface would be removed. The fencing, landscaping, and drainage and associated infrastructure improvements would remain on-site and be maintained by the property owner. The project site is located within the Light Manufacturing with Planned Development Additive Zone (M-1-PD). The request includes certification of the proposed Final Environmental Impact Report (EIR) (State Clearinghouse No. 2020069039) and adoption of the Mitigation Monitoring and Reporting Program (MMRP) which has been prepared pursuant to the California Environmental Quality Act (CEQA). As mandated by the CEQA Guidelines, the EIR has been subject to the City's internal review process and reflects the Lead Agency's independent review and judgment and objectivity with regard to the scope, content, and adequacy of analysis. Filed by Christina Birdsey, 333 Ponoma Street, Port Hueneme, California 93044-0608, designated agent (the "Applicant") on behalf of A&J Oxnard LLC, 18980 Ventura Boulevard, Unit 200, Tarzana, California 91356 (the "Property Owner").

Subsequent to the release of the staff report, staff received additional comment letters from members of the public concerning the proposed project (attached). Staff has reviewed the letters and will provide responses as necessary.

Attachment

A. Public Comment Letters

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 public hearing public comment VOTE NO

1 message

Krista Nordstrom <kristanordstrom3@gmail.com> Mon, Oct 17, 2022 at 10:36 AM
To: planning@oxnard.org
Cc: "sofi@causenow.org" <sofi@causenow.org>

To: ***planning@oxnard.org***

BCC: *Sofi@causenow.org*

Subject: **10/20 Public Hearing-Public comment to *Vote NO on the* The Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project**

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Krista Nordstrom

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Krista Nordstrom
Independent cabi Stylist
Mobile: 805-559-0069
Email: KristaNordstrom3@gmail.com

view the current Collection at KristaNordstrom.cabionline.com
for the latest styling tips, trends, and outfit ideas, visit the cabi blog at KristaNordstrom.cabionline.com/blog

Inline image

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Question: Port of Hueneme - Temporary Outdoor Vehicle Storage Facility - PLANNING AND ZONING PERMIT No. 18-500-02

1 message

Daniel Carawan <carawandr@alumni.vcu.edu> Fri, Oct 14, 2022 at 7:46 PM
To: Planning@oxnard.org

Sir/Ma'am,

With respect to Project: Port of Hueneme - Temporary Outdoor Vehicle Storage Facility - PLANNING AND ZONING PERMIT No. 18-500-02:
1) **How is the relatively smooth flow of traffic going to be ensured at the intersection of Perkins Rd and Hueneme Rd? In other words, when can we expect the Traffic Control Plan? I am fully in favor of economic development, done in a sensible way that balances the interests of the surrounding community and business partners.**

- The traffic lights at the intersections of Edison Dr and Acturus Ave have increasingly reduced the smooth flow of traffic on Hueneme Rd, increased tailpipe air emissions from engine idling at the traffic light and reduced public safety from vehicles running red lights. While it is an estimate on my part, the east to west vehicle ratio far exceeds the number of vehicles using the lights on Edison Dr. and Acturus Ave.
- The above mentioned traffic lights used to be on a timer but have transitioned to sensors. What this has meant in practice is one car coming up to a traffic light from Edison Dr. or Acturus Ave. quickly causes the traffic light on Hueneme Rd to change to red. That is, one vehicle stops around ten vehicles driving on Hueneme Rd., give or take.
- In essence, business interests are overriding those of the surrounding community and commuters working in the area.
- We do not need greater police presence in this area. We do not need traffic cameras. We need the City of Oxnard and Southern California Edison to ensure that the traffic lights on Hueneme Rd. continue on a timer-basis, not a sensor basis, ensuring traffic flows on Hueneme Rd. continue smoothly, environmental justice and public health are maintained.

Let me respectfully remind the Council how close this Industrial Zone is to the Residential Zone I and thousands of others live in.

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Daniel Carawan

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Dain Lopez <dain.c.lopez@gmail.com> Thu, Oct 13, 2022 at 9:04 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

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The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit. Oxnard deserves clean air and environmental justice! As someone who has family in Oxnard and lives near the diesel death zone of the Port of Long Beach, this project is extremely concerning when it comes to health, safety and the improved quality of life that you should be looking out for.

Sincerely,
Dain Lopez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Diana Bautista <dianaebau.18@gmail.com> Thu, Oct 13, 2022 at 9:23 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Diana Bautista

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

lynna n <itslynnanguyen@gmail.com> Thu, Oct 13, 2022 at 9:44 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Lynna Nguyen

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Jelitza Gutierrez' via Planning <planning@oxnard.org> Fri, Oct 14, 2022 at 1:39 AM
Reply-To: Jelitza Gutierrez <jelitza.gutierrez@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

VOTE NOOOOOO

I understand you've been receiving a bunch of these and we hope you read through them. When I drove down from Thousand Oaks to Oxnard back in the day, I would catch a beautiful view of part of Ventura county. Now, a lot of the time you see SO MUCH smog. It's ridiculous that such a tiny county can emit so many tons of CO2 into our atmosphere. We haven't even seen the impact this new Amazon warehouse will create. This county is so diverse and unfortunately a lot of low income families live here. That does not mean you get to come into this beautiful place we call home and capitalize it. We don't want to have dirty beaches and put up with unfair environmental destruction. As a Gen Z-er I demand that you protect our community/environment!!! The Channel Islands harbor is home to many unique wildlife as well as dolphin and whale breeding grounds. By expanding this harbor you will be affecting the wonderful ecosystem we have off our coast. We have already miserably failed them by fracking off shore causing several oil spills and poisoning the precious wildlife. We are TIRED of capitalists doing things that will benefit their pockets rather than help us advance as a society in a green way. We truly hope you don't pass this. If not I will loose even more hope in humanity. Please!!

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Jelitza Gutierrez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Tasi Meyer <tasimeyer@gmail.com> Fri, Oct 14, 2022 at 10:20 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city. The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit. Oxnard deserves clean air and

environmental justice!

Sincerely,

Tasi Meyer

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Elizabeth Sarabia <sarabiaelizabeth05@gmail.com> Fri, Oct 14, 2022 at 9:24 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Elizabeth Santos

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Marissa Arellano' via Planning <planning@oxnard.org> Fri, Oct 14, 2022 at 10:32 AM
Reply-To: Marissa Arellano <marissa_arellano3@yahoo.com>
To: planning@oxnard.org, Sofi@causenow.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

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Sincerely,

Marissa Arellano

Sent from Yahoo Mail for iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Moises Almaguer <moises.almaguer@gmail.com> Fri, Oct 14, 2022 at 10:47 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Moises Almaguer

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Donna Marie Domingo <donnamariealmaguer@gmail.com> Fri, Oct 14, 2022 at 10:48 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Donna Almaguer

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

tatum becker <tatumbecker3@gmail.com> Fri, Oct 14, 2022 at 11:01 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Tatum Becker

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

dorisnogalesmiguel@umail.ucsb.edu <dorisnogalesmiguel@umail.ucsb.edu> Fri, Oct 14, 2022 at 11:09 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Doris Nogales Miguel

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Sandra Arroyo' via Planning <planning@oxnard.org> Fri, Oct 14, 2022 at 11:13 AM
Reply-To: Sandra Arroyo <arroyo_sandries@me.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Sandra Arroyo

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Alexandra Guerrero <guerrero.alexandra15@gmail.com> Fri, Oct 14, 2022 at 12:16 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Alexandra Guerrero

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Ruby Fletcher <rubyfletcher4@gmail.com> Fri, Oct 14, 2022 at 12:22 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Ruby fletcher

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

kmiyashiro@roadrunner.com <kmiyashiro@roadrunner.com> Fri, Oct 14, 2022 at 1:29 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Kai Miyashiro

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Alex M <alex597gmartinez@gmail.com> Fri, Oct 14, 2022 at 1:55 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Alejandro Gutierrez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

ARMY 875 <805rachelr39@gmail.com> Fri, Oct 14, 2022 at 2:49 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Rachel Rivera

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'saidi garcia' via Planning <planning@oxnard.org> Fri, Oct 14, 2022 at 3:52 PM
Reply-To: saidi garcia <saidigarcia@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Saidi Garcia

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Beatriz Basurto <bassurtobeatriz@gmail.com> Fri, Oct 14, 2022 at 4:46 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Beatriz Basurto

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Christina Zubko <czubko@roadrunner.com> Fri, Oct 14, 2022 at 5:01 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Christina Zubko
Friends of Ormond Beach

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Alicia Meyer <alicialmeyer@gmail.com> Fri, Oct 14, 2022 at 5:23 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Alicia Meyer

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Hanna Dangiapo <hannadangiapo@gmail.com> Fri, Oct 14, 2022 at 5:45 PM
To: planning@oxnard.org
Cc: sofi@causenow.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Hanna Dangiapo

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

2 messages

'Eileen Castro' via Planning <planning@oxnard.org> Fri, Oct 14, 2022 at 5:50 PM
Reply-To: Eileen Castro <eileen_c357@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Eileen Castro

'Abishai Ramirez' via Planning <planning@oxnard.org> Fri, Oct 14, 2022 at 6:34 PM
Reply-To: Abishai Ramirez <thechoosen98@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

2 messages

'David Caskey' via Planning <planning@oxnard.org> Sat, Oct 15, 2022 at 9:11 AM
Reply-To: David Caskey <dlcaskey@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely

David Caskey, Port Hueneme

'Deborah Morales' via Planning <planning@oxnard.org> Sat, Oct 15, 2022 at 11:06 AM
Reply-To: Deborah Morales <debbielol.dm@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard

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Sincerely,

Deborah Morales

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Marie Martin <marierm68@gmail.com> Sun, Oct 16, 2022 at 10:45 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Most importantly this area is adjacent to an important marine mammal and threatened bird species sanctuary. The air and light pollution that would be created by this would be detrimental to the birds population and reduce their breeding and hunting grounds. This is not the place to store a bunch of cars.

Sincerely,
Marie Martin

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote YES on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Rick Kehoe <rickkehoe@sbcglobal.net> Sun, Oct 16, 2022 at 11:55 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to accept the Final EIR (FEIR) and vote YES on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings and you have.

It has been submitted to the record to the Port of Hueneme and We want these long-term good paying jobs in our community.

Sincerely,

Patrick “Rick” Kehoe
576 Island View Circle
Port Hueneme, 93041

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Amanda <amandaekay@gmail.com> Sun, Oct 16, 2022 at 5:31 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Amanda

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Luis Morales Jr <morales.ljr@gmail.com> Sun, Oct 16, 2022 at 8:10 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Luis Morales Jr.

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Meghan M <megmyday23@gmail.com> Mon, Oct 17, 2022 at 10:24 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the
FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

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This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Meghan

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Madeline Oliver <madeline.c.oliver@gmail.com> Mon, Oct 17, 2022 at 10:26 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Madeline Oliver

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Adam Kaiserman <adamkaiserman@gmail.com> Mon, Oct 17, 2022 at 10:30 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Adam Kaiserman

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Kristen Klitgaard <kristenklitgaard@gmail.com> Mon, Oct 17, 2022 at 10:50 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Kristen Klitgaard, Ventura county resident

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Darian Rubow <darianrrubow@gmail.com> Mon, Oct 17, 2022 at 11:00 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Darian Rubow
She/Her
darianrrubow@gmail.com
949-975-9629

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

K <katelornakelly@gmail.com> Mon, Oct 17, 2022 at 11:09 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Kate Kelly

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme %2ï¿½Temporary Outdoor Vehicle Storage Facility Project

1 message

'tim.katz@yahoo.com' via Planning <planning@oxnard.org> Mon, Oct 17, 2022 at 11:23 AM
Reply-To: "tim.katz@yahoo.com" <tim.katz@yahoo.com>
To: "planning@oxnard.org" <planning@oxnard.org>

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Tim Katz

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme -Temporary Outdoor Vehicle Storage Facility Project

1 message

Ched Myers <chedmyers@bcm-net.org> Mon, Oct 17, 2022 at 12:03 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Ched Myers & Elaine Enns

_____

Bartimaeus Cooperative Ministries (on Facebook)

PO Box 328, Oak View, CA 93022 805-836-1227

ChedMyers.org

watersheddiscipleship.org (on Facebook)

radicaldiscipleship.net

Center and Library for the Bible and Social Justice (on Facebook)

For *Healing Haunted Histories: A Settler Discipleship of Decolonization* go here.

Find resources at our Bartcast and YouTube pages.

We live and work on unceded Chumash territory in the Ventura River Watershed.

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Molly Foytek <molly.foytek@gmail.com> Mon, Oct 17, 2022 at 12:25 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice! Please do the right thing for the earth, Oxnard, and all those who live in it.

Sincerely,
Molly Foytek

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 PUBLIC COMMENT: Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Karen Rice <karen@waycollective.org> Mon, Oct 17, 2022 at 12:28 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

As a pastor, local resident, and someone working toward racial justice, I urge you to **reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion**. The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

This project is not truly temporary, since the FEIR fails to say what the **long term plans** are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

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The Port has said cars stored at the 34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
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This FEIR fails to accurately examine the negative impacts of this project. **I'm asking that you do not certify the FEIR and deny the Special Use Permit.**Oxnard deserves clean air and environmental justice!

Sincerely,
Karen Rice

--
Dr. Karen Rice
Way Collective Co-Curator
Pronouns: she/her/hers

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Mari Rose Taruc <mrtaruc@gmail.com> Mon, Oct 17, 2022 at 12:48 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Mari Rose Taruc

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Roberto Gonzalez <roberto.gonzalez@mixteco.org> Mon, Oct 17, 2022 at 1:28 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Roberto Gonzalez

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the system manager. This message contains confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Alisann Tolosa' via Planning <planning@oxnard.org> Mon, Oct 17, 2022 at 2:28 PM
Reply-To: Alisann Tolosa <alisannt@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners, I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Jennifer Martinez <jennifermartinez040@gmail.com> Mon, Oct 17, 2022 at 4:03 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city. The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Jennifer Martinez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Mariana <mparedes15@gmail.com> Mon, Oct 17, 2022 at 6:30 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,
Mariana Harms

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Agle Rosales <aglerosales1@gmail.com> Mon, Oct 17, 2022 at 6:36 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Agle Rosales

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Hedy <juarezhedy@gmail.com> Mon, Oct 17, 2022 at 6:39 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,
Hedy Juarez

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Yoana Ibanez <yoana_ibanez1@my.vcccd.edu> Mon, Oct 17, 2022 at 6:40 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Yoana Ibanez

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Kyle De La Torre' via Planning <planning@oxnard.org> Mon, Oct 17, 2022 at 6:47 PM
Reply-To: Kyle De La Torre <kyle_delatorre2@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Kyle Emmanuel De La Torre

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

John Sarley <john@biggbusiness.com> Mon, Oct 17, 2022 at 7:00 PM
To: "planning@oxnard.org" <planning@oxnard.org>

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Sincerely,

Get Outlook for Android

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

chiarra <chiarra.limos@gmail.com> Mon, Oct 17, 2022 at 7:21 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Chiarra Limos

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Ignacio Benitez <nachobenitez76@gmail.com> Mon, Oct 17, 2022 at 7:50 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Ignacio

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Maria Navarro <maria.navarro0805@gmail.com> Mon, Oct 17, 2022 at 9:09 PM
To: planning@oxnard.org

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Maria Navarro

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Kari Aist <mom4mykids@gmail.com> Tue, Oct 18, 2022 at 3:47 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250-acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and must prioritize transitioning their cargo fleet to zero emission trucks ASAP.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and that you deny the Special Use Permit.

Oxnard deserves clean air and environmental justice!

Sincerely,

Kari Aist

8892 Tacoma Street, Ventura, 93004

805-323-6063

--
Pronouns: she, her
805-323-6063
8892 Tacoma Street, Ventura 93004

"Believe with all your heart that how you live your life makes a difference" - Colin Beavan

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

LIZ CAMPOS <lizcamposventura@gmail.com> Wed, Oct 19, 2022 at 11:50 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.

It is beyond unethical to bill this as a "temporary outdoor vehicle storage project", particularly when the State, the CPUC and CARB are working on an electric truck transfer stste for the port region which is designed to protect the wild life, insect and lower species which this project will exterminate. Extinction is permanent, not temporary. Said project as described will also likely destroy the local air quality and cause rapid changes in the marshland/brackish water filtration sysyem, dry the underlying and border soils, and never be removed.
The same project was proposed on County land approximately 4 years ago. That proposal fail because the serious environmental consequences far outweigh any benefit to the City. Even the port environmental services officers attended commission meetings to argue against the idea.
The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

Because the FEIR fails to accurately examine the negative impacts of this project I'm write, demanding that you do not certify the FEIR and deny the Special Use Permit.

Oxnard deserves clean air and environmental justice!

Sincerely,

Liz Campos

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Anne Lamar <annelamar592@gmail.com> Wed, Oct 19, 2022 at 1:26 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Anne Lamar

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Gene Rubin <generubinaudio@earthlink.net> Wed, Oct 19, 2022 at 1:32 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Gene Rubin

805-340-2270

All the really good stuff is at: https://generubinaudio.com/

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Shellie Rothstein' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 1:57 PM
Reply-To: Shellie Rothstein <shellier@me.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Shellie Rothstein

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Ivan Corona' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 2:21 PM
Reply-To: Ivan Corona <ic891@aol.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the
FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Ivan C

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Phil Chandler <philipbchandler@earthlink.net> Wed, Oct 19, 2022 at 3:52 PM
To: planning@oxnard.org
Cc: sofi@causenow.org

Dear Oxnard Planning Commissioners,

This is written to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR inaccurately describes the CEQA project used as the basis for the FEIR. CEQA requires an accurate project description. Impacts to air quality and sub-PM10 pollution from diesel transport trucks were not properly evaluated. Accumulation of multi-year deposition of the emitted particulates on greenscape and hardscape surfaces of neighboring properties and in nearby coastal sensitive wildlife areas is neglected. Both direct inhalation and depositional impacts of emissions requires adequate evaluation in human health and eco-risk still assessments as part of the FEIR. The surface water impacts of the project are not adequately evaluated. Capture and recycle scarce water resources that the project requires is not adequately addressed. The FEIR does not consider alternatives to mitigate the project's pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to address long term plans are for Port Storage after the 3-5 years that are known to be under consideration. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to construct a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road. The FEIR does not honestly address this nor the additional resources that will ultimately be required. Approval of this project without inclusion of the existing long-term plans for Port storage that appear to be concealed from consideration is inappropriate under CEQA..

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be simultaneously true. It appears that this project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. This is quite insubstantial and is not a satisfactory basis for approval of the FEIR.

The Port has said cars stored at the 34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is demonstrably the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime. An adequate Human Health Risk Assessment (HHRA) must be completed before the FEIR is approved.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. In order to satisfy CEQA requirements, project alternatives that need serious consideration in a proper FEIR should include options like using existing space in the navy base and the use of zero emission trucks to mitigate the diesel exhaust impacts to human health and the environment. If the Port of Los Angeles can make clean air commitments to its harbor area why can't this Port do the same?

This FEIR fails to adequately examine the negative impacts of this project. I'm asking that you do not certify this FEIR and deny the Special Use Permit until all of the impacts are considered and properly addressed. Residents of Oxnard deserve clean air

Sincerely,
Philip Chandler

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Nancy Ortega' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 3:57 PM
Reply-To: Nancy Ortega <emailortega@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the
FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Ms. Ortega

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Lisa Wade Devine <lwadedevine@gmail.com> Thu, Oct 13, 2022 at 7:59 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am an Oxnard resident writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.

Oxnard deserves clean air and environmental justice!

Sincerely,

Lisa Devine

Oxnard resident

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

Fwd: Port of Hueneme Temporary Vehicle Storage Project Public Hearing

1 message

Dobrowalski, Jay <jay.dobrowalski@oxnard.org> Tue, Oct 18, 2022 at 11:54 AM
To: "Loera, Miriam" <miriam.loera@oxnard.org>, Rogelio Solis <rogelio.solis@oxnard.org>

Hi Miriam and Roy,
Please include this letter with the other PC comments regarding the Port Project.
This letter should be the first of the bunch.
Thanks,

Jay Dobrowalski | Planning Supervisor
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805.385.3948 | F: 805.385.7417
www.oxnard.org

Effective February 14, 2022, the Service Center and all public-interfacing City buildings will be open to the public.

Online services remain available through our online portal at www.oxnard.org/planning

- General inquiries should be sent via email to Planning@oxnard.org.
- For new applications, email us at planning@oxnard.org. Large projects can be shipped with prior authorization. Smaller projects may be submitted via email.
- For existing applications, contact your assigned Case Planner by direct email.

For the most up to date information on COVID-19 please visit https://www.venturacountyrecovers.org/

---------- Forwarded message ---------
From: **Linda Daly-Calderon** <lindaly21@yahoo.com>
Date: Tue, Oct 11, 2022 at 4:09 PM
Subject: Re: Port of Hueneme Temporary Vehicle Storage Project Public Hearing
To: Dobrowalski, Jay <jay.dobrowalski@oxnard.org>

Thank you for sending this notice. I am not sure I can make it as I mostly do not drive at night now due to cataracts on both eyes. I can see but don't feel as comfortable with the night driving so try to avoid. We'll see. Keep me in the loop anyway please. Wish we could have some of these meetings with a daytime part also for us seniors.

Linda Gray Calderon

On Monday, October 10, 2022 at 04:59:57 PM PDT, Dobrowalski, Jay <jay.dobrowalski@oxnard.org> wrote:

Dear Interested Party:

You are receiving this notice because you registered to receive notice regarding public hearings or you submitted comments regarding the environmental document for the Port of Hueneme Temporary Vehicle Storage Project.

The project has been scheduled for a Planning Commission hearing on October 20, 2022 at 6:00pm.

The Final Environmental Impact Report (EIR), which includes written responses to comments received regarding the draft document, is available from the Planning Division website:
https://www.oxnard.org/city-department/community-development/planning/environmental-documents/

Copies of the Final EIR are available for review at the following City locations:
City of Oxnard Planning Division offices at 214 South C Street, Oxnard, CA 93030;
City of Oxnard Main Library at 251 South A Street, Oxnard, CA 93030;
City of Oxnard South Oxnard Branch Library at 4300 Saviers Road, Oxnard, CA 93033; and
City of Oxnard Colonia Branch Library at 1500 Camino del Sol #26, Oxnard, CA 93030.

The Notice of the Public Hearing, which includes instructions on how to submit comments and participate in the Planning Commission hearing, is attached to this email. Instructions on how to submit comments and participate in the Planning Commission hearing are also available from the City website: https://www.oxnard.org/city-meetings/

The Planning Commission hearing documents will be available from the City website one week prior to the hearing:
https://www.oxnard.org/city-meetings/

I hope you find this information helpful.
Thank you for your participation in the planning process.
Sincerely,

Jay Dobrowalski | Planning Supervisor
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805.385.3948 | F: 805.385.7417
www.oxnard.org

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- General inquiries should be sent via email to Planning@oxnard.org.
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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

Fwd: Port of Hueneme Temporary Vehicle Storage Project Public Hearing

1 message

Dobrowalski, Jay <jay.dobrowalski@oxnard.org> Tue, Oct 18, 2022 at 11:54 AM
To: "Loera, Miriam" <miriam.loera@oxnard.org>, Rogelio Solis <rogelio.solis@oxnard.org>

Hi Miriam and Roy,
Please include this letter with the other PC comments regarding the Port Project.
This letter should be the first of the bunch.
Thanks,

Jay Dobrowalski | Planning Supervisor
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805.385.3948 | F: 805.385.7417
www.oxnard.org

Effective February 14, 2022, the Service Center and all public-interfacing City buildings will be open to the public.

Online services remain available through our online portal at www.oxnard.org/planning

- General inquiries should be sent via email to Planning@oxnard.org.
- For new applications, email us at planning@oxnard.org. Large projects can be shipped with prior authorization. Smaller projects may be submitted via email.
- For existing applications, contact your assigned Case Planner by direct email.

For the most up to date information on COVID-19 please visit https://www.venturacountyrecovers.org/

---------- Forwarded message ---------
From: **Linda Daly-Calderon** <lindaly21@yahoo.com>
Date: Tue, Oct 11, 2022 at 4:09 PM
Subject: Re: Port of Hueneme Temporary Vehicle Storage Project Public Hearing
To: Dobrowalski, Jay <jay.dobrowalski@oxnard.org>

Thank you for sending this notice. I am not sure I can make it as I mostly do not drive at night now due to cataracts on both eyes. I can see but don't feel as comfortable with the night driving so try to avoid. We'll see. Keep me in the loop anyway please. Wish we could have some of these meetings with a daytime part also for us seniors.

Linda Gray Calderon

On Monday, October 10, 2022 at 04:59:57 PM PDT, Dobrowalski, Jay <jay.dobrowalski@oxnard.org> wrote:

Dear Interested Party:

You are receiving this notice because you registered to receive notice regarding public hearings or you submitted comments regarding the environmental document for the Port of Hueneme Temporary Vehicle Storage Project.

The project has been scheduled for a Planning Commission hearing on October 20, 2022 at 6:00pm.

The Final Environmental Impact Report (EIR), which includes written responses to comments received regarding the draft document, is available from the Planning Division website:
https://www.oxnard.org/city-department/community-development/planning/environmental-documents/

Copies of the Final EIR are available for review at the following City locations:
City of Oxnard Planning Division offices at 214 South C Street, Oxnard, CA 93030;
City of Oxnard Main Library at 251 South A Street, Oxnard, CA 93030;
City of Oxnard South Oxnard Branch Library at 4300 Saviers Road, Oxnard, CA 93033; and
City of Oxnard Colonia Branch Library at 1500 Camino del Sol #26, Oxnard, CA 93030.

The Notice of the Public Hearing, which includes instructions on how to submit comments and participate in the Planning Commission hearing, is attached to this email. Instructions on how to submit comments and participate in the Planning Commission hearing are also available from the City website: https://www.oxnard.org/city-meetings/

The Planning Commission hearing documents will be available from the City website one week prior to the hearing:
https://www.oxnard.org/city-meetings/

I hope you find this information helpful.
Thank you for your participation in the planning process.
Sincerely,

Jay Dobrowalski | Planning Supervisor
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805.385.3948 | F: 805.385.7417
www.oxnard.org

Effective February 14, 2022, the Service Center and all public-interfacing City buildings will be open to the public.

Online services remain available through our online portal at www.oxnard.org/planning

- General inquiries should be sent via email to Planning@oxnard.org.
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- For existing applications, contact your assigned Case Planner by direct email.

For the most up to date information on COVID-19 please visit https://www.venturacountyrecovers.org/

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

Fwd: VCTA Supports Project 34

1 message

Pearson II, Joe <joe.pearson@oxnard.org> Wed, Oct 19, 2022 at 1:16 PM
To: Rogelio Solis <rogelio.solis@oxnard.org>, "Dobrowalski, Jay" <jay.dobrowalski@oxnard.org>

Port Project Comment.

Best,

Joe Pearson II, AICP | Planning and Environmental Services Manager
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805-385-8272
Joe.Pearson@Oxnard.org
www.oxnard.org

---------- Forwarded message ---------
From: **Lai, Dee** <dee.lai@oxnard.org>
Date: Wed, Oct 19, 2022 at 10:42 AM
Subject: Fwd: VCTA Supports Project 34
To: Joe Pearson II <Joe.Pearson@oxnard.org>
Cc: City Clerk <cityclerk@oxnard.org>

Hi Joe,

Please see the below email below pertaining to Jay's project.

Regards,

Dee Lai, Assistant City Clerk
City of Oxnard
300 West Third Street, 4th Floor
Oxnard, CA 93030
Office: (805) 385-8200
dee.lai@oxnard.org

CITY OF OXNARD CALIFORNIA

---------- Forwarded message ---------
From: **Ventura County Taxpayers Association** <info@vcta.org>
Date: Tue, Oct 18, 2022 at 6:03 AM
Subject: VCTA Supports Project 34
To: <cityclerk@oxnard.org>

VCTA

VENTURA COUNTY TAXPAYERS ASSOCIATION

Investigate, Advocate, and Inform Citizens on Critical Issues Facing Ventura County

VCTA Supports The Port of Hueneme's Project 34

The Port of Hueneme is an often-forgotten contributor to Ventura County's tax revenue. Last year, the Port of Hueneme contributed $173.2 million to local cities and the state of California.

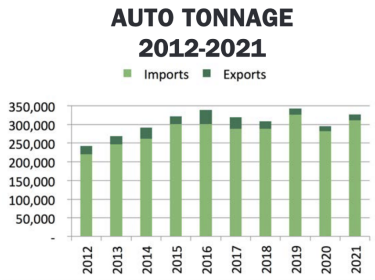
The Port of Hueneme is the fourth largest in California and the only deep-water port between Los Angeles and San Francisco. It is the "greenest" port in the United States. And during the COVID-19 pandemic, the Port of Hueneme had a unique market position as the uncongested port on the West Coast.

The Ventura County Taxpayers Association applauds the Port because it is completely self-supporting. It uses no tax dollars to maintain its operations.

The Port specializes in the niche markets of fresh fruit, project cargo, automotive and liquid bulk cargoes. Over 46% of the Port's annual cargo value comes from the automotive trade.

Because of the high reliance on the auto trade, the Port of Hueneme's Emissions Reduction and Job Creation Project should appeal to Ventura County residents.

The project aims to use privately owned land zoned for light industry as a temporary outdoor overflow parking lot. The goal is to reduce and consolidate reliance on off-port storage locations for automobiles shipped into the port. The proposed project will take three to five years to complete.



To achieve their goal, the Port of Hueneme needs a Special Use Permit from the City of Oxnard. The Oxnard Planning Commission will hold a meeting on October 20, 2022, to discuss the matter.

The project will benefit Ventura County in a variety of ways. Project 34, as the Port refers to it, will create port-related new jobs for the life of the project. Also, it will add $2.2 million in local salaries per year.

Did you know?

» The Port of Hueneme is California's 4th largest container port.

» The Port of Hueneme is the greenest port in the United States.

» The Port of Hueneme is the backbone of Ventura County's economy.

The Port ensured the project was consistent with the city's General Plan. The project will improve the vacant lots proposed for temporary parking in keeping with the local environment. And once the project is over, the site will be a gateway park for the City of Port Hueneme.

We see no reason the City of Oxnard should deny a Special Use Permit to the Port of Hueneme. To do so would harm the local economy and degrade the local environment.

To learn more about the project, visit **GreenProject34**

To learn more about the VCTA, visit our website at **www.vcta.org**, and subscribe to our **newsletter**.

BECOME A MEMBER

The Gene Haas Foundation is supporting the Ventura County Taxpayer Foundation's mission to grow its membership base through the

end of 2022. Specifically, they have committed to match, dollar-for-dollar, on every new membership to VCTF!

By choosing to support our Educational Mission through VCTF, Business & Founding Members gain access to resources, as well as opportunities to increase brand awareness through member recognition, events, and sponsorship opportunities.

VCTF Members will also enjoy benefits such as free or discounted tickets to our special events and discounts on sponsorship fees.

JOIN VCTF

SPECIAL EVENTS

REGISTER

VCTA, We are your eyes on Government!

VCTA debuted our 2021/2022 Commercial at the Ventura State of the County on September 30, 2021.

Please check it out by clicking on the image or this link: **VIDEO HERE**

About the Ventura County Taxpayers Association (VCTA)
The Ventura County Taxpayer's Association (VCTA) is a non-partisan 501(C)(4) organization emphasizing issues that affect Ventura County.

We inform taxpayers, promote the wise use of public funds, oppose waste, advise public officials regarding issues of concern to taxpayers and recommend positions that will best serve the taxpayers' interests.

VCTA has been looking out for the interests of taxpayers in Ventura County since 1954.
VCTA believes in efficient, effective and transparent government.

Ventura County Taxpayers Association
PO Box 3878
Ventura, CA 93006
info@vcta.org | www.vcta.org

VCTA | vcta.org

Ventura County Taxpayers Association | PO Box 3878, Ventura, CA 93006

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October 19, 2022

Via Email and Federal Express

Jay Dobrowalski
Senior Planner
City of Oxnard Planning Division
214 South C Street
Oxnard, CA 93030
Email: jay.dobrowalski@oxnard.org
planning@oxnard.org
cityclerk@oxnard.org

Re: Comments on The Final Environmental Impact Report for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit)

Dear Mr. Dobrowalski:

We are in receipt of the Planning Department's Final Environmental Report, and respond here with comments submitted by Central Coast Alliance United for a Sustainable Economy (CAUSE), Natural Resources Defense Council, Earthjustice and the Wishtoyo Chumash Foundation. We submit the documents listed below on the enclosed thumb drive via FedEx, and available through this OneDrive link 4527 - Port of Hueneme Comments - Sources Shared on October 19 2022* via email. These documents contain key references cited in our comments, which we ask you to consider in conducting your review and include in the administrative record associated with this matter.

1. **Attachment 1: Dobrowalski July 13th Email**

This email is from Mr. Jay Dobrowalski, the Senior Planner for the City of Oxnard Planning Division, acknowledging receipt of our February comment letter, and noting that the letter and all supporting documents would be entered into the record.

2. **Attachment 2: Commenters' October 11, 2022 Errata Request**

This email is from Commenters requesting an erratum after realizing the supporting documents had not been entered into the record as part of the FEIR documentation.

3. **Attachment 3: Previous Comment Letters and Attachments**

February 14, 2022 Initial Comment Letter (and attachments) and July 1, 2022 Supplemental Comment Letter (and attachments).

* The following email addresses have access to this folder: jay.dobrowalski@oxnard.org, planning@oxnard.org, cityclerk@oxnard.org. Please email Radhika Kannan at rkannan@earthjustice.org or Fernando Gaytan at fgaytan@earthjustice.org if there are any access issues.

4. **Attachment 4: SWAPE Reply Report and Supportive Document**
5. **Attachment 5: Dr. Smallwood Reply Letter and Supportive Documents**
6. **Attachment 6: 2022 Automotive Logistics News Article on Electric Car-Carrier Trucks**

Sincerely,

Radhika Kannan
Fernando Gaytan
Earthjustice

Natalia Ospina
Heather Kryczka
Natural Resources Defense Counsel

Lucia Marquez
Central Coast Alliance United for a Sustainable Economy (CAUSE)

Mati Waiya
Wishtoyo Chumash Foundation

October 19, 2022

Via Email and Federal Express

Jay Dobrowalski
Senior Planner
City of Oxnard Planning Division
214 South C Street
Oxnard, CA 93030
Email: jay.dobrowalski@oxnard.org
planning@oxnard.org
cityclerk@oxnard.org

Re: Comments on The Final Environmental Impact Report for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit)

Dear Mr. Dobrowalski:

We submit these comments on the Final Environmental Impact Report ("FEIR") for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project ("Project") on behalf of the Central Coast Alliance United for a Sustainable Economy ("CAUSE"), Earthjustice, Natural Resources Defense Council ("NRDC"), and Wishtoyo Chumash Foundation ("Wishtoyo").

The FEIR fails to address several fundamental deficiencies in the Draft Environmental Impact Report ("DEIR") that commenters had previously identified. Despite the submission of over 200 comments on the DEIR, the City of Oxnard Planning Division ("OPD" or "City") has only made minor revisions to its analysis in finalizing the FEIR.[1] Even when confronted with new knowledge, facts, and expertise, including record evidence from the Oxnard Harbor District's ("OHD" or the "Port") internal documents, the City has refused to reevaluate its mistaken analysis. Consequently, the FEIR is legally deficient and unfit for certification under the California Environmental Quality Act ("CEQA").

I. The Record Must Include Commenters' Submitted Evidence on July 1, 2022

Following the close of the public comment period for the DEIR in February 2022, commenters became aware of new evidence through documents produced in response to a Public Records Act request to the OHD. These documents contained substantial relevant information for decisionmakers to be aware of ahead of deciding whether to approve this proposal. Furthermore, on March 21, 2022, the City hosted a Virtual Community Workshop with presentations from the OHD discussing its plans for the 34-acre Vehicle Storage Site currently under review. At the conclusion of the Virtual Community Workshop, OPD invited additional

[1] Final Environmental Impact Report, Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project, SCH No. 2020069039 (Sept. 2022) (hereinafter "FEIR").

written comments from the public concerning the proposed Project and the presentation by the Port. In line with this invitation, and to ensure that the Commissioners and other decisionmakers were provided with information necessary to make an informed decision, commenters submitted supplemental comments on July 1, 2022, in addition to the comments submitted on February 14, 2022.

The City of Oxnard Planning Division has acknowledged receipt and noted that the letter and all supporting documents would be entered into the record. The confirmation email is attached hereto as Attachment 1, Dobrowalski July 13, 2022 Email. Although the July 1 letter appears in Attachment F of the Staff Report (along with other letters submitted after February 14, 2022), the supporting evidence does not. When commenters realized that the supporting documents had not been entered into the record as part of the FEIR documentation, commenters sent an email to Mr. Dobrowalski requesting an erratum. This request is attached hereto as Attachment 2, Commenters' October 11, 2022 Errata Request. This erratum has not been filed. As Planning Commissioners are tasked with deciding whether to approve this controversial project, they should have access to the entire record. In an abundance of caution, we are attaching the July 1, 2022 letter, as well as the February 14th letter, and all supporting documents to each of these comments as Attachment 3, Previous Comment Letters and Attachments.

Commenters request that the Commissioners strongly consider both the July 1, 2022, supplemental letter, and all supporting evidence in deciding this permit. We realize that this is a significant amount of information to review in a short amount of time which is also why we previously asked for the Commission's decision to be delayed for 30 days until the Commissioners have had an opportunity to hear from the public and have full access to the entire record in this considerable matter.

II. The FEIR Fails to Adequately Respond to Comments

When comments raise significant environmental issues through expert declarations or evidence-based assertions, the FEIR's response must provide a reasoned, good-faith analysis and "describe the disposition of significant environmental issues raised."[2] Comments must be "addressed in detail giving reasons why specific comments and suggestions were not accepted."[3] Detailed responses are required to "ensure that the lead agency will fully consider the environmental consequences of a decision before it is made."[4] Generally, the level of detail in the response must match the level of detail in the comment.[5]

"[C]onclusory statements unsupported by factual information" are never an adequate response.[6] Yet, such conclusory statements are precisely what the City has proffered in its FEIR. Firstly, other than the Vehicle Miles Traveled ("VMT") analysis, the City has not made any substantive changes to the DEIR. Mere editorial changes do not rise to the level of fully engaging with public comments. Secondly, and more egregiously, while commenters have

[2] Cal.Code Regs., tit.14, §15088(c).
[3] *Id.*
[4] *City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009) 176 Cal.App.4th 889, 904.
[5] *Pfeiffer v. City of Sunnyvale* (2011) 200 Cal.App.4th 1552, 1568.
[6] Cal.Code Regs., tit.14, §15088(c); *City of Maywood v. Los Angeles Unified Sch. Dist.* (2012) 208 Cal.App.4th 362, 391.

provided detailed explanations including several citations to documents produced by the OHD, the City's response to these detailed and well-supported objections has been to overwhelmingly refer commenters to "Global Responses." *See e.g.,* FEIR Comment Response 206-15; 206-24 (the response containing nothing more than "Please refer to Global Response GR-3, Relation of Project to the Multimodal Logistics Park and Global Response GR-8, Cumulative Projects.") At the same time, no additional details can be found in these Global Responses. These Global Responses do not grapple with OHD's emails, grant applications, internal memos and other logical inconsistencies pointed out by the commenters. This failure to engage extends to most responses to the comments.

As such, the City has failed in its CEQA obligation to provide detailed reasoning for why commenters' suggestions were not accepted. Overall, the City has not shown a good faith effort to consider public input.

III. The FEIR Improperly Piecemeals the Analysis of the Whole Project and Fails to Analyze the Impacts of Important Project Components

The FEIR's flawed Project Description violates the fundamental goal of CEQA, which is to provide complete and accurate information about the environmental impacts of a proposed project before it is approved. The City claims that the design of the Project is meant to "[r]educe and consolidate, where feasible, Port vehicle customer reliance on off-Port satellite storage locations, which would reduce the need for car carrier truck movement to distribute vehicles to those locations."[7] The FEIR also notes in the Project Description that the 34-acre outdoor vehicle storage facility is meant to be temporary – for a maximum of 5 years.[8] Yet, the FEIR misstates the true scope of the 34-acre site, leading to an incorrect analysis regarding the design of the Project.

A. The FEIR Misstates and Improperly Rewrites CEQA Requirements

The FEIR attempts to re-write the CEQA process for what must be considered in the Project Description.

The law requires that an EIR must include an analysis of the environmental effects of future expansions or other actions when: a) a project is a reasonably foreseeable consequence of the initial project; and b) the future expansion or action is significant in that it will likely change the scope or nature of the initial project or its environmental effects.[9]

> "[T]he environmental review accompanying the first discretionary approval must evaluate the impacts of the ultimate development authorized by that approval. … Even though further discretionary approvals may be required before development can occur, the agency's environmental review must extend to the development envisioned by the initial approvals. It is irrelevant that the

[7] FEIR, Section 3.5, p. 3-15.
[8] FEIR, Section 3.6, p. 3-15.
[9] *Laurel Heights Improvement Ass'n v. Regents of Univ. of California* 47 Cal. 3d 367, 396 (1988), as modified on denial of reh'g (Jan. 26, 1989).

> development may not receive all necessary entitlements or may not be built. Piecemeal environmental review that ignores the environmental impacts of the end result will not be permitted."[10]

CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones – each with a minimal potential impact on the environment – which cumulatively may have disastrous consequences."[11]

The FEIR's failure to recognize the 250-acre site stems from its erroneous interpretation of CEQA requirements. The FEIR claims that the 250-site does not need to be integrated in this project description and no environmental analysis needs to be conducted because: (1) "the City of Oxnard has not received an application for proposed development of a 250-acre site" [12]; and (2) a 250-acre parcel would require annexation which would be subject to future environmental review.[13]

Whether a project is a "reasonably foreseeable consequence of the initial project" does not depend upon whether the City has received an application for it or whether that project might trigger additional CEQA review. Indeed, such a requirement is nowhere to be found in the City's or the State's CEQA Guidelines. The City cites to no authority for these "requirements" for which projects need to be included in its project description.[14] These additional elements are created out of whole cloth by the City to avoid re-writing the project description to include what is *clearly* a foreseeable project. As described above, the City cannot use the fact that the entitlement will be subject to further environmental review as an excuse to avoid integrating the extension in its analysis currently.

B. The FEIR's Conclusions Regarding the 250-Acre Site Are Not Supported By Substantial Evidence.

The City concludes that because "the future development of a 250-acre site is unspecified and uncertain, the City has determined that potential future development of a 250-acre site is not reasonably foreseeable and is speculative."[15] However, this conclusion flies in the face of the wealth of documents presented to the City demonstrating how the City was well aware of the depth of the planning for the 250-acre site.

As commenters have highlighted in their previous letters, several documents from the Port (including new documents released in response to commenters' Public Records Act request) indicate that beginning in 2018, the Port has started drafting conceptual plans, pursuing financial arrangements with customers, hiring consultants related to the project, considering the 250-acre project for grants, and designating the site as an Opportunity Zone.[16] Yet, in response, the FEIR

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[10] *See* Kostka, et al., *Practice Under the California Environmental Quality Act*, § 6.52, p. 298.
[11] *Bozung v. LAFCO*, 13 Cal.3d 263, 283-84 (1975); *City of Santee v. County of San Diego*, 214 Cal.App.3d 1438, 1452 (1989).
[12] FEIR, Section 12.4.2, p. 12-9.
[13] *Id.*
[14] *Id.*
[15] *Id.*
[16] Attachment 3, February Comment letter, pp. 9-11 (hereinafter "Commenters' February Letter"); *see also* Attachment 3, July Comment Letter, pp. 4-5 (hereinafter "Commenters' July Letter").

Global Responses makes no effort to address these documents. The City's response is entirely inadequate.

First, the FEIR selectively ignores evidence that the Port has coordinated with the City a more permanent solution to the auto storage issue through the 250-acre site. The Port produced a document titled "Collaboration Call with City of Oxnard" with the goal of "Partnership for Economic Development."[17] The document has an "ongoing deadline" and is supplemented with information about the 250-acre site, including grant applications and the inclusion of the 250-acre site in census tracks as an Opportunity Zone.[18] Furthermore, a flyer published by both the City of Oxnard and the Port indicates that "[t]he stop gap 34-acre measure … will ensure that the City of Oxnard and the PoH will have sufficient time to structure and meet all regulatory requirements for the longer term 250-acre port logistics park with access to rail."[19] Thus, the City was well aware that the 250-acre site was a reasonably foreseeable extension of the 34-acre site.

Second, the Global Response to Comments regarding piecemealing the 250-acre site, is primarily devoted to explaining how the 250-acre Multimodal Logistics Park site "was *conceptual* at the time of the Notice of Preparation and is *one possible concept* for potential future development" (emphasis added).[20] But the Port's communications to landowners, the Memoranda of Understanding ("MOU") and Letters of Intent ("LOI") between GLOVIS and the Port, and the funding applications demonstrate that concrete steps have indeed been taken to bring the project into fruition and render the 250-acre site very far from merely "conceptual."[21]

Third, the FEIR's Project Description fails to consider the timescale of the Project. It makes no sense to assume, as the FEIR does, that given the serious land deficits (over 300-acres) the Port is facing, that there will be no further land use planned for automobile storage once the five-year temporary site expires.[22] The FEIR summarily dismisses these land deficits by referring commenters to its superficial Global Responses.[23] This is not substantial evidence to support a conclusion that the 250-acre site is speculative. By postponing review of this component, the FEIR improperly bifurcates the project in violation of CEQA, and in doing so, severely underestimates the impact on human health and the environment.

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[17] Commenters' July Letter, p. 8 (citing OHD, Collaboration Call with City of Oxnard at p. 2).
[18] *Id*. (Commenters also noted that "Private investments made within this zone will expect return on their investment over a period of time. This strongly suggests that an increased movement of cars and other goods through this corridor was reasonably foreseeable.")
[19] Commenters' July Letter, p. 8 (citing City of Oxnard & The Port of Hueneme: Partners in Economic Development, *Flyer Re: Ensuring the commercial viability of a major Ventura County Economic Engine - The Port of Hueneme (PoH) - for a better tomorrow at the City of Oxnard*.)
[20] FEIR, Section 12.4.2, Global Response 3, p. 493.
[21] Commenters' July Letter, pp. 6-8 (citing Email between Dona T. Lacayo and GLOVIS USA (Nov. 7, 2019), Email between Dona T. Lacayo and GLOVIS USA (Aug. 20, 2019), Email between Dona T. Lacayo and GLOVIS USA (Sept. 2019); *Memorandum of Understanding*, Oxnard Harbor District (March 3, 2020); Email from Kristin Decas to Commissioners, Subject Weekly Update (Oct. 16, 2020); OHD, Collaboration Call with City of Oxnard at p.2 (Ongoing)).
[22] Commenters' February Letter, p. 9; Commenters' July Letter, p. 9 (citing Oxnard & POH Commercial Viability Report, p.1. PROD-PHCN0000828).
[23] FEIR, Section 12.5, Response to Comment Letter #206, Response No. 206-15, p. 12-1162.

IV. The FEIR's Project Description is Inaccurate and Misleading and Impedes Meaningful Public Review

As stated in prior comments, the City has disingenuously omitted analysis of the broader Port logistics expansion that this Project represents. The City has strained to create a project description that artificially limits the scope of the Project to the 34-acre site, despite substantial evidence demonstrating a much broader plan to increase storage capacity in the region, including at the 250-acre Multimodal Logistics Center. In doing so, the City has produced a FEIR with a flawed project description under CEQA that contradicts its own objectives and fails to offer the Planning Commission the information necessary to properly assess the impacts of this project. This is discussed further in Section V.

The City simply ignores the multiple comments submitted concerning the inadequacy of the project description itself—more specifically, the incompatibility of the Project's objectives with the alleged "temporary" nature of the storage site.[24] One of the key objectives listed for this Project is to "reduce and consolidate" reliance on off-port satellite storage locations.[25] Yet, the City maintains that the project will be temporary, stating: "[t]he project proposes a temporary outdoor vehicle storage facility (vehicle storage facility or facility) for a maximum of 5 years on the approximately 34-acre project site. Future expansion of Port facilities based on the project is speculative at this time."[26] The FEIR fails to reconcile this inherent conflict nor explain how the Project, allegedly limited to a maximum of 5 years, will actually result in the consolidation of existing sites to meet the Project's objectives.

As we stated in our July 1, 2022 comment letter, the City has failed to explain how the Project will be both "temporary" and fulfill its objectives to consolidate off-port storage.[27] There are no details, for example, for how the site will be transitioned post-Project but continue to serve the consolidation objective and meet the Port's known need for more land to accommodate its expansion.[28] Moreover, if this project is truly temporary, it would fail to satisfy the stated objectives—making Alternative One: No Project/No Build by far the environmentally superior alternative[29] that the City should adopt. The rejection of this alternative in the FEIR is based on deficient and incomplete analysis.

The inadequacy of the project description means that the Planning Commission is being called to make a decision "in the dark"—without the necessary information to fully appreciate the full scope of this Project or its impact. The approval actions before the Commission, therefore, involve much more than a straightforward EIR approval. Here, Planning

[24] See Commenters' July Letter
[25] FEIR, Section 3.5, p. 3-15.
[26] FEIR, Section 12.5, Response to Comment Letter #206, Response No. 206-20, p. 12-1163.
[27] Commenters' July Letter, pp. 9-10.
[28] *Id*.
[29] The FEIR also identified Alternative Two: Two Existing Off-Port Vehicle Storage Locations as the environmentally superior option among the Project alternatives. FEIR, Section 6.9.4, pp. 6-16. This conclusion is as flawed as the rejection of the No Project/No Build alternative, as the analysis of this alternative is not only incomplete, but also fails to incorporate feasible mitigation measures to address air quality impacts, such as the implementation of zero-emission technology. See Commenters' February Letter, p 69; FEIR, Section 6.7, pp. 6-5 to 6-10.

Commissioners are not simply being asked whether to certify the FEIR and approve a Special Use Permit for a single project. Despite how the Planning Division has decided to reframe this project as a "Temporary" Vehicle Storage Facility to make it seem benign, this Project sets the stage for an unprecedented expansion of Port activities into the very neighborhoods that have already borne the brunt of air pollution, traffic, noise, and lack of greenspace and coastal access. This is not simply a storage lot; it will hasten the expansion of commercial and industrial activity in the region— an expansion for which we do not know the true extent of environmental impact. Because of these flaws in the project description, the FEIR remains inadequate as an informational document and precludes meaningful public review. It should therefore be rejected in its current form and recirculated for further public review if revised to fix these discrepancies.

V. The FEIR Fails to Consider a Reasonable Range of Alternatives and Improperly Rejects Existing Alternatives

A major function of an EIR is the lead agency's full assessment of a reasonable range of alternatives stemming from a well-prepared project description and statement of objectives.[30] However, where a project description is inadequate or overly narrow—as in the case here—the alternatives analysis risks being equally flawed. As discussed at more length in commenters' February and July letters,[31] the project objectives are narrowly tailored in a way that facilitates the City's improper rejection of alternatives that could offer substantial environmental advantages and avoid worsening air quality and further concentrating industrial uses and harms adjacent to an over-burdened residential neighborhood, while still meeting most project objectives. As a result, the FEIR contains a flawed and incomplete analysis of feasible alternatives and fails as an informational document that facilitates meaningful public engagement. It, therefore, cannot be certified.

The FEIR fails to address the deficiencies in the DEIR's alternatives analysis. First, the lack of detail provided in the EIR prevents a meaningful public review and a reasonable choice of alternatives.[32] For instance, it is impossible to know based on the limited discussion and lack of detailed information provided in the EIR whether there are no feasible alternative sites for car storage that would meet most of the stated objectives.[33] Lead agencies are required to disclose in their EIR their reasons for concluding that no feasible alternative locations exist.[34] However, the City's failure to consider the Navy Base Ventura County ("Navy") property as an alternative site

[30] Cal. Pub. Resources Code, § 21002; Cal.Code Regs., tit.14, § 15124(b); *Laurel Heights Improvement Ass'n v. Regents of the Univ. of California* (1988) 47 Cal.3d 376, 400; *In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1163, citing Cal.Code Regs., tit.14, § 15124(b).
[31] Commenters' February Letter, pp. 68-83; Commenters' July Letter, p. 15.
[32] See *Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 287 ("Absolute perfection is not required; what is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned.")
[33] FEIR, Section 1.5, pp. 1-11 to 1-12.
[34] Cal.Code Regs., tit.14, § 15126.6(f)(2)(B); see also *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405, as modified on denial of reh'g (Jan. 26, 1989) ("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." (citations omitted)).

in the EIR and to instead address its feasibility solely in a General Response, violates CEQA and is further evidence of the FEIR's failings as an informational document.

Second, the FEIR continues to apply circular logic to reject alternatives for not lessening project impacts. By failing to carry out the full analysis required under CEQA, the FEIR underestimates the Project impacts. As a result, it comes to the incorrect conclusion that the project would not result in significant or unavoidable impacts and therefore the City has no obligation to consider alternatives. However, as discussed at length in this and other comments, there is substantial evidence that the project will have significant impacts on the environment and public health.

Third, the FEIR improperly conflates the City's jurisdiction with feasibility. Alternatives cannot be rejected simply because they are beyond the lead agency's authority.[35] And yet, the City relies on this argument to avoid even considering alternatives raised by commenters. For instance, the City relies on the 34-acre property being privately-owned to conclude that a park alternative is infeasible.[36] Similarly, the City refuses to consider the Navy property[37] as a feasible alternative in part because it does not have jurisdiction over Navy property.[38] This ignores the definition of feasibility under CEQA[39] and fails to address the central question of whether the OHD as the project proponent has reasonable access, ownership, or control over alternative sites.[40] In the case of the Navy property alternative, the close relationship between the OHD and the Navy evidenced by a 2021 Joint Use Agreement demonstrates that it is a viable alternative worth considering. Nevertheless, this goes undiscussed in the FEIR. The City should apply the CEQA definition of feasibility and fully evaluate all reasonable alternative locations[41], including the Navy property.

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[35] See *Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286–287 ("[I]t is not appropriate to disregard alternatives simply because the alternative may be beyond the scope of expertise of the agency or because the alternative may require implementing legislation since CEQA was intended to provide a basis for consideration and choice by all branches of government.")

[36] FEIR, Section 12.4.2, p. 12-15.

[37] It is disingenuous for the City to claim it is not informed about the Joint Use Agreement between the Navy and the Port given the coverage the agreement received in the local press. See, e.g., Commenters' February Letter, p. 71 (citing Brian J. Varela, Port of Hueneme, Navy Partner to Assist Los Angeles County Port Backlog, Ventura County Star, November 28, 2021, 10:40 a.m.; https://www.vcstar.com/story/news/2021/11/28/port-hueneme-assist-la-county-ports-through-agreement-navy/8771397002/).

[38] FEIR, Section 12.4.2, p. 12-15.

[39] CEQA Guidelines define feasibility as capable of "being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Cal.Code Regs., tit.14, § 15364.

[40] Cal.Code Regs., tit.14, § 15126.6(f)(1). See, e.g., *Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 288 (finding that an alternative to develop a university athletic stadium jointly with the city was properly rejected based on a prohibition to spend funds on a non-university stadium and the city's documented lack of interest in a joint stadium project).

[41] Another such alternative site could include prioritizing the on-dock parking structure for which the OHD has sought federal funding over the past several years, which is intended to store over 7,000 vehicles. Commenters' February Letter, p. 71 (citing Oxnard Harbor District, Economic-Environment Partnership, Slide presentation (undated), Slides 29 and 30); see also https://maritime.dot.gov/PIDPgrants. While not all information about this proposal is public, it is apparent that it is not speculative; the Port has hired consultants to study this parking

Finally, the FEIR once again ignores the current availability of zero-emission technology[42] and GLOVIS' role as a leading regional maker of heavy-duty Class 8 zero-emission trucks in its rejection of the Electric Car Carrier Truck Alternative. During public meetings and in public statements, the OHD frequently highlights its alleged commitment to a zero-emission transition, and yet when an opportunity arrives to make a clear commitment that investment is not even considered or analyzed. In order to begin to address the air quality impacts from the Port on the surrounding community, the OHD must invest in a zero-emission transition and establish near-term milestones to achieve that vision, such as the use of zero-emission car-carriers. In their expert reply to the FEIR, Matt Hagemann and Dr. Paul E. Rosenfeld identify several mitigation measures related to zero-emission technology that the City should consider and evaluate to address air quality impacts from the Project.[43]

Due to deficiencies described above and in previous letters, the EIR contains an inadequate discussion of project alternatives in violation of CEQA.

VI. Mitigation Measures Offered in FEIR Continue to be Inadequate

Under CEQA, a public agency cannot approve a project if there are "feasible mitigation measures which substantially lessen the significant environmental effects" of the project.[44] Any potential mitigation measure must be at least partially effective in reducing the significance of the impacts at issue.[45] The FEIR fails to offer mitigation measures that meet this standard. Since the FEIR does not evaluate the full scope of the Project due to an overly narrow project description and project objectives, it fails to analyze, much less address, the significant impacts that would result from the Project. Given that most mitigation measures in the FEIR went unaltered,[46] those measures continue to be inadequate and will not substantially lessen the significant environmental effects of the full scope of the Project.

Moreover, the few updates made to mitigation measures for biological resources and cultural and tribal resources in the FEIR continue to fall short of addressing the impacts from the Project. For instance, the addition of a preconstruction wildlife survey to the biological resource mitigation measures will be insufficient in detecting special status species, as discussed in detail by Dr. Shawn Smallwood.[47] As a result, the FEIR's mitigation measures are deficient, and new measures must be considered following a complete evaluation of the Project's full impacts.

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structure proposal. Commenters' July Letter, p. 13 (citing Oxnard Harbor District, Professional Services Agreement (May 26, 2021); and Oxnard Harbor District Comprehensive Economic Development Strategy at p. 50 (2021)).

[42] Commenters' February Letter, pp. 71-83; Commenters' July Letter, p. 15. There are companies working on developing zero-emissions Class 6-8 car carrier trucks and a commitment by the OHD to order and use these carriers could drive additional investments in this type of technology. See Namrita Chow, Electric car carriers promise to pack a punch, Automotive Logistics, access Oct. 17, 2022 at 4:52pm, https://www.automotivelogistics.media/finished-vehicle-logistics/electric-car-carriers-promise-to-pack-a-punch/42868.article, attached hereto as Attachment 6.

[43] Attachment 4, SWAPE Report, pp. 12-13 (hereinafter "SWAPE report").

[44] Cal. Pub. Res. Code § 21002.

[45] *Sierra Club v. County of Fresno*, (2018) 431 P.3d 1151,1166.

[46] Commenters' February Letter, pp. 63-67.

[47] See Attachment 5, Smallwood Reply Letter (Oct. 18, 2022), pp.8-9 (hereinafter "Smallwood Reply Letter").

VII. The FEIR Inadequately addresses the Cumulative Impacts

The FEIR's flawed cumulative analysis violates CEQA. The City claims that Table 4-1 lists all projects that could contribute to considerable cumulative impacts.[48] The FEIR also acknowledges various Port projects that are in development, including the 250-acre Multimodal Logistics Park, channel deepening, berth widening, on-dock expansions, expansion of rail lines, the Structure for Transfer of Automobiles Creating Key Economic Development (STACKED) Project, off-Port Cargo storage yards and overall expansion of Port Operations, the INVEST Project, the BUILD Project, and the Port Intermodal Corridor (Hueneme Modernization Project).[49] Yet, the FEIR fails to include relevant projects in its cumulative analysis.

A. The FEIR Misstates and Improperly Rewrites CEQA Requirements for Cumulative Impacts

The FEIR attempts to re-write the CEQA process for what must be considered in a cumulative impact analysis.

The City admits that CEQA requires that the FEIR address cumulative impacts.[50] Cumulative impacts are those that result from "the combination of the project evaluated in the EIR together with other projects causing related impacts."[51] The incremental effects of an individual project "are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."[52] Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.[53] A relatively "small" impact is not insignificant under CEQA if it contributes to an existing environmental problem.[54]

The City also admits CEQA requires a cumulative impact analysis to contain, at minimum, either 1) a list of past, present, and reasonably anticipated future projects, including those projects outside the agency's control that produce related or cumulative impacts[55] or 2) a summary of such projections contained in an adopted general plan or related planning document

[48] FEIR, Section 4.2, p. 4-2.
[49] FEIR, Section 12.4.2, pp. 12-17 to 12-18.
[50] FEIR, Section 4.1, p. 4-1; Cal.Code Regs., tit.14, § 15130; *see also* Cal.Code Regs.,tit.14, § 15355
[51] Cal.Code Regs., tit.14, § 15130(a)(1).
[52] *Id.* at § 15065(a)(3).
[53] *Id.* at § 15355(b) (The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time).
[54] "[A] project's cumulative environmental impact cannot be deemed insignificant solely because its individual contribution to an existing environmental problem is relatively small." *See, San Francisco Baykeeper, Inc. v. State Lands Comm'n* (2015) 242 Cal.App.4th 202, 223. "In fact, 'the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant.'" *Id.* (quoting *Cmtys for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 120).
[55] FEIR, Section 4.1, p. 4-1; CEQA suggests that agencies consider factors such as the nature of the environmental resource examined, location of project, and type. Cal. Code Regs., tit.14, § 15130(b)(2).

that evaluates regional or areawide conditions.[56] The cumulative impacts analysis of this Project continues to remain flawed.

As with the Project Description, the FEIR's failure to include several projects in its cumulative impacts analysis stems from its erroneous understanding of the CEQA requirements. The FEIR claims that several pertinent projects need not be considered in its list of past, present, and reasonably anticipated future projects because (1) "each cumulative development project represented in Table 4-1 was "determined to be reasonably foreseeable by the City based on applications that the City received at the time the Notice of Preparation (NOP) for the Draft EIR was released (June 25, 2020)"[57]; and (2) the City does not consider conceptual long-range projects under the jurisdiction of another lead agency to be reasonably foreseeable.[58]

Commenters address each of these excuses in turn. First, whether a project is a "reasonably anticipated" does not turn on whether the City has received an application for it. Indeed, such a requirement is nowhere to be found in the City's or the State's CEQA guidelines. Because this element is not required under law, it should not factor into which projects are listed. Second, as plainly stated in the law, the agency must consider any project that can reasonably have cumulative impacts even if "those projects [are] outside the agency's control." Thus, the legal excuses provided by the City do not pass muster.

B. The FEIR's Conclusions Regarding the Projects Included in the Cumulative Analysis Are Not Supported by Substantial Evidence

The City cites to three different reasons why the projects commenters list should not be considered: (1) that some cumulative impacts are speculative; (2) they are not within the proposed geographic zone; and (3) despite proposed increases in passageways for rail and freight traffic, *this project* doesn't change capacity requirements.[59] These objections are unfounded.

First, commenters have pointed to several projects that could impact the area surrounding the 34-acre site with supporting evidence demonstrating why they are not speculative. For example, the proposed widening of Hueneme Road to four lanes included in the Roads and Transportation Five-Year Capital Improvement Program; how the Port has invested in a new rail line with GLOVIS; and the capital investments to deepen berths to accommodate larger capacity vessels.[60] The City makes no effort to engage with the wealth of evidence of these substantial

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[56] *Id.* at § 15130(b)(1).
[57] FEIR, Section 12.4.2, p. 12-17.
[58] *Id.*, at p. 12-18.
[59] *Id.*, at pp. 12-17 to 12-18.
[60] Commenters' February letter at pp. 19-20 (citing INFRA FY19: Multimodal Optimization & Vehicle Efficiency Project Summary, PROD-00002504; INFRA FY20 Application Project Summary; 2020 OHD Comprehensive Economic Development Strategy, PHCN0002370; 2020 OHD Comprehensive Economic Development Strategy, PROD-PHCN0002353; INFRA FY19 Multimodal Optimization & Vehicle Efficiency Project, PROD-PHCN00005158; OHD Board of Commissioners Meeting Agenda- September 11, 2017-Press Report Attachment, PROD-00002699; The Hueneme Modernization Project BCA Appendix - March 17 2021, PROD-0004367; The Hueneme Modernization Project INFRA Grant Application FY2021, PROD-0003201; Ventura County Freight Corridor Study, (October 2021), Prepared by Iteris, Inc., on behalf of Southern California Council of Governments, The Port of Hueneme, Caltrans and Ventura County Transportation Commission at 36, PROD-PHCN0001900-2126).

plans. The record evidence demonstrates that concrete steps have been taken to bring the listed projects into fruition and disprove the City's conclusion that these projects are "speculative."[61]

Second, commenters have provided figures for the proposed developments including a figure showing the relative locations of the 34-acre site to the 250-acre site, a figure showing the relative position of the STACKED project (on the North Terminal), and another showing the traffic pathways and the potential widening of Hueneme Road.[62] The City's response to these relevant images has been to claim that these images "do[] not raise an issue related to the adequacy of any specific section or analysis of the Draft EIR."[63] At the same time, the City notes that the cumulative impacts are only assessed in the geographic area "bound by Bard Road to the north; Ormond Lagoon Waterway/Edison Drive to the east; the Pacific Ocean to the south; and Ventura Road and other areas within the City of Port Hueneme to the west, but not within the Port of Hueneme or Naval Base Ventura County ("Navy") Port Hueneme."[64]

As described above, the City cannot shirk its duty to review cumulative impacts just because a project may be in another agency's control. Thus, delineating a line for any project "within the Port of Hueneme" is legally void, particularly given how the Port is viewing its many expansion projects as interconnected and in furtherance of their stated goal of expanding throughput. Furthermore, the lines drawn at Bard Road, Ventura Road, and Edison Drive are internally inconsistent. For example, the City addresses air quality concerns arising from Port operations and agricultural use which are outside these boundaries.[65] The City also extends the VMT analysis to Camarillo Airport and Tuff shed – both of which are outside these arbitrary lines.[66] The City cannot cherry pick instances in which to apply these arbitrary boundaries in a self-serving manner. The City cites to no authority for setting these specific limitations. At the very least, the city must explain why it chose these boundaries as supported by substantial evidence e.g., scientific studies indicate that emissions from facilities do not travel beyond "X" miles. In summary, these geographic boundaries are arbitrary and not supported by substantial evidence.

Even within these arbitrary boundaries that the City has set, several projects listed have at least some portion of their operations within this geographic region. The City cannot dismiss <u>all</u> these projects as outside the geographic area without taking a hard look at the impacts that portions of these proposed projects will likely have.

Third, the City admits that the "project would result in less trucking and more rail on/off moves compared to existing conditions" yet, the City concludes that it doesn't need to conduct a cumulative impact analysis because "the City has not received an application for a new rail project."[67] Similarly, in response to commenters noting that there are berth widening and

[61] FEIR, Section 12.5, Responses to Comment Letter #206, Response Nos. 206-35 to 206-38, pp. 12-1164 to 12-1165.
[62] See FEIR, Section 12.5, Responses to Comment Letter #206, Response No. 206-17, p. 12-1162; Response No. 206-25, FEIR p. 12-1163; and Response No. 206-38, FEIR p. 12-1165.
[63] *Id.*
[64] FEIR, Section 12.4.2, pp. 12-17 to 12-18.
[65] FEIR, Section 5.33, p. 5.3-8.
[66] FEIR, Section 12.4.1, p. 12-13
[67] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-23, p. 12-1163.

dredging projects that would increase shipping traffic, the City concludes that new cars stored at the vehicle storage facility would not require additional ships.[68] Even assuming that the temporary 34-acre site will neither facilitate an increase in goods movement by ship nor rail nor truck in the area (a fact that commenters do not concede), the fact that all three pathways propose to be extended in this exact area reflect, without a question, significant impacts. Simply, the City fundamentally and mistakenly conflates these points in the FEIR and leaves the Planning Commission and the public with an incomplete cumulative impacts analysis.

Finally, even with the projects that have been listed in Table 4-1, the City undertakes no analysis of *how* the listed projects will impact the area surrounding the 34-acre site – including but not limited to additional emissions that might result and how that could impact vulnerable populations.[69] In summary, the EIR's cumulative impacts analysis remains deficient such that the FEIR cannot be certified.

VIII. The FEIR Fails to Consider Environmental Justice Impacts and Violates CEQA

The temporary 34-acre storage site is located next to low-income, densely populated neighborhoods in south Oxnard. As commenters note in their February letter, a Report prepared by the California Office of Attorney General ("OAG"), provisions of CEQA, and Government Code Section 11135 require lead agencies to study the environmental justice impacts of projects and to mitigate those impacts.[70] Part of the discussion in the FEIR must include an evaluation of the location of the project because the significance of an impact on people and the environment may change based on the project's setting.[71] Commenters pointed to studies demonstrating how California communities of color and low-income communities bear a disproportionate burden of the state's diesel trucking emissions.[72] Commenters also highlighted that the nearest school is only 780 feet from the Project site and the proposed Project would also be located as close as 360 feet from residences located to the northwest, north, and northeast of the Project site.[73]

To these points, the City's response has been to point the public to Global Response No. 5 on environmental justice impacts. [74] This response is insufficient. Although the City admits that the proposed Project would "result in a minor increase in vehicle traffic…[due to] worker vehicle trips, delivery of heavy-duty equipment and materials, and haul trips," it nevertheless concludes "impacts would be less than significant on sensitive receptors." This conclusion is based entirely on the assertion that the project site is "not located in an area with poor circulation or heavy traffic." The City points to no study supporting its circulation finding and proffers no

[68] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-21, p. 12-1163.
[69] FEIR, Section 4.2, Table 4-1, p. 4-2.
[70] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-180 to 206-182, p. 12-1189 (citing the Office of the California Attorney General, *Environmental Justice at the Local and Regional Level* (2012), p. 3, *available at* https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/ej_fact_sheet.pdf).
[71] *Id*.
[72] FEIR, Section 12.5, Responses to Comment Letter #206, Response No. 206-183, p.12-1189 (citing Union of Concerned Scientists, *Inequitable Exposure to Air Pollution from Vehicles in California*, fact sheet (Feb. 2019), *available at* https://www.ucsusa.org/sites/default/files/attach/2019/02/cv-air-pollution-CA-web.pdf.)
[73] FEIR, Section 12.5, Responses to Comment Letter #206, Response No. 206-185, p. 12-1190 (citing DEIR, p. 5.3-9)
[74] FEIR, Section 12.4.2, p. 12-11

evidence in support of the traffic patterns. In fact, with the additional projects described above, it would seem that the City has conveniently omitted several projects in the pipeline that would increase traffic and emission patterns.

Commenters appreciate that the City has added language responding to commenters' concerns associated with nearby power plants, superfund site, and factories.[75] The City summarily concludes that the "distance between the project" and these sites would not create a significant hazard to the public.[76] However, the City fails to provide the underlying data, study, or processes used to come to this determination. Neither the Commissioners nor the public should accept conclusions that have not been properly substantiated – especially where the health and safety of vulnerable populations and overburdened communities are at stake.

IX. The City has Failed to Address Deficiencies in Language Access, Which has Further Frustrated Meaningful Public Review of the EIR Documents

The City claims that it is under no obligation under State law (CEQA or otherwise) to translate environmental review documents into Spanish or any other language.[77] This response completely ignores comments previously submitted highlighting the fact that limiting public access violates a core tenet of CEQA[78] – that "the public holds a 'privileged position' in the CEQA process 'based on a belief that citizens can make important contributions to environmental protection and on notions of democratic decision making.'"[79]

While the City acknowledges that CEQA, "deems public participation and comment during any environmental review process as an essential part of the CEQA process," it has done very little to offer document translation or interpretation. In fact, according to the FEIR's response to comments, only the Port has offered the minimal language access services in the form of a Spanish-translated Executive Summary from the DEIR, and "a video in Mixteco explaining the contents of the Draft EIR."[80]

Under the California Bilingual Services Act, State agencies must distribute applicable translated written materials if the State agency "serves a substantial number of non-English-speaking persons" and "[t]he information solicited, required, or furnished affects or may affect the individual's rights, duties, or privileges with regard to that agency's services or benefits." Although, as local agencies, the City and Port are not directly subject to this rule, refusing to translate environmental documents restricts limited or non-English speaking individuals' ability and right to meaningfully participate in environmental decisions that impact their health and safety. Given the importance of this Project to the many residents for whom English is not a primary language, we reiterate our call to translate the EIR and make it accessible by recirculation in order to ensure meaningful public review.

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[75] *Id.*
[76] *Id.*
[77] FEIR, Section 12.4.2, p.12-9.
[78] See Commenters' July Letter.
[79] Cal. Code Regs. tit. 14, § 15201 (1992).
[80] FEIR, Section 12.4.2, p.12-9.

X. The FEIR's Vehicle Miles Travelled Analysis Remains Woefully Inadequate and Does Not Support a Finding of No Significant Traffic of VMT Impacts

The City admits that neither it, nor the City of Port Hueneme have adopted guidelines or significant criteria for assessing VMT by development projects[81] — a requirement under California Public Resources Code §21099 and 14 Cal. Code Regs § 156064.3 (CEQA Guidelines). Rather than directly responding to our comments highlighting the need for a more robust VMT analysis for the Project, the FEIR points to the same conclusory and vague explanation in its Global Response No. 6 to justify not doing more to provide the Planning Commission and the public with sufficient information to appreciate the full scope of traffic impacts. The FEIR's conclusion that no VMT impacts would result from the Project is unsupported by what little analysis is offered for three key reasons.

First, the FEIR's application of Governor's Office of Planning and Research's ("OPR") Technical Advisory on Evaluating Transportation Impacts ("Technical Advisory") is flawed. The FEIR fails to adopt any specific methodology or criteria for its evaluation of the Project's VMT that would make its conclusions verifiable based on OPR's guidance. It inappropriately adopts a screening threshold when no such threshold applies to this Project and it misapplies the qualitative analysis outlined in the Technical Advisory. The FEIR's conclusions that no VMT or traffic impacts are present are therefore unreliable.

The FEIR contends that the qualitative analysis approach outlined in OPR's Technical Advisory is the appropriate evaluation for the Project's VMT impact.[82] It also summarily adopts the DEIR's conclusion that no VMT impacts would result from the implementation of the Project without showing how the qualitative analysis approach was specifically applied in this case. The City admits based on the screening thresholds outlined in OPR's Technical Advisory — which apply to residential, office, retail projects, land use plans, and transportation projects — that this project would not "screen out"[83], i.e., that further analysis would be required even under a qualitative approach. Yet, the FEIR reaches the conclusion that "the project would lead to a less-than-significant transportation impact" using the same retail threshold it admits is inapplicable.[84]

The Technical Advisory does recommend, however, that "[a]gencies should consider whether their actions encourage development in a less travel-efficient location by limiting development in travel-efficient locations."[85] No such data-supported analysis was provided in this FEIR.

Second, the FEIR's analysis on VMT and traffic impacts is conclusory and relies on contradictory assumptions. For example, in its assessment of alleged VMT reductions, the City assumes the elimination of two existing vehicle storage facilities to conclude overall VMT reduction while at the same time defending the DEIR's analysis of the traffic effect of the Project

[81] FEIR, Section 12.4.2, p.12-13.
[82] *Id.*
[83] *Id.*
[84] *Id.*
[85] California Governor's Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts on CEQA (OPR Technical Advisory) (December 2018), p. 17; available at: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

"under existing and cumulative conditions, with due consideration of other related projects in the area."[86] These inconsistencies lead to self-serving conclusions that simply cannot be relied on.[87] If current conditions are assumed, then VMT analysis would have to account for the higher VMT that the Project would produce as a result of having the approximately 240 daily trips made in individual cars (according to one estimate provided), compared to the more limited car carrier truck trips making the haul to the furthest existing site. Even using that simplistic comparison, which we do not concede qualifies as a VMT threshold under either the Technical Advisory or CEQA guidelines, the Project would still generate more vehicle miles travelled on its own as compared to the furthest existing site.[88] The FEIR attempts to avoid dealing with this increase in VMT by attempting to shoehorn a threshold analysis for new retail facilities that is inapplicable to the Project.

Third, the FEIR ignores evidence submitted showing that the traffic report that underlies much of the City's environmental review was merely rubber stamped and created in a way to offer cover for predetermined conclusions. It therefore cannot be relied upon to conclude that no impacts will result from the project.

As commenters pointed out in their July 1, 2022 comment letter to the City, documents made available in response to Public Records Act requests suggest that there was never any intention on the part of the Port applicant or the City to vet the real traffic impacts of the 34-acre site. In fact, emails between Port staff and a land-use planning specialist suggest that the City might forgo a traffic report altogether by providing a letter, noting, "the City just needs a paper trail - this way they can cover themselves with a letter from a professional."[89] In subsequent emails, the hired consultant confirmed that they would prepare the trip generation analysis based solely on the Project Description and a Design letter[90]— without considering the requirements outlined in CEQA guidelines or the recommendations found in the Ventura County Freight Corridors Study. These revelations, which the FEIR neglects to address, cast further doubt on the reliability of calculations, information, and analysis used to support the FEIR 's conclusion that no significant traffic or VMT-related impacts will occur.

Given the cursory manner in which the traffic study and VMT analysis were conducted, it is unsurprising that the FEIR is replete with inconsistencies and contradictions that call into question its reliability as an informational document. We call on the Planning Commission to reject this FEIR. Moreover, the City should fix its lack of baseline methodologies and thresholds for assessing the impact of VMT from this Project. Until these errors are corrected, the FEIR fails to meet basic standards under CEQA.

[86] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-51, pp. 12-1166 to 12-1167.
[87] Note: the FEIR does not address the inconsistent assumptions highlighted in our February 14, 2022 comment letter wherein we highlight that in order to switch to an analysis that would presume the elimination of two existing sites, the agency must first justify this decision by showing that the existing conditions are somehow misleading or without informational value. No such analysis has been done in the FEIR. See Commenters' February Letter, p. 25.
[88] See *id*., at pp. 24-25.
[89] Commenters' July Letter (citing emails between Dona T. Lacayo and Kevin Waldron at p. 2 of 8 (Aug. 2018).
[90] *Id*. (citing emails between Dona T. Lacayo and Darryl F. Nelson at p. 1 of 11 (Aug. 2018).

XI. The FEIR Continues to Rely on Flawed Air Emissions Modeling, Lacks the Requisite Health Impact Analysis, and Fails to Properly Assess Greenhouse Gas Emissions.

The FEIR fails to justify its modelling used to calculate greenhouse gas emissions ("GHG") and air quality impacts and continues to lack the necessary analysis on health impacts. These flaws were originally outlined in a findings report submitted by experts Matt Hagemann and Dr. Paul Rosenfeld and incorporated into commenters' February 14, 2022 letter.[91] Hagemann and Rosenfeld have reviewed the FEIR and responses to those comments and have concluded that many of the justifications used by the City for their approach to air emissions, health hazards, and GHG emissions remain fundamentally flawed.[92] Several of these flaws in the FEIR are outlined below:

- **Hazards and Hazardous Materials –** The FEIR fails to address the lack of a Phase I ESA analysis, despite being a key element called for in the City of Oxnard 2030 General Plan Safety and Hazards Chapter. More specifically, the FEIR does not explain why Policy H-7.12, which requires a hazardous materials study for any new development, was not followed.
- **Air Quality and CalEEMod Model -** The FEIR again fails to provide access to, or justify the use of, the underlying data inputs used to calculate the Project's emissions. More specifically, the FEIR refers to "applicant provided" information for its inputs on the length of construction for the site, yet the underlying data, and the justification for using it, are not made publicly available in the documents attached to the FEIR. This makes it impossible to verify whether the changes to defaults accurately reflect the proposed construction schedule. Despite the City's claims that relying on "applicant provided" information is sufficient, CalEEMod requires that information used to change defaults be supported by substantial evidence as required under CEQA.[93] The calculations, therefore, remain unreliable and the City must either justify these modifications with substantial evidence or revise its calculations. Similarly, the FEIR's modeling concerning construction activities is flawed as the FEIR arbitrarily modified construction lengths based on different phases of development – potentially underestimating peak daily emissions. Similarly, the FEIR fails to provide substantial evidence for changing off-road construction equipment amounts therefore making it challenging, if not impossible, to verify if these changes are accurate.
- **Greenhouse Gas Emissions –** The conclusion that GHG impacts are "less-than-significant" relies on the same incorrect and unsubstantiated air modelling described above. Moreover, the FEIR relies on outdated thresholds which the City fails to justify through substantial evidence. This has resulted in the FEIR failing to identify any potentially significant GHG impact from the project.

[91] See Letter from Matt Hagemann and Dr. Paul E. Rosenfeld to Fernando Gaytan (February 9, 2022), Attachment A to Commenters' February Letter.
[92] See Letter from Matt Hagemann and Dr. Paul E. Rosenfeld to Fernando Gaytan (October 17, 2022), attached hereto as Attachment 4, SWAPE Report.
[93] See SWAPE Report.

This flawed analysis of air pollution impacts also extends to the FEIR's treatment of the necessary mitigation and health impacts associated with it. In concluding that the project will not reach the thresholds set by Ventura County Air Pollution Control District ("VCAPCD"), the FEIR relies on an arbitrarily restrictive view of the Project without accounting for the inconsistencies between the Project Description and Objectives and ample evidence demonstrating that this project encompasses more than the 34-acres described and for longer than five years. This arbitrarily restrictive scope is also used by the City to claim that the Project will not pass emissions thresholds set by the VCAPCD[94] and to justify its refusal to conduct the type of Health Impact Assessment required under the California Supreme Court case, *Friant-Ranch.*

In short, the FEIR's conclusion misses the mark. While CEQA may not mandate an in-depth risk assessment outright:

> "CEQA requires that the EIR have made a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce."[95]

Because the FEIR fails to address flaws in its modeling, its estimation of the pollutants generated by the Project is unreliable. Moreover, the narrow and cursory analysis that the FEIR does offer on air pollutants and potential health impacts, is unverifiable given the lack of access to the underlying data. This foundational information is necessary for informed decision-making and public participation. The City, therefore, cannot support its conclusion that the Project falls under the VCAQCD's thresholds. Even so, the FEIR misinterprets *Friant-Ranch* wherein the California Supreme Court found that CEQA requires analysis correlating increased air emissions to probable resulting human health effects.[6] The City cannot claim that no emissions will result from this Project just as it cannot avoid the necessary health impact analysis required under *Friant-Ranch* by simply stating that emissions will not surpass thresholds it has arbitrarily chosen to apply.

As further highlighted in Hagemann and Rosenfeld's review and commenters' letters, the FEIR also fails to address the following:

- **Diesel Particulate Matter emissions** – The City fails to include a health impact of using equipment producing diesel particulate matter ("DPM") emissions during a construction phase of the Project slated to last over 180 to 200 days and its justification for not doing so is not supported by the evidence. More specifically, as the Hagemann and Rosenfeld report points out, "until both the Project's construction and operational health risks are quantified, summed together, and compared to the VCAPCD threshold of 10 in one million, the

[94] SWAPE Report, pp. 5-6.
[95] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 521

FEIR's response is inadequate" and does not evaluate the Project's potential health risk impacts.

- **Comprehensive assessment of Toxic Air Contaminants** – The FEIR fails to provide a "good faith reasoned analysis" of the health effects of any increase in Toxic Air Contaminants caused by the Project, including those that result from the combustion of diesel and gasoline engines associated with the entire car storage complex, the 34-acre and the 250-acre sites, increased Port-related emissions due to augmented cargo throughput, and construction related to the aforementioned projects.
- **Encroachment of Port-Related Activities** – The FEIR also fails to adequately address comments concerning the shift in port-activity emissions towards south Oxnard populations adjacent to the Port-serving freight corridors like Hueneme Road.

In short, the FEIR ignores critical flaws in its analysis and inadequate data verification that call into question its reliability as an informational document for environmental assessment. The law requires that the public and the Planning Commission have an accurate assessment of potential health risks and air quality impacts – which this FEIR fails to deliver.

XII. FEIR Continues to Underestimate Impacts on Special Status Species, Habitats, and Wildlife Movement

The City failed to provide good-faith, reasoned responses to the comments raised regarding the DEIR's biological impacts analysis.[96] Instead, the City offered partial responses and conclusionary statements that ignores large swaths of commenters' concerns and failed to make significant changes to its analysis to ensure the full scope of direct, indirect, and cumulative biological impacts from the Project are evaluated by the FEIR. Therefore the FEIR's conclusions that there will not be a significant impact on biological resources from the Project remains unsupported by substantial evidence.

In its responses, the City avoided addressing the full concerns raised in the expert report prepared by Dr. Shawn Smallwood that determined that significantly more special status species likely rely on the property for habitat, foraging, hunting, mating, or other needs.[97] The FEIR dismisses this evidence entirely and continues instead to rely on flawed reconnaissance surveys that failed to observe or detect special status species.[98] Further, Dr. Smallwood identified flaws in the additional assessment attached to the FEIR as Appendix FA.[99] In fact, he explains that the databases relied upon by the FEIR show bird species using nearby sites with similar levels of disturbance as the Project site, which undermines the FEIR's conclusion that the Project site cannot be habitat to special status species.[100] The FEIR's over-reliance on inadequate analysis and surveys means it grossly underestimates the special status species that may use the site and the value of this Project property as important habitat. Eliminating 34-acres of habitat (regardless

[96] These comments are laid out in significant detail in Commenters' February Letter, at pp. 39-46 (citing Smallwood report).
[97] Commenters' February Letter, at pp. 39-42.
[98] See Commenters' February Letter, at pp. 40-41 (citing Smallwood report); Smallwood Reply Letter (Oct. 18, 2022), at pp. 3-5.
[99] Smallwood Reply Letter (Oct. 18, 2022), at pp. 4-5, 15.
[100] Smallwood Reply Letter (Oct. 18, 2022), at p. 8.

of whether it is used for breeding or wintering) would result in a significant impact on special status species, thereby meeting the City's threshold of significance for a biological resources impact.

The slight update to the proposed mitigation measures is not sufficient to lessen the impact below the threshold level of significance. As was raised in previous comments, an additional pre-construction survey is unlikely to detect species that are notoriously difficult to detect in surveys, such as the burrowing owl.[101] Moreover, the fact that there may be a detectable presence of a special status species at the time of the pre-construction survey does not change the fact that after five years of intensive use as a parking lot this habitat will be, at best, unavailable during that period and at worst irreparably damaged or destroyed.[102]

The City's refusal to acknowledge the value of this property to wildlife extends to its alternative analysis as well. The FEIR concludes that using the 34-acre site as open space would not lessen the significant impacts from the Project, but that is based on an erroneous conclusion that building a parking lot on un-developed property would not impact special status species or wildlife movement, which is not supported by substantial evidence.[103]

Commenters incorporate by reference all points raised in Dr. Smallwood's October 18, 2022 reply letter.

XIII. The FEIR must be Recirculated Before Project Approval and Certification

Under CEQA, an EIR must be re-circulated for review and comment whenever significant new information becomes known to the lead agency and is added to the EIR, after public notice of the availability of the draft document has been made, and before the EIR is certified.[104] Under such circumstances the lead agency is specifically required to re-notice the environmental review document to the public and all responsible agencies, and is required to obtain comments from the same, before certifying the document's impacts and alternatives analyses as well as any mitigation measures.[105] A lead agency's decision not to recirculate an EIR must be supported by substantial evidence.[106]

"Significant new information" includes any information regarding changes in the environmental setting of the project under review.[107] It also includes information or data that has been added to the EIR and is considered "significant" because it deviates from that which was presented in the draft document, depriving the public of a meaningful opportunity to comment upon a significant environmental effect of the project, or a feasible way to mitigate or avoid such an effect at the time of circulation of the draft.[108] Recirculation is further required where the

[101] Smallwood Reply Letter (Oct. 18, 2022), at pp. 8-9.
[102] See *id*., at p. 9.
[103] FEIR, Section 12.4.2, p. 12-16.
[104] Pub. Res. Code § 21092.1
[105] *See id*.; *see also*, Pub. Res. Code § 21153.
[106] Cal. Code Regs. tit. 14, § 15088.5(e)
[107] *Id*., at § 15088.5(a).
[108] *Id*.

draft EIR is "so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."[109]

While re-circulation is an exception and not the rule in the preparation of final environmental review documents, it is an exception that must be invoked here – where the absence of significant information rendered the DEIR ineffective in meeting CEQA's substantive mandates, and now, where included, the addition of significant new information substantially changes the FEIR's analyses and conclusions regarding the Project's impacts, feasible alternatives and required mitigation.[110]

As stated in numerous comments to the DEIR, that document failed to provide critical information regarding the duration, scope, and mitigation of the Project's impacts; it failed to adequately describe fundamental information relating to the phasing and timing of the project's implementation and phase out by claiming to add permanent jobs to the region; it lacked adequate detail specifically regarding the construction and operations phases of the Project, including mitigation; and it contained analyses and mitigation measures relating to the Project's air quality, traffic, human health and biological resources impacts based on incorrect datasets and formulas.

In some instances, the FEIR erratically and arbitrarily includes selective new data into its analysis of the Project's impacts, and in others critical information remains absent from the document.

The FEIR contains significant new information and must be recirculated for public review and comment before being considered by the Planning Commission.[111] Although this new information does not cure the inadequacies pointed out in comments to the DEIR, the City has added new information that that the public should be allowed to thoroughly review and evaluate with sufficient opportunity to further comment prior to a decision by the Planning Commission. This new information includes, but is not limited to: a revision of Mitigation Measure MM-BIO01 related to biological resources; the addition of land use policies to be considered pertaining to aesthetics; different data on maximum daily construction emissions and maximum daily operational emissions; the addition of a new 2022 California Native Diversity database search performed and new analysis performed resulting from a revised habitat assessment concerning biological resources; alleged revisions to the analysis and evaluation of archaeological resources and mitigation measures proposed as MM-CUL-1 and MM-CUL-2; alleged revisions to the analysis of project impacts and mitigation measures under Tribal Cultural Resources; a new listing of potential hazardous sites; a new summary of significant unavoidable impacts not previously disclosed; remodeling of the project in CalEEMod used for the project to project emissions during construction and operation; and, a list of additional previously undisclosed alternative locations considered by the City. In addition, Appendix D, Air Quality

[109] *Id*.
[110] *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal*. (1993) 6 Ca4th 1112, 1132.
[111] Cal. Code Regs. tit. 14, §15088.5.

and Greenhouse Gas Study and Appendix FA – Biological Resources Inventory 2022 were updated with new information previously not disclosed.

The FEIR also contains new references to the storage of electric vehicles at the site without any details as to whether these vehicles will require charging infrastructure at the site while the cars are being stored.[112] Thus, it is unclear whether further alterations to the site will be necessary in the near future. In short, this new information adds greater uncertainty and highlights the document's failure as an informational document.

The public must have an adequate opportunity to comment on these many changes and address any new impacts this new information may reveal. Providing just 10 days before a hearing with the Planning Commission does not provide that opportunity for meaningful public engagement concerning the new information contained in the FEIR. Given these revisions, the myriad other information, and alternative analysis added in the FEIR, recirculation is required.

Moreover, on March 21, 2022, our organizations requested that the City schedule a special meeting of the Planning Commission before deciding on whether to approve the Project[113]. Not only would this give the Commission an opportunity to hear from stakeholders and members of the public and provide for adequate language access, but it would also give the Commission time to review additional evidence that has become available after the comment period. Given the tremendous interest that this Project has garnered with over 200 written comments received, setting a special pre-determination hearing before the Commission is more than appropriate.

The City released its responses to our comments less than ten full days prior to the October 20, 2022 hearing.[114] To provide Commissioners with the opportunity to thoroughly review all the evidence, including the evidence and comments from stakeholders, the special meeting of the Planning Commission should be set at least 30 days prior to it making a final decision on this FEIR and pending Special Use Permit.

XIV. Conclusion

The FEIR's continuing informational deficiencies render it unlawful. The City's responses to commenters do not address their arguments against the adequacy of the DEIR. The FEIR contains an incomplete project description, a deficient cumulative impact analysis that omits relevant projects and impacts, inadequate alternatives analysis, and an incomplete evaluation of environmental justice, air quality, traffic, language access, public health and biological resources impacts. Accordingly, the Planning Commission should not certify an FEIR at this time and must deny the requested Special Use Permit until the City is able to present a comprehensive and accurate report of the Project's scope, impacts, alternatives, and mitigation measures.

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[112] City of Oxnard, Planning Commission Report, (October 20, 2022), p.10.
[113]See Letter from CAUSE et.al., to Jay Dobrowalski, Re: Port of Hueneme =Vehicle Storage Site Environmental Impact Report Comment Period, (March 21, 2022); available at page 141 of the Planning Commission Staff Report for October 20, 2022.
[114] Response to the comments submitted by our organizations were sent out from the email account of Senior Planner, Jay Dobrowalski at 5:00 p.m. on Monday, October 10, 2022.

Sincerely,

Radhika Kannan
Fernando Gaytan
Earthjustice

Natalia Ospina
Heather Kryczka
Natural Resources Defense Counsel

Lucia Marquez
Central Coast Alliance United for a Sustainable Economy (CAUSE)

Mati Waiya
Wishtoyo Chumash Foundation

COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION
214 SOUTH C STREET
OXNARD, CALIFORNIA 93030

MEMORANDUM

Agenda Item No.: F.1

Date: October 20, 2022

To: **Planning Commission**

From: **Joe Pearson II, Planning Manager, (805) 385-8272**

Subject: **Transmittal Memo No. 2 – Port of Hueneme - Temporary Outdoor Vehicle Storage Facility -** PLANNING AND ZONING PERMIT No. 18-500-02 (Special Use Permit); Located at southeast corner of Hueneme Road and Perkins Road (APNs: 231-0-092-105 and 231-0-092-245). A request for a Special Use Permit to construct and operate a temporary outdoor vehicle storage facility for a maximum of five years on the approximately 34-acre project site. Upon expiration of the Special Use Permit, the vehicle parking area, the guard house, portable restroom, perimeter site lighting, and gravel surface would be removed. The fencing, landscaping, and drainage and associated infrastructure improvements would remain on-site and be maintained by the property owner. The project site is located within the Light Manufacturing with Planned Development Additive Zone (M-1-PD). The request includes certification of the proposed Final Environmental Impact Report (EIR) (State Clearinghouse No. 2020069039) and adoption of the Mitigation Monitoring and Reporting Program (MMRP) which has been prepared pursuant to the California Environmental Quality Act (CEQA). As mandated by the CEQA Guidelines, the EIR has been subject to the City's internal review process and reflects the Lead Agency's independent review and judgment and objectivity with regard to the scope, content, and adequacy of analysis. Filed by Christina Birdsey, 333 Ponoma Street, Port Hueneme, California 93044-0608, designated agent (the "Applicant") on behalf of A&J Oxnard LLC, 18980 Ventura Boulevard, Unit 200, Tarzana, California 91356 (the "Property Owner").

Subsequent to the release of the staff report and posting of transmittal memo #1, staff received additional comment letters from members of the public concerning the proposed project (attached). Staff has reviewed the letters and will provide responses as necessary.

Attachment

A. Public Comment Letters received after Transmittal Memo #1

October 19, 2022

VIA ELECTRONIC MAIL

Rose Chaparro
City Clerk
300 West Third Street
Fourth Floor
Oxnard, CA 93030
Email: cityclerk@oxnard.org

Re: Agenda Item F-1: The Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit)

Honorable Commissioners:

You play a vital role in preserving and enhancing the quality of the City of Oxnard's ("City") natural and built environments by making sound and impartial land use decisions.[1] As Commissioners, you are expected to conduct fair hearings, consider environmental protection, avoid using false or inaccurate information, and make decisions based on evidence in the record.[2] Your decisions must also be in the best interest of the people of Oxnard and protect their health and safety.[3] These core principles must govern your deliberations.

While we have submitted formal written comments on the final Environmental Impact Report ("FEIR") for your consideration, in this letter we present the law governing environmental review of the proposed Temporary Outdoor Vehicle Storage Facility Project ("Project") along with evidence demonstrating why you should not certify a final EIR and should deny the Special Use Permit.

Administrative Process to Date and Need for Recirculation

This agenda item concerns the City's approval for a vehicle storage site to facilitate the Port of Hueneme's ("Port") operations and a related Special Use Permit. A Draft Environmental Impact Report ("DEIR") has been prepared and circulated. After an evaluation of public comments on the DEIR, the Planning Commission must decline to certify FEIR if the report is

[1] *See* City of Oxnard, Planning Commission (last accessed Aug. 2, 2022) available online https://www.oxnard.org/city-department/community-development/planning/planning-commission/.
[2] Institute for Local Government, The Planning Commissioner's Role at p. 5 (last accessed Aug. 2, 2022) https://www.ca-ilg.org/sites/main/files/file-attachments/resources__PCH_sec1.pdf.
[3] City of Oxnard Ethics Advisory Subcommittee, *Report And Recommendations On City Council Ethical Standards And Guidelines* (2015) available online https://www.oxnard.org/wp-content/uploads/2016/05/Final-Draft-May-2015.pdf.

inadequate, fails to follow CEQA guidelines and cannot support the approval of the Special Use Permit pending before you.

As explained in greater detail in our comments to the FEIR, this FEIR contains new information that must be recirculated for public review and comment before being considered by the Planning Commission, based on state CEQA regulations. CEQA Guidelines § 15088.5. Although this new information does not come close to addressing the myriad of inadequacies found in both the DEIR and the FEIR, the City adds new information that the public should be allowed to thoroughly review and evaluate with sufficient opportunity to further comment. Moreover, the Planning Commission should have the opportunity to hear from the public and other agencies about these revisions before making its final decision. The FEIR must be recirculated.

The Evidence Strongly Supports Rejecting the FEIR

The FEIR, public comments, additional expert reports, and information initially submitted by the applicant are all considered record evidence. We incorporate by reference our previous letters submitted on February 14, 2022, July 1, 2022, and our comments to the FEIR submitted most recently on October 19, 2022. For your convenience, we have attached these prior comments to this letter as Exhibits A, B, and C. Additionally, in June 2021, CAUSE and NRDC submitted Public Records Act ("PRA") requests to the City and the Port. Although the City has almost entirely ignored the PRA requests, the Port has produced additional responsive documents. These documents have revealed much more detail about the Port and the City's true intentions for expanding port operations, including vehicle storage sites.

Since we submitted our supplemental comments to the Planning Commission on July 1, 2022, a subset of these produced documents were brought to the attention of the Planning Division and have since become part of the administrative record. The released documents show, as further explained below, that in compiling the FEIR, the City has: knowingly separated or "piecemealed" this project from other expansion projects in a way that would downplay its true environmental impacts, willfully ignored significant environmental issues, did not include adequate project detail in the FEIR, and failed to translate the relevant EIR documents for meaningful public review.

The Law

Based on the City's CEQA Guidelines ("Guidelines"), below is a summary of the mandatory elements of a FEIR. To support your assessment of whether the FEIR for the vehicle storage site meets these mandatory elements, we have included questions at the end of each legal requirement to help you evaluate whether applicants have provided satisfactory answers. As you consider these requirements, we request that you keep in mind not only the evidence that applicants submitted, but also the evidence that has come to light through the PRA responses.

1. The FEIR Must Include An Accurate Project Description.

In considering land use and social impacts, the Guidelines require the Commission to review the description of the proposed project. Guidelines § 10.3, 13.3. An accurate project description is foundational to reliable review. As the Guidelines note, the description must include: the size, density, and intensity of the operation. *Id* at § 10.3. Relatedly, the Commission must determine how the Project would generate employment. Guidelines § 13.3.

If a project is too narrowly defined by dividing a proposed development into several segments, it will improperly limit the analysis to only a portion of the project and fail to assess the complete environmental impact of the two halves of the project. CEQA prohibits such "piecemealing" to avoid a more robust review of the potential direct or indirect environmental changes caused by a project.[4]

The FEIR misquotes the law. The standard for when a project needs to be considered is not when the City receives a Permit Application. Rather, the law requires that an EIR must include analysis of the environmental effects of future expansions or other actions when: a) a project is a reasonably foreseeable consequence of the initial project; and 2) the future expansion or action is significant in that it will likely change the scope or nature of the initial project or its environmental effects.

Thus, an accurate project description is the foundation for an adequate analysis of the environmental impacts. Without a reliable description, decision makers such as yourselves would have to make key permitting decisions in the dark. Moreover, if the City is allowed to proceed in this way, the public will be kept from necessary information to properly evaluate the impact of the proposed project.

Questions:

- **Does the Project Description improperly exclude the 250-acre site in light of evidence showing that it is a "reasonably foreseeable" extension of the current project?**
    - Considering the record evidence that the Port drafted conceptual plans, pursued financial arrangements with customers, listed the project as a priority for grant funding, sought for the site to be designated as an Opportunity Zone, and grouped the two projects in their public annual financial reports, the answer is yes. The 250-acre project is reasonably foreseeable and should have been included in the FEIR Project Description.

[4] *CEQA Portal Topic Paper Project Description* at p. 2, AEP (Feb. 2020), *available at:* https://ceqaportal.org/tp/CEQA%20Project%20Description%202020%20Update.pdf.

- **Does the Project Description explain how the Project impacts are temporary?**
  - Considering the evidence demonstrating a serious off-port land deficit, the lack of any evidence showing how the site will be transitioned to a different use in the future, the allegedly temporary project suggests that it will not be temporary.
  - Indeed, if truly temporary, the project would fail to satisfy its own stated objectives— to "reduce and consolidate" reliance on off-port satellite storage locations.
- **Does the Project Description explain how the employment benefits are permanent?**
  - There is scant evidence demonstrating how such a temporary project will provide the promised economic growth and permanent job opportunities.
  - Record evidence indicates that only 14 new jobs would be created.[5] But does not explain how these jobs would remain after the temporary project is disbanded.

2. The FEIR Must Consider Cumulative Impacts

The FEIR misquotes the law. The standard for when a project needs to be considered in a cumulative impacts analysis is **not** determined by when the City receives a Permit Application. Rather, CEQA requires a discussion of cumulative impacts i.e., the incremental impact of the project when considered in the context of "closely related past, present, and reasonably foreseeable future projects." Guidelines § 17.1. Under the same Guidelines, a "reasonably foreseeable future project" is one where the cumulative project is a) "in an adopted capital improvement program … or other plan" or b) the City or other pertinent agency has devoted significant time and financial resources to prepare for any regulatory review of the project. *Id*. at § 17.2. Furthermore, Section 15130(b) of the State CEQA Guidelines defines consideration of (A) a list of past, present, and reasonably anticipated future projects and (B) a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document as elements necessary to provide an adequate discussion of cumulative impacts.

Each phase of the project will have direct air quality impacts. Changes to air quality will directly and adversely impact the health of Oxnard citizens. Air quality impacts can compound and exacerbate respiratory conditions for vulnerable populations in the area. As commenters have previously noted, to reach the 34-acre site, traffic will pass by five elementary schools, one high school, low-income housing, and a community health clinic.[6]

[5] The FEIR notes that there will be 167 local employees. However, these are existing GLOVIS employees who would continue to be employed.

[6] Comments Submitted by Central Coast Alliance United for a Sustainable Economy, Earthjustice, Natural Resources Defense Council, and Wishtoyo Chumash Foundation, The Port of Hueneme- Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit) (Feb. 14, 2022).

The City has a procedural and a *moral* obligation, to ensure that the cumulative impacts of this project do not burden communities that are already disproportionately impacted by poor air quality.

Questions:

- **Based on the record evidence, are there other pieces of evidence demonstrating growth that should have been considered in cumulative assessments?**
    - Yes, evidence demonstrating the resources invested in channel deepening, the STACKED project (among others) indicate that the cumulative impacts of these additional projects must be considered in the FEIR.
- **Does the EIR look at the cumulative and direct impacts from existing or planned projects including warehouses and planned port expansions?**
    - No. Although there is record evidence showing the likelihood of these expansions, these have not been listed or accounted for as past, present, and reasonably anticipated future projects in the EIR, which is in violation of CEQA.
- **Did the EIR include or list the 250-acre site as a cumulative impact?**
    - No. Even if it is not included in the project description as described above, record evidence shows that it is a "reasonably foreseeable future project" for which the Port has devoted significant time and financial resources to prepare for any regulatory review of the project. Guidelines § 17.2. The City's omission from the cumulative impacts violates CEQA.

3. The FEIR Must Capture Key Environmental Information.

The Guidelines highlight several environmental issue areas including consideration of greenhouse gas ("GHG") emissions and transportation for which the applicant must provide sufficient information to allow for meaningful review. The Guidelines note that "for land use and transportation related projects, the degree of compliance with policies intended to minimize GHG emissions will remain an important part of assessing their impacts." Guidelines § 5.1. The Guidelines also note that the State's metric of Vehicle Miles Traveled ("VMT") will "replace or augment" the current Level of Service ("LOS") method. Guidelines § 15. The State formally adopted the VMT metric on July 1, 2020. As such, the Applicant must incorporate the VMT standard either in place of, or in addition to the LOS standard. Yet, the City admits that neither it nor the City of Port Hueneme have adopted guidelines or significant criteria for assessing VMT by development projects.[7] Instead, the City conducts only a cursory analysis of estimated vehicle trips in order to avoid doing a more robust study and inquiry into what type of impact this project is likely to have. For example, even though there is no evidence that the Port is prepared to shut down existing storage sites, the City conveniently adopts the assumption that this project will reduce trips to those sites while failing to explain how that occurs if this project is allegedly temporary. Moreover, as stated in our FEIR comments,

[7] FEIR Section 12.4.1, pp. 12-13.

evidence suggests that the traffic study that the City relies on was a hollow gesture, intended to create a paper trail to justify its predetermined conclusions.

Similarly, the FEIR fails to fix or explain fundamental flaws in the modeling used to calculate air emissions from increased traffic, construction, and operation of the site. The FEIR also continues to lack the requisite health impact assessment or proper analysis of GHG's. Because of these omissions, the FEIR is not a reliable report on environmental impacts.

Question:

- **Does the FEIR accurately perform a traffic analysis and consider reasonable, zero-emission alternatives?**
    - No. The evidence has shown that the traffic study was rubberstamped. The City misapplies the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in evaluating the Project's VMT impacts. Furthermore, the VMT analysis is internally inconsistent and conclusory, and cannot be relied on.
    - The Port's failure to consider using zero-emission vehicles (even though GLOVIS is one of the region's only makers of HD Class 8 zero-emission trucks) is an insufficient alternatives and mitigation analysis under CEQA.
- **Does the FEIR accurately assess greenhouse gas emissions, damage to air quality, and health impacts that might stem from the Project?**
    - No. The City refuses to conduct a proper health impact analysis for this Project, insisting that it does not have to do so.
    - The FEIR bases its conclusions on health impacts and air pollution on flawed modeling in which the FEIR has failed to properly justify the inputs used to project those emissions, thus calling into question the calculations the City uses to justify not doing more to protect the public, including the refusal to conduct a proper health risk assessment.
    - Moreover, the FEIR relies on outdated thresholds which the City fails to justify through substantial evidence. This has resulted in the FEIR unjustifiably failing to identify any potentially significant GHG impacts from the project.

4. The FEIR Must Allow Public Participation In The Review Process.

As the Guidelines makes clear, the FEIR must enable meaningful public participation in the review process. See CEQA Guidelines at p. 1. The Guidelines also note that the public must be given notice and an opportunity to comment on the FEIR. *Id*. at p. 10. According to the latest census data, in Oxnard as a whole, 66% of residents speak a language other than English at home. Translation of environmental documents and workshops is necessary to promote non-English speaking individuals' right to meaningfully participate in environmental decisions that impact their health and safety.

Question:

- **Was Project Information translated into Spanish and Mixteco?**
    - The evidence has shown that because the Port failed to translate key environmental documents, workshops, and hearings into Spanish and Mixteco, many Oxnard residents could not meaningfully participate in discussions about the Project.

What the Commissioners are Called to Do Based on the Law and Evidence

As Commissioners, it is your duty to weigh and to evaluate all of the evidence received for this Project, and, in that process, to decide whether this project has undergone the legally required environmental review and meets California's environmental standards. It is also your duty to apply the law whether you agree with it or not. The answers to the above questions highlight the fundamental omissions in the FEIR and the broader CEQA process. The evidence shows that, despite the City's claims to the contrary, the FEIR was inadequate and conclusory in nature, and therefore precluded meaningful public review.

We ask that you not certify a final EIR at this time and deny the Special Use Permit.

In the alternative, the Applicant must incorporate the required information under the City's CEQA Guidelines and recirculate the EIR. CEQA requires agencies to recirculate an EIR when "significant new information" is disclosed and provide an opportunity for a renewed public notice and comment. CEQA Guidelines § 15088.5(d), (f); see also Cal. Pub. Res. Code § 21092.1 (West). The public deserves an opportunity to review and comment on a comprehensive EIR that discloses the full extent of the Project's environmental impacts.

Sincerely,

Radhika Kannan
Fernando Gaytan
Earthjustice

Natalia Ospina
Heather Kryczka
Natural Resources Defense Council (NRDC)

Lucia Marquez
Central Coast Alliance United for a Sustainable Economy (CAUSE)

Mati Waiya
Wishtoyo Chumash Foundation

October 19, 2022

City of Oxnard Planning Commission
305 West Third Street
Oxnard, CA 93030

Sent via email planning@oxnard.org

Re: Agenda Item F - Vote No on Port of Hueneme Temporary Outdoor Vehicle Storage Facility

Dear Commissioners,

Climate First: Replacing Oil & Gas (CFROG) is a grassroots environmental nonprofit dedicated to combating the climate crisis by working to shape the transition from fossil fuels to a carbon-free economy in Ventura County. We are committed to the establishment of an economy that is sustainable, inclusive, and promotes renewable energy. **CFROG urges the Oxnard Planning Commission to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion.**

The proposed expansion plans for the Port of Hueneme conflict with the community vision for a healthy, sustainable South Oxnard. We will not accept any more pollution in Oxnard and instead call for an alternative vision: full transparency on planned projects for future port development, a healthy environment with a zero-emission commitment from the Port, and no more industrialization between South Oxnard neighborhoods and coastal beaches.

Environmental Injustice - Don't Create a Diesel Death Zone

The FEIR fails to consider the impact on air quality and community health from diesel trucks that will transport cars from the 34-acre site to dealerships in the County and beyond. This expansion will bring more diesel trucks onto Hueneme Road, polluting the air with more cancer-causing exhaust and other harmful pollutants.

Diesel particulate matter is linked to several serious public health problems including, but not limited to:

- aggravating asthma,
- heart and lung disease,
- cancer, and
- premature mortality.

Twenty years ago, diesel engine exhaust was classified as "carcinogenic to humans" after being linked to lung cancer induction and death from lung cancer. The state estimates that 70 percent of the cancer risk linked to air pollution for the average person in California results from breathing diesel exhaust. To be approving the exponential increase in diesel pollution in a heavily populated community is irresponsible and unjust.

The nearby South Oxnard community is already experiencing an overall pollution burden higher than 94 percent of other California communities, and a diesel particulate matter burden higher than 86 to 90 percent of the rest of the state (CalEnviroScreen 4.0). This has led to higher than average rates of asthma, low birth weights, and cardiovascular disease in surrounding, down-wind communities.

GLOVIS has already started to use zero-emission trucks in other communities to improve air quality. At the very least, all transportation as a result of this expansion should be zero-emission, instead of dirty diesel.

Contributing to Climate Crisis

We are increasingly feeling the impacts of climate change in Ventura County - the fastest warming county in the contiguous United States - from wildfire to continued drought to unavoidable sea level rise. While the FEIR broadly determines this project to have a "less than significant impact" on greenhouse gas emissions, it fails to consider the lasting effects of industrializing an area or the alternative biological carbon sequestration of maintaining open space.

Increasing the number of diesel-powered vehicles will undoubtedly have *significant* climate impacts. A large proportion of diesel particulate matter is composed of black carbon. The Intergovernmental Panel on Climate Change recently reported that emissions of black carbon are the second largest contributor to global warming, after carbon dioxide emissions.

The FEIR drastically underestimates greenhouse gas emissions by inaccurately describing the project as "temporary" and only considering 3-5 years of impact. First, records have been submitted to the city that indicates the Port of Hueneme has larger expansion plans, including contracts and grant applications, to expand to a 250-acre storage location. Second, the long-term greenhouse gas impacts of industrialization on this land are unaccounted for. What future emissions will be a result of this infrastructure?

Additionally, this is one of the last pieces of unindustrialized land between South Oxnard neighborhoods and the coast. It neighbors the Ormond Beach Wetlands, which are being restored as a public green space for the community to enjoy. The FEIR falsely states that a scenario of "no project/no build" has "no impact" on all impact areas, including air quality, biological resources, and greenhouse gas emissions. This scenario should have been classified as "environmentally superior" as open space can improve air quality, sequester carbon, and promote healthy wildlife.

True Commitment to the Environment means Commitment to People

The Port of Hueneme has received multiple Green Marine certifications, been voted the Greenest Port in the U.S. by industry, and describes itself as "committed to the environment." CFROG applauds these advancements and is a partner in the Port's local air monitoring efforts. But we urge the Port to truly follow its commitments by ensuring that all business decisions - from electrification to expansion - are done equitably and in a way that does not reinforce existing systemic inequities.

The FEIR fails to accurately examine the negative impacts of this project. We urge you to not certify the FEIR and deny the proposed Special Use Permit. Thank you for prioritizing the health, air quality, and future of South Oxnard over industrialization and diesel expansion.

With urgency,

Haley Ehlers, Associate Executive Director

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 0/20 Public Hearing-Public comment to Vote NO on the Temporary Vehicle Storage Project

1 message

Citlali Clarissa <citlalicplaza@gmail.com> Thu, Oct 20, 2022 at 8:00 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the 34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit. Oxnard deserves clean air and

environmental justice!

Sincerely,

Citlali Plaza

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Citlali

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Agenda Item F

1 message

John Brooks <johnbrooks69@gmail.com> Wed, Oct 19, 2022 at 8:12 PM
To: planning@oxnard.org

Dear Commissioners,

Please vote No on the proposed “temporary “ parking facility in South Oxnard . My friends who live there already suffer from the health impacts of diesel exhaust. South Oxnard has suffered enough and adding to its pollution burden is not what the Port should be doing. At the very least why is there no analysis of the benefits of electric trucks on the already underestimated greenhouse gas and particulate emissions?
The FEIR is inaccurate but I will let the scientists tell you the details.
I just know you should not certify the FEIR and in the name of environmental justice vote No on the pro.
Thank you,

John Brooks
Oak View

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] GLOVIS Port Expansion

1 message

Katie McCarthy <katiejoby@gmail.com> Thu, Oct 20, 2022 at 2:29 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.
The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the 34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit. Oxnard deserves clean air and environmental justice!

Respectfully,

Katie McCarthy

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Item 1 Permit 18-500-02

1 message

'David Caskey' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 9:05 AM
Reply-To: David Caskey <dlcaskey@yahoo.com>
To: Planning@oxnard.org
Cc: dlcaskey@yahoo.com, saveormondbeach2019@gmail.com, Lucas Zucker <lucas@causenow.org>

Item 1 Temporary Outdoor Vehicle Storage Facility
18-500-02

I urge the Planning Commission to deny this permit. I fully support the position of the Friends of Ormond Beach, of which I'm a member, and of the Central Coast Alliance United for a Sustainable Economy, which I support.

Most of us familiar with the Coast between Pt. Mugu and Port Hueneme would agree that what we've done there is a disgrace. A beautiful and ecologically rich environment has been used as an industrial sewer. The health of the nearby residents has been wrecked. It's a blight, on Oxnard, on Ventura County, and on California and it's commitment to preserve and protect its Coast.

The first step towards recovery is to stop doing harm. You have that chance here, with this decision. There should be no more industrial zoning south of Hueneme Road between the Navy property and the City of Port Hueneme.

The Port is important, but it can be sustained and improved using existing land and infrastructure. The joint use agreement, currently being used to help congestion in the Los Angeles Ports, can be modified to sustain its future viability.

One of the most dedicated, and sorely missed public servants in Ventura County was Carmen Ramirez. She spent many years trying to address the mistakes of the past. In an interview with the LA Times, over five years ago, she said, "It's clear who gets stuck with all the dirty stuff. What other city has three power plants and a Superfund site on the beach. The people of Oxnard have paid their dues."

I hope you honor her memory.

In her words, "We just want to stop the abuse and get our coast back."

Regards,

David Caskey
Port Hueneme

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Opposition to FEIR Final EIR

1 message

Cori Raffaelli <cori.raffaelli@oxnardunion.org> Thu, Oct 20, 2022 at 12:33 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Cori Raffaelli

This is a staff email account managed by Oxnard Union High School District. This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender.

From: Irene
Sent: Thursday, October 20, 2022 3:03 PM
To: cityclerk@oxnard.org
Cc: Larry Godwin

To: the City of Oxnard and Planning Commissioners

Re: Port of Hueneme request for Vehicle Storage Facility at Ormond Beach
a. Adopt a Resolution certifying Final Environmental Impact Report (EIR) No. 22-01 for the Port of Hueneme - Temporary Outdoor Vehicle Storage Facility (Governor's Office of Planning and Research State Clearinghouse No. 2020069039); and

b. Adopt a Resolution approving Planning and Zoning Permit No. 18-500-02 (Special Use Permit) for a vehicle storage facility, subject to certain findings and conditions.

For Oxnard,
Please OPPOSE the Port of Hueneme Vehicle Storage at this location.
Oxnard can do better! A car park at Ormond is an imposition efforts any hope for a public project at Ormond.
Despite the Port's claim that the project is temporary, it is an eyesore to the adjacent community already in need of improvements, and a threat to existing rare native coastal environment. This rare parcel is virtually the last remaining native land on our coastline… needs to be protected for a preserve at Ormond for the generations!

Irene Rauschenberger
Oxnard Resident

Sent from Windows Mail

October 19, 2022

Via Email and Federal Express

Jay Dobrowalski
Senior Planner
City of Oxnard Planning Division
214 South C Street
Oxnard, CA 93030
Email: jay.dobrowalski@oxnard.org
planning@oxnard.org
cityclerk@oxnard.org

Re: Comments on The Final Environmental Impact Report for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit)

Dear Mr. Dobrowalski:

We are in receipt of the Planning Department's Final Environmental Report, and respond here with comments submitted by Central Coast Alliance United for a Sustainable Economy (CAUSE), Natural Resources Defense Council, Earthjustice and the Wishtoyo Chumash Foundation. We submit the documents listed below on the enclosed thumb drive via FedEx, and available through this OneDrive link 4527 - Port of Hueneme Comments - Sources Shared on October 19 2022* via email. These documents contain key references cited in our comments, which we ask you to consider in conducting your review and include in the administrative record associated with this matter.

1. **Attachment 1: Dobrowalski July 13th Email**

This email is from Mr. Jay Dobrowalski, the Senior Planner for the City of Oxnard Planning Division, acknowledging receipt of our February comment letter, and noting that the letter and all supporting documents would be entered into the record.

2. **Attachment 2: Commenters' October 11, 2022 Errata Request**

This email is from Commenters requesting an erratum after realizing the supporting documents had not been entered into the record as part of the FEIR documentation.

3. **Attachment 3: Previous Comment Letters and Attachments**

February 14, 2022 Initial Comment Letter (and attachments) and July 1, 2022 Supplemental Comment Letter (and attachments).

* The following email addresses have access to this folder: jay.dobrowalski@oxnard.org, planning@oxnard.org, cityclerk@oxnard.org. Please email Radhika Kannan at rkannan@earthjustice.org or Fernando Gaytan at fgaytan@earthjustice.org if there are any access issues.

4. **Attachment 4: SWAPE Reply Report and Supportive Document**
5. **Attachment 5: Dr. Smallwood Reply Letter and Supportive Documents**
6. **Attachment 6: 2022 Automotive Logistics News Article on Electric Car-Carrier Trucks**

Sincerely,

Radhika Kannan
Fernando Gaytan
Earthjustice

Natalia Ospina
Heather Kryczka
Natural Resources Defense Counsel

Lucia Marquez
Central Coast Alliance United for a Sustainable Economy (CAUSE)

Mati Waiya
Wishtoyo Chumash Foundation

October 19, 2022

Via Email and Federal Express

Jay Dobrowalski
Senior Planner
City of Oxnard Planning Division
214 South C Street
Oxnard, CA 93030
Email: jay.dobrowalski@oxnard.org
planning@oxnard.org
cityclerk@oxnard.org

Re: Comments on The Final Environmental Impact Report for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit)

Dear Mr. Dobrowalski:

We submit these comments on the Final Environmental Impact Report ("FEIR") for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project ("Project") on behalf of the Central Coast Alliance United for a Sustainable Economy ("CAUSE"), Earthjustice, Natural Resources Defense Council ("NRDC"), and Wishtoyo Chumash Foundation ("Wishtoyo").

The FEIR fails to address several fundamental deficiencies in the Draft Environmental Impact Report ("DEIR") that commenters had previously identified. Despite the submission of over 200 comments on the DEIR, the City of Oxnard Planning Division ("OPD" or "City") has only made minor revisions to its analysis in finalizing the FEIR.[1] Even when confronted with new knowledge, facts, and expertise, including record evidence from the Oxnard Harbor District's ("OHD" or the "Port") internal documents, the City has refused to reevaluate its mistaken analysis. Consequently, the FEIR is legally deficient and unfit for certification under the California Environmental Quality Act ("CEQA").

I. The Record Must Include Commenters' Submitted Evidence on July 1, 2022

Following the close of the public comment period for the DEIR in February 2022, commenters became aware of new evidence through documents produced in response to a Public Records Act request to the OHD. These documents contained substantial relevant information for decisionmakers to be aware of ahead of deciding whether to approve this proposal. Furthermore, on March 21, 2022, the City hosted a Virtual Community Workshop with presentations from the OHD discussing its plans for the 34-acre Vehicle Storage Site currently under review. At the conclusion of the Virtual Community Workshop, OPD invited additional

[1] Final Environmental Impact Report, Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project, SCH No. 2020069039 (Sept. 2022) (hereinafter "FEIR").

written comments from the public concerning the proposed Project and the presentation by the Port. In line with this invitation, and to ensure that the Commissioners and other decisionmakers were provided with information necessary to make an informed decision, commenters submitted supplemental comments on July 1, 2022, in addition to the comments submitted on February 14, 2022.

The City of Oxnard Planning Division has acknowledged receipt and noted that the letter and all supporting documents would be entered into the record. The confirmation email is attached hereto as Attachment 1, Dobrowalski July 13, 2022 Email. Although the July 1 letter appears in Attachment F of the Staff Report (along with other letters submitted after February 14, 2022), the supporting evidence does not. When commenters realized that the supporting documents had not been entered into the record as part of the FEIR documentation, commenters sent an email to Mr. Dobrowalski requesting an erratum. This request is attached hereto as Attachment 2, Commenters' October 11, 2022 Errata Request. This erratum has not been filed. As Planning Commissioners are tasked with deciding whether to approve this controversial project, they should have access to the entire record. In an abundance of caution, we are attaching the July 1, 2022 letter, as well as the February 14th letter, and all supporting documents to each of these comments as Attachment 3, Previous Comment Letters and Attachments.

Commenters request that the Commissioners strongly consider both the July 1, 2022, supplemental letter, and all supporting evidence in deciding this permit. We realize that this is a significant amount of information to review in a short amount of time which is also why we previously asked for the Commission's decision to be delayed for 30 days until the Commissioners have had an opportunity to hear from the public and have full access to the entire record in this considerable matter.

II. The FEIR Fails to Adequately Respond to Comments

When comments raise significant environmental issues through expert declarations or evidence-based assertions, the FEIR's response must provide a reasoned, good-faith analysis and "describe the disposition of significant environmental issues raised."[2] Comments must be "addressed in detail giving reasons why specific comments and suggestions were not accepted."[3] Detailed responses are required to "ensure that the lead agency will fully consider the environmental consequences of a decision before it is made."[4] Generally, the level of detail in the response must match the level of detail in the comment.[5]

"[C]onclusory statements unsupported by factual information" are never an adequate response.[6] Yet, such conclusory statements are precisely what the City has proffered in its FEIR. Firstly, other than the Vehicle Miles Traveled ("VMT") analysis, the City has not made any substantive changes to the DEIR. Mere editorial changes do not rise to the level of fully engaging with public comments. Secondly, and more egregiously, while commenters have

[2] Cal.Code Regs., tit.14, §15088(c).
[3] *Id.*
[4] *City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009) 176 Cal.App.4th 889, 904.
[5] *Pfeiffer v. City of Sunnyvale* (2011) 200 Cal.App.4th 1552, 1568.
[6] Cal.Code Regs., tit.14, §15088(c); *City of Maywood v. Los Angeles Unified Sch. Dist.* (2012) 208 Cal.App.4th 362, 391.

provided detailed explanations including several citations to documents produced by the OHD, the City's response to these detailed and well-supported objections has been to overwhelmingly refer commenters to "Global Responses." *See e.g.,* FEIR Comment Response 206-15; 206-24 (the response containing nothing more than "Please refer to Global Response GR-3, Relation of Project to the Multimodal Logistics Park and Global Response GR-8, Cumulative Projects.") At the same time, no additional details can be found in these Global Responses. These Global Responses do not grapple with OHD's emails, grant applications, internal memos and other logical inconsistencies pointed out by the commenters. This failure to engage extends to most responses to the comments.

As such, the City has failed in its CEQA obligation to provide detailed reasoning for why commenters' suggestions were not accepted. Overall, the City has not shown a good faith effort to consider public input.

III. The FEIR Improperly Piecemeals the Analysis of the Whole Project and Fails to Analyze the Impacts of Important Project Components

The FEIR's flawed Project Description violates the fundamental goal of CEQA, which is to provide complete and accurate information about the environmental impacts of a proposed project before it is approved. The City claims that the design of the Project is meant to "[r]educe and consolidate, where feasible, Port vehicle customer reliance on off-Port satellite storage locations, which would reduce the need for car carrier truck movement to distribute vehicles to those locations."[7] The FEIR also notes in the Project Description that the 34-acre outdoor vehicle storage facility is meant to be temporary – for a maximum of 5 years.[8] Yet, the FEIR misstates the true scope of the 34-acre site, leading to an incorrect analysis regarding the design of the Project.

A. The FEIR Misstates and Improperly Rewrites CEQA Requirements

The FEIR attempts to re-write the CEQA process for what must be considered in the Project Description.

The law requires that an EIR must include an analysis of the environmental effects of future expansions or other actions when: a) a project is a reasonably foreseeable consequence of the initial project; and b) the future expansion or action is significant in that it will likely change the scope or nature of the initial project or its environmental effects.[9]

> "[T]he environmental review accompanying the first discretionary approval must evaluate the impacts of the ultimate development authorized by that approval. … Even though further discretionary approvals may be required before development can occur, the agency's environmental review must extend to the development envisioned by the initial approvals. It is irrelevant that the

[7] FEIR, Section 3.5, p. 3-15.
[8] FEIR, Section 3.6, p. 3-15.
[9] *Laurel Heights Improvement Ass'n v. Regents of Univ. of California* 47 Cal. 3d 367, 396 (1988), as modified on denial of reh'g (Jan. 26, 1989).

> development may not receive all necessary entitlements or may not be built. Piecemeal environmental review that ignores the environmental impacts of the end result will not be permitted."[10]

CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones – each with a minimal potential impact on the environment – which cumulatively may have disastrous consequences."[11]

The FEIR's failure to recognize the 250-acre site stems from its erroneous interpretation of CEQA requirements. The FEIR claims that the 250-site does not need to be integrated in this project description and no environmental analysis needs to be conducted because: (1) "the City of Oxnard has not received an application for proposed development of a 250-acre site" [12]; and (2) a 250-acre parcel would require annexation which would be subject to future environmental review.[13]

Whether a project is a "reasonably foreseeable consequence of the initial project" does not depend upon whether the City has received an application for it or whether that project might trigger additional CEQA review. Indeed, such a requirement is nowhere to be found in the City's or the State's CEQA Guidelines. The City cites to no authority for these "requirements" for which projects need to be included in its project description.[14] These additional elements are created out of whole cloth by the City to avoid re-writing the project description to include what is *clearly* a foreseeable project. As described above, the City cannot use the fact that the entitlement will be subject to further environmental review as an excuse to avoid integrating the extension in its analysis currently.

B. The FEIR's Conclusions Regarding the 250-Acre Site Are Not Supported By Substantial Evidence.

The City concludes that because "the future development of a 250-acre site is unspecified and uncertain, the City has determined that potential future development of a 250-acre site is not reasonably foreseeable and is speculative."[15] However, this conclusion flies in the face of the wealth of documents presented to the City demonstrating how the City was well aware of the depth of the planning for the 250-acre site.

As commenters have highlighted in their previous letters, several documents from the Port (including new documents released in response to commenters' Public Records Act request) indicate that beginning in 2018, the Port has started drafting conceptual plans, pursuing financial arrangements with customers, hiring consultants related to the project, considering the 250-acre project for grants, and designating the site as an Opportunity Zone.[16] Yet, in response, the FEIR

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[10] *See* Kostka, et al., *Practice Under the California Environmental Quality Act*, § 6.52, p. 298.
[11] *Bozung v. LAFCO*, 13 Cal.3d 263, 283-84 (1975); *City of Santee v. County of San Diego*, 214 Cal.App.3d 1438, 1452 (1989).
[12] FEIR, Section 12.4.2, p. 12-9.
[13] *Id.*
[14] *Id.*
[15] *Id.*
[16] Attachment 3, February Comment letter, pp. 9-11 (hereinafter "Commenters' February Letter"); *see also* Attachment 3, July Comment Letter, pp. 4-5 (hereinafter "Commenters' July Letter").

Global Responses makes no effort to address these documents. The City's response is entirely inadequate.

First, the FEIR selectively ignores evidence that the Port has coordinated with the City a more permanent solution to the auto storage issue through the 250-acre site. The Port produced a document titled "Collaboration Call with City of Oxnard" with the goal of "Partnership for Economic Development."[17] The document has an "ongoing deadline" and is supplemented with information about the 250-acre site, including grant applications and the inclusion of the 250-acre site in census tracks as an Opportunity Zone.[18] Furthermore, a flyer published by both the City of Oxnard and the Port indicates that "[t]he stop gap 34-acre measure … will ensure that the City of Oxnard and the PoH will have sufficient time to structure and meet all regulatory requirements for the longer term 250-acre port logistics park with access to rail."[19] Thus, the City was well aware that the 250-acre site was a reasonably foreseeable extension of the 34-acre site.

Second, the Global Response to Comments regarding piecemealing the 250-acre site, is primarily devoted to explaining how the 250-acre Multimodal Logistics Park site "was *conceptual* at the time of the Notice of Preparation and is *one possible concept* for potential future development" (emphasis added).[20] But the Port's communications to landowners, the Memoranda of Understanding ("MOU") and Letters of Intent ("LOI") between GLOVIS and the Port, and the funding applications demonstrate that concrete steps have indeed been taken to bring the project into fruition and render the 250-acre site very far from merely "conceptual."[21]

Third, the FEIR's Project Description fails to consider the timescale of the Project. It makes no sense to assume, as the FEIR does, that given the serious land deficits (over 300-acres) the Port is facing, that there will be no further land use planned for automobile storage once the five-year temporary site expires.[22] The FEIR summarily dismisses these land deficits by referring commenters to its superficial Global Responses.[23] This is not substantial evidence to support a conclusion that the 250-acre site is speculative. By postponing review of this component, the FEIR improperly bifurcates the project in violation of CEQA, and in doing so, severely underestimates the impact on human health and the environment.

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[17] Commenters' July Letter, p. 8 (citing OHD, Collaboration Call with City of Oxnard at p. 2).
[18] *Id*. (Commenters also noted that "Private investments made within this zone will expect return on their investment over a period of time. This strongly suggests that an increased movement of cars and other goods through this corridor was reasonably foreseeable.")
[19] Commenters' July Letter, p. 8 (citing City of Oxnard & The Port of Hueneme: Partners in Economic Development, *Flyer Re: Ensuring the commercial viability of a major Ventura County Economic Engine - The Port of Hueneme (PoH) - for a better tomorrow at the City of Oxnard*.)
[20] FEIR, Section 12.4.2, Global Response 3, p. 493.
[21] Commenters' July Letter, pp. 6-8 (citing Email between Dona T. Lacayo and GLOVIS USA (Nov. 7, 2019), Email between Dona T. Lacayo and GLOVIS USA (Aug. 20, 2019), Email between Dona T. Lacayo and GLOVIS USA (Sept. 2019); *Memorandum of Understanding*, Oxnard Harbor District (March 3, 2020); Email from Kristin Decas to Commissioners, Subject Weekly Update (Oct. 16, 2020); OHD, Collaboration Call with City of Oxnard at p.2 (Ongoing)).
[22] Commenters' February Letter, p. 9; Commenters' July Letter, p. 9 (citing Oxnard & POH Commercial Viability Report, p.1. PROD-PHCN0000828).
[23] FEIR, Section 12.5, Response to Comment Letter #206, Response No. 206-15, p. 12-1162.

IV. The FEIR's Project Description is Inaccurate and Misleading and Impedes Meaningful Public Review

As stated in prior comments, the City has disingenuously omitted analysis of the broader Port logistics expansion that this Project represents. The City has strained to create a project description that artificially limits the scope of the Project to the 34-acre site, despite substantial evidence demonstrating a much broader plan to increase storage capacity in the region, including at the 250-acre Multimodal Logistics Center. In doing so, the City has produced a FEIR with a flawed project description under CEQA that contradicts its own objectives and fails to offer the Planning Commission the information necessary to properly assess the impacts of this project. This is discussed further in Section V.

The City simply ignores the multiple comments submitted concerning the inadequacy of the project description itself—more specifically, the incompatibility of the Project's objectives with the alleged "temporary" nature of the storage site.[24] One of the key objectives listed for this Project is to "reduce and consolidate" reliance on off-port satellite storage locations.[25] Yet, the City maintains that the project will be temporary, stating: "[t]he project proposes a temporary outdoor vehicle storage facility (vehicle storage facility or facility) for a maximum of 5 years on the approximately 34-acre project site. Future expansion of Port facilities based on the project is speculative at this time."[26] The FEIR fails to reconcile this inherent conflict nor explain how the Project, allegedly limited to a maximum of 5 years, will actually result in the consolidation of existing sites to meet the Project's objectives.

As we stated in our July 1, 2022 comment letter, the City has failed to explain how the Project will be both "temporary" and fulfill its objectives to consolidate off-port storage.[27] There are no details, for example, for how the site will be transitioned post-Project but continue to serve the consolidation objective and meet the Port's known need for more land to accommodate its expansion.[28] Moreover, if this project is truly temporary, it would fail to satisfy the stated objectives—making Alternative One: No Project/No Build by far the environmentally superior alternative[29] that the City should adopt. The rejection of this alternative in the FEIR is based on deficient and incomplete analysis.

The inadequacy of the project description means that the Planning Commission is being called to make a decision "in the dark"—without the necessary information to fully appreciate the full scope of this Project or its impact. The approval actions before the Commission, therefore, involve much more than a straightforward EIR approval. Here, Planning

[24] See Commenters' July Letter
[25] FEIR, Section 3.5, p. 3-15.
[26] FEIR, Section 12.5, Response to Comment Letter #206, Response No. 206-20, p. 12-1163.
[27] Commenters' July Letter, pp. 9-10.
[28] *Id*.
[29] The FEIR also identified Alternative Two: Two Existing Off-Port Vehicle Storage Locations as the environmentally superior option among the Project alternatives. FEIR, Section 6.9.4, pp. 6-16. This conclusion is as flawed as the rejection of the No Project/No Build alternative, as the analysis of this alternative is not only incomplete, but also fails to incorporate feasible mitigation measures to address air quality impacts, such as the implementation of zero-emission technology. See Commenters' February Letter, p 69; FEIR, Section 6.7, pp. 6-5 to 6-10.

Commissioners are not simply being asked whether to certify the FEIR and approve a Special Use Permit for a single project. Despite how the Planning Division has decided to reframe this project as a "Temporary" Vehicle Storage Facility to make it seem benign, this Project sets the stage for an unprecedented expansion of Port activities into the very neighborhoods that have already borne the brunt of air pollution, traffic, noise, and lack of greenspace and coastal access. This is not simply a storage lot; it will hasten the expansion of commercial and industrial activity in the region— an expansion for which we do not know the true extent of environmental impact. Because of these flaws in the project description, the FEIR remains inadequate as an informational document and precludes meaningful public review. It should therefore be rejected in its current form and recirculated for further public review if revised to fix these discrepancies.

V. The FEIR Fails to Consider a Reasonable Range of Alternatives and Improperly Rejects Existing Alternatives

A major function of an EIR is the lead agency's full assessment of a reasonable range of alternatives stemming from a well-prepared project description and statement of objectives.[30] However, where a project description is inadequate or overly narrow—as in the case here—the alternatives analysis risks being equally flawed. As discussed at more length in commenters' February and July letters,[31] the project objectives are narrowly tailored in a way that facilitates the City's improper rejection of alternatives that could offer substantial environmental advantages and avoid worsening air quality and further concentrating industrial uses and harms adjacent to an over-burdened residential neighborhood, while still meeting most project objectives. As a result, the FEIR contains a flawed and incomplete analysis of feasible alternatives and fails as an informational document that facilitates meaningful public engagement. It, therefore, cannot be certified.

The FEIR fails to address the deficiencies in the DEIR's alternatives analysis. First, the lack of detail provided in the EIR prevents a meaningful public review and a reasonable choice of alternatives.[32] For instance, it is impossible to know based on the limited discussion and lack of detailed information provided in the EIR whether there are no feasible alternative sites for car storage that would meet most of the stated objectives.[33] Lead agencies are required to disclose in their EIR their reasons for concluding that no feasible alternative locations exist.[34] However, the City's failure to consider the Navy Base Ventura County ("Navy") property as an alternative site

[30] Cal. Pub. Resources Code, § 21002; Cal.Code Regs., tit.14, § 15124(b); *Laurel Heights Improvement Ass'n v. Regents of the Univ. of California* (1988) 47 Cal.3d 376, 400; *In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1163, citing Cal.Code Regs., tit.14, § 15124(b).
[31] Commenters' February Letter, pp. 68-83; Commenters' July Letter, p. 15.
[32] See *Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 287 ("Absolute perfection is not required; what is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned.")
[33] FEIR, Section 1.5, pp. 1-11 to 1-12.
[34] Cal.Code Regs., tit.14, § 15126.6(f)(2)(B); see also *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405, as modified on denial of reh'g (Jan. 26, 1989) ("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." (citations omitted)).

in the EIR and to instead address its feasibility solely in a General Response, violates CEQA and is further evidence of the FEIR's failings as an informational document.

Second, the FEIR continues to apply circular logic to reject alternatives for not lessening project impacts. By failing to carry out the full analysis required under CEQA, the FEIR underestimates the Project impacts. As a result, it comes to the incorrect conclusion that the project would not result in significant or unavoidable impacts and therefore the City has no obligation to consider alternatives. However, as discussed at length in this and other comments, there is substantial evidence that the project will have significant impacts on the environment and public health.

Third, the FEIR improperly conflates the City's jurisdiction with feasibility. Alternatives cannot be rejected simply because they are beyond the lead agency's authority.[35] And yet, the City relies on this argument to avoid even considering alternatives raised by commenters. For instance, the City relies on the 34-acre property being privately-owned to conclude that a park alternative is infeasible.[36] Similarly, the City refuses to consider the Navy property[37] as a feasible alternative in part because it does not have jurisdiction over Navy property.[38] This ignores the definition of feasibility under CEQA[39] and fails to address the central question of whether the OHD as the project proponent has reasonable access, ownership, or control over alternative sites.[40] In the case of the Navy property alternative, the close relationship between the OHD and the Navy evidenced by a 2021 Joint Use Agreement demonstrates that it is a viable alternative worth considering. Nevertheless, this goes undiscussed in the FEIR. The City should apply the CEQA definition of feasibility and fully evaluate all reasonable alternative locations[41], including the Navy property.

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[35] See *Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286–287 ("[I]t is not appropriate to disregard alternatives simply because the alternative may be beyond the scope of expertise of the agency or because the alternative may require implementing legislation since CEQA was intended to provide a basis for consideration and choice by all branches of government.")

[36] FEIR, Section 12.4.2, p. 12-15.

[37] It is disingenuous for the City to claim it is not informed about the Joint Use Agreement between the Navy and the Port given the coverage the agreement received in the local press. See, e.g., Commenters' February Letter, p. 71 (citing Brian J. Varela, Port of Hueneme, Navy Partner to Assist Los Angeles County Port Backlog, Ventura County Star, November 28, 2021, 10:40 a.m.; https://www.vcstar.com/story/news/2021/11/28/port-hueneme-assist-la-county-ports-through-agreement-navy/8771397002/).

[38] FEIR, Section 12.4.2, p. 12-15.

[39] CEQA Guidelines define feasibility as capable of "being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Cal.Code Regs., tit.14, § 15364.

[40] Cal.Code Regs., tit.14, § 15126.6(f)(1). See, e.g., *Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 288 (finding that an alternative to develop a university athletic stadium jointly with the city was properly rejected based on a prohibition to spend funds on a non-university stadium and the city's documented lack of interest in a joint stadium project).

[41] Another such alternative site could include prioritizing the on-dock parking structure for which the OHD has sought federal funding over the past several years, which is intended to store over 7,000 vehicles. Commenters' February Letter, p. 71 (citing Oxnard Harbor District, Economic-Environment Partnership, Slide presentation (undated), Slides 29 and 30); see also https://maritime.dot.gov/PIDPgrants. While not all information about this proposal is public, it is apparent that it is not speculative; the Port has hired consultants to study this parking

Finally, the FEIR once again ignores the current availability of zero-emission technology[42] and GLOVIS' role as a leading regional maker of heavy-duty Class 8 zero-emission trucks in its rejection of the Electric Car Carrier Truck Alternative. During public meetings and in public statements, the OHD frequently highlights its alleged commitment to a zero-emission transition, and yet when an opportunity arrives to make a clear commitment that investment is not even considered or analyzed. In order to begin to address the air quality impacts from the Port on the surrounding community, the OHD must invest in a zero-emission transition and establish near-term milestones to achieve that vision, such as the use of zero-emission car-carriers. In their expert reply to the FEIR, Matt Hagemann and Dr. Paul E. Rosenfeld identify several mitigation measures related to zero-emission technology that the City should consider and evaluate to address air quality impacts from the Project.[43]

Due to deficiencies described above and in previous letters, the EIR contains an inadequate discussion of project alternatives in violation of CEQA.

VI. Mitigation Measures Offered in FEIR Continue to be Inadequate

Under CEQA, a public agency cannot approve a project if there are "feasible mitigation measures which substantially lessen the significant environmental effects" of the project.[44] Any potential mitigation measure must be at least partially effective in reducing the significance of the impacts at issue.[45] The FEIR fails to offer mitigation measures that meet this standard. Since the FEIR does not evaluate the full scope of the Project due to an overly narrow project description and project objectives, it fails to analyze, much less address, the significant impacts that would result from the Project. Given that most mitigation measures in the FEIR went unaltered,[46] those measures continue to be inadequate and will not substantially lessen the significant environmental effects of the full scope of the Project.

Moreover, the few updates made to mitigation measures for biological resources and cultural and tribal resources in the FEIR continue to fall short of addressing the impacts from the Project. For instance, the addition of a preconstruction wildlife survey to the biological resource mitigation measures will be insufficient in detecting special status species, as discussed in detail by Dr. Shawn Smallwood.[47] As a result, the FEIR's mitigation measures are deficient, and new measures must be considered following a complete evaluation of the Project's full impacts.

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structure proposal. Commenters' July Letter, p. 13 (citing Oxnard Harbor District, Professional Services Agreement (May 26, 2021); and Oxnard Harbor District Comprehensive Economic Development Strategy at p. 50 (2021)).

[42] Commenters' February Letter, pp. 71-83; Commenters' July Letter, p. 15. There are companies working on developing zero-emissions Class 6-8 car carrier trucks and a commitment by the OHD to order and use these carriers could drive additional investments in this type of technology. See Namrita Chow, Electric car carriers promise to pack a punch, Automotive Logistics, access Oct. 17, 2022 at 4:52pm, https://www.automotivelogistics.media/finished-vehicle-logistics/electric-car-carriers-promise-to-pack-a-punch/42868.article, attached hereto as Attachment 6.

[43] Attachment 4, SWAPE Report, pp. 12-13 (hereinafter "SWAPE report").

[44] Cal. Pub. Res. Code § 21002.

[45] *Sierra Club v. County of Fresno*, (2018) 431 P.3d 1151,1166.

[46] Commenters' February Letter, pp. 63-67.

[47] See Attachment 5, Smallwood Reply Letter (Oct. 18, 2022), pp.8-9 (hereinafter "Smallwood Reply Letter").

VII. The FEIR Inadequately addresses the Cumulative Impacts

The FEIR's flawed cumulative analysis violates CEQA. The City claims that Table 4-1 lists all projects that could contribute to considerable cumulative impacts.[48] The FEIR also acknowledges various Port projects that are in development, including the 250-acre Multimodal Logistics Park, channel deepening, berth widening, on-dock expansions, expansion of rail lines, the Structure for Transfer of Automobiles Creating Key Economic Development (STACKED) Project, off-Port Cargo storage yards and overall expansion of Port Operations, the INVEST Project, the BUILD Project, and the Port Intermodal Corridor (Hueneme Modernization Project).[49] Yet, the FEIR fails to include relevant projects in its cumulative analysis.

A. The FEIR Misstates and Improperly Rewrites CEQA Requirements for Cumulative Impacts

The FEIR attempts to re-write the CEQA process for what must be considered in a cumulative impact analysis.

The City admits that CEQA requires that the FEIR address cumulative impacts.[50] Cumulative impacts are those that result from "the combination of the project evaluated in the EIR together with other projects causing related impacts."[51] The incremental effects of an individual project "are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."[52] Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.[53] A relatively "small" impact is not insignificant under CEQA if it contributes to an existing environmental problem.[54]

The City also admits CEQA requires a cumulative impact analysis to contain, at minimum, either 1) a list of past, present, and reasonably anticipated future projects, including those projects outside the agency's control that produce related or cumulative impacts[55] or 2) a summary of such projections contained in an adopted general plan or related planning document

[48] FEIR, Section 4.2, p. 4-2.
[49] FEIR, Section 12.4.2, pp. 12-17 to 12-18.
[50] FEIR, Section 4.1, p. 4-1; Cal.Code Regs., tit.14, § 15130; *see also* Cal.Code Regs.,tit.14, § 15355
[51] Cal.Code Regs., tit.14, § 15130(a)(1).
[52] *Id.* at § 15065(a)(3).
[53] *Id.* at § 15355(b) (The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time).
[54] "[A] project's cumulative environmental impact cannot be deemed insignificant solely because its individual contribution to an existing environmental problem is relatively small." *See, San Francisco Baykeeper, Inc. v. State Lands Comm'n* (2015) 242 Cal.App.4th 202, 223. "In fact, 'the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant.'" *Id.* (quoting *Cmtys for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 120).
[55] FEIR, Section 4.1, p. 4-1; CEQA suggests that agencies consider factors such as the nature of the environmental resource examined, location of project, and type. Cal. Code Regs., tit.14, § 15130(b)(2).

that evaluates regional or areawide conditions.[56] The cumulative impacts analysis of this Project continues to remain flawed.

As with the Project Description, the FEIR's failure to include several projects in its cumulative impacts analysis stems from its erroneous understanding of the CEQA requirements. The FEIR claims that several pertinent projects need not be considered in its list of past, present, and reasonably anticipated future projects because (1) "each cumulative development project represented in Table 4-1 was "determined to be reasonably foreseeable by the City based on applications that the City received at the time the Notice of Preparation (NOP) for the Draft EIR was released (June 25, 2020)"[57]; and (2) the City does not consider conceptual long-range projects under the jurisdiction of another lead agency to be reasonably foreseeable.[58]

Commenters address each of these excuses in turn. First, whether a project is a "reasonably anticipated" does not turn on whether the City has received an application for it. Indeed, such a requirement is nowhere to be found in the City's or the State's CEQA guidelines. Because this element is not required under law, it should not factor into which projects are listed. Second, as plainly stated in the law, the agency must consider any project that can reasonably have cumulative impacts even if "those projects [are] outside the agency's control." Thus, the legal excuses provided by the City do not pass muster.

B. The FEIR's Conclusions Regarding the Projects Included in the Cumulative Analysis Are Not Supported by Substantial Evidence

The City cites to three different reasons why the projects commenters list should not be considered: (1) that some cumulative impacts are speculative; (2) they are not within the proposed geographic zone; and (3) despite proposed increases in passageways for rail and freight traffic, *this project* doesn't change capacity requirements.[59] These objections are unfounded.

First, commenters have pointed to several projects that could impact the area surrounding the 34-acre site with supporting evidence demonstrating why they are not speculative. For example, the proposed widening of Hueneme Road to four lanes included in the Roads and Transportation Five-Year Capital Improvement Program; how the Port has invested in a new rail line with GLOVIS; and the capital investments to deepen berths to accommodate larger capacity vessels.[60] The City makes no effort to engage with the wealth of evidence of these substantial

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[56] *Id.* at § 15130(b)(1).
[57] FEIR, Section 12.4.2, p. 12-17.
[58] *Id.*, at p. 12-18.
[59] *Id.*, at pp. 12-17 to 12-18.
[60] Commenters' February letter at pp. 19-20 (citing INFRA FY19: Multimodal Optimization & Vehicle Efficiency Project Summary, PROD-00002504; INFRA FY20 Application Project Summary; 2020 OHD Comprehensive Economic Development Strategy, PHCN0002370; 2020 OHD Comprehensive Economic Development Strategy, PROD-PHCN0002353; INFRA FY19 Multimodal Optimization & Vehicle Efficiency Project, PROD-PHCN00005158; OHD Board of Commissioners Meeting Agenda- September 11, 2017-Press Report Attachment, PROD-00002699; The Hueneme Modernization Project BCA Appendix - March 17 2021, PROD-0004367; The Hueneme Modernization Project INFRA Grant Application FY2021, PROD-0003201; Ventura County Freight Corridor Study, (October 2021), Prepared by Iteris, Inc., on behalf of Southern California Council of Governments, The Port of Hueneme, Caltrans and Ventura County Transportation Commission at 36, PROD-PHCN0001900-2126).

plans. The record evidence demonstrates that concrete steps have been taken to bring the listed projects into fruition and disprove the City's conclusion that these projects are "speculative."[61]

Second, commenters have provided figures for the proposed developments including a figure showing the relative locations of the 34-acre site to the 250-acre site, a figure showing the relative position of the STACKED project (on the North Terminal), and another showing the traffic pathways and the potential widening of Hueneme Road.[62] The City's response to these relevant images has been to claim that these images "do[] not raise an issue related to the adequacy of any specific section or analysis of the Draft EIR."[63] At the same time, the City notes that the cumulative impacts are only assessed in the geographic area "bound by Bard Road to the north; Ormond Lagoon Waterway/Edison Drive to the east; the Pacific Ocean to the south; and Ventura Road and other areas within the City of Port Hueneme to the west, but not within the Port of Hueneme or Naval Base Ventura County ("Navy") Port Hueneme."[64]

As described above, the City cannot shirk its duty to review cumulative impacts just because a project may be in another agency's control. Thus, delineating a line for any project "within the Port of Hueneme" is legally void, particularly given how the Port is viewing its many expansion projects as interconnected and in furtherance of their stated goal of expanding throughput. Furthermore, the lines drawn at Bard Road, Ventura Road, and Edison Drive are internally inconsistent. For example, the City addresses air quality concerns arising from Port operations and agricultural use which are outside these boundaries.[65] The City also extends the VMT analysis to Camarillo Airport and Tuff shed – both of which are outside these arbitrary lines.[66] The City cannot cherry pick instances in which to apply these arbitrary boundaries in a self-serving manner. The City cites to no authority for setting these specific limitations. At the very least, the city must explain why it chose these boundaries as supported by substantial evidence e.g., scientific studies indicate that emissions from facilities do not travel beyond "X" miles. In summary, these geographic boundaries are arbitrary and not supported by substantial evidence.

Even within these arbitrary boundaries that the City has set, several projects listed have at least some portion of their operations within this geographic region. The City cannot dismiss <u>all</u> these projects as outside the geographic area without taking a hard look at the impacts that portions of these proposed projects will likely have.

Third, the City admits that the "project would result in less trucking and more rail on/off moves compared to existing conditions" yet, the City concludes that it doesn't need to conduct a cumulative impact analysis because "the City has not received an application for a new rail project."[67] Similarly, in response to commenters noting that there are berth widening and

[61] FEIR, Section 12.5, Responses to Comment Letter #206, Response Nos. 206-35 to 206-38, pp. 12-1164 to 12-1165.
[62] See FEIR, Section 12.5, Responses to Comment Letter #206, Response No. 206-17, p. 12-1162; Response No. 206-25, FEIR p. 12-1163; and Response No. 206-38, FEIR p. 12-1165.
[63] *Id.*
[64] FEIR, Section 12.4.2, pp. 12-17 to 12-18.
[65] FEIR, Section 5.33, p. 5.3-8.
[66] FEIR, Section 12.4.1, p. 12-13
[67] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-23, p. 12-1163.

dredging projects that would increase shipping traffic, the City concludes that new cars stored at the vehicle storage facility would not require additional ships.[68] Even assuming that the temporary 34-acre site will neither facilitate an increase in goods movement by ship nor rail nor truck in the area (a fact that commenters do not concede), the fact that all three pathways propose to be extended in this exact area reflect, without a question, significant impacts. Simply, the City fundamentally and mistakenly conflates these points in the FEIR and leaves the Planning Commission and the public with an incomplete cumulative impacts analysis.

Finally, even with the projects that have been listed in Table 4-1, the City undertakes no analysis of *how* the listed projects will impact the area surrounding the 34-acre site – including but not limited to additional emissions that might result and how that could impact vulnerable populations.[69] In summary, the EIR's cumulative impacts analysis remains deficient such that the FEIR cannot be certified.

VIII. The FEIR Fails to Consider Environmental Justice Impacts and Violates CEQA

The temporary 34-acre storage site is located next to low-income, densely populated neighborhoods in south Oxnard. As commenters note in their February letter, a Report prepared by the California Office of Attorney General ("OAG"), provisions of CEQA, and Government Code Section 11135 require lead agencies to study the environmental justice impacts of projects and to mitigate those impacts.[70] Part of the discussion in the FEIR must include an evaluation of the location of the project because the significance of an impact on people and the environment may change based on the project's setting.[71] Commenters pointed to studies demonstrating how California communities of color and low-income communities bear a disproportionate burden of the state's diesel trucking emissions.[72] Commenters also highlighted that the nearest school is only 780 feet from the Project site and the proposed Project would also be located as close as 360 feet from residences located to the northwest, north, and northeast of the Project site.[73]

To these points, the City's response has been to point the public to Global Response No. 5 on environmental justice impacts. [74] This response is insufficient. Although the City admits that the proposed Project would "result in a minor increase in vehicle traffic…[due to] worker vehicle trips, delivery of heavy-duty equipment and materials, and haul trips," it nevertheless concludes "impacts would be less than significant on sensitive receptors." This conclusion is based entirely on the assertion that the project site is "not located in an area with poor circulation or heavy traffic." The City points to no study supporting its circulation finding and proffers no

[68] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-21, p. 12-1163.
[69] FEIR, Section 4.2, Table 4-1, p. 4-2.
[70] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-180 to 206-182, p. 12-1189 (citing the Office of the California Attorney General, *Environmental Justice at the Local and Regional Level* (2012), p. 3, *available at* https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/ej_fact_sheet.pdf).
[71] *Id*.
[72] FEIR, Section 12.5, Responses to Comment Letter #206, Response No. 206-183, p.12-1189 (citing Union of Concerned Scientists, *Inequitable Exposure to Air Pollution from Vehicles in California*, fact sheet (Feb. 2019), *available at* https://www.ucsusa.org/sites/default/files/attach/2019/02/cv-air-pollution-CA-web.pdf.)
[73] FEIR, Section 12.5, Responses to Comment Letter #206, Response No. 206-185, p. 12-1190 (citing DEIR, p. 5.3-9)
[74] FEIR, Section 12.4.2, p. 12-11

evidence in support of the traffic patterns. In fact, with the additional projects described above, it would seem that the City has conveniently omitted several projects in the pipeline that would increase traffic and emission patterns.

Commenters appreciate that the City has added language responding to commenters' concerns associated with nearby power plants, superfund site, and factories.[75] The City summarily concludes that the "distance between the project" and these sites would not create a significant hazard to the public.[76] However, the City fails to provide the underlying data, study, or processes used to come to this determination. Neither the Commissioners nor the public should accept conclusions that have not been properly substantiated – especially where the health and safety of vulnerable populations and overburdened communities are at stake.

IX. The City has Failed to Address Deficiencies in Language Access, Which has Further Frustrated Meaningful Public Review of the EIR Documents

The City claims that it is under no obligation under State law (CEQA or otherwise) to translate environmental review documents into Spanish or any other language.[77] This response completely ignores comments previously submitted highlighting the fact that limiting public access violates a core tenet of CEQA[78] – that "the public holds a 'privileged position' in the CEQA process 'based on a belief that citizens can make important contributions to environmental protection and on notions of democratic decision making.'"[79]

While the City acknowledges that CEQA, "deems public participation and comment during any environmental review process as an essential part of the CEQA process," it has done very little to offer document translation or interpretation. In fact, according to the FEIR's response to comments, only the Port has offered the minimal language access services in the form of a Spanish-translated Executive Summary from the DEIR, and "a video in Mixteco explaining the contents of the Draft EIR."[80]

Under the California Bilingual Services Act, State agencies must distribute applicable translated written materials if the State agency "serves a substantial number of non-English-speaking persons" and "[t]he information solicited, required, or furnished affects or may affect the individual's rights, duties, or privileges with regard to that agency's services or benefits." Although, as local agencies, the City and Port are not directly subject to this rule, refusing to translate environmental documents restricts limited or non-English speaking individuals' ability and right to meaningfully participate in environmental decisions that impact their health and safety. Given the importance of this Project to the many residents for whom English is not a primary language, we reiterate our call to translate the EIR and make it accessible by recirculation in order to ensure meaningful public review.

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[75] *Id.*
[76] *Id.*
[77] FEIR, Section 12.4.2, p.12-9.
[78] See Commenters' July Letter.
[79] Cal. Code Regs. tit. 14, § 15201 (1992).
[80] FEIR, Section 12.4.2, p.12-9.

X. The FEIR's Vehicle Miles Travelled Analysis Remains Woefully Inadequate and Does Not Support a Finding of No Significant Traffic of VMT Impacts

The City admits that neither it, nor the City of Port Hueneme have adopted guidelines or significant criteria for assessing VMT by development projects[81] — a requirement under California Public Resources Code §21099 and 14 Cal. Code Regs § 156064.3 (CEQA Guidelines). Rather than directly responding to our comments highlighting the need for a more robust VMT analysis for the Project, the FEIR points to the same conclusory and vague explanation in its Global Response No. 6 to justify not doing more to provide the Planning Commission and the public with sufficient information to appreciate the full scope of traffic impacts. The FEIR's conclusion that no VMT impacts would result from the Project is unsupported by what little analysis is offered for three key reasons.

First, the FEIR's application of Governor's Office of Planning and Research's ("OPR") Technical Advisory on Evaluating Transportation Impacts ("Technical Advisory") is flawed. The FEIR fails to adopt any specific methodology or criteria for its evaluation of the Project's VMT that would make its conclusions verifiable based on OPR's guidance. It inappropriately adopts a screening threshold when no such threshold applies to this Project and it misapplies the qualitative analysis outlined in the Technical Advisory. The FEIR's conclusions that no VMT or traffic impacts are present are therefore unreliable.

The FEIR contends that the qualitative analysis approach outlined in OPR's Technical Advisory is the appropriate evaluation for the Project's VMT impact.[82] It also summarily adopts the DEIR's conclusion that no VMT impacts would result from the implementation of the Project without showing how the qualitative analysis approach was specifically applied in this case. The City admits based on the screening thresholds outlined in OPR's Technical Advisory — which apply to residential, office, retail projects, land use plans, and transportation projects — that this project would not "screen out"[83], i.e., that further analysis would be required even under a qualitative approach. Yet, the FEIR reaches the conclusion that "the project would lead to a less-than-significant transportation impact" using the same retail threshold it admits is inapplicable.[84]

The Technical Advisory does recommend, however, that "[a]gencies should consider whether their actions encourage development in a less travel-efficient location by limiting development in travel-efficient locations."[85] No such data-supported analysis was provided in this FEIR.

Second, the FEIR's analysis on VMT and traffic impacts is conclusory and relies on contradictory assumptions. For example, in its assessment of alleged VMT reductions, the City assumes the elimination of two existing vehicle storage facilities to conclude overall VMT reduction while at the same time defending the DEIR's analysis of the traffic effect of the Project

[81] FEIR, Section 12.4.2, p.12-13.
[82] *Id.*
[83] *Id.*
[84] *Id.*
[85] California Governor's Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts on CEQA (OPR Technical Advisory) (December 2018), p. 17; available at: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

"under existing and cumulative conditions, with due consideration of other related projects in the area."[86] These inconsistencies lead to self-serving conclusions that simply cannot be relied on.[87] If current conditions are assumed, then VMT analysis would have to account for the higher VMT that the Project would produce as a result of having the approximately 240 daily trips made in individual cars (according to one estimate provided), compared to the more limited car carrier truck trips making the haul to the furthest existing site. Even using that simplistic comparison, which we do not concede qualifies as a VMT threshold under either the Technical Advisory or CEQA guidelines, the Project would still generate more vehicle miles travelled on its own as compared to the furthest existing site.[88] The FEIR attempts to avoid dealing with this increase in VMT by attempting to shoehorn a threshold analysis for new retail facilities that is inapplicable to the Project.

Third, the FEIR ignores evidence submitted showing that the traffic report that underlies much of the City's environmental review was merely rubber stamped and created in a way to offer cover for predetermined conclusions. It therefore cannot be relied upon to conclude that no impacts will result from the project.

As commenters pointed out in their July 1, 2022 comment letter to the City, documents made available in response to Public Records Act requests suggest that there was never any intention on the part of the Port applicant or the City to vet the real traffic impacts of the 34-acre site. In fact, emails between Port staff and a land-use planning specialist suggest that the City might forgo a traffic report altogether by providing a letter, noting, "the City just needs a paper trail - this way they can cover themselves with a letter from a professional."[89] In subsequent emails, the hired consultant confirmed that they would prepare the trip generation analysis based solely on the Project Description and a Design letter[90]— without considering the requirements outlined in CEQA guidelines or the recommendations found in the Ventura County Freight Corridors Study. These revelations, which the FEIR neglects to address, cast further doubt on the reliability of calculations, information, and analysis used to support the FEIR 's conclusion that no significant traffic or VMT-related impacts will occur.

Given the cursory manner in which the traffic study and VMT analysis were conducted, it is unsurprising that the FEIR is replete with inconsistencies and contradictions that call into question its reliability as an informational document. We call on the Planning Commission to reject this FEIR. Moreover, the City should fix its lack of baseline methodologies and thresholds for assessing the impact of VMT from this Project. Until these errors are corrected, the FEIR fails to meet basic standards under CEQA.

[86] FEIR, Section 12.5, Responses to Comment Letter #206, Response 206-51, pp. 12-1166 to 12-1167.
[87] Note: the FEIR does not address the inconsistent assumptions highlighted in our February 14, 2022 comment letter wherein we highlight that in order to switch to an analysis that would presume the elimination of two existing sites, the agency must first justify this decision by showing that the existing conditions are somehow misleading or without informational value. No such analysis has been done in the FEIR. See Commenters' February Letter, p. 25.
[88] See *id*., at pp. 24-25.
[89] Commenters' July Letter (citing emails between Dona T. Lacayo and Kevin Waldron at p. 2 of 8 (Aug. 2018).
[90] *Id*. (citing emails between Dona T. Lacayo and Darryl F. Nelson at p. 1 of 11 (Aug. 2018).

XI. The FEIR Continues to Rely on Flawed Air Emissions Modeling, Lacks the Requisite Health Impact Analysis, and Fails to Properly Assess Greenhouse Gas Emissions.

The FEIR fails to justify its modelling used to calculate greenhouse gas emissions ("GHG") and air quality impacts and continues to lack the necessary analysis on health impacts. These flaws were originally outlined in a findings report submitted by experts Matt Hagemann and Dr. Paul Rosenfeld and incorporated into commenters' February 14, 2022 letter.[91] Hagemann and Rosenfeld have reviewed the FEIR and responses to those comments and have concluded that many of the justifications used by the City for their approach to air emissions, health hazards, and GHG emissions remain fundamentally flawed.[92] Several of these flaws in the FEIR are outlined below:

- **Hazards and Hazardous Materials –** The FEIR fails to address the lack of a Phase I ESA analysis, despite being a key element called for in the City of Oxnard 2030 General Plan Safety and Hazards Chapter. More specifically, the FEIR does not explain why Policy H-7.12, which requires a hazardous materials study for any new development, was not followed.
- **Air Quality and CalEEMod Model -** The FEIR again fails to provide access to, or justify the use of, the underlying data inputs used to calculate the Project's emissions. More specifically, the FEIR refers to "applicant provided" information for its inputs on the length of construction for the site, yet the underlying data, and the justification for using it, are not made publicly available in the documents attached to the FEIR. This makes it impossible to verify whether the changes to defaults accurately reflect the proposed construction schedule. Despite the City's claims that relying on "applicant provided" information is sufficient, CalEEMod requires that information used to change defaults be supported by substantial evidence as required under CEQA.[93] The calculations, therefore, remain unreliable and the City must either justify these modifications with substantial evidence or revise its calculations. Similarly, the FEIR's modeling concerning construction activities is flawed as the FEIR arbitrarily modified construction lengths based on different phases of development – potentially underestimating peak daily emissions. Similarly, the FEIR fails to provide substantial evidence for changing off-road construction equipment amounts therefore making it challenging, if not impossible, to verify if these changes are accurate.
- **Greenhouse Gas Emissions –** The conclusion that GHG impacts are "less-than-significant" relies on the same incorrect and unsubstantiated air modelling described above. Moreover, the FEIR relies on outdated thresholds which the City fails to justify through substantial evidence. This has resulted in the FEIR failing to identify any potentially significant GHG impact from the project.

[91] See Letter from Matt Hagemann and Dr. Paul E. Rosenfeld to Fernando Gaytan (February 9, 2022), Attachment A to Commenters' February Letter.
[92] See Letter from Matt Hagemann and Dr. Paul E. Rosenfeld to Fernando Gaytan (October 17, 2022), attached hereto as Attachment 4, SWAPE Report.
[93] See SWAPE Report.

This flawed analysis of air pollution impacts also extends to the FEIR's treatment of the necessary mitigation and health impacts associated with it. In concluding that the project will not reach the thresholds set by Ventura County Air Pollution Control District ("VCAPCD"), the FEIR relies on an arbitrarily restrictive view of the Project without accounting for the inconsistencies between the Project Description and Objectives and ample evidence demonstrating that this project encompasses more than the 34-acres described and for longer than five years. This arbitrarily restrictive scope is also used by the City to claim that the Project will not pass emissions thresholds set by the VCAPCD[94] and to justify its refusal to conduct the type of Health Impact Assessment required under the California Supreme Court case, *Friant-Ranch.*

In short, the FEIR's conclusion misses the mark. While CEQA may not mandate an in-depth risk assessment outright:

> "CEQA requires that the EIR have made a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce."[95]

Because the FEIR fails to address flaws in its modeling, its estimation of the pollutants generated by the Project is unreliable. Moreover, the narrow and cursory analysis that the FEIR does offer on air pollutants and potential health impacts, is unverifiable given the lack of access to the underlying data. This foundational information is necessary for informed decision-making and public participation. The City, therefore, cannot support its conclusion that the Project falls under the VCAQCD's thresholds. Even so, the FEIR misinterprets *Friant-Ranch* wherein the California Supreme Court found that CEQA requires analysis correlating increased air emissions to probable resulting human health effects.[6] The City cannot claim that no emissions will result from this Project just as it cannot avoid the necessary health impact analysis required under *Friant-Ranch* by simply stating that emissions will not surpass thresholds it has arbitrarily chosen to apply.

As further highlighted in Hagemann and Rosenfeld's review and commenters' letters, the FEIR also fails to address the following:

- **Diesel Particulate Matter emissions** – The City fails to include a health impact of using equipment producing diesel particulate matter ("DPM") emissions during a construction phase of the Project slated to last over 180 to 200 days and its justification for not doing so is not supported by the evidence. More specifically, as the Hagemann and Rosenfeld report points out, "until both the Project's construction and operational health risks are quantified, summed together, and compared to the VCAPCD threshold of 10 in one million, the

[94] SWAPE Report, pp. 5-6.
[95] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 521

FEIR's response is inadequate" and does not evaluate the Project's potential health risk impacts.

- **Comprehensive assessment of Toxic Air Contaminants** – The FEIR fails to provide a "good faith reasoned analysis" of the health effects of any increase in Toxic Air Contaminants caused by the Project, including those that result from the combustion of diesel and gasoline engines associated with the entire car storage complex, the 34-acre and the 250-acre sites, increased Port-related emissions due to augmented cargo throughput, and construction related to the aforementioned projects.
- **Encroachment of Port-Related Activities** – The FEIR also fails to adequately address comments concerning the shift in port-activity emissions towards south Oxnard populations adjacent to the Port-serving freight corridors like Hueneme Road.

In short, the FEIR ignores critical flaws in its analysis and inadequate data verification that call into question its reliability as an informational document for environmental assessment. The law requires that the public and the Planning Commission have an accurate assessment of potential health risks and air quality impacts – which this FEIR fails to deliver.

XII. FEIR Continues to Underestimate Impacts on Special Status Species, Habitats, and Wildlife Movement

The City failed to provide good-faith, reasoned responses to the comments raised regarding the DEIR's biological impacts analysis.[96] Instead, the City offered partial responses and conclusionary statements that ignores large swaths of commenters' concerns and failed to make significant changes to its analysis to ensure the full scope of direct, indirect, and cumulative biological impacts from the Project are evaluated by the FEIR. Therefore the FEIR's conclusions that there will not be a significant impact on biological resources from the Project remains unsupported by substantial evidence.

In its responses, the City avoided addressing the full concerns raised in the expert report prepared by Dr. Shawn Smallwood that determined that significantly more special status species likely rely on the property for habitat, foraging, hunting, mating, or other needs.[97] The FEIR dismisses this evidence entirely and continues instead to rely on flawed reconnaissance surveys that failed to observe or detect special status species.[98] Further, Dr. Smallwood identified flaws in the additional assessment attached to the FEIR as Appendix FA.[99] In fact, he explains that the databases relied upon by the FEIR show bird species using nearby sites with similar levels of disturbance as the Project site, which undermines the FEIR's conclusion that the Project site cannot be habitat to special status species.[100] The FEIR's over-reliance on inadequate analysis and surveys means it grossly underestimates the special status species that may use the site and the value of this Project property as important habitat. Eliminating 34-acres of habitat (regardless

[96] These comments are laid out in significant detail in Commenters' February Letter, at pp. 39-46 (citing Smallwood report).
[97] Commenters' February Letter, at pp. 39-42.
[98] See Commenters' February Letter, at pp. 40-41 (citing Smallwood report); Smallwood Reply Letter (Oct. 18, 2022), at pp. 3-5.
[99] Smallwood Reply Letter (Oct. 18, 2022), at pp. 4-5, 15.
[100] Smallwood Reply Letter (Oct. 18, 2022), at p. 8.

of whether it is used for breeding or wintering) would result in a significant impact on special status species, thereby meeting the City's threshold of significance for a biological resources impact.

The slight update to the proposed mitigation measures is not sufficient to lessen the impact below the threshold level of significance. As was raised in previous comments, an additional pre-construction survey is unlikely to detect species that are notoriously difficult to detect in surveys, such as the burrowing owl.[101] Moreover, the fact that there may be a detectable presence of a special status species at the time of the pre-construction survey does not change the fact that after five years of intensive use as a parking lot this habitat will be, at best, unavailable during that period and at worst irreparably damaged or destroyed.[102]

The City's refusal to acknowledge the value of this property to wildlife extends to its alternative analysis as well. The FEIR concludes that using the 34-acre site as open space would not lessen the significant impacts from the Project, but that is based on an erroneous conclusion that building a parking lot on un-developed property would not impact special status species or wildlife movement, which is not supported by substantial evidence.[103]

Commenters incorporate by reference all points raised in Dr. Smallwood's October 18, 2022 reply letter.

XIII. The FEIR must be Recirculated Before Project Approval and Certification

Under CEQA, an EIR must be re-circulated for review and comment whenever significant new information becomes known to the lead agency and is added to the EIR, after public notice of the availability of the draft document has been made, and before the EIR is certified.[104] Under such circumstances the lead agency is specifically required to re-notice the environmental review document to the public and all responsible agencies, and is required to obtain comments from the same, before certifying the document's impacts and alternatives analyses as well as any mitigation measures.[105] A lead agency's decision not to recirculate an EIR must be supported by substantial evidence.[106]

"Significant new information" includes any information regarding changes in the environmental setting of the project under review.[107] It also includes information or data that has been added to the EIR and is considered "significant" because it deviates from that which was presented in the draft document, depriving the public of a meaningful opportunity to comment upon a significant environmental effect of the project, or a feasible way to mitigate or avoid such an effect at the time of circulation of the draft.[108] Recirculation is further required where the

[101] Smallwood Reply Letter (Oct. 18, 2022), at pp. 8-9.
[102] See *id*., at p. 9.
[103] FEIR, Section 12.4.2, p. 12-16.
[104] Pub. Res. Code § 21092.1
[105] *See id*.; *see also*, Pub. Res. Code § 21153.
[106] Cal. Code Regs. tit. 14, § 15088.5(e)
[107] *Id*., at § 15088.5(a).
[108] *Id*.

draft EIR is "so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."[109]

While re-circulation is an exception and not the rule in the preparation of final environmental review documents, it is an exception that must be invoked here – where the absence of significant information rendered the DEIR ineffective in meeting CEQA's substantive mandates, and now, where included, the addition of significant new information substantially changes the FEIR's analyses and conclusions regarding the Project's impacts, feasible alternatives and required mitigation.[110]

As stated in numerous comments to the DEIR, that document failed to provide critical information regarding the duration, scope, and mitigation of the Project's impacts; it failed to adequately describe fundamental information relating to the phasing and timing of the project's implementation and phase out by claiming to add permanent jobs to the region; it lacked adequate detail specifically regarding the construction and operations phases of the Project, including mitigation; and it contained analyses and mitigation measures relating to the Project's air quality, traffic, human health and biological resources impacts based on incorrect datasets and formulas.

In some instances, the FEIR erratically and arbitrarily includes selective new data into its analysis of the Project's impacts, and in others critical information remains absent from the document.

The FEIR contains significant new information and must be recirculated for public review and comment before being considered by the Planning Commission.[111] Although this new information does not cure the inadequacies pointed out in comments to the DEIR, the City has added new information that that the public should be allowed to thoroughly review and evaluate with sufficient opportunity to further comment prior to a decision by the Planning Commission. This new information includes, but is not limited to: a revision of Mitigation Measure MM-BIO01 related to biological resources; the addition of land use policies to be considered pertaining to aesthetics; different data on maximum daily construction emissions and maximum daily operational emissions; the addition of a new 2022 California Native Diversity database search performed and new analysis performed resulting from a revised habitat assessment concerning biological resources; alleged revisions to the analysis and evaluation of archaeological resources and mitigation measures proposed as MM-CUL-1 and MM-CUL-2; alleged revisions to the analysis of project impacts and mitigation measures under Tribal Cultural Resources; a new listing of potential hazardous sites; a new summary of significant unavoidable impacts not previously disclosed; remodeling of the project in CalEEMod used for the project to project emissions during construction and operation; and, a list of additional previously undisclosed alternative locations considered by the City. In addition, Appendix D, Air Quality

[109] *Id*.
[110] *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal*. (1993) 6 Ca4th 1112, 1132.
[111] Cal. Code Regs. tit. 14, §15088.5.

and Greenhouse Gas Study and Appendix FA – Biological Resources Inventory 2022 were updated with new information previously not disclosed.

The FEIR also contains new references to the storage of electric vehicles at the site without any details as to whether these vehicles will require charging infrastructure at the site while the cars are being stored.[112] Thus, it is unclear whether further alterations to the site will be necessary in the near future. In short, this new information adds greater uncertainty and highlights the document's failure as an informational document.

The public must have an adequate opportunity to comment on these many changes and address any new impacts this new information may reveal. Providing just 10 days before a hearing with the Planning Commission does not provide that opportunity for meaningful public engagement concerning the new information contained in the FEIR. Given these revisions, the myriad other information, and alternative analysis added in the FEIR, recirculation is required.

Moreover, on March 21, 2022, our organizations requested that the City schedule a special meeting of the Planning Commission before deciding on whether to approve the Project[113]. Not only would this give the Commission an opportunity to hear from stakeholders and members of the public and provide for adequate language access, but it would also give the Commission time to review additional evidence that has become available after the comment period. Given the tremendous interest that this Project has garnered with over 200 written comments received, setting a special pre-determination hearing before the Commission is more than appropriate.

The City released its responses to our comments less than ten full days prior to the October 20, 2022 hearing.[114] To provide Commissioners with the opportunity to thoroughly review all the evidence, including the evidence and comments from stakeholders, the special meeting of the Planning Commission should be set at least 30 days prior to it making a final decision on this FEIR and pending Special Use Permit.

XIV. Conclusion

The FEIR's continuing informational deficiencies render it unlawful. The City's responses to commenters do not address their arguments against the adequacy of the DEIR. The FEIR contains an incomplete project description, a deficient cumulative impact analysis that omits relevant projects and impacts, inadequate alternatives analysis, and an incomplete evaluation of environmental justice, air quality, traffic, language access, public health and biological resources impacts. Accordingly, the Planning Commission should not certify an FEIR at this time and must deny the requested Special Use Permit until the City is able to present a comprehensive and accurate report of the Project's scope, impacts, alternatives, and mitigation measures.

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[112] City of Oxnard, Planning Commission Report, (October 20, 2022), p.10.
[113]See Letter from CAUSE et.al., to Jay Dobrowalski, Re: Port of Hueneme =Vehicle Storage Site Environmental Impact Report Comment Period, (March 21, 2022); available at page 141 of the Planning Commission Staff Report for October 20, 2022.
[114] Response to the comments submitted by our organizations were sent out from the email account of Senior Planner, Jay Dobrowalski at 5:00 p.m. on Monday, October 10, 2022.

Sincerely,

Radhika Kannan
Fernando Gaytan
Earthjustice

Natalia Ospina
Heather Kryczka
Natural Resources Defense Counsel

Lucia Marquez
Central Coast Alliance United for a Sustainable Economy (CAUSE)

Mati Waiya
Wishtoyo Chumash Foundation

From: Dobrowalski, Jay <jay.dobrowalski@oxnard.org>
Sent: Wednesday, July 13, 2022 9:36 AM
To: Radhika Kannan
Cc: Ospina, Natalia; Kryczka, Heather; lucia@causenow.org; lucas@causenow.org; César Nije; matiwaiya@wishtoyo.org; Fernando Gaytan; tschmitt@wishtoyo.org; Andrea Pereira Schork
Subject: Re: Supplemental Comments on Draft Environmental Impact Report for the proposed Port of Hueneme- Temporary Outdoor Vehicle Storage Facility Project (State Clearinghouse #2020069039 and PZ 18-500-02 (Special Use Permit)

This message originated outside of Earthjustice. Please use caution before opening attachments or links.

Hello Radhika,
Thank you for your recent comment letter; it has been entered into the record.
Sincerely,

Jay Dobrowalski | Senior Planner
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805.385.3948 | F: 805.385.7417
www.oxnard.org

Effective February 14, 2022, the Service Center and all public-interfacing City buildings will be open to the public.

Online services remain available through our online portal at www.oxnard.org/planning

- General inquiries should be sent via email to Planning@oxnard.org.
- For new applications, email us at planning@oxnard.org. Large projects can be shipped with prior authorization. Smaller projects may be submitted via email.
- For existing applications, contact your assigned Case Planner by direct email.

For the most up to date information on COVID-19 please visit https://www.venturacountyrecovers.org/

On Fri, Jul 1, 2022 at 4:19 PM Radhika Kannan <rkannan@earthjustice.org> wrote:

> Dear Mr. Dobrowalski,
>
> Please find attached supplemental comments submitted on behalf of the Central Coast Alliance United for a Sustainable Economy, Earthjustice, Natural Resources Defense Council, and Wishtoyo Chumash Foundation. These comments address the Draft Environmental Impact Report (DEIR) that has been prepared for the proposed "Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18-500-02 (Special Use Permit)" (the Project).

In support of these comments, we are also providing a link to a shared folder containing copies of the supporting documents and reference materials cited in our supplemental comment letter. You can access the folder by clicking on this link: Port of Hueneme: Supplemental Comments. This link will allow you to download the documents for your review.

As a courtesy, we are also sending, via FedEx, a thumb drive containing these same documents. We trust that the City will consider these comments and our supporting materials as part of the record for the proposed Project — including any materials referenced that are otherwise reasonably available to the City online.

For the reasons discussed in the attached supplemental comments, as well as previous submissions made to the City on this matter, we are urging the City to reject the DEIR in its entirety. Please let me know if you have any questions or trouble downloading the attachment.

Thank you,

Radhika Kannan

_____

Radhika Kannan
Pronouns: she/her/hers

Associate Attorney
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From: Radhika Kannan
Sent: Tuesday, October 11, 2022 3:44 PM
To: Dobrowalski, Jay
Cc: Fernando Gaytan; Ospina, Natalia; Kryczka, Heather; lucia@causenow.org; lucas@causenow.org; Andrea Pereira Schork; tschmitt@wishtoyo.org
Subject: Errata for Administrative Record: Temporary Outdoor Vehicle Storage Facility Project (State Clearinghouse #2020069039) and PZ 18-500-02 (Special Use Permit)
Attachments: Re: Supplemental Comments on Draft Environmental Impact Report for the proposed Port of Hueneme- Temporary Outdoor Vehicle Storage Facility Project (State Clearinghouse #2020069039 and PZ 18-500-02 (Special Use Permit)

Dear Mr. Dobrowalski,

We are in receipt of the Final Environmental Impact Report (FEIR) for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (State Clearinghouse #2020069039) and PZ 18-500-02 (Special Use Permit). We look forward to the hearing next week.

We wanted to bring to your attention that our supplemental comment letter submitted on behalf of the Central Coast Alliance United for a Sustainable Economy, Earthjustice, Natural Resources Defense Council, and Wishtoyo Chumash Foundation and all supporting documents and reference materials cited in our supplemental comment letter are not included in the current FEIR or the Appendices.

As you had indicated in your July 13, 2022 email (attached here), the letter and the attachments were entered into the record.

Please help us ensure that the administrative record is complete ahead of the hearing with our supplemental comment letter and the supporting attachments.

Thank you,
Radhika Kannan

Radhika Kannan
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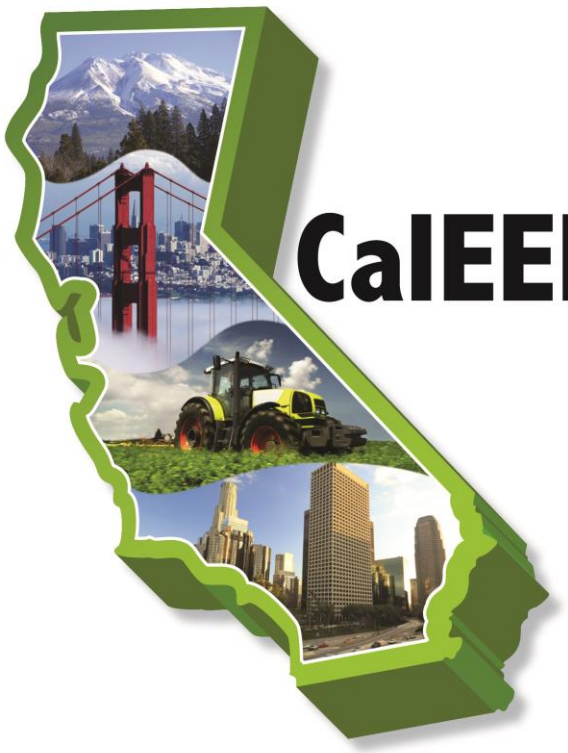
Attachment 3

- February Comment Letter—Submitted by CAUSE, Earthjustice, NRDC, and Wishtoyo Chumash Foundation re: The Port of Hueneme Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18 500 02 (Special Use Permit), submitted February 14, 2022
    - All attachments to the letter available here: 4527 - Port of Hueneme Comments - Sources Shared on February 14 2022 *
- July Comment Letter—Submitted by CAUSE, Earthjustice, NRDC, and Wishtoyo Chumash Foundation re: The Port of Hueneme Temporary Outdoor Vehicle Storage Facility Project (#2020069039) and PZ 18 500 02 (Special Use Permit), submitted July 1, 2022
    - All attachments to the letter available here: 4527 - Port of Hueneme Supplemental Comments - Sources Shared on July 1 2022*

* The following email addresses have access to this folder: jay.dobrowalski@oxnard.org, planning@oxnard.org, cityclerk@oxnard.org. Please email Radhika Kannan at rkannan@earthjustice.org or Fernando Gaytan at fgaytan@earthjustice.org if there are any access issues.



California Emissions Estimator Model®

User's Guide

Version 2020.4.0

Prepared for:
California Air Pollution Control Officers Association (CAPCOA)

Prepared by:
BREEZE Software, A Division of Trinity Consultants
in collaboration with South Coast Air Quality Management District and the California Air Districts

Date:
May 2021

Acknowledgements

This program has been developed by BREEZE Software, a division of Trinity Consultants (Trinity) for the California Air Pollution Officers Association (CAPCOA) in collaboration with South Coast Air Quality Management District (South Coast AQMD) and California Air Districts. The following individuals should be recognized for their contributions to this version of the program.

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CAPCOA also recognizes the important contributions made to CalEEMod by the Institute of Transportation Engineers (ITE) for granting permission to CAPCOA to utilize its trip generation data. ITE's *Trip Generation Manual* can be obtained by visiting ITE's website: https://www.ite.org/technical-resources/topics/trip-and-parking-generation/.

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California Emission Estimator Model (CalEEMod)®
Version 2020.4.0
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Developed by BREEZE Software, A Division of Trinity Consultants in collaboration with the South Coast Air Quality Management District and the California Air Districts.

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1 Introduction

This User's Guide (Guide) to the California Emission Estimator Model (CalEEMod)® is meant to give the user an introduction on how to use the program as well as to document the detailed calculations and default assumptions made in associated appendices. The purpose of CalEEMod is to provide a uniform platform for government agencies, land use planners, and environmental professionals to estimate potential emissions associated with both construction and operational use of land use projects. It is intended that these emission estimates are suitable for quantifying air quality and climate change impacts as part of the preparation of California Environmental Quality Act (CEQA) documents. In addition, individual districts may rely on the model's emission estimates to show compliance with local agency rules.

CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include but are not limited to the United States Environmental Protection Agency (USEPA) AP-42 emission factors, California Air Resources Board (CARB) vehicle emission models, studies commissioned by California agencies such as the California Energy Commission (CEC) and CalRecycle. In addition, some local air districts provided customized values for their default data and existing regulation methodologies for use for projects located in their jurisdictions. When no customized information was provided, and no regional differences were defined for local air districts, state-wide default values were utilized. Since resource data and regulations are constantly changing, local agencies should be consulted to determine whether there are any circumstances when updated values should be used in place of the defaults currently incorporated into CalEEMod. A majority of CalEEMod's default data associated with locations and land use are derived from surveys of existing land uses. For any project that substantially deviates from the types and features included in the surveys, site-specific data that are supported by substantial evidence should be used, if available.

The model provides several opportunities for the user to change the defaults in the model; however, users are required to provide justification for all changes made to the default settings (e.g., reference more appropriate data sources) in the Remarks box provided at the bottom of the screen before the user will be able to proceed to the next screen. Further, the user should make every effort to ensure that correct data is entered, including the choice and percent reduction of mitigation most applicable to the land use project being evaluated.

1.1 Purpose of Model

CalEEMod provides a simple platform to calculate both construction emissions and operational emissions from a land use project. It can calculate both the daily maximum and annual average for criteria pollutants as well as annual greenhouse gas (GHG) emissions. The output from these calculations can be used in the preparation of air quality and GHG analyses in CEQA documents such as Environmental Impact Reports (EIRs)

and Negative Declarations. For projects located in the jurisdiction of San Luis Obispo APCD, the model can also calculate and report the sum of reactive organic gas (ROG) and nitrogen oxide (NO_x) emissions on a rolling quarterly basis for the construction phase. In addition, CalEEMod contains default values for estimating water and energy use which may be useful for preparing hydrology and energy analyses in other sections of a CEQA document. Specifically, the model can aid the user by conducting the following calculations:

- Short-term construction emissions associated with the demolition, site preparation, grading, building, coating, and paving from the following sources:
  - Off-road construction equipment;
  - On-road mobile equipment associated with workers, vendors, and hauling;
  - Fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads. (Fugitive dust from windblown sources such as storage piles and inactive disturbed areas, as well as fugitive dust from off-road vehicle travel, are not quantified in CalEEMod, which is consistent with approaches taken in other comprehensive models.)
  - Architectural coating activities *(including the painting/striping of parking lots)* and paving (ROG).
- Operational emissions for fully built-out land use development from the following sources:
  - On-road mobile vehicle traffic generated by the land uses;
  - Fugitive dust associated with roads;
  - Architectural coating activities (ROG);
  - Off-road equipment (e.g., forklifts, cranes) used during operation;
  - Landscaping equipment;
  - Emergency generators, fire pumps, and process boilers;
  - Use of consumer products, parking lot degreasers, fertilizers/pesticides, and cleaning supplies (ROG);
  - Wood stoves and hearth usage;
  - Natural gas usage in the buildings;
  - Electricity usage in the buildings (GHG only);
  - Electricity usage from lighting in parking lots and lighting, ventilation and elevators in parking structures;
  - Water usage per land use (GHG only); and,
  - Solid waste disposal per land use (GHG only).

- One-time vegetation sequestration changes
  - Permanent vegetation land use changes
  - New tree plantings
- Mitigation adjustments to both short-term construction and operational emissions. Several of the mitigation measures described in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures[1] have been incorporated into CalEEMod.

[1] Available at: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

2 Program Installation

The CalEEMod program is distributed and maintained by the California Air Pollution Control Officers Association[2]. The most recent version can be downloaded from www.caleemod.com.

2.1 Operating System Requirements

CalEEMod was programmed using Microsoft SQL Compact Edition in conjunction with a Visual Basic Graphical User Interface (GUI). CalEEMod Version 2020.4 requires the following system requirements:

- Microsoft Windows XP, Vista, 7, 8, or 10 Operating System with Microsoft .NET Framework 4 or higher
- Microsoft SQL Server Compact 4.0
- Microsoft Access Database Engine 2010 Redistributable, 32-bit
- 300 Mb hard drive space available

2.2 Installation Procedures

To install CalEEMod Version 2020.4.0:

1. Ensure that the required Microsoft .Net framework is installed on the computer. Microsoft .Net Framework 4.0 is available free from Microsoft at: https://www.microsoft.com/en-us/download/details.aspx?id=17851. Once the file is downloaded, unzip the file anywhere onto the computer and run the installation file (setup.exe) and follow the instructions on Microsoft's website to locate the appropriate .msi file.

2. During the installation, Microsoft SQL Server Compact 4.0 will be automatically installed.

   However, if the automatic installation fails, visit www.caleemod.com, click on the Download Model tab, and select the appropriate .exe file to be installed on the computer. For 32-bit computers, double click on SSCERuntime_x86-ENU.exe to install the file. For a 64-bit computer, double click on SSCERuntime_x64-ENU.exe to install the file.

3. During the installation, 32-bit Microsoft Access Database Engine 2010 Redistributable will be automatically installed.

   However, if the automatic installation fails, go to https://www.microsoft.com/en-us/download/details.aspx?id=13255&751be11f-ede8-5a0c-058c-2ee190a24fa6=True, click on Download, select "AccessDatabaseEngine.exe" (25.3 MB), and click on Next. Once this file is downloaded, double click on "AccessDatabaseEngine.exe" file and follow the instructions to finish the installation.

   If the version of Microsoft Office is 64-bit, the 32-bit Microsoft Access Database Engine 2010 Redistributable file can be installed in passive mode by following the instructions below:

[2] CalEEMod® 2021 All Rights Reserved by California Air Pollution Control Officers Association.

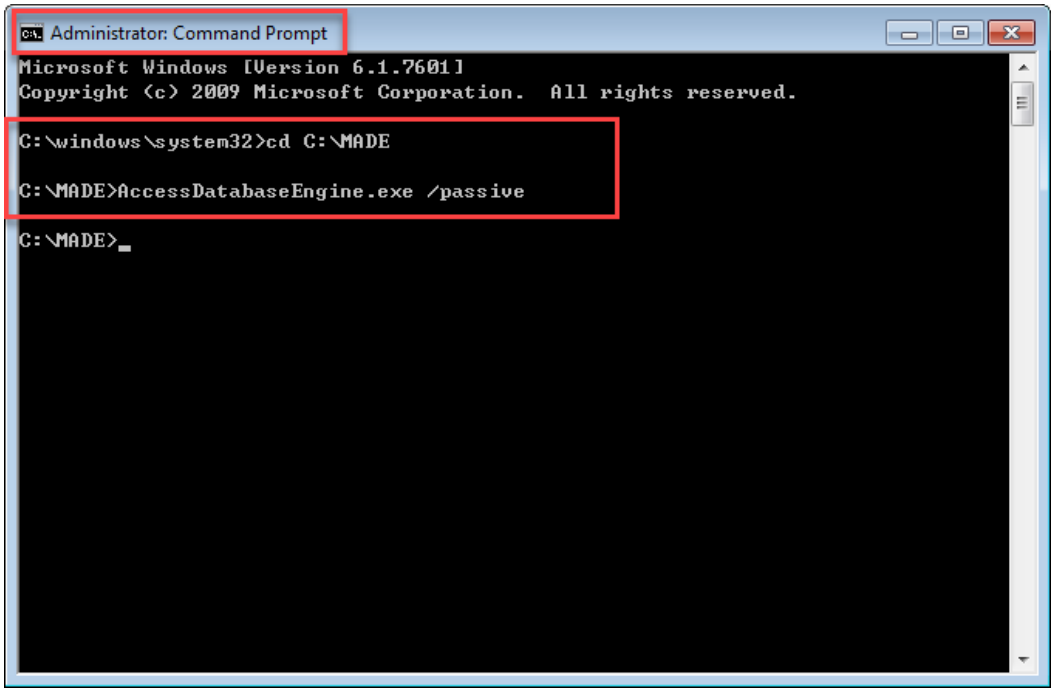
a) Go to the C: drive - - > Create a new folder "MADE" - - > Copy the 32-bit Microsoft Access Database Engine 2010 Redistributable (AccessDatabaseEngine.exe) installer to that folder

b) Start a command prompt as an administrator: Click Start - - > In the Start Search box, type cmd, and then press CTRL+SHIFT+ENTER

c) In Administrator: Command Prompt window - - > Type in "cd C:\MADE" and press ENTER

d) Type in "AccessDatabaseEngine.exe /passive" and press ENTER

e) See the following screenshot for Steps 3 c) and d)



f) 32-bit Microsoft Access Database Engine 2010 Redistributable should be installed automatically.

4. Visit www.CalEEMod.com, click on the Download Model tab, download the installation file (CalEEMod.WixSetup.Bootstrapper_2020.4.0.29.exe), click on the file and follow the instructions. Screenshots of the CalEEMod Windows Installer XML (WiX) Setup Wizard are provided at the end of this section (see pp.6-9).

5. visit www.caleemod.com, click on the Download Model tab

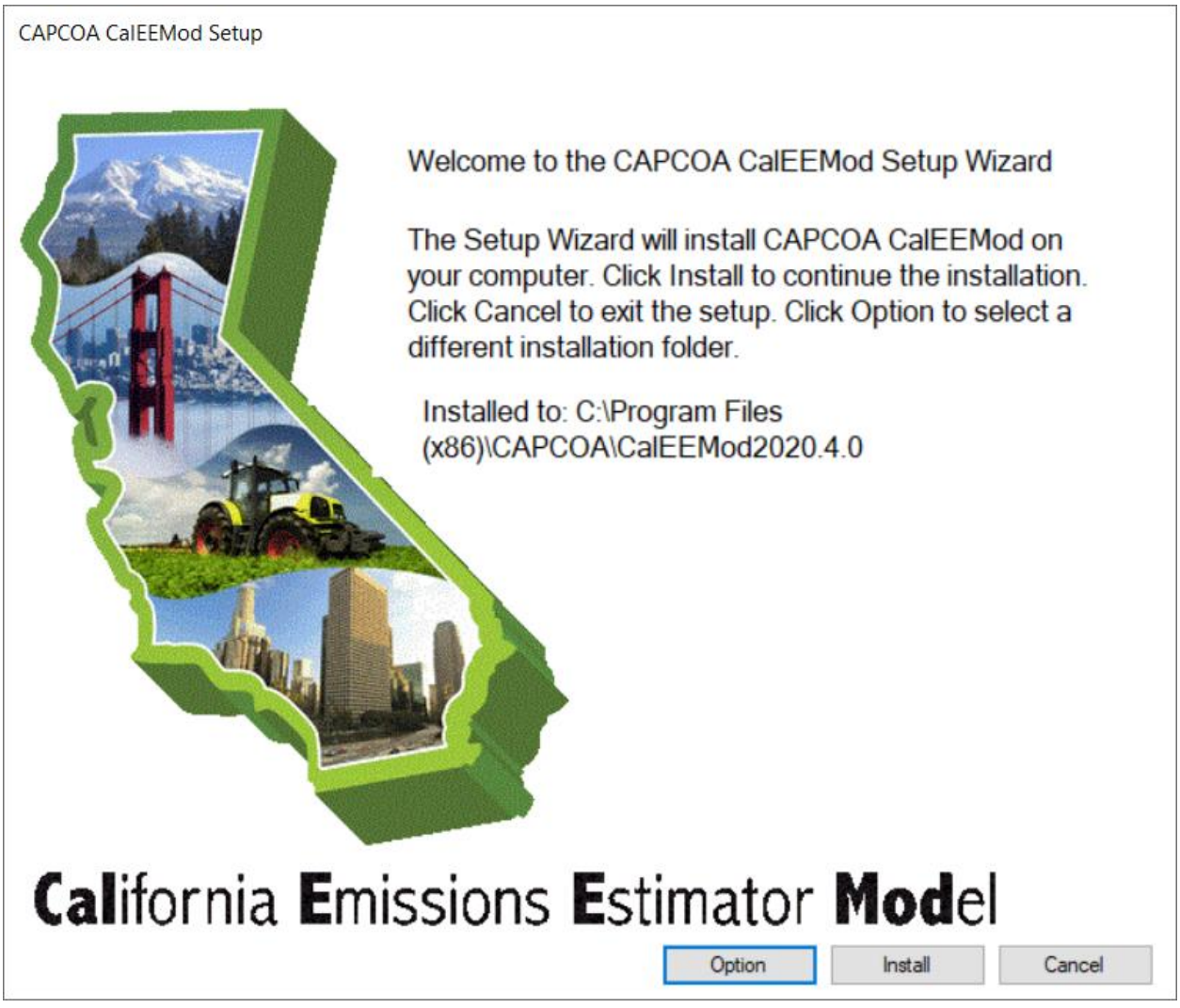
6. CalEEMod Version 2020.4.0 can be installed side by side with Version 2016.3.2 provided that each version is installed in different folders.

   For 32-bit computers, the default directory for CalEEMod Version 2016.3.2 is C:\Program Files\CAPCOA\CalEEMod; for 64-bit computers, the default directory for CalEEMod Version 2016.3.2 is C:\Program Files (x86)\CAPCOA\CalEEMod.

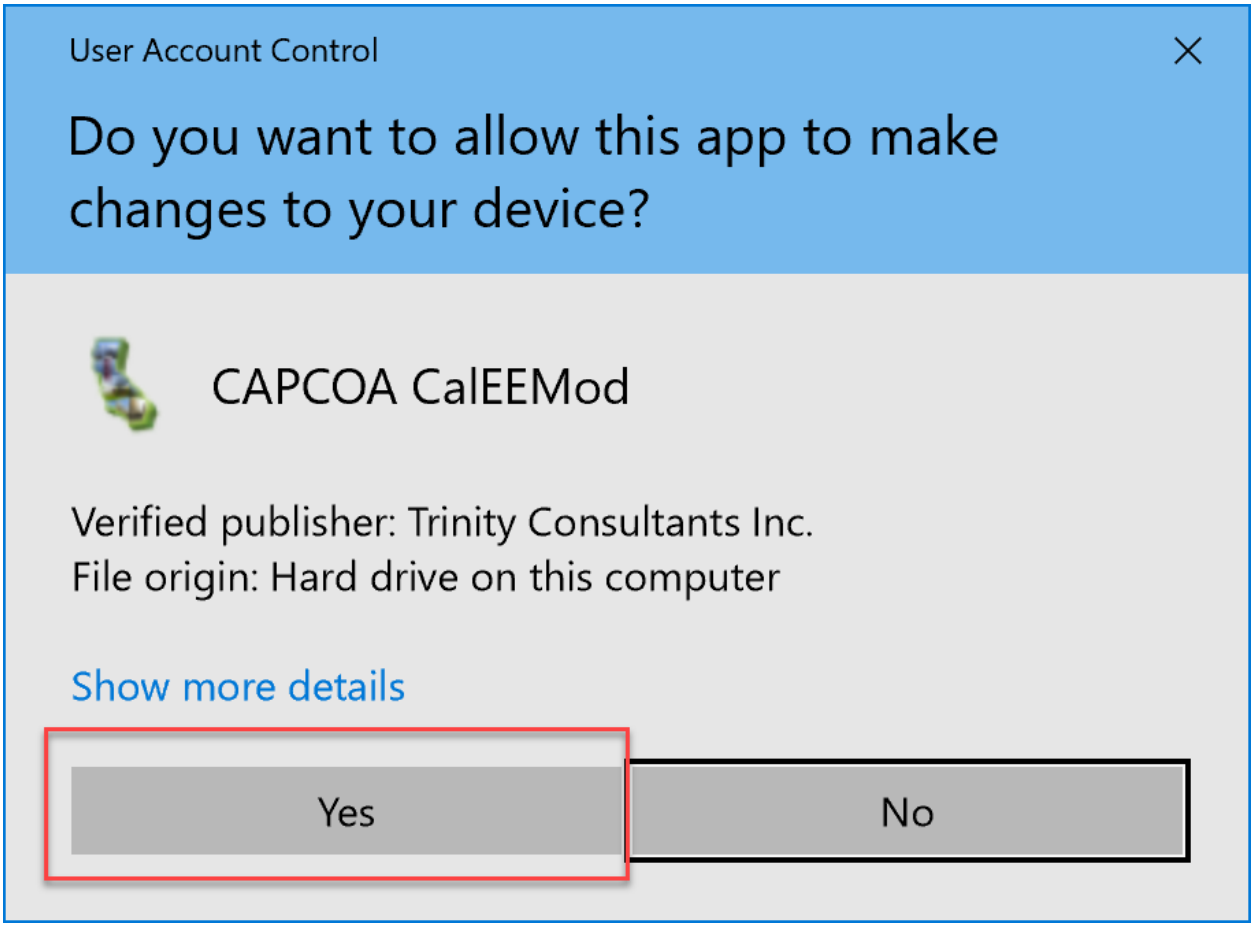
For 32-bit computers, the default directory for CalEEMod Version 2020.4.0 is C:\Program Files\CAPCOA\CalEEMod2020.4.0; for 64-bit computers, the default directory for CalEEMod Version 2020.4.0 is C:\Program Files (x86)\CAPCOA\CalEEMod2020.4.0. Click Next until the installation has completed, then click Finish to exit the installer.

7. If difficulty is encountered when installing CalEEMod (e.g., network firewalls may prevent successful downloading of the model, especially for computers connected to an intranet or other type of network system), verify that the appropriate user privileges are activated and that the computer meets the minimum operating system requirements.

8. The installation process is completed when the CAPCOA CalEEMod 2020.4.0 icon appear in two locations: 1) on the desktop; and 2) in the Start, Programs menu.



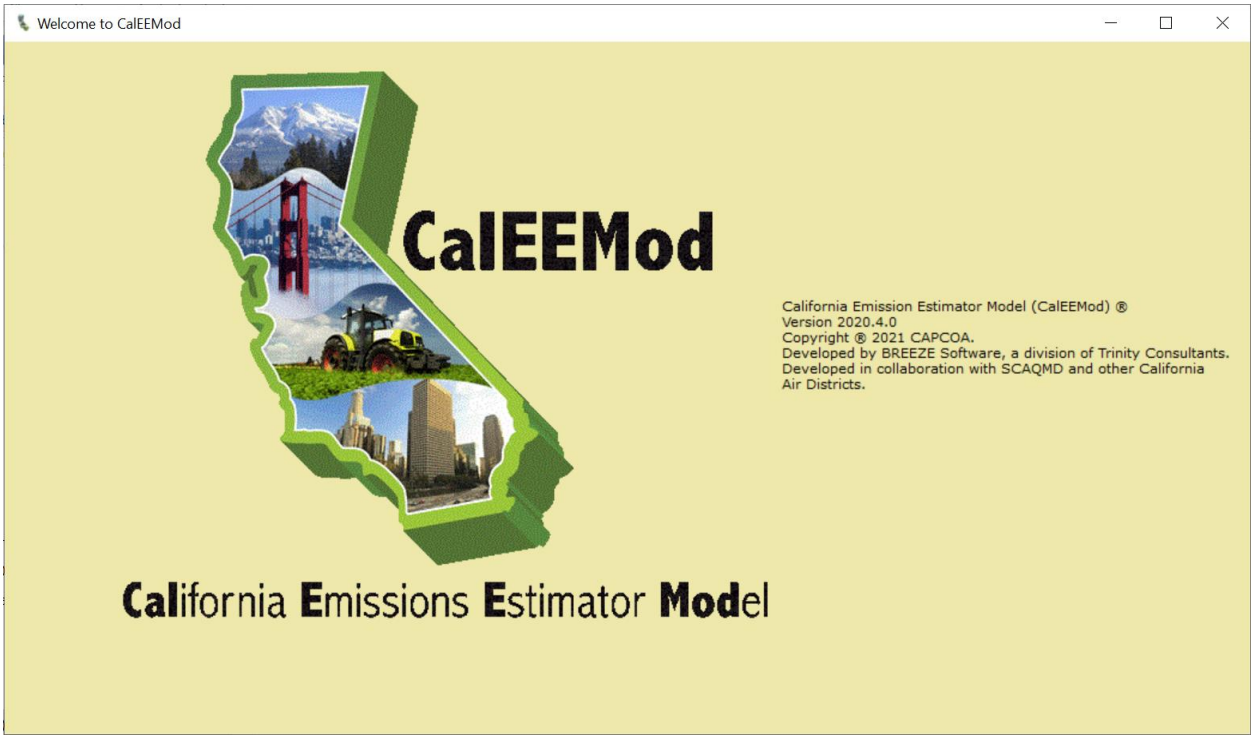
CAPCOA CalEEMod Setup
C:\Program Files (x86)\CAPCOA\CalEEMod2020.4.0
Browse
California Emissions Estimator Model
Option
OK
Cancel


User Account Control
Do you want to allow this app to make changes to your device?
CAPCOA CalEEMod
Verified publisher: Trinity Consultants Inc.
File origin: Hard drive on this computer
Show more details
Yes
No

CAPCOA CalEEMod Setup
Installation Completed
California Emissions Estimator Model
Option
Install
Close

2.3 Starting CalEEMod

To open the model, double click on the CAPCOA CalEEMod2020.4.0 icon from the desktop or select the CAPCOA CalEEMod2020.4.0 program from the Start, Programs menu.

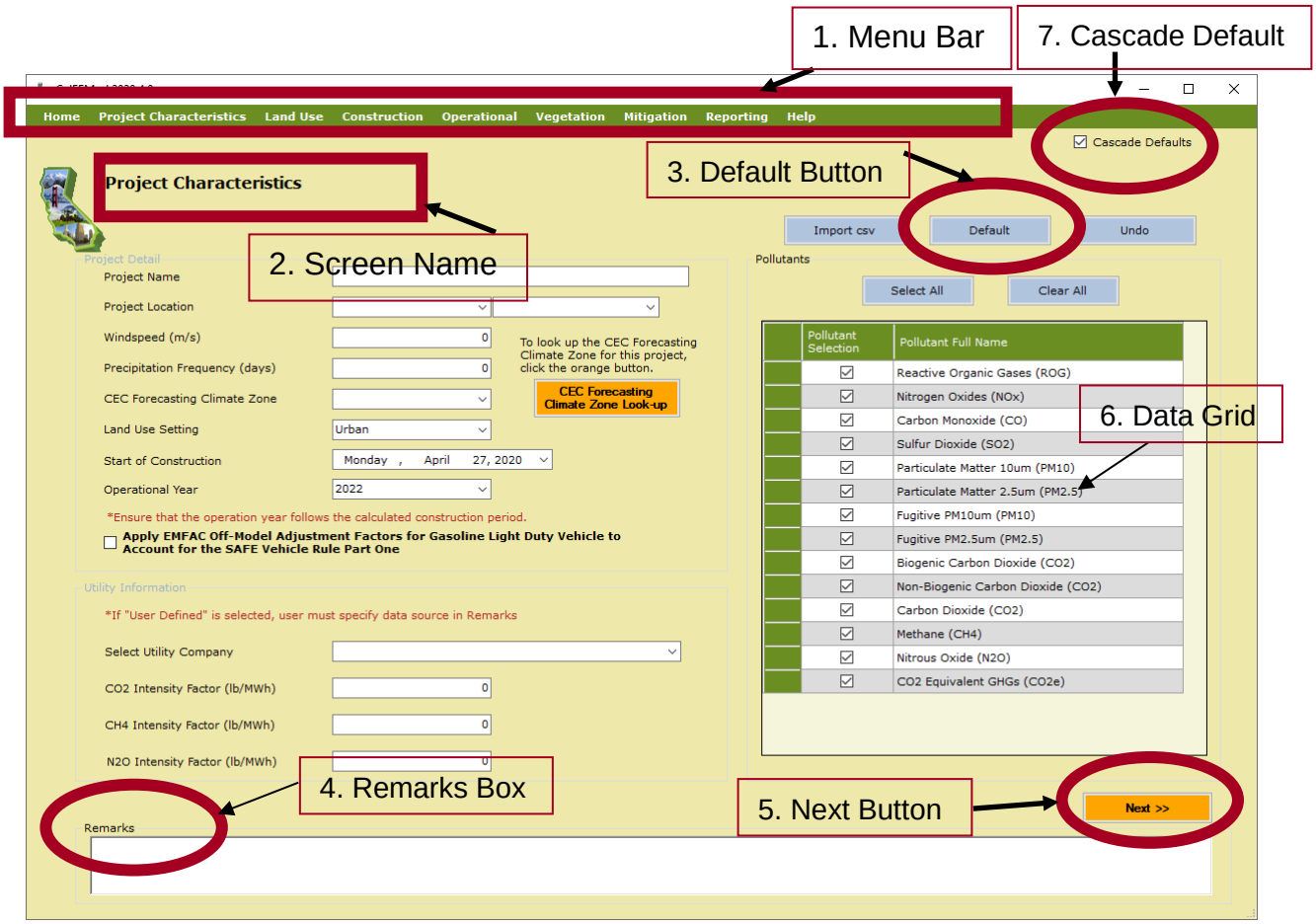


3 Using CalEEMod

3.1 Key Features

CalEEMod is comprised of a series of screens with each designed with an individual purpose to define features of the project such as project characteristics, construction schedule and equipment, operational activity, mitigation measures, etc. The user will need to input basic information about the project such as location, land use type(s) (e.g., residential, commercial, retail, etc.) and project size, and the model will populate subsequent screens with pre-determined defaults. The user may override the defaults to input more accurate, project-specific information as appropriate.

The following screenshot highlights some key features in CalEEMod which are described in more detail below:



1. Menu Bar: A drop down menu bar is found on all screens. For example, the Home menu controls file features such as New Project, Open Project, Save Project, and Save As Project. The Help menu will link to appropriate information for the relevant screen from this User's Guide. All of the other menus will allow navigation between the screens in any order.

2. Screen Name: Identifies the name of the current screen.
3. Default Button: This button allows the user to restore the program defaults after the user has changed any default values on the screen. User-entered values will be highlighted in yellow to clearly indicate the defaults that have been changed. The user will be prompted to specify whether the default should be restored for the current or last cell on the screen or for the entire screen. The Import csv option will allow the user to load a .csv file for a specific data grid. Clicking on the Undo button will allow the user to cancel or undo the previous action.
4. Remarks: This section is located at the bottom of each screen and it requires the user to enter comments regarding any defaults that have been replaced with user-defined values. The Remarks section is meant to assist project reviewers to determine or assess the justification for user-defined values entered.
5. Next Button: When the user clicks on this button, the next sequential screen will appear. As the user progresses through the model, later screens will also show a Previous button that will take the user to the previous screen.
6. Data Grid: This is a common box where values for the variables defined across the top are to be filled in with data. The number of rows will automatically be adjusted based on the number of rows of information required to define the information. On some data grids, the last row may have an asterisk (*) and once the user begins adding information to this row, a new row will be added at the end. To delete a row, select the desired row to delete, and hit the delete button on your keyboard. (Deleting information is generally allowed unless the data grid contains a fixed list such as the Pollutant selection list.) Scroll bars (both horizontal and vertical) may also occur on some data grids, as appropriate.
7. Cascade Defaults: CalEEMod has a feature that freezes the automatic downloading of the programmed defaults. Each input screen displays a box called Cascade Default which will be automatically checked to populate defaults in future screens. However, if user unchecks the Cascade Default box, no defaults will be populated in subsequent screens and the user will need to input project-specific data. Unless all the necessary input parameters required for a proper analysis are known, the user should run the model at least once with "Cascade Default" button checked to allow the defaults to be populated. Then, if the user would like to change the project's parameters (e.g., number of dwelling units, building square footage, etc.) without cascading new defaults in later screens, then the user should uncheck the Cascade Default box when in the Land Use screen. This feature may be helpful when the defaults are replaced with project-specific information (e.g., construction schedule, construction equipment, water use, energy use, etc.) and the user would like to evaluate different project scenarios with the same basic project information (e.g., land use type, location, etc.). In addition, by unchecking the Cascade Default box, the following will occur:

    - The defaults in *ALL* subsequent screens will be frozen.
    - Any changes that are made to screens that follow the Land Use screen (e.g., adding a new construction phase) will not cascade defaults relating to that change or add new tabs (e.g., trips and VMT, dust material movement). Thus, the user will need to manually input project-specific information in order for the impacts to be calculated.

- If any changes to land use type (e.g., from single family housing to a hospital) are made, the subsequent screens will not reflect the new land use type causing some incorrect calculations (e.g., impacts from energy and water use) to be performed.

When changing or adding a land use type, the user should click on the Cascade Default button so the future screens will be populated with appropriate defaults and the correct calculations specific to the changed or added land use type will occur.

3.2 Home

The Home tab on the file menu bar that controls the file saving and opening features. The available options are:

- New Project
- Open Project
- Save
- Save As
- Exit

The user should select Open Project to open a project that has been previously created and saved or New Project to create a new project. Note that opening a previously saved project will remove any information that has been entered into the GUI unless it has been saved to a file. Save will save the currently loaded project database as a Microsoft Excel file and this file can be closed, and then re-opened later. Save As will allow the user to change the name of the saved project file. Exit will close CalEEMod. The Microsoft Excel file can be edited following the format of the save file to quickly make edits outside of the Graphical User Interface (GUI) but the user will still need to use the GUI in order to report the results. This can be most useful in making changes to construction lists. Data for individual tabs can be uploaded as a .csv file in various places in CalEEMod to minimize the data entry.

3.3 Defining a Project

To define a project, the user must enter all information on both the Project Characteristics screen and the Land Use screen. After entering information on these two screens, CalEEMod will populate all the other information required to calculate unmitigated construction (unless there is demolition, grading, or site preparation) and operation emissions using default data. If demolition, grading, and/or site preparation activities are part of the project, then the user will need to enter additional information on the appropriate construction screens, including but not limited to, the amount of material to be demolished and transported to or from the site. If site-specific information is not needed for the project, the user can skip this part and jump to the Mitigation screen and enter mitigation measures. After completing the Mitigation screen, the user can proceed to the Reporting screen to select the type of report to be generated for the project.

3.4 Altering Default Data

CalEEMod was designed with default assumptions supported by substantial evidence to the extent available at the time of programming. The functionality and content of CalEEMod is based on fully adopted methods and data. However, CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that

the information is supported by substantial evidence as required by CEQA. If the user chooses to modify any defaults, an explanation will be required in the Remarks box found at the bottom of the screen to justify and support the modification before the user will be able to proceed to the next screen. Modifications to defaults and the explanations are noted in the output report. Comments in the Remarks box are also included in the report and alert reviewers of modifications to the defaults. Comments are important because they show the user's justification for the modifications, which allows the reviewers the ability to determine whether the modifications are appropriate and sufficiently justified.

3.5 Mitigation

Common construction mitigation measures that impact the calculations in CalEEMod have been incorporated as options for the user to select. It is important to note that compliance with fugitive dust rules vary widely by district and include requirements to reduce dust. Even though the fugitive dust rules contain requirements that when implemented, have the effect of mitigating dust emissions, these requirements are not considered to be mitigation per se. For these reasons, requirements such as percentage adjustments to fugitive dust rules have not been incorporated into the unmitigated fugitive dust calculations.

Several mitigation measures from CAPCOA's Quantifying Greenhouse Mitigation Measures have been incorporated including combinations and caps when using multiple mitigation measures. CalEEMod was designed to include typical mitigation measures that are some of the more effective measures available to development projects. If mitigation measures are not available as options in CalEEMod, the user can alter the inputs in the program to adjust to account for mitigation measures that may be less common. This will require separate runs of CalEEMod files to properly account for unmitigated and mitigated scenarios. For more details regarding mitigation, see Subchapter 4.11.

3.6 Reporting

The Reporting tab allows the user to select the type of report (e.g., annual, winter or summer) to present the results of the calculations. The reports can be viewed on screen and then saved as either a Microsoft Excel file or a .pdf file. For more details regarding reporting, see Subchapter 4.11.

4 Detailed Program Screens

4.1 Project Characteristics

The Project Characteristics screen is starting point where the user enters the project name, project location, and selects utility provider, climate zone, and pollutants to be analyzed. The information entered on this screen will trigger project appropriate default data to populate subsequent screens. Any changes entered on this screen will override any previously entered user-defined data and the corresponding default data. The project name will appear in the reports. Each of the information categories on this screen are described in more detail below.

Project Location

To define the region where the project is located, the user is given the option to select Air District, Air Basin, County, or Statewide. The second drop down box will reveal a list of specific locations to the region selected. If the user selects County, It is important to note that there may be some counties that are shared by multiple Air Districts, Air Basins or District-specific sub-regions and the default values (e.g., on-road vehicle emissions, trip lengths, water supply and treatment electricity use, solid waste disposal rates, amount of paved roads, days of landscaping equipment use, architectural coating emissions, and hearth usage) may vary accordingly. Thus, if the user selects County, the user may also be prompted to select the sub-county area. If you are uncertain about what region to choose for your project location, consult your lead agency. See notes in Section 4.3.5 regarding EMFAC subarea.

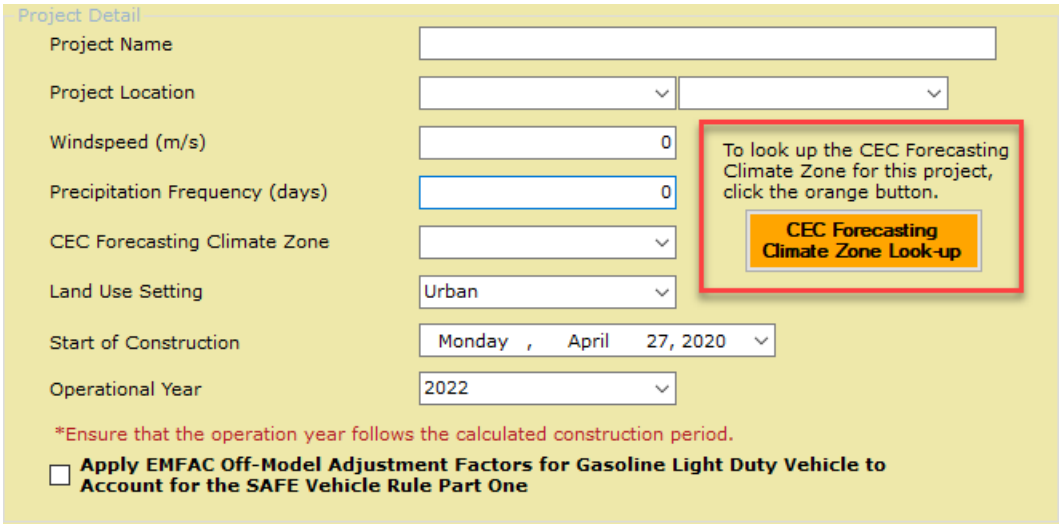
Wind Speed and Precipitation Frequency

Selection of project location will automatically fill in the default wind speed and precipitation frequency. The user can also choose to override this information and enter a different value. The wind speed, in meters per second (m/s), is used in the fugitive dust calculations. Precipitation frequency, e.g. the number of days per year with a precipitation amount measuring greater than 0.01 inches in one day, is used in the fugitive dust calculations.

Climate Zone

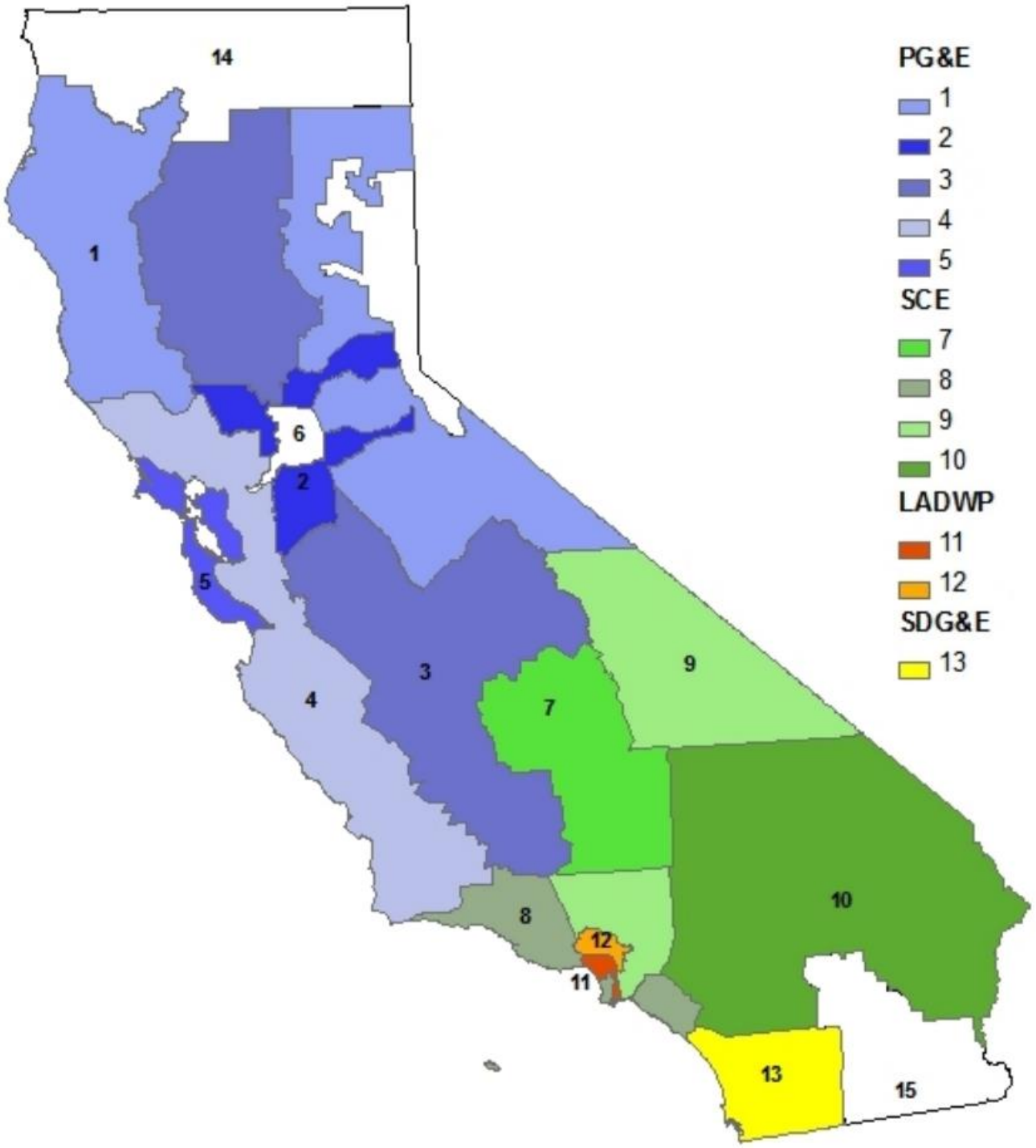
Selection of project location will restrict the climate zones available for the user to choose from based on the climate zones in the project location. The climate zones that have been programmed into CalEEMod are based on the California Energy Commission's (CEC) Forecasting Climate Zones, which are different from the Title 24 Building Climate Zones. The user should determine the correct climate zone by either referring to the figure below or by clicking on the orange button that says "CEC Climate Zone Forecasting Look-up" on the Project Characteristics screen. In addition, the user may also determine the climate zone by city or zip code from the look up tables in Appendix F.

CEC Forecasting Climate Zone Look-up Button



CalEEMod utilizes the Forecasting Climate Zones because the baseline data in the 2002 California Commercial End Use Survey (CEUS) and 2009 Residential Appliance Saturation Survey (RASS), upon which CalEEMod relies, are categorized in this manner. Further information on the calculation of building energy usage, including the application of data specific to the Forecasting Climate Zones, is contained in Appendix E.

CEC Forecasting Climate Zones[3, 4]



[3] Adapted from Figure ES-2 of CEC. 2010. Residential Appliance Saturation Survey. Available at: https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C18.pdf

[4] White spaces represent areas served by other electric utilities not included in survey.

Land Use Setting

The Land Use Setting tab is where the user indicates whether the project is located in a rural or urban setting. The user should contact the local air district for the region where the project is located for guidance on the appropriate Land Use Setting to select.

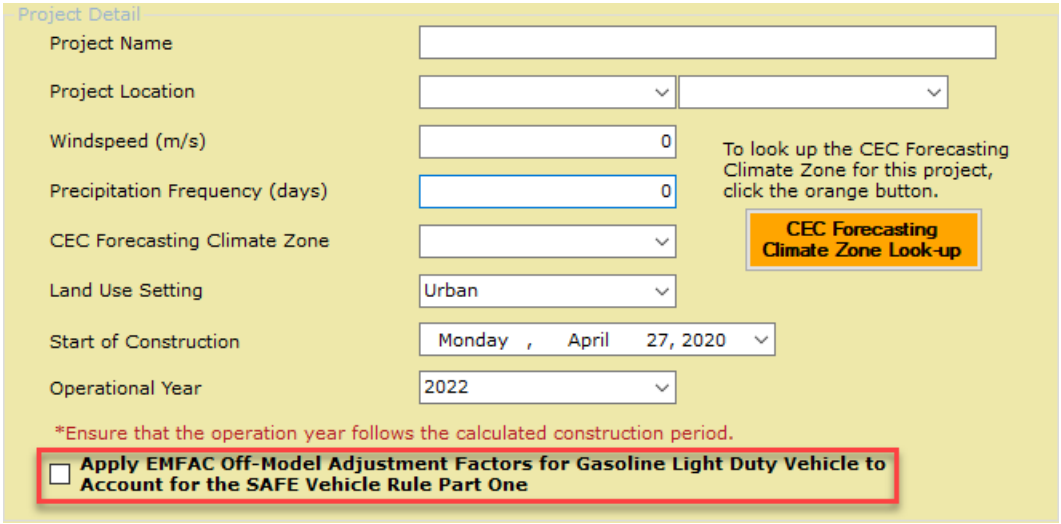
Start of Construction

To indicate when construction of the project will begin, the user will need to insert a date in the Start of Construction field. The date when construction will start triggers a rolling calendar that starts with the construction start date and follows by various construction phases that will be populated with default date ranges in the Construction screen.

Operational Year

CalEEMod is designed to require the user to select the first year when full project operation is expected to begin. CalEEMod relies on the initial operational year to apply the appropriate emission factors in all operational module calculations. CalEEMod can accommodate the following years for the initial operational year: 2000, 2005, 2010-2035, 2040, 2045, and 2050. This wide range of dates allows the user to analyze a project for an operational year that occurs in the past or further into the future. It is important to note that the selection of years is limited to minimize the file size associated with the vehicle emission factors associated with each operational year. For a project that consists of multiple phases with operation activities occurring over multiple years, the user is recommended to run the model multiple times for the various input parameters for each operational year.

EMFAC2017 Off-Model Adjustment Factors



CalEEMod2020.4.0 offers a new feature which allows the user to analyze a project by either applying the original EMFAC2017 emission factors adopted by CARB or the modified EMFAC2017 emission factors which include with off-model adjustments applied to certain gasoline-fueled light duty and medium duty vehicles (EMFAC vehicle codes: LDA, LDT1, LDT2,

and MDV) in accordance with Part One of the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rules and actions adopted by the U.S. Environmental Protection Agency and National Highway Traffic Safety Administration in 2020 [5]. The off-model adjustment factors apply to the following pollutants: NOx, TOG, ROG, PM_{10}, $PM_{2.5}$ and CO. CARB's guidance has indicated that the off-model adjustment factor for TOG can be applied to ROG, and the off-model adjustment factor for PM can be applied to PM_{10} and $PM_{2.5}$.

- If the box is checked, off-model adjustment factors will be applied to both construction emissions and operational emissions for the aforementioned gasoline-fueled light duty and medium duty vehicles; if the box is not checked, the original EMFAC2017 emission factors will be applied for all vehicle classes, without any off-model adjustments.

Utility Company

From the drop-down list, the user will need to select the appropriate utility company that will serve the project location. When a specific utility is selected, the intensity factors for CO_2, CH_4 and N_2O will be automatically populated with defaults applicable to the specified utility. However, if the utility for the project is not in the drop-down list, the user may select User Defined and the user will need to manually enter the various intensity factors. In addition, the user will need to identify the utility in the Remarks section.

The intensity factors are used in various modules to calculate the GHG emissions associated with electricity use. The default values are based on CARB's Local Government Operations Protocol (LGO)[6] for CO_2, updated public utility protocols for CO_2, and E-Grid values for CH_4 and N_2O. Each default CO_2 intensity factor is based on the latest reporting year available for each utility. Appendix D, Table 1.2 provides the default CO_2 intensity factor and reporting year from which the factor was identified for each utility identified in the drop-down list. As with other defaults in the model, if a new intensity factor is identified before the defaults in CalEEMod are updated, the user may override the default and provide justification for the change in the Remarks section at the bottom of the Project Characteristics screen.

Pollutants

CalEEMod provides a list of pollutants with adjacent check boxes for the user to select. Upon starting a new project, all the boxes are automatically checked and if the boxes remain checked, all pollutants will be quantified and identified in the reports. If user unchecks any of the boxes, the unchecked pollutants will be excluded from the calculations and the reports. Some of the pollutants may overlap other identified pollutants. For example, carbon dioxide (CO_2) is identified on its own, and it is separated into biogenic and non-biogenic categories. In addition, CO_2 Equivalent GHGs represents, all CO_2 emissions plus methane (CH_4) and nitrous oxide (N_2O) as adjusted by their corresponding Global Warming Potential (GWP) weighted value. The GWPs are based on the 2007 IPCC's Fourth Assessment Report (AR4)[7], and are consistent with 2014 CARB's Scoping Plan Update[8].

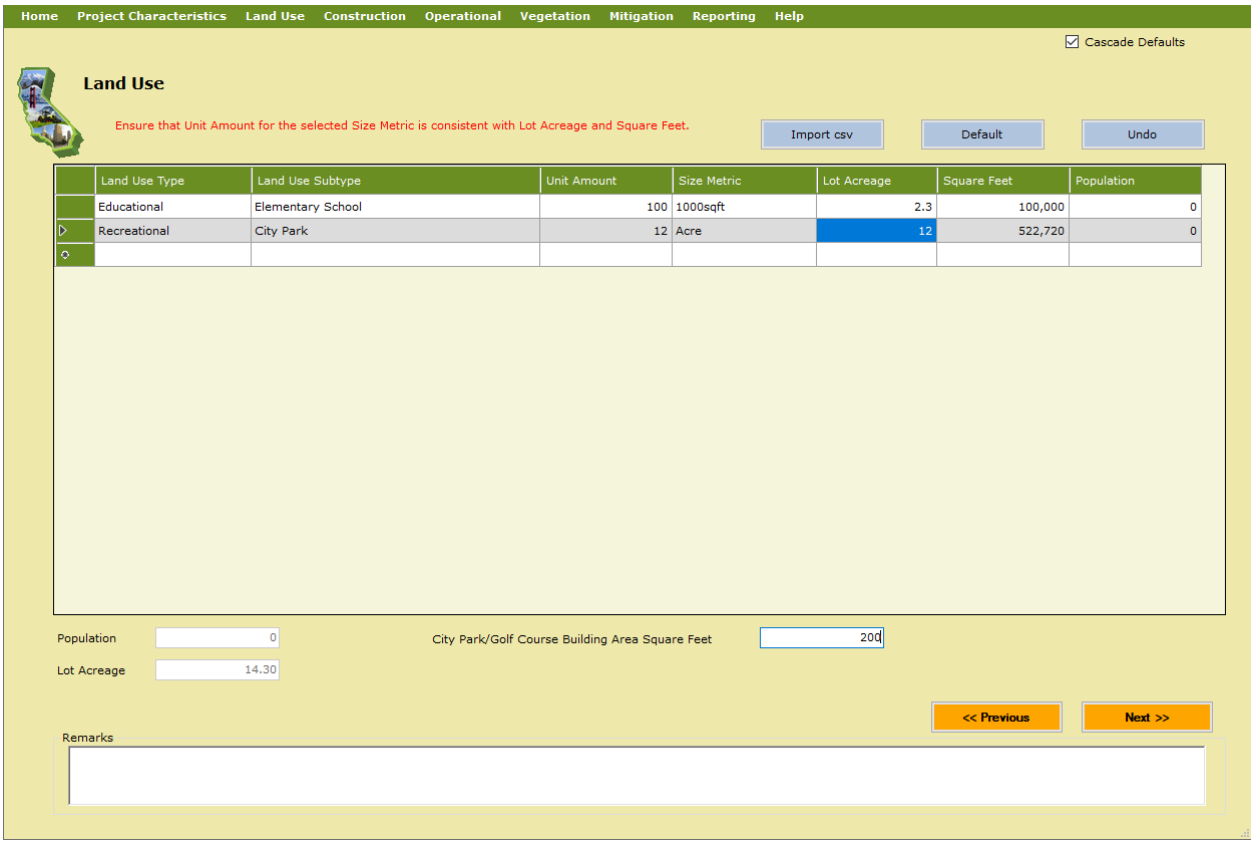
[5] Available at: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf; https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf
[6] Available at: http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm
[7] Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf
[8] Available at: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm

Remarks

As previously explained in Subchapter 3.4, if the user chooses to modify any defaults, the user will be required to provide an explanation or justification in the Remarks section for incorporating user defined (e.g., non-default) values before the user will be able to proceed to the next screen. Any remarks that are entered will be included in the reports and will assist a reviewer in understanding the reasons for a change in the default value (e.g., new trip rate based on a project-specific traffic study conducted by traffic engineers).

4.2 Land Use

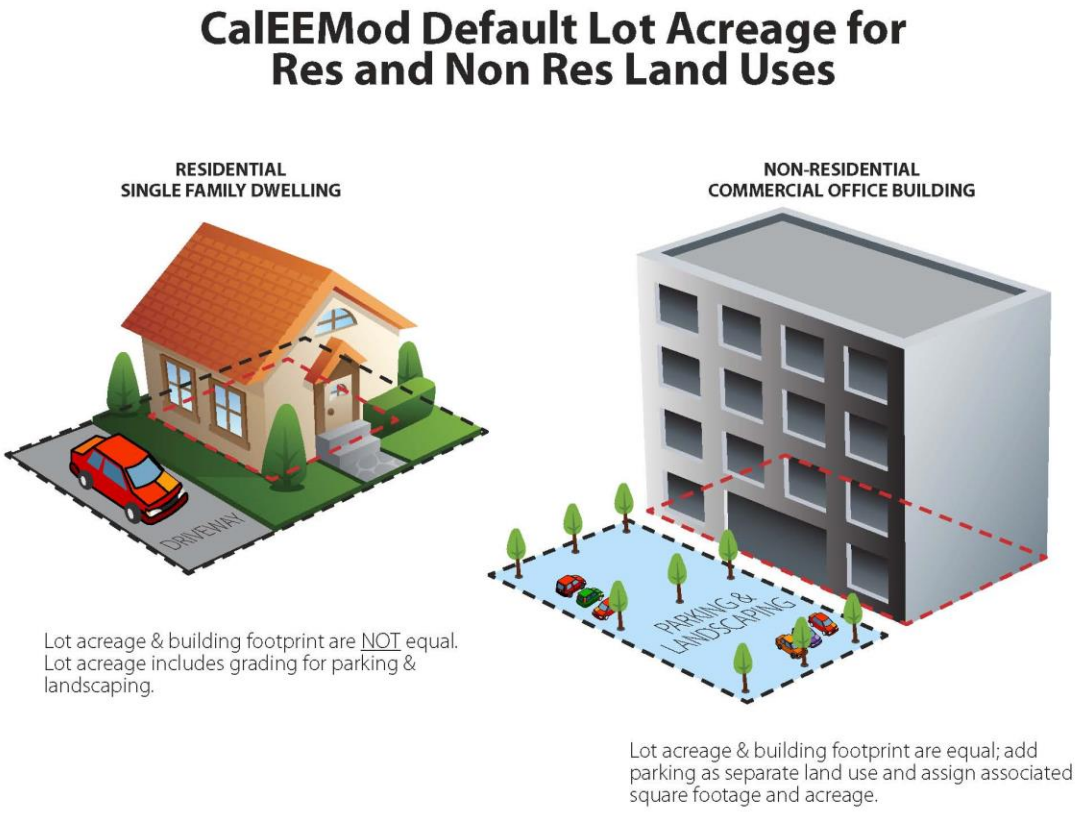
The Land Use screen is where the user identifies the land use(s) that will occur at the project site. The data in the land use types and subtypes, unit amounts, size metric, lot acreage, square feet and population fields determine the default variables that are used in the calculations. It is important to note that for any project that includes a city park, golf course, or recreational swimming pool land use, the user will be prompted to enter the square footage of the buildings associated with these land uses (e.g., restrooms/changing rooms, pro-shop, etc.). By excluding the entire lot size for these three land use types, and instead only using the square footage of the buildings, the calculations for consumer product use will provide a more accurate representation of how and where these materials are used and avoid incorrectly attributing consumer products use to greenspaces and pool water. For more information on the calculations for consumer product use, see Subchapter 4.5, Section 4.5.2.



Land Use Type

The Land Use Type tab allows the user to select any of the following primary land use types from a drop-down list: Commercial, Educational, Industrial, Parking, Recreational, Residential, and Retail. The 63 different land use types were chosen for inclusion in CalEEMod because each has an established trip rate, which is critical for mobile source calculations. The trip generation data are from the ITE Trip Generation Manual, 10th Edition.[9]

CalEEMod specifically designates parking areas as a separate land use rather than as a part of an associated non-residential land use (e.g., commercial buildings, retail facilities, etc.). However, no separate parking land use for a driveway or garage needs to be identified for residential land uses because parking is already included in the calculation. For more information on how CalEEMod treats parking based on the footprint and lot acreage of residential and non-residential land uses, please refer to the following figure. As depicted, the lot acreage of a residential land use includes the parking and building footprint. For non-residential land uses, the lot acreage is the same as the building footprint, so parking needs to be entered as a separate land use.



[9] ITE Technical Resources website: https://www.ite.org/technical-resources/topics/trip-and-parking-generation/

For the parking land use subtype, two primary options are available: parking lot or parking structure (e.g., garage). There are four types of parking structures: 1) enclosed; 2) enclosed with an elevator; 3) unenclosed; and, 4) unenclosed with an elevator. The reason for these specific descriptions is so that the model properly accounts for energy impacts associated with ventilation and elevator operations.

For land use subtypes that are not listed (e.g., roads, underground parking, pipelines, etc.) or that do not accurately represent the project being analyzed, each land use subtype has a User Defined option that the user can select. If a User Defined land use subtype is selected, there is no default data (including size metric) that will automatically populate the data fields. Instead, the user will need to manually enter the unit amount, size metric, lot acreage, etc. If these fields are left blank, no emissions will be calculated for the User Defined land use subtype. Also, whatever size metric (e.g., per acre, per 1000 square foot, etc.) the user chooses for the User Defined land use subtype needs to be consistently applied to all subsequent default values (e.g., gallons of water used *per acre* or *per 1000 square foot*). An alternative approach to entering a User Defined land use subtype would be to choose a land use subtype that most closely fits the project and allow the model to populate the data fields with the defaults. Then, the user can go back through the model and modify the defaults with any known specific project information and enter the required Remarks to explain why the defaults are modified.

Land Use Subtype

63 land use subtypes have been included in CalEEMod and each has an established trip rate that is used for calculating mobile source emissions. By tabbing over to the next column in a row, the user can select a variety of land use subtypes. The user also has the option to select a User Defined land use subtype; however, as explained previously, there is no default data (including size metric) that will automatically populate the data fields. Instead, the user will need to manually enter the unit amount, size metric, lot acreage, etc. Land use subtypes are based primarily on the land use definitions used for (mobile source) trip generation rate information from the ITE Trip Generation Manual, 10th Edition. Note that the trip generation rates included in CalEEMod are a subset of a larger compilation of data that can be obtained from ITE.[10] In some cases, similar generalized land uses or surrogate data were mapped to some land use subtypes to generate the default data needed for various modules.

[10] ITE Technical Resource webpage: https://www.ite.org/technical-resources/topics/trip-and-parking-generation/

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
RESIDENTIAL		
Apartments High Rise	High-rise apartments are units located in rental buildings that have more than 10 levels and most likely have one or more elevators.	222, ITE 10th
Apartments Low Rise	Low-rise apartments are units located in rental buildings that have 1-2 levels.	220, ITE 10th
Apartments Mid Rise	Mid-rise apartments in rental buildings that have between 3 and 10 levels.	221, ITE 10th
Condo/Townhouse	These are ownership units that have at least one other owned unit within the same building structure.	220, ITE 10th
Condo/Townhouse High Rise	These are ownership units that have three or more levels.	221, ITE 10th
Congregate Care (Assisted Living)	These facilities are independent living developments that provide centralized amenities such as dining, housekeeping, transportation and organized social/recreational activities. Limited medical services may or may not be provided.	254, ITE 10th
Mobile Home Park	Mobile home parks consist of manufactured homes that are sited and installed on permanent foundations and typically have community facilities such as recreation rooms, swimming pools and laundry facilities.	240, ITE 10th
Retirement Community	These communities provide multiple elements of senior adult living. Housing options may include various combinations of senior adult housing, congregate care, assisted living, and skilled nursing care aimed at allowing the residents to live in one community as their medical needs change.	255, ITE 10th
Single Family Housing	All single-family detached homes on individual lots typical of a suburban subdivision	210, ITE 10th
EDUCATIONAL		
Day-Care Center	A day care center is a facility where care for pre-school age children is provided, normally during the daytime hours. Day care facilities generally include classrooms, offices, eating areas and playgrounds.	565, ITE 10th
Elementary School	Elementary schools typically serve students attending kindergarten through the fifth or sixth grade. They are usually centrally located in residential communities to facilitate student access and have no student drivers.	520, ITE 10th
High School	High schools serve students who have completed middle or junior high school.	530, ITE 10th
Junior College (2Yr)	This land use includes two-year junior, community, or technical colleges.	540, ITE 10th

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
Junior High School	Junior High schools serve students who have completed elementary school and have not yet entered high school.	522, ITE 10th
Library	A library is a facility that consists of shelved books; reading rooms or areas; and sometimes meeting rooms.	590, ITE 10th
Place of Worship	A place of worship is a building in which public worship (religious) services are held (e.g., church, synagogue, mosque, etc.). A place of worship is comprised of an assembly hall or sanctuary; it may also house meeting rooms, classrooms and occasionally dining catering or party facilities.	560, ITE 10th
University/College (4Yr)	This land use includes four-year universities or colleges that may or may not offer graduate programs.	550, ITE 9th (Saturday) and 10th (Weekday)
RECREATIONAL		
Arena	Arenas are large indoor structures in which spectator events are held. These events vary from professional ice hockey and basketball to non-sporting events such as concerts, shows, or religious services. Arenas generally have large parking facilities, except when located in or around the downtown of a large city.	460, ITE 9th
City Park	City parks are owned and operated by a city.	411, ITE 10th
Fast Food Restaurant W/O Drive Thru	This land use includes fast-food restaurants without drive-through windows. Patrons generally order at a cash register and pay before they eat.	933, ITE 10th
Fast Food Restaurant with Drive Thru	This category includes fast-food restaurants with drive-through windows.	934, ITE 10th
Golf Course	Golf courses include 9-, 18-, 27- and 36-hole courses. Some sites may also have driving ranges and clubhouses with a pro shop, restaurant, lounge and banquet facilities.	430, ITE 10th
Health Club	These are privately-owned facilities that primarily focus on individual fitness or training. Typically, they provide exercise classes; weightlifting, fitness and gymnastics equipment; spas; locker rooms; and small restaurants or snack bars.	492, ITE 9th
High Turnover (Sit Down Restaurant)	This land use consists of sit-down, full-service eating establishments with turnover rates of approximately one hour or less. This type of restaurant is usually moderately priced and frequently belongs to a restaurant chain.	932, ITE 10th
Hotel	Hotels are places of lodging that provide sleeping accommodations and supporting facilities such as restaurants; cocktail lounges; meeting and banquet rooms or convention facilities; limited recreational facilities and other retail and service shops.	310, ITE 10th

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
Motel	Motels are places of lodging that provide sleeping accommodations and often a restaurant. Motels generally offer free on-site parking and provide little or no meeting space and few supporting facilities.	320, ITE 10th
Movie Theater (No Matinee)	Movie theaters consist of audience seating, single or multiple screens and auditoriums, a lobby and a refreshment stand. Movie theaters without matinees show movies on weekday evenings and weekends only; there are no weekday daytime showings.	444, ITE 10th
Quality Restaurant	This land use consists of high quality, full-service eating establishments with typical turnover rates of at least one hour or longer. Quality restaurants generally do not serve breakfast, some do not serve lunch; all serve dinner. This type of restaurant usually requires reservations and is generally not part of a chain. Patrons commonly wait to be seated, are served by a waiter, order from menus and pay for meals after they eat.	931, ITE 10th
Racquet Club	These are privately-owned facilities that primarily cater to racquet sports.	491, ITE 9th
Recreational Swimming Pool	This is a typical recreational swimming pool that may be associated with community centers, parks, swim clubs, etc.	495, ITE 10th
PARKING		
Enclosed Parking Structure	This is an enclosed parking structure that may be above or below ground. It is not covered in asphalt. This land use will require lighting and ventilation, and will have more than one floor with no elevator.	N/A
Enclosed Parking with Elevator	This is an enclosed parking structure that may be above or below ground. It is not covered in asphalt. This land use will require lighting and ventilation, and will have more than one floor with an elevator.	N/A
Other Asphalt Surfaces	This is an asphalt area not used as a parking lot (e.g., long driveway, basketball court, etc.)	N/A
Other Non-Asphalt Surfaces	This is a non-asphalt area (e.g., equipment foundation, loading dock area, etc.).	N/A
Parking Lot	This is a typical single surface parking lot typically covered with asphalt. This land use will require lighting.	N/A
Unenclosed Parking Structure	This is an unenclosed parking structure that may be above or below ground. It is not covered in asphalt. This land use will require lighting but not ventilation. It will have more than one floor with no elevator.	N/A
Unenclosed Parking with Elevator	This is an unenclosed parking structure that may be above or below ground. It is not covered in asphalt. This land use will require lighting but not ventilation. It will have more than one floor with an elevator.	N/A

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
RETAIL		
Automobile Care Center	An automobile care center houses numerous businesses that provide automobile-related services, such as repair and servicing; stereo installation; and seat cover upholstering.	942, ITE 10th
Convenience Market (24 Hour)	These markets sell convenience foods, newspapers, magazines and often beer and wine. They do not sell or dispense motor vehicle fuels (e.g., gasoline and diesel).	851, ITE 10th
Convenience Market with Gas Pumps	These markets sell or dispense motor vehicle fuels (e.g., gasoline and diesel), convenience foods, newspapers, magazines and often beer and wine. This includes convenience markets with motor vehicle fueling dispensers where the primary business is the selling of convenience items, not the fueling of motor vehicles.	853, ITE 10th
Discount Club	A discount club is a discount store or warehouse where shoppers pay a membership fee to take advantage of discounted prices on a wide variety of items such as food, clothing, tires and appliances. Many items are sold in large quantities or in bulk.	857, ITE 10th
Electronic Superstore	These are free-standing facilities that specialize in the sale of electronic merchandise.	863, ITE 10th
Free-Standing Discount Store	Discount stores offer centralized cashiering and sell products that are advertised at discount prices. These stores offer a variety of customer services and maintain long store hours seven days a week.	815, ITE 10th
Free-Standing Discount Superstore	The discount superstore is similar to the free-standing discount stores with the addition that they also contain a full-service grocery department under the same roof that shares entrances and exits with the discount store area.	813, ITE 10th
Gasoline/Service Station	This land use includes service stations where the primary business is the fueling of motor vehicles. They may also have ancillary facilities for servicing and repairing motor vehicles.	944, ITE 10th
Hardware/Paint Store	These stores sell hardware and paint supplies and are generally free-standing buildings.	816, ITE 10th
Home Improvement Superstore	These are free-standing facilities that specialize in the sale of home improvement merchandise.	862, ITE 10th
Regional Shopping Center	A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center's composition is related to its market area in terms of size, location and type of store.	820, ITE 10th
Strip Mall	Small strip shopping centers contain a variety of retail shops and specialize in quality apparel, hard goods and	826, ITE 9th

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
	services such as real estate offices, dance studios, florists and small restaurants.	
Supermarket	Supermarkets are free-standing retail stores selling a complete assortment of food: food preparation and wrapping materials; and household, cleaning items. Supermarkets may also contain the following products and services: ATMs, automobile supplies, bakeries, books and magazines, dry cleaning, floral arrangements, greeting cards, limited-service banks, photo centers, pharmacies and video rental areas.	850, ITE 10th
COMMERCIAL		
Bank (With Drive-Through)	Drive-in banks provide banking facilities for motorists who conduct financial transactions from their vehicles; many also serve patrons who walk into the building.	912, ITE 10th
General Office Building	A general office building houses multiple tenants where affairs of businesses commercial or industrial organizations or professional persons or firms are conducted. If information is known about individual buildings, it is suggested that this land use be used instead of the more generic office park.	710, ITE 10th
Government (Civic Center)	A group of government buildings that are interconnected by pedestrian walkways.	733, ITE 10th
Government Office Building	This is an individual building containing either the entire function or simply one agency of a city, county, state, federal, or other governmental unit.	730, ITE 10th
Hospital	A hospital is any institution where medical or surgical care and overnight accommodations are provided to non-ambulatory and ambulatory patients. However, it does not refer to medical clinics or nursing homes.	610, ITE 10th
Medical Office Building	This is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. One or more private physicians or dentists generally operate this type of facility.	720, ITE 10th
Office Park	Office parks are usually suburban subdivisions or planned unit developments containing general office buildings and support services, such as banks, restaurants and service stations, arranged in a park-or campus-like atmosphere. This should be used if details on individual buildings are not available.	750, ITE 10th

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
Pharmacy/Drugstore W/O Drive Thru	These are retail facilities that primarily sell prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationery, personal care products, limited food products and general merchandise. The drug stores in this category do not contain drive-through windows.	880, ITE 10th
Pharmacy/Drugstore with Drive Thru	These are retail facilities that primarily sell prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationery, personal care products, limited food products and general merchandise. The drug stores in this category contain drive-through windows.	881, ITE 10th
Research & Development	R&D centers are facilities devoted almost exclusively to R&D activities. The range of specific types of businesses contained in this land use category varies significantly. R&D centers may contain offices and light fabrication areas.	760, ITE 10th
INDUSTRIAL		
General Heavy Industry	Heavy industrial facilities usually have a high number of employees per industrial plant and are generally limited to the manufacturing of large items.	140, ITE 10th
General Light Industry	Light industrial facilities are free-standing facilities devoted to a single use. The facilities have an emphasis on activities other than manufacturing and typically have minimal office space. Typical light industrial activities include printing, material testing and assembly of data processing equipment. For CalEEMod Version 2020.4.0, this land use subtype must be less than 50,000 square feet.[11]	110, ITE 10th
Industrial Park	Industrial parks contain several industrial or related facilities. They are characterized by a mix of manufacturing, service and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities.	130, ITE 10th
Manufacturing	Manufacturing facilities are areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.	140, ITE 10th
Refrigerated Warehouse-No Rail	This is a warehouse that has refrigeration but no rail spur.	157, ITE 10th
Refrigerated Warehouse-Rail	This is a warehouse that has refrigeration and a rail spur.	157, ITE 10th

[11] For a project with a lot size greater than 50,000 square feet, the user will need to select a different land use type such as general heavy industry, industrial park, or manufacturing.

Table 1: Source of Trip Rates for Land Use Subtypes

Land Use Subtype	Description	Land Use Code and Source
Unrefrigerated Warehouse-No Rail	This is a warehouse that does not have refrigeration and no rail spur.	150, ITE 10th
Unrefrigerated Warehouse-Rail	This is a warehouse that does not have refrigeration but has a rail spur.	150, ITE 10th

Unit Amount and Size Metric

By tabbing over to the Unit Amount and Size Metric columns, respectively, the user can enter the number of units (e.g., houses, apartments, etc.) and the corresponding size metric (e.g., per 1000 sq. ft., employees, students, etc.). These data combinations will be used to populate the lot acreage, square feet and population columns on this screen. For example, a school land use allows the user to define its size by the number of students, building square footage, or number of employees. It is important to note that the square footage, which is used for calculating such impacts as architectural coatings and energy use, relates to the total building square footage and not the building footprint or lot acreage which is used for housing density as well as grading and site preparation calculations. A pop-up message was added to let users know that Unit Amount should be consistent with Lot Acreage or Square Feet on the Land Use page, and the Unit Amount should not be left as zero or blank.

Lot Acreage

If actual lot acreage data is available, the user should override the default value. However, for a mixed use, multi-story building, the user should not override the square footage default value for each individual land use or the acreage default value assigned to the residential portion or the split between the non-residential land uses if there is no residential portion. The figure below provides an example of a mixed-use project and instructions for applying the appropriate square footage and acreage.

Acreage is used to estimate housing density and assign construction default data (e.g., grading, site preparation, etc.). Table 2 contains housing density default data per land use in terms of dwelling units (DU) per acre. By using these data, CalEEMod can estimate the number of acres per dwelling unit (DU) for residential land use. For example, if the user enters 10 apartments in a low-rise building, then the lot acreage will be 0.625 acre (10 DU divided by 16 acres/DU). According to the California Energy Commission's Residential Appliance Saturation Survey (RASS), the metric for low rise apartments is 1,000 square feet per DU (see Table 2.1). Similarly, using the same example, the building footprint will be 0.23 acre (10 DU x 1000 sq. ft./DU x 1 acre/43,560 sq. ft.). Thus, the total lot acreage includes the residential footprint plus driveway and landscaping/open space.

After the user has completed entering all of land uses for the project, CalEEMod will add the lot acreage values for each land use and the total will be reflected in the lot acreage text box located at the bottom of the screen. The value in the total lot acreage box cannot be modified by the user.

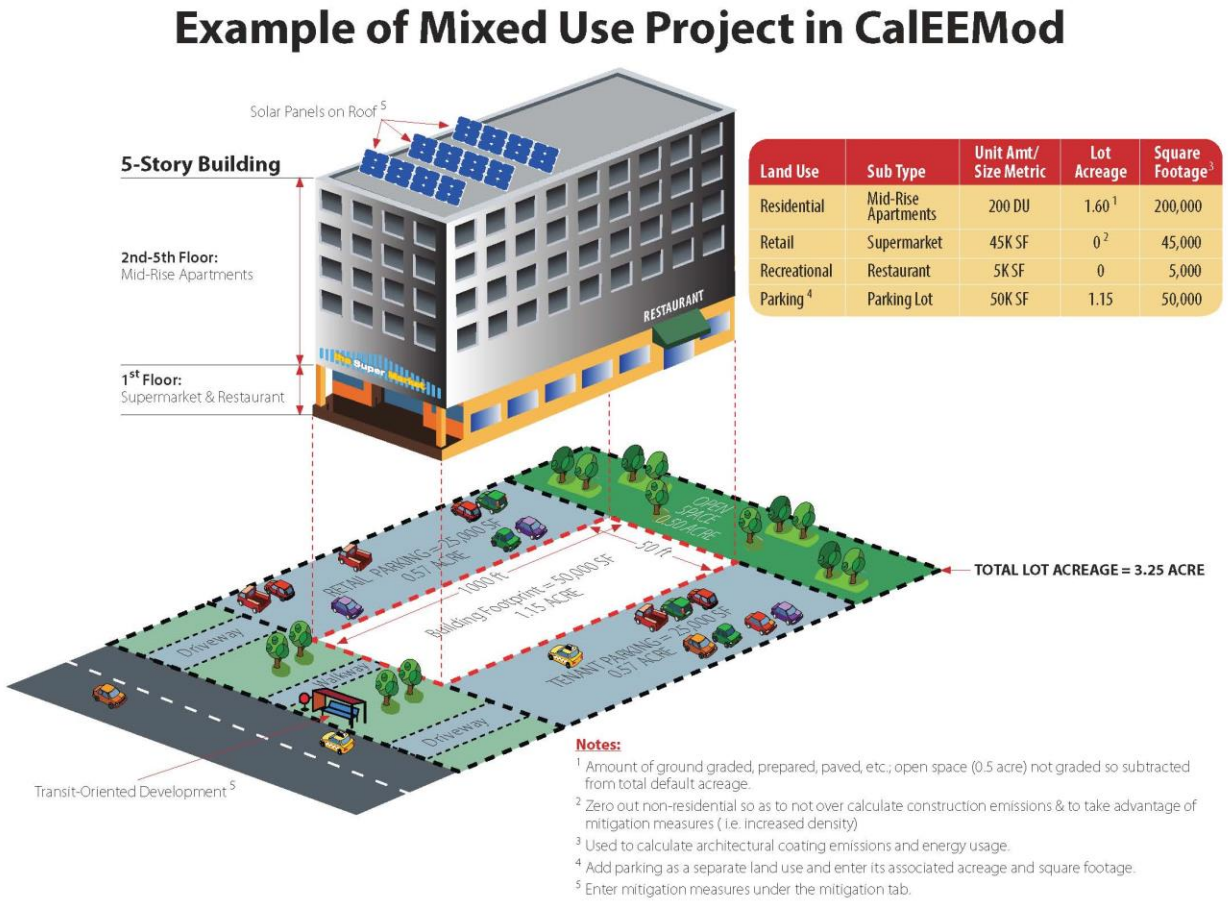


Table 2: Default Housing Density[1]

Land Use Subtype	Density (Dwelling Units/Acre)
Single Family Housing	3
Apartments low rise	16
Apartments mid rise	38
Apartments high rise	62
Condo/townhouse	16
Condo/townhouse high rise	64
Mobile Home Park	8
Retirement Community	5
Congregate care (Assisted Living)	16

[1] Based on the density assumed in ITE Trip Generation 8th Edition

Square Footage

If actual square footage of the total building or building footprint is known, the user should override the default value.

Population

After the completing the tabs for unit amount, size metric, lot acreage, and square footage, the population field will contain a default which represents an estimate of the population for each land use type and subtype selected by the user. If the actual population data is known, the user should override the default value.

After the user has completed entering all of land uses for the project, CalEEMod will add the population values for each land use and the total will be reflected in the population text box located at the bottom of the screen. The value in the total population box cannot be modified by the user.

City Park/Golf Course Building Area Square Feet (text box)

If the user selects a City Park and/or Golf Course land use, a text box will appear at the bottom of the screen that will prompt the user to enter the building square footage of all the buildings that will be located on the City Park and/or Golf Course property (e.g., restrooms/changing rooms, pro-shop, etc.). The user must input site-specific building square footage data because there are no default values for building footprints on these types of land uses. If the building square footage is left blank (e.g., zero square feet), a warning message will appear to remind the user to enter a value in this field.

Recreational Swimming Pool Building Area Square Feet (text box)

If the user selects a Recreational Swimming Pool land use, a text box will appear at the bottom of the screen that will prompt the user to enter the building square footage of all the buildings that will be located on the property (e.g., restrooms/changing rooms, pro-shop, etc.). The user must input site-specific building square footage data because there is no default value for the building footprint on this type of land use. If the building square footage is left blank (e.g., zero square feet), a warning message appear to remind the user to enter a value in this field.

4.3 Construction

After completing the Land Use screen and clicking on the Next button, the Construction screen will appear along with seven tabs/sub-screens that cover the following construction topic areas: Construction Phase; Off-Road Equipment; Dust from Material Movement; Demolition; Trips and VMT, On-Road Fugitive Dust, and Architectural Coatings. To move from one tab/sub-screen to another, the user can use the Next and Previous buttons, or click on any of grey tabs. The construction tabs/sub-screens contain default information that was obtained from a survey of construction sites conducted by South Coast Air Quality Management District (South Coast AQMD). The construction survey data is grouped by construction phase and lot acreage and can be found in Appendix E1. The default construction equipment list and phase length data were determined to be the most appropriate for the size and types surveyed. In addition, some data in the survey was extrapolated to create default values for project sizes that were not in the survey. However, if the user has more detailed site-specific equipment and phase information, the user should override the default values.

4.3.1 Construction Phase

The Construction Phase tab is where the user can enter the type of each construction phase and the date range for each phase. Default phases are based on the total lot acreage of the project. Depending on the project being modeled, not all phases may be necessary, so the user may need to delete phases that are not applicable to the project. For example, not all projects require demolition. In addition, the user may need to add multiple phases of similar types for large projects with staged build out scenarios. It is important to note that if a project has demolition, grading, and site preparation phases, the user will need to provide additional project-specific data on the Demolition and Dust from Material Movement sub-screens.

Phase Name and Phase Type

The Phase Name and Phase Type fields will be automatically populated with the following default construction phases: Site Preparation; Demolition; Grading; Building Construction; Paving; and, Architectural Coating. The inclusion of any of these phases will define the types of calculations and default assumptions for on-road vehicle trips and fugitive emissions that occur in subsequent construction sub-screens. The definitions of the default phase types are as follows:

- *Demolition* involves removing buildings or structures.
- *Site Preparation* involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
- *Grading* involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.
- *Building Construction* involves the construction of the foundation, structures and buildings.
- *Architectural Coating* involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.
- *Paving* involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

Start Date and End Date

The user can enter with the aid of a calendar, the Start Date and End Date for each construction phase. The default Start Date is the Start of Construction date defined on the Project Characteristics screen. The cells will be automatically populated with a default construction schedule starting with the Demolition phase, with subsequent phases starting the following day after the previous phase's end date. The user may change the defaults to alter the total days estimated for each phase. Because CARB's emission factors vary from year to year, when the user inserts the start and end dates for each construction phase, the model will select the correct emission factors for the year when each piece of off-road equipment will be utilized.

Days per Week

The user can select from a drop-down box the number of days per week (either 5, 6, or 7 days) that construction will occur. Five days per week assumes that construction will occur from Monday through Friday, and six days per week assumes that construction will occur Monday through Saturday.

Total Days

The Total Days field is intended to indicate the number of days that it will take to complete a particular construction phase and this field is initially populated with default values. If the End Date or the Days per Week fields are changed, clicking the Total Days field will trigger a recalculation of the Total Days. If the Total Days field for any phase is changed, then once leaving this field, the program will automatically adjust the End Date based on the Start Date for that phase.

4.3.2 Off-Road Equipment

The Off-Road Equipment tab is for the user to select the type and quantity of off-road equipment needed for each construction phase and to define the daily usage schedule. Since equipment lists can be lengthy and vary widely for each construction phase, the user will need to first select the phase from Phase Name drop down list or by clicking on the Previous or Next buttons located next to the phase name, and then select the off-road equipment that will be used for each construction phase. The Off-Road Equipment screen calculates emissions based on the expected off-road equipment engine use for each piece of equipment listed over the duration of the phase length. It is important to note that fugitive emissions from off-road equipment are calculated elsewhere on other construction screens.

After the user enters the Equipment Type, Number of Units, and Hours per Day for each piece of equipment that will be used in any phase, the Horsepower and Load Factor fields will be automatically populated with the default average values from CARB's OFFROAD2011. If equipment-specific information is available, the user can override these default values. In some cases, CARB's OFFROAD2011 emission factors are not available for all years. Thus, if the user selects a construction year that does not have corresponding emission factors, CalEEMod has been programmed to substitute the emissions factors from nearest, lower end (e.g., oldest) year. For example, if construction will occur in year 2037 (a year which does not have emission factors), CalEEMod will substitute the emission factors from year 2035 instead. Since newer equipment tends to have less emissions than older equipment, by selecting emission factors from year 2035 (an older year), the calculations may result in a conservative, slight overestimate of emissions.

If the project requires the use of off-road equipment that is not specifically listed in the drop-down list, the user can select from three generalized equipment categories to add customized equipment to the analysis: 1) Other Construction Equipment; 2) Other General Industrial Equipment; and, 3) Other Material Handling Equipment. In addition, the user may choose to select a surrogate equipment type which has a similar horsepower rating and load factor. To include water trucks and cement trucks in the analysis, the user needs to first determine if these trucks are off-road or on-road vehicles. If they are only driven off-road, then the user can select the Off-Highway Trucks category in the Off-Road Equipment screen. If the trucks are driven on-road, the user can account for the on-road emissions by entering this information as Additional Vendor Trips on the Trips and VMT screen (see Subchapter 4.3.5).

4.3.3 Dust from Material Movement

The Dust from Material Movement sub-screen is intended for calculating fugitive dust emissions associated with the Site Preparation and Grading phases (defaults) during construction. This sub-screen calculates the following three types of fugitive dust: 1) fugitive dust from dozers moving dirt; 2) fugitive dust from graders or scrapers leveling the land; and; 3) fugitive dust from loading or unloading dirt into haul trucks. These methods have been adapted from USEPA's AP-42 method for Western Coal Mining. Once the user enters the amount of material imported and exported to the site, CalEEMod will estimate the number of hauling trips associated with from material transport activities. The user may define the units in terms of Ton of Debris or Cubic Yards. The user may also select whether the import/export of material is phased (e.g., the same truck that arrives with material departs with another load of material to export in one round trip or two one-way trips. The calculations for non-phased material import/export trips assume that one truck arrives empty and departs full and a different truck arrives full for a total of two round trips (or four one-way trips). Thus, phasing of material import and export trips reduces the number of haul trips.

The Total Acres Graded field represents the cumulative distance traversed on the property by the grading equipment, assuming a blade width of 12 feet. To properly grade a piece of land, multiple passes with grading equipment may be required. So even though the lot size is a fixed number of acres, the Total Acres Graded could be an order of magnitude higher than the footprint of the lot and is calculated based on the equipment list (including number of equipment), the number of days need to complete the grading and/or site preparation phase, and the maximum number of acres a given piece of equipment can traverse in an 8-hour workday. For more information regarding how Dust from Material Movement is calculated, including grading rates, see Appendix A, Subchapter 4.3.

4.3.4 Demolition

The Demolition sub-screen is intended for the user to enter the amount of material that is demolished, if a demolition phase is selected by the user as part of the construction project. The user can select the Size Metric to define the amount of demolished material that is expected to be generated during the demolition phase in terms of Ton of Debris or Building Square Footage. With this data, fugitive dust emissions generated during demolition are calculated. The calculation of fugitive dust emissions during demolition is derived from the methodology described in the report prepared for the USEPA by Midwest Research Institute, Gap Filling PM_{10} Emission Factors for Selected Open Area Dust Sources.

4.3.5 Trip and VMT

The Trip and VMT sub-screen is used to provide the number and length (in terms of vehicle miles traveled or VMT) of on-road vehicle trips for workers, vendors, and hauling for each construction phase. Depending on the land use type and subtype combined with the various construction phases, CalEEMod will populate the fields for Number of Trips, Trip Length, and Vehicle Class for worker, vendor and haul trips, respectively, with default values. The vehicle class descriptor HHDT, MHDT means that there is a 50/50 percent mix of heavy-heavy duty trucks and medium-heavy duty trucks. Similarly, the vehicle class descriptor LDA, LDT1, LDT2 means that there is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively. The user may override the defaults and enter different weightings of vehicle fleet mixes. It is important to note that CalEEMod's database has EMFAC2017 emission factors for the following years: 2000, 2005, 2010-2035, 2040, 2045, and 2050 so if the user selects a construction year that does not have corresponding EMFAC2017 emission factors for on-road vehicles, CalEEMod has been programmed to substitute the emissions factors from nearest, lower end (e.g., oldest) year. For example, if construction will occur in year 2037 (a year which does not have emission factors), CalEEMod will substitute the emission factors from year 2035 instead. Since newer equipment tends to have less emissions than older equipment, by selecting emission factors from year 2035 (an older year), the calculations may result in a conservative, slight overestimate of emissions. Note: CalEEMod only adopts EMFAC's Statewide, Air Basin, Air Districts and County regions, it does not include EMFAC's MPO and sub-area regions.

CalEEMod quantifies the number of construction workers by multiplying 1.25 times the number of pieces of equipment for all phases (except Building Construction and Architectural Coating). For the Building Construction, the number of workers is derived from a study conducted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) which determined the number of workers needed for various types of land uses and corresponding project size. This study and its analysis are included in Appendix E2. For the Architectural Coating phase, the number of workers is approximately 20% of the number of workers needed during the Building Construction phase.

The number of vendor trips during the Building Construction phase is also derived from a study conducted by the SMAQMD. The SMAQMD trip survey during construction counted cement and water trucks as vendor trips (instead of counting them as off-road vehicle trips) and these trip rates were incorporated into the calculations for the Building Construction phase. If the user deletes the Building Construction phase from the analysis, but the project will require water and/or cement trucks, then the user will need to account for these either as vendor trips under another construction phase or under the Off-Road equipment screen.

The default values for hauling trips assume that a truck can haul 20 tons (or 16 cubic yards) of material per load. If one load of material is delivered, CalEEMod assumes that one haul truck importing material will also have a return trip with an empty truck (e.g., 2 one-way trips). Similarly, a haul truck needed to export material is assumed to have an arrival trip in an empty truck and a loaded departure truck (e.g., 2 one-way trips). Thus, each trip to import and export material is considered as two separate round trips (or 4 one-way trips). However, if the Phase box is checked, the same haul truck that imported the material will be assumed to be the same haul truck that export material resulting in one round trip (or 2 one-way trips).

4.3.6 On-Road Fugitive Dust

The On-Road Fugitive Dust sub-screen defines the variables that will be used to determine the fugitive dust emissions from on-road vehicles driving over paved and unpaved roads during construction. CalEEMod automatically populates the data fields based on the construction phase. The calculations use emission factors from USEPA's AP-42 for paved roads (January 2011 edition) and unpaved roads (November 2006 edition). Each data field is the same as those defined in the aforementioned AP-42 sections.

4.3.7 Architectural Coatings

The Architectural Coatings sub-screen is intended to calculate ROG emissions associated with painting the interior/exterior of residential and non-residential buildings as well as calculate emissions from parking lot painting or striping. The user may override any of the default interior and exterior surface areas estimated for residential and non-residential buildings. In addition, each of these surface types has a different emission factor indicating the ROG content of the paint in grams per liter (g/L). It is important to note that the parking area square footage is not included in the non-residential interior/exterior square footage when calculating emissions attributable to parking lot striping. See Appendix A, Subchapter 4.7 for the methodology of estimating surface areas to be coated from building square footage.

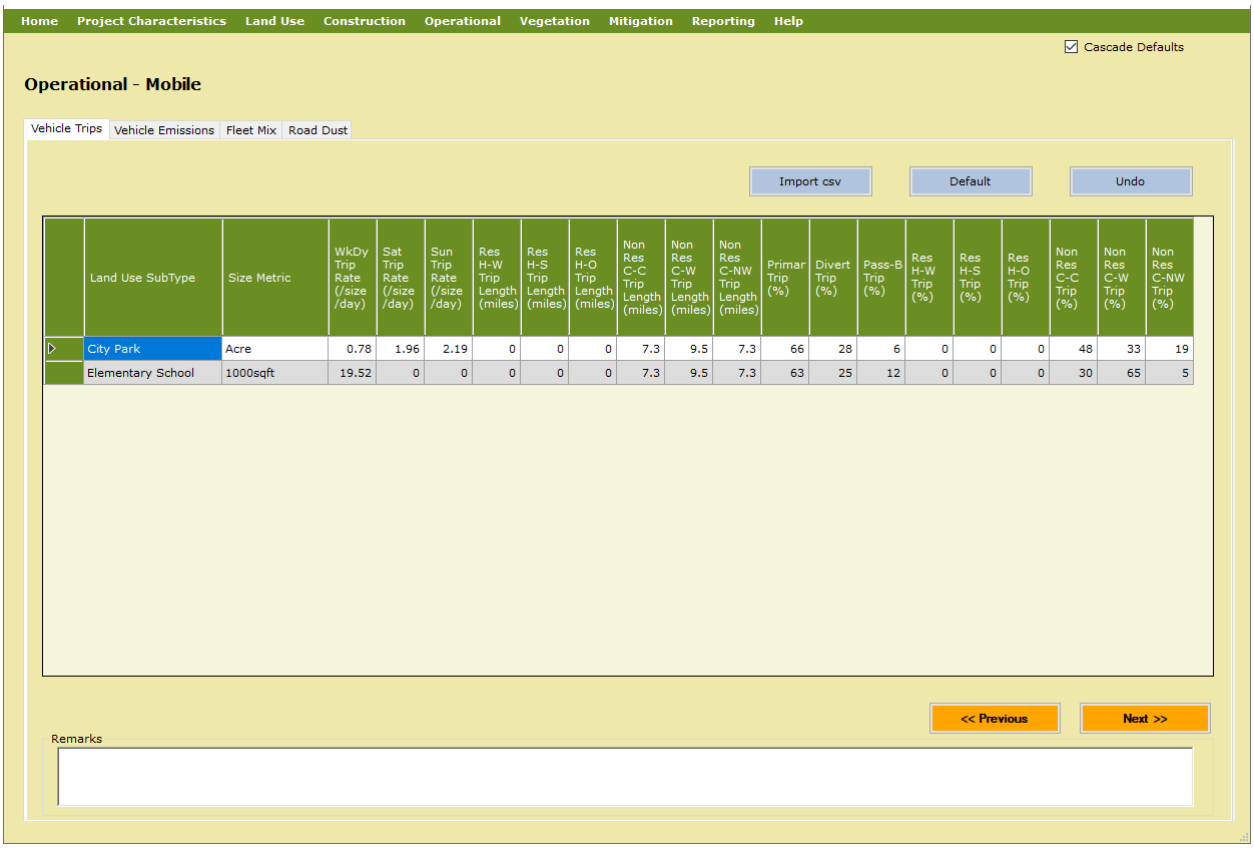
4.4 Operational Mobile

The operational mobile screen is made up of four sub-screens: Vehicle Trips, Vehicle Emissions, Fleet Mix and Road Dust. These screens are used in defining the information necessary to calculate the emissions associated with operational on-road vehicles.

4.4.1 Vehicle Trips

This sub-screen includes the trip rates, trip lengths, trip purpose, and trip type percentages for each land use subtype in the project. The user can edit any of this information by entering a new value in the appropriate cell. Trip rates are in terms of the size metric (thousand square footage or dwelling unit) defined on the land use screen and are listed for weekday, Saturday and Sunday if available. Trip lengths are for primary trips. Trip purposes are primary, diverted, and pass-by trips. Diverted trips are assumed to take a slightly different path than a primary trip and are assumed to be 25% of the primary trip lengths. Pass-by trips are assumed to be 0.1 miles in length and are a result of no diversion from the primary route. Residential trip types are defined as home-work (H-W), home-shop (H-S), and home-other (H-O). Non-residential trip types are defined as commercial –customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW) such as delivery trips. Appendix A includes the equations and methodology used to calculate motor vehicle emissions from the operation of a project.

The trip rates are based on ITE 8th, 9th, and 10th edition average trip rates for the respective land use categories.

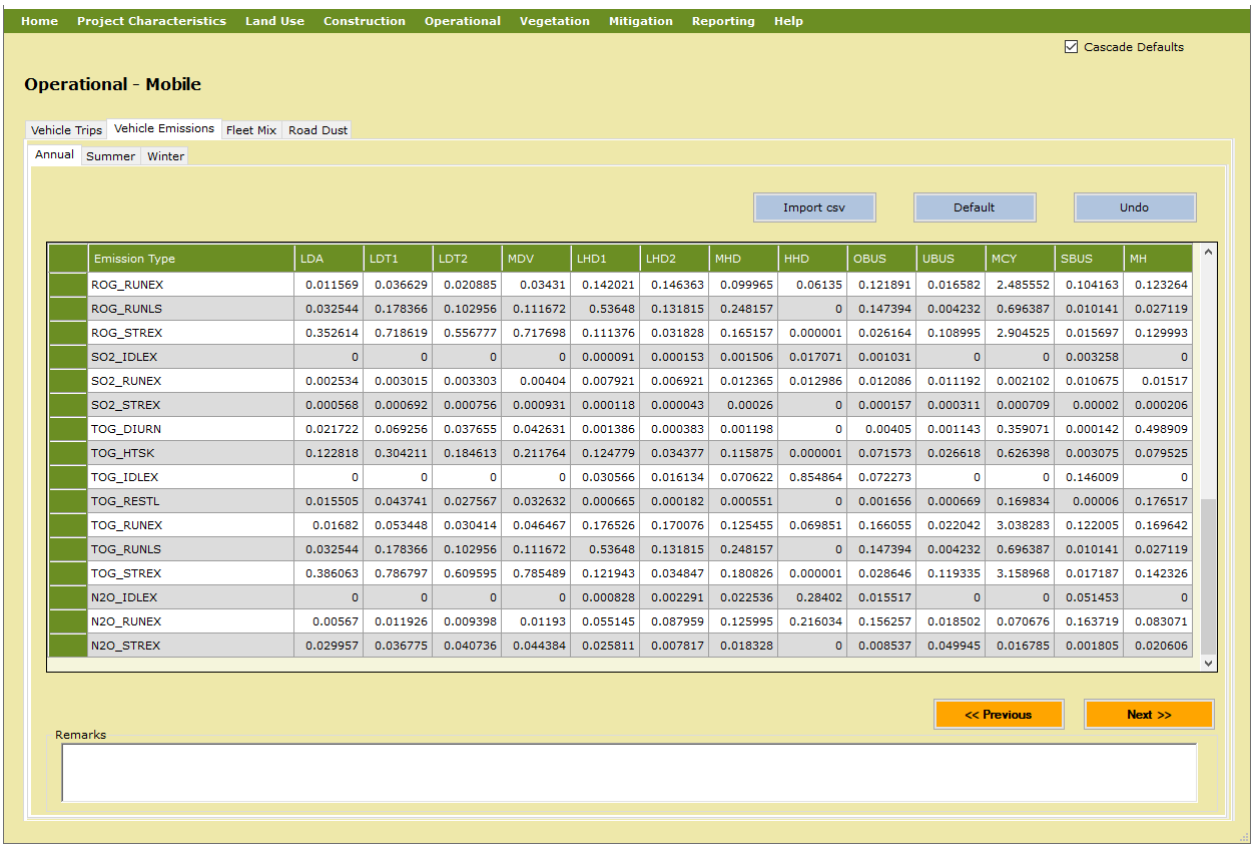


4.4.2 Vehicle Emissions

This sub-screen contains the detailed vehicle emission factors based on EMFAC2017. Appendix A includes the description of how these emission factors were derived from EMFAC2017. It is anticipated that most users will not edit data in this sub-screen. There are separate tabs for annual, summer, and winter emissions values. If the user wants to alter the breakdown of fuel types (catalytic, non-catalytic, and other) within a vehicle class, they will have to provide their own data. This will likely be an infrequent change due to CEQA enforceability requirements.

EMFAC2017 includes vehicle N_2O emissions. Beginning with CalEEMod Version 2020.4.0, N_2O emissions from vehicles are included.

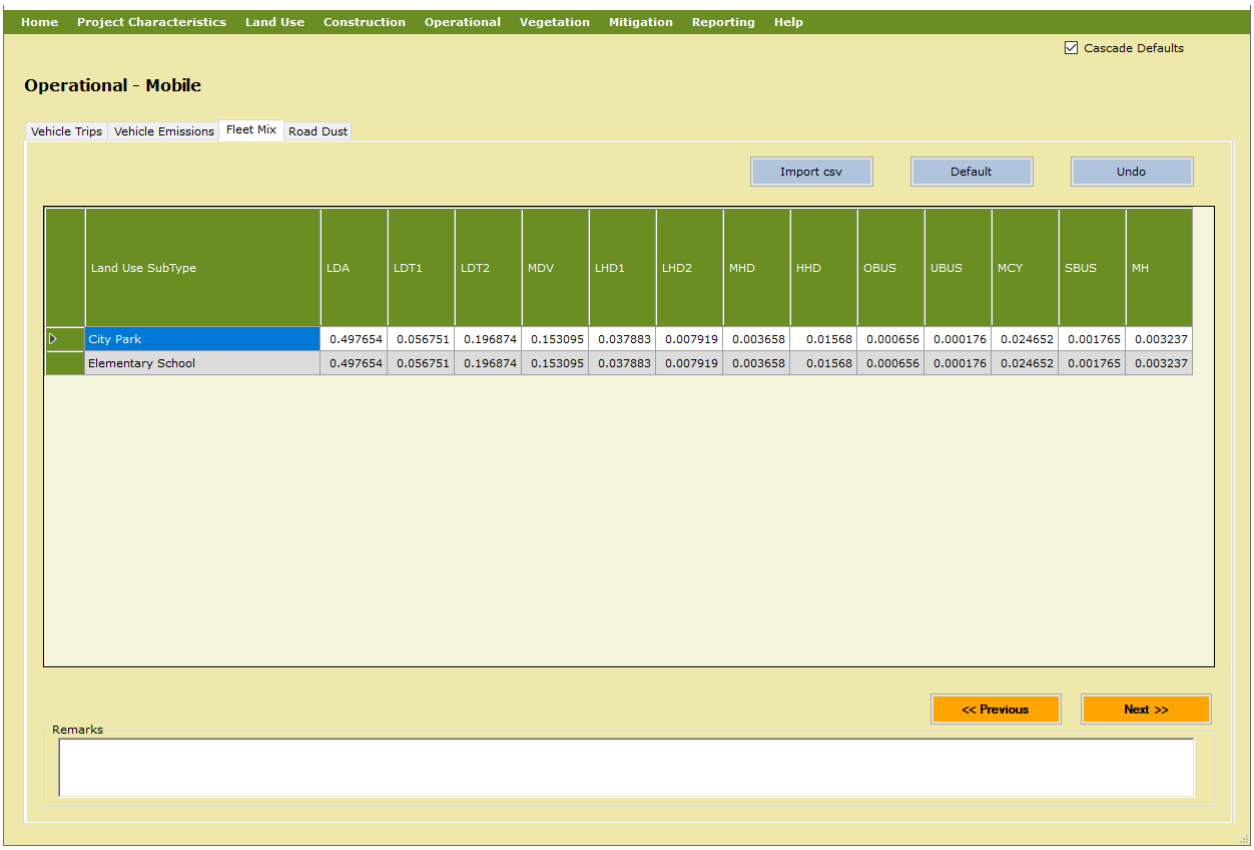
This screen along with the previous screen (Vehicle Trips) and next screen (Fleet Mix) will provide the data for the model to calculate the emissions associated with on-road motor vehicle use. The calculation does not include the fugitive dust emissions from travel over roads as these are associated with the next screen (Road Dust).



Emission Type	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
ROG_RUNEX	0.011569	0.036629	0.020885	0.03431	0.142021	0.146363	0.099965	0.06135	0.121891	0.016582	2.485552	0.104163	0.123264
ROG_RUNLS	0.032544	0.178366	0.102956	0.111672	0.53648	0.131815	0.248157	0	0.147394	0.004232	0.696387	0.010141	0.027119
ROG_STREX	0.352614	0.718619	0.556777	0.717698	0.111376	0.031828	0.165157	0.000001	0.026164	0.108995	2.904525	0.015697	0.129993
SO2_IDLEX	0	0	0	0	0.000091	0.000153	0.001506	0.017071	0.001031	0	0	0.003258	0
SO2_RUNEX	0.002534	0.003015	0.003303	0.00404	0.007921	0.006921	0.012365	0.012986	0.012086	0.011192	0.002102	0.010675	0.01517
SO2_STREX	0.000568	0.000692	0.000756	0.000931	0.000118	0.000043	0.00026	0	0.000157	0.000311	0.000709	0.00002	0.000206
TOG_DIURN	0.021722	0.069256	0.037655	0.042631	0.001386	0.000383	0.001198	0	0.00405	0.001143	0.359071	0.000142	0.498909
TOG_HTSK	0.122818	0.304211	0.184613	0.211764	0.124779	0.034377	0.115875	0.000001	0.071573	0.026618	0.626398	0.003075	0.079525
TOG_IDLEX	0	0	0	0	0.030566	0.016134	0.070622	0.854864	0.072273	0	0	0.146009	0
TOG_RESTL	0.015505	0.043741	0.027567	0.032632	0.000665	0.000182	0.000551	0	0.001656	0.000669	0.169834	0.00006	0.176517
TOG_RUNEX	0.01682	0.053448	0.030414	0.046467	0.176526	0.170076	0.125455	0.069851	0.166055	0.022042	3.038283	0.122005	0.169642
TOG_RUNLS	0.032544	0.178366	0.102956	0.111672	0.53648	0.131815	0.248157	0	0.147394	0.004232	0.696387	0.010141	0.027119
TOG_STREX	0.386063	0.786797	0.609595	0.785489	0.121943	0.034847	0.180826	0.000001	0.028646	0.119335	3.158968	0.017187	0.142326
N2O_IDLEX	0	0	0	0	0.000828	0.002291	0.022536	0.28402	0.015517	0	0	0.051453	0
N2O_RUNEX	0.00567	0.011926	0.009398	0.01193	0.055145	0.087959	0.125995	0.216034	0.156257	0.018502	0.070676	0.163719	0.083071
N2O_STREX	0.029957	0.036775	0.040736	0.044384	0.025811	0.007817	0.018328	0	0.008537	0.049945	0.016785	0.001805	0.020606

4.4.3 Fleet Mix

Beginning with CalEEMod Version 2016.3.1, the fleet mix was separated from the Vehicle Emissions screen and a new Fleet Mix screen was created so that users can change default fleet mix associated with different land use subtypes.



4.4.4 Road Dust

This sub-screen is used to change any of the default values that are used in the USEPA's AP-42 methods for calculating fugitive emissions from paved and unpaved roads. The defaults for the road dust (e.g., material silt content, material moisture content, and mean vehicle speed) are statewide averages, but the user can override the defaults if data specific to the project is known. Local jurisdictions can also provide guidance to users as to what default properly reflects known regional road dust parameters.

For the San Luis Obispo region, the user is recommended to provide the following unpaved road dust parameters overriding the statewide defaults if users choose to use USEPA's AP-42 methods:

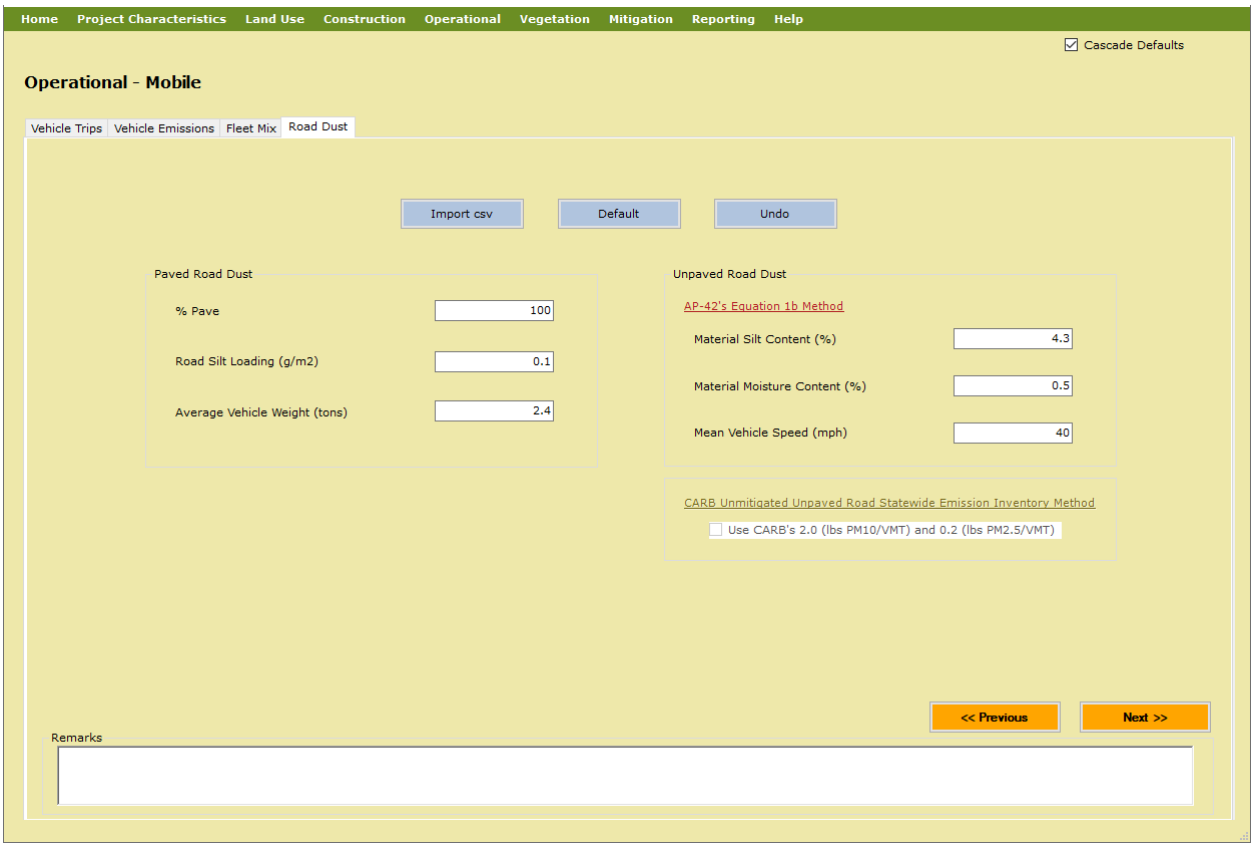
9.3 for Material Silt Content (%) *(instead of 4.3 statewide default)*

0.1 for Material Moisture Content (%) *(instead of 0.5 statewide default)*

32.4 for Mean Vehicle Speed (mph) *(instead of 40 statewide default)*

Beginning with CalEEMod Version 2016.3.1, projects located in San Luis Obispo County APCD and Sacramento Metropolitan AQMD were provided an additional option for the user to select

CARB's 2.0 lbs. PM_{10}/VMT[12] as the default unmitigated fugitive dust emission factor for unpaved roads during the operational phase. If this default is selected, an emission factor of 0.2 lbs. $PM_{2.5}$/VMT is also applied based on a 10% $PM_{2.5}$/ PM_{10} ratio[13, 14]. By checking the box, the program will use CARB's emission factor to override the calculated emission factor based on USEPA AP-42. Note: For project locations other than San Luis Obispo County APCD and Sacramento Metropolitan AQMD, CARB's 2.0 lbs. PM_{10}/VMT is not an option that the user can select.



4.5 Area

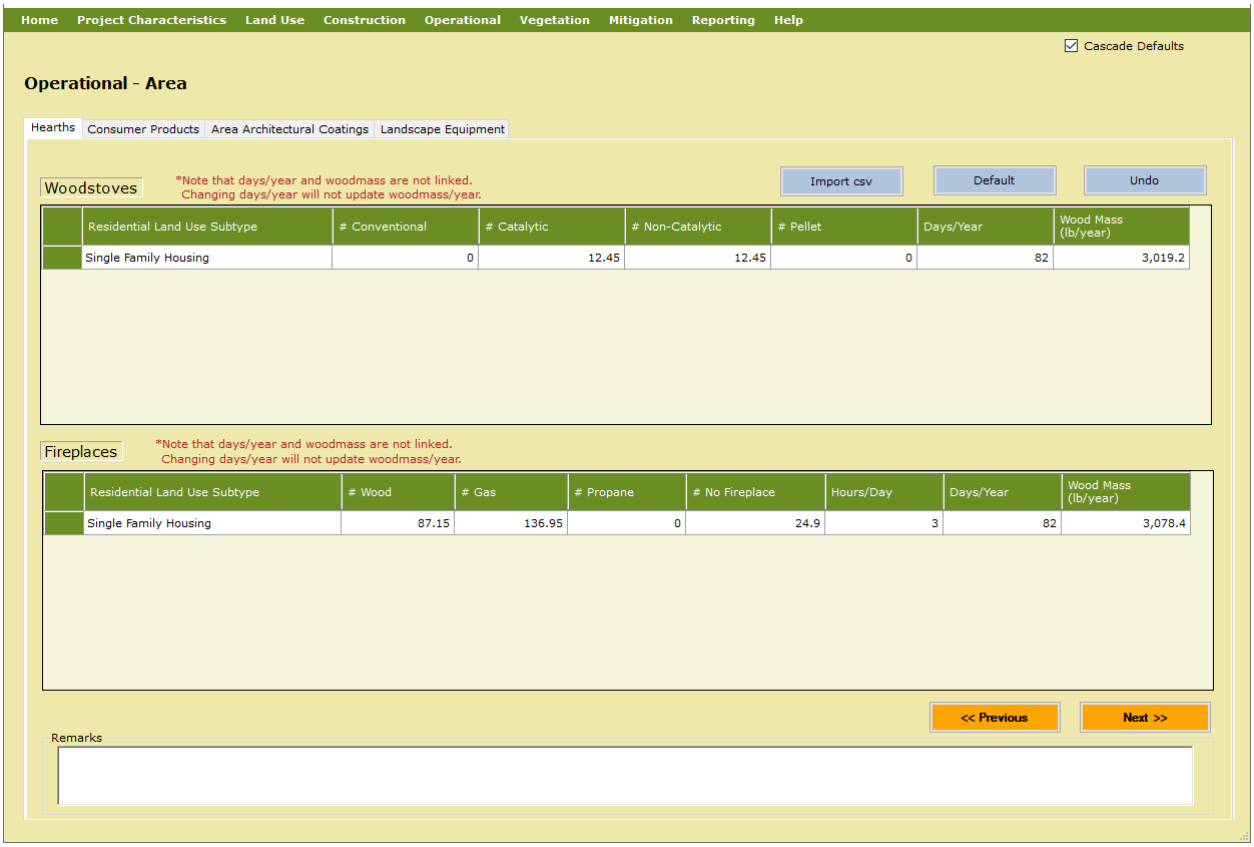
The area source screen consists of four sub-screens: Hearths, Consumer Products, Area Architectural Coatings, and Landscaping Equipment. Natural gas emission variables from all uses except hearths are included in the energy use screen (described in Section 4.6).

4.5.1 Hearths and Woodstoves

This sub-screen allows the user to enter the number of woodstoves and hearths of various types as well as the usage of these devices. Woodstoves are separate from fireplaces since a home may have both and these devices may have different use patterns. The number of devices that is

[12] Available at: http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-10.pdf
[13] Available at: http://www3.epa.gov/ttnchie1/ap42/ch13/related/mri_final_fine_fraction_dust_report.pdf
[14] Available at: http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2015&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CA#0

entered for each device type represents the total number of devices installed in the dwelling units for a particular land use. Appendix A contains the emissions calculation methodology and details of variables that the user cannot override. Some of these emissions may be classified as biogenic and are therefore reported as CO_2-Biogenic. For most locations a default percent of hearths and stoves was provided by air districts and is multiplied through. The number of devices was chosen to include in CalEEMod instead of a percentage to allow for incorporation of various air district rules regarding hearths and woodstoves in new residences without having specialized data entry screens. Commercial land uses by default do not have hearths or woodstoves in CalEEMod. These are included for those cases where they may occur such as in restaurants or hotels.



The San Joaquin Valley jurisdiction has a regulatory limit on the number of hearths depending upon the type and number of residential developments. The regulatory limit is generated by CalEEMod but all the input parameters (e.g., unit density, etc.) are necessary to determine the value. Thus, the regulatory limit is disclosed during the reporting stage under the Default Value box in the report. The model, however, calculates emission impacts from the number of hearths inputted on the Area source screen (listed under the New Value column in the report). Therefore, if the user wants to calculate emissions from regulatory limit, the report needs to be run to determine the regulatory limit and the user needs to go back to the Area Source screen to input that value and re-run the report. If the user chooses to calculate emissions from a different number of hearths (e.g., the number of hearths less than the regulatory limit), then that number needs to be inputted on the Area Source screen to properly calculate emissions. Again, the report will

provide the regulatory limit under the Default Value column and the user input value under New Value column.

4.5.2 Consumer Products

Consumer products are various solvents used in non-industrial applications which emit ROGs during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and toiletries. South Coast AQMD has developed an emission factor based on the total of all building square footage for both residential and non-residential buildings. Details of how this emission factor was developed can be found in Appendix E. The user can change this emission factor if more relevant data is available. Beginning with CalEEMod Version 2016.3.1, ROG emissions from pesticides/fertilizers for City Parks and Golf Courses and ROG emissions from parking surface degreasers are separate from the general consumer products category. Also beginning with CalEEMod Version 2016.3.1, the model also assumes that there would be no ROG emissions from the actual pool surface area for Recreational Swimming Pools because the chemicals used for maintaining pools are not considered to be ROGs. Details of how the ROG emission factors for pesticides/fertilizers and parking surface degreasers were determined can be found in Appendix E.

4.5.3 Area Architectural Coatings

This sub-screen has text boxes for the reapplication rate and coating ROG content for each building surface type and parking surface. The reapplication rate is the percentage of the total surface area that is repainted each year. A default of 10% is used, meaning that 10% of the surface area is repainted each year (i.e., all surface areas are repainted once every 10 years). Daily emissions divide the annual rate by 365 days per year. This is based on assumptions used by South Coast AQMD in their district rules regarding architectural coatings. Some districts provided details on their coating regulations that phase-in over time, which have been incorporated to the extent feasible, given the general classifications of paint (interior or exterior for residential and non-residential). Coating ROG content from state regulations are used for air districts that did not provide specific architectural coating information. Consult your local air district for suggested values that may be lower than the state regulations.

The ROG contents under the Operational Area Architectural Coatings screen (either CalEEMod defaults or site-specific values defined by users) become the default ROG contents for the Area Mitigation screen. The user may check the box under the Area Mitigation screen and specify a lower ROG content limit.

4.5.4 Landscape Equipment

This sub-screen has two text boxes to show the number of snow days or summer days. In addition, the defaults consider a realistic number of days which the landscaping equipment would be operated. For example, landscaping at commercial facilities typically do not take place during a weekend or during the summer at educational facilities that are not open. The number of days is applied to the appropriate landscape equipment types available in OFFROAD2011 using the average horsepower and load factors of the population mode. The derivation of emission factors used for each equipment type from OFFROAD2011 is described in Appendix A.

4.6 Energy Use

The energy use screen is used to gather the information necessary to estimate the emissions associated with building electricity and natural gas usage (non-hearth). The electricity energy use is in units of kilowatt hours (kWh) per size metric for each land use subtype. Natural gas use is in units of a thousand British Thermal Units (kBTU) per size metric for each land use subtype.

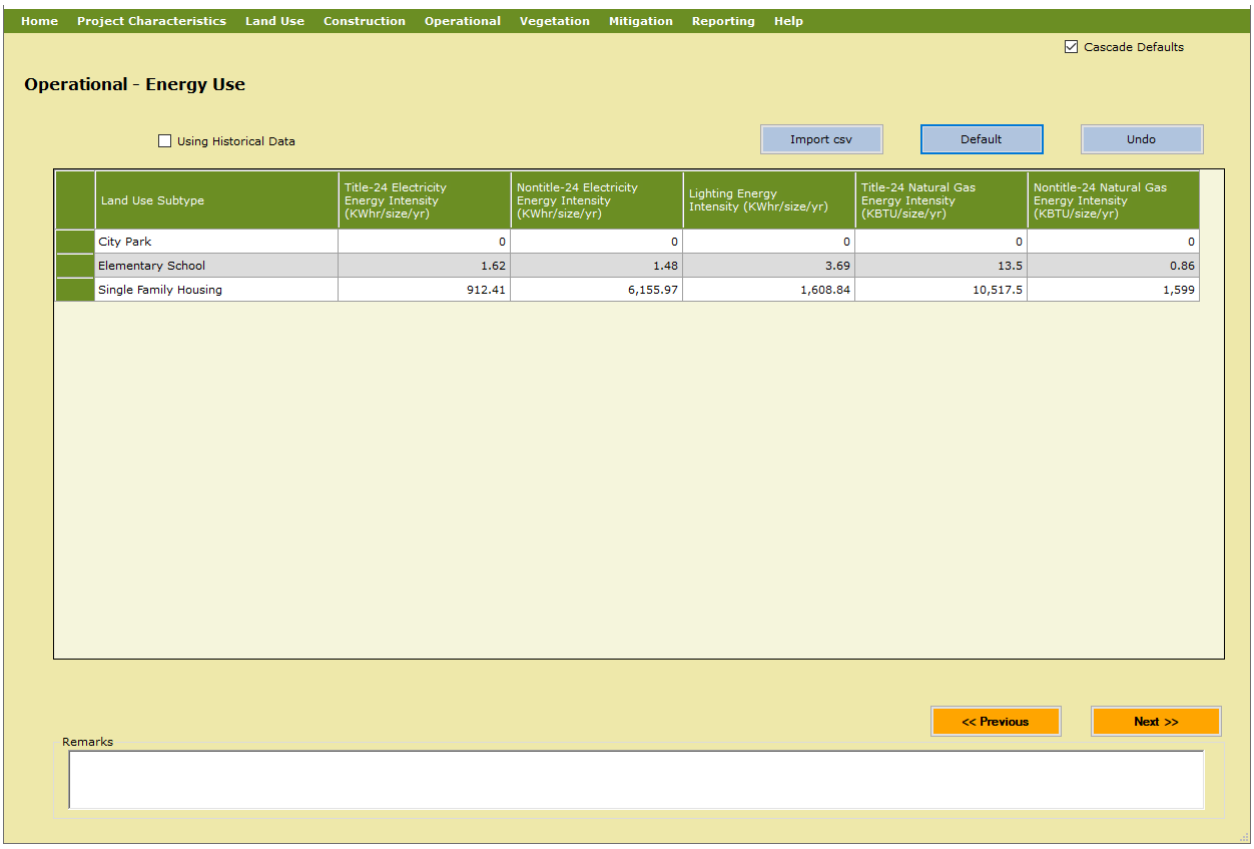
Title 24 of the California Code of Regulations, known as the California Building Standards Code or Title 24, contains energy conservation standards applicable to all residential and non-residential buildings throughout California. With CalEEMod, building electricity and natural gas use is divided into two categories: 1) end uses subject to Title 24 standards; and, 2) end uses not subject to Title 24 standards. The distinction is used when the mitigation measure for exceeding Title 24 standards (BE-1) is applied. Lighting is also a separate category in CalEEMod for which a separate mitigation measures (LUT-1) may be applied for using energy efficient lighting.

For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24 such as space heating, space cooling, water heating, and ventilation. Non-Title 24 uses include all other end uses, such as appliances, electronics, and other miscellaneous plug-in uses. Because some lighting is not considered as part of the building envelope energy budget, and since a separate mitigation measure is applicable to this end use, CalEEMod makes lighting a separate category.

For natural gas, uses are likewise categorized as Title 24 or Non-Title 24, with Title 24 uses including building heating and hot water end uses. Non-Title 24 natural gas uses include cooking and appliances (including pool/spa heaters).

The baseline values are based on the CEC sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies[15]. For climate zones not included in these surveys, data from the closest climate zone was used as a surrogate. Since these studies are based on older buildings, adjustments have been made to account for changes due to Title 24 building codes as described in Appendix E. The user should select the use historical box if they only want an adjustment to the 2005 standards which were in effect when CARB developed its Scoping Plan 2020 No Action Taken predictions. After selecting the historical button, the user must also click the default button to load the historical default values.

[15] CEC. October 2010. Residential Appliance Saturation Survey. Available at: http://www.energy.ca.gov/appliances/rass
CEC. March 2006. Commercial End-Use Survey. Available at: https://www.energy.ca.gov/data-reports/surveys/california-commercial-end-use-survey/2006-california-commercial-end-use-survey



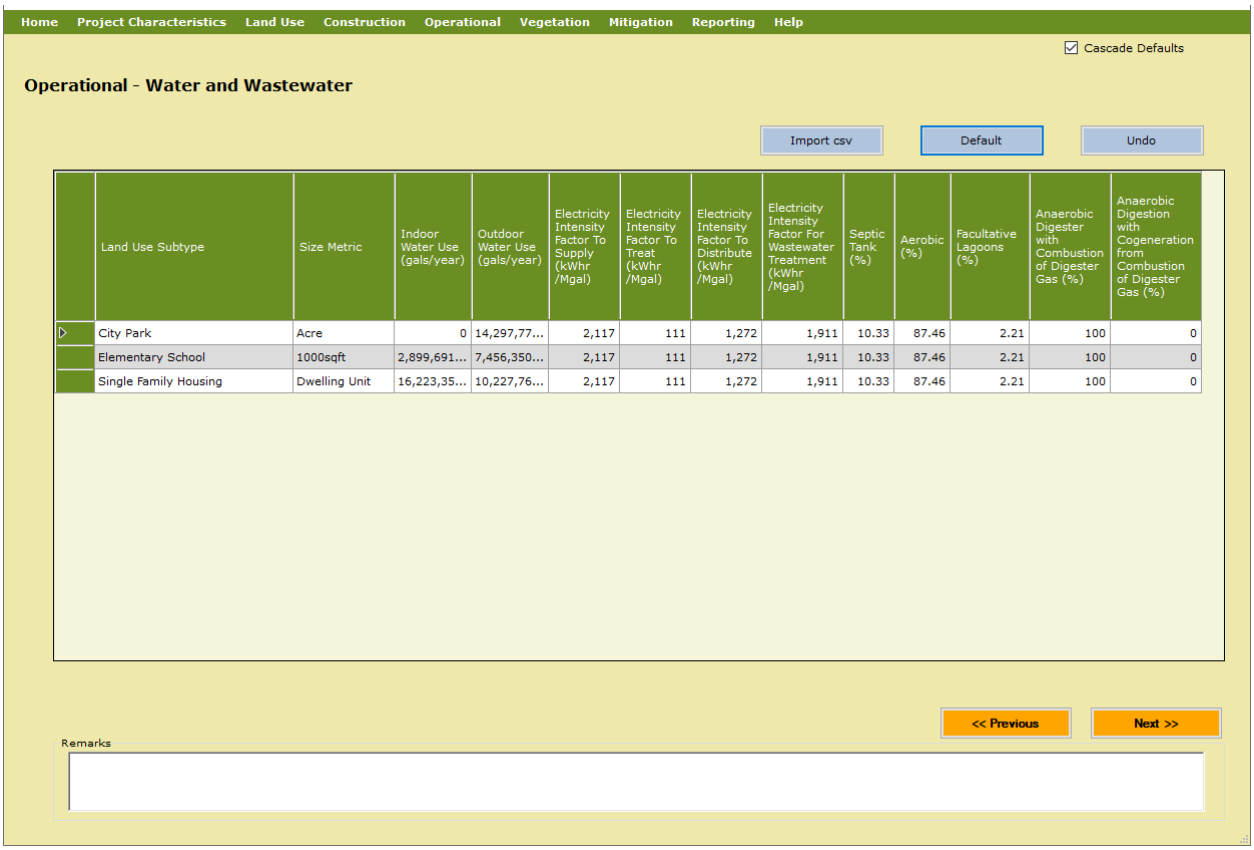
4.7 Water and Wastewater Use

This screen estimates the land uses contribution of GHG emissions associated with supplying and treating water and wastewater. This screen is used to enter the amount of water in gallons used indoors and outdoors for each land use subtype.[16] The indoor water is also used to estimate the amount of wastewater. The electricity intensity factor for various phases of providing water is provided. Depending on the specific water supply used or treatment method used these numbers can vary over a wide range. Supplying water is bringing the water from its primary source such as the ground, river, or snowpack to the treatment plant. Distributing the water is bringing the water from the treatment plant to the end users. The electricity intensity factors are multiplied by the utility GHG emissions intensity factors for the GHGs and are classified as indirect emissions. The default electricity intensity is from the CEC's 2006 Refining Estimates of Water-Related

[16] Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available at: http://pacinst.org/publication/waste-not-want-not/
Dziegielewski; B.; Kiefer, J.C.; Optiz, E.M.; Porter, G.A.; Lantz, G.L.; DeOreo, W.B.; Mayer, P.W.; Nelson, J.O. 2000. Commercial and Institutional End Uses of Water. Published by the American Water Works Association Research Foundation.

Energy Use in California using the average values for Northern and Southern California[17]. The location will automatically select the appropriate values if using these defaults. Since the electricity can vary greatly based on locations, the user should override these values if they have more specific information regarding their specific water supply and treatment.

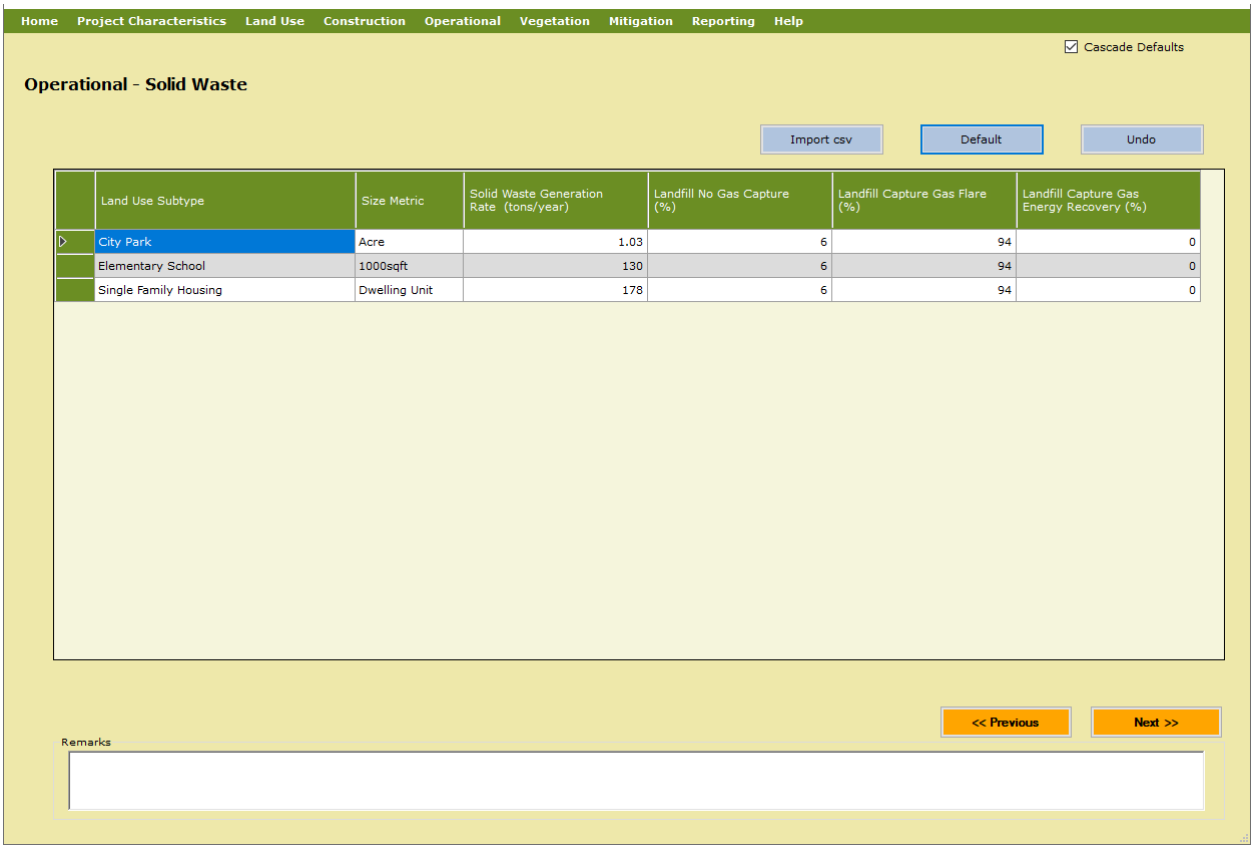
Wastewater may also have direct emissions of GHGs. These depend on the type of wastewater treatment system (e.g., septic, aerobic or lagoons) used and therefore the wastewater treatment type percentages are variables. In addition, the model calculates impacts if the solids are digested either through an anaerobic digester or with co-generation from combustion of digester gas. Each type has associated GHG emission factors. Some of these may be classified as biogenic. Not all the biogenic emissions are accounted for since there are not adequate emissions factors at this time. Refer to Appendix A on how to properly change the defaults, if necessary, and the methodology used to calculate impacts from wastewater treatment.



[17] CEC-500-2006-118. Available at https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.21_CEC%20Water-Related%20Energy%20Use.PDF

4.8 Solid Waste

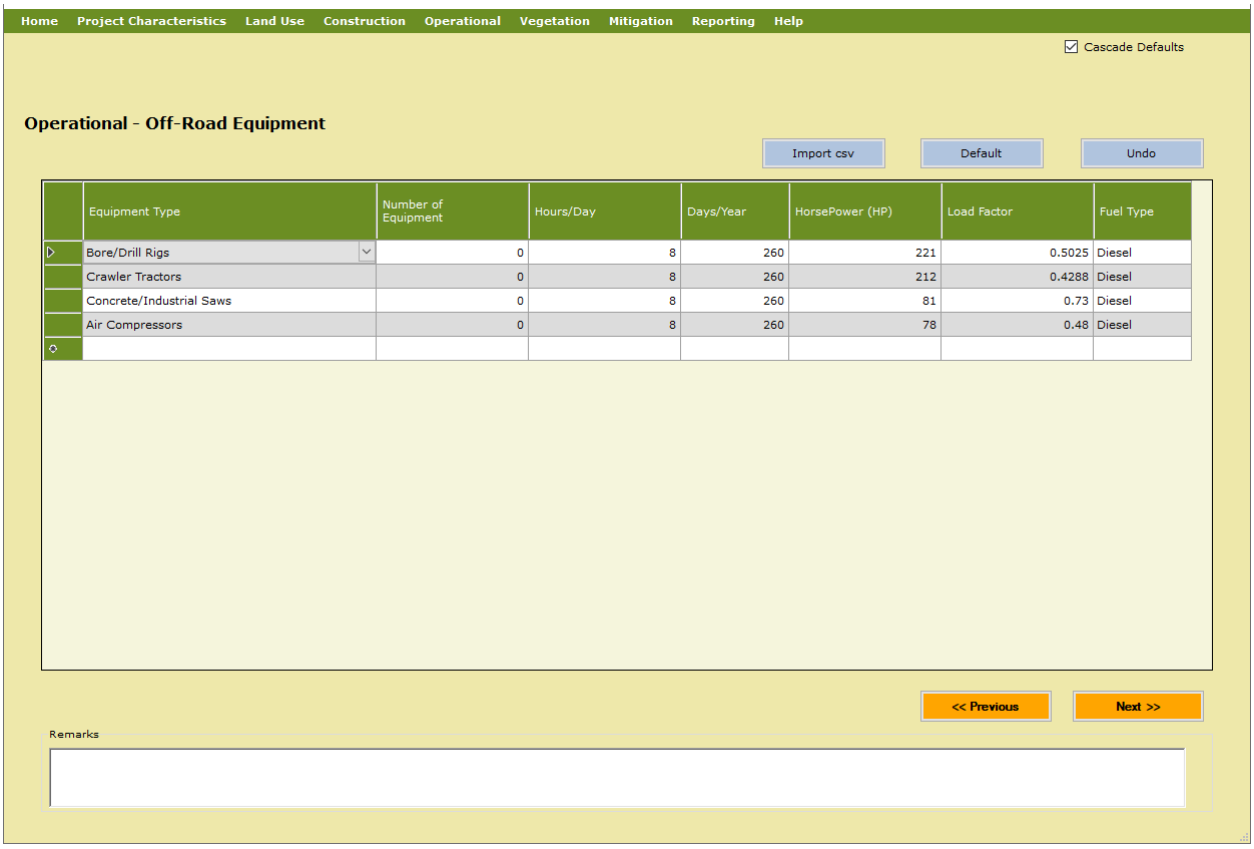
The solid waste screen determines the GHG emissions associated with disposal of solid waste into landfills. To estimate the eventual contribution of GHG emissions from solid waste disposed by a land use annually, the total amount of carbon dioxide and methane that would be evolved over the span of many years is calculated. This is based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste[18]. Waste disposal rates by land use and overall composition of municipal solid waste in California is primarily based on CalRecycle data. The amount of methane emitted depends on characteristics of the landfill, and therefore the default percentage is based on the types of landfills assumed by CARB in their GHG emissions inventories. Portions of these emissions are biogenic. The defaults for the gas capture (e.g., no capture, flaring, energy recovery) are statewide averages except for Santa Barbara APCD which has a 100% landfill capture gas flare. The user can override the defaults if the gas capture at the landfill to be used by the project is known. Local jurisdictions can also provide guidance to users as to what default properly reflects known regional solid waste gas capture.



[18] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 5 Waste. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html.

4.9 Off-Road Equipment

The Operational - Off-Road Equipment sub-screen allows the user to identify any off-road equipment used during operational activities (e.g., forklifts, cranes, loaders, generator sets, pumps, pressure washers, etc.) at the project site. Because such equipment cannot be assumed to be needed for a particular land use project, a user must provide the data for CalEEMod to calculate the resulting emissions from off-road equipment operation. A dropdown list of off-road equipment is provided for the user to identify each piece of equipment. The model requires the following specific information per equipment type. The user would need to provide the number of pieces for each equipment type. The model assumes an operation activity of 8 hours per day and 260 days per year, as well as the horsepower and load factor of the equipment type, but the user can override the default assumptions with project specific information. Finally, the model assumes diesel fuel, but a dropdown menu is provided to allow the user to choose bio-diesel, compressed natural gas (CNG) or electrical if known, to power the equipment.

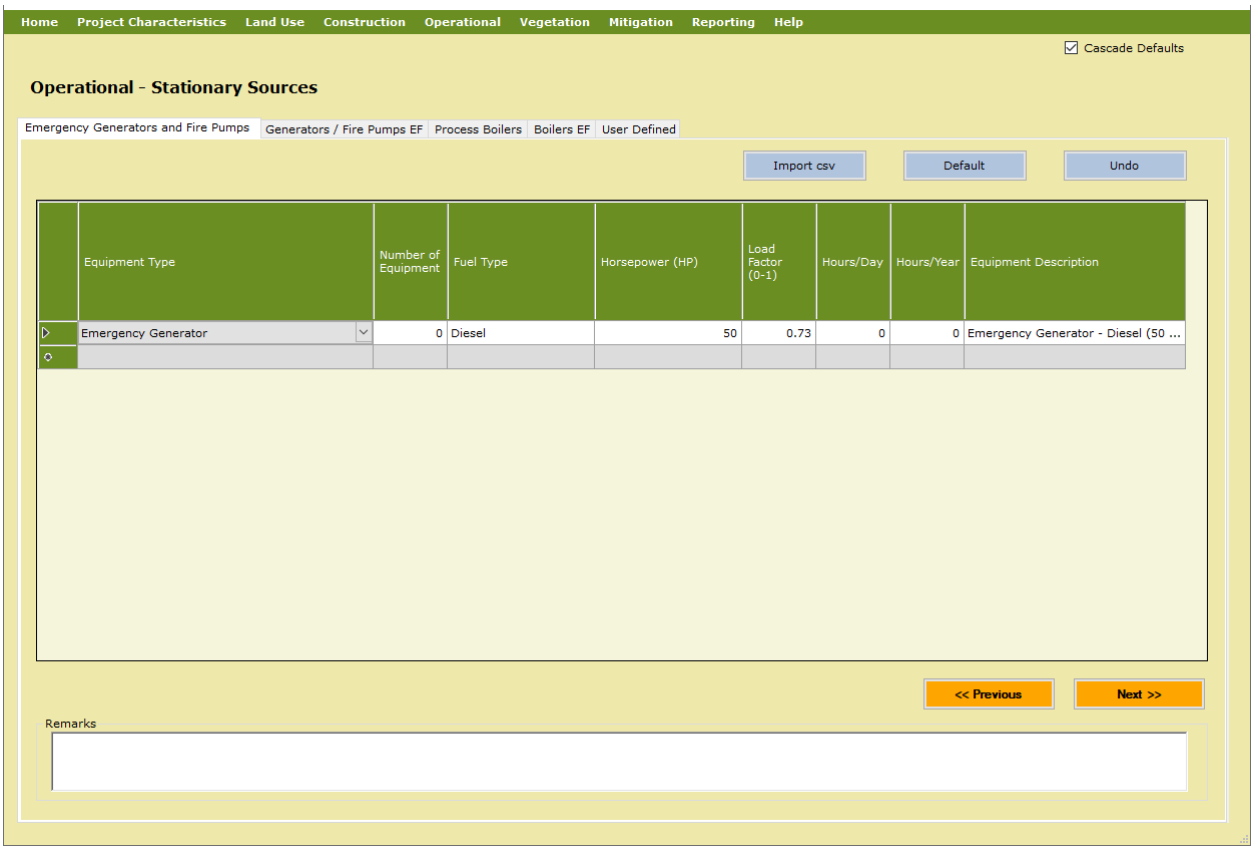


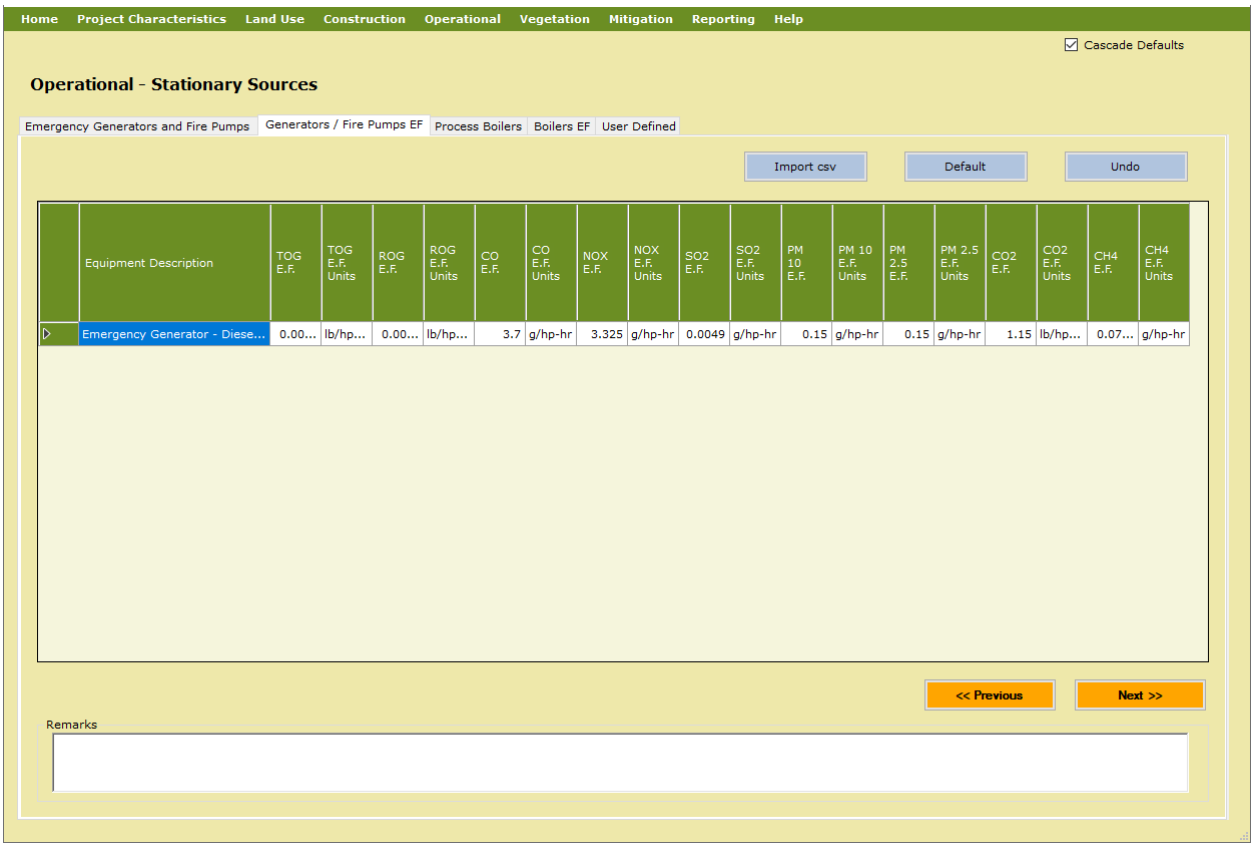
4.10 Stationary Sources

The Stationary Sources screen consists of five sub-screens: Emergency Generators and Fire Pumps and their default emission factors, Process Boilers and their default emission factors, and User Defined Sources. Consult with the local air district to determine if permitted stationary sources should be included in the project analysis using CalEEMod.

4.10.1 Emergency Generator and Fire Pumps and Default Emission Factors

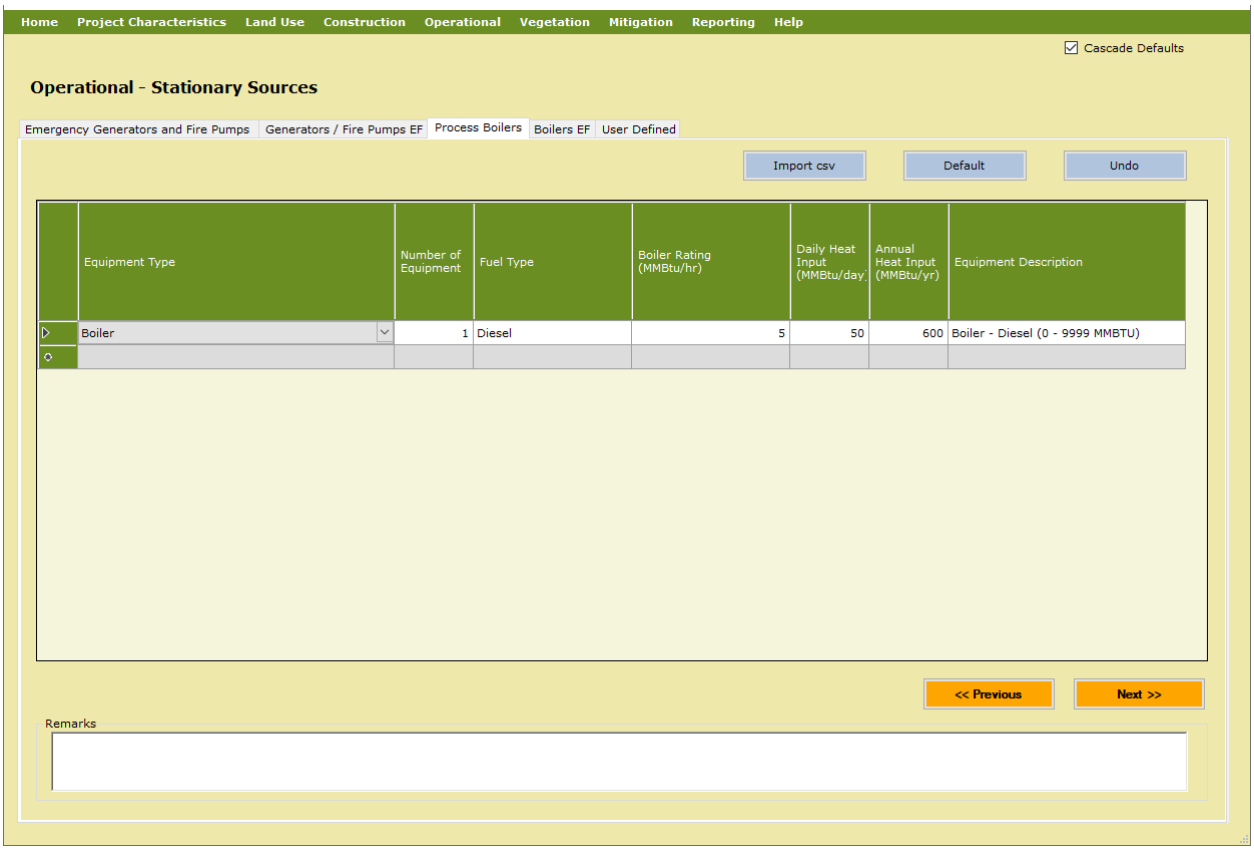
Two sub-screens allow the user to enter emergency power generators and diesel fueled fire pumps and to estimate emissions. This type of equipment operates only for maintenance and testing, or during emergency situations, such as power failures. To calculate emissions, the user must enter the engine rating (in horsepower), the anticipated maximum daily usage, and the anticipated maximum annual usage into the Emergency Generators and Fire Pumps sub-screen. The user may change the default load factor. The default emission factors for the equipment are shown on the separate Generators/Fire Pumps EF (emission factor) sub-screen. The user can replace the default emission factors but needs to provide custom emission factors in the predefined units. See Appendix A for the sources of default emission factors and emission calculation methodology.





4.10.2 Process Boilers and Default Emission Factors

Two sub-screens allow the user to enter process boilers and to estimate emissions. Do not use this option for boilers providing space heating or building hot water, as these uses are included building energy use (See Subchapter 4.6). To calculate process boiler emissions, the user must enter the boiler rating (in million BTU/hr) and maximum anticipated daily and annual heat input in the Process Boilers sub-screen. The default emission factors for boilers are shown on the separate Boiler EF (emission factor) sub-screen. The user can replace the default emission factors, but needs to provide custom emission factors in the predefined units. See Appendix A for the sources of default emission factors and emission calculation methodology.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Process Boilers
Boilers EF
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Import csv
Default
Undo
Equipment Type
Number of Equipment
Fuel Type
Boiler Rating (MMBtu/hr)
Daily Heat Input (MMBtu/day
Annual Heat Input (MMBtu/yr)
Equipment Description
Boiler
1
Diesel
5
50
600
Boiler - Diesel (0 - 9999 MMBTU)
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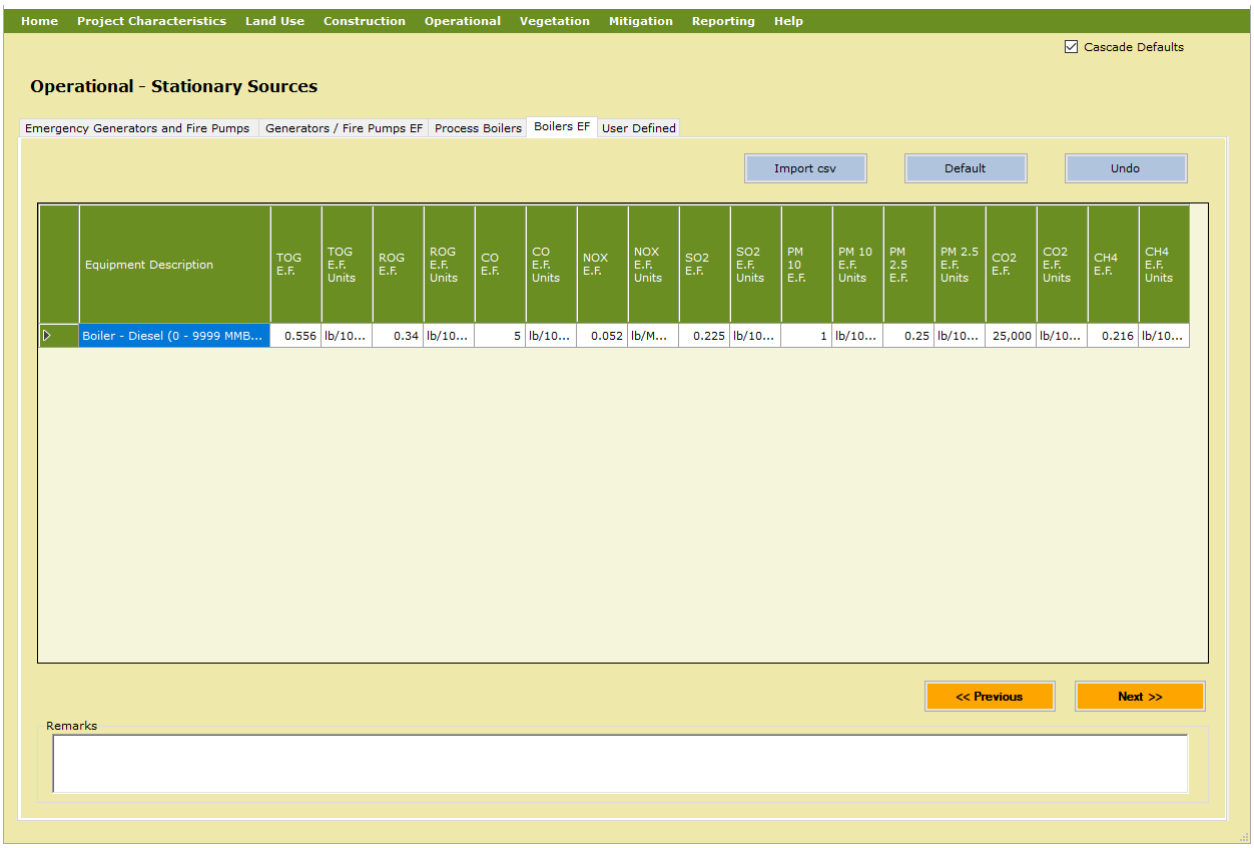
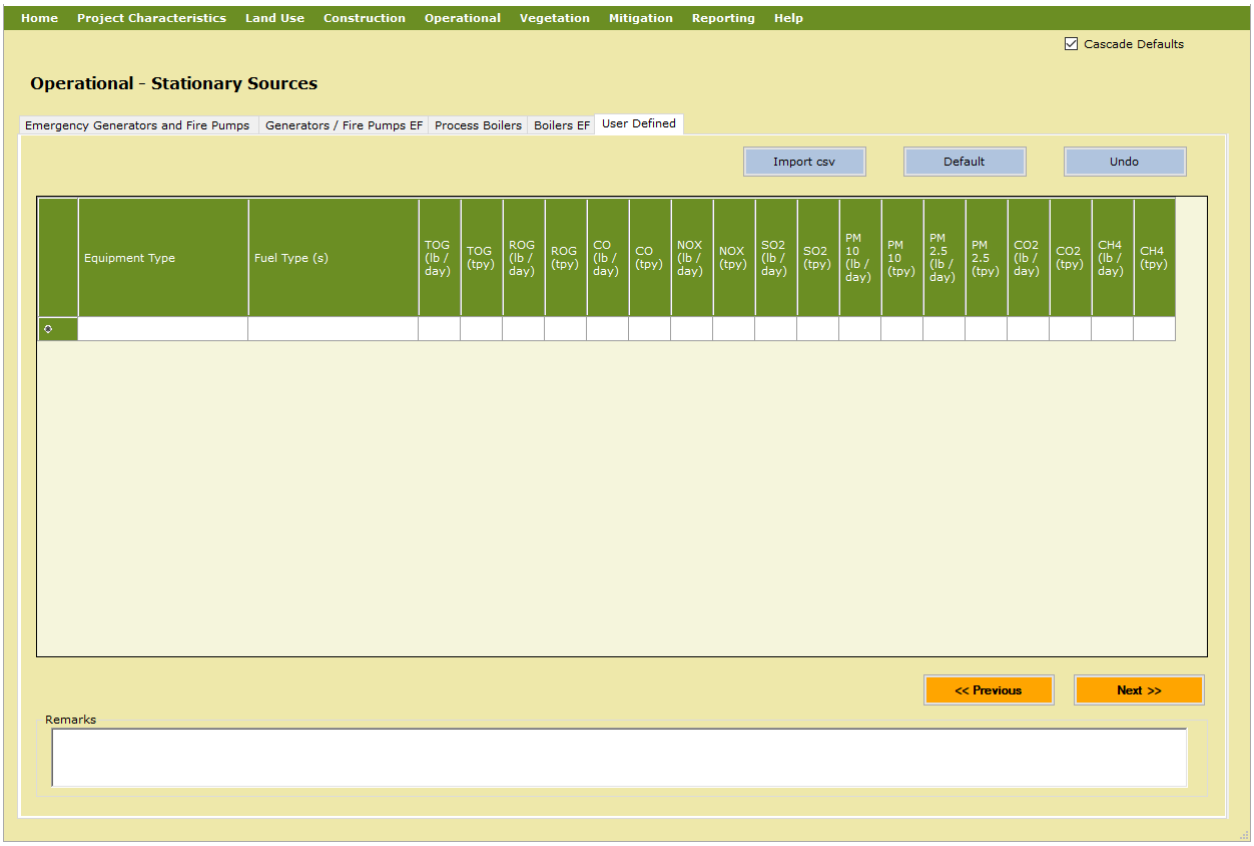


4.10.3 User Defined

An option for the user to define stationary sources other than emergency generators, fire pumps and process boiler has been included in the User Defined sub-screen. Emissions for this source would include any other miscellaneous sources that typically require permits to operate issued by an air district. Emissions may be manually entered here, either by transferring values from the permits to operate, or by calculating emissions outside of CalEEMod. Any emissions entered here will be transferred to the appropriate reports.



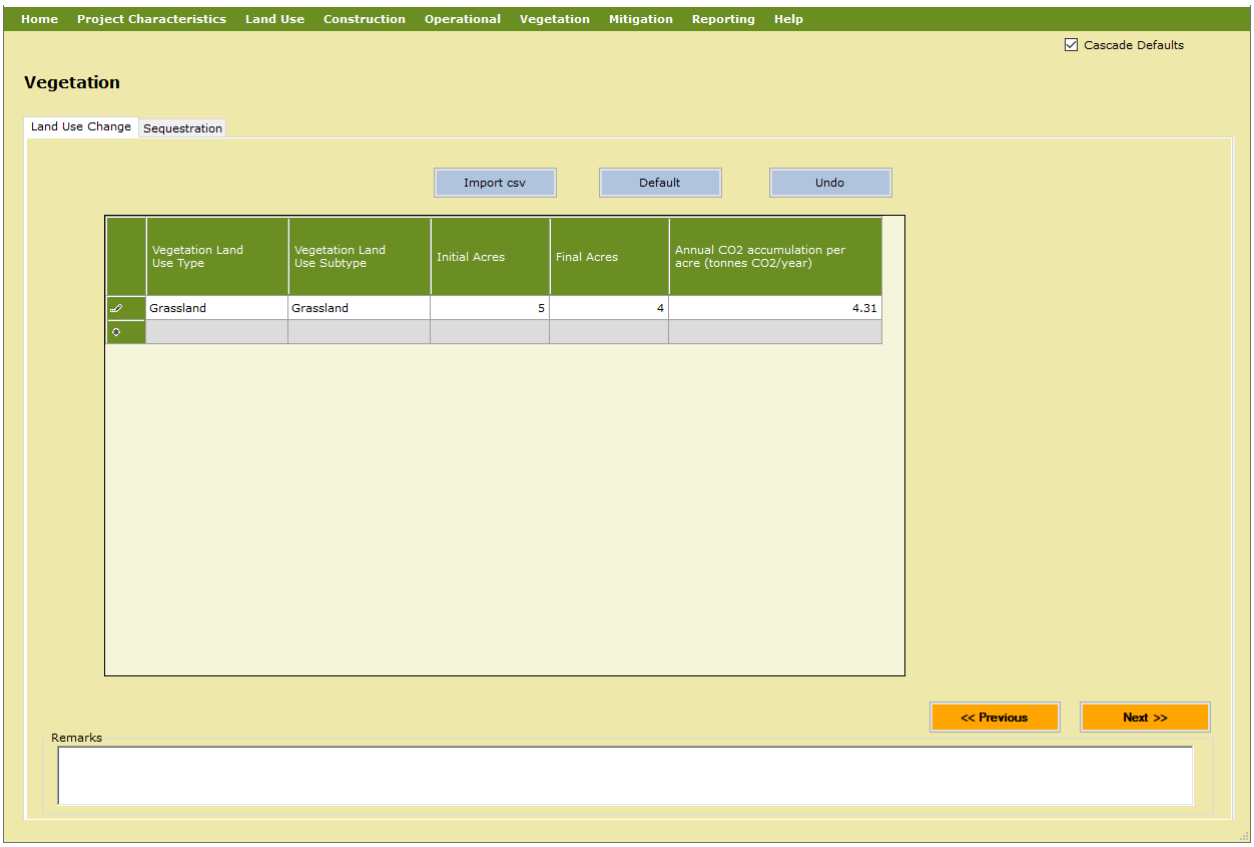
4.11 Vegetation

The vegetation screen is used to estimate the one-time change in carbon sequestration capacity due to a project. There are two sub-screens, Land Use Change and Sequestration. The methods used are based on IPCC[19].

4.11.1 Land Use Change

The Land Use Change sub-screen estimates GHG emissions due to a change in vegetation resulting from a change in land use type. The user enters the vegetation land use type, the initial and final acreage of the vegetation land use type, and the annual carbon dioxide equivalent accumulation per acre if the user chooses to override the default value. Settlement land use acreage is not considered since it is a net zero at steady state unless trees are added.

[19] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html



4.11.2 Sequestration

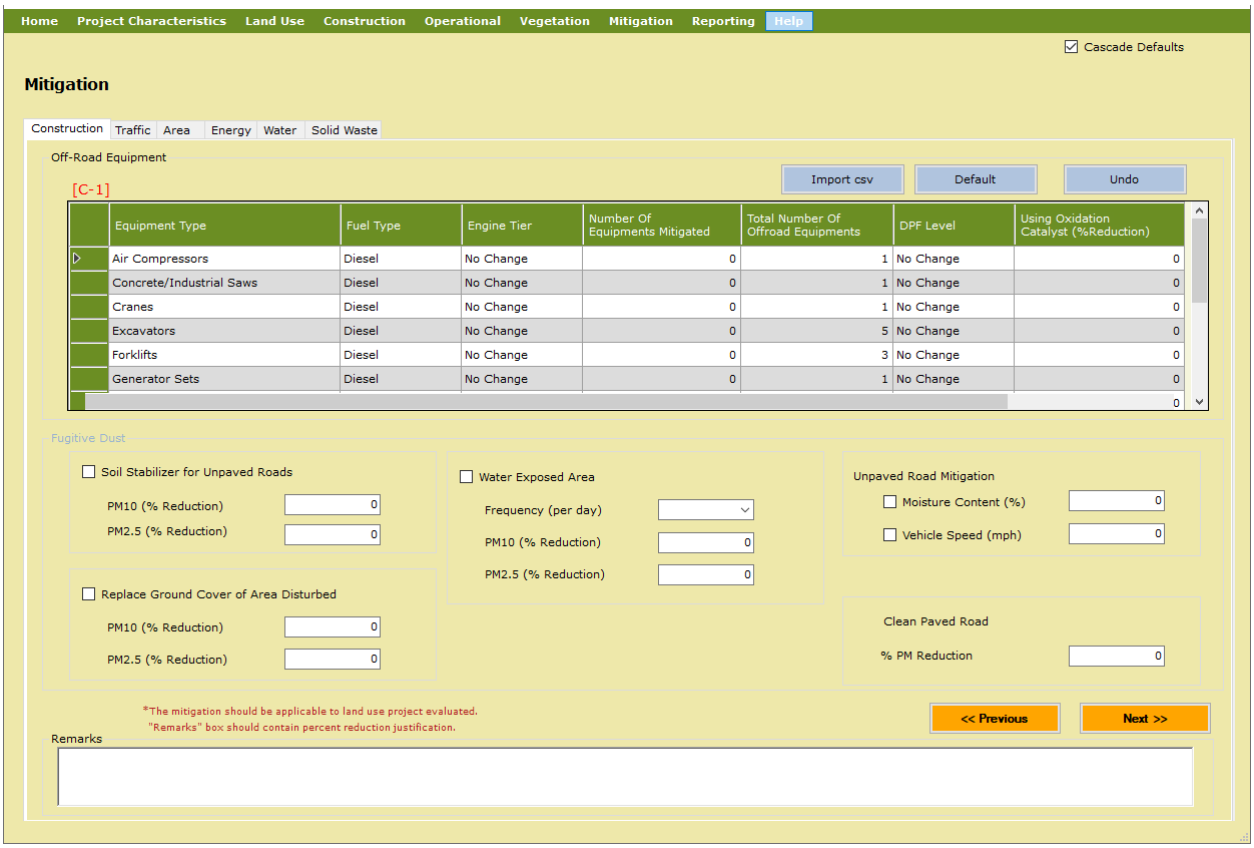
This sub-screen of Vegetation is used to estimate the GHG emissions associated with the sequestration of net new trees added to the project site. Consistent with IPCC recommendations a 20-year active growth period is assumed. The user enters the tree type or miscellaneous if it is not known, and the total number of trees. The user can override the default carbon sequestration rate.

4.12 Mitigation

The mitigation screen consists of six sub-screens that the user can indicate and supply the necessary information to estimate the emissions after mitigation measures have been implemented. The mitigation measures included in CalEEMod are largely based on the CAPCOA Quantifying Greenhouse Gas Mitigation Measures (http://www.capcoa.org/wp-content/uploads/downloads/2010/09/CAPCOA-Quantification-Report-9-14-Final.pdf) document. The CAPCOA measure numbers are provided next to the mitigation measures in CalEEMod to assist the user in understanding each measure by referencing back to the CAPCOA document. This User's Guide focuses on key aspects of the Mitigation sub-screens which are described in more detail in the following sections.

4.12.1 Construction Mitigation

This sub-screen consists of a data-grid of off-road construction equipment to apply various mitigation measures and check boxes with supplemental information for fugitive dust emissions mitigation.



To apply mitigation to construction equipment, the user selects the equipment type, notes the number of equipment mitigated (of the total number of off-road equipment listed), and type of mitigation that applies. If substantial evidence supporting reductions was available at the time of development, options include fuel type (diesel, CNG, electric, hybrid, biodiesel), engine tier (typically select Tier 4), diesel particulate filter tiers (Tier 3 being the most effective), and use of oxidative catalysts. The program estimates how much if any increase or decrease in emissions to apply for each pollutant. Some mitigation measures have trade-offs in pollutant reductions and therefore may result in increases of some pollutants. The mitigation option to use alternative fuel for construction equipment is consistent with mitigation measure C-1 in the CAPCOA Quantifying GHG Mitigation document.

To apply mitigation to construction fugitive dust, the user must select the check box in front of the mitigation measure name, and enter the appropriate information in the drop-down or text boxes. Some fugitive dust mitigation required by some air districts will not appear since the fugitive dust

sources being mitigated are not quantified by CalEEMod (e.g., fugitive dust generated by wind over land and storage piles). For any fugitive dust source that is not quantified, it is not appropriate to apply the reduction.

For Unpaved Road Mitigation for construction fugitive dust, the maximum vehicle speed and the minimum moisture content for unpaved roads are entered. Defaults for these values are those entered on the On-Road Fugitive Dust screen. Mitigated emissions are calculated using the VMT from on-road vehicles traveling along unpaved roads, previously calculated from the percentages entered on the On-road Fugitive Dust Screen (e.g., % Pave Worker, % Pave Vendor or % Pave Hauling).

Users may check the boxes and provide a lower vehicle speed and a higher moisture content to conduct the mitigation calculation. If during a particular construction phase the user defined mitigated vehicle speed is higher than the unmitigated vehicle speed and/or the user defined mitigated moisture content is lower than the unmitigated moisture content, a warming message will be displayed. In this case, the unmitigated values will be used, resulting in no mitigation being calculated.

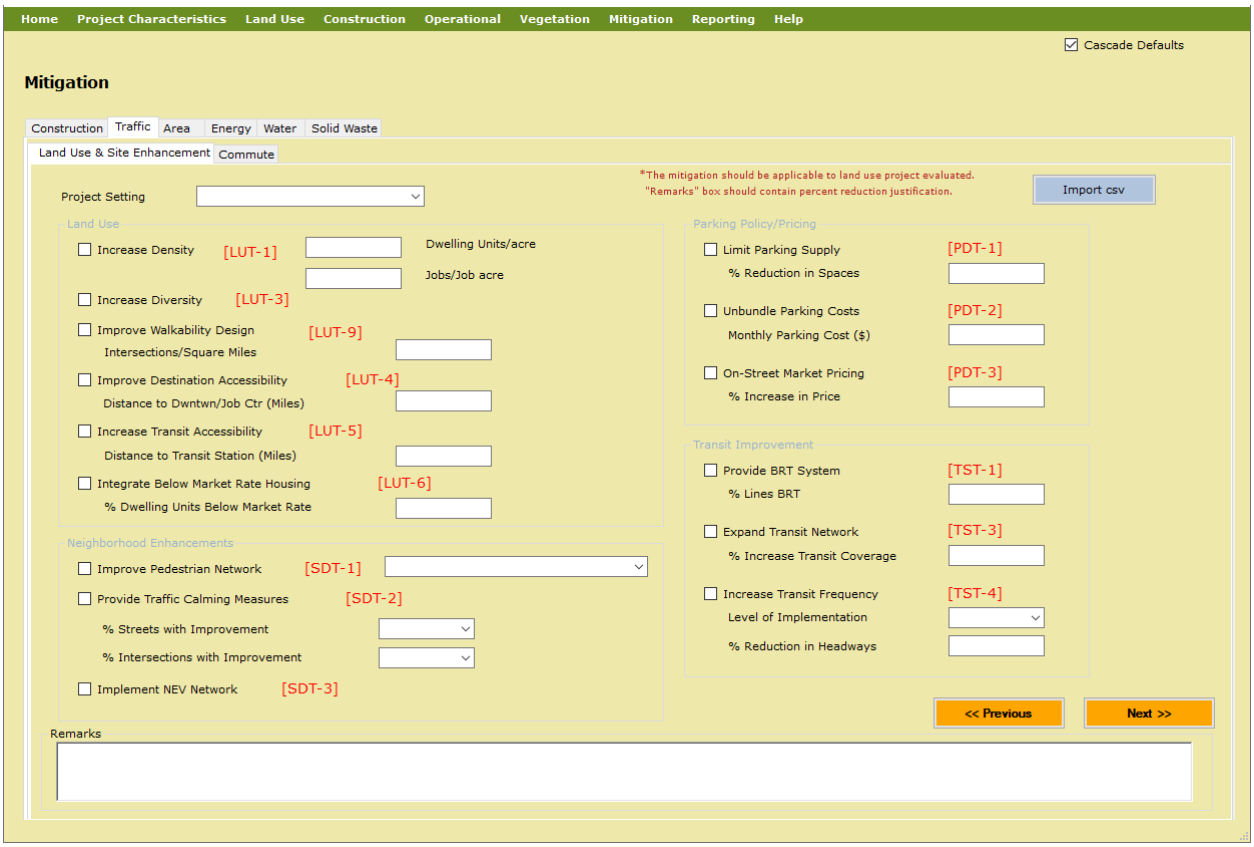
4.12.2 Traffic Mitigation

There are two traffic mitigation sub-screens that the user can select from, Land Use & Site Enhancement and Commute. First, the user must select the Project Setting as defined in the CAPCOA document (pp. 59-60).

- Low Density Suburban: An area characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb).
- Suburban Center: An area that serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb.
- Urban: An area which is located within the central city with higher density of land uses than you would find in the suburbs. It may be characterized by multi-family housing and located near office and retail.
- Urban Center *(referred to as Compact Infill in the CAPCOA document)*: An area which is located within or contiguous with the central city. Examples may include redevelopment areas, abandoned sites, or underutilized older buildings/sites.

If the CAPCOA measure did not distinguish between Suburban Center and Low-Density Suburban, values for Low Density Suburban were used. Similarly, if Urban Center and Urban values were not distinguished, Urban values were used.

The user checks the box next to each mitigation measure and fills in the appropriate information as required. The maximum reduction caps defined in the CAPCOA Quantifying GHG Mitigation document are integrated into these calculations. The CAPCOA traffic mitigation measure numbers included in CalEEMod are the following: LUT-1, LUT-3, LUT-9, LUT-4, LUT-5, LUT-6, SDT-1, SDT-2, SDT-3, PDT-1, PDT-2, PDT-3, TST-1, TST-3, TST-4, TRT-1, TRT-2, TRT-4, TRT-15, TRT-14, TRT-6, TRT-7, TRT-11,TRT-3, and TRT-13. The NEV network mitigation measure (SDT-3) assumes the low end of the CAPCOA recommendations.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Commute
*The mitigation should be applicable to land use project evaluated.
"Remarks" box should contain percent reduction justification.
Import csv
Project Setting
Land Use
Increase Density [LUT-1]
Dwelling Units/acre
Jobs/Job acre
Increase Diversity [LUT-3]
Improve Walkability Design [LUT-9]
Intersections/Square Miles
Improve Destination Accessibility [LUT-4]
Distance to Dwntwn/Job Ctr (Miles)
Increase Transit Accessibility [LUT-5]
Distance to Transit Station (Miles)
Integrate Below Market Rate Housing [LUT-6]
% Dwelling Units Below Market Rate
Neighborhood Enhancements
Improve Pedestrian Network [SDT-1]
Provide Traffic Calming Measures [SDT-2]
% Streets with Improvement
% Intersections with Improvement
Implement NEV Network [SDT-3]
Parking Policy/Pricing
Limit Parking Supply [PDT-1]
% Reduction in Spaces
Unbundle Parking Costs [PDT-2]
Monthly Parking Cost ($)
On-Street Market Pricing [PDT-3]
% Increase in Price
Transit Improvement
Provide BRT System [TST-1]
% Lines BRT
Expand Transit Network [TST-3]
% Increase Transit Coverage
Increase Transit Frequency [TST-4]
Level of Implementation
% Reduction in Headways
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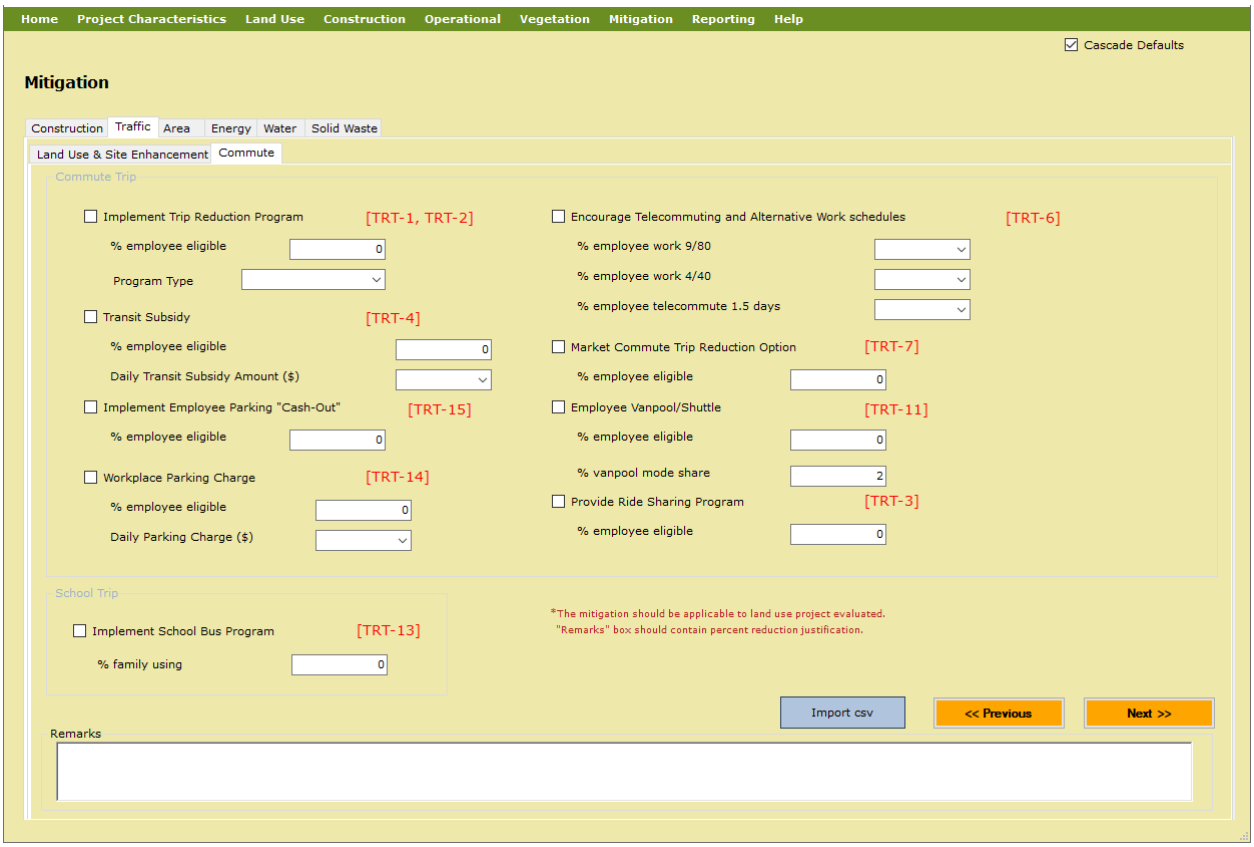
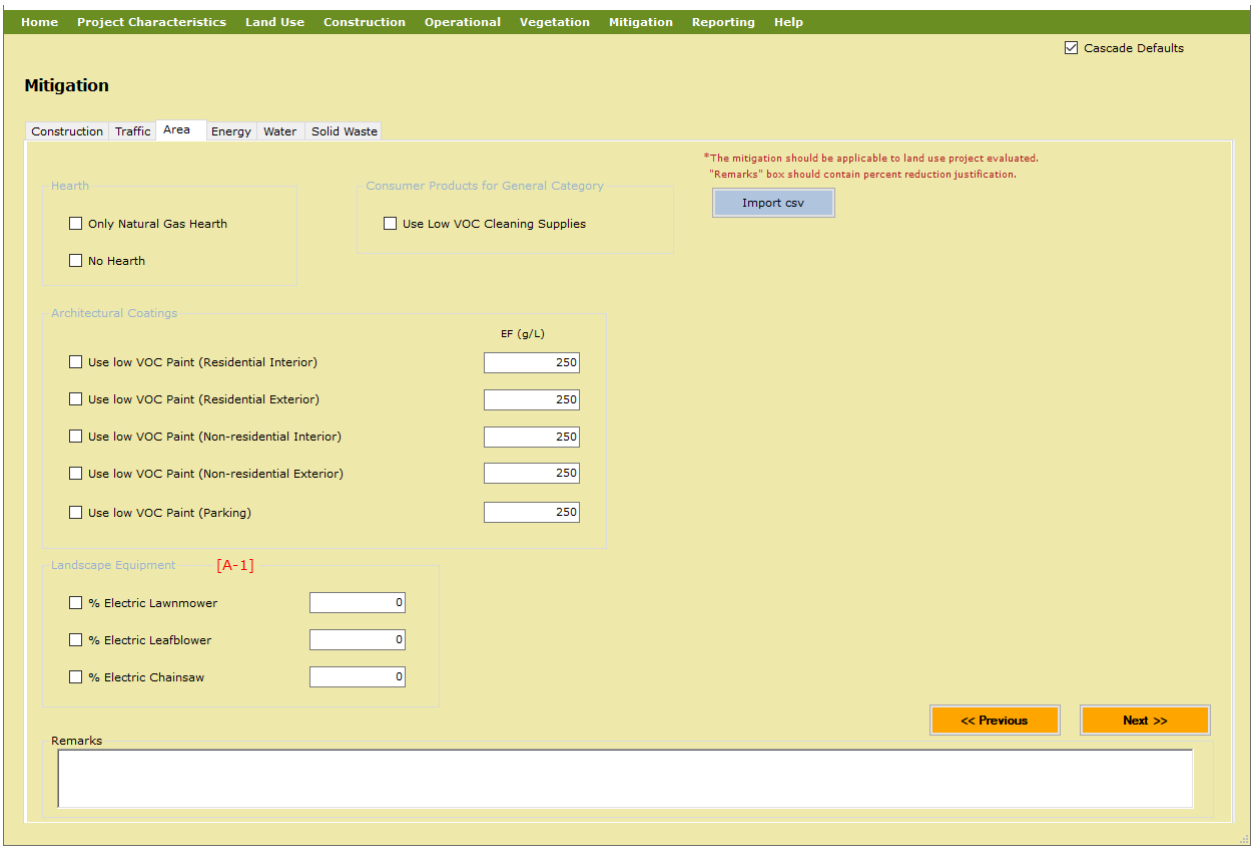


4.12.3 Area Mitigation

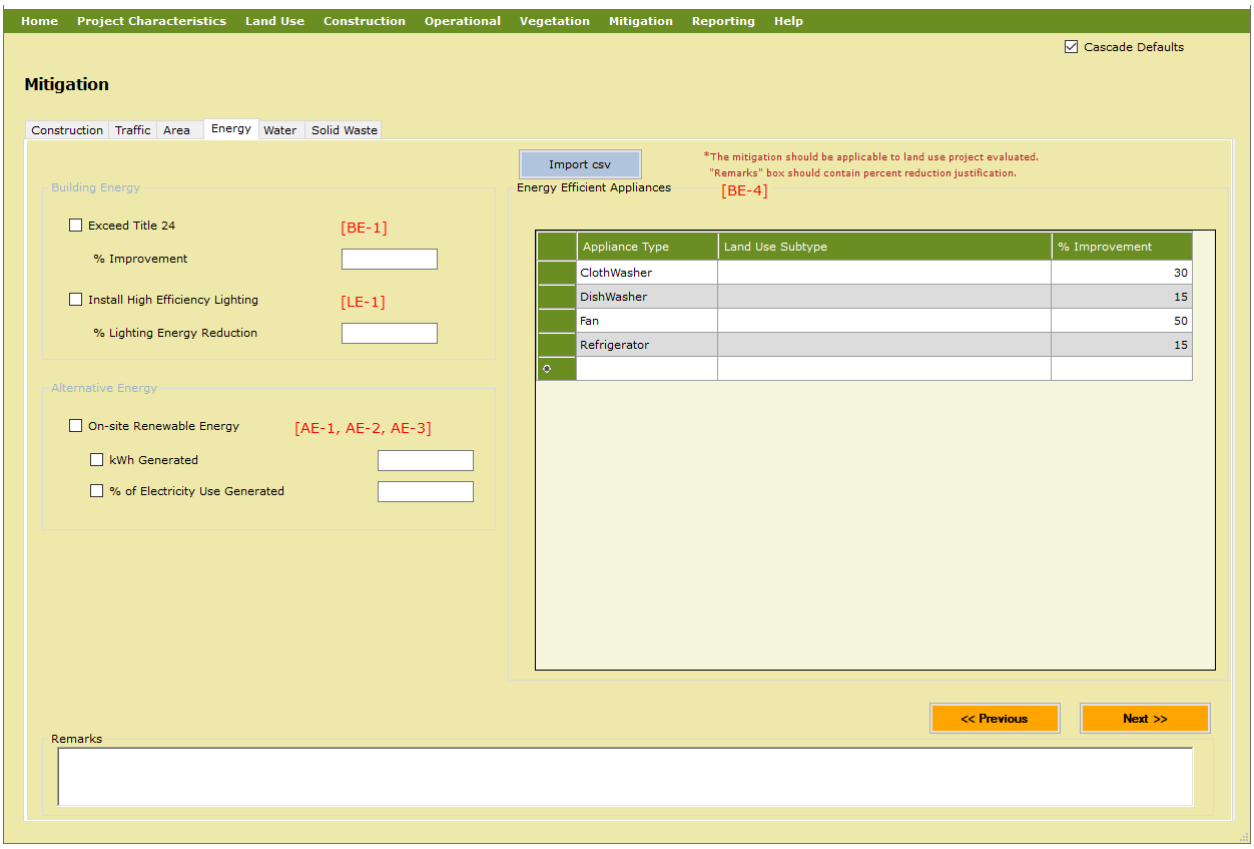
The user can select from a few area source mitigation measures on the Area sub-screen by checking the appropriate box and supplying any additional information in the text boxes. These measures include all natural gas hearths, no hearths, electric landscaping equipment use, reduced ROG coatings, and reduced general category consumer product ROG content. The area landscaping mitigation to prohibit gas powered landscape equipment is consistent with mitigation A-1 in the CAPCOA Quantifying GHG Mitigation document.



4.12.4 Energy Mitigation

The user selects energy mitigation measures on the Energy sub-screen by using the check boxes or the data-grid. These correspond to CAPCOA Mitigation Measures LE-1, BE-1, AE-1, AE-2, AE-3 and BE-4 as listed in the CAPCOA Quantifying GHG Mitigation document. The lighting is a percentage reduction in lighting as supplied by the user. The data-grid is used to enter the land use subtypes that will use energy efficient appliances. The percent improvement is the typical percent improvement above standard appliances according to the 2008 Energy Star Annual Report[20]. Alternative Energy has two methods to enter the amount of alternative energy. The first is the amount of kW-hr generated. The second is the percentage of the total electricity use by buildings that is generated. At this time alternative energy methods that are not carbon neutral are not quantified. To apply the amount of alternative energy only one of the two methods (kW-hr or percentage) needs to be entered for CalEEMod to calculate emission reductions.

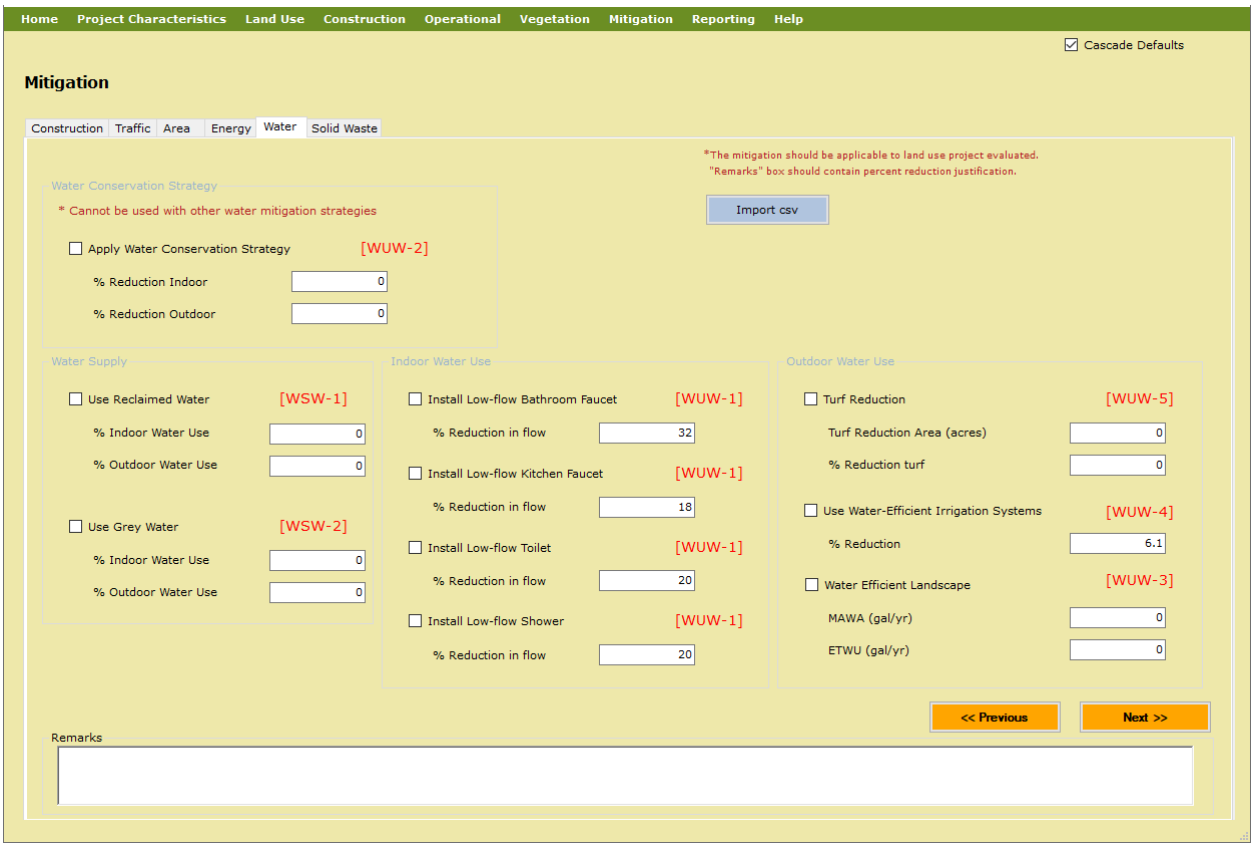
[20] Available at: https://www.energystar.gov/ia/partners/annualreports/annual_report_2008.pdf



4.12.5 Water Mitigation

On the Water sub-screen, water mitigation can either be estimated as the percent reduction based on a water conservation strategy or the other individual mitigation measures. The CAPCOA Quantifying GHG Mitigation document includes water supply and use measures WSW-1 and WSW-2, and WUW-1 through WUW-5.

For CAPCOA Mitigation Measure WSW-3 (Use Locally Sourced Water Supply), using locally-sourced water or water from less energy-intensive sources reduces the electricity and indirect CO_2 emissions associated with water supply and transport because water from local or nearby groundwater basins, nearby surface water and gravity-dominated systems have smaller energy-intensity factors. This mitigation measure is not included in the Water mitigation sub-screen, therefore, to implement WSW-3, the user should alter the energy intensity values in water and run a separate CalEEMod run to accommodate these values.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*The mitigation should be applicable to land use project evaluated.
"Remarks" box should contain percent reduction justification.
Import csv
Water Conservation Strategy
* Cannot be used with other water mitigation strategies
Apply Water Conservation Strategy
[WUW-2]
% Reduction Indoor
0
% Reduction Outdoor
0
Water Supply
Use Reclaimed Water
[WSW-1]
% Indoor Water Use
0
% Outdoor Water Use
0
Use Grey Water
[WSW-2]
% Indoor Water Use
0
% Outdoor Water Use
0
Indoor Water Use
Install Low-flow Bathroom Faucet
[WUW-1]
% Reduction in flow
32
Install Low-flow Kitchen Faucet
[WUW-1]
% Reduction in flow
18
Install Low-flow Toilet
[WUW-1]
% Reduction in flow
20
Install Low-flow Shower
[WUW-1]
% Reduction in flow
20
Outdoor Water Use
Turf Reduction
[WUW-5]
Turf Reduction Area (acres)
0
% Reduction turf
0
Use Water-Efficient Irrigation Systems
[WUW-4]
% Reduction
6.1
Water Efficient Landscape
[WUW-3]
MAWA (gal/yr)
0
ETWU (gal/yr)
0
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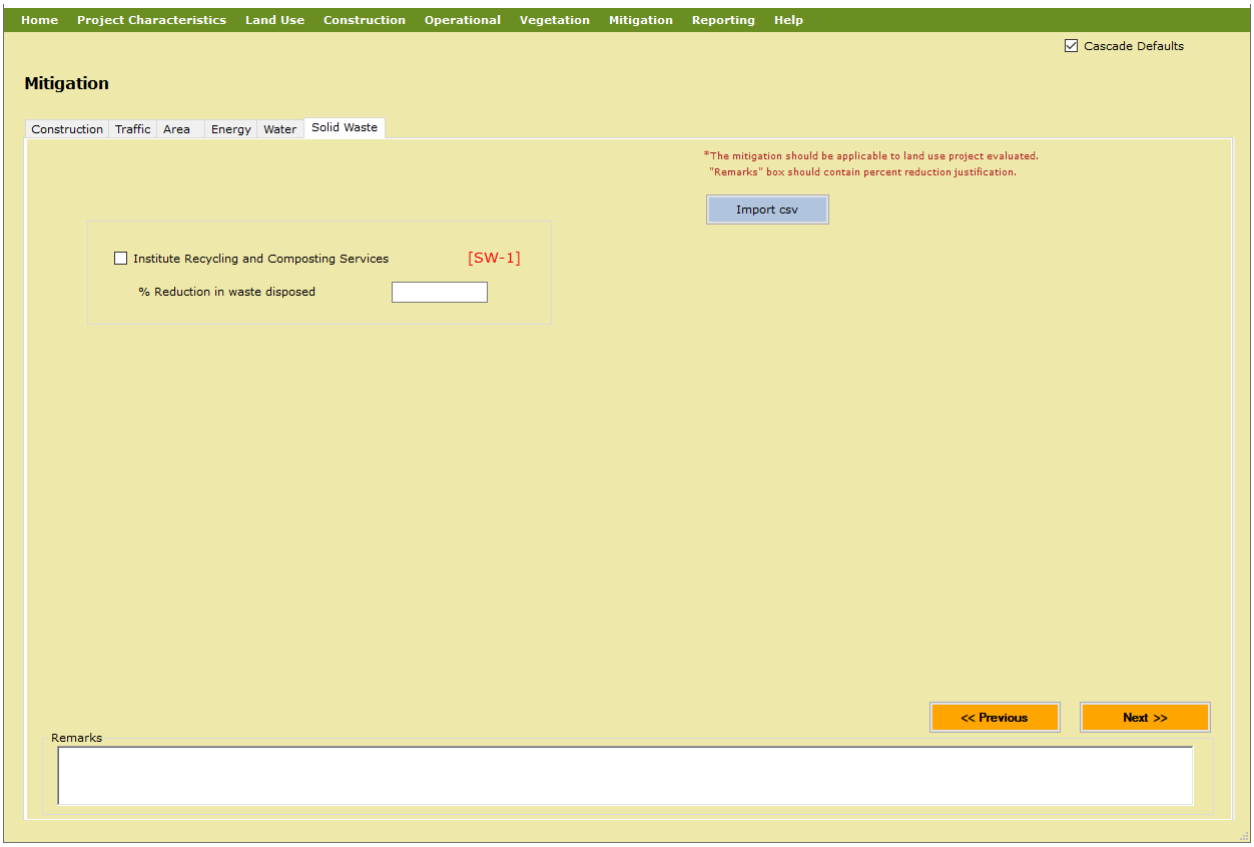
4.12.6 Solid Waste Mitigation

The user can calculate an emissions reduction for recycling waste. This mitigation measure corresponds to CAPCOA Mitigation Measure: SW-1.



4.13 Reporting

The user initiates final emission calculations by selecting the report and clicking on the Recalculate All Emissions and Run Report button. The available reports include: Annual, Summer (peak) Daily, Winter (peak) Daily, Mitigation and Summary of peak daily emissions and annual GHG emissions. A separate report viewer will appear on the screen. From this report viewer, the user can view each selected report on-screen, print each report, save each report as either a Microsoft Excel .xls file, an Adobe Acrobat .pdf file, or in the case of the Mitigation report, a Microsoft Word .doc file. It is important to note that the data presented in the Excel file has already been calculated and the calculated results are placed in the grids as text. For this reason, the user cannot change an emission value presented in an Excel file and expect the report to calculate a revised value. These values, however, can be copied to new Excel spreadsheet for any further desired calculation with the data. If the user elects to generate a Summary report, the project needs to use only the CalEEMod defaults and there can be no remarks on any page.

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October 18, 2022

Fernando Gaytan
Earthjustice
707 Wilshire Boulevard, Suite 4300
Los Angeles, CA 90017

Subject: **Comments on the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project (SCH No. 2020069039)**

Dear Mr. Gaytan,

We have reviewed the September 2022 Final Environmental Impact Report ("FEIR") and December 2021 Draft Environmental Impact Report ("DEIR") for the Port of Hueneme – Temporary Outdoor Vehicle Storage Facility Project ("Project") located in the City of Oxnard ("City"). Upon review, we find that the FEIR is insufficient in addressing our concerns regarding the Project's hazards and hazardous materials air quality, health risk, and greenhouse gas impacts. As asserted in our February 9th, 2022 comment letter, an updated EIR should be prepared to adequately evaluate the Project's potential impacts on the environment.

Hazards and Hazardous Materials

Inadequate Analysis of Impacts

In our February 9th comment letter, we found that the DEIR's finding of-less-than-significant impacts associated with Hazards and Hazardous Materials were made without an adequate evaluation of potential impacts and the findings should not be relied upon for the purposes of determining significance. To adequately disclose and mitigate Hazards and Hazardous Materials, we stated a Phase I Environmental Site Assessment was necessary for the Project site. The FEIR did not address this comment adequately.

In response to comment 206-232 and 206-233 (p. 12-1199), the FEIR provides no explanation to failing to address the comment we made, that the failure to prepare a Phase I ESA was inconsistent with the City of Oxnard 2030 General Plan Safety and Hazards Chapter, which states:

> Policy SH-7.12 Hazardous Material Studies. Ensure that the proponents of new development projects address hazardous materials concerns through the preparation of Phase I or Phase II hazardous materials studies for each identified site as part of the design phase for each project.

The responses provide no explanation as to why Policy SH-7.12 was not followed. As the policy states, a Phase I ESA is necessary and a an updated EIR should be prepared to include a Phase I.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

In our February 9th comment letter, we identified several issues with the DEIR's air model (California Emissions Estimator Model, "CalEEMod")[1] that artificially reduced the Project's construction and operational emissions. After review of the FEIR, we found that it fails to address all our concerns and maintain that the DEIR's CalEEMod model is flawed and fails to accurately estimate the Project's criteria air pollutant emissions. As such, we find the DEIR and FEIR to be inadequate and maintain that an updated EIR should be prepared to adequately evaluate the Project's local and regional air quality impacts. Until a proper air quality analysis is conducted, the Project should not be approved.

Unsubstantiated Changes to Individual Construction Phase Lengths

As discussed in our February 9th comment letter, the "Port of Hueneme 34-acre Temporary Vehicle Storage Facility" CalEEMod model included several unsubstantiated changes to the default individual construction phase lengths. Review of the FEIR demonstrates that the Project again fails to justify or correct this modeling error. As discussed below, we find the DEIR and FEIR to be inadequate for two reasons, and maintain that the less-than-significant air quality impact conclusion is unsubstantiated. Specifically, regarding the changes to the default individual construction phase lengths, the FEIR states:

> "The comment states that the Draft EIR fails to mention or justify the individual construction phase lengths. *As shown in Appendix A to Appendix D of the Draft EIR, the construction phasing is based on the Client provided RFI.* As such, any changes to the default phasing were based on the project applicant provided information. For this type of project, CalEEMod does not provide default construction information. As such, the use of applicant provided information is imperative for construction phasing inputs. No further response is needed" (emphasis added) (Response 206-241, p. 12-1201).

However, the FEIR again fail to provide the above-mentioned Client Provided RFI. As such, we cannot verify that the changes are an accurate reflection of the proposed construction schedule. According to the CalEEMod User's Guide:

[1] "CalEEMod Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/download-model.

> "CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA." [2]

Here, until the FEIR provides the above-mentioned Client Provided RFI and shows the calculations used for the revised individual construction phase lengths, we cannot verify the changes are accurate.

These unsubstantiated changes to the individual construction phase lengths present an issue, as the construction emissions are improperly spread out over a longer period of time for some phases, but not for others. According to the CalEEMod User's Guide, each construction phase is associated with different emissions activities (see excerpt below).[3]

> *Demolition* involves removing buildings or structures.
>
> *Site Preparation* involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
>
> *Grading* involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.
>
> *Building Construction* involves the construction of the foundation, structures and buildings.
>
> *Architectural Coating* involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.
>
> *Paving* involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

Thus, by disproportionately altering and extending some of the individual construction phase lengths without proper justification, the model assumes there are a greater number of days to complete the construction activities required by the prolonged phases. As such, there will be less construction activities required per day and, consequently, less pollutants emitted per day. As a result, the model may underestimate the peak daily emissions associated with some phases of construction and should not be relied upon to determine Project significance. Thus, we reiterate our February 9th comment that the DEIR's CalEEMod model is unsubstantiated, and the DEIR and FEIR's less-than-significant air quality impact conclusion should not be relied upon.

Unsubstantiated Changes to Off-Road Construction Equipment Unit Amounts

As discussed in our February 9th comment letter, the "Port of Hueneme 34-acre Temporary Vehicle Storage Facility" CalEEMod model included several unsubstantiated changes to the off-road construction equipment unit amounts. Review of the FEIR demonstrates that the Project again fails to justify or correct this modeling error. As discussed below, we find the DEIR and FEIR to be inadequate and

[2] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 12.
[3] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 32.

maintain that the less-than-significant air quality impact conclusion is unsubstantiated. Specifically, regarding the changes to the default off-road construction equipment unit amounts, the FEIR states:

> "The comment states that the Draft EIR fails to mention or justify the unit amounts of equipment. The model inputs used in the technical study are consistent with the Draft EIR's project description, as shown in Section 1.3 of the Draft EIR. Project specific information was included in the modeling in accordance with the requirements of CalEEMod and CEQA in order to provide more project-specific analysis of potential impacts. *These project specific inputs were shown in detail in Appendix D of the Draft EIR*" (emphasis added) (Response 206-246, p. 12-1201).

As demonstrated above, the FEIR states that the off-road construction equipment unit amounts were noted in Section 1.3 of the Draft EIR DEIR's. However, upon further review, the DEIR and associated documents fail to mention or justify the off-road construction equipment unit amounts in the project description or elsewhere in the Project documents. As such, we cannot verify that the changes are an accurate reflection of the proposed construction equipment. As previously stated, according to the CalEEMod User's Guide:

> "CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA." [4]

Here, as the DEIR and FEIR fail to provide substantial evidence to support the off-road construction equipment unit amounts, we cannot verify the changes. As such, we reiterate our February 9th comment that the Project's CalEEMod model is unsubstantiated, and the DEIR and FEIR's less-than-significant air quality impact conclusion should not be relied upon.

Diesel Particulate Matter Emissions Inadequately Evaluated

As discussed in our February 9th comment letter, the DEIR failed to adequately evaluate the Project's potential health risk impacts. Review of the FEIR again demonstrates a failure to adequately evaluate the Project's potential health risk impacts. As such, we find the FEIR to be inadequate and maintain that the DEIR's less-than-significant impact conclusion regarding the Project's health risk impact should not be relied upon. Regarding the toxic air contaminant ("TAC") emissions associated with Project construction and operation, the FEIR states:

> "The comment states that the Draft EIR ignores the use of the Ventura County Air Pollution Control District (VCAPCD) Air Quality Assessment Guidelines with response to health risk impacts. The VCAPCD 2003 Guidelines, Section 6.5.1, Determining Whether the Project will Emit Toxic Air Contaminants states that lead agencies should refer to Appendix D, Major Toxic Air Contaminant Regulations and Common Toxic Air Contaminant Sources and Substances, for a list of common toxic air contaminant sources and substances that may be encountered at facilities

[4] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 12.

in Ventura County and Appendix B, Common Equipment and Processes Requiring a VCAPCD Permit to Operate. The project would include offroad equipment during construction which may emit diesel particulate matter. However, construction would be temporary, lasting up to 200 days, and would not be concentrated in one area of the site. Thus, emissions would disperse rapidly and would not expose sensitive receptors to substantial pollutant concentrations. Furthermore, the project would not exceed applicable VCAPCD significance thresholds during construction or operation. Finally, as shown in the closest meteorological station to the project site at the Oxnard Airport, the predominant wind direction blows from the west to the east away from the closest sensitive receptors to the project site. As stated on page 1-5 of the Draft EIR, all vehicles stored at this vehicle storage facility would be light duty vehicles; no trucks or diesel-powered vehicles be stored at this facility. As such, the project would not result in air quality impacts related to diesel powered vehicles and idling trucks. Please refer to Global Response GR-4, Traffic Related Pollution and Health Risks. Regarding electrification of the Port fleet, the comment does not reference the content of nor challenge the adequacy of the Draft EIR, and no further response is required" (p. 12-1171).

Furthermore, the FEIR states:

> "Commenters also claim that the Draft EIR should address health impacts related to increased diesel emissions and particulate matter. As identified in the Draft EIR (Section 5.3.5, Air Quality Project Impacts and Mitigation) Measures, pp. 5.3-12), the project would not expose nearby sensitive receptors to substantial concentrations of substantial pollutant concentrations exceeding state or federal standards or in excess of health risk criteria for toxic air contaminants and impacts would be less than significant. The operational and construction emissions generated by the project were remodeled in CalEEMod in the Final EIR to account for all proposed land uses, to reflect the 316 daily operational trips as discussed in the Draft EIR, and to remove certain reductions used in the Draft EIR CalEEMod analysis (see the updated emissions tables in Final EIR, Section 5.3.5, Air Quality Project Impacts and Mitigation Measures, pp. 5.3-12, and Appendix D, CalEEMod Output Results of this Final EIR). As shown in this Final EIR, the corrections do not result in a change in any significance determination previously disclosed in the Draft EIR, nor do they indicate a substantially more severe environmental impact than was previously disclosed. Thus, the operational and construction emissions generated by the project would continue to not exceed applicable significance thresholds and would not expose nearby sensitive receptors to substantial concentrations of substantial pollutant concentrations exceeding state or federal standards or in excess of health risk criteria for toxic air contaminants" (Response GR-4, p. 12-10).

As demonstrated above, the FEIR claims that preparing a quantified construction and operational HRA is not necessary, as the emissions generated by the Project would not exceed applicable significance thresholds. However, this is incorrect. As discussed in our February 9th comment letter, the Project's failure to prepare a quantified construction and operational HRA is inconsistent with the Office of

Environmental Health Hazard Assessment ("OEHHA").[5] As such, until both the Project's construction and operational health risks are quantified, summed together, and compared to the VCAPCD threshold of 10 in one million, the FEIR's response is inadequate, and we maintain our February 9th comment that the FEIR failed to adequately evaluate the Project's potential health risk impacts.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The FEIR estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 319.8 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year"), which does not exceed the SCAQMD threshold of 3,000 MT CO_2e/year (p. 5.8-12). Furthermore, the FEIR's analysis relies upon the Project's consistency with the City's Energy Action Plan ("EAP") in order to conclude that the Project would result in a less-than-significant GHG impact (p. 5.8-13). However, review of the FEIR demonstrates that the Project again fails to adequately evaluate potential GHG impacts. As discussed below, we maintain that the DEIR's and FEIR's GHG analyses, as well as the subsequent less-than-significant impact conclusion, are incorrect for three reasons:

(1) The DEIR and FEIR's quantitative GHG analysis rely upon an incorrect and unsubstantiated air model;
(2) The DEIR and FEIR rely upon an unsupported quantitative threshold; and
(3) The DEIR and FEIR fail to identify a potentially significant GHG impact.

1) Incorrect and Unsubstantiated Quantitative Analysis of Emissions

As discussed in our February 9th comment letter, the DEIR's quantitative GHG analysis relied upon an incorrect and unsubstantiated air model. Review of the FEIR demonstrates that the Project again fails to justify or correct some of these modeling errors. As discussed below, we find the DEIR and FEIR to be inadequate and maintain that the Project's less-than-significant GHG impact determination is unsubstantiated. Specifically, regarding the Project's air modeling, the FEIR states:

> "The comment states that the Draft EIR's quantitative GHG analysis is unsubstantiated. The Final EIR is updated as reflected in Responses to Comment 206-235 through 206-258 and changes to the Draft EIR are included in Section 5.8 of the Final EIR." (p. 12-1204).

However, this response is inadequate. While we acknowledge that the FEIR substantiated or corrected most of their modeling input parameters, the FEIR still fails to sufficiently address *all* of our comments regarding the Project's flawed CalEEMod models. Specifically, the FEIR fails to provide access to the "Client provided RFI," which is cited as justification for the revised construction-related CalEEMod input parameters, as previously discussed. As such, emissions associated with the Project remain underestimated, and the DEIR's and FEIR's quantitative GHG analyses should not be relied upon to determine Project significance. As such, we reiterate our February 9th comment that the DEIR's

[5] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/hotspots2015.html

CalEEMod models are unsubstantiated, and the DEIR's and FEIR's less-than-significant GHG impact conclusion should not be relied upon.

2) Incorrect Reliance Upon an Outdated Quantitative GHG Threshold

As discussed in our February 9th comment letter, the DEIR relies upon an unsupported GHG threshold. Review of the FEIR demonstrates that the Project again fails to adequately justify or correct this error. As discussed below, we find the DEIR and FEIR to be inadequate and maintain that the Project's less-than-significant GHG impact determination is unsubstantiated.

As previously stated, the FEIR estimates that the Project would generate net annual GHG emissions of 319.8 MT CO_2e/year, which would not exceed the SCAQMD threshold of 3,000 MT CO_2e/year (p. 5.8-12). Regarding the DEIR's use of an interim threshold, the FEIR states:

> "The comment states that the Draft EIR incorrectly relied upon an outdated quantitative GHG threshold. The City understands that the 3,000 MT CO2e per year threshold was proposed a decade ago and was never adopted. However, the 3,000 MT CO2e per year threshold was developed and recommended by SCAQMD, an expert agency, based on substantial evidence as provided in the Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold (SCAQMD 2008) document and subsequent Working Group meetings (latest in 2010). This threshold uses the Executive Order S-3-05 goal as the basis, so it is not tied to only the 2020 target year and is thus not outdated. This threshold is also based on the 90% capture rate methodology, which means that 90% of total emissions from all new or modified projects would be subject to some type of CEQA analysis, which was the approach taken by SCAQMD to establish the stationary/industrial source threshold, as well as by the California Air Resources Board (for interim threshold for stationary source projects) and one of the options suggested by the California Air Pollution Control Officers Association (quantitative threshold based on market capture). Further, this threshold has been used for hundreds, if not thousands of GHG analyses performed for projects located within the SCAQMD jurisdiction. As such, the use of the 3,000 MT CO2e threshold is appropriate and substantiated" (p. 12-1183).

However, the DEIR's use of this threshold remains incorrect. Regardless of the FEIR's claims, the Association of Environmental Professionals ("AEP") guidance states:

> "[F]or evaluating projects with a post 2020 horizon, the threshold will need to be revised based on a new gap analysis that would examine development and reduction potentials out to the next GHG reduction milestone (2030 or 2050).[6]

As discussed in our February 9th comment letter, thresholds for 2020 are not applicable to the proposed Project and should be revised to reflect the current GHG reduction target. As such, rather than relying upon the outdated 2008 SCAQMD Draft thresholds, we recommend that the Project evaluate GHG

[6] "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at:* https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 39.

emissions per the next tier and apply the SCAQMD 2035 efficiency target of 3.0 MT CO_2e/year, which was calculated by applying a 40% reduction to the 2020 targets.[7]

3) Unsubstantiated Air Model Indicates a Potentially Significant GHG Impact

When applying the SCAQMD 2035 efficiency target of 3.0 MT CO_2e/SP/year, the Project's incorrect and unsubstantiated air model indicates a potentially significant GHG impact.[8] As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 319.8 MT CO_2e/year (p. 5.8-12). Furthermore, according to CAPCOA's *CEQA & Climate Change* report, service population is defined as "the sum of the number of residents and the number of jobs supported by the project."[9] The FEIR estimates that the Project would generate approximately 14 new jobs (p. 1-6). As the Project does not include any residential land uses, we estimate a service population of 14 people.[10] When dividing the Project's net annual GHG emissions, as estimated by the DEIR, by a service population of 14 people, we find that the Project would emit approximately 22.8 MT CO_2e/SP/year (see table below).[11]

FEIR Greenhouse Gas Emissions per Capita	
Annual Emissions (MT CO_2e/year)	319.8
Service Population	14
Service Population Efficiency (MT CO_2e/SP/year)	22.8
2035 SCAQMD Efficiency Target	**3.0**
Exceeds?	***Yes***

As demonstrated above, the Project's service population efficiency value, as estimated by the DEIR's provided net annual GHG emission estimates and service population, vastly exceeds the SCAQMD 2035 efficiency target of 3.0 MT CO_2e/SP/year, indicating a potentially significant impact not previously identified or addressed by the DEIR or FEIR. As such, we find the FEIR to be inadequate and maintain our February 9th comment that the DEIR's less-than-significant GHG impact determination should not be relied upon, as it is based on an outdated significance threshold. As a result, an updated EIR should be prepared, which includes an updated GHG analysis, and additional mitigation should be incorporated accordingly, per CEQA Guidelines.

[7] "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf, p. 2.
[8] "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf, p. 2.
[9] CAPCOA (Jan. 2008) CEQA & Climate Change, p. 71-72, http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf.
[10] Calculated: 0 residents + 14 employees = 14 service population.
[11] Calculated: (62.3 MT CO_2e/year) / (14 service population) = (4.45 MT CO_2e/SP/year).

Mitigation

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in a potentially significant air quality and GHG impacts that should be mitigated further. In an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Therefore, to reduce the Project's emissions, we recommend consideration of SCAG's 2020 *RTP/SCS* PEIR's Air Quality Project Level Mitigation Measures ("PMM-AQ-1") and Greenhouse Gas Project Level Mitigation Measures ("PMM-GHG-1"), as described below: [12]

SCAG RTP/SCS 2020-2045
Air Quality Project Level Mitigation Measures – PMM-AQ-1: In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency:
a) Minimize land disturbance.
b) Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
c) Cover trucks when hauling dirt.
d) Stabilize the surface of dirt piles if not removed immediately.
e) Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
f) Minimize unnecessary vehicular and machinery activities.
g) Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
h) Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.
j) Require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project. Prepare a plan for approval by the applicable air district demonstrating achievement of the applicable percent reduction for a CARB-approved fleet.
k) Ensure that all construction equipment is properly tuned and maintained.
l) Minimize idling time to 5 minutes—saves fuel and reduces emissions.
m) Provide an operational water truck on-site at all times. Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas. Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.

[12] "4.0 Mitigation Measures." Connect SoCal Program Environmental Impact Report Addendum #1, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_addendum_4_mitigationmeasures.pdf?1606004420, p. 4.0-2 – 4.0-10; 4.0-19 – 4.0-23; See also: "Certified Final Connect SoCal Program Environmental Impact Report." Southern California Association of Governments (SCAG), May 2020, *available at:* https://scag.ca.gov/peir.

n) Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
o) Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
p) As appropriate require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site.
q) Require projects within 500 feet of residences, hospitals, or schools to use Tier 4 equipment for all engines above 50 horsepower (hp) unless the individual project can demonstrate that Tier 4 engines would not be required to mitigate emissions below significance thresholds.
s) Projects located within AB 617 communities should review the applicable Community Emissions Reduction Plan (CERP) for additional mitigation that can be applied to individual projects.
t) Where applicable, projects should provide information about air quality related programs to schools, including the Environmental Justice Community Partnerships (EJCP), Clean Air Ranger Education (CARE), and Why Air Quality Matters programs.
u) Projects should work with local cities and counties to install adequate signage that prohibits truck idling in certain locations (e.g., near schools and sensitive receptors).
w) As applicable for port projects, the following measures should be considered: - Develop specific timelines for transitioning to zero emission cargo handling equipment (CHE) - Develop interim performance standards with a minimum amount of CHE replacement each year to ensure adequate progress. - Use short side electric power for ships, which may include tugboats and other ocean-going vessels or develop incentives to gradually ramp up the usage of shore power. - Install the appropriate infrastructure to provide shore power to operate the ships. Electrical hookups should be appropriately sized. - Maximize participation in the Port of Los Angeles' Vessel Speed Reduction Program or the Port of Long Beach's Green Flag Initiation Program in order to reduce the speed of vessel transiting within 40 nautical miles of Point Fermin. - Encourage the participation in the Green Ship Incentives. - Offer incentives to encourage the use of on-dock rail.
aa) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities.
bb) The following criteria related to diesel emissions shall be implemented on by individual project sponsors as appropriate and feasible: - Diesel nonroad vehicles on site for more than 10 total days shall have either (1) engines that meet EPA on road emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85% - Diesel generators on site for more than 10 total days shall be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%. - Nonroad diesel engines on site shall be Tier 2 or higher. - Diesel nonroad construction equipment on site for more than 10 total days shall have either (1) engines meeting EPA Tier 4 nonroad emissions standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines for 50 hp and greater and by a minimum of 20% for engines less than 50 hp. - Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.

- Diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend approved by the original engine manufacturer with sulfur content of 15 ppm or less.
- The construction contractor shall maintain a list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following:
    i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.
    ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.
    iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.
- The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.
- The contractor shall maintain a monthly report that, for each on road diesel vehicle, nonroad construction equipment, or generator onsite, includes:
    i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date.
    ii. Any problems with the equipment or emission controls.
    iii. Certified copies of fuel deliveries for the time period that identify:
        1. Source of supply
        2. Quantity of fuel
        3. Quantity of fuel, including sulfur content (percent by weight)

Greenhouse Gas Project Level Mitigation Measures – PMM-GHG-1

In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency:

b) Reduce emissions resulting from projects through implementation of project features, project design, or other measures, such as those described in Appendix F of the State CEQA Guidelines.

c) Include off-site measures to mitigate a project's emissions.

d) Measures that consider incorporation of Best Available Control Technology (BACT) during design, construction and operation of projects to minimize GHG emissions, including but not limited to:

i. Use energy and fuel-efficient vehicles and equipment;

ii. Deployment of zero- and/or near zero emission technologies;

iii. Use lighting systems that are energy efficient, such as LED technology;

iv. Use the minimum feasible amount of GHG-emitting construction materials;

v. Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;

vi. Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse;

vii. Incorporate design measures to reduce energy consumption and increase use of renewable energy;

viii. Incorporate design measures to reduce water consumption;

ix. Use lighter-colored pavement where feasible;

x. Recycle construction debris to maximum extent feasible;

xi. Plant shade trees in or near construction projects where feasible; and

xii. Solicit bids that include concepts listed above.

e) Measures that encourage transit use, carpooling, bike-share and car-share programs, active transportation, and parking strategies, including, but not limited to the following:

i. Promote transit-active transportation coordinated strategies;

ii. Increase bicycle carrying capacity on transit and rail vehicles;

iii. Improve or increase access to transit;

iv. Increase access to common goods and services, such as groceries, schools, and day care;

v. Incorporate affordable housing into the project;

vi. Incorporate the neighborhood electric vehicle network;

vii. Orient the project toward transit, bicycle and pedestrian facilities;

viii. Improve pedestrian or bicycle networks, or transit service;

ix. Provide traffic calming measures;

x. Provide bicycle parking;

xi. Limit or eliminate park supply;

xii. Unbundle parking costs;

xiii. Provide parking cash-out programs;

xiv. Implement or provide access to commute reduction program;

f) Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;

g) Improving transit access to rail and bus routes by incentives for construction and transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and

h) Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that:

i. Provide car-sharing, bike sharing, and ride-sharing programs;

ii. Provide transit passes;

iii. Shift single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services;

iv. Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle;

v. Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms;

vi. Provide employee transportation coordinators at employment sites;

vii. Provide a guaranteed ride home service to users of non-auto modes.

i) Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;

j) Land use siting and design measures that reduce GHG emissions, including:

i. Developing on infill and brownfields sites;

ii. Building compact and mixed-use developments near transit;

iii. Retaining on-site mature trees and vegetation, and planting new canopy trees;

iv. Measures that increase vehicle efficiency, encourage use of zero and low emissions vehicles, or reduce the carbon content of fuels, including constructing or encouraging construction of electric vehicle charging stations or neighborhood electric vehicle networks, or charging for electric bicycles; and

v. Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.
k) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities. The measures provided above are also intended to be applied in low income and minority communities as applicable and feasible.
l) Require at least five percent of all vehicle parking spaces include electric vehicle charging stations, or at a minimum, require the appropriate infrastructure to facilitate sufficient electric charging for passenger vehicles and trucks to plug-in.
m) Encourage telecommuting and alternative work schedules, such as: i. Staggered starting times ii. Flexible schedules iii. Compressed work weeks
n) Implement commute trip reduction marketing, such as: i. New employee orientation of trip reduction and alternative mode options ii. Event promotions iii. Publications
q) Price workplace parking, such as: i. Explicitly charging for parking for its employees; ii. Implementing above market rate pricing; iii. Validating parking only for invited guests; iv. Not providing employee parking and transportation allowances; and v. Educating employees about available alternatives.

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce emissions released during Project construction and operation. An updated EIR should be prepared to include all feasible mitigation measures, as well as include updated air quality and GHG analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The updated EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's significant emissions are reduced to the maximum extent possible.

Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

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

Paul E. Rosenfeld, Ph.D.

Attachment A: Matt Hageman CV
Attachment B: Paul Rosenfeld CV

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
Industrial Stormwater Compliance
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2104, 2017;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

Rosenfeld, P. E., M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

Rosenfeld P. E., J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49(9), 171-178.

Rosenfeld, P. E., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

Rosenfeld, P.E., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

Rosenfeld, P.E., and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

Rosenfeld, P.E., and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

Rosenfeld, P.E., and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

Rosenfeld, P. E. (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

Rosenfeld, P. E. (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

Rosenfeld, P. E. (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

Rosenfeld, P. E. (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International*

Conferences on Soils Sediment and Water. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

Deposition and/or Trial Testimony:

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 5-14-2021
Trial, October 8-4-2021

In the Circuit Court of Cook County Illinois
Joseph Rafferty, Plaintiff vs. Consolidated Rail Corporation and National Railroad Passenger Corporation d/b/a AMTRAK,
Case No.: No. 18-L-6845
Rosenfeld Deposition, 6-28-2021

In the United States District Court For the Northern District of Illinois
Theresa Romcoe, Plaintiff vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail, Defendants
Case No.: No. 17-cv-8517
Rosenfeld Deposition, 5-25-2021

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa
Mary Tryon et al., Plaintiff vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case Number CV20127-094749
Rosenfeld Deposition: 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division
Robinson, Jeremy et al *Plaintiffs*, vs. CNA Insurance Company et al.
Case Number 1:17-cv-000508
Rosenfeld Deposition: 3-25-2021

In the Superior Court of the State of California, County of San Bernardino
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.
Case No. 1720288
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.
Case No. 18STCV01162
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri
Karen Cornwell, *Plaintiff,* vs. Marathon Petroleum, LP, *Defendant.*
Case No.: 1716-CV10006
Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case No.: 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No.: 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi
Guy Manuel vs. The BP Exploration et al., Defendants
Case: No 1:19-cv-00315-RHW
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM
Rosenfeld Deposition: July 2010, June 2011

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil Action No. CV 2008-2076
Rosenfeld Deposition: September 2010

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052
Rosenfeld Deposition: July 2009

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Attn: Jay Dobrowalski
City of Oxnard
214 South C Street
Oxnard, California 93030 18 October 2022

RE: Temporary Outdoor Vehicle Storage

Dear Mr. Dobrowalski,

I write to reply to the Final Environmental Impact Report's (FEIR's) responses to my 9 February 2022 comments on the Draft Environmental Impact Report (DEIR) in support of a proposed temporary outdoor vehicle storage facility on 33.7 acres of open space at the southeast corner of Hueneme Road and Perkins Road.

The FEIR assigns comment numbers throughout my letter, to which responses are likewise numbered. I disagree with the splitting of certain paragraphs into separate comments, but this splitting is unimportant to me. Thus, I replied according to the numbering the FEIR assigns to my comments. What is important, however, is that the responses characterized many of the numbered comments as statements or as introductions to comments to follow. In all of these instances, the FEIR concludes that no further response is required. In other words, many of my comments, which were acknowledged as such by the FEIR's numbered labels, were then disqualified as comments in order to avoid having to respond to them. Except for two or three introductory paragraphs, which the FEIR should not have assigned comment numbers, the paragraphs I wrote were comments on the DEIR, and as comments, they merited serious responses. To many of my comments, City of Oxnard fails to provide good-faith, reasoned analyses in their responses.

My replies mostly follow the numbered responses in the order they appear in the FEIR. I consolidated a few of those that the FEIR address redundantly.

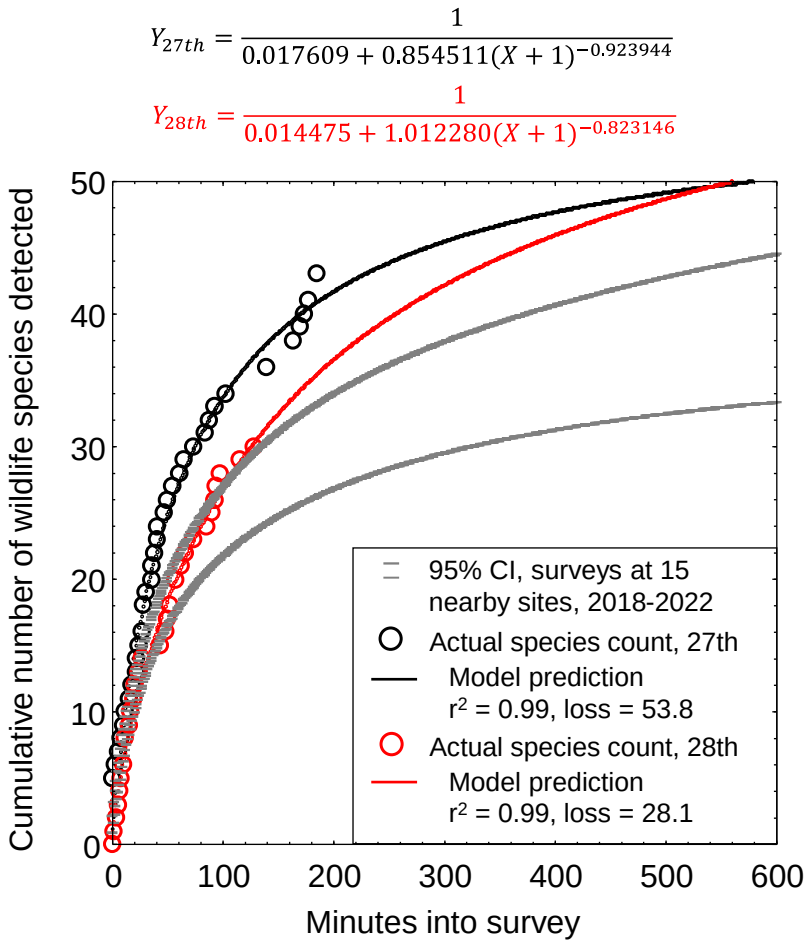
Response 206-94: "The project site is not topographically diverse and can be characterized as flat. … the site is regularly disturbed through tilling and mowing activities… As a result, the reconnaissance-level surveys conducted by Rincon in the spring of 2018 and fall of 2020 were general in nature." And, "the site visit and conditions suggested that no special-status plant species were expected due to the disturbed nature of the site, high degree of urbanization in the vicinity of the project site and project site's soil profile"

Reply: In other words, a determination was made in advance that the site would provide no biological value. A grossly inadequate survey effort was then directed to wildlife at the project site, thereby confirming the pre-determination that a flat, often-disturbed site does not support wildlife. My survey demonstrates otherwise. I did not

survey for very long, as I was only there during one evening and the following cold-and-windy early morning. Despite my brief time there and the less-than-ideal conditions, I detected 47 species of vertebrate wildlife, including 12 with special status.

The number of species I saw at the project site was about twice the number I usually detect during reconnaissance-level surveys. Furthermore, that 26% of the species I detected were special-status species was unusually high in my experience. For greater context, I updated Figure 1 from my comment letter so that it includes the 95% confidence interval based on reconnaissance surveys that my daughter and I (my daughter works for me) have completed at 15 other proposed project sites in the area between Ventura and Burbank (Figure 1). Note that the data and model predictions representative of the project site exceed the upper bound of the 95% CI. In other words, the project site supports more species of wildlife than do most other project sites I have surveyed in the area.

Figure 1. *Actual and predicted relationships between the number of vertebrate wildlife species detected and the elapsed survey time based on my visual-scan surveys on 27-28 January 2022. This version of the Figure also includes 95% confidence intervals (CI) based on reconnaissance surveys my daughter and I completed at 15 other sites between Ventura and Burbank.*



Response 206-94: "Reconnaissance surveys document existing conditions and assess the habitat suitability for special-status species, which informs whether or not further surveys are necessary. The survey's site visits were timed for performing a general reconnaissance survey, which can be performed any time of the year."

Reply: According to the response, the surveys were timed to achieve the standard of general reconnaissance surveys being completed at any time of year; in other words, the survey timing met no standard at all. In fact, no standard for the timing of general reconnaissance surveys exists as they apply to wildlife, just as no protocol or guidance exists for general reconnaissance surveys directed to wildlife. The scientific literature is silent on general reconnaissance surveys, because such surveys have been invented by the environmental consulting industry and lack scientific vetting. These surveys have been contrived to achieve objectives that are scientifically indefensible. Below I explain why these surveys are inappropriate to the purpose that City of Oxnard applies them.

To CEQA's primary objective to disclose potential environmental impacts of a proposed project, it helps for both the analysis and the public to be informed of which biological species are known to occur at the proposed project site, which special-status species are likely to occur, as well as the limitations of the survey effort directed to the site. Analysts need this information to characterize the environmental setting as a basis for opining on, or predicting, potential project impacts to biological resources.

There are three types of survey for wildlife at a project site that are typical of CEQA review. One is known as a species-specific **detection survey**, which follows a methodological protocol formulated by experts on the species. The protocol balances cost against a reasonable likelihood of detection should the species be present. If the protocol is followed, but the species is not detected, then the negative outcome of the detection survey can serve as support for an absence determination, i.e., the species at issue can be determined absent from the site for however long the protocol specifies. It is therefore important that the details of the detection survey be reported so that the reader can compare these details to the minimum standards of the detection survey protocol. In this case, no detection surveys were completed for any special-status species.

Two other types of survey for wildlife at proposed project sites are known as **reconnaissance survey**, otherwise known as **general survey**, and **habitat assessment**. The typical objective of reconnaissance survey is to inventory the species that compose the wildlife community, whereas that of habitat assessment is to assign occurrence likelihoods to special-status species based on documented associations between each species and environmental settings. Unlike the carefully formulated protocols of detection surveys, reconnaissance surveys and habitat assessments lack formal standards of implementation and interpretation. The outcome of a 5-minute reconnaissance survey should not be afforded the same credibility as that of a 5-hour reconnaissance survey, but no guidance is available on how long a reconnaissance survey should last or what its findings should mean. It is therefore very important that the methodological details of reconnaissance surveys and habitat assessments be reported. It is just as important that the standards of interpretation be reported, along with sources of uncertainty and bias.

Sources of potential uncertainty and bias abound in reconnaissance surveys for the purpose of wildlife species inventory. Biologists vary in their skill at detecting wildlife species, and all are imperfect observers. After all, some species are large, loud, colorful

or abundant, and can readily be seen during diurnal surveys, whereas others are tiny, quiet, cryptic or rare, or are detectable only by night or by trapping or use of remote-sensing technology. In my experience, some species typically do not reveal themselves until I have been on the survey station for 20 minutes, 30 minutes, or for hours. The inventory will be the product of the amount of survey time and the range of survey methods invested. As examples, because nocturnal surveys and trapping with live bait are rarely implemented as part of reconnaissance surveys, bats and shrews rarely find their places on species inventories at proposed project sites. Membership on an inventory can also carry different meanings based on how each species occurs at the site. Whereas some species are resident year-round, others can be seasonal or ephemeral in their occurrences at a site. Should a species be included on an inventory depends on the analyst's standard of what counts as presence, but that standard should be reported so that the public can decide whether to agree with it. (The DEIR reports no such standard.) In short, reconnaissance survey can only sample the true suite of wildlife species of a site, and most often, the sample will be biased against the rare, sensitive and threatened or endangered species that CEQA is most concerned about.

Reconnaissance surveys occasionally reveal the presence of special-status species, sometimes due to the skill of the observer but often due to luck of survey timing. What these surveys cannot reveal is the absences of any species whose geographic ranges overlap the site and whose habitat associations at all resemble conditions of the site. And it is habitat associations that consulting biologists often rely upon to determine likelihoods of occurrence of special-status species. Unfortunately, habitat associations often poorly comport with the habitat concept, which is that habitat is that part of the environment that is used by a species (Hall et al. 1997), and which is described by scientists through measurement (Smallwood 2002). Habitat associations defined by consulting biologists typically lack foundation in actual measurements of habitat use, and are therefore speculative and prone to error. One source of error is to map vegetation complexes as habitat types, to which consulting biologists assign species by association without concern for the unrealistically hard boundaries that divide the mapped habitat types (see Figure 2 of Rincon 2018). Another source of error is to pigeon-hole species into unrealistically narrow portions of the environment, which can then be said not to exist on the project site (for examples, see wildlife habitat descriptions in Appendix FA Follow-Up Biological Resources Inventory – 2022). A third source of error is to assign functions to habitat for the purpose of dividing habitat into unrealistic functional parts, such as between breeding habitat versus foraging habitat (for examples, see wildlife habitat descriptions in Appendix FA Follow-Up Biological Resources Inventory – 2022). Primacy is assigned to breeding habitat, which often can be said not to exist on the project site. In reality, all parts of an animal's habitat are essential to breeding success, regardless of where breeding opportunities occur.[1]

[1] Animals unable to find sufficient forage, refugia, or travel opportunities are just as unable to reproduce as those unable to find sufficient nest-site opportunities. Per the precautionary principle of risk analysis and consistent with the habitat concept, CEQA review should be based on the broadest of available habitat characterizations, which should be interpreted on the whole rather than contrived functional parts. Any detections of a species on or over a site, regardless of time of year, should be interpreted as that species' use of habitat, any part of which is critical to breeding success.

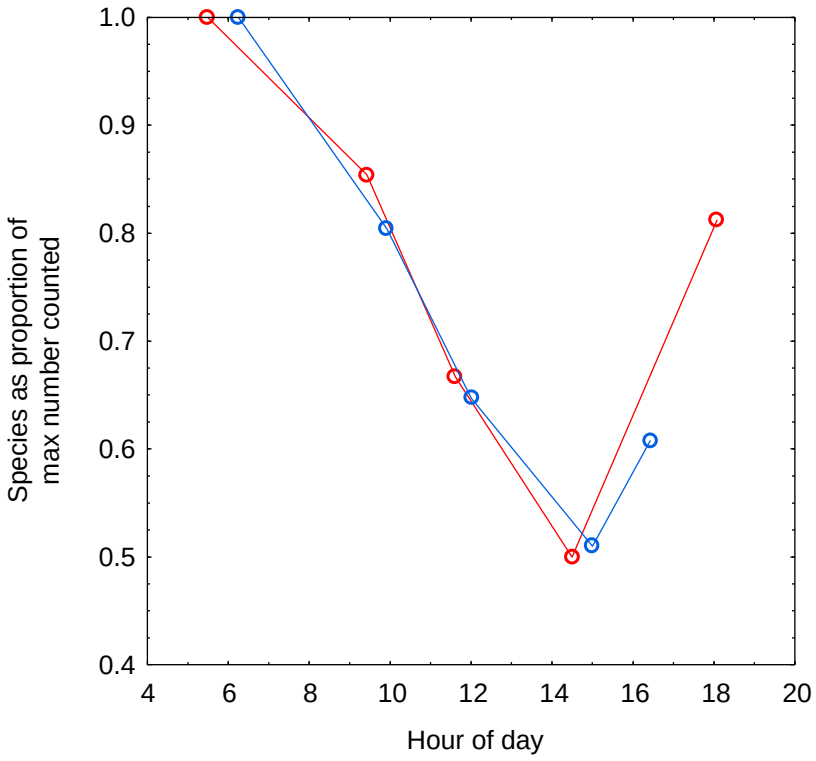
Given the true cost of species inventory, the temptation to shortcut the analysis of occurrence likelihoods is understandable. In the spirit and intent of CEQA, a reasonably feasible sampling of the species inventory should be the first objective of reconnaissance surveys. Several approaches to sound interpretation of the sampled inventory are defensible. One is to commit to a survey effort that results in the detection of a sufficient number of species to accurately estimate the number of species yet to be detected, which is the approach I applied in my comment letter. A second approach is to honestly report the uncertainties and biases of the characterizations of the species inventory and of the likelihoods of occurrence of special-status species. In the third approach, the analyst can assume species are present until suitable evidence is acquired in support of an absence determination. This last approach would be consistent with the precautionary principle of risk analysis directed toward rare and precious resources (National Research Council 1986) and with the tenets of protocol-level detection surveys formulated by experts on each special-status species. Regardless of the approach, most important is to refrain from determining species are absent before sufficient survey has been completed, and to refrain from asserting certainty in the species inventory when that certainty is unjustified.

Returning to the response's point that reconnaissance surveys can be performed any time of the year, I concur. One can perform a reconnaissance survey any time of year or any time of day. I have completed hundreds of wildlife surveys in all seasons of the year and all times of day and night. But I also quantify the effects of survey timing, because survey timing bears strongly on survey findings. The scientific literature is full of seasonal patterns of occurrence and abundance of many wildlife species. Recently I tested for time-of-day effects on the outcomes of reconnaissance-level surveys. To compare the data between surveys at two sites, I normalized the number of species detected as a proportion of the maximum number detected across all 5 surveys per site. Figure 2 shows a mirrored relationship between number of species detected and time of day when each 2-hour visual-scan survey began. Temperature could explain some of the variation in survey outcomes, but the effect of time of day was strongest and appears robust. Although one can perform reconnaissance surveys at any time of year and any time of day, one needs to interpret the survey outcomes in light of seasonal and time-of-day patterns of species detection likelihood.

Response 206-97: "…site conditions are unlikely to support sustained ground squirrel populations or associated burrowing owl populations."

Reply: This response does not comport with the ground squirrels I saw and photographed in the middle of the project site (see Photo 4 of my comment letter). Ground squirrels inhabit burrow complexes at the rate of 1.89 adults per burrow complex on average (Smallwood unpublished data), and burrow complexes support many generations over long periods of time. That ground squirrels occur in the middle of the project site is evidence of a sustained ground squirrel population despite disturbances to the site.

Figure 2. *Numbers of species detected as proportion of the maximum number detected among the 5 surveys per project site, and as a function of start time during the day. The red symbols represent Greentree and the blue symbols represent the comparison project site.*



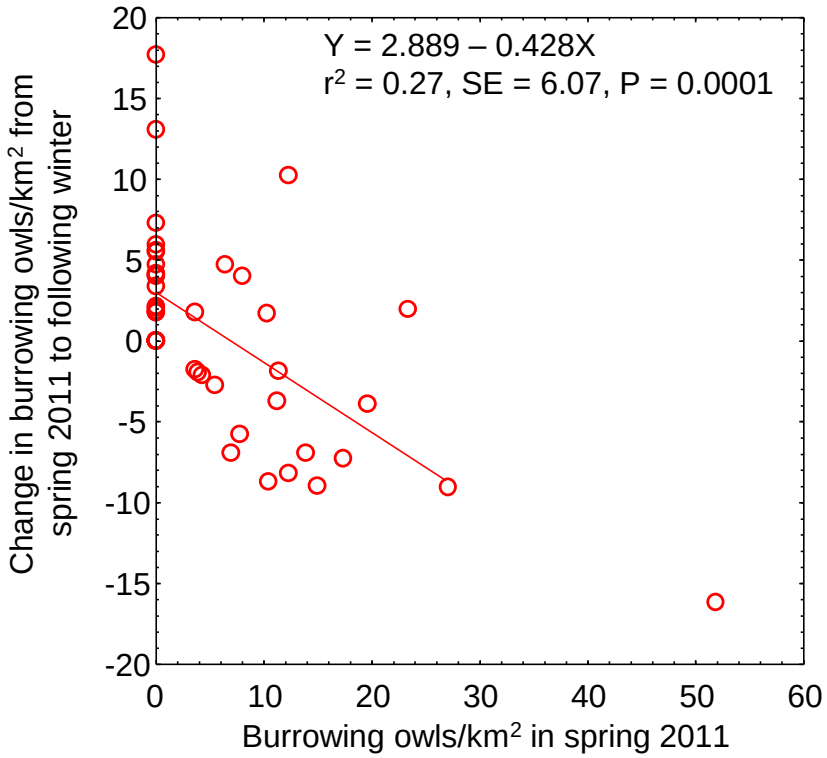
Response 206-97: "As described in the updated assessment, burrowing owls are only known to winter in the Oxnard Plains."

Reply: As I commented in my 9 February comment letter, records of burrowing owl occurrence are "very close" to the project site. The blue teardrop symbols in Figure 3 represent locations of 29 burrowing owl occurrence records within only 1 mile of the site. That the records are winter occurrences qualifies them as no less important to burrowing owl nest success than had they represented nest sites. Burrowing owls that cannot acquire sufficient forage over winter, or cannot survive the winter, cannot successfully breed.

Burrowing owls naturally shift locations between breeding and non-breeding seasons. I studied the phenomenon over one full year of repeat surveys across a large study area in Alameda and Contra Costa Counties (Smallwood et al. 2013), where I found that the relocation of burrowing owls from nesting colonies to over-wintering sites was density-dependent (Figure 4). The negative density-dependent relationship suggest that burrowing owls need to rest their prey-base in breeding areas, or they need to find more abundant prey where they did not breed, or they need to escape predator or parasite loads, or all of the above. Whatever, the reason, winter sites are of high importance to burrowing owls, and should not be minimalized as they are in the FEIR.

Figure 3. *eBird occurrence records of burrowing owl within 1 mile of the project site. The blue teardrop symbols are where 29 sightings have been reported.*

Figure 4. *Among 46 sampling plots across a 167-km² study area in the Altamont Pass, burrowing owl density in winter was a negative function of density in the breeding season, meaning that burrowing owls needed to leave breeding-season locations to winter where fewer burrowing owls nested in spring.*



Response 206-97: "the California Natural Diversity Database (CNDDB) (August 2022) and eBird.org (August 2022) occurrences suggest that burrowing owls utilize Ormond Beach and the game preserve, areas with little disturbance and higher quality habitat for this species."

Reply: The CNDDB and eBird records provide no such evidence. Twelve of the eBird records were at the beach, where disturbance is a defining feature of the beach. Sixteen of the eBird records were located along Edison Drive, bordered on both sides by agricultural fields – fields mostly used for sod production. Photos of the owls depict bare ground and packed earth indicative of disturbance. The conditions where these burrowing owls were reported mirror conditions I myself have many times found and recorded burrowing owls. Burrowing owls are often characterized as disturbance-adapted species.

Furthermore, the CNDDB and eBird records are based on locations where volunteer reporters of the records happened to visit. They do not represent any sort of scientific survey of the project area. As noted by CNDDB, "*The CNDDB is a positive sighting database. It does not predict where something may be found. We map occurrences only where we have documentation that the species was found at the site. There are many areas of the state where no surveys have been conducted and therefore there is nothing on the map. That does not mean that there are no special status species present*." [2] The conclusion drawn in Response 206-97 cannot be supported by species occurrence databases, and therefore is purely speculative. Without completion of detection surveys that meet the standards of CDFW (2012), the FEIR cannot defend a conclusion of absence nor even of low likelihood of occurrence.

Response 206-97: "Although the site may support a small temporary population of insects and small rodents in between disturbance activities, the site is unlikely to support sustained and abundant prey populations due to the disturbances. In addition, prey resources are likely more abundant in the adjacent open space areas which would likely attract any burrowing owl traversing across the region."

Reply: The response is speculative; it is unsupported by evidence. The site supports ground squirrels, which are not small mammals that come and go between disturbances. Considering that ground squirrels persist through disturbances of the site, it is reasonable to conclude that many other species of wildlife, include arthropod populations, also persist through disturbances.

Response 206-97: "The preconstruction wildlife survey would similarly be sufficient to document any wintering burrowing owls or California horned lark, should they occur on-site."

Reply: The response is incorrect. As I commented in my 9 February 2022 letter, wintering burrowing owls are difficult to detect. At minimum, the surveys would need to

[2] State of California Department of Fish and Game, California Natural Diversity Database, CNDDB Data Use Guidelines, p. 12. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27285&inline.

achieve the standards of CDFW (2012), but more realistically, the surveys carry about a 10% chance of detection of wintering burrowing owls. I will add that horned larks can also be missed during preconstruction surveys.

Response 206-105: "Given the temporary use of the site for outdoor vehicle storage for a maximum of 5 years and that the proposed project does not include permanent structures, the proposed project does not preclude future non-industrial uses."

Reply: After 5 years of cover by gravel and cars, the soils would be dead, meaning the living constituents of soil would be dead. All animal burrow would be destroyed. The biologically productive capacity of the site would be severely depleted.

Response 206-107: "…no special-status species are expected to be present on site."

Reply: Special-status species are already present on site, as documented in my comment letter. On and over the site I observed Vaux's swift, California gull, western gull, double-crested cormorant, turkey vulture, red-tailed hawk, American kestrel, merlin, and either Belding's or Large-billed savannah sparrow. Just off site I observed Allen's hummingbird, northern harrier, and loggerhead shrike. But these are not the only special-status species occurring at and next to the site (most likely, those I saw next to the site also use the project site – I just did not see them do so while I was there). Using an analytical bridge to a large research effort I completed in Northern California, I predicted in my comment letter that over the course of a year or longer, repeated visual-can surveys would eventually detect at least 158 species of vertebrate wildlife. Assuming my ratio of special-status to non-special-status species was to hold with through the detections of all 158 species predicted by my analytical bridge between my survey outcome and the larger research effort in Northern California, then continued surveys would eventually detect 41 special-status species of vertebrate wildlife.

Response 206-110 and Response 206-313: "The project proposes to establish 20-foot tall security lighting around the perimeter of the site. The placement of the lights is intended to minimize lighting impacts to the natural habitat south of the project site."

Reply: Even so placed, the security lighting would add light pollution to the protected habitat area to the south. If the project goes forward, minimization of impacts should be implemented, but as I commented in my letter of 9 February 2022, I recommend reducing the number of lights. Compensatory mitigation would be warranted for the impacts of artificial lighting that could not be avoided despite minimization measures.

Response 206-111 and Response 206-314: The response opines that landscaping along the fence would prevent bird-fence collision and entanglement mortality.

Reply: The response provides no evidence that landscaping would accomplish the impact minimization it asserts. I am not aware of any evidence that would support the FEIR's response. In fact, I do not see any reason why landscaping along the fence would not increase bird-fence collision and entanglement mortality. While recently visiting a proposed project site not far from this one, my daughter came upon yet another

collision/entanglement victim (Photo 1). My prediction remains. Based on empirical evidence from fatality monitoring along fences, I predict 26.5 (95% CI: 20–37) bird fatalities per year. Adult birds killed on the fence could also leave behind chicks on the nest, which would be at greater risk of dying on the nest. As the FEIR stands, these fatalities would not be mitigated, and in my opinion, they would qualify as a significant impact to birds.

Photo 1. *Fledgling house finch that fatally collided with a perimeter security fence in Oxnard, California, 26 June 2022. Photo by Noriko Smallwood.*

Response 206-112: "During this temporary project, the project site will not offer any foraging habitat except for the perimeter vegetation, and it will be unlikely that wildlife would utilize the interior of the site. The probability that wildlife would utilize the project site or the immediate area is unlikely given the urban nature of the project site and the surrounding vicinity."

Reply: Even with cars and gravel covering what was once productive soil, wildlife would use the site, just not in all the same ways nor at the same level. The airspace over the site composes part of the aerosphere (Kunz et al. 2008). The aerosphere is where birds and bats and other volant animals with wings migrate, disperse, forage, perform courtship and where some of them mate (Davy et al. 2017, Diehl et al. 2017). The aerosphere is habitat (Kunz et al. 2008). Birds would continue to fly over the site, and some would perch on security lights, the security fence, on the office structure, and on cars.

Response 206-112: "The project includes fencing around the perimeter of the site and fencing will function to redirect birds such as raptors to fly higher if they are flying near the road."

Reply: Again, demonstrating the hazard of speculation, the response mischaracterizes how birds react to fences and other structures when passing over them. I have long studied this phenomenon, including how birds react to powerlines, wind turbines and fences. Birds typically flap hard to ascend high enough to pass over the barrier, and then once cleared, immediately drop in altitude on the other side of the barrier (Photo 2). (I have many photos of this behavior, but Photo 2 was the easiest to find and present.) This behavior contributes to how birds often collide with auto traffic. After clearing a structure such as powerlines, a fence, or even a large shipping truck, birds temporarily lose some flight control and have difficulty avoiding secondary obstacles.

Photo 2. *White-faced ibises flap hard to ascend to avoid colliding with distribution lines before descending after having cleared the lines. Photos by Shawn Smallwood.*

Response 206-114: In response to the issue raised about the DEIR's flawed analysis of whether the project would interfere with wildlife movement, the FEIR writes "Please refer to response in comment 206-111. Also, as discussed on page 5.10-12 of the Draft EIR, through implementation of Standard Conditions SC HYD-1 through SC HYD-4, the project would be required to adhere to the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit requirements which is consistent with the Clean Water Act. In addition, as stated on page 5.10-17 of the Draft EIR, the project would adhere to the NPDES requirements for the Construction General Permit and implement a Stormwater Pollution Prevention Program that includes required best management practices (BMPs) and good housekeeping practices, for the protection of the adjacent wetlands."

Reply: Response 206-111 bears only on the security fence allowing small mammals to pass through gaps left in the fence, but otherwise has not bearing on the issue. The remainder of the response, which refers to various permits the project applicant would obtain regarding pollution discharge and construction, has no bearing on the issue of

wildlife movement. It would seem the preparers of the FEIR put this part of the response in the wrong place.

Response 206-120: "The project will have a negligible effect on adjacent wetlands due to the temporary nature of the project…"

Reply: I suggest revising the EIR to more convincingly assure that the project would be temporary. The surest way to assure of the temporary nature of the project is to add a mitigation measure to restore the soils of the site to full productive capacity, including the capacity to support native vegetation, fossorial mammal burrows and species of wildlife appropriate to the area.

Response 206-285: "The City acknowledges the comment as a statement."

Reply: My comment was a comment. And my comment posed implications for the accuracy of the DEIR's characterization of the project's environmental setting. Only 3 person-hours of reconnaissance-level survey were committed to the project site, during which time only 7 species of vertebrate wildlife were reportedly detected. I detected 6.7 times the number of species at 3.5 times the number of species per hour than did Rincon (2018). My comment noted that I consider my own survey effort as merely a starting point toward characterizing the environmental setting, which means that Rincon's (2018) survey effort had yet to reach any sort of starting point. Of the 158 species of vertebrate wildlife my comment letter predicts as a minimum number of species using the project site, Rincon (2018) detected 4.4%. From this level of sampling of the species inventory, the EIR is incapable of accurately characterizing the wildlife community as part of the existing environmental setting.

Response 206-286: "The City acknowledges the comment as a statement."

Reply: My comment was for the need to appropriately interpret reconnaissance survey results. Rincon (2018) and then the DEIR treat the Rincon (2018) survey results as if they were determinant regarding the likelihoods of occurrence of many species of wildlife. For example, Response 206-306 includes the assertion, "Reconnaissance surveys documented existing conditions and assessed the habitat suitability for special-status species." The surveys did not accomplish either of these outcomes. Seeing only 7 wildlife species did not document existing conditions. The results of the Rincon (2018) surveys are treated as if they were protocol-level detection surveys, which they were not. The DEIR is misleading in its interpretation of Rincon's (2018) survey results.

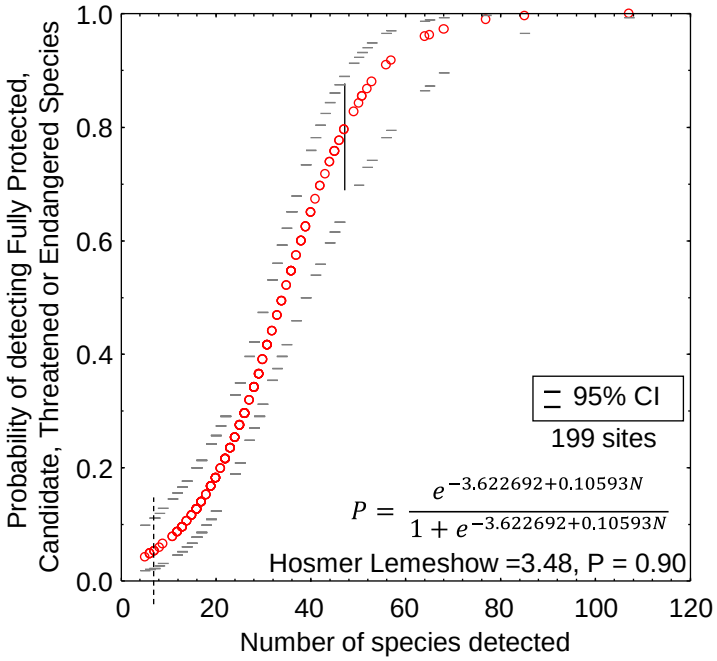
Response 206-288: "The City acknowledges the comment as a statement."

Reply: My comment was an analysis, not a statement. My analysis led to a predicted number of species of vertebrate wildlife likely to use the site over the long-term – much longer than the very brief surveys completed by both Rincon (2018) and myself. The DEIR presents no similar analysis, which leaves the reader with the false impression that the 7 species seen by Rincon (2018) were all the species to be seen on the project site.

Response 206-289: "The City acknowledges the comment as a statement."

Reply: My comment was an analysis, not a statement. This analysis goes to the probability of detection of special-status species, which the DEIR does not address. A brief survey is unlikely to detect many of the special-status species that use a particular site, but an empirical foundation is available to calculate the probability of detection of a special-status species based on a survey outcome. My comment provided an example that was directed toward listed species including California Fully Protected species. Since my comment letter, I updated my analysis based on a larger data set. My larger data set predicts an 80% probability of detecting a listed species at the project site based on my survey effort, but only a 5% probability of doing so based on the survey effort of Rincon (2018). If the savannah sparrows I saw on site were Belding's savannah sparrows, then I beat the odds. It probably would have taken many surveys by Rincon (2018) to detect a listed species, due to their relatively unproductive survey, but the point of my comment is that Rincon's failure to detect a listed species is likely more of a reflection of their insufficient survey effort than it is of wildlife species occurrences.

Figure 5. *Probability of detecting ≥1 Candidate, Threatened or Endangered Species of wildlife listed under California or federal Endangered Species Acts, based on survey outcomes logit-regressed on the number of wildlife species I detected during 199 site visits in California. The dashed vertical line represents the number of species detected by Rincon and the solid vertical line represents the number I detected.*



Response 206-291: "The City acknowledges the comment as a statement."

Reply: My comment was an analysis, not a statement. Henceforth, I will not reply to responses that mischaracterize my comments as statements.

Response 206-292: "According to the most recent CDFW Special Animal's List (July 2022), the red-tailed hawk is not designated as a special-status species, and double-crested cormorants are a Watch List species for nesting colonies."

Reply: The response warrants a review of which species need to be considered as special-status species. §15380 of the CEQA Guidelines defines special-status species as Endangered, Rare, or Threatened, and it further defines each of these terms. Rare is defined as "(A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (B) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act." Thus, rare species need not be listed species.

Importantly, CEQA Guideline 15125(c) provides that in describing the environmental setting "special emphasis should be placed on environmental resources that are rare or unique to the region and would be affected by the project."

The California Resources Agency's Guidelines for Implementation of CEQA includes Appendix G, which requires that the proposed project be evaluated for whether it may have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife and US Fish and Wildlife Service.

The California Department of Fish and Wildlife in turn defines a Species of Special Concern to be a species that:

- is extirpated from the State or, in the case of birds, is extirpated in its primary season or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

The species I identified as special-status species are consistent with how CEQA defines special-status species.

The meanings of CEQA's defining terms for a species' special status differ, but their differences also broaden the suite of species that CEQA intends should be considered as special-status species. The meanings of the terms Rare and Sensitive also often underly the inclusions of species on special-status species lists compiled by resource agencies. Rareness can apply to species that have been diminished in abundance or geographic extent, or it can apply to species that are naturally scarce owing to their position at the top of the food-chain or to some other ecological factor. Rareness can also apply to species that are endemic to a region, even though such species can be abundant within their limited geographic range, e.g., yellow-billed magpie and Nuttall's woodpecker. Sensitive can apply to species that respond more adversely than other species to changes

to their environment, often due to susceptibility to pollutants or pathogens or to the loss or degradation of a narrow portion of the environment on which the species relied. For example, burrowing owls often but not always depend on ground squirrels for the squirrels' provisions of burrows as nest sites and for their mutual predator-alarm calling. Therefore, burrowing owls are sensitive to human changes to the environment that diminish ground squirrels.

The CEQA definition is consistent with how I identified special-status species in Table 2 of my comment letter. I rely on the status assigned each species in California's Special Animal List (California Department of Fish and Wildlife, Natural Diversity Database. November 2021. Special Animals List. Periodic publication) – a list that is updated annually and often relied upon for CEQA reviews. The Special Animals List compiles designations of special status to species from various agencies and for various reasons. According to policy of the California Department of Fish and Wildlife regarding species of special concern (SSC) (https://www.wildlife.ca.gov/Conservation /SSC#394871319-how-are-sscs-addressed-under-the-california-environmental-quality-act), "*SSCs should be considered during the environmental review process. The California Environmental Quality Act (CEQA; California Public Resources Code §§ 21000-21177) requires State agencies, local governments, and special districts to evaluate and disclose impacts from "projects" in the State. Section 15380 of the CEQA Guidelines clearly indicates that species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein. Sections 15063 and 15065 of the CEQA Guidelines, which address how an impact is identified as significant, are particularly relevant to SSCs. Project-level impacts to listed (rare, threatened, or endangered species) species are generally considered significant thus requiring lead agencies to prepare an Environmental Impact Report to fully analyze and evaluate the impacts. In assigning "impact significance" to populations of non-listed species, analysts usually consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.*"

The US Fish and Wildlife Service circulates a list of Birds of Conservation Concern. This list is of "all migratory nongame birds that without additional conservation action are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." Factors contributing to this list are "population abundance and trends, threats on breeding and nonbreeding grounds, and size of breeding and nonbreeding ranges." I rely on this list.

Raptors are protected by California Fish and Game Code 3503.5, otherwise known as the Birds of Prey Code. Raptors are protected by this Code because raptors are top predators wherever they live. Their positions in the food chain naturally require that they are rare, which is one of the key conditions – and one of the key words – that meets the CEQA definition of special-status species. Species that are naturally rare, such as species of raptor, are more likely identified as special-status species, e.g., California condor, bald eagle, peregrine falcon, burrowing owl, spotted owl, whereas fewer of the naturally abundant species are so identified, such as songbirds. I consider raptors protected by CFG Code 3503.5 to be special-status species.

Some species of bat are listed or designated as California Species of Special Concern, but others are assigned conservation priority rankings the Western Bat Working Group (WBWG), which California Department of Fish and Wildlife relies upon and which CDFW tracks in its list of California' special animals. I consider bats with WBWG conservation priority rankings of medium and high to be special-status species.

And then there are the bird species assigned to the Taxa to Watch List in California. These assignments are again assignments of special status; otherwise, there would be no point to assigning them to the Taxa to Watch List. Specifically, they are species that were earlier assigned special concern, but which did not rank as high as those species currently on the list of Species of Special Concern (Shuford and Gardali 2008). Nevertheless, CDFW commissioned the development of this list, and would not have done so without concern for the rarity and sensitivity of the species listed. I rely on this list.

For the reasons summarized above, the FEIR response relies on a flawed premise for its scope of analysis of potential impacts to biological resources, and for its accusation that I defined special status too broadly.

Response 206-294 and Response 206-295: "An updated biological assessment considering special-status species potential to occur was performed and is provided as Appendix FA to the Final EIR. This updated assessment expanded the database review for the USGS quadrangles including the project site and surrounding eight quadrangles ("nine-quad search")."

Reply: Appendix FA of the FEIR screens out species from further consideration if CNDDB occurrence records do not exist within USGS 7.5-minute topographic quadrangles including and adjacent to the site. By relying on CNDDB records to determine species' absences, the DEIR misapplies CNDDB. CNDDB was not designed to support absence determinations or to screen out species from characterization of a site's wildlife community.

Response 206-296: "An updated biological assessment considering species potential to occur was performed and is provided as Appendix FA to the Final EIR."

Reply: The response does not address my comment, which was about the need to complete an adequate survey effort. My comment was not suggesting more database review and speculation about species occurrence likelihoods, but it instead suggested more visits to the project site to actually survey for wildlife.

Response 206-300: "The City acknowledges the comment as an introduction to comments that follow."

Reply: My comment was not an introduction to comments that followed. It was a stand-alone comment, pointing out that based on years of experience studying

burrowing owls, the occurrence of ground squirrels is a good precursor to finding burrowing owls. The response does not address my comment.

Response 206-301: "The reconnaissance-level surveys conducted by Rincon were general in nature. Reconnaissance surveys document existing conditions and assess the habitat suitability for special-status species, which informs whether or not further surveys are necessary."

Reply: With ground squirrels on the project site, protocol-level detection surveys are warranted. Presence of ground squirrels is just the sort of finding that typically prompts implementation of the CDFW (2012) survey guidelines. However, I am the one who found and reported ground squirrels on the project site. Rincon (2018) did not report having detected ground squirrels, and the DEIR makes no mention of ground squirrels occurring on site. In other words, the reconnaissance surveys missed an easily detectable species, which was also an ecological keystone species, the presence of which typically prompts implementation of the burrowing owl survey guidelines. This outcome goes to show that the premise of Response 206-301 is grossly flawed. The general reconnaissance survey failed to accurately assess the site's habitat potential for burrowing owls.

Response 206-301: "Burrowing owls are opportunistic feeders and primarily feed on insects (e.g., grasshoppers, crickets, moths, beetles) and small mammals; and pursue other prey as opportunities arise." And "the site is unlikely to support sustained and abundant prey populations due to the disturbances. … Therefore, the proposed project is not anticipated to significant affect burrowing own [sic] foraging habitat or significantly affect prey populations."

Reply: This characterization of foraging behavior is inaccurate. I have studied burrowing owl foraging behavior for years, during both day and night. At night, burrowing owls actively forage at specific locations for specific types of animals. Burrowing owls will also prey on species as opportunities arise, but their principal foraging strategy is targeted, active hovering over specific locations. They often travel 400 m and farther from their burrows to forage.

Response 206-302: "The comment states that Rincon (2018) per the Draft EIR offers no survey findings of wildlife on adjacent properties, such as the property to the south that is undergoing habitat restoration by The Nature Conservancy. At the closest point, the Ormond Lagoon Waterway is located approximately 110 feet of the very southeast edge of the project parcel. However, as shown on Exhibit 5.1-5 of the Draft EIR (Photometric Plan), the proposed lighting will not directly spill into the adjacent open space."

Reply: The comment addressed by the Response had nothing to do with lighting. My comment was directed toward the adequacy of the characterization of the existing environmental setting; I had not even gotten to potential project impact yet.

Response 206-303: "Please refer to response to comment 206-302."

Reply: My comment about Belding's savannah sparrow (or possibly large-billed savannah sparrow) had nothing to do with the potential impacts of lighting at this point in my letter. I was addressing the adequacy of the characterization of the existing environmental setting.

Response 206-308: "Please refer to response to comment 206-111."

Reply: I fail to understand what Response 206-111 has to do with my comment on the impact of habitat loss to total bird nesting density.

Response 206-308: "following project operations, the proposed vehicle parking area, guard house, portable restroom, perimeter site lighting, and gravel surface would be removed, allowing for other types of development to be proposed."

Reply: I fail to understand how preparation of the site for its next stage of development is going to do anything to avoid, minimize, rectify or compensate for the impact of habitat loss on total bird nest density.

Response 206-308: "For the aforementioned reasons, because impacts are less than significant, mitigation measures are not required."

Reply: Nothing about the response indicates that my impact prediction would be any less than I presented in my comment.

Response 206-310: "Please refer to response to comment 206-308."

Reply: Response 206-308 does not address my predicted annual loss of 1,907 birds that would be caused by the project. Since my comments of 9 February 2022, my method for estimating total bird density and the number of birds that would be denied California due to habitat loss was peer-reviewed and published (Smallwood 2022).

Response 206-311 and Response 206-312: "Please refer to response to comment 206-308."

Reply: Response 206-308 does not address my comment, especially my comment on specific species likely to lose habitat as a result of the project. Also, I must point out that Response 206-308 is confusing and therefore of little informative value. According to the Response, "...following project operations, the proposed vehicle parking area, guard house, portable restroom, perimeter site lighting, and gravel surface would be removed, allowing for other types of development to be proposed. Given the temporary use of the site for outdoor vehicle storage for a maximum of 5 years and that the proposed project does not include permanent structures, the proposed project does not preclude future non-industrial uses." The Response says that the proposed project would clear the way for a subsequent develop project, which does not preclude non-industrial uses. In other words, anything can happen. What would not happen, however, is a return to the

productive capacity for wildlife that the site provides now. The soil would be dead after being covered by gravel and cars for 5 years.

Response 206-315: "The City acknowledges the comment as a statement. No further response is required."

Reply: My comment was a comment. I identified special-status species of birds that I witnessed flying over the project site. I photographed some of these birds and inserted the photos to my comment letter as substantial evidence in the record. The FEIR does not seriously address my comment.

Response 206-316: "Please refer to response to comment 206-308."

Reply: The FEIR provides no response specific to my comment that the DEIR adopts a false CEQA standard to analyze potential project interference with wildlife movement in the region.

Response 206-317: "During this temporary project, the project site will not offer any foraging habitat, and it will be unlikely that species would utilize the site. The project includes fencing around the perimeter of the site and fencing will function to redirect species such as raptors."

Reply: The impact of which I commented – wildlife-automobile collision mortality – would not take place on the project site, but rather on the roads traversed by traffic generated by the project. The response is misdirected and entirely misses the meaning of my comment.

Response 206-317: "The additional biological analysis will take all potential impacts into consideration."

Reply: The meaning of this response is lost on me. I found no additional biological analysis in the FEIR, nor did I find any analysis of automobile collision mortality.

Response 206-319: "The City acknowledges the comment as an introduction to comments that follow. No further response is required."

Reply: My comment was not an introduction to comments to follow. It presented an analysis leading to a prediction of vehicle miles traveled (VMT) for the purpose of predicting wildlife mortality that would result from project-generated traffic. I included my analysis because VMT is an important predictor variable in my analysis of wildlife-automobile mortality caused by project-generated traffic. The DEIR failed to report a prediction of VMT, so based on my experience with reviewing VMT predicted for other proposed projects, I predicted VMT based on the average miles attributed to commuting employees and based on daily vehicle delivery mileage reported in the DEIR.

In response to comments on the DEIR, the FEIR (pages 12-13 and 12-14) reports a prediction of 475 daily VMT attributed to vehicle deliveries to and from the project site.

The FEIR does not report VMT attributed to employee commute, so I will continue to rely on my assumption of my original analysis to again predict 219,000 annual VMT for employee commute. This latter rate added to the revised 173,375 annual VMT for vehicle deliveries yields 392,375 annual VMT for the project, which is a larger VMT than I had predicted in my 9 February 2022 comment letter. I therefore update my wildlife mortality prediction. Based on the methods summarized in my comment letter, I predict 215 wildlife fatalities per year caused by project-generated traffic. In my opinion, based on the evidence provided by the Mendelsohn et al. (2009) study and my prediction of the project's annual VMT on local roads, it is my opinion that the project's toll on wildlife due to wildlife-vehicle collision mortality would qualify as an unmitigated significant impact to wildlife.

Response 206-320: "The City acknowledges the comment as a statement. No further response is required."

Reply: An analysis resulting in an impact prediction is not merely a statement in the context of comments on an DEIR.

Response 206-322: "The City acknowledges the comment as a statement. No further response is required."

Reply: I commented on a major flaw of the DEIR's analysis of cumulative impacts. My comment was not a mere statement.

Thank you for your attention,

_____
Shawn Smallwood, Ph.D.

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POLICY PERSPECTIVE

Aeroconservation for the Fragmented Skies

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Abstract

From birds to bacteria, airborne organisms face substantial anthropogenic impacts. The airspace provides essential habitat for thousands of species, some of which spend most of their lives airborne. Despite recent calls to protect the airspace, it continues to be treated as secondary to terrestrial and aquatic habitats in policy and research. Aeroconservation integrates recent advances in aeroecology and habitat connectivity, and recognizes aerial habitats and threats as analogous to their terrestrial and aquatic counterparts. Aerial habitats are poorly represented in the ecological literature and are largely absent from environmental policy, hindering protection of aerial biodiversity. Here, we provide a framework for defining aerial habitats to advance the study of aeroconservation and the protection of the airspace in environmental policy. We illustrate how current habitat definitions explicitly disadvantage aerial species relative to non-aerial species, and review key areas of conflict between aeroconservation and human use of the airspace. Finally, we identify opportunities for research to fill critical knowledge gaps for aeroconservation. For example, aerial habitat fragmentation may impact biodiversity and ecosystem function similarly to terrestrial habitat fragmentation, and we illustrate how this can be investigated by extending existing methods and paradigms from terrestrial conservation biology up into the airspace.

Introduction

The airspace provides essential habitat for an enormous array of biodiversity including microorganisms, wind-dispersed seeds, fungal spores, arthropods, bats, and birds (Kunz *et al.* 2008; Womack *et al.* 2010; Diehl 2013). Migratory aerial species rely on a clear path through the airspace to move between summer and winter habitats, while aerial insectivores rely on the airspace to forage. Insects such as the Ephemeroptera (mayflies) rely on aerial swarms for mating (Brodskiy 1973), and the Alpine Swift *(Tachymarptis melba*) can remain airborne for months, foraging, sleeping, and mating in the air (Liechti *et al.* 2013). At higher altitudes, aerial microorganisms exhibit strategies, such as increased UV resistance, which allow them to survive in the high reaches of the atmosphere (Yang *et al.* 2008; Womack *et al.* 2010).

Aerial species represent a substantial portion of global biodiversity. Twenty-eight percent of vertebrate species assessed by the International Union for the Conservation of Nature (IUCN) fly or glide, and rely to some extent on the airspace (Figure 1). This proportion may be much higher for insects, spiders, and plants that produce wind-dispersed seeds.

Unfortunately, a growing number of anthropogenic threats are intruding into the "crowded airspace" (Lambertucci *et al.* 2015; Table 1). Collisions with human infrastructure and aircraft result in billions of wildlife deaths each year (Longcore & Rich 2004; Womack *et al.* 2010; Diehl 2013; Baxter-Gilbert *et al.* 2015; Lambertucci *et al.* 2015; Arnett *et al.* 2016; Figure 2). Moving vehicles kill billions of flying insects (Baxter-Gilbert *et al.* 2015), wind turbines kill millions of bats (Arnett *et al.* 2016), and aircrafts kill thousands of birds (Dolbeer *et al.* 2015). In Canada alone, an estimated 44.6 million adult birds die each year from collisions with buildings, wind farms, communication towers, and other sources of aerial fragmentation (Calvert *et al.* 2013). Global use of unmanned

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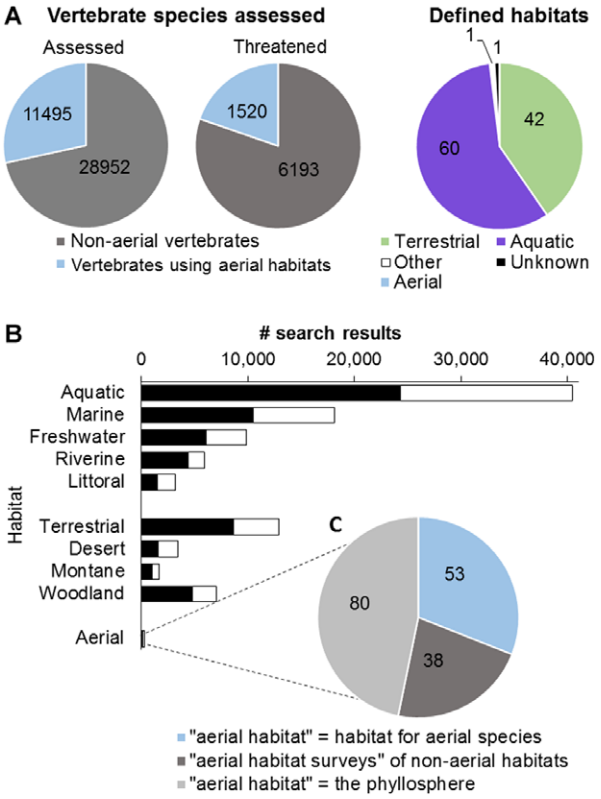

Figure 1 Despite many threatened species relying on aerial habitats, assessments of species' conservation status and research on habitats and habitat conservation focus heavily on terrestrial and aquatic habitats. (A) Proportion of vertebrates assessed and listed as threatened by the IUCN that use aerial and nonaerial habitats. (B) Disproportionate representation of select habitat types in the scientific literature, based on Google Scholar search results (September 6, 2015). Bars show the number of hits that reference each search term; black subsections represent the results that also reference "conservation." (C) "Aerial habitat" actually refers to habitats other than the airspace in most of the 248 unique documents referencing this term.

aerial vehicles (UAVs) by law enforcement, researchers, hobbyists, and military organizations is increasing, and commercial UAV-based delivery services are in development in some countries. Substantial overlap between the flight altitudes of UAVs and aerial species (Figure 2) suggests that growing UAV activity will increase UAV-wildlife collisions. The three-dimensional nature of aerial habitats creates the illusion that flying, soaring, or gliding organisms can simply circumnavigate anthropogenic structures, aircraft or UAVs. Yet, empirical data clearly demonstrate that this is often not the case.

Here, we identify a critical gap in conservation ecology and policy that sits at the intersection of four key, current topics (Figure 3). The growing field of aeroecology (Kunz *et al.* 2008) is revealing how flying animals use the airspace. The airspace was recently defined as habitat (Diehl 2013), complete with heterogeneous resource distribution and the potential for anthropogenic activities to create impacts analogous to those documented in fragmented terrestrial habitats. Alongside compelling evidence that terrestrial habitat fragmentation significantly reduces biodiversity (Haddad *et al.* 2015), it has become increasingly clear that anthropogenic structures and transportation are a major source of mortality for flying wildlife (Calvert *et al.* 2013; Lambertucci *et al.* 2015; Arnett *et al.* 2016). The intersection of these policy issues and research areas represent a major conservation gap: targeted conservation of aerial species and habitats. We propose a new field, "aeroconservation," to integrate these important research areas and develop effective conservation tools for aerial habitats and biodiversity.

The skies are not simply "crowded" by human activities (Lambertucci *et al.* 2015) – they represent critical but undefined habitats that have little policy support. Long-distance migrants must fly a gauntlet of threats (Movie S1) through habitats that are not effectively protected, in part because these habitats are not clearly defined. Substantial effort has been made to conserve wildlife corridors and mitigate the barrier effects of infrastructure in terrestrial habitats. It is time to consider similar mitigations for aerial habitats. To meet the challenge of aeroconservation, we propose: (1) defining aerial habitat types clearly in international policy, (2) articulating responsibility for aerial habitat conservation in environmental legislation, and (3) targeting conservation research to support the urgent needs of threatened aerial species and habitats.

Explicit definitions for aerial habitat

Habitat definitions vary among jurisdictions, but are often based on those used by the IUCN. We therefore use the IUCN's current Habitat Classification scheme here, to illustrate our concern. The IUCN scheme recognizes only terrestrial and aquatic habitats (Figure 1B). A flexible third category, "Other," could be applied to aerial habitat but typically is not (e.g., 0.2% of 1,150 IUCN assessments of bat species list "Other" habitat, but do not refer to airspace). The IUCN assessment of the Globe Skimmer dragonfly (*Pantala flavescens*) considers 14 terrestrial habitat types, but does not list the airspace used for dispersal or intercontinental migrations (Hobson *et al.* 2012; IUCN 2015).Thus, status assessments based on the current habitat classifications consider only terrestrial and aquatic habitat types, incorrectly implying that aerial species rely only on their nonaerial habitats such as migratory stopovers, roosts, or nests for survival.

In contrast, many assessments of nonaerial species include habitats connecting nonbreeding and breeding

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Table 1 Aerial threat typology and potential effects associated with anthropogenic impacts on aerial habitats

Threat type		Examples	Potential effects
Direct collisions	With stationary structures	Buildings, transmission lines, solar panels, fences	Increased mortality; injury
	With moving structures	Cars, trains, ships, moving turbine blades, aircraft	Increased mortality; injury
			Range expansions of microorganisms or seeds dispersed by aircraft.
Physical barriers	From stationary or moving structures	Buildings, vehicles, fences, aircraft	Physical fragmentation of aerial habitat
			Effective habitat fragmentation through barrier effects (e.g., through individuals avoiding high-traffic aerial routes)
			Modified airflow affecting dispersal of microorganisms, wind-dispersed seeds, ballooning spiders, etc.
Pollution	Chemical pollution	Emissions from manufacturing or mining operations	Increased UV radiation through ozone depletion, particularly for high-altitude microorganisms
		Smoke billows from wildfires	Reduced visibility from particulate suspended in the air, leading to increased collision risk and disrupting celestial navigation
		Emissions from transportation	Physiological impacts on organisms exposed to toxic doses.
	Heat pollution	Solar flare at solar power installations	Increased mortality
		Urban heat islands	Modified local climate
		Heat plumes from cooling towers or wildfires	Modified airflow patterns, affecting dispersal of microorganisms, wind-dispersed seeds, ballooning spiders, etc.
	Light pollution	Airport and urban lighting	Disrupted celestial navigation through reduction of visible starlight or through attraction toward artificial light
			Increased risk of collisions (i.e., for night-flying insects).
	Noise pollution	Vehicle and aircraft traffic, manufacturing activities, natural resource extraction	Disrupted acoustic communication (insects, birds, bats)
			Disrupted acoustic navigation (e.g., echolocating bats).

areas (IUCN 2015). As an illustration, the IUCN assessments of the European and American Eel (*Anguilla anguilla; A. rostrata)* both include habitat types used for "passage" from breeding to nonbreeding areas, analogous to the airspace used by migrating or dispersing aerial species. This approach acknowledges that boundaries among habitat types are ecologically permeable, and that most species rely on the protection of multiple habitat types for survival (Burke & Gibbons 1995; IUCN 2015).

The absence of aerial habitat recognition extends to international policy. For example, the Convention on the Conservation of Migratory Wild Species of Animals defines a species' range as "the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route." Aerial habitats are excluded despite an explicit acknowledgment in the text that some species fly. Thus billions of birds, bats, insects, and other organisms rely on undefined and therefore unprotected aerial habitat to complete critical life processes.

To facilitate the incorporation of aerial habitats into habitat classification schemes, we propose habitat subdivisions for the troposphere (0–15 km altitude; Table S1, Figure 2). Adopting these habitat definitions would allow more complete assessments of the habitat requirements of aerial organisms. We have based the proposed scheme loosely on the existing definitions of marine pelagic habitats, which are also three-dimensional and therefore challenging to define. Pelagic habitats are defined in part by the amount of light penetrating from the surface, and whether it is sufficient for photosynthesis. For aerial habitats, we defined biologically meaningful categories based on temperature and oxygen levels in the airspace.

Basoaerial habitat includes the airspace extending from the top of the adjacent terrestrial habitat, upward to an absolute altitude of 1 km, at which the temperature has dropped 10°C below that of the air directly above the adjacent terrestrial or aquatic habitat. Thus, movement within the basoaerial layer requires relatively little physiological adjustment to tolerate the increased altitude. The basoaerial layer will be thicker above grasslands or water bodies, and thinner above high forest canopies. Threats to organisms in basoaerial habitat include collisions with vehicles, aircraft, wind turbines and buildings (Baxter-Gilbert *et al.* 2015; Dai *et al.* 2015; Lambertucci *et al.* 2015), and light pollution (Longcore & Rich 2004). Mesoaerial

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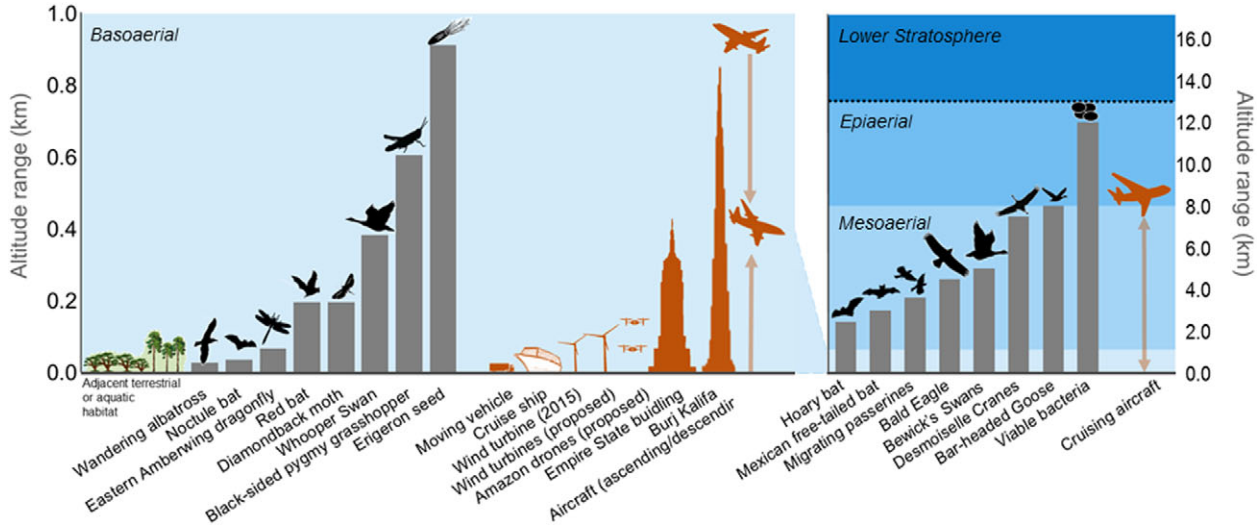

Figure 2 Aerial species fly a gauntlet of threats as they navigate fragmented aerial habitats. Gray bars in the left panel show flight altitudes reached by selected aerial species in the basoaerial; altitudes of selected threats in each aerial habitat type are shown in red. The indicated (dashed line) altitude of the tropopause (upper limit of the troposphere) is approximate because the height of the troposphere varies according to latitude. The troposphere encapsulates the basoaerial, mesoaerial, and epiaerial layers (blue shading).

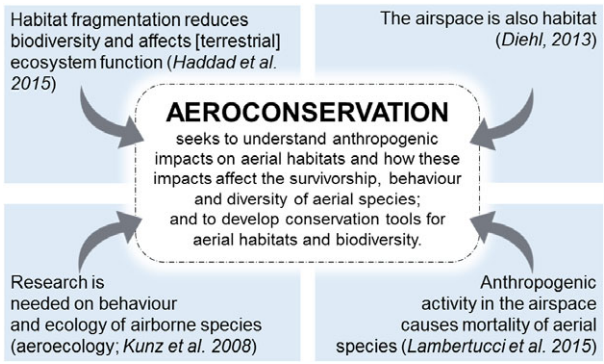

Figure 3 Aeroconservation integrates four key research areas related to habitat and species conservation, illustrated in this schematic by a major contribution from each area.

habitat (1–8 km altitude) is characterized by steadily decreasing temperatures (-10°C/km) and decreasing oxygen levels as altitude increases. At approximately 8 km in altitude, there is insufficient oxygen for typical human survival (the so-called "death zone" described by high-altitude climbers; Krakauer 1997). Birds flying near or above the upper limits of mesoaerial habitats exhibit physiological adaptations to these extreme conditions (Scott 2011). Anthropogenic threats in mesoaerial habitats (1–8 km) include light pollution and collisions with aircraft. Finally, temperatures in epiaerial habitat plunge toward -56°C at the tropopause. The altitude of the tropopause, which defines the upper limit of epiaerial habitat, varies with latitude. Thus, epiaerial habitat begins at 8 m in altitude and rises to between 9 and approximately 17 km in altitude, depending on latitude. Threats to species in epiaerial habitat include cruising aircraft and light pollution. Epiaerial microorganisms exhibit adaptations to high altitude (Yang *et al.* 2008), but their biology and diversity are not well understood (Womack *et al.* 2010).

Crowded skies: conflicting priorities in management of aerial habitats

Aerial species cross a range of altitudes (Scott 2011; Figure 2) and jurisdictional boundaries. Thus, aeroconservation will require interagency coordination within a jurisdiction, and transboundary cooperation among jurisdictions. This poses a challenge because ensuring human safety and economic growth can conflict with protection of aerial biodiversity. For example, the International Civil Aviation Organization encourages elimination of birds and bird habitat from airports because these species pose a threat to aircraft safety (Kelly & Allan 2006). The U.S. Federal Aviation Administration further recommends exclusion of habitat for "hazardous wildlife" within an 8 km radius of each airport's air operations area. With over 13,000 airports in the United States, this area of exclusion not only impacts more than 2.6 million km^2 of terrestrial habitat – twice the total of all protected areas in the United States – but also more than 2.6 million km^3 of basoaerial habitat through which planes ascend and descend, creating a network of high-risk areas for aerial organisms.

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We also face novel conflicts between our desire to protect biodiversity in the Anthropocene, our need to mitigate climate change (in part to protect biodiversity), and our current, insatiable demand for energy. Renewable energy technologies developed to provide sustainable alternatives to fossil fuels can have substantial impacts on basoaerial habitats. Wind energy installations increase mortality of local and migratory birds and bats, and solar energy installations that include solar power towers can incinerate flying birds or arthropods that cross the "solar flux" (Dai *et al.* 2015; Walston *et al.* 2016). Although the impact of each individual installation on threatened aerial species is likely negligible, the long-term, cumulative impacts of the growing number of installations may not be. Thus, decreasing the impacts of renewable energy on aerial wildlife represents a major challenge in aeroconservation. An associated challenge is the conversion of estimated mortality rates from these threats to projected, population-level impacts. Currently, such impacts are unclear because mortality estimates are highly variable among studies (Calvert *et al.* 2013; Arnett *et al.* 2016) and baseline data on population trends are unavailable for many aerial taxa (Baxter-Gilbert *et al.* 2015; Arnett *et al.* 2016).

The final ecological frontier?

The airspace also remains poorly represented in ecological and conservation research, despite recent interest in aeroecology (Kunz *et al.* 2008; Womack *et al.* 2010). To illustrate this on a broad scale, we conducted a Google Scholar search for the terms "aquatic habitat" and "terrestrial habitat," which returned ~40,000 and ~13,000 records, respectively. In contrast, our search for the term "aerial habitat" returned 171 records, and only 31% of these used the term to describe habitat for aerial taxa (Figure 1C). We are not suggesting that there is no interest in the airspace among ecologists, or that it has never been considered. Instead, we hope to catalyze progress in aeroconservation by highlighting: (1) a critical, persistent gap in conservation biology and (2) an opportunity to extend paradigms and research methods from terrestrial ecology upward into the airspace. We explore one example below: the fragmentation of aerial habitat.

Fragmented skies – applying paradigms from terrestrial ecology to the airspace

Diehl (2013) proposed that aerial habitat could also be "fragmented," but the implications of aerial habitat fragmentation have not yet been studied. Fahrig (2003) defined habitat fragmentation as the "breaking apart of habitat," a process that can cause chronic changes in species diversity and ecosystem function (Andren 1994; Lindenmayr & Fischer 2013; Haddad *et al.* 2015). Describing the airspace as "fragmented" may be counterintuitive to ecologists accustomed to visualizing this process in two-dimensional, terrestrial landscapes. Nevertheless, we propose that anthropogenic intrusions into aerial habitats can create barriers to movement, functionally dividing basoaerial habitat into isolated fragments.

The multidimensionality of the airspace can complicate our perception of its connectivity. In discussing aerial habitat fragmentation and aeroconservation with colleagues, we have repeatedly heard the argument that flying wildlife can surely avoid obstacles as large as buildings. For organisms such as ballooning spiders or aerial microorganisms that do not control their aerial trajectory (Womack *et al.* 2010; Blandenier *et al.* 2014), obstacle avoidance may simply be impossible. However, we acknowledge that many obstacles encountered by aerial species appear easily surmountable from our perspective. For example, transmission lines are not *that* high – surely birds can simply fly over them? In many cases they do, but expecting aerial species to consistently increase flight altitude in response to habitat fragmentation discounts the constraints of the altitudinal niches to which they are adapted (Scott 2011, Finn *et al.* 2012), and may raise the potential energetic and fitness costs of flight. Exposure to aerial predators and energetic costs of flight may increase with flight altitude, especially for species that are not adapted to high-altitude gliding (Niskanen *et al.* 2014), while increased altitude also increases the length of the total flight path. The challenges of obstacle avoidance in the airspace are clearly illustrated by the millions of aerial vertebrates and arthropods that collide with anthropogenic features every year.

As a thought experiment, imagine a population of passerine birds (or damselflies, or hemipterans). Picture a species that can meet its habitat requirements in an urban area, and that typically flies within a few meters of the ground to reduce energetic costs of flight (Finn *et al.* 2012), or to avoid predation. In urban areas, buildings that are taller than the preferred flight height of this species create functional barriers, analogous to those documented in terrestrial species that avoid roads that they are physically able to cross (D'Amico *et al.* 2016). Our hypothetical aerial species can fly around buildings where gaps exist, but this increases the distance of their journey from one point to another, potentially increasing predation risk and energetic costs, and further decreases the functional connectivity of their habitat.

Aeroconservation can benefit not only from the paradigms of terrestrial ecology, but also the tools. For example, connectivity analyses could identify critical

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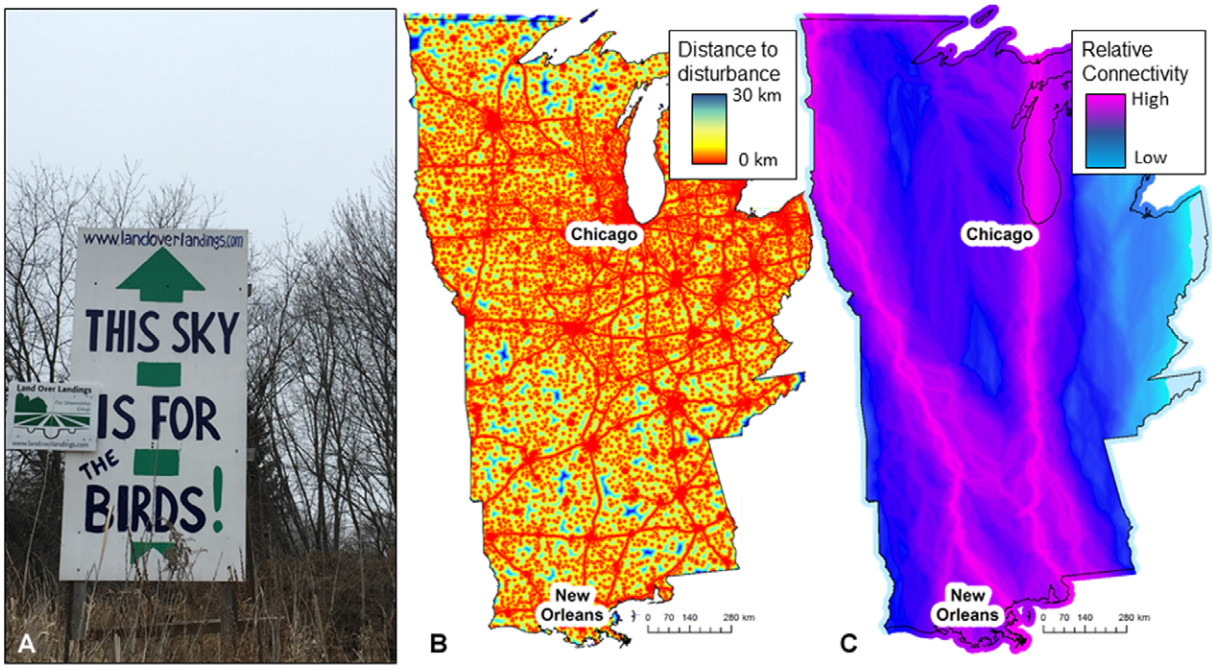

Figure 4 Conservation of aerial species requires protection of aerial habitats. There is growing awareness of the need to conserve airspace for wildlife, illustrated here by a sign in Ontario, Canada, that was posted in response to a proposed airport (A). Yet, conservation policy lags behind public awareness, limiting effective management of aerial habitats (Table 1). Tools used to quantify fragmentation of terrestrial habitats can also be used for the conservation of airspace, such as (B) linkage maps (Koen *et al.* 2014). Here, we quantify aerial movement corridors that have the lowest cumulative exposure to aerial habitat fragmentation in the Mississippi flyway. Most points in the eastern United States are <30 km from sources of fragmentation (B). As a result, basoaerial habitat connectivity is low, shown in (C). We define fragmentation as proximity to airports, cities, highways, wind farms, or communication towers, although we acknowledge that further sources of aerial habitat fragmentation also exist. Termini for the corridors are the Yucatan Peninsula (Mexico), Hudson's Bay (Canada), and Wood Buffalo National Park (Canada), approximating avian migration through the United States and Canada. See online supplemental material for further details of this analysis.

corridors for aerial habitat connectivity, an approach we illustrate in Figure 4. Such corridors could be overlaid with habitats essential to terrestrial or aquatic habitat connectivity, allowing identification of "connectivity hotspots."

In addition to anthropogenic impacts on aerial vertebrates and arthropods, potential human impacts on microorganisms adapted to aerial habitats provide rich research opportunities (Yang *et al.* 2008; Womack *et al.* 2010). Selective pressures on aerial microorganisms are likely altered by climate change, pollution, and human activity. Shifting temperature or precipitation patterns could affect survival of aerial microorganisms, potentially altering community structure. Altered wind patterns and aircraft movements could influence microorganism dispersal, modifying the biogeography of aerial microorganisms with unpredictable effects. Although we consider it unlikely that the facilitated movement of aerial microorganisms would cause a major ecological catastrophe, the rapid increase in emerging infectious diseases (Jones *et al.* 2008) serves as an illustration that invasive microorganisms can have unpredictable effects on naïve ecosystems.

Reaching for the sky

Effective aeroconservation requires effective solutions and tools for the conservation of aerial habitats and biodiversity. Substantial efforts are already underway, supported both by the development of new technologies, and the implementation of common-sense solutions. These include installation of new types of window glass that are less likely to cause bird collisions, and mandated temporary shut-downs of wind energy installations during peak bird or bat migration periods. However, these efforts are largely limited to local mitigation of collision-based impacts on particular taxa. The recognition of aerial habitats now needs to be translated into policy, qualifying the habitats themselves for legal protection where necessary.

Flying aircraft or UAVs at low altitudes is often prohibited over some protected areas, typically to protect terrestrial species from disturbance (e.g., Otto *et al.* 2003). Such rules could be extended to protect aggregations of aerial species, and dynamic aerial reserves have been proposed to protect aerial foraging or migratory habitat (Diehl 2013; Lambertucci *et al.* 2015). While we echo

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the call for protected aerial reserves, we argue that it is premature until aerial habitats are acknowledged in policy and legislation, and until the extent of legislative influence into aerial habitat is clarified (Lambertucci *et al.* 2015; Linchant *et al.* 2015). In many countries, legislation such as the U.S.A. Clean Air Act addresses the abiotic components of air quality. These types of legislation could serve as a platform to provide legal protection to aerial biodiversity. Similarly, legislation governing terrestrial and aquatic conservation (e.g., the Canadian Species at Risk Act) could be modified to include aerial habitats where required for species protection.

We acknowledge that there are substantial logistical challenges associated with aeroconservation, and we are hopeful that new technologies will emerge to meet them. For example, radar can detect mass migrations or significant ephemeral concentrations of prey for aerial insectivores (Farnsworth *et al.* 2015), enabling habitat protection when necessary and allowing human use at other times (dynamic aerial reserves). Stable isotope analyses and the increasing miniaturization of biologging tools allow identification of migratory and dispersal pathways for an increasing diversity of airborne organisms (Fraser *et al.* 2010; Stanley *et al.* 2015).

Building effective strategies for aeroconservation will not be simple or fast. It will require transboundary partnerships and creative collaborations among legislators and policy makers, conservation practitioners, researchers, and the public. We invite you to join us in lifting our conservation tools up off the ground, and developing effective protection for the thousands of species with which we share the skies.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

The following supplementary material is available for this article:

Movie S1. This material is available as part of the online article from: http://www.blackwell-synergy.com/doi/full/10.1111/j.1755–263X.2008.00002.x.

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Extending the Habitat Concept to the Airspace

3

Robert H. Diehl, Anna C. Peterson, Rachel T. Bolus, and Douglas H. Johnson

Abstract

Habitat is one of the most familiar and fundamental concepts in the fields of ecology, animal behavior, and wildlife conservation and management. Humans interact with habitats through their senses and experiences and education to such a degree that their perceptions of habitat have become second nature. For this reason, it may be difficult at first to accept the airspace as habitat, an area that is invisible, untouchable, highly dynamic, and its occupants difficult to see. Nonetheless, the habitat concept, by definition and in practice, applies readily to the airspace. Some ecological and behavioral processes including habitat selection, foraging, and reproduction are operational in the airspace, while others, particularly those mediated by resource limitation such as territoriality, are likely uncommon if present at all. The behaviors of flying animals increasingly expose them to anthropogenic hazards as development of the airspace accelerates. This exacerbates the need to identify approaches for managing these human–wildlife conflicts in aerial habitats, especially where human safety or at-risk populations are concerned. The habitat concept has proven useful in shaping environmental law and policy to help

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mitigate these conflicts. It remains to be seen whether current law can bend to include a more expansive concept of habitat that includes the airspace.

1 What Is Habitat?

Consider an organism moving through a vast and apparently featureless yet dynamic fluid medium. Its behavioral and physical phenotype is designed for life in this medium, and its survival contingent upon its ability to seek out favorable currents in which to move about, find food, sleep, and avoid predators. This might describe the rudimentary natural history of countless pelagic fish species and we would not hesitate to call the open water they occupy a habitat. This might also describe the natural history of numerous bird species and the airspaces they occupy, yet most would claim a bird in flight is not in habitat. The notion of habitat is firmly linked to terrestrial or aquatic places, yet nothing about the ecology of habitats excludes the airspace which shares many ecological parallels with its terrestrial and aquatic counterparts.

Ecologists have struggled to define habitat. Linnæus (1754), his mind on plants, informally referred to "the native places" (where one finds a given species of plant) as "station," his nascent term for habitat. This concept was developed with principles that apply to sessile plants and which have continued to influence scientific understanding of habitat; however, highly mobile organisms defy our attempts to discretely categorize their habitats by plant communities (e.g., forest, grassland) and/or geological formations (e.g., river, alpine). Linnæus' general perception of habitat remains widely accepted today, even as a persistent dissatisfaction surrounds a precise definition. Odum's (1959) definition of habitat as "the place an organism lives, or where one would go to find it" is perhaps the most familiar to ecologists. A few years later, perhaps dissatisfied with this and other definitions, Elton (1966) stated that, "definition of habitat, or rather lack of it, is one of the chief blind spots in zoology," and efforts to define it continue. Many of the more generalizable definitions of habitat offer some reference to occupancy or resources that promote occupancy (e.g., Hall et al. 1997; Dennis et al. 2003, 2006; Morrison et al. 2006). Of these, Morrison et al.'s is among the more precise and generalizable, calling habitat an "area with a combination of resources and environmental conditions that promotes occupancy by individuals of a given species that allows individuals to survive and reproduce." More context specific definitions usually involve additional criteria and represent special cases and are therefore less broadly applicable to the life history of organisms as a whole (e.g., by requiring the presence of vegetation). The airspace satisfies criteria set forth in these and other broadly defined conceptions of habitat in that it contains resources that promote occupancy. These include food, mates, opportunities to avoid predators, and a low friction, relatively uncluttered medium enabling efficient travel. The idea that the airspace should be considered habitat (Diehl 2013) is gaining acceptance and is a fundamental tenet of the emerging field of aeroecology (Kunz et al. 2008).

It was unclear how long airborne resources could sustain life during flight, particularly of a vertebrate, until Alpine and Common Swifts (*Tachymarptis melba* and *Apus apus*) were documented remaining aloft for several months without landing (Liechti et al. 2013; Hedenström et al. 2016). The airspace alone provided all the resources required to sustain the swift's biology, including food and sleep. Much as a terrestrial amphibian uses the water only to breed, these swifts appear to need land only to support their nests and eggs. (The word "amphibious" means "leading a double life" in Greek, and had early taxonomists not applied this word exclusively to animals that exist between the land and water, we might also label swifts as "amphibious.") In addition, recent research shows that the microscopic biological flotsam of the air is composed not only of inert cells and bits of feathers but also of life: pollen, bacteria, fungi, and protists (Deprés et al. 2012). The airspace is teeming with microbial communities that spend generations aloft before settling back to the surface after metabolizing, undergoing selection, and reproducing (Womack et al. 2010). Such phenomena challenge biologists to accept that the airspace is habitat. The alternative—that such organisms are sustained through large proportions of their lives outside habitat—suggests that the current habitat model be rejected altogether, although it is unclear what might replace it (Dennis et al. 2003). A revised understanding of habitat that includes the airspace offers a new context to consider the habitat concept. Relative to its terrestrial and aquatic counterparts, the airspace is highly dynamic yet presumably lacking in much of the structure and organizational complexity that comes with higher plant and animal abundances, species diversity, and physical substrates typically associated with habitat.

Despite a strong ecological basis that the airspace should be considered habitat, the notion remains counterintuitive and references to the airspace as habitat are vague where they exist at all (e.g., Cadenasso et al. 2003). Through formal education and personal experience, we learn about habitat strictly in terms of land and water. Indeed, among all vertebrates and macroinvertebrates, humans and a relative handful of other species are actually unusual for their inability to fly. Our perceptions shape how we understand and apply the habitat concept in ways that may have consequences for wildlife conservation and management and the education of future generations.

Early hunter-gatherer societies likely cultivated a deep understanding of the natural history of plants and animals, so the awareness of habitat (in the sense that certain resources can be found in certain places at certain times) predates scientific recognition and definition by millions of years. The knowledge of when and where to gain access to resources was critical to survival throughout evolutionary history and therefore linked to resources that were accessible (that is, by land and water, but seldom through the air). As such, perceptions of habitat may be deeply ingrained, possibly even codified in our DNA, and indeed, a genetic basis for habitat preference is well documented among some species (Jaenike and Holt 1991).

Evolution shaped our senses for survival on land and water to a degree that almost certainly influences our perceptions of what constitutes habitat, so considering the airspace as a habitat poses several challenges. The airspace is largely

invisible as are many of the features that give it structure (e.g., wind, temperature, pressure, geomagnetism). Even those features which are detectable to humans through nonvisual channels (e.g., wind) likely do not carry the same meaning as they do with flying animals. We lack certain sensory receptive organs (e.g., cilia) and the neurological infrastructure that interprets signals from those organs. Moreover, certain characteristics of aerial habitat seem to defy common sense. That a habitat could be invisible or is capable of being present one moment and gone the next is far outside most personal and professional experiences. For example, the convective thermals used by raptors represent aerial habitats that are both invisible and highly ephemeral. Despite these limitations, extensions to our senses offered by access to the airspace though manned and unmanned aircraft and advances in remote sensing technology are beginning to reveal the intricacies of an ecological airspace (Helms et al. 2016; Bridge et al. 2011; Robinson et al. 2009).

2 The Nature of Aerial Habitat

The term "aerial habitat" has been used more in reference to plants than flying animals, specifically in relation to the phyllosphere where the ecology of epiphytes and other arboreal organisms plays out, usually high in the trees (e.g., Lindow and Brandl 2003). What constitutes aerial habitat in the context of aeroecology remains a somewhat open question. In atmospheric terms, aerial habitat includes those parts of the troposphere where aerobiological activity occurs, within the planetary boundary layer and lower parts of the free atmosphere (Davy et al. 2017). Typically, most activity occurs within the first several hundred meters above ground level. In biological terms, aerial habitat occurs when and where an organism's presence indicates use of an airborne resource (e.g., for food or as a movement corridor).

Many properties of the airspace give rise to variability in the structure of aerial habitat. These include wind speed and direction and their diverse manifestations (e.g., convection, shear, turbulence); various forms of moisture including humidity and cloud; precipitation; temperature; pressure and air density (see Chap. 2); magnetic and gravitational field strengths; odor; light conditions (e.g., polarized light, also Van Doren et al. 2017); and natural and anthropogenic gases, chemicals, and particulate matter. Other properties that may not be considered structural in relation to the airspace itself but are nonetheless influential include aerial predators and prey, topography, and anthropogenic structure (Lambertucci et al. 2015; Shipley et al. 2017). These characteristics influence the likelihood of occupancy for a given species within the occupiable airspace, which has vague upper and lower boundaries.

Animals occupying aerial habitats respond primarily to conditions aloft and are often behaviorally decoupled from land and water surfaces. However, at low altitudes, aerial habitat segues into terrestrial or aquatic habitat and animal behavior aloft is increasingly influenced by surface features. A large literature exists concerning the ecology of habitat interfaces, usually between patches of vegetation (Cadenasso et al. 2003). Where obvious transitions between the primary physical

habitat types (land–water, land–air, air–water) have received some attention, the ecology of land–water interfaces dominates. Land–air and air–water interfaces are considered hard boundaries with comparatively abrupt transitions. Research on these boundaries focuses primarily on the physics and chemistry of gas exchange and microbial communities (Belnap et al. 2003) with little attention given to higher trophic levels. In these areas, the airspace may be a functional extension of surface terrestrial or aquatic habitat rather than aerial habitat *per se*, and time spent aloft by vertebrates and macroscopic invertebrates can be brief and usually occurs irrespective of conditions in the interstitial airspaces (e.g., nectar feeding bats, terrestrial territoriality in birds).

As altitude increases, conditions supporting buoyancy and powered flight diminish and the upper limit for a particular species is determined by the extent to which its behavior, anatomy, and physiology have adapted to decreasing air density, temperature, oxygen, and increasing radiation. Where these upper boundary conditions lie for most species is unknown owing to the difficulty of tracking small organisms. Winds are capable of lifting and dispersing invertebrates, seeds, and numerous microorganisms including pollen, spores, and fungi to altitudes exceeding 50 km (e.g., Drake and Reynolds 2012; Westbrook and Isard 1999; Womack et al. 2010). Among high-flying vertebrates, the bar-headed goose (*Anser indicus*) may be the most well-studied and most extreme. These geese routinely reach altitudes exceeding 6000 m when transiting the Himalayan Mountains of the Tibetan Plateau (Hawkes et al. 2011, 2013), although these geese and other species have been documented at higher altitudes, including a Ruppell's Vulture (*Gyps rueppellii*) which was struck by an aircraft at >11,000 m (Laybourne 1974). At 6000 m, air density and the partial pressure of oxygen is approximately half that at sea level under standard atmospheric conditions. Therefore, oxygen availability to power aerobic flight is considerably reduced just as the demands of flight increase as a result of reduced lift from low air density. Despite these constraints, bar-headed geese are not known to benefit from supportive winds in their trans-Himalayan migrations, instead relying on physiological adaptation to altitude and favoring calm atmospheric conditions (Hawkes et al. 2011).

3 Ecology of the Airspace

Terrestrial and aquatic habitats are home to a long list of ecological and behavioral processes including predation, competition, reproduction, and territoriality. The extent to which many of these processes are operational in the airspace is poorly known and, even if present, may be uncommon, ephemeral, or difficult to detect and observe. Certain behaviors are unambiguously at work including habitat selection, reproductive behavior, and predator–prey interactions. Others, especially those that partition resources such as exploitative competition and territoriality, even when operational, may be too short-lived or ambiguous to be useful.

Persistent resource defense territoriality generally occurs only when resources are defendable, limited, and predictable. In most cases, the energetic cost of

occupying the airspace may be high relative to that in terrestrial and aquatic habitats as the airspace has no substrate and offers little unassisted buoyant support (at least for most vertebrates). Flying animals must power movement using their own energy reserves or by harvesting energy conveniently available from the wind (Sachs 2016; Pennycuick 1998), either of which limits the defendability of airborne resources. Also, most properties of the airspace that might serve as airborne resources (e.g., favorable wind, airborne invertebrates as food) may be both unpredictable and effectively unlimited at any given place and time. As a result, resource defense territoriality of airspaces is likely either uncommon or assumes an alternative form than that which has been previously recognized. For example, instead of defending a particular static area bounded in three dimensions, perhaps territoriality manifests as competition in space relative to other individuals (e.g., location in a flock or breeding swarm), which may be more spatially dynamic than the traditional view of a territory. Flying animals, particularly some invertebrates, do use the airspace to defend underlying terrestrial or aquatic habitats and their associated resources. We regard this use of airspace as an extension of surface territoriality as opposed to strict defense of an aerial resource.

Like other difficult-to-study habitats, the airspace offers a relatively unexplored context for examining the generality of ecological theory. If a given ecological process is present because the airspace and organism meet known criteria required for that process to be operational, then the durability of that concept is reinforced. Alternatively, an ecological process that is present despite the absence of expected criteria may call the generality of theory into question. Similar reasoning applies for ecological processes not present in the airspace. We discuss the occurrence of some of these ecological processes to emphasize the point that the airspace functions as habitat and that the ecology of the airspace in many ways differs little from the ecology of the land and the water.

3.1 Habitat Quality, Use, and Selection

Aerial habitats, like their terrestrial and aquatic counterparts, vary in quality in ways that influence survival and reproductive success (Jones 2001). Organisms react to this variation, although reactions differ among species. Microorganisms may be limited in their ability to "select" habitat, but distinct microbial communities exist in the airspace. Community composition is influenced by adjacent source terrestrial/aquatic habitats (Bowers et al. 2011; Brodie et al. 2007), weather (Harrison et al. 2005), and microhabitat differences in the airspace (Womack et al. 2010). Winds aerosolize microorganisms upward from the land (especially from plants; Vaïtilingom et al. 2012) or water and then can horizontally transport the larger microbes and pollen, sometimes for long distances (e.g., from the Sahara to the Alps; Meola et al. 2015), mixing communities. Once they have been passively dispersed, species differ in their ability to survive extreme temperature shifts, radiation, osmotic shocks, and desiccation (Joly et al. 2015), conditions that vary spatially and temporally (Womack et al. 2010). Eventually microorganisms return

to earth due to wind drift, sedimentation, or precipitation (Deprés et al. 2012). Adaptations to the harsh life of the atmosphere (e.g., pigments to reduce the stress from radiation, cold shock proteins; Joly et al. 2015) have likely contributed to the successful inoculation of life in some of its most extreme aquatic and terrestrial habitats (e.g., polar ice sheets; Gonzalez-Toril et al. 2009).

In contrast to microorganisms' passive habitat use, flying animals often select habitats because they provide resources in support of some critical behavior such as foraging, reproduction, or migration. For example, migrating birds choose routes and weather conditions (e.g., Fig. 3.1) that allow them to manage the often conflicting goals of minimizing travel time, energy expenditure, and risk (Alerstam and Lindström 1990); these birds often respond to wind support more than temperature and humidity when selecting the routes and altitudes for their movements (Liechti et al. 2000). For instance, to assist their long-distance migrations over the ocean, bar-tailed godwits time departures from Alaska to coincide with weather likely to produce tailwinds (Gill et al. 2009). In contrast, some migratory insects choose their altitudes primarily based on atmospheric turbulence rather than tail wind assistance (Aralimarad et al. 2011). Diurnal soaring birds, such as the golden eagle, restrict their flight to a narrow band of low-altitude airspace as wind speeds increase (Lanzone et al. 2012). These and other forms of aerial habitat selection appear to be non-density dependent, since the resources being selected (e.g., favorable winds) are not thought to be limiting so as to create conditions for competitive exclusion.

A feature of habitat selection that distinguishes it from mere habitat use is that it results from the relationship between the costs and benefits of occupancy. For instance, during nocturnal migration, birds appear to select the lowest altitude where they first encounter supportive wind conditions even if "better" winds occur at higher altitudes (Mateos-Rodríguez and Liechti 2012). Presumably birds are unwilling to cross a cost barrier to seek out potentially more advantageous flying conditions suggesting that frequent altitude changes in search of optimal flying conditions may be costly (but see Bowlin et al. 2015).

3.2 Reproduction

The airspace provides many resources supporting reproduction, ranging from the concrete (space for asexual division, gamete dispersal, or copulation; protection from predators) to the abstract (a clear channel for communicating with potential mates). Many plants are pollinated through the action of the wind either directly or indirectly by affecting the flight paths of their pollinators. Bacteria have shorter reproductive cycles than their typical residency times in the air column and may have multiple generations between their ascents and descents (Burrows et al. 2009; Sattler et al. 2001).

Most aerial reproductive behavior in flying animals occurs among invertebrates. Insect mating swarms can take many forms. Under seasonally appropriate weather conditions, Diptera form highly localized mating swarms and may maintain

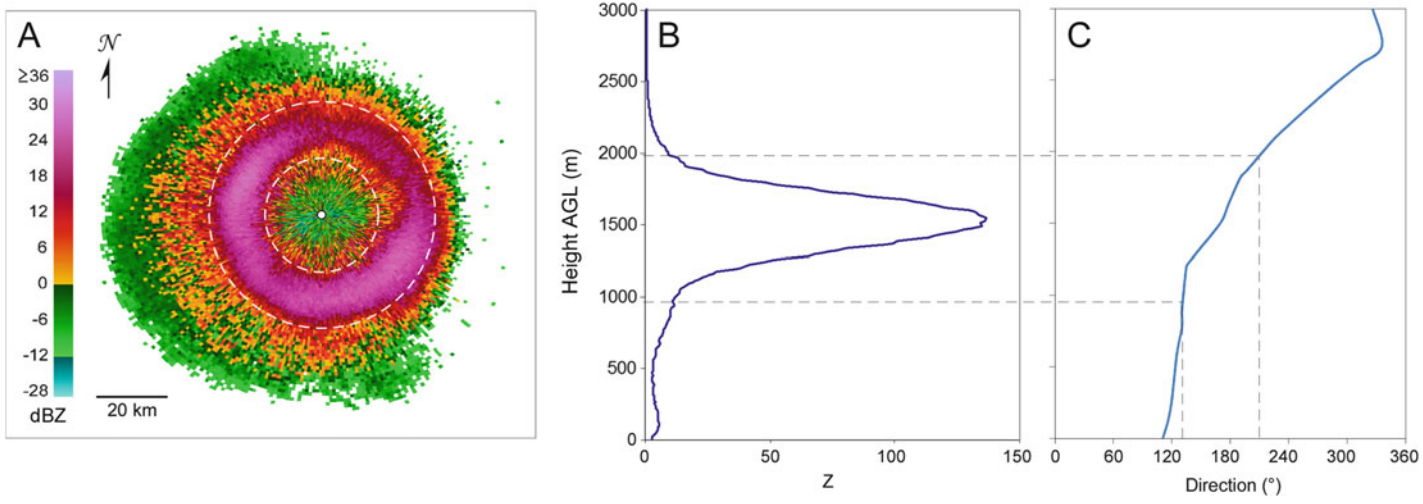

Fig. 3.1 (**a**) Weather radar reflectivity at 3.51° antenna elevation from Brownsville, TX (KBRO) showing layered bird migration on 12 May 2006, 2330 CST. A white dot shows the location of the radar. (**b**) The vertical profile of reflectivity computed from the radar reflectivity volume scan on this day, and the (**c**) associated wind profile showing the direction from which the wind was blowing that day at 1900 CST. The dashed circles in (**a**) represent 16 and 32 km range rings and correspond to the ~1000 and ~2000 m height AGL dashed lines, respectively, in (**b**) and (**c**)

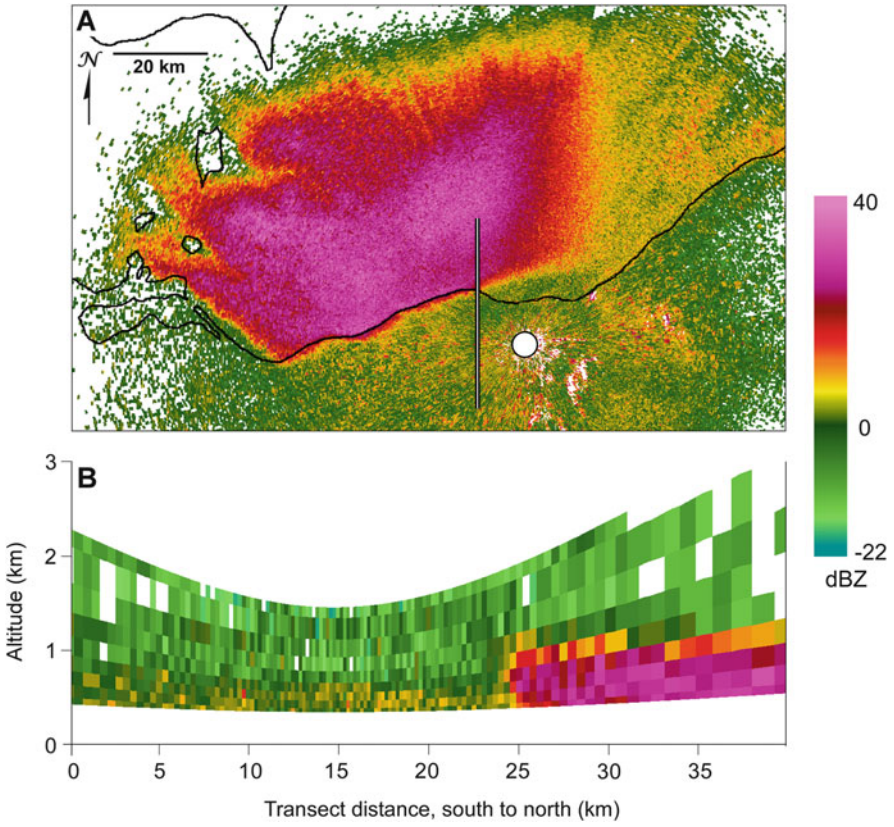

Fig. 3.2 Emergence of *Hexagenia* mayflies from western Lake Erie on 18 June 2015, 2204 CST as captured by Cleveland, Ohio weather radar, KCLE (white dot). Radar reflectivities (dBZ) show varying mayfly densities aloft. The line segment in the upper image (**a**) west of the radar identifies the south-to-north cross section through the radar's volume scan shown below (**b**)

consistent locations with respect to conspicuous "swarm markers" in the landscape (e.g., a geographic feature or patch of sunlight; Sullivan 1981). Alternatively, mating swarms may occupy enormous areas (Dublon and Sumpter 2014). The mayfly swarming event depicted in Fig. 3.2 occupies more than 3000 km^2 of Lake Erie's surface, at least 12% of its total area. Emergence generally occurs when both water temperatures exceed 20 °C (Corkum et al. 2006) and winds are moving toward the shore, as molting occurs on land after emergence; therefore, aerial habitat selection affects reproductive timing. Aerial reproductive swarming of this magnitude also serves as predator defense, as the massive pulse of food for local predators overwhelms the predator community to the point of satiation (Sweeney and Vannote 1982; but see Allan and Flecker 1989). Aerial copulation is common among invertebrates (e.g., Scott 1972; Allan and Flecker 1989), but appears to be rare among vertebrates. However, there is some evidence that red bats

(*Lasiurus borealis*) and hoary bats (*Lasiurus cinereus*) copulate in flight (Cryan and Brown 2007).

The airspace is an important area for mating displays across taxa. Aerial lekking has been described for some insects (e.g., Lepidoptera, Andersson et al. 1998). Eusocial insects, particularly the Hymenoptera and Blattodea (e.g., termites), often make nuptial flights, although many of these occur close to the ground, where the role of the airspace may be limited (e.g., Dial and Vaughan 1987). Some bats may respond to turbulence when choosing mating display locations; this hypothesis has been suggested as an explanation for why bats congregate in the lee of wind turbines, a behavior which unfortunately often results in mortality (Cryan et al. 2014). Many birds have song flights and elaborate aerial displays, including the roding display of the Eurasian woodcock (*Scolopax rusticola*; Hoodless et al. 2008), the dive and shuttle of Anna's hummingbird (*Calypte anna*; Stiles 1982), and the sky dancing of the Montagu's harrier (*Circus pygargus*; Arroyo et al. 2013).

In addition to visual displays, many acoustic and olfactory breeding signals are transmitted through the air, including an assortment of vocalizations, stridulations, airborne pheromones, and pollinator attractors. Many of these signals evolved characteristics that allow them to travel efficiently through the air to receivers, taking forms that propagate with minimal degradation (Morton 1975). The signals themselves compete for airspace, or at least clear transmission through it, by varying in ways that minimize overlap within a community (Nelson and Marler 1990). This variation can either be an adaptive characteristic of a species- or population-specific signal (e.g., a distinct floral scent; Wright and Schiestl 2009) or the result of an individual modulating its signal in real time in response to current acoustic or olfactory "clutter" (e.g., modulating a bird song frequency to avoid overlap with noise; Goodwin and Podos 2013).

3.3 Foraging, Competition, and Resource Partitioning

The airspace supports considerable foraging habitat for many aerial specialists and obligate insectivores (e.g., swallows, flycatchers, insectivorous bats). Other flying animals depend upon predictable seasonal resource pulses (Yang et al. 2008). Usually these occur as the invertebrate mating swarms described above, but some aerial predators have adapted to exploit seasonal songbird migrations as a food source. The giant noctule bat (*Nyctalus lasiopterus*) will opportunistically switch diets to prey almost exclusively upon migrating songbirds (Popa-Lisseanu et al. 2007; Fukui et al. 2013). Eleonora's falcon (*Falco eleonorae*) also takes migrating songbirds in flight and appears to synchronize its reproduction with the seasonal availability of this food source (Wink and Ristow 2000). Similarly, peregrine falcons (*Falco peregrinus*) and red-tailed hawks (*Buteo jamaicensis*) hunt outside the large breeding colonies of insectivorous Brazilian free-tailed bats (*Tadarida brasiliensis*; Lee and Kuo 2001), which in turn prey on migrating noctuid moths. This sets up an aerial tritrophic interaction (raptors > bats > noctuid moths) that occurs each summer and is mediated by abiotic conditions in the airspace that

determine the favorability of conditions for moth migration (McCracken et al. 2008).

Intra- and interspecific competition over aerial food resources also occurs in the airspace, although the difficulty in defending airborne resources together with limited niche overlap among competitors reduces the likelihood that such competition will arise (Mills 1986). Bats and common nighthawks (*Chordeiles minor*) have been observed in competitive interaction over insects at a human light source (Shields and Bildstein 1979). Altitudinal resource partitioning is hypothesized to explain differences in niche breadth among some avian aerial insectivores, wherein physical adaptations have allowed certain swift species to forage at higher altitudes and take advantage of larger and higher flying insects, thus reducing competition with swifts at lower altitudes (Collins 2015). Several species of desert bats differed in the locations and timing of foraging bouts over water sources in the Central Negev Highlands of Israel, suggestive of aerial resource partitioning due to competition for a shared insect resource (Razgour et al. 2011).

4 Anthropogenic Impacts

Even as human encroachment into the airspace advances, it is difficult to know whether certain taxa experience non-compensatory levels of mortality (Drewitt and Langston 2006; Kunz et al. 2007) which complicates how development of the airspace can be managed to reduce impacts to flying animal populations. In this context, recognizing the airspace as habitat may have meaningful consequences for species conservation and management. The habitat concept is necessarily central to international species-based environmental law (e.g., US Endangered Species Act and National Environmental Policy Act, EU's Habitats Directive and Birds Directive) and influences how biologists that work for regulatory agencies interpret the law in practice. That many parts of the airspace fall within the habitat concept could change the scope of application of these laws to include vast new areas. However, regulatory references to the airspace as habitat are scant; we could find only one and it argued against recognizing the airspace as habitat. In the context of a review of New Zealand's Resource Management Act which recognizes protection of significant habitats, Wallace (2007) specifically argues against characterizing flight corridors or migration routes as habitat because those areas are "disconnected from breeding and feeding spaces." Aside from being imprecise (many organisms do breed and feed in the airspace, even if the waterbirds considered by this Act do not), the point is also irrelevant since breeding and foraging are not required characteristics of habitat and are not the only habitat-related behaviors critical to survival (e.g., hibernating, roosting; Cryan and Veilleux 2007, Mehlman et al. 2005). Even if waterbirds were the only taxon of concern for a regulatory agency, they repeatedly travel similar routes between feeding and roosting locations (Everaert and Stienen 2007; Cox and Afton 1996), so any anthropogenic disruption in their path could have negative consequences on their populations by increasing mortality and decreasing reproductive success. Recognizing the airspace as habitat

is critical for species conservation and management that consider entire life histories (Davy et al. 2017).

4.1 Threats to Aerial Organisms

The actions of society through development, commerce, transportation, policy, and resource extraction increasingly result in conflicts with flying animals that have impacts ranging from the safety of airline travel (Dolbeer and Wright 2008) to the price of corn (Boyles et al. 2011). The increasing construction of tall structures may result in long-term disruptions of aerial habitats, including wind turbines (Arnett et al. 2010); power lines (Martin 2011; Bevanger 1998); buildings, especially those using glass construction (Loss et al. 2014; Klem 1990); and some communications towers (Gehring et al. 2011; Gehring et al. 2009). One of the newest anthropogenic entrants to the airspace, unmanned aircraft systems (UAS), pose possible threats in that they may interfere with natural animal behavior and in other ways disrupt aerial ecosystems (e.g., Lambertucci et al. 2015). Current US federal guidelines allow UAS operations in all classes of airspace except those in the vicinity of airports (Class B; Federal Aviation Administration 2015a), but because proposed guidelines require operators to keep UAS within visual line-of-sight (Federal Aviation Administration 2015b), UAS use generally occurs relatively close to the ground within the region of most flying animal activity.

Anthropogenic development of the airspace creates novel challenges for flying animals, many of which are not adapted to flying in cluttered environments. Put another way, "perceptually [birds] have no prior for human artifacts such a buildings, power wires or wind turbines" (Martin 2011). In addition, not only may organisms lack the sensory capabilities to avoid development, but their senses may trick them into responding inappropriately to it. Ecological traps occur when rapid changes in the environment produce misleading cues about the quality of habitats. Based on these cues, organisms may select lower quality habitat which leads to lower survival or reproductive success, even though higher quality habitat may be available. Numerous examples of ecological traps have been documented for terrestrial habitats, and anthropogenic factors are usually responsible (Robertson and Hutto 2006; Schlaepfer et al. 2002). The airspace is no exception. Migrating birds drawn into circling illuminated communications towers, particularly those with guy wires, in low cloud conditions die in large numbers (Gehring et al. 2009; Larkin and Frase 1988). Under these conditions, airspace in the vicinity of lighted towers might be considered low-quality aerial habitat. Nonetheless, birds in these circumstances remain in flight, presumably because the hazy glow of a lighted tower in cloud is in some way attractive. Similarly, bats that die in the vicinity of wind turbines may select this aerial habitat, perhaps as a mating location or because turbines concentrate insects as food (Cryan et al. 2014).

Anthropogenic structures and machines in the airspace are not the only threat to aerial organisms. Chemicals and particulate matter as air pollutants also degrade aerial habitats, and the impacts of air pollution on animals in flight are poorly understood. Is the health of flying animals disproportionately affected owing to

their relatively high metabolic rates during flight? Does air pollution interfere with olfactory or visual cues necessary for foraging, reproduction, and orientation? Might pollution that impacts aerial invertebrates have a trophic effect on their aerial predators? Does extreme air pollution impede visibility enough to increase risk of collisions with structure? Does pollution interfere with the composition and metabolic processes of aerial microbial communities in ways that affect climate and human health?

Anthropogenic structures that intrude upon aerial habitats can be designed, refitted, or adapted to limit their impacts on flying animals. Communications towers can be designed with lighting and structural support that reduces collision risk (Gehring et al. 2009). Curtailment of wind turbines has been shown to reduce bat mortality (Arnett et al. 2010), and current research is exploring ultraviolet (UV) illumination of turbines as a way of dissuading bats from approaching altogether (Gorresen et al. 2015). Combination camera/acoustic detection and deterrence systems are being explored as a means of reducing eagle mortality at wind facilities (Sinclair and DeGeorge 2016). A variety of markers are now available which increase the visibility of powerlines to birds in flight (e.g., Sporer et al. 2013). UV reflecting patterns on glass, which are visible to birds but not humans, may be effective at deterring birds from colliding with glass structure (Klem 2009).

Where technological deterrents are impractical or otherwise ineffective, the airspaces themselves may require protection. Airspace reserves may be needed to support the conservation of species as human development of aerial habitats continues and populations face compounding pressures across all phases of their life cycle (e.g., terrestrial habitat loss, mismatched phenology through climate change, predation and competition from nonnative species). Such reserves might focus on regulating development of the airspace near traditional movement corridors or in other areas where high densities of aerial organisms commonly occur or where species of concern are prone to fly (Diehl 2013; Lambertucci et al. 2015). Aerial reserves may be appropriate in areas where human–wildlife conflicts become a human safety concern or development presents a population-level risk to flying organisms or the ecological services they provide.

The preservation of aerial habitats may be quite different than traditional approaches for terrestrial and aquatic habitats. Most terrestrial and aquatic habitat preservation focuses on particular areas of concern and is intended to be continuous and long term, as disturbance can have lasting effects. In contrast, many human–wildlife conflicts are temporally dependent. Where animal use of aerial habitat is predictable, preservation may involve the timing of human activities rather than permanent restrictions on a particular area. For instance, proper lighting and curtailment of wind turbines when flying animals are most active can reduce or eliminate systematic impacts (Arnett et al. 2010; Duerr et al. 2012). Turbine curtailment could conceivably occur over even short timescales such as when fog or low cloud interferes with animals' ability to avoid structures (Kirsch et al. 2015). Many North American cities participate in seasonal lights-out programs, turning off the lights of large city buildings during peak bird migration times. These examples

illustrate how anthropogenic hazards to flying animals can be reduced by timing the use of airspaces to complement animal phenology.

Brazilian free-tailed bats offer an interesting conservation case study. Brazilian free-tailed bats are migratory and roost during summer in caves across the southern tier of the continental USA, with exceptionally large concentrations in central Texas (Wilkins 1989). Bracken, Frio, and other caves in this region host summer maternity colonies containing millions of these bats; the colony in Bracken Cave is one of the largest single bat colonies in the world (McCracken 2003). In the evenings, they depart the caves *en masse* to forage on noctuid moths and other insects near the planetary boundary layer (Westbrook 2008; Fig. 3.3).

Conservation organizations acquired land to protect terrestrial habitat in the immediate vicinity of the cave entrance. Protecting these areas from human development indirectly offers overlying airspaces some associated protection by excluding potentially hazardous anthropogenic structures (e.g., wind turbines, communications towers) from the immediate area. Protection of Bracken Cave and its airspace preserves the phenomenon of mass exodus (*sensu* Brower and Malcolm 1991), the biological integrity of its populations (e.g., Allee effects, Langwig et al. 2015), the ecological services these bats provide to agriculture (Boyles et al. 2011; Davidai et al. 2015), and the educational opportunities afforded by these conspicuous movements (Pennisi et al. 2004). Even though Bracken and other caves in the region are occupied only half of the year (March through October), protecting the integrity of the cave itself from any form of development or even routine visitation is a year-round necessity as the cave represents a nonrenewable resource for bats. The immediate overlying airspace is also critical habitat as millions of bats transit this space when moving to and from foraging habitat. In contrast to the protection of the cave, aerial habitat in the vicinity of the cave could be considered renewable and its preservation seasonal.

The reserve concept is often oriented toward nonhuman species protection, but understanding and perhaps regulating airspace use with respect to flying animals has financial and human safety implications as well. From 1990 to 2007, bird strikes by civilian aircraft accounted for the overwhelming majority of monetary losses associated with wildlife strikes (~$125 to ~$625 million annually in the USA) and resulted in 10 fatalities and 164 injuries (Dolbeer and Wright 2008). After US Airways Flight 1549 struck a flock of Canada Geese (*Branta canadensis*) and crash landed into the Hudson River, there were calls for improved monitoring of bird movements (Marra et al. 2009).

Bird-avoidance models exist that combine both historic and current data to identify times and places of increased risk of bird strikes for low-flying aircraft (Shamoun-Baranes et al. 2008). These warning systems forecast hazards using near real-time feedback from biological data collected from weather radar. However, classification algorithms designed to identify and extract biological data from weather radar data streams are rudimentary at best. Currently, no published algorithms exist that can differentiate among types of biological echoes (i.e., taxa) on weather radars, although some effort has been made to distinguish biological from nonbiological radar echoes (Park et al. 2009; Bachmann and Zrnić 2007).

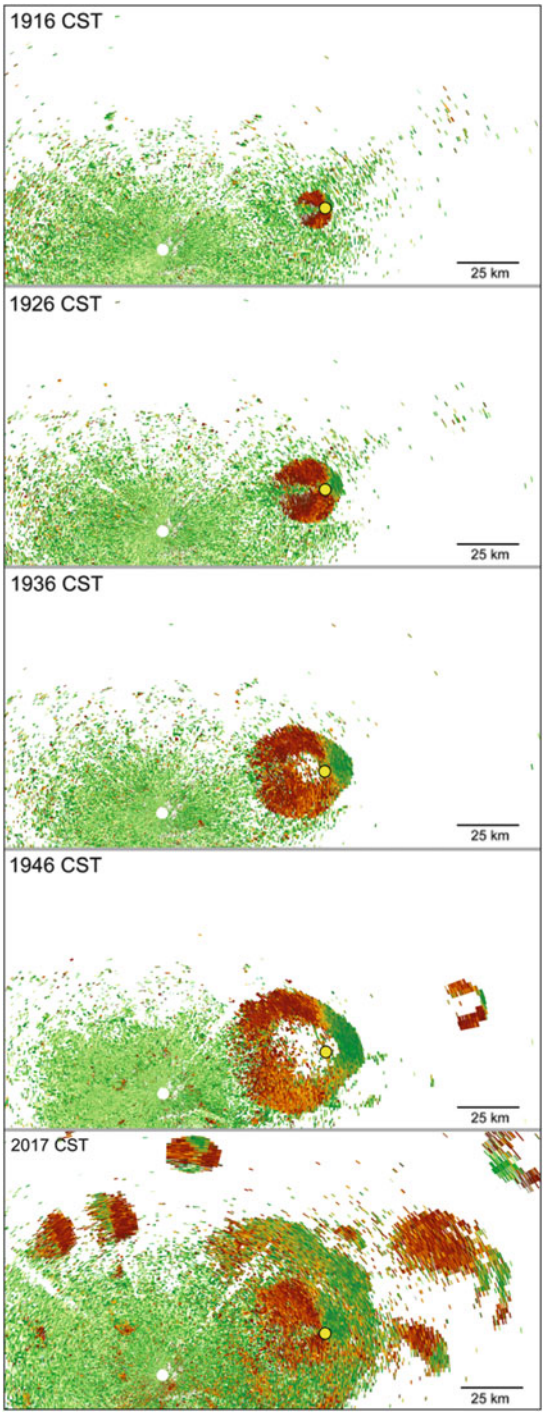

Fig. 3.3 Series of weather radar sweeps showing the evening exodus of Brazilian free-tailed bats from Frio Cave (yellow dot) near Concan, Texas, during the evening of 22 July 2014. The white dot shows the location of the weather radar (KDFX) at Laughlin AFB, Texas. Colors show differential phase, a radar polarimetry measure used here because it best distinguishes emerging bats (browns, yellows, and dark greens) from other radar bioscatterers (light green). The first four sweeps are separated by 10 min; the fifth sweep occurred 30 min after the fourth and shows the movement more developed and bats emerging from other roosts in the vicinity

Identifying radar echoes to taxon is critical to the operational usefulness of any near real-time warning system, since large birds pose the greatest hazard to manned aircraft (Dolbeer and Wright 2008). Reliable information on the passage of large birds would enable responders to manage aircraft altitudes and approach and departure times and directions as needed. Figure 3.4 shows a typical autumn

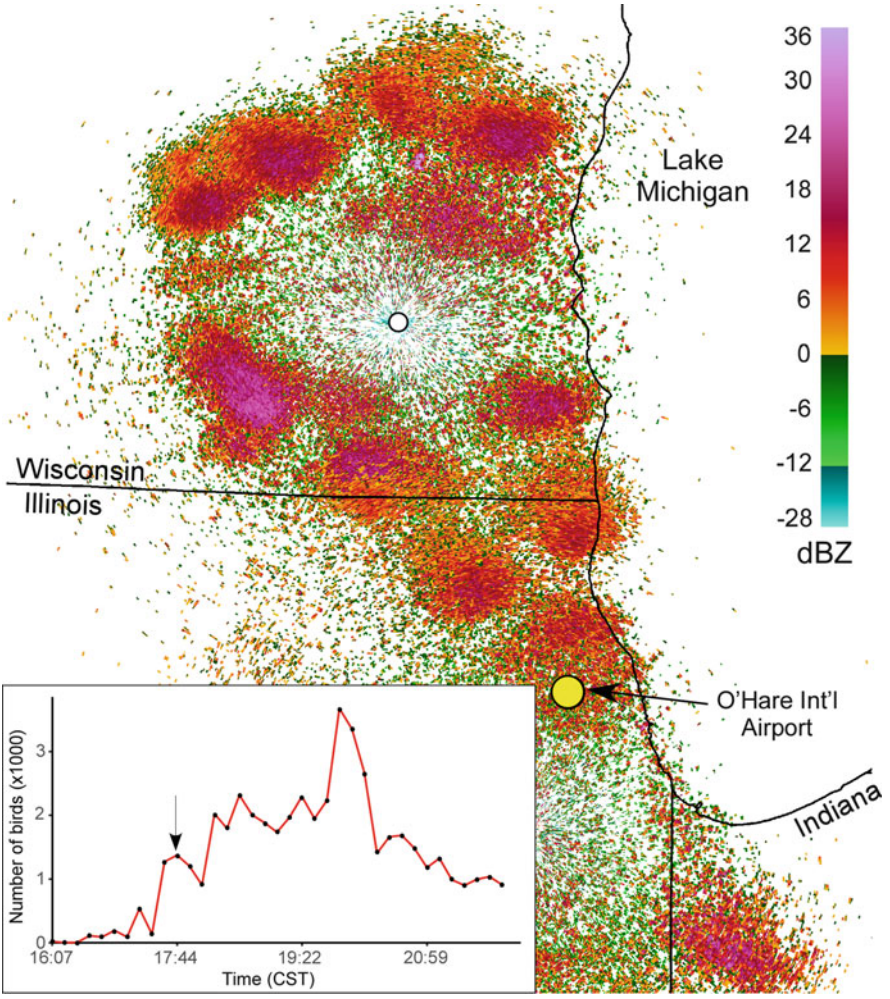

Fig. 3.4 Weather radars capture a moment during the onset of waterfowl migration toward the SSE across southeastern Wisconsin and northeastern Illinois on 22 Nov 2010, at ~17:45 CST. A 10 km diameter airspace centered on O'Hare International Airport is represented by a yellow circle. The inset shows changes in the estimated number of birds within this circle as the migration begins and progresses. (The abundance calculation assumes mallard-sized birds for simplicity and because good estimates of radar cross section are available for Mallards (*Anas platyrhynchos*) to convert radar reflectivity to bird numbers (O'Neal et al. 2010; Chilson et al. 2012b); the likely presence of larger birds such as geese and perhaps some cranes reduces these estimates of bird abundances.). The arrow indicates when in the time series this radar capture occurred

waterfowl migration toward the SSE with ducks, Canada Geese, and some Sandhill Cranes (*Grus canadensis*) departing habitats throughout southeastern Wisconsin and northeastern Illinois. Waves of waterfowl passed through the airspace of O'Hare International Airport, near Chicago, Illinois (Fig. 3.4, time series). In this image, the northern-most band of waterfowl radar echoes running west of the "Lake Michigan" label passed through O'Hare airspace at ~19:50 and was responsible for the large pulse of waterfowl seen in the time series. These migratory pushes out of southeastern Wisconsin occur routinely each autumn, so during this time O'Hare becomes both heavily used commercial airspace and seasonally predictable waterfowl aerial habitat.

5 Conclusions

Definitions matter. How habitat is defined influences law, policy, and the actions of resource managers in interpreting policy. Frequent efforts to redefine habitat in ways that capture perceived shortcomings testify to the continuing importance of the habitat concept. The airspace easily satisfies widely recognized definitions of habitat and shares many ecological properties of other more familiar habitat types. Considering the airspace as habitat also encourages new perspectives on the habitat concept. For example, airspace lacks many of the familiar visible cues we associate with habitat such as vegetation, substrate, or topographic relief. The energetic costs of occupying aerial habitats are often high, and critical aerial resources can be simultaneously abundant, ephemeral, and unpredictable with respect to any one location. Identifying properties shared across all major habitat types—terrestrial, aquatic, and aerial—clarifies our understanding of habitat by focusing our attention on its most fundamental and essential elements.

Considering the airspace as habitat also reminds us that time as much as place is a critical component of habitat, since many of the airspace's resources for flying animals depend upon the weather and are therefore highly dynamic. Yet, many widely recognized definitions of habitat explicitly refer only to place and tend to reinforce a rather static notion of habitat (but see Dingle 2014; Southwood 1977). This conforms with human perception of habitats as generally stable through time, at least in the manner we are accustomed to instinctively experiencing them, even if academically, we might recognize that the suitability of nearly any habitat for a given species varies through time, often seasonally if not through ecological succession or some other biotic or abiotic process. In short, that habitat is "where one would go to find it" (Odum 1959) is no more important than *when* one would go to find it.

The habitat concept has proven to be influential in shaping and informing environmental law and natural resource management in many countries. It is unknown whether aerial habitat represents an expansion of the habitat concept that is applicable under existing law, for example, if the need should arise to create airspace reserves or otherwise regulate the airspace to ensure human safety or protect animal populations. Accelerating human occupancy and development of

aerial habitats has created a greater need for regulation of the airspace, and clarification of the habitat concept is critical for developing or interpreting laws and regulatory practices that protect species when and where they are present.

We have much to learn about the ecology of the airspace. The dynamism of aerial habitat leads to dynamism of aeroecological processes generally, making them challenging to study, even with the aid of contemporary technology (Chilson et al. 2012a; Bridge et al. 2011). Recognizing that the airspace is habitat allows the known ecology of terrestrial and aquatic habitats to serve as models for predicting the conditions required for a wide range of ecological and behavioral processes to be operational in the airspace.

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CHAPTER

6

Habitat Models Based on Numerical Comparisons

K. Shawn Smallwood

Habitat Model Types and Analysis

Habitat analysis typically involves either a comparison of used versus not used environmental elements or a test for disproportionate *use* of environmental elements from a measured set of *available* environmental elements. This chapter will focus on the latter approach (Table 6.1). The measure of use can include numerical spatial patterns (distributions) based on an individual's locations or on collections of individuals (Fig. 6.1). Using estimates of density or the number of individuals to perform habitat analysis also involves the use of pattern analysis, because density and spatial distribution are interlinked (Taylor 1961; Taylor et al. 1978). If organisms were patterned uniformly or randomly across a landscape or region, then habitat analysis would not be informative. The species would be considered as simply ubiquitous. However, species do not distribute themselves this way. Numbers vary spatially, and implicit in most habitat models is the assumption that numerical peaks coincide with locations where habitat is of the highest quality (but see Van Horne 1983 for warnings against this assumption).

Using densities or numbers of individuals for habitat analysis, the measurement units for the response side of the analysis can range in demographic organization from subpopulations and populations to megapopulations (sensu Garshelis and Visser 1997) and metapopulations (sensu Hanski and Gilpin 1997). These response units are measured on geographic areas that encompass at least several home ranges to regions (Fig. 6.1). Many habitat models include the term N to represent number of individuals, D to represent density, or some other term representing number or spatial intensity in the environment. The terms N and D are explicitly represented in some habitat models (e.g., Table 6.1, Equations 6.1, 6.5, 6.11, 6.12, 6.13) and are needed for frequency counts and ratios used in the other models. Therefore, habitat analysis is scale-dependent because N and D are scale-dependent (Verner 1981; Blackburn and Gaston 1996; Smallwood and Schonewald 1996). Furthermore, these models do not specify which demographic unit is being represented by N or D, nor the contexts of demography, season, interannual variability, or condition of the landscape, all of which can affect N or D (Cyr 1997; Smallwood in press).

Habitat models using numerical comparisons have been reviewed already (e.g., Morrison et al. 1998). Van Horne (1983) pointed out that density is a misleading indicator of habitat quality, mainly because density estimates are frequently too narrow in their representation of a population's success. According to Van Horne (1983), habitat studies are often spatially and temporally inadequate for including areas occupied during all seasons, nor do they include the full

TABLE 6.1.

Habitat models based on numbers or densities.

Equation Number and Model Name	Model Structure	Explanation
Measures of effect, no P-*value*		
6.1. Edge index (Helle and Jarvinen 1986)	$E = \frac{D_i}{D_j} * 100\%$	D_i and D_j are densities at sites i and j
6.2. Index of selection (Paloheimo 1979)	$S = \frac{r_i}{p_i}$	r_i is the percentage of the ith element used, and p_i is the percentage available in the measured set
6.3. Index of electivity (Ivlev 1961; Jacobs 1974; Gordon 1989)	$E = \frac{r_i - p_i}{r_i + p_i}$	
6.4. Usage-availability rank difference (Johnson 1980)	$t_{ij} = rank\ r_i - rank\ p_i$	
Hypothesis tests with P-*values*		
6.5. Isodar Theory of habitat selection (Morris 1990)	$D_1 = \frac{a_1 - a_2}{b_1} + \frac{b_2}{b_1} * D_2$	in the ith habitat, a_i = maximum fitness, b_i = per capita reduction in fitness
6.6. χ^2 test with Bonferoni Z test (Pearson 1900; Neu et al. 1974)	$\chi^2 = \sum \frac{(O-E)^2}{E}$	O = observed, and $E = p_i * N$ = expected number of observations
6.7. Log-likelihood ratio criterion (Fisher 1924, 1950; Everitt 1977)	$\chi^2 = 2\sum O * \log_e \frac{O}{E}$	
6.8. Measure of aggregation (David and Moore 1954; Pielou 1977)	$\chi^2 = \left(\frac{1}{n\bar{x}}\right)\sum_{i=1}^{n}(x_i - \bar{x})^2$	x_i = number of occurrences in ith element; x = mean of occurrences among n elements
6.9. Ecological order (Smallwood 1993)	$M_i = \frac{O}{E}$	M_i = the number observed as a multiple of the number expected in the ith element
6.10. Negentropy (Fisher 1924; Shannon and Weaver 1949; Rothstein 1951; Phipps 1981)	$H' = \sum_{i=1}^{s} O \log_e \frac{O}{E}$	Use of information; use of the measured set of choices; deviation from uniform association indicates negative entropy
6.11. Surface regression model (Rotenberry 1986)	$D = b_0 + \sum_i^h b_i X_i + \sum_i^h b_{ii} X_i^2 + \sum_i^h \sum_j^h b_{ij} X_i X_j$	X_i = the ith habitat, h is the number of habitat variables, and bs are fitted coefficients
6.12. Correlation (Wiens and Rotenberry 1981)	$d = ah_i$	In a strip transect, h_i is the ith habitat attribute expressed as a continuous variable, e.g., percent cover
6.13. Patch shape/Type (Otis 1998)	$\ln\{E(D_{ij})\} = \beta_0 + \ln(A_{ij} + \beta_1(S_{ij}) + \sum \beta_i P_{ijk}$	A_{ij} = area of the jth patch in the ith environmental element; S = shape, which is a function of the patch perimeter and its area; P = patch perimeter

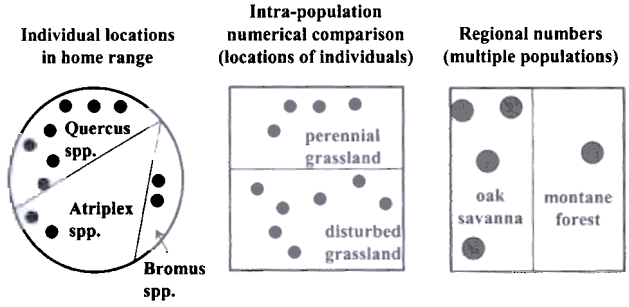

Figure 6.1. Numerical data in habitat models can include individual locations within a home range or any number of individuals with or without reference to a demographic unit. The grain of the measured set of environmental elements typically grades from micro- to macro-habitat representation as the numerical data grades from individual locations to regional in scope.

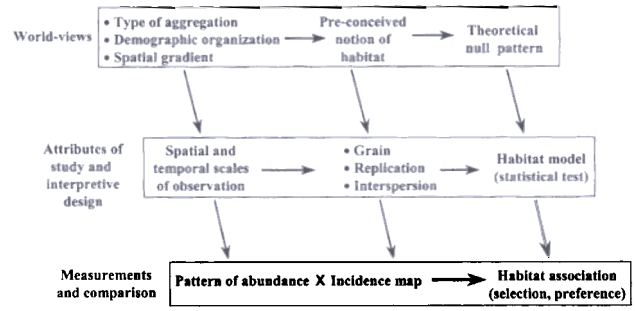

Figure 6.2. The effectiveness of numerically based habitat models and the measurements of use and availability ultimately depend on the attributes of the field studies and the world-views of the analyst, which have primacy over the actual measurements of use and availability.

range of numerical responses to environmental changes, nor do they address the social interactions leading to occupation of both source and sink areas. Vickery et al. (1992) found density to be a poor predictor of nest success among three species of passerine bird species, although they did not account for the effect their variable plot sizes had on density (Smallwood 1999). Nevertheless, unburdened by any possible effect of variable plot sizes on density, Morris (1989) found mean litter size of the white-footed mouse (*Peromyscus leucopus*) to decline with increasing density. Alldredge et al. (1998) discussed faulty assumptions underlying various habitat models, such as the assumption that the sample of animals is random (rather than belonging or not belonging to a population), that each observation is independent of the next, that each animal's habitat selection was independent of others in the sample, that the availability of environmental elements is known rather than estimated, that availability is constant over the period of the study (rather than changing seasonally or for other reasons), and that detectability of animals is constant among the environmental elements sampled. Smallwood (1993) began a discussion on the theoretical foundations of these models, focusing on the role of thermodynamics in resource selection models.

In this chapter, I will frame habitat analysis within the larger context of world-views on how and why animals distribute themselves and how and why analysts apply experimental design principles and statistical tests to habitat studies based on relative number or density. Figure 6.2 depicts a hierarchical framework for discussing habitat analysis, first considering world-views (paradigms), then attributes of study and interpretive design, and finally the measurements and comparisons, the results and interpretation of which depend on world-views, and study and interpretive design. I intend to demonstrate that the available habitat models are inadequate by themselves for characterizing habitat of animal species; these models are no substitute for long-term research experience, although their predictions can be used as testable hypotheses. Just as habitat analysts need operational terms with which to work (Morrison and Hall, Chapter 2), they also need a larger framework with which to interpret applications of the habitat models based on numerical comparisons.

The Theoretical Null Pattern

The significance of a measured numerical pattern (spatial distribution) to habitat use is decided largely by its comparison to a theoretical null pattern. Measured numerical patterns can be uniform, random, aggregated, or regular, and null patterns can be uniform, random, or both (Fig. 6.3). Deviation of a measured pattern from the null pattern is assumed to be caused by a relationship between the species and the energy or material resources composing the environmental elements (Smallwood 1993). The theoretical foundations of the null pattern are therefore critical for interpreting the association. The null pattern in thermodynamics is uniformity, which connotes the equilibrium cold state, or

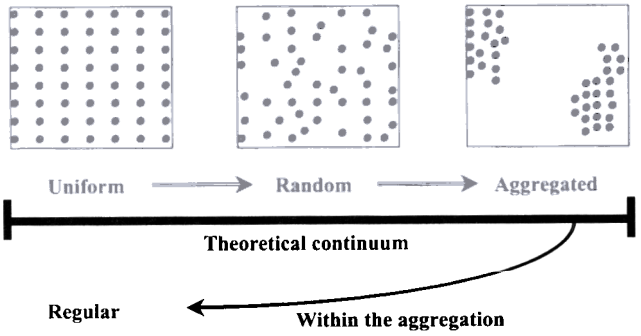

Figure 6.3. Random patterns occur somewhere along a gradient ranging from uniformity (regularity) to aggregation, thereby reducing the distance that can be measured between an observed aggregated pattern and the null pattern of randomness.

lack of energy relationships (Hutchinson 1953). The null pattern in information theory is also uniformity, which connotes no use of the available information (Shannon and Weaver 1949; Kullback 1959; Phipps 1981). Uniformity is the state of maximum entropy in both thermodynamics and information theory. The null pattern in ecology is randomness, which connotes lack of influence from the locations of other individuals (Fisher 1950; Taylor 1961). The null pattern chosen by the habitat analyst identifies the world-view of the analyst regarding how and why nature is organized, and it determines the set of alternative results.

Habitat analysts usually explicitly or implicitly assume that spatial distributions are determined by some form of energy relationship(s) between the organisms and their environment (Hall et al. 1997b; Morrison et al. 1998). Although rarely discussed explicitly, many ecologists hold the world-view that biological processes are governed ultimately by the laws of thermodynamics (Hutchinson 1953). The measures of effect used in Equations 6.6–6.10 are derived from these laws, and all the other models in Table 6.1 (except Equation. 6.5) are theoretically and mathematically related to Equations 6.6–6.10 (Smallwood 1993). Many aspects of habitat are assumed to be energy-related, and the goals of wildlife are usually assumed to be resource acquisition and total fitness (Southwood 1977; Rosenzweig 1985; Wiens 1989b,c), which are energy-related and energy-dependent, respectively. Habitat elements other than energy are recognized as important, such as water, nutrients, refugia, travel corridors, nest sites, and so on. However, even the response variable, density, has its conceptual origins in the physical sciences and is energy-dependent. High-quality habitat is said to have greater levels of energy available (Hall et al. 1997b).

However, if the laws of thermodynamics largely govern the spatial distributions of animals, then assuming randomness as the null pattern is not only inappropriate on theoretical grounds but also reduces the analyst's capacity to recognize meaningful aggregations and selection of environmental elements (Smallwood 1993). Random patterns occur somewhere along a gradient that ranges from uniformity (regularity) to aggregation (Fig. 6.3). This gradient is represented by probability values of the χ^2 distribution, the lower-tail values of which correspond with uniformity and increasingly upper-tail values grading through randomness and eventually aggregated patterns. The distance that can be measured between an observed aggregated pattern and the null pattern of randomness is less than between the aggregated pattern and the null pattern of uniformity. Therefore, assuming the null pattern is random instead of uniform washes out some of the potential significance that can be attributed to an observed aggregated pattern. The world-view of the analyst is at least implicitly expressed by the types of habitat model and statistical test used, because these models and tests are structured either on the assumption that the null pattern is uniform (e.g., χ^2 tests) or random (e.g., ANOVA tests).

Only aggregated patterns of animals can lead to inferences about habitat use. Purely uniform or random patterns of use will fail to reveal any selection of environmental elements from a measured set because no disproportional patterns will be evident (Fig. 6.4). A regular pattern of distribution might indicate that the study area included territories of individuals numbering fewer than occurred in the larger population (Fig. 6.5). In other words, the study area was smaller than the area occupied by the population, which often arranges itself into regularly spaced home ranges or territories held by its members. Similarly, random patterns have been observed when progeny (of insects) dispersed passively in air or water (Taylor et al. 1978), or when occurrence was scarce or at the edge of a larger aggregation (Fig. 6.5).

Recognizing whether the spatial pattern is uniform, random, aggregated, or regular depends on both the

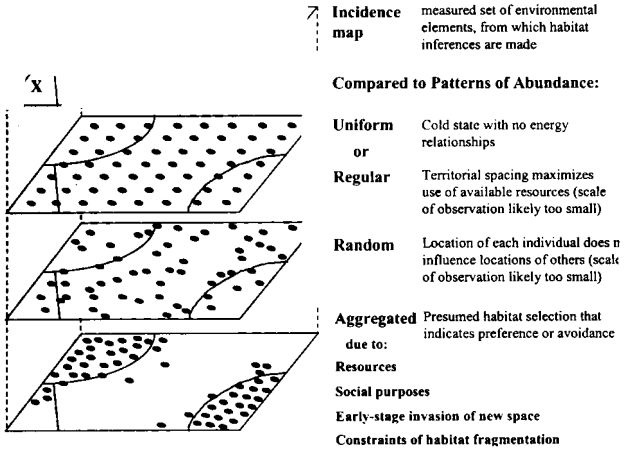

Figure 6.4. To interpret meaningful associations, patterns of distribution are compared to a map of the measured incidence of environmental elements, composing a measured set. The meaning of an association ultimately depends on the world-view of the analyst and on the theoretical foundations of the statistical test or measure of effect being used. It also depends on the type of aggregations that are being compared to the measured set of available environmental elements.

spatial scale of observation and knowledge of the species' demographic organization. Examining the spatial relations of individuals from a portion of a population can mislead an analyst into thinking the pattern of distribution is random or uniform, when it is more likely regular at the scale appropriate for measuring the population and aggregated at the regional scale. For example, prairie dog (*Cynomys* spp.) burrows occur fairly regularly within colonies (Tileston and Lechleitner 1966), which are themselves aggregations in the region (Koford 1958). Of course, information about the spatial distribution is lost when transforming the locations of individuals into numerical estimates and then to densities. Comparing N or D for habitat analysis cannot lead to conclusions about demographic organization unless the spatial areas are included in the comparison (Smallwood 1999).

Types of Aggregation

Aggregations can form for several reasons (Fig. 6.6), and each of these reasons poses a unique implication for interpreting the habitat association. These reasons bear on the choice of the theoretical null pattern and the habitat model. It will be important for wildlife biologists to determine the relative occurrence frequencies of each of the following four types of aggregation: resource, demographic, early-stage, and constrained.

Individuals may aggregate around a centralized or patchy resource, forming a *resource aggregation*. Competition for a limited resource can force some animals to live on the fringe of the resource patch, or even to spill over into ecological sinks. Such an aggregation can extend beyond the boundary of the resource patch just because off-patch individuals get sufficient access to the resource or because those exploiting the resource generate progeny that disperse

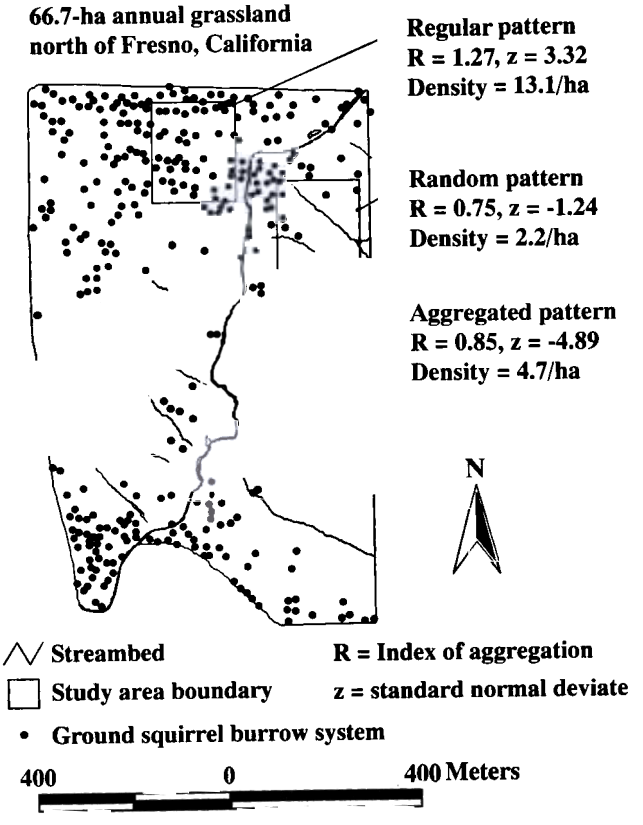

Figure 6.5. The size and position of study areas inform of different spatial patterns among burrow systems of California ground squirrels (*Spermophilus beecheyi*). Using the pacing method for mapping burrow systems of pocket gophers (Smallwood and Erickson 1995), I mapped the approximate centers of ground squirrel burrow systems on 66.7 hectares of annual grassland in the low-elevation foothills north of Fresno, California, during April and May 2000. A nearest-neighbor-distance method (Clark and Evans 1954) indicated that ground squirrel burrow systems were regularly distributed within a larger aggregation and randomly distributed at the edge of the aggregation. The larger aggregation was only recognizable within the boundary of the largest (66.6 hectares) study area. The density of burrow systems was also greater within the aggregation compared to the edge.

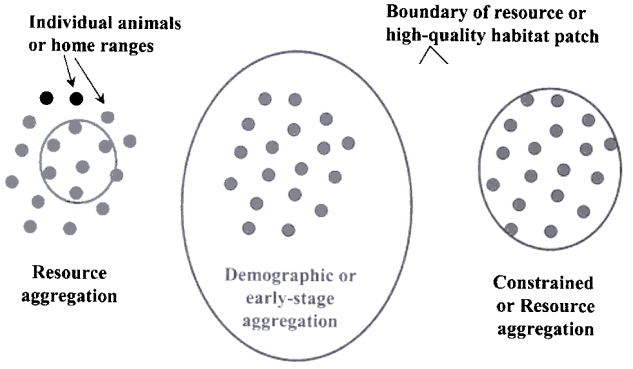

Figure 6.6. The types of aggregations observed largely determine the pattern of distribution and the association with the measured set of environmental elements. Demographic, resource patchiness, habitat fragmentation, and early-stage filling of ecological space can affect our perception of use and availability.

outward, beyond the patch. In either case, and in the case of other possible explanations, the number of individuals associated with the resource-based aggregation need not be bound within the resource patch.

Individuals also aggregate with conspecifics to improve fitness through reproduction, rearing of young, and group cooperation such as foraging and predator avoidance. They may choose places to live based on the momentum of the congregation rather than the energetic or nutrient accessibility of the habitat patch (Alatalo et al. 1985). *Demographic aggregations* may have spatial limits that are imposed by behaviors or by uncertainties of habitat quality outside the aggregation (Stamps 1991). Demographic aggregations conceivably could be confined to space that is smaller in extent than the resource patch (Taylor and Taylor 1979). Social constraints could therefore limit our observed use of an environmental element (resource) to less than that expected based on its availability. Dasgupta and Alldredge (1998) devised a behavioral dependency parameter for use with χ^2 tests, involving situations where multiple individuals are observed together. However, aggregations can occur without individuals being observed together, per se (e.g., *Puma concolor*, Smallwood 1997), but which may have formed to serve social and demographic needs nevertheless (Lloyd 1967).

An early-stage aggregation can also form while immigrants invade previously unoccupied habitat, which could have been cleared of former occupants, or which was recently discovered or became available to the species. An invasion of pocket gophers (*Thomomys* spp.) into new stands of alfalfa (Smallwood and Geng 1997) is a good example. Early-stage aggregations are combined resource and demographic aggregations but temporarily give different results when analyzing habitat selection based on use and availability methods. Such aggregations provide the best opportunity to observe preference of the available environmental elements because they are relatively free of demographic constraints (e.g., competition and territoriality). However, as numbers increase due to continued immigration, social mechanisms such as territoriality force later arrivals into less-preferred locations, thereby affecting our perception of use (Fig. 6.7). An example of early-stage aggregations can be found in "Intrapopulation Numbers," later in this chapter.

Constrained aggregations result from habitat fragmentation (sensu Wilcox and Murphy 1985) or the division of previously contiguous habitat patches (Addicott et al. 1987). They may also result from intolerable environmental conditions occurring naturally outside the aggregation, including the occurrence of competitors or predators (Hutchinson 1953; Koford 1958). Patches of low-quality habitat are occupied by constrained aggregations because the species is left with no other place to go (du Toit 1995). Low-quality habitat can appear to be high-quality habitat when loss of habitat constrains individuals to fragmented habitat patches or to peripheral habitat areas. Habitat analysis using constrained aggregations can be misleading due to packing of individuals into the habitat fragment or the inclusion of the intolerable areas in the measured set of environmental elements. Unfortunately, many special-status rare species are found only in fragmented habitat, or in habitat at the boundary of their tolerable conditions (e.g., Scott et al. 1986), so their constrained aggregations should not be used alone to interpret habitat associations. For example, giant garter snakes (*Thamnophis gigas*, federally endangered) occur in marshes and adjacent irrigation canals where marshes in the Central Valley of California have not been converted entirely to agricultural fields and houses. The study of historical data and taxonomically and functionally similar species might help investigators interpret habitat associations for special-

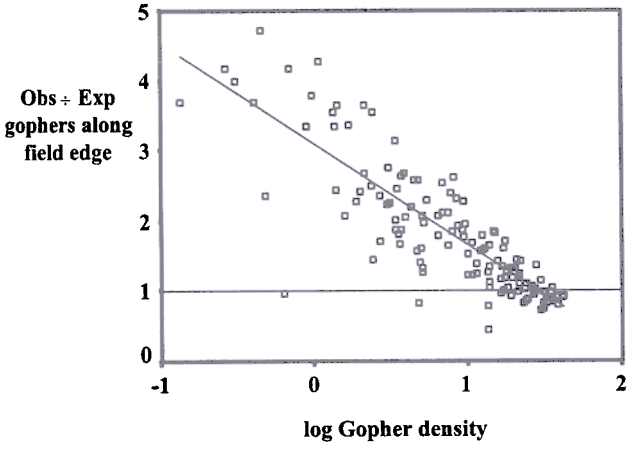

Figure 6.7. The relationship between selection for the field edge and pocket gopher (*Thomomys bottae*) density across alfalfa fields (*Medicago sativa*). The observed value divided by the expected value of 1.0 indicates the edge was used in proportion to its availability.

status rare species. For example, habitat descriptions of *T. sirtalis*, *T. couchi*, and *T. elegans* might provide insight into the historical habitat of *T. gigas*.

The prevailing view among those using the models in Table 6.1 appears to be that resource aggregations result in our measurements of disproportionate use of environmental elements. For example, Rotenberry et al. (Chapter 22) present a habitat selection model for which they assume that most wildlife observations are made where these animals want to be—where they derive some benefit from resources. However, the models in Table 6.1, and that of Rotenberry et al., can yield the same measures of disproportionate use when applied to aggregations that were forced by habitat fragmentation or the need to congregate. Applied to *T. gigas*, these models will indicate that *T. gigas* selects irrigation canals, probably because the landscape matrix is annual field crops where the snake cannot live. The models in Table 6.1 will not discriminate among aggregations influenced by various disparate factors, so they cannot be relied upon to measure habitat quality.

Demographic Organization

The demographic units represented by the numbers compared also bear on habitat analyses (Van Horne 1983). Whether or not demographic organization can be related to use of environmental elements, it affects the pattern of distribution observed. I recently discovered a range in size of study areas in which the number of individuals might be given some meaning in terms of demographic organization (Smallwood 1999). As I had also found for mammalian carnivora (Smallwood 1999), nearly half the numerical estimates of northern goshawk (*Accipiter gentilis*) increased proportionally with increases in the sizes of their corresponding study areas (scale domain A, Fig. 6.8). Given that species of carnivora and northern goshawk typically space themselves at fairly even distances due to territory maintenance, I interpreted the aforementioned pattern as an indication that these estimates were made at areas smaller than those occupied by the "population." Each species in Smallwood (1999) appeared to have what I termed a *threshold area*, at which the number of individuals ceased to increase proportionally with increasing study area size (as in Fig. 6.8). The threshold area was the low end of a spatial scale domain (B), in which the number of individuals varied considerably but did not regress on study area size with a slope significantly different from zero. I interpreted the numerical estimates within scale domain B to represent populations because no other demographic units have been defined for the clusters of twenty-five to sixty adults that are typical of this scale domain (Smallwood 1999).

Regardless of whether the estimates in scale domain B represented distinct populations, the theoretical foundation of animal ecology includes the population as a key demographic unit with functional, goal-directed significance. Odum (1959) and Dasmann (1981) defined a population as some collection of organisms of the same species occupying a particular space and sharing a suite of attributes representing a unique organizational structure. Yet our use of N (number of individuals) and D (density) in habitat and other analyses is usually given no meaning with respect to the population concept. Usually, no demographic unit is attributed to N or D in habitat models. In conducting habitat analysis using a measured set of environmental elements, what does it mean to compare three individuals in element X to fifty in element Y and to four hundred in element Z, when the three individuals are a small portion of a population, the fifty compose an entire population, and the four hundred are from six populations? The three in element X

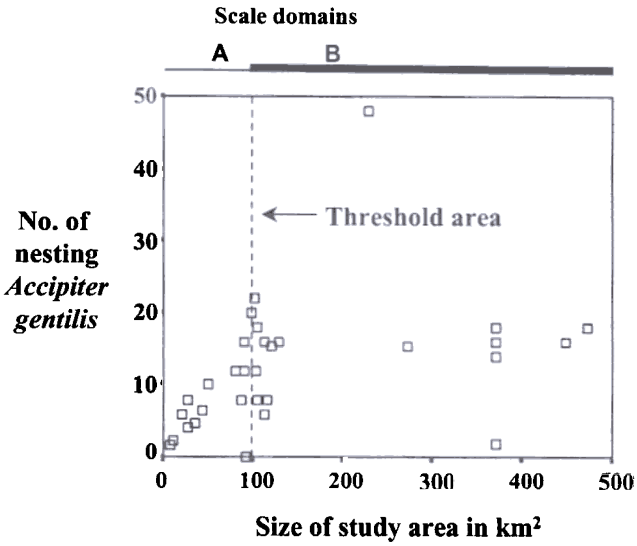

Figure 6.8. Based on the published estimates (summarized in Smallwood 1998), the number of nesting pairs of northern goshawks (*Accipiter gentilis*) increases proportionally with increasing size of study area until the study area is at least 100 square kilometers (scale domain A). Study areas larger than 100 square kilometers include aggregations that no longer increase with increasing study area size (scale domain B).

may occur in an ecological sink after having been forced there by the fifty, which themselves occur in element Y out of proportion to Y's availability but well within the space needed to support a population.

That the number of individuals in spatial scale domain B did not correlate with study area size also revealed a mathematical artifact in measuring animal density (Smallwood 1999). The number of individuals in domain B is relatively similar in magnitude to those in larger-area domains (see Smallwood 1999). Regressing density on its corresponding study area size will force a slope of –1 when density was calculated by dividing a constant number by a variable area. Similarly, regressing density on its corresponding study area size will force a slope of 0 when density was calculated using the numbers that increased proportionally with study area size, such as those in scale domain A and those forming the transitions between scale domains B and larger. Therefore, density appears to be a continuous variable only in the absence of demographic organization, and its discontinuity can confound habitat analyses based on the models in Table 6.1.

Spatial scale (extent) domains of distribution provide habitat analysts with a means to attribute social meaning to the frequency counts used in the habitat models. These domains revealed a possible demographic context against which frequency data can be compared. I lack the directed field research evidence needed to conclude that the numerical estimates in spatial scale domain B were distinct populations. However, the population concept can still be used to discuss the intent of habitat analysts and the meaning of their results.

Home Range

Habitat analysis within the individual's home range fails to reveal the significance of the location of the home range. Differential use of areas within the individual's home range is interesting at the microhabitat level, but the location of the home range itself can be influenced by the location of the population and the social and demographic status of the individual (Van Horne 1983). An individual's home range can encompass low-quality habitat simply because it was forced to live there in order to participate as a member of the population (Stamps 1991). Leger et al. (1983) found that California ground squirrels (*Spermophilus beecheyi*) adjust their behaviors to access microhabitats that would otherwise pose increased risks of predation. Animals do not always go to a place because it provides the highest-quality habitat, but once at the place, they make the best of it. Reports of habitat studies based on telemetry locations of individuals often provide no information of the demographic status of the individual or of the individual's spatial relationship to the population.

Intrapopulation Numbers

Comparing numerical estimates made at the subpopulation level (scale domain A) can confound the habitat analysis with the proportional relationship between the estimated number of individuals and study area size (Smallwood 1999), unless study sites (plots) were chosen randomly or systematically from a region, used and unused sites were compared, or long-term observations were used. Habitat analysis at this numerical level risks observing proportional patterns of use simply because individuals or their home ranges are regularly distributed among microhabitat elements due to

territoriality or other social interactions that partitioned the resources at this level. Habitat analysis at this level of organization may or may not contribute useful inference regarding habitat, as social interactions are driving the spatial distribution within a larger area of habitat. Unless home range size can be related to habitat quality, habitat identified from a home range or from within the bounds of a population was pseudoreplicated (Hurlbert 1984; Aebischer et al. 1993).

As an illustration of apparent habitat use based on intra-population numbers, I compared a measure of resource selection (Equation 6.9 in Table 6.1) to Botta's pocket gopher (*Thomomys bottae*) density to test whether measured selection for the edge of alfalfa (*Medicago sativa* L.) fields was density-dependent:

$$\frac{\dfrac{\textit{Observed}}{\textit{gophers at edge}}}{\dfrac{\textit{Expected}}{\textit{gophers at edge}}} = \frac{\textit{gophers along edge}}{\textit{gophers in field} \cdot \left(\dfrac{\textit{ha along edge}}{\textit{ha of field}} \right)}$$

The density estimates were from 134 counts of burrows across thirty-seven alfalfa fields in Yolo County, California, during 1992 through 1994 (Smallwood and Geng 1997).

At low density, gophers occurred along the field edge at nearly five times the number expected by chance (Fig. 6.7). However, increasing density reduced my ability to quantitatively represent gopher selection for the field edge ($r^2 = 0.71$, Root MSE = 0.49, $P < 0.001$):

$$\frac{\textit{Observed gophers at edge}}{\textit{Expected gophers at edge}} = 3.09 - 1.43 \log \textit{Density}$$

The obvious preference for the edge grew increasingly hidden as gophers invaded the interior of the field and approached a regular distribution due to saturation of territorial space, represented by a ratio of 1.0 between the observed and expected gophers at the field edge. I do not think that gophers favored the edge any less as density increased, but rather their preference for the edge grew increasingly less recognizable as the overall density in the field increased (Fig. 6.7). As gophers saturated the field interior, the clustering along the edge became hidden, just as Hansen and Remmenga (1961) found a clustered gopher distribution to vanish as the increasing density shifted the gopher population to a regular distribution. This density-dependence of distribution was recognized before (Taylor et al. 1978), but the density-dependence of measuring selection preference or avoidance will require habitat analysts to reconsider current reliance on measures and statistical tests based on use and availability of resources. Measured selection of environmental elements will be density- and therefore area- and time-dependent (also see Smallwood 1995), just as information theoretical measures (e.g., H', the composite index of species richness, $\log_2 S$ and evenness, J) are dependent on sample size (Cousins 1977) or on the spatial scale at which these measurements are derived.

This density- or scale-dependence also bears on the timing of habitat analysis. Measures of resource use will vary depending on the stage of ecological succession of a site or the stage at which a site is being colonized. Preference can be clearly observed during the early stages of colonization, but during the later stages the preferred resources can be hidden by overflow of individuals into relatively less-preferred conditions.

Interpopulation Numbers

Comparing numbers (densities) between populations poses two potential obstacles to recognizing true patterns of habitat association. The spatial shifting of aggregations summarized by Taylor and Taylor (1979) involves clustering at a subset of the available high-quality habitat patches. Taylor and Taylor (1979) proposed four hypotheses to explain the frequently observed spatial shifting of aggregations: (1) populations must move once they deplete their most limiting resources; (2) population members shift locations innately so as to prevent the exhaustion of resources; (3) dispersal and territory establishment of the next generation also establishes the location of the next aggregation, while the previous aggregation senesces; and, (4) a combination of hypotheses 1–3. Occupied habitat patches are either not different from many of those that are unoccupied at the time of the analysis or they are ephemeral in their quality. In the latter case, the results of habitat analysis are ephemeral. In the former

case, habitat analysis might measure use as less than availability, and a strict adherence to the numerical comparison might mislead the investigator to conclude that the occupied habitat patches are less preferred.

Today's absence at a site can be tomorrow's presence, as the spatial distribution is unique for each generation (Taylor and Taylor 1979). Habitat measured at time t_1 can represent the species' habitat at times t_2 and t_3 only if the same generation and the same environmental conditions span times t_1 through t_3. If the species shifted locations between generations, as is common according to Taylor and Taylor (1979) and den Boer (1981), or if environmental conditions changed between times t_1, t_2, and t_3, then the analysis at time t_1 will be inadequate and misleading if the goal is to describe the species' habitat; it will contribute to a belief that the species relies on a narrower range of environmental conditions than it actually does. The exception will be constrained aggregations, which will be at the same locations at all times, so long as none of the aggregations go extinct. However, habitat analyses using constrained aggregations are predisposed to mislead simply due to the constraints on availability of suitable environmental elements.

An additional obstacle is the meaning we attach to numerical variations of each population. Population number can vary greatly, with increases and decreases lagging behind changes in conditions of resources. Interannual variability in N typically cannot be characterized adequately until monitoring has been conducted spanning multiple generations (Cyr 1997). Therefore, when comparing N or D from population X to that of population Y, and N or D differs, can we really conclude that habitat quality differs between the sites occupied by populations X and Y?

Presumably, sociality and energy and material resources maintain a carrying capacity just below which exists an optimal density. Within the spatial bounds of a population, density can vary somewhat but must be constrained by territoriality or the habitat element in most limited supply. Comparing locations occupied by populations, density might be nearly the same within the bounds of each population (Smallwood 1999). Comparing density within the spatial bounds of a population or between high-density populations is unlikely to reveal meaningful differences and is therefore relatively uninteresting. In other words, density needs to vary considerably to reveal possible differences in habitat quality, but intrapopulation regularity of distribution and mutually high-density populations will not vary sufficiently in N or D to provide inference regarding habitat selection.

The terms N and D in habitat models can be representative of whole populations, and the occurrence frequency or spatial areas occupied by these populations compared to the measured set of environmental elements within a region or the species' range. The N or D representing a whole population can simply be replaced by a 1 to denote presence or a 0 to denote absence, and little information would be lost so long as the populations are discrete and easily bounded. Representing whole populations, presence or absence might be just as informative as N or D. If this step were taken, then the boundary of the area that is occupied by the population would need to be identified. The area occupied by the population might be more reliable as a measure of use than either N or D.

Megapopulation or Regional Numbers

Demographic organization is again implicitly ignored by habitat models that compare densities to measure use and availability of elements between regions. Regions are usually large-enough areas to include multiple populations. Garshelis and Visser (1997) termed the collective abundance from regions as megapopulations because they did not know what else to call it. Metapopulations, on the other hand, theoretically organize within regions (Hanski and Gilpin 1997), but empirical evidence is lacking for knowing the bounds of a metapopulation or how many populations might compose a metapopulation. Regional patterns of distribution are still largely theoretical, and the term megapopulation indicates that this theory is weak.

Comparing densities or use of regions poses the additional problem of comparing the availability of disparate measured sets of environmental elements (Wiens and Rotenberry 1981b). For example, Smallwood and Fitzhugh (1995) compared the number of puma track sets to represent use of available vegetation complexes and topographic categories across all the sampled areas of California, which included areas

spanning the full north-south and east-west extents of the state within the species' range. The topographic categories were common across the state, consisting of ridges, mountain peaks, basins, canyons, and so on. These macrohabitat categories were fairly comparable across California, much like Anderson's (1981) use of vegetation structural elements across the United States. However, sage-juniper forests are limited to north-central and eastern California, and chaparrals occur more to the west; they are not interspersed. Comparing use to availability of vegetation categories seemed uninformative on a statewide level, especially when puma populations occurred in both sage-juniper and chaparral. Knowing the range of environments used by pumas in California is useful, and knowing that pumas are more rare in the Mojave Desert than in the Klamath Mountains is also useful, but habitat analysis involving use and availability comparisons is probably best conducted within regions, within which key elements are more likely to be naturally interspersed.

Gradient of Abundance

Animal density is often represented with contours, which illustrate relatively smooth gradations in density from high to low across landscapes or regions (e.g., Taylor and Taylor 1977; Wiens and Rotenberry 1981b; Cody 1985a,b; Scott et al. 1986; Root 1988a,b,c; Price et al. 1995; Morrison et al. 1998). These gradients are mathematically derived using averaging and interpolation, whereas the actual spatial distribution may not be smoothly graded. This transformation of field observations into density contours expresses a world-view of distribution that acknowledges aggregation as the norm for animal species but also facilitates the potentially erroneous idea that animal density corresponds to habitat quality. Habitat quality is assumed to be energy-related, as discussed previously, so it is related to the world-view that the laws of thermodynamics govern the spatial patterning of animal species, also previously discussed. However, this world-view, that density grades smoothly across the landscape, can be supported by few examples, just as sharply bounded aggregations can be supported by few examples (Morrison et al. 1998). It may be that spatial distributions of animals can be better represented by categories, including population occurrence, trace activity (i.e., a few individuals in a large area), and absence. Lidicker (1995) also summarized categorizations of habitat quality, which were thought to bear directly on densities. Habitat analysts need to test whether animal aggregations are discrete or graded, whether population boundaries can be identified, and whether densities are categorical in correspondence with habitat quality. Empirical evidence should be the foundation of theory, and theory that bears on gradients of abundance also bears on habitat analysis.

It is well documented that individuals can occur in what are regarded as ecological sinks for the species. In fact, numerical estimates in ecological sinks can always be greater than zero just because dispersing animals are forced into the sink where the rates of recruitment outpace mortality. Habitat models based on numerical comparison will thus give ecological sinks some positive habitat value in such cases, whereas the true value should be negative (less than zero) with respect to the functionality of the population. Density estimates alone cannot inform of sink conditions (Lidicker 1975, Van Horne 1983), because density estimates cannot be negative—they range from zero to some presumed carrying capacity. Learning of sink conditions requires intensive study, making use of more information than numerical estimates (e.g., Morris 1989).

Preconception of Habitat

The map of available environmental elements is made by the habitat analyst. Some a priori notion of habitat inevitably goes into construction of the incidence map and will affect the typology of the map and its spatial grain (Austin, Chapter 5). For example, Smallwood and Fitzhugh (1995) used typical home range size of puma to decide on the quadrat size and transect lengths for counting track sets in California. The volunteer biologists who selected the exact locations of the transect segments believed that roads along ridgetops would produce more tracks. We later learned that roads along streams were most productive. If we were to start a new sampling program for puma track sets, it would differ markedly from the

1985 design, and the results would likely differ as well.

Preconceived notions of habitat influence the study's location, spatial extent, grain of mapping, and ultimately the replication and interspersion of the environmental elements in the map. Habitat analysts often collect the use and availability data from locations where the species was known to occur, often in abundance. By siting habitat studies this way, analysts may often force results that conform to preconceived notions of habitat. Experimental design principles should be applied to mensurative as well as to manipulative studies (Smallwood 1993). The spatial extent and grain of the study should be appropriate to measuring the species' differential use of the environment. Replication and interspersion of treatments (i.e., environmental elements considered to be available to the species) also must be incorporated into mensurative studies (also see Otis 1998; Austin, Chapter 5). Along a transect or within a defined study area, replication of available elements is achieved through multiple occurrence of each environmental element in the measured set of elements (e.g., vegetation complexes). Those elements occurring once are pseudoreplicated (sensu Hurlbert 1984) and association of the species with that element should be considered dubious pending further research (e.g., environmental elements X and Z in Fig. 6.4 are pseudoreplicated, while Y is measured as two replicates). Interspersion is achieved by each element's occurrence between other elements in the measured set, such that gradient effects do not cause spurious relationships between measured use and availability. Thus, replication and interspersion of various environmental elements can be achieved when the program of observation includes two or more patches of each environmental element within the study area or along the transect.

Given that the analyst is constrained by observing extant environmental conditions, the observed use of the environment by an individual, population, or larger social unit need not reflect the species' perception of what constitutes habitat or high-quality habitat (Morrison et al. 1998). Much of what analysts may perceive as a numerical response to extant environmental conditions actually may be responses to the combination of both relic and current habitat and demographic conditions. Habitat models implicitly assume that deviations from the theoretical null patterns of distribution are immediate responses of individuals to resources that are available in the measured space. However, demographic organization can represent a long-term response to energy and material resources in the environment experienced by the species, and it can pose much of the information useful to the individuals. If a suite of environmental and demographic conditions typified the success of the species over long time periods, then the species likely developed perceptions of habitat and demographic organization that are relatively reliable evolutionarily. Such stability could be achieved by building the responsible neurons early in ontogeny (Coss and Goldthwaite 1995). How such perceptions would be manifested in the changed landscapes of modern times can affect our interpretations of habitat.

Habitat analysis is bound to include plenty of noise caused by conserved use of information from relic environments, which today may be missing from the studied environment. For example, after Hutto (1990) experimentally reduced food supplies from under the bark of specific trees, he found no difference in visits per tree or time spent at the tree by birds that depend on this food supply during the winter months in the boreal forest. In another example, the carrying capacity of pocket gophers in alfalfa fields is determined not by the food source, which is plentiful, but by the home range size. The home range size was established by natural selection in past environments where food supplies were typically more limited. Pocket gophers in alfalfa are so constrained by evolutionarily designed perceptions of space that they cannot fully exploit alfalfa stands, which are perhaps the most abundant food source these animals have ever encountered. Management or policy decisions should acknowledge a reasonable level of uncertainty in habitat analysis or assessment and should be very conservative.

Conclusions

Comparing numerical terms for use and availability cannot reliably characterize habitat without considering the environmental and demographic contexts of the numbers. The measurements and resulting associa-

tions are determined largely by the attributes of the field study design, as well as those of the analytical, interpretive design. These attributes are themselves determined largely by the analyst's preconception of habitat, demographic organization of the species, how the species is patterned spatially and temporally, and the reasons for animals to congregate or associate with environmental elements out of proportion to the element's availability (Fig. 6.2). At our current state of knowledge, world-views may bear more heavily on habitat analysis than does the procedure for measuring occurrence frequencies in environmental elements. Some of these world-views can be tested as hypotheses by directed field research. For example, how often do animals aggregate for reasons that do not bear directly on the availability of a food resource? Are all aggregations truly populations? How sharply bounded are animal populations? Answers to these and other related questions can provide habitat analysts with meaning for numerical comparisons that the models do not provide.

The effectiveness of habitat analysis based on numerical comparisons is largely dependent on knowing how and why animals distribute themselves. The models in Table 6.1 will be prone to inappropriate application and erroneous interpretation until analysts largely agree on the extent to which animal species respond numerically to energy availability, information presented by the past and current environments, or to predators and competitors. Each model has a theoretical root or history, and we need to decide whether the theoretical foundation is consistent with what we are attempting to measure and how we should interpret the resulting patterns.

Van Horne's (1983) argument that density is a misleading indicator of habitat quality remains valid, and based on recent research on density, it is all the more clear that numerical comparisons are currently of dubious utility to habitat analysis. Density estimates are sensitive to whether they are derived from population "isolates" or from sampling of the statistical universe (Preston 1962a), and they are sensitive to the size of the study area examined (Smallwood and Schonewald 1996). Until much more basic research on animal distribution has been conducted, the models in Table 6.1 should be used cautiously because their use can translate into inappropriate management decisions, sometimes with possible dire consequences for the species.

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Predicting Species Occurrences

Issues of Accuracy and Scale

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Aeroecology: probing and modelling the aerosphere

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Synopsis Aeroecology is a discipline that embraces and integrates the domains of atmospheric science, ecology, earth science, geography, computer science, computational biology, and engineering. The unifying concept that underlies this emerging discipline is its focus on the planetary boundary layer, or aerosphere, and the myriad of organisms that, in large part, depend upon this environment for their existence. The aerosphere influences both daily and seasonal movements of organisms, and its effects have both short- and long-term consequences for species that use this environment. The biotic interactions and physical conditions in the aerosphere represent important selection pressures that influence traits such as size and shape of organisms, which in turn facilitate both passive and active displacements. The aerosphere also influences the evolution of behavioral, sensory, metabolic, and respiratory functions of organisms in a myriad of ways. In contrast to organisms that depend strictly on terrestrial or aquatic existence, those that routinely use the aerosphere are almost immediately influenced by changing atmospheric conditions (e.g., winds, air density, precipitation, air temperature), sunlight, polarized light, moon light, and geomagnetic and gravitational forces. The aerosphere has direct and indirect effects on organisms, which often are more strongly influenced than those that spend significant amounts of time on land or in water. Future advances in aeroecology will be made when research conducted by biologists is more fully integrated across temporal and spatial scales in concert with advances made by atmospheric scientists and mathematical modelers. Ultimately, understanding how organisms such as arthropods, birds, and bats aloft are influenced by a dynamic aerosphere will be of importance for assessing, and maintaining ecosystem health, human health, and biodiversity.

Introduction

The biosphere has been traditionally viewed as being composed of the lithosphere, hydrosphere and atmosphere, each of which interact dynamically with the other. In an ecological context, the Earth's lower atmosphere or troposphere has long been considered an important functional component of the biosphere through the exchange of nutrients, water, and gases in the form of local, regional, and global climate variation and biogeochemical cycles. However, to our knowledge, the aerosphere—the relatively thin substratum of the troposphere closest to the Earth's surface that supports life–has rarely been considered beyond studies of meteorological conditions and functional ecosystem relationships, such as nutrient cycling and gas exchanges in the atmosphere (Oke 1987, Sorbjan 1989, National Research Council 1997). Until quite recently, ecologists with interests in organisms that depend on the aerosphere as a fluid medium for movement (e.g., dispersal, foraging, and migration), a source of food and nutrients, and ever-changing physical conditions (e.g., weather and air pollution), have worked more or less independently of atmospheric scientists. Research goals of organismal biologists who study airborne organisms have mostly focused on the behavior, ecology, and evolution of specific taxonomic groups (e.g., microbes, arthropods,

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birds, and bats), or specific physiological or behavioral functions such as thermoregulation, water balance, respiration, or flight. In contrast, research goals of atmospheric scientists and engineers have largely emphasized how severe weather and climate can affect human well-being, and thus have focused on the efficacy and efficiency of human developments, including building construction (e.g., skyscrapers), modes of transportation (e.g., sail boats, aircraft, spacecraft), design and installation of communication infrastructure (e.g., tall towers and transmission lines), and power generation (e.g., utility and residential scale wind energy facilities). Achieving these two sets of goals in large measure depends upon understanding the dynamic properties of wind and associated meteorological conditions at local, regional, or global scales, and understanding how these conditions affect movements of organisms.

To our knowledge, no organism spends its entire life in the aerosphere, yet many species spend a significant portion of their lives in this environment (Wilcove 2008). Species that spend significant amounts of time in terrestrial and aquatic ecosystems also may depend on the aerosphere for daily and seasonal locomotion, and sometimes for courtship and mating. Important selection pressures accordingly influence the biology of flight, including the size and shape of structures that comprise the flight apparatus, and sensory modalities that provide information about the aerosphere, and the active and passive systems that control locomotor movements.

On both temporal and spatial scales, the aerosphere is more variable and dynamic than the lithosphere or hydrosphere. Relative to strictly terrestrial and aquatic organisms, species that regularly occupy the aerosphere are almost immediately influenced by changing atmospheric conditions (e.g., pressure, wind, air density, precipitation, temperature), and other physical factors (e.g., solar radiation, polarized light, moon light, and geomagnetic and gravitational forces). Organisms that use the aerosphere for foraging, dispersal, and seasonal movements have evolved unique body forms and shapes, but also specific physiological traits (e.g., increased production of hemoglobin at high altitudes), thermoregulatory and respiratory responses, and the like, in response to different selection pressures. The aerosphere and the organisms that compose it not only are strongly influenced by predictable atmospheric conditions, but also by a myriad of anthropogenic conditions (e.g., lighted towns and cities, skyscrapers, air pollution, aircraft, radio and television towers, and more recently from the proliferation of wind turbines and communication towers) that increasingly have adverse effects on such essential activities such as feeding, dispersal, migration, and courtship (Kunz et al. 2007a, 2007b; National Research Council 2007; Arnett et al. 2008; Horn et al. 2008; Fig. 1). Similarly, human-altered landscapes (e.g., forest fragmentation, agriculture, and urbanization) are rapidly and irreversibly transforming the quantity and quality of available habitats for organisms that use the aerosphere, conditions that also can affect the structure and function of terrestrial and aquatic ecosystems and the assemblages of organisms therein. Prevailing climate change and its expected effects on global circulation of the atmosphere and resultant changes on local, regional, and weather conditions may have profound effects on the historic migratory patterns of animals that use the aerosphere (Wilcove 2008).

Challenges of probing and modeling the aerosphere

Ecologists who study species that use the aerosphere face three important challenges: (1) to discover how best to detect the presence, taxonomic identity, diversity, and activity of organisms that use this space, (2) to identify ways to quantify relevant environmental variables at different temporal and spatial scales, and (3) to determine how best to understand and interpret responses of organisms in the context of complex meteorological events and patterns within both natural and anthropogenically altered environments. Efforts to address these challenges require the collaboration of scientists from diverse disciplines who have expertise and instruments needed to probe the aerosphere whether by day or night, in arid and humid conditions, at low and high altitudes, in strong and weak magnetic fields, in cold and warm climates, and during calm and windy conditions. Increasingly available tools, some originally designed for military purposes, space exploration, climate modelling, and security applications, include remote sensing and imaging devices such as radar, lidar, aircraft surveillance, weather satellites, night vision, and thermal infrared imaging cameras. Other instruments designed specifically for the study of animal movements, include radio-telemetry networks of ground-based stations and satellites, devices that detect audible and ultrasounds of birds and bats, stable isotope and DNA markers for assessing migration, which can be particularly valuable when used in combination with remotely sensed atmospheric, oceanic, and landscape conditions. Availability of these tools and methods provides rich opportunities for addressing emerging questions in ecology and environmental sciences with an emphasis on the aerosphere.

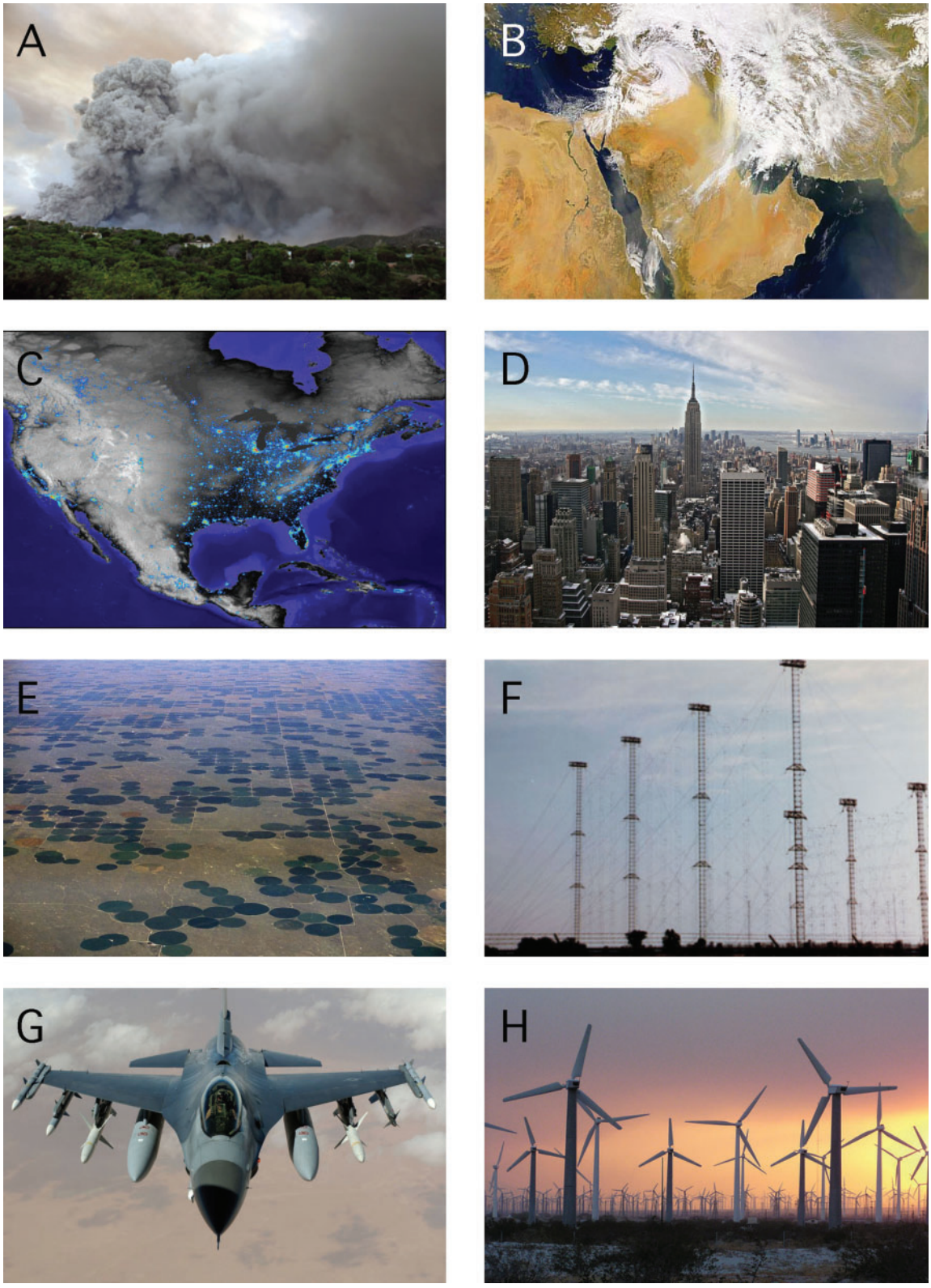

Fig. 1 The aerosphere is influenced by both natural phenomena and anthropogenic factors. (**A**) Aerospheric view of a volcanic eruption on the island of Montserrat (news.nationalgeographic.com); (**B**) Counter-clockwise swirl of clouds as a cyclone passed over Iraq, and dust being transported within the warm sector of the system (ucsu.colorado.edu/~drewsc/sandstorm/); (**C**) Aerial view of the North American landscape at night, showing lighted cites and towns (www.usgcrp.gov/usgcrp/images/ocp2003/8.1b-HCR); (**D**) Aerospheric view of skyscrapers New York City (www.justinlagace.com); (**E**) Aerial view of an agricultural landscape, showing the influence of center pivot irrigation in an arid region of Colorado (www.discoverlife.org/IM/EL_DP/0010/mx); (**F**) Aerospheric view of land-based communication towers (hawkins.pair.com/voadelano/voa_delano03.jpg); (**G**) Aerospheric view of a modern U.S. Air Force F-16 Fighting Falcon aircraft (galleries.fototagger.com/image/f-16_fighting_); (**H**) Aerospheric view of a modern, utility-scale wind energy facility in Palm Springs, California (www.planetscience.org/revisiontime/wind2.jpg).

The appropriate integration of diverse tools, technologies, and multiple databases promises to inform important ecological concerns and concepts, ranging from spread of invasive species, changes in biodiversity, and local- and global-scale animal movements in response to altered terrestrial, aquatic, and aerial environments. To date, ecologists have been hampered by a lack of technological awareness, inconsistent vocabularies, and challenges of working across different disciplinary platforms, including the complexities of establishing meaningful collaborations with atmospheric and computer scientists. Similarly, ecologists interested in proximate and evolutionary responses of airborne fauna to climate change and other anthropogenic perturbations have yet to optimally use the rich databases on landscapes assembled by earth scientists and geographers using remote sensing tools [e.g., American MODIS (Moderate Resolution Imaging Spectroradiometer), the European MERIS (Medium Resolution Imaging Spectrometer), and the Indian IRS-P6 (Indian Remote Sensing Satellite)].

Goals of the aeroecology symposium

The papers presented in this symposium address some of the limitations and challenges highlighted above, and highlight opportunities for gaining new insights that could arise from overcoming these challenges. To accomplish these goals, each of the authors considered several ecological questions that require analyses that embrace ecological and environmental sciences relevant to the aerosphere. Specifically, questions relate to animal displacements, and atmospheric and biological factors that may affect daily and seasonal patterns of prey density, foraging behavior, and migration. In addition to developing and promoting new tools and technologies to support research in aeroecology, it is important to integrate knowledge from different disciplines by encouraging the participation of scientists from varied backgrounds to develop a broader understanding of complex processes and the responses of organisms to a dynamic aerosphere. To achieve these goals, the authors share ideas with respect to novel tools, emphasize tangible and specific scientific questions, and adopt novel research paradigms. To this end, we have identified instrumentation and software tools, and discuss their applications to improve our collective understanding of the aerosphere and the interactions of airborne organisms with the hydrosphere and lithosphere. Several research areas were not included in this symposium because time was limited. Notwithstanding, we include brief comment on these and other emerging disciplines relevant to understanding the ecology of organisms that use the aerosphere.

Historical and current research on aeroecology

Weather radar historically has been used for detecting groups of migrating birds (Able 1970; Bruderer and Steidinger 1972). Since the early 1990s, weather surveillance, NEXRAD (NEXt Generation RADar) Doppler radar has been used at various temporal scales to quantify movements of birds (Diehl et al. 2003; Diehl and Larkin 2005; Larkin 2005; Gauthreaux and Belser 2003, 2005; Gauthreaux et al. 2003, 2006; Kunz 2004), although it has become increasingly clear that many targets also include bats and insects (Westbrook et al. 1998; Kunz 2004; Cleveland et al. 2006; Cryan and Diehl in press). Similarly, tracking radar is being used to investigate foraging, dispersal, and migratory movements of flying arthropods, birds, and bats (Bruderer and Boldt 2001; Bruderer and Popa-Lisseanu 2005; Larkin 2005). Additionally, use of vertical profiler radar promises to provide new insight into the distribution and movement of air masses, and of arthropods, birds, and bats in the aerosphere (Smith et al. 1993; Eaton et al. 1995; McLaughlin 2003; Kunz et al. 2007b; T.A. Kelly, personal communication).

Advances in radio-telemetry (e.g., miniature radio transmitters for insects, small birds and bats, and satellite tracking with GPS for larger species), have advanced our knowledge of movements at smaller spatial and temporal scales than can be provided by radar. Recent developments of integrated arrays of receiving antennae and satellite tracking of small birds and bats (Cochran and Wikelski 2005; Smith et al. 2005; Wikelski et al. 2007), in addition to advanced canopy-netting techniques (Hodgkison et al. 2002), are beginning to yield new insights on animal movements, pollination of flowers by nectarivores, and dispersal of seeds by frugivores (Hodgksion et al. 2003; Thies and Kalko 2004; Croxall et al. 2005; Nathan et al. 2005; Thies et al. 2006)—research that also is relevant to the conservation of biodiversity (Trakhtenbrot et al. 2005) and for understanding the transmission and mitigation of emerging diseases (Chivian 2003; Epstein et al. 2003).

Radio transmitters, together with other visualization methods, also are enabling researchers to quantify energy expenditure, wingbeat patterns, respiration, and flight altitudes of small, free-ranging animals (e.g., Lord et al. 1962; Dudley 2000; Altshuler et al. 2004; Bowlin et al. 2005). Use of wind tunnels

and computer-aided visualization techniques (Srygley and Thomas 2002; Altshuler and Dudley 2003; Pivkin et al. 2005; Swartz et al. 2006; Hedenström et al. 2007; Henningsson et al. 2008; Muijres et al. 2008) also are helping to inform field ecologists in how flow dynamics and atmospheric conditions influence flight behavior of bats, birds, and insects (e.g., Dillon et al. 2006).

Measuring physiological traits of foraging and migrating animals, under different atmospheric conditions (Greenstone 1990, 1991), also has begun to advance our knowledge of how animals respond to different aerospheric conditions. Moreover, novel efforts are being made to understand how insects, birds, and bats navigate during migration (Holland et al. 2006a, 2006b). Experimental manipulations have included alteration of magnetic fields to understand how animals navigate over long distances (e.g., Cochran et al. 2004; Srygley et al. 2006; Holland et al. 2006b; Wang et al. 2007). A recent initiative to employ radio technology on a near-earth satellite to track small animals around the globe holds considerable promise for understanding migratory movements of free-ranging animals (Wikelski et al. 2007). A recent global initiative, known as the International Cooperation for Animal Research Using Space (ICARUS; www.icarusinitiative.org), also has been formed to help achieve this goal. Other initiatives, including NEON (National Ecological Observatory Network [http://www.neoninc.org/]), and related Research Coordination Networks, such as MIGRATE (Migration Interest Group: Research Applied toward Education [www.migrate.ou.edu]), both funded by the National Science Foundation, have been formed to help answer important questions such as the influence behavioral plasticity of migrants, drivers of population dynamics of migratory animals, determinants of individual fitness, and impacts of environmental change on migratory life-histories (JF Kelly, personal communication).

Recent developments in audible and ultrasonic acoustic detection and analysis, coupled to high-speed infrared and thermal images now make it possible to quantify three-dimensional flight trajectories of bats as they pursue airborne arthropods (Schnitzler and Kalko 2001; Holderied et al. 2005; Holderied and Jones in press; Hristov et al. 2008), and to unambiguously identify the mix of free-ranging bat species in both temperate and tropical assemblages (Parsons and Jones 2000; Brigham et al. 2004; Szewczak 2004; Parsons and Szewczak in press). This technology now makes it possible to characterize species richness and activity patterns that previously been difficult to quantify or record species have gone completely undetected, such as many aerial insectivorous bats, especially in tropical regions (Jung et al. 2007). Night vision devices and thermal infrared cameras have become increasingly used to observe birds, bats, and insects aloft, not only for assessing foraging behaviors (Simmons 2005; Betke et al. 2007; Horn et al. 2008; Hristov et al. 2008), but also for censusing animals during nightly emergence flights (Sabol and Hudson 1995; Frank et al. 2003; Betke et al. 2007, 2008; Hristov et al. 2008). When used simultaneously with tracking radar, night vision devices and thermal infrared cameras also make it possible to distinguish between birds and bats as they respond to anthropogenic structures such as wind turbines (Gauthreaux and Livingston 2006; Kunz et al. 2007a; 2007b).

Many important aspects of the behavior of flying organisms in the aerosphere occur in groups, sometimes of immense sizes. Many collective behaviors are influenced by the three-dimensional geometry of the environment, and by the cognitive abilities of animals that interact with prevailing atmospheric conditions. Understanding the behavior of individuals in isolation does not necessarily provide information about the properties of individuals within groups (Couzin and Krause 2003). Increased focus on empirical studies, self-organization theory, and mathematical modelling of group and collective behavior of insects, birds, and other organisms promises to help advance knowledge about daily flocking behavior at the population level and group dynamics during migration (Couzin 2006a, 2006b).

Use of stable isotopes of carbon and nitrogen as dietary tracers also can provide valuable insights into trophic relationships of airborne predators and their prey (Ibáñez et al. 2001; Sullivan et al. 2006: Popa-Lisseanu et al. 2007), and isotopes of hydrogen can additionally be used for discerning geographic origins of nocturnal migrants (Hobson and Wassenaar 2001; Cryan et al. 2004; Kelly et al. 2002; 2005, Hobson et al. 2006).

Collaborations of biologists with atmospheric scientists and aerospace engineers are needed to help advance understanding of animal behavior in the aerosphere. In turn, these collaborations can help advance the technical design and function of small, unmanned aerial vehicles, as inspired by the ecology, behavior, physiology, and biomechanics of real organisms (Watts et al. 2001; Pivkin et al. 2005; Swartz et al. 2006).

The symposium

To the extent possible, each contribution from this symposium has posed several important questions

and has reviewed existing and upcoming applications that inform new answers. Interdisciplinary approaches are emphasized, particularly those designed to optimally exploit the expertise of domain scientists in behavior, ecology, biomechanics, meteorology, computer science, and geography—approaches that are central to developing meaningful cross-disciplinary collaborations.

Using Doppler weather surveillance radar, Gauthreaux et al. (2008) discuss major challenges in understanding daily and seasonal movements of airborne fauna. Reflectivity data contain information on the quantity of organisms aloft, and data on velocity and winds aloft are needed to determine the different types of organisms that use the aerosphere. The latter is accomplished by examination of statistical distributions of the maximum ground speeds of airborne fauna in the aerosphere. Because migrating birds and bats have mean velocities greater than most insects and randomly foraging birds and bats in a sample volume of the aerosphere, these data can often be used to detect and discriminate specific targets aloft.

Horn and Kunz (2008) used NEXRAD databases to explore how Brazilian free-tailed bats disperse nightly into the aerosphere, and how this information can provide insight into local population dynamics. NEXRAD radar images are georeferenced and compiled in a GIS along with colony locations and landscape features. In temporal sequences of NEXRAD images, identification of individual bat colonies is accomplished by assessing reflectivity from bats aloft using computer vision algorithms. These measurements are used to compute relative colony size and mean direction of travel and to compare variation in emergence behavior both within and among colonies. Analyses using circular statistics suggest that multiple factors play a role in the nightly flight and dispersal behavior of bats, and demonstrate that NEXRAD data can be a valuable resource for monitoring the nightly behavior of large bat colonies, and larger-scale seasonal and interannual changes in abundance of local populations.

Larkin and Szafoni (2008) discuss how tracking radar data can be used to investigate nocturnal aggregations of birds. Statistical analyses of detailed flight paths support the hypothesis that individual birds that fly together (closer than 200–300 m) move in the same direction and at the same speed more often than those that are widely dispersed. Evidence from tracking radar suggests that birds flying together also may have similar wing beat frequencies than can be expected by chance.

Hristov et al. (2008) provide an overview of recent applications of thermal infrared imaging in ecological research and discuss how this technology has revolutionized our ability to observe and document the behavior of free-ranging organisms in the dark. Unlike traditional imaging that requires visible light, thermal infrared imaging relies on the emission of heat energy from objects in the environment. Temperature-sensitive cameras and computer vision algorithms are used to detect differences in thermal values in their fields of view and to depict information visually as different brightness (temperature) values. As noted in this article, successful applications of thermal infrared imaging from ongoing studies of bat ecology and behavior also are relevant for the study other organisms.

Kalko et al. (2008) present results based on recordings and analysis of echolocation calls of Neotropical bats that, for the first time, permit explicit species identification as well as assessment of foraging activity in these species-rich tropical assemblages. Use of miniature radio transmitters also makes it possible to assess foraging strategies, range size, and differential habitat use of species that previously have been otherwise difficult to study. Given the high impact of bats as seed dispersers, pollinators, and predators on arthropods, the fine resolution of movements afforded by radio-telemetry provides a better understanding of the links between spatial use and resource distribution and abundance. In turn, this provides novel information needed to understand temporal dynamics, to help quantify the ecosystem services provided by bats, and to predict how anthropogenic changes may affect the abundance and distribution of their prey.

Jones and Holderied (2008) discuss how echolocation is used by bats to detect, localize, and classify airborne targets at night. As obstacles or prey species are approached, it has become increasingly clear that the call structure of echolocating bats changes in predictable ways: calls become shorter to reduce overlap between pulse and echo, and calls change in shape so that localization errors in the detection of insect prey can be minimized. Echolocation behavior and flight performance of bats are closely synchronized by monitoring both features simultaneously using stereo photo- and videogrammetry, and by acoustic tracking of their flight paths. These approaches make it possible to quantify the intensity of signals used by free-ranging bats, and thus demonstrate systematic changes in signal design in relation to the proximity of obstacles (e.g., moving insect prey and stationary objects) in the aerosphere.

Westbrook (2008) discusses long-distance migration of important agricultural pests, such as adult corn earworm moths (*Helicoverpa zea*), also called cotton bollworm moths, and several other noctuid moth species upon which bats and birds sometimes feed. These seasonal geographic expansions of pest populations and the consequent increased infestations of agricultural crops are documented on a continental scale in North America. Observed patterns of migratory flight by these insect pests are largely associated with vertical profiles of temperature and wind direction and are concentrated in the atmospheric boundary layer. Collective patterns of moth migrations generally are related to wind direction, but often at significant angular deviations. Preliminary analyses suggest that moth distributions in the aerosphere can be estimated from discrete moth counts using X-band radar and bulk reflectivity data from NEXRAD Doppler radar.

McCracken et al. (2008) discuss bat echolocation calls recorded using radio microphones suspended in the aerosphere from kites and tethered helium balloons. These data mostly include calls of Brazilian free-tailed bats from ground-level up to 1118 m above ground level (AGL). Altitudinal profiles show significantly different levels of bat echolocation call activity at different levels AGL in the aerosphere. Bat activity was greatest at ground level and 400–600 m AGL, coincident with the atmospheric boundary layer and the highest densities of moths as described in the paper by Westbrook (2008). Feeding buzzes, indicating attacks on aerial prey, were most abundant near ground level and at 400–600 m AGL, although some were detected at altitudes up to 1 km AGL.

Srygley and Dudley (2008) review data on insects in the atmospheric boundary layer by tracking individuals as they migrate across the Caribbean Sea and the Panama Canal. Data presented on dragonflies of the genus *Pantala* show that migration occurs in October and is associated with frontal systems. Butterflies and dragonflies are capable of directed movement towards a preferred compass direction in variable winds, whereas moths of the genus *Urania* migrate from Central to South America and drift with winds over water. Butterflies navigating in the aerosphere appear to use both global and local cues. In support of optimal migration theory, butterflies and dragonflies appear to adjust their flight speeds to maximize migratory distance per unit energy, whereas moths do not.

Swartz et al. (2008) examine the biomechanics and physiology of flight of bats in the laboratory, and explore how this knowledge can help advance understanding of foraging, dispersal, and migration of free-ranging animals. Laboratory studies of animal flight in wind tunnels provide valuable information for improving and understanding of airflow dynamics. Emphasis is placed on flow characteristics of distinct aerial environments as a critical first step toward understanding the ecology of free-ranging animals aloft. The dynamics of natural airflow, characterized by air speeds, variability, intensity, and turbulence, will likely influence many aspects of an animal's behavior in the aerosphere. A combination of field- and laboratory-based research also is needed to delineate conditions under which flight mechanics and energetics are influenced by turbulence created by other animals.

Cochran et al. (2008) discuss the advanced use of miniaturized radio-transmitters that allow for the continuous monitoring of behavioral and physiological variables of small, free-ranging animals that use the aerosphere. Monitoring of nocturnal migratory flights of three species of neotropical thrushes in the mid-western US has revealed variations in wing beat frequencies, flight speeds and body accelerations that may reflect ascending and descending movements of individuals during flights. Individual thrushes also pause (in wingbeat) more often than expected during their migratory flights, likely to save energy. The high variation in wingbeat frequencies also cautions against categorizing radar echoes as particular types of birds.

Future directions

To further advance the emerging discipline of aeroecology, studies are needed that integrate the research discoveries of atmospheric scientists, engineers, and computer scientists with those of ecologists, physiologists, and functional morphologists, to more fully understand the activity and movements of organisms in the aerosphere. Research that incorporates laboratory and field studies on biomechanics, physiology, behavior, and ecology also promises to provide new insights into how, where, when, and why organisms interact with anthropogenic features in the aerosphere. To this end, studies are needed to assess: (1) physiological and behavioral responses of airborne organisms to climate change, (2) behavioral and ecological responses of organisms to structures that extend into the aerosphere (e.g., communication towers, tall buildings, and wind turbines), (3) how landscape fragmentation and land use change affects movements, and (4) how the altered structure of aeroecological communities, through the invasion of exotics, may affect species

distributions and abundance (Lindenmayer and Fischer 2006; National Research Council 2007; Kunz et al. 2007a; Lian 2007; Wilcove 2008). Use of stable isotopes to investigate trophic relationships between insects, birds, bats, and their prey also promises to yield valuable insight into how the myriad of organisms interact in the aerosphere. Ultimately, understanding the ecosystem services provided by arthropods, birds, and bats that use the aerosphere is important for maintaining ecosystem health, human health, and biodiversity on the planet (Daily et al. 1997; Cleveland et al. 2006; Chivian and Burnstein 2008).

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RESEARCH ARTICLE

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Utility-scale solar impacts to volant wildlife

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Abstract

To reduce carbon emissions from fossil fuel combustion, United States government agencies, including those in California, initiated aggressive programs to hasten development of utility-scale solar energy. Much of California's early development of solar energy occurred in deserts and annual grasslands, much of it on public land. Measurement of solar energy's impacts to wildlife has been limited to mortality caused by features of solar facilities, and has yet to include impacts from habitat loss and energy transmission. To estimate species-specific bird and bat fatality rates and statewide mortality, I reviewed reports of fatality monitoring from 1982 to 2018 at 14 projects, which varied in duration, level of sampling, search interval, search method, and carcass detection trials. Because most monitors performed carcass detection trials using species of birds whose members were larger than birds and bats found as fatalities, I bridged the monitors' onsite trial results to offsite trial results based on the same methods but which also measured detection probabilities across the full range of body sizes of species represented by fatalities. This bridge preserved the project site's effects on detection probabilities while more fully adjusting for the effects of body size. My fatality estimates consistently exceeded those reported. Projected to California's installed capacity of 1,948.8 MW of solar thermal and 12,220 MW of photovoltaic (PV) panels in 2020 (14,168.8 MW total), reported estimates would support an annual statewide fatality estimate of 37,546 birds and 207 bats, whereas I estimated fatalities of 267,732 birds and 11,418 bats. Fatalities/

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MW/year averaged 11.61 birds and 0.06 bats at PV projects and 64.61 birds and 5.49 bats at solar thermal projects. Fatalities/km/year averaged 113.16 birds and zero bats at generation tie-ins, and 14.44 birds and 2.56 bats along perimeter fences. Bird fatality rates averaged 3 times higher at PV projects searched by foot rather than car. They were usually biased low by insufficient monitoring duration and by the 22% of fatalities that monitors could not identify to species. I estimated that construction grading for solar projects removed habitat that otherwise would have supported nearly 300,000 birds/year. I recommend that utility-scale solar energy development be slowed to improve project decision-making, impacts assessment, fatality monitoring, mitigation efficacy, and oversight.

KEYWORDS
bats, birds, carcass detection trials, collision mortality, fatality monitoring, solar energy, wildlife impacts

In response to environmental and economic threats posed by carbon emissions from fossil fuel combustion, state and federal governments embarked on ambitious plans to develop renewable energy in California, USA (California Public Utilities Commission 2008). Plans such as the Desert Renewable Energy Conservation Plan (California Energy Commission et al. 2014) were formulated to overcome regulatory and permitting barriers for utility-scale renewable energy and its transmission to help Californians achieve the goal of obtaining 60% of its energy from renewable sources by 2030 and 100% of it by 2045. Because development of utility-scale renewable energy projects comes with environmental costs, including impacts to wildlife, state and federal agencies collaborated on an Avian-Solar Science Coordination Plan (Multiagency Avian-Solar Collaborative Working Group 2016) to identify and prioritize information needs related to impacts to birds. Just as understanding of impacts to wildlife lagged the rapid expansion of wind energy development (May et al. 2015, 2017), understanding impacts to wildlife also lags the rapid expansion of utility-scale solar energy projects (Multiagency Avian-Solar Collaborative Working Group 2016, Kosciuch et al. 2020). For example, only recently was it learned that many of the animals killed at California's solar projects originated out of state (Conkling et al. 2020), thus elevating the impacts to the regional level.

Deliberation is needed concerning the environmental costs and benefits of utility-scale solar energy compared to other forms of energy generation (e.g., wind, geothermal, hydroelectric, fossil-fuels, nuclear, rooftop solar). Accurate estimates of wildlife mortality would help determine impacts at project and regional levels. Researchers have calculated regional estimates of wind energy impacts to birds (Loss et al. 2013*a*, Smallwood 2013, Zimmerling et al. 2013, Erickson et al. 2014) and bats (Hayes 2013; Smallwood 2013, 2020; Zimmerling and Francis 2016). Researchers have also discussed cumulative impacts (Calvert et al. 2013) and calculated regional estimates of wildlife mortality caused by other anthropogenic sources, such as from collisions with automobiles (Loss et al. 2014*a*), transmission lines (Rioux et al. 2013, Loss et al. 2014*b*), and buildings (Machtans et al. 2013, Loss et al. 2014*c*), and predation from house cats (Loss et al. 2013*b*). Accuracy of these regional estimates depends on representativeness of the monitored projects (or places) relative to the spatial distribution of all projects (Smallwood 2013, Huso and Dalthorp 2014). It also depends substantially on study design and field methods implemented at the project level.

Before 2012, fatality monitoring at utility-scale solar projects was rare, largely because few utility-scale solar projects existed. The only wildlife fatality monitoring performed before 2012 had been at the 10-MW Solar One project in 1982–1983 near Barstow in San Bernardino, California (McCrary et al. 1986). Since monitoring at Solar One, much had been learned about fatality monitoring at wind projects from the late 1980s through the initial fatality monitoring plan for solar projects (Nicolai et al. 2011) and its update in 2016 (Huso et al. 2016). Managers formulated guidance documents to standardize survey methods for the purposes of accurately estimating and comparing fatalities among wind energy projects and to fatalities estimated for other forms of energy generation (Smallwood 2017*b*). Researchers deliberated field methods concerning their support of accurate fatality estimation (Smallwood 2007, Johnson et al. 2016, Reyes et al. 2016, Smallwood et al. 2018, Kitano et al. 2020), and the estimation methods themselves (Korner-Nievergelt et al. 2011, Kitano and Shiraki 2013, Péron et al. 2013, Warren-Hicks et al. 2013, Smallwood et al. 2018). A new framework for testing the efficacy of bat, golden eagle (*Aquila chrysaetos*), and bald eagle (*Haliaeetus leucocephalus*) impact-reduction strategies at wind energy projects (Sinclair and DeGeorge 2016) was also an important step in measuring and responding to utility-scale renewable energy impacts to volant wildlife. Much of what has been learned from research of wind energy impacts to wildlife can contribute to improved fatality monitoring at utility-scale solar projects, but solar projects also pose different risk factors, including to many species less vulnerable to wind energy impacts.

Once constructed, utility-scale solar projects pose multiple fatality risk factors. Volant wildlife can collide with solar collectors, power block structures, project buildings, medium-voltage overhead lines, gen-tie lines (i.e., generator lead or transmission lines), fencing, and automobiles servicing the project. Some birds might collide with photovoltaic (PV) panels because of the lake effect, or the birds' perception of many closely spaced PV panels as a waterbody onto which they attempt to land (Kagan et al. 2014). Polarized light from PV panels might attract prey of insectivorous birds and hence the birds themselves (Horváth et al. 2010), or it might fool birds into trying to lick water from the panel while in flight (Horváth et al. 2009, 2010). Reflected self-images on mirrors of solar thermal projects, or even of PV panels, might elicit aggressive responses of birds motivated to defend territory (Hager and Craig 2014, Kahle et al. 2016). Collisions might result from high-speed predator-prey encounters in which the pursuer or pursued collide with a project feature (Dunn 1993). Bats might fail to detect angled collector panels or mirrors because of reduced echolocation output (Gorresen et al. 2017, Corcoran and Weller 2018) or confused echolocation feedback (P. R. Long, retired military pilot, personal communication). Bats might also misinterpret echolocation-detected flat panels as water bodies from which they attempt to drink while in flight (Greif and Siemers 2010). At power tower projects, birds and bats die because of acute exposure to the zone of solar flux (Kagan et al. 2014). Data summarized herein indicate that birds also perish because of electrocution on energized portions of the project, entrapment or entanglement with project infrastructure such as fencing, and drowning in solar evaporation ponds. Until 2018, however, data needed to test hypothesized causal factors and to estimate regional fatalities were largely unavailable to the public.

Reviews of project-level fatality estimates were reported by those with exclusive access to reports and data (Kagan et al. 2014, Cooper 2016, Walston et al. 2016, Kosciuch et al. 2020). These reviews, along with Harrison et al. (2016), discussed barrier effects, habitat loss, and displacement of wildlife, but they focused on the lesser impacts of mortality caused by operable projects. In the reviews other than Harrison et al. (2016), fatality rates at operative projects were compared mostly as they had been reported, and only Walston et al. (2016) attempted to adjust all project-level fatality counts by carcass detection probabilities. I obtained and reviewed reports, data, environmental reviews, and communications related to bird and bat fatality monitoring at California utility-scale solar energy projects (Table 1). The variety of study designs and methods I observed inspired my own estimations of project-level fatality estimates. I became most concerned over liberal exclusions of fatalities from project-level fatality estimates, use of automobiles in fatality searches, and placements of inappropriate carcasses to measure searcher detection and carcass persistence in carcass detection trials. My first objective was to compare my independent estimates to originally reported estimates of bird and bat

TABLE 1 Solar projects for which fatality data were made available for bats and bird mortalities 1982–2018 at solar projects in California, USA, in response to United States Freedom of Information Act and California Public Records Act requests in 2018

Project	Ref[a]	County[b]	Features surveyed[c]	MW	Ha	Year(s)	Other surveys[d]
California Valley Solar Ranch	1	SLO	PV, OL, G, F	258	476	2012–2014	Bat, BM
Topaz Solar Farm	2	SLO	PV, OL	550	677	2012–2016	Nest, Use, Bat, BM
Campo Verde Solar Project	3	Imp	PV, G, F	139	584	2013–2016	None
Centinela Solar Energy Project	4	Imp	PV, G, F	170	665	2014–2015	None
Imperial Solar Energy Center South	5	Imp	PV, G	130	383	2014	None
Calipatria Solar Project	6	Imp	PV	20	64	2016	None
Midway Solar Farm II	7	Imp	PV	30	113	2018	None
Desert Sunlight Solar Farm	8	Riv	PV, G, F	550	1,700	2015–2016	None
Stateline Solar Farm	9	SB	PV, G	300	682	2017–2018	None
McCoy Solar Energy Project	10	Riv	PV, G, F	250	914	2016–2017	None
Blythe Solar Power Project	11	Riv	PV, G, F	235	769	2016–2017	None
Genesis Solar Energy Project	12	Riv	SCA, PB, P, G, F	250	728	2015–2017	None
Solar One	13	SB	PT, HM, F, P	10	32	1982–1983	Use
Ivanpah Solar Electric Generating System	14	SB	PT, HM, G, F	377	1,457	2013–2018	Use

[a]References: 1 = H.T. Harvey and Associates (2013, 2015*a*); 2 = Althouse and Meade (2012, 2014); 3 = Heritage Environmental Consultants (2014, 2015*a* 2016); 4 = Heritage Environmental Consultants (2015*b*), Chambers Group (2016); 5 = UltraSystems (2014*a*–*e*); 6 = Heritage Environmental Consultants (2017*a*,*b*,*c*); 7 = Shoener and Barrett's Biological Surveys (2018); 8 = Western EcoSystems Technology (2017*a* 2018*a*); 9 = Dudek (2018*a*); 10 = Martinson et al. (2018*b*); 11 = Doering and Santistevan (2013), Martinson et al. (2018*a*); 12 = Western EcoSystems Technology (2016, 2017*c*); 13 = McCrary et al. (1986); 14 = H.T. Harvey and Associates (2015*b*), Western EcoSystems Technology (2017*b*, 2018*b*, 2019).

[b]SLO = San Luis Obispo, Imp = Imperial, Riv = Riverside, SB = San Bernardino.

[c]PV = photovoltaic panels mounted on ground-based metal frames, OL = medium voltage overhead lines, G = gen-tie, or generation tie-ins to the nearest substation or transmission lines, F = perimeter security fence, SCA = solar collector arrays composed of parabolic mirrors, PB = power blocks, P = solar evaporation ponds, PT = power towers receiving reflected sunlight from heliostat mirrors, and HM = heliostat mirrors arranged to reflect solar energy to receiver on power tower.

[d]Bat = bat activity surveys performed using acoustic detectors; BM = background mortality surveys consisting of fatality searches in adjacent areas lacking solar project infrastructure; nest = nest survey, use = visual scans to detect and count birds during daylight hours.

fatality rates at monitored utility-scale solar projects. I predicted my estimates would usually be higher. My second objective was to estimate statewide fatalities of birds and bats caused by the installed capacity of utility-solar projects in 2020. My third objective was to apportion collision fatality impacts to project features to reveal which features warrant greatest concern. My fourth objective was to compare fatality rates among bird and bat species and among those with special status to identify species in relatively greater need of research and mitigation. My fifth objective was to identify additional sources of error and bias that warrant further research to increase accuracy of fatality estimates.

STUDY AREA

The fatality monitoring studies I reviewed had been performed from 1982–2018 at 14 utility-scale solar energy projects on relatively flat terrain in annual grassland, desert, and agricultural environments within the desert of California (Figure 1; Table 1). Elevations ranged −4 m to 983 m. Climate was Mediterranean, with warmest temperatures and least rainfall during June–August, coolest temperatures and greatest rainfall during November–February, and transitional periods with increasing temperatures and decreasing rain in March–May, and deceasing temperatures and increasing rain during September–October. Twelve projects were located in Mojave and Sonoran deserts, where annual rainfall averaged <10 cm, and natural ground cover was desert scrub including creosote (*Larrea tridentata*). Two project sites were in San Luis Obispo County, where annual rainfall averaged 10–38 cm, and natural ground cover was annual grassland composed of red brome (*Bromus madritensis rubens*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum*), six-weeks fescue (*Festuca octoflora*) and wild oat (*Avena fatua*.). Wildlife typical of the desert sites included coyote (*Canis latrans*), desert kit fox (*Vulpes macrois*), bighorn sheep (*Ovis canadensis*), black-tailed jackrabbit (*Lepus californicus*), canyon bat (*Parastrellus hesperus*), common raven (*Corvus corax*), desert sidewinder (*Crotalus cerastes*), and Agassiz desert tortoise (*Gopherus agassizii*).

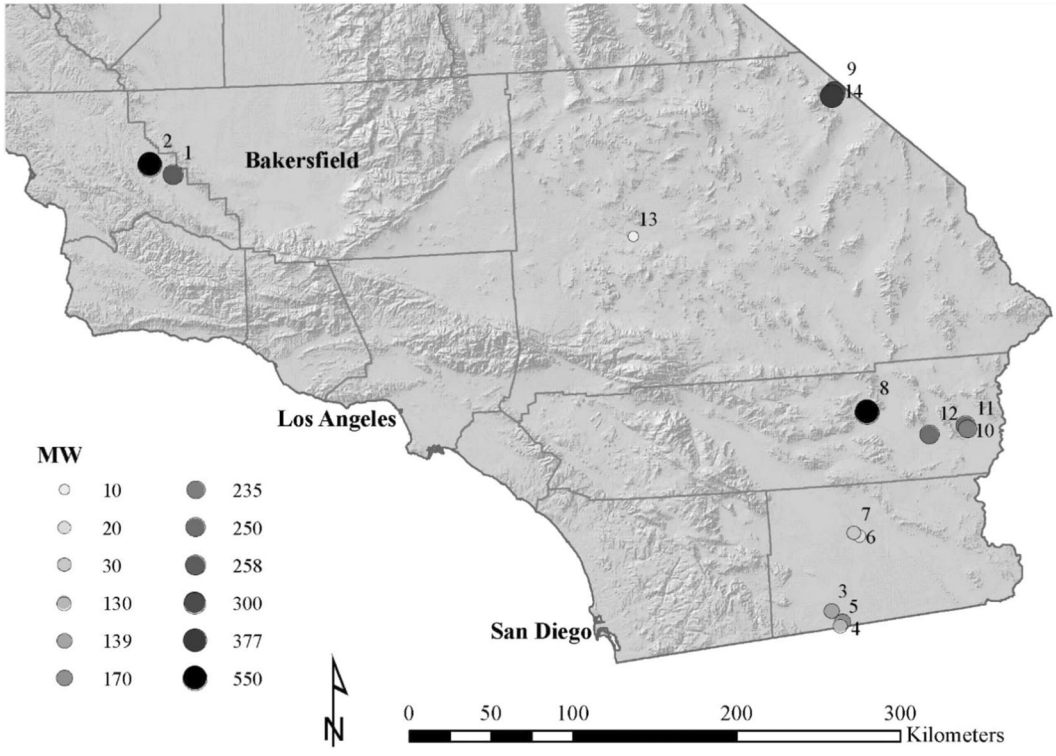

FIGURE 1 Locations and rated capacities (MW) of solar energy project sites that were monitored for wildlife fatalities in California, 1982–2018: 1 = California Valley Solar Ranch, San Luis Obispo County, 2 = Topaz Solar Farm, San Luis Obispo County, 3 = Campo Verde Solar Project, Imperial County, 4 = Centinela Solar Energy Project, Imperial County, 5 = Imperial Solar Energy Center South, Imperial County, 6 = Calipatria Solar Project, Imperial County, 7 = Midway Solar Farm II, Imperial County, 8 = Desert Sunlight Solar Farm, Riverside County, 9 = Stateline Solar Farm, San Bernardino County, 10 = McCoy Solar Energy Project, Riverside County, 11 = Blythe Solar Power Project, Riverside County, 12 = Genesis Solar Energy Project, Riverside County, 13 = Solar One, San Bernardino County, 14 = Ivanpah Solar Electric Generating System, San Bernardino County

Wildlife typical of the grassland sites included coyote, San Joaquin kit fox (*Vulpes macrotis mutica*), black-tailed jackrabbit, giant kangaroo rat (*Dipodomys ingens*), and northern Pacific rattlesnake (*Crotalus oreganus oreganus*).

All monitored projects had been graded flat and natural vegetation had been removed. Of the 3 solar energy technologies monitored, 1 technology included flat PV panels on ground-mounted frames with solar trackers at most projects. The other 2 technologies were solar thermal, including solar-trough parabolic mirrors referred to as solar collector arrays (SCAs) at Genesis Solar Energy Project, and heliostat mirrors reflecting light to receivers, or boilers, atop power towers at Ivanpah Solar Electric Generating System (Ivanpah) and the since-decommissioned Solar One project. Solar projects connected to the grid via gen-ties, which resemble transmission lines and their towers. Solar projects were also surrounded by perimeter security fences. Some projects also included medium-voltage overhead lines. Monitored projects totaled 3,259 MW, including 627 MW of solar thermal and 2,632 MW of PV. They included 163.35 km of security fence bordering 2,237 MW of solar arrays (0.073 km/MW) and 78.09 km of gen-tie serving 2,237 MW of solar arrays (0.037 km/MW) that were monitored for fatalities.

METHODS

Through use of California Public Records Act (PRA) and federal Freedom of Information Act (FOIA) requests to agencies with regulatory authority over biological resources, I obtained reports, data, environmental reviews, and communications related to fatality monitoring at utility-scale solar projects in California. Field and analytical methods of fatality monitoring varied among reports but all were intended to estimate the number of fatalities caused by the project. Monitors searched for fatalities by following protocols designed to account for proportions of fatalities not found, to extrapolate from sampling units to whole projects, and to compare fatality rates between project features and whole projects. Although monitors used various fatality estimators, the basic form was $\hat{F} = \frac{F}{\rho}$, where $\hat{F}$ was the fatality estimate, F was the number of fatalities found, and ρ represented carcass detection probability.

Monitors typically searched by foot or by car for fatalities according to a periodic schedule and along evenly spaced transects across sampled portions or all of a solar project. At 6 projects, monitors applied distance sampling from transects. They usually removed all fatality finds upon discovery. Most performed carcass detection trials, in which testers placed carcasses on the study site to quantify searcher detection rates and carcass persistence time, or the time until the placed carcass was no longer detectable by searchers. Outcomes of carcass detection trials were used to estimate ρ. For fatality estimation, monitors usually omitted fatalities found incidental to scheduled searches or outside search areas. Some monitors set 5 or 10 fatality detections/species as thresholds for species' inclusion, and some separately reported fatality estimates between known and unknown cause of death. A few reports provided estimates for 10 species with the highest fatality rates.

From information I received following PRA and FOIA requests, I constructed data sets I needed to independently estimate fatalities at monitored solar projects (fatality data and their reported attributes, along with definitions of data fields [Table S1], are available in Supporting Information). I recorded each study's start date, duration of monitoring of each project feature, proportion of each project feature searched, whether searched by walking or car, transect width, whether distance sampling was used, fatality search interval, and fatality metric (Table 2). I recorded essential attributes of carcass detection trials that monitors used to represent ρ, including taxa, carcass source, body size classes into which trial carcasses were grouped, trial duration, and metric used to estimate the probability of carcasses persisting to the next search (r), which could be derived from R = proportion of carcasses remaining on the ith day into a trial, R_C = mean daily carcass persistence upon the ith day into a trial, and $\overline{t}$ = mean days to carcass removal (Table S2, available in Supporting Information). Some of the monitors' detection trials included placements of feather piles as a separate class from small and large birds. I did not use the results of such trials because all fatalities found as feather piles began as complete carcasses. Starting a trial from a feather pile, as if the rest of the carcass never existed, was unrealistic.

TABLE 2 Bird and bat fatality search methods reported at utility-scale solar projects in California, USA, 1982–2018

Project	Feature[a]	Yrs	Sample (%)	Search	Transect (m)[b]	*I* (days) in spring, summer, fall, winter[c]	$\hat{F}$ metric[d]
CVSR[e]	Gen-tie	2.4	100	Walk	15	7, 7, 7, 7	F/(S × *r*)
CVSR[e]	MVOH	1.8	100	Walk	18	7, 7, 7, 7	F/(S × *r*)
CVSR[e]	Fence	2.0	20	Walk	3	7, 7, 7, 7	F/(S × *r*)
CVSR[e]	PV	2.0	20	Walk	5	7, 7, 7, 7	F/(S × *r*)
Topaz	MVOH	5.0	3.3	Walk	2.13	1 | 30	F/plot/search
Topaz	PV	5.0	3.5	Walk	2.3	1 | 30	F/plot/search
Campo Verde	Fence	2.5	100	Walk		1 | 30	None
Campo Verde	Gen-tie	2.5	30	Walk	7.5	1 | 30	None
Campo Verde	PV	2.5	30	Walk		1 | 30	None
Centinela	Gen-tie	0.8	50	Walk	5	3.5, 3.5, 3.5, 3.5	F/(S × R_C)
Centinela	Fence	1.0	100	Walk		1 | 30	
Centinela	PV	1.0	10	Walk	4.2	1 | 30	F/0.2 yr
Imperial	Gen-tie	0.4	100	Car		1 | 30	None
Imperial	PV	0.4	10	Car	14.5	1 | 30	None
Calipatria	PV	2.0	100	Walk	35	7, 21, 7, 21	Distance[f]
Midway	PV	0.4		Car	60	7, 0, 18, 0	
Desert Sunlight	Fence	1.0	7	Car		7, 23, 8, 19	F/(S × *r*)
Desert Sunlight	Gen-tie	1.0	48	Walk	15	7, 23, 8, 19	F/(S × *r*)
Desert Sunlight	PV	1.0	30	Walk	70	7, 23, 8, 19	F/(S × *r* × A)
Stateline	Fence	1.0	100	Car	3	7, 21, 7, 21	F/(S × *r*)
Stateline	Gen-tie	1.0	50	Car	15	7, 21, 7, 21	F/(S × *r*)
Stateline	PV	1.0	40	Car	120	7, 21, 7, 21	F/(S × *r* × A)
McCoy	Fence	2.0	98	Car	3	7, 21, 7, 21	F/(S × *r*)
McCoy	Gen-tie	2.0	25	Walk	15	7, 21, 7, 21	F/(S × *r*)
McCoy	PV	2.0	45	Car	160	7, 21, 7, 21	F/(S × *r* × A)
Blythe	Fence	2.0	92	Car	3	7, 21, 7, 21	F/(S × *r*)
Blythe	Gen-tie	2.0	25	Walk	15	7, 21, 7, 21	F/(S × *r* × A)
Blythe	PV	2.0	41	Car	95	7, 21, 7, 21	F/(S × *r* × A)
Genesis	Fence	2.0	100	Car	?	7, 20, 7, 19	F/(S × *r*)
Genesis	Gen-tie	2.0	25	Walk	15	7, 20, 7, 19	F/(S × *r*)
Genesis	Ponds	2.0	100	Walk		7, 20, 7, 19	F/(S × *r*)
Genesis	PBlocks	2.0	100	Walk	7.5	7, 20, 7, 19	F/(S × *r*)
Genesis	SCAs	2.0	30–50	Car	30	7, 20, 7, 19	F/(S × *r* × A)

(Continues)

TABLE 2 (Continued)

Project	Feature[a]	Yrs	Sample (%)	Search	Transect (m)[b]	*I* (days) in spring, summer, fall, winter[c]	$\hat{F}$ metric[d]
Solar One	Heliostats	0.8	100	Walk		7, 0, 7, 7	F/(*r*)
Solar One	Tower	0.8	100	Walk		7, 0, 7, 7	F/(*r*)
Ivanpah	Fence	2.0	100	Car	3	7, 25, 7, 25	F/(S × *r*)
Ivanpah	Gen-tie	2.0	100	Car	15	7, 25, 7, 25	F/(S × *r*)
Ivanpah	Heliostats	2.0	24	Walk	5	7, 25, 7, 25	F/(S × *r*)
Ivanpah	Heliostats	2.0	8	Walk		7, 0, 0, 21	F/(S × *r*)
Ivanpah	Tower[g]	2.0	100	Walk		7, 25, 7, 25	F/(S × *r*)
Ivanpah	Tower[g]		100	Walk		7, 21, 7, 21	F/(S × *r*)

[a]PV = photovoltaic panels mounted on ground-based metal frames, MVOH = medium voltage overhead lines, Gen-tie = generation tie-ins to the nearest substation or transmission lines, Fence = perimeter security fence, SCA = solar collector arrays composed of parabolic mirrors, PBlocks = power blocks, Ponds = solar evaporation ponds, Tower = power towers receiving reflected sunlight from heliostat mirrors, and Heliostats = mirrors arranged to reflect solar energy to a receiver on power tower.

[b]Width of search area to one side of transect.

[c]1 | 30 refers to daily searches for 7 consecutive days beginning again every 30 days.

[d]$\hat{F}$ = estimated number of fatalities, *F* = number of fatalities found, *S* = proportion of trial carcasses found, *r* = proportion of trial carcasses persisting to next search, *A* = proportion of search area that was searchable; empty spaces indicated the reporting was unclear which metric was used.

[e]California Valley Solar Ranch. Also performed daily searches for 5 consecutive days once every 4 weeks.

[f]Used Program Distance (Miller 2016), but none of the models fit the data well.

[g]Included cleared ground around towers, power blocks, and inner rings of high-density heliostat mirrors.

Where monitors used distance sampling, I derived probabilities of searcher detection of trial carcasses within distance increments from transects, which were reported graphically. I multiplied each distance increment by transect length to calculate the search area, and hence the search area as a proportion of the project area (*A*) associated with a probability of searcher detection. Because all but the gen-tie at Centinela did not report distances of fatalities from the transect, I usually could not assign fatalities to the distance increment for which detection probabilities had been characterized by trials. I therefore averaged $S \times A$ among the distance increments searched, where *S* was the proportion of placed trial carcasses found within the *i*th distance increment (of those available), and *A* was the searchable area between the car and the farthest point of the *i*th distance increment. Along with *r*, $S \times A$ composed ρ: $\hat{F} = \frac{F}{r \times S \times A}$.

Where carcass detection trials were not implemented, insufficiently described, or based on <8 carcass placements/category of bats, small birds, and large birds (i.e., California Valley Solar Ranch [CVSR], Campo Verde, Centinela, Imperial, Solar One), I applied detection rates from my own trials of carcasses as part of 2 3-year fatality monitoring studies in the Altamont Pass Wind Resource Area (APWRA). Given its short-stature annual grassland cover, carcass visibility to scavengers and fatality searchers should be similar between the APWRA and the 5 project sites to which I applied APWRA-derived carcass detection rates, but to minimize differences, I relied solely on trial carcasses that had been placed on open ground to simulate conditions of ground visibility at the 5 solar project sites. The APWRA trials were integrated into routine fatality monitoring with placements that were periodic throughout each study and randomized within fatality search areas. In 1 study, trials included 276 bird carcasses of 79 species that ranged in mass from 2 g to 6,650 g (Smallwood et al. 2017*a*, 2018). In the other study, trials included 764 bird carcasses of 100 species ranging in mass from

3 g to 6,000 g, and 144 bat carcasses of 16 species ranging in mass from 2.3 g to 23.6 g (Brown et al. 2016). Trial carcasses were left indefinitely where placed. Whether searchers ever found the carcass determined each trial outcome. I logit-regressed trial outcomes of found or not found on $\log_{10}$ body mass (g) to estimate overall detection probability $\hat{D}$:

$$\hat{D} = \frac{e^{-a+b\times log_{10}M}}{1 + e^{-a+b\times log_{10}M}},$$

where a and b were fitted coefficients and M was body mass (Figure 2). I estimated $\hat{D}$ separately for birds and bats, and among the 3 fatality search intervals that were implemented between the 2 APWRA studies: 5, 7, and 28 days. To simulate a daily search interval, I estimated $\hat{D}$ from carcass trial placements 1 day prior to the next search (Smallwood 2017*a*).

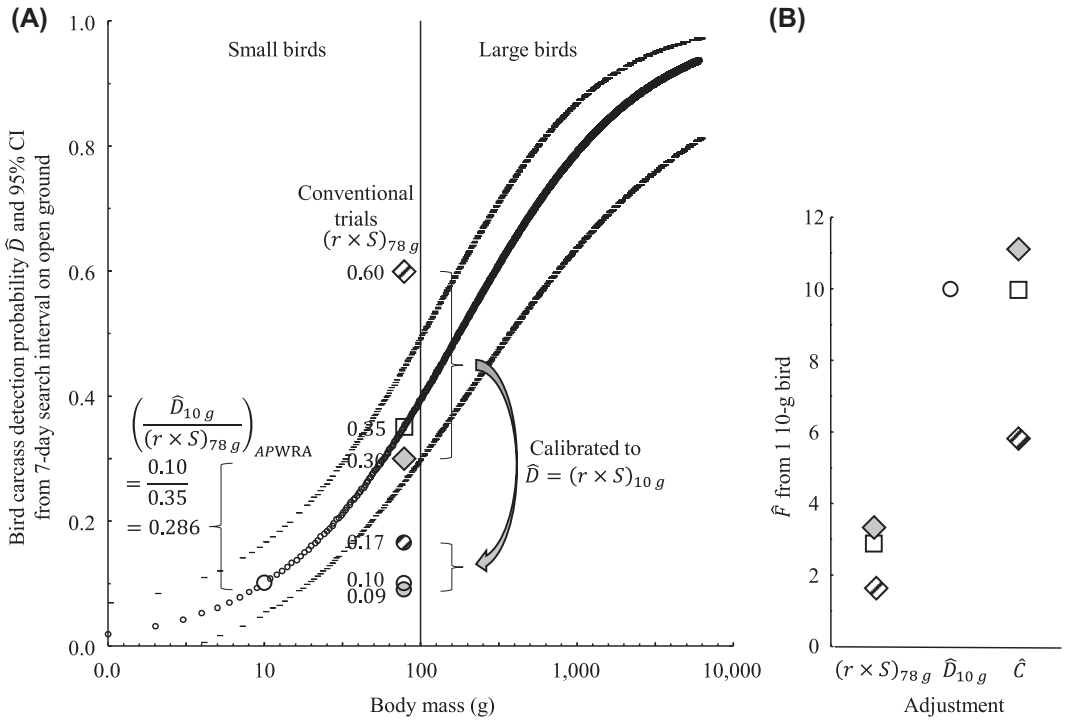

FIGURE 2 Hypothetical fatality estimation from 1 bird of a 10-g species found at a site where monitors used 78-g bird carcasses to represent small birds of ≤100 g body mass in on-site carcass detection trials, and then calibrated to carcass detection trial outcomes on open ground in the Altamont Pass Wind Resource Area (APWRA), California, USA, 2012–2015, where carcass detection probability was modeled to variation in body mass. A) Predicted probability of carcass detection ($\hat{D}$) and 95% confidence intervals based on outcomes of detection trials performed at 7-day intervals and logit-regressed on $\log_{10}$ body mass, and overlayed by overall detection measured for 78-g bird carcasses in on-site trials at 2 sites (shaded and striped diamond symbols) and in the APWRA (open square) and calibrated to $\hat{D}$ of the 10-g bird that was found (oversized circle among mean $\hat{D}$). Also overlaid are the detection probabilities derived from trials with 78-g birds calibrated to that of the 10-g bird (circles patterned to match symbols representing uncalibrated detection probabilities). B) Resulting fatality estimates ($\hat{F}$) derived from 3 types of adjustment: conventional trials for carcass persistence r and searcher detection S using 78-g birds to represent small birds, $\hat{D}$ of a 10-g bird, and the calibration bridge to introduce the effect of body size on detection probability while preserving the site effect: $\hat{C} = \frac{1}{(r \times S)_{78\,g\ on\ site}} \Big/ \left(\frac{\hat{D}_{10\,g}}{(r \times S)_{78\,g}}\right)_{APWRA}$

Although logit regression calculates asymptotic confidence intervals along with predicted detection probabilities of each body mass used to develop the model, the body masses of fatality finds can differ from those of the trial carcasses used to develop the model. To extend the model's confidence intervals to fatality finds, I fit nonlinear regression models to logit regression's 95% lower and upper confidence limits (Smallwood et al. 2018).

To the 5 studies at solar projects in need of carcass detection probabilities from my offsite studies, $\hat{D}$ served as ρ in the fatality estimator: $\hat{F} = \frac{F}{\hat{D}}$. I assumed that detection probabilities of carcasses placed on open ground depended more on variation in carcass size than on variation in carcass removal rates among project sites. Spatial variation in carcass removal rates remains unknown, but the effect of body mass on detection probability is strong (Figure 2). Given the strong effect of body mass, $\hat{D}$ served a second purpose in this study. Because I monitored trial carcasses in the APWRA for availability to be found by searchers so that I could also estimate fatalities using the conventional terms $r \times S$, I had the means to calibrate $r \times S$ to $\hat{D}$, the importance of which is discussed below.

Most fatality monitors at solar projects deployed birds in detection trials that were larger than most of the birds and bats found as fatalities. This practice emerged as a potential bias because the placed birds represented broad size categories in which the body size-specific detection probabilities of the placed birds would be increasingly discrepant from the detection probabilities of increasingly smaller or larger species found as fatalities in the same broad size category (Figure 2). I therefore adjusted the results of detection trials to account for the effects of variation in body mass. I used integrated, overall detection trials performed in the APWRA to derive a unit-free scaler to adjust for the effects of variation in body mass on trial outcomes. I formulated a body mass scaler $\hat{C}$ as follows:

$$\hat{C} = \left(\frac{F}{r \times S}\right)_{ith\ solar\ project} \Big/ \left(\frac{\hat{D}}{r \times S}\right)_{APWRA,\ open\ ground}$$

With $\hat{C}$, I adjusted number of fatalities found for overall detection probability $r \times S$ based on the monitors' onsite trials, and then I adjusted fatalities by the ratio of overall detection probability $\hat{D}$ to overall detection probability $r \times S$ derived from the same conventional trials using the same-sized carcasses as at the solar project. In these cases, $\hat{C}$ served as ρ. In the dividend, $r \times S$ were from the same-sized species as $r \times S$ in the divisor, thereby serving to bridge the 2 sites, 1 site where $\hat{D}$ was additionally measured along a continuous range of body mass and the other site where F was additionally measured among species that varied continuously in body mass (Figure 2). This bridge preserved any differences in r and S between the sites. I applied this bridge to onsite detection trials and fatality data from Topaz, Desert Sunlight, McCoy, Midway, Calipatria, Blythe, Genesis, and Ivanpah. I was unable to apply this bridge to data from Stateline, to which I relied solely upon onsite detection trials.

I applied the body mass scaler to bird and bat fatalities where trial outcomes had been lumped into broad size categories. Monitors had performed detection trials for bats at only 1 solar project, but bats were represented by small birds in those trials. The scaling function I used for bats was $\hat{D}$ for bats relative to $r \times S$ for whichever bird species in my study represented small birds at the solar project, and again I relied only on bats and small birds in my study that had been placed on open ground (no occlusion) at Vasco Winds (Brown et al. 2016) or Sand Hill (Smallwood et al. 2018). To represent trial carcasses at solar projects, I selected APWRA bird trial carcasses ranging in size 24–32 g for house sparrows (*Passer domesticus*), 36–47 g for brown-headed cowbirds (*Molothrus ater*), 50–70 g for Japanese quail (*Coturnix japonica*) chicks, 108–168 g for Japanese quail adults, 260–400 g for rock pigeons (*Columba livia*), 1,050–1,150 g for mallards (*Anas platyrhynchos*), and 1,200–2,300 g for ring-necked pheasants (*Phasianus colchicus*). For application to fatality monitoring based on 21-day search intervals, I averaged $\hat{D}$ between 7- and 28-day intervals on open ground at Vasco Winds.

Only at CVSR were found fatalities sufficiently assigned to sampling units so that other researchers could estimate standard error attributable to variation among sampling units. Consistent with Smallwood et al. (2020), I used the delta method to estimate confidence intervals at CVSR. Otherwise, I relied on logit-regressed estimates of confidence intervals to represent confidence intervals of fatality estimates. I estimated fatalities of every species

represented by ≥1 fatality at operational solar projects. I assumed solar projects caused all fatalities found by monitors, but natural causes likely contributed to a few of the fatalities.

Although I endeavored to reduce the effects of bias on ρ by factoring in fatality detection probability as a function of interspecific variation in body mass, fatality estimates remained amply prone to error and bias (Smallwood 2007). To improve accuracy of fatality estimates going forward, I addressed 3 additional sources of error and probable bias. First, I compared monitoring outcomes between pedestrian and car surveys. I assumed bias would be indicated, though not verified, if estimated fatality rates differed between projects searched by foot and by car. Second, to indicate whether and to what degree wildlife species were represented in fatality monitoring results at solar projects, I related the cumulative number of species represented as detected fatalities by months since monitoring was initiated, similar to the approach used by Beston et al. (2015). To the fatality monitoring data of each project, I attempted to fit a nonlinear model for the purpose of identifying the asymptote of the cumulative number of species represented, and to determine whether the predicted asymptote had indeed been reached. Third, I tallied fatalities that monitors had assigned to taxa or size groups other than the species level.

RESULTS

Attributes of fatality monitoring studies

Fatality monitoring studies varied greatly in attributes that affect fatality estimates (Tables 2, S1). As examples, fatality searches covered 3.3% to 100% of solar project features, and spanned 0.42 to 5 years in duration. Fatality search intervals ranged 1 to 25 days, but at 2 projects searches were daily for 5 to 7 consecutive days beginning at intervals of 28 to 30 days, respectively. Areas searched from transects varied within maximum distances of 2.1 to 160 m—a 76-fold range. Distance sampling was used from a transect along the gen-tie at Centinela, from transects intersecting PV arrays at Centinela, Imperial, Calipatria, Midway, Desert Sunlight, Midway, McCoy, and Blythe, and from transects intersecting SCAs at Genesis. The fatality metric at Topaz was fatalities/plot/search, which was incomparable to fatality metrics reported in other studies. No fatality estimates were reported at Campo Verde and Imperial, and none were reported for bats at Ivanpah.

Studies varied greatly in carcass detection trials needed to accurately represent ρ. Bat detection trials were implemented only at Genesis, where small birds served as surrogates for bats (Table S2). Bird carcasses were placed in all detection trials except for trials along the Centinela gen-tie, where colorful bird-shaped holiday ornaments were placed in searcher detection trials. Source of bird carcasses was unreported at all studies except CVSR, which used carcasses from wildlife rehabilitation facilities and fatalities found during monitoring. Two studies neglected to identify species used in detection trials. Monitors at Solar One and Calipatria did not perform searcher detection trials. Monitors at Centinela and Imperial did not perform detection trials of any type. Duration of carcass persistence trials ranged 5 to 42 days. The carcass persistence metric varied but was usually mean days to carcass removal (Table S2).

The majority of birds killed at solar projects were small-bodied; most were smaller than the bird carcasses used to represent them in detection trials (Figure 3). Of bird species found as fatalities among solar projects, the typical adult body mass of 30% were <22 g, 50% were <42 g, 63% were ≤100 g, and only 22% were at least as large as rock pigeons. Of bird species found as fatalities at 11 PV projects, the typical adult body mass of 30% were ≤25 g, 50% were <56 g, 57% were <100 g, and only 25% were at least as large as rock pigeons. Among 3 projects (McCoy, Blythe, and Desert Sunlight), the smallest species used in small-bird persistence trials was larger than 73% of the small birds found as fatalities (Figure S1, available in Supporting Information). The smallest species used in medium-bird persistence trials was larger than 33% of the medium bird species found. The largest species used in large-bird persistence trials was smaller than 50% of the large birds found as fatalities. Accounting for the detection probabilities of fatalities of species smaller than detection trial carcasses increased fatality estimates of many small-bird

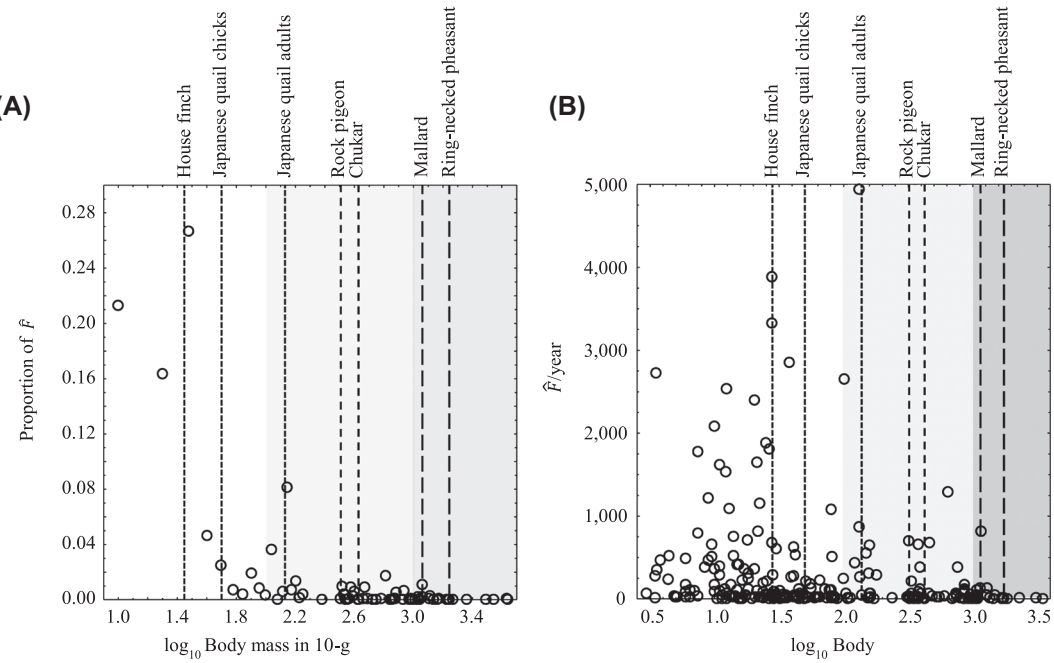

FIGURE 3 Body size-distribution of bird fatalities relative to typical body mass of species used in searcher detection and carcass persistence trials (dashed vertical lines) among 13 California solar projects (Solar One not included) monitored 2012–2018, where the clear zone represents small birds ≤100 g, light gray represents medium birds >100 g to ≤1,000 g, and dark gray represents large birds >1,000 g: A) proportion of estimated number of fatalities ($\hat{F}$) by 10-g increments of typical species' body mass, and B) estimated annual fatalities by body mass on a continuous scale. Carcasses of many found fatalities were smaller than the species used in on-site detection trials

species, but it reduced estimates of a much smaller number of large-bird species (Figure S2, available in Supporting Information). The onsite-adjusted fatality estimates bridged to the APWRA's integrated overall detection trials related linearly to onsite-adjusted fatality estimates without the bridge, indicative of an unbiased adjustment for interspecific variation in body mass (Figure S3, available in Supporting Information).

Body-size adjusted fatality estimates

My bird fatality estimates exceeded originally reported estimates by factors of 1.07 at Campo Verde, 1.5 at Desert Sunlight, 1.88 at CVSR, 4.59 at McCoy, 6.59 at Blythe, 10.49 at Genesis, 10.5 at Calipatria, and 18–72 at Topaz (Table 3). No project-wide fatality estimates were reported at Ivanpah, but my estimates for birds at Ivanpah's heliostat mirror arrays and in the tower area exceeded originally reported estimates by factors of 10 and 3.8, respectively.

My estimate of bird fatalities among Ivanpah's heliostat mirrors exceed that of the Tower Area by a factor of 6.2 (Table 3; Figure S4, available in Supporting Information). Some unknown portion of the fatalities found among heliostat mirrors was likely caused by exposure to the zone of solar flux. Bird fatality rates among mirrors at Genesis averaged only 20% of those among heliostat mirrors at Ivanpah. Bird mortality was highest at solar thermal projects (Table 3). On a per-MW basis, the gen-tie was the most dangerous project feature to birds at some projects, whereas the PV panels or mirrors were the most dangerous at others. On a project-wide basis, however, more birds died by collision with solar collectors—mirrors and PV panels.

TABLE 3 Reported estimates and my own estimates of wildlife fatality rates at California utility-scale solar energy projects and project features through 2020. I cannot explain the estimates that were not reported by monitors, but I did not estimate fatalities caused by medium-voltage overhead lines and PV at Topaz because these facilities overlapped to a degree that I could not determine which caused the fatalities

			$\hat{F}$/MW/year (95% CI)	
Project	**Taxa**	**Feature**[a]	**Reported**[b]	**This study**
CVSR	Birds	Gen-tie	0.38 (0.32–0.48)	1.27 (0.89–1.93)
CVSR	Birds	MVOH	0.10 (0.08–0.12)	0.35 (0.26–0.48)
CVSR	Birds	Fence	0.72 (0.60–0.89)	1.15 (0.85–1.64)
CVSR	Birds	PV	8.97 (7.33–11.49)	16.17 (11.98–22.05)
CVSR	Birds	Project	10.07 (8.20–12.92)	18.98 (14.00–26.16)
Topaz	Birds	MVOH	0.0546–0.2159[c]	
Topaz	Birds	PV	0.0491–0.1909[c]	
Topaz	Birds	Project	0.1037–0.4068[c]	7.48 (6.12–11.22)
Campo Verde	Birds	Fence		0.10 (0.08–0.14)
Campo Verde	Birds	Gen-tie		0.50 (0.39–0.78)
Campo Verde	Birds	PV		20.49 (16.52–31.07)
Campo Verde	Birds	Project	19.65	21.09 (16.99–32.00)
Centinela	Birds	Fence		1.82 (1.49–2.77)
Centinela	Birds	Gen-tie	1.68[c]	2.31 (1.7–3.82)
Centinela	Birds	PV	12.93	22.92 (18.52–34.71)
Centinela	Birds	Project		28.64 (23.09–43.76)
Imperial	Birds	Project		9.70 (8.22–14.65)
Calipatria	Birds	PV	2.1	22.09
Calipatria	Birds	Project	2.1	22.09
Midway	Birds	Project		3.22
Desert Sunlight	Birds	Fence	0.015 (0.005–0.042)	0.03 (0.02–0.03)
Desert Sunlight	Birds	Gen-tie	1.86 (0.87–4.99)	2.58 (1.68–4.32)
Desert Sunlight	Birds	PV	1.05 (0.88–1.56)	1.68 (1.24–3.19)
Desert Sunlight	Birds	Project	2.93 (2.03–6.67)	4.39 (3.01–7.70)
Stateline	Birds	Gen-tie	0.457	0.19
Stateline	Birds	PV	0.387	1.94
Stateline	Birds	Project		2.13
McCoy[d]	Birds	Fence	0.096 (0.016–0.20/8)	0.25 (0.17–0.36)
McCoy[d]	Birds	Gen-tie	3.124 (2.36–4.04)	11.68 (7.19–21.13)
McCoy[d]	Birds	PV	0.23 (0.04–0.49)	3.88 (2.58–6.04)
McCoy[d]	Birds	Project	3.45 (2.66–4.39)	15.83 (9.98–27.60)

(Continues)

TABLE 3 (Continued)

Project	Taxa	Feature[a]	$\hat{F}$/MW/year (95% CI) Reported[b]	This study
McCoy[d]	Bats	Project		0.46 (0.01–0.73)
Blythe[d]	Birds	Fence	0.09 (0.03–0.17)	0.38 (0.28–0.55)
Blythe[d]	Birds	Gen-tie	3.32 (2.51–4.30)	16.35 (10.07–28.96)
Blythe[d]	Birds	PV	0.18 (0.009–0.455)	6.67 (4.52–5.75)
Blythe[c]	Birds	Project	3.59 (2.76–4.60)	23.65 (15.04–35.62)
Genesis	Bats	Fence	0.012 (0.002–0.030)	1.67 (0.11–4.27)
Genesis	Bats	Ponds	0.036 (0.008–0.078)	4.82 (0.13–7.90)
Genesis	Bats	PBlocks	0.002 (0.002–0.006)	2.40 (0.09–4.77)
Genesis	Bats	SCAs	0.052 (0.020–0.092)	0.56 (0.09–3.53)
Genesis	Bats	Project	0.106 (0.032–0.198)	10.92 (0.48–22.98)
Genesis	Birds	Fence	0.39 (0.25–0.56)	5.63 (4.21–7.70)
Genesis	Birds	Gen-tie	1.50 (0.66–2.73)	17.62 (11.26–31.09)
Genesis	Birds	Ponds	0.39 (0.14–0.72)	5.57 (3.98–8.09)
Genesis	Birds	PBlocks	0.21 (0.13–0.29)	4.93 (3.51–7.06)
Genesis	Birds	SCAs	2.41 (1.90–3.10)	12.93 (9.77–17.86)
Genesis	Birds	Project	4.56 (3.44–5.84)	47.83 (33.53–73.59)
Solar One	Birds	Heliostats		26.20 (18.70–58.94)
Solar One	Birds	Tower area		16.24 (9.24–92.42)
Solar One	Birds	Project	9.88–11.44	42.44 (27.94–151.36)
Ivanpah	Birds	Fence	0.19 (0.13–0.28)	0.58 (0.41–0.83)
Ivanpah	Birds	Gen-tie	0.005	0.14 (0.09–0.25)
Ivanpah	Birds	Others		0.82 (0.45–5.23)
Ivanpah	Birds	Heliostats	6.41 (4.66–10.38)	63.91 (40.45–141.33)
Ivanpah	Birds	Tower area	2.69 (1.82–4.46)	10.30 (5.79–52.95)
Ivanpah	Birds	Project		75.74 (47.19–200.59)
Ivanpah	Bats	Tower area		1.79 (0.08–3.70)

[a]Project = all features of the project, Fence = perimeter security fence, Ponds = solar evaporation ponds, Gen-tie = generation lead or transmission lines, MVOH = medium-voltage overhead collector lines, PV = solar photo-voltaic panels; and in solar thermal projects, Heliostats = heliostat mirrors, SCAs = solar collector arrays, Tower area = bare ground between SCAs and the power tower, PBlocks = power blocks, and Others = ancillary structures such as operations and maintenance buildings.

[b]90% CI at California Valley Solar Ranch (CVSR) and Genesis.

[c]I calculated the value based on the reported estimate in terms of a different metric.

[d]I assumed methods remained unchanged in year 2, but the second-year report was unavailable. Martinson et al. (2018*a*,*b*) reported results only for year 1, whereas I report results for both years 1 and 2.

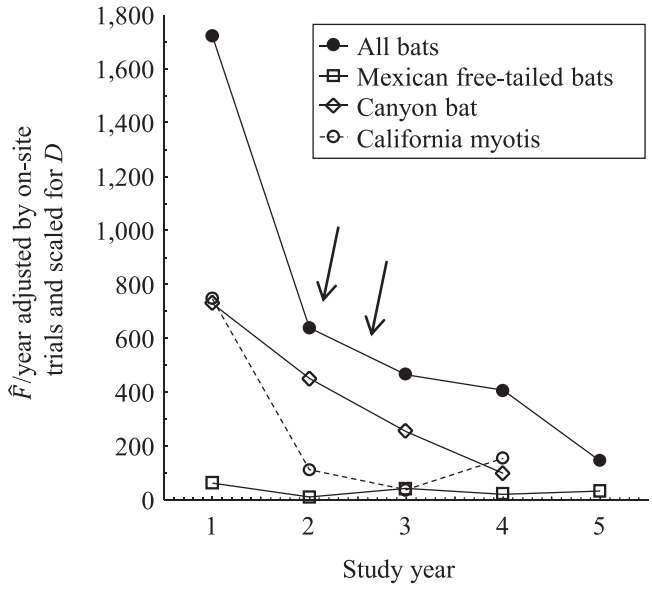

FIGURE 4 Estimates of annual bat fatalities in the tower area of Ivanpah Solar Electric Generating System, San Bernardino County, California, USA, 2013–2018, spanning the cleared ground between the power tower and the mirror arrays and including all bats as a group, Mexican free-tailed bats (*Tadarida brasiliensis*), canyon bats, and California myotis. Arrows point to years following installations of ultrasonic deterrents at power towers, 1 installation after the first year, and 2 more during the second year. Declines in bat mortality preceded installations of deterrents

Bat mortality was highest at Genesis, followed by Ivanpah and McCoy. At Genesis, the most dangerous project feature to bats was the solar evaporation ponds, followed by power blocks, fences, and SCAs (Table 3). At Ivanpah, bat fatality estimates were possible only in the tower area, where mortality declined over the 5 years of monitoring (Figure 4). Species exhibiting the largest declines were canyon bat and California myotis (*Myotis californicus*). An ultrasonic bat deterrence method was implemented at unit 1 on 10 September 2014, and at units 2 and 3 on 23 April 2015.

California-wide impacts of operative utility-scale solar projects

According to the California Energy Commission, 1,948.8 MW of solar thermal projects operated in California in 2020, and 12,220 MW of PV had been installed by the end of 2019. On average, utility-scale solar energy projects required 3.48 ha/MW for solar thermal and 2.67 ha/MW for PV. Therefore, utility-scale solar thermal projects covered 6,782 ha, and utility-scale solar PV covered 32,627 ha. Projected to California's installed capacity of all utility-scale solar projects in 2020, mean annual fatalities at monitored projects predicted 267,732 (95% CI = 186,071–495,391) bird fatalities and 11,418 (95% CI = 601–23,926) bat fatalities (Table S3). Only 8 studies reported project-wide bird fatality estimates, and only 2 of these reported a confidence interval. Only 2 studies at solar thermal projects reported project-wide bat fatality estimates. Projected to California's installed capacity of all utility-scale solar projects in 2020, originally reported mean annual fatalities would predict 82,471 birds, but original reporting was insufficient for including a 95% confidence interval or for predicting statewide bat fatalities.

At utility-scale solar PV projects, my estimates of $\hat{F}$/MW/year averaged 11.61 (95% CI = 8.37–17.56) birds and 0.06 (95% CI = 0.01–0.10) bats (Table S4, available in Supporting Information). Projected to

California's installed capacity of 12,220 MW of PV in 2019, my fatality rates predicted annual fatalities of 141,811 (95% CI = 102,227–214,593) birds and 716 (95% CI = 124–1,221) bats. At solar thermal projects my estimates of $\hat{F}$/MW/year averaged 64.61 (95% CI = 41.74–149.95) birds and 5.49 (95% CI = 0.25–11.65) bats (Table S4). Projected to California's installed capacity of 1,948.8 MW of solar thermal in 2020, my fatality rates predicted annual fatalities of 125,921 (95% CI = 81,346–292,225) birds and 10,701 (95% CI = 477–22,705) bats.

Along perimeter fences, I estimated $\hat{F}$ /km/year averaged 14.44 (95% CI = 10.88–20.34) birds and 2.56 (95% CI = 0.17–6.54) bats (Table S4). Projected to California's installed 900 km of fencing around solar projects in 2020, these rates predicted annual fatalities of 13,005 (95% CI = 9,802–18,324) birds and 2,304 (95% CI = 156–5,892) bats. I estimated fatalities along fences averaged almost 5% of birds and 20% of bats killed at solar projects.

Along gen-ties, I estimated $\hat{F}$/km/year averaged 113.16 (95% CI = 71.78–198.42) birds and no bats (Table S4). Projected to California's installed 461 km of gen-ties at solar projects in 2020, these rates predicted annual fatalities of 52,162 (95% CI = 33,087–91,463) birds. I estimated fatalities along gen-ties averaged 19% of birds and 0% of bats killed at solar projects.

Projected to the 2019 installed capacity, utility-scale solar PV annually killed more mourning doves (*Zenaida macroura*) than any other species at 17,043, followed by 10,082 horned larks (*Eremophila alpestris*), and 7,628 western meadowlarks (*Sturnella neglecta*), and thousands of other grassland birds (Table S4). The PV panels killed 5,362 American coots (*Fulica americana*), 4,755 soras (*Porzana carolina*) among many other rails, grebes, and waterfowl, and 2,224 burrowing owls (*Athene cunicularia*), 958 American kestrels (*Falco sparverius*), and hundreds of other raptors. They also killed 1,486 common yellowthroats (*Geothlypis trichas*), 1,298 yellow warblers (*Setophaga petechia*), and thousands of additional likely migrants.

Projected to the 2020 installed capacity, utility-scale solar thermal projects annually killed more unidentified small birds than any individual species, at 10,716. Solar thermal killed 8,118 canyon bats and members of ≥8 other bat species (Table S4). It killed likely migrants, including 7,043 yellow-rumped warblers (*Setophaga coronata*), 5,582 yellow warblers, 4,470 Costa's hummingbirds (*Calypte costae*), and thousands of birds of other species. It killed many grassland and desert scrubland birds, including 3,678 white-crowned sparrows (*Zonotrichia leucophrys*), 3,506 American pipits (*Anthus rubescens*), 3,116 western meadowlarks, and 1,498 loggerhead shrikes (*Lanius ludovicianus*).

I estimated that in 2020 fences surrounding solar projects killed 1,783 canyon bats, 1,385 western meadowlarks, 1,174 greater roadrunners (*Geococcyx californianus*), and 476 northern flickers (*Colaptes auratus*; Table S4). Fences also killed an estimated 226 burrowing owls, 172 yellow-headed blackbirds (*Chrysomus icterocephalus*), and 108 northern harriers (*Circus hudsonius*).

I estimated that in 2020 gen-ties of solar projects killed 8,425 Wilson's warblers (*Cardellina pusilla*), 7,144 Brewer's sparrows (*Spizella breweri*), 3,364 common yellowthroats, 2,031 yellow warblers, 899 loggerhead shrikes (*Lanius ludovicianus*), 241 American kestrels, and 195 red-tailed hawks (*Buteo jamaicensis*; Table S4).

Fatalities at operational projects represented ≥8 bat species and ≥192 bird species. Of the 10 species of bats represented by fatalities at solar projects, 3 were California species of special concern. Western Bat Working Group ranked 4 species as high and 2 as moderate conservation priority. Of species of birds represented by fatalities at solar projects, 2 were listed as threatened or endangered under the federal or California Endangered Species Acts. California Fish and Game Code 3503.5 (i.e., birds of prey) protected ≥20 species, and additional statutes protected 8 of these species. Two bird species were California fully protected, and another 36 species were listed as a United States Fish and Wildlife Service bird species of conservation concern or California species of conservation concern, or listed on California's Watch List. Of species listed as California species of special concern, 8 were priority level 3, 9 were priority level 2, and 2 were priority level 1 (2 species were assigned no priority level). Including raptors, 45 special-status species of vertebrate wildlife were documented as fatalities of utility-scaled solar projects, or 23% of all species represented by fatalities.

Additional sources of error and bias

The PV solar projects were searched by foot ($n = 6$) and car ($n = 5$), whereas SCAs at Genesis were searched by car, and power tower projects were searched by foot. Estimated fatalities differed between foot and car searches at PV projects ($t_9 = 2.44$, $P = 0.037$), with respective means of 15.14 $\hat{F}$/MW/year and 5.08 $\hat{F}$/MW/year.

To indicate whether and to what degree wildlife species were represented in fatality monitoring results at solar projects, I fit nonlinear models to the cumulative number of species represented by fatalities with increasing number of months into the study at 5 projects that were monitored more extensively in space and time (Table 4). The monitoring data from Ivanpah served to exemplify not only the asymptotic nature of species representation with monitoring duration, but also the effect of a change in search coverage (Figure 5A). Monitoring effort substantially lessened after 24 months when the monitor terminated fatality searches along the gen-tie and fence and reduced search coverage among heliostat arrays from 24.1% to 8% (0% in the fifth year). Subsequent to the reduced search effort, the increase in number of additional species represented by fatalities was slower than predicted by the pattern in the data through 24 months (Figure 5A). Where fatality monitoring lasted long enough, the pattern in the data revealed how much longer it would have taken at sustained search efforts to achieve asymptotes in species representation by fatalities (Figure 5B). Fatality monitoring at 5 projects was too brief to reveal anything other than a linear increase of species with increasing monitoring duration (Figure 5C). The regression slopes of Blythe and McCoy were nearly identical (Figure 5C). These 2 projects were adjacent to each other, and monitored by the same consulting firm. But even after 2 years of monitoring and documentation of >50 species as fatalities, the pattern of increasing cumulative species represented by fatalities hinted of no imminent arrival to an asymptote. I could not fit a model to the cumulative number of species represented by fatalities with increasing number of months into the study from 4 PV projects. The MW-years sampled among these 4 projects averaged only 11.4% of MW-years at the other 7 PV projects, a significant difference ($F_{1,9} = 22.76$, $P = 0.001$).

Species represented by fatalities were often vulnerable to biased fatality estimates because of misrepresentation. Monitors did not identify nearly 22% of fatalities to species, and identified them instead to coarser levels such as genus, subfamily, small, medium, or large bird, or as unknown bird or bat (Table 5). The coarser the reported level of identification, the more I applied detection probabilities derived from lumped representations of body mass. For example, the degraded carcass of a Pacific-slope flycatcher (*Empidonax difficilis*) found by a weekly

TABLE 4 Best-fit models of cumulative vertebrate species detected as fatalities at California, USA, utility-scale solar projects relative to the number of months since the fatality monitoring began, where model 1 was of the form $Y = a + b \times X$, and model 2 was of the form $Y = \frac{1}{a + b \times c^{log10\,X}}$

Project	Model	Coefficients			r^2	RMSE[a]
		a	*b*	*c*		
California Valley Solar Ranch	2	0.0157	0.4970	0.0490	0.99	51.34
Topaz	2	0.0032	0.2229	0.2548	0.96	266.20
Campo Verde	2	0.0096	0.2435	0.1401	0.97	81.30
Desert Sunlight	1	−2.5714	3.3571		0.96	1.44
Stateline	1	0.8	0.55		0.92	0.67
McCoy	1	3.2029	2.0804		0.96	1.44
Blythe	1	2.0000	2.1700		0.98	1.02
Genesis	2	0.0097	0.2305	0.0017	0.98	311.57
Ivanpah	2	0.0061	0.1762	0.0406	0.99	300.49

[a]RMSE = root mean square error.

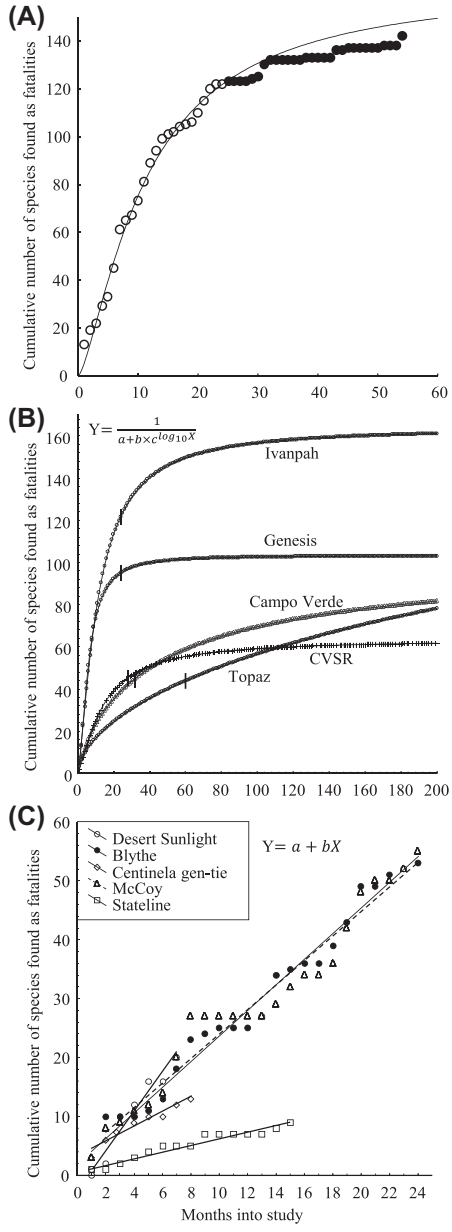

FIGURE 5 Cumulative number of vertebrate species detected as fatalities, California, USA, 2012–2018: A) during the first 2 years of monitoring (open circles) and last 3 years of reduced monitoring effort (filled circles) at the Ivanpah Solar Electric Generating System, San Bernardino County, California, along with best-fit model to the first 2 years of data and projected to the last 3 years of monitoring; B) among solar projects where fatality monitoring lasted long enough to predict an asymptote of species represented by fatalities (vertical bars indicate duration of monitoring used to project the nonlinear pattern in the data); and C) among solar projects where fatality monitoring had not lasted long enough to predict an asymptote, and therefore insufficiently represented species affected. Survey effort largely determined the number of species represented by found fatalities

TABLE 5 Species of wildlife identified as fatalities among California's utility-scale solar energy projects, USA, 1982–2018, and the percentages of estimated fatalities ($\hat{F}$) that could and could not be identified to species

Solar project	Number of species represented by fatalities	Percent of $\hat{F}$/MW/year of F	
		Identified	Not identified
California Valley Solar Ranch	43	96.8	3.2
Topaz Solar Farm	17	95.3	4.7
Campo Verde Solar Project	45	81.4	18.6
Centinela Solar Energy Project	24	53.0	47.0
Imperial Solar Energy Center South	4	100.0	0.0
Calipatria Solar Project	13	77.8	22.2
Midway Solar Farm II	4	76.1	23.9
Desert Sunlight Solar Farm	53	83.3	16.7
Stateline Solar Farm	9	100.0	0.0
McCoy Solar Energy Project	49	79.9	20.1
Blythe Solar Power Project	54	82.6	17.4
Genesis Solar Energy Project	97	81.3	18.7
Solar One	25	71.2	28.8
Ivanpah Solar Electric Generating System	147	72.3	27.7
All projects	200	78.3	21.7

search on open ground might have been reported as a small bird. I assigned $D = 0.197$ to small birds, which was the value predicted for house sparrows–the smallest species placed in small-bird detection trials among solar projects. Had the Pacific-slope flycatcher been accurately identified to species, it would have been adjusted by $D = 0.10$, resulting in twice the estimated fatality rate.

The same bias applies to bats. As one of the most often-found bats among solar projects, canyon bats likely contributed most often to bats found and identified as unknown bat. At wind projects, an unknown bat would typically be adjusted using an overall detection probability quantified from the placements of all bats in carcass detection trials. I therefore used the mean from such trials to represent unknown bats with $D = 0.1008$. Overall detection for canyon bat was $D = 0.0485$. Again, had searchers been able to identify canyon bats to species instead of unknown bats, and assuming most of the unknown bats were canyon bats, each of these bats' contribution to bat fatality estimates would have doubled.

At Centinela, 47% of fatalities were not identified to species (Table 5). Other projects where monitors could not identify many fatalities to species included Solar One and Ivanpah at 28.8% and 27.7%, respectively. Projects where all fatalities were identified to species were surveyed briefly by car, including at Imperial where fatalities of only 4 large-sized bird species were found, and at Stateline where fatalities of only 9 species were detected.

DISCUSSION

I largely achieved my study objectives. Original reports of fatality monitoring did not always provide fatality estimates for project features and whole projects, but of those that did, I compared my independent estimates to theirs. From my estimates of project-level fatalities, I estimated statewide fatalities based on the installed capacity

of utility-scale solar projects in 2020, and I did so per each project feature. An exception was for medium-voltage overhead lines, which deposited bird carcasses too close to PV solar arrays to discern whether the fatalities were caused by collisions with the overhead lines or the PV solar arrays. I compared fatality rates among species of birds and bats, and among those with special status. I also identified sources of error and bias to alert investigators to research directions needed to improve accuracy of fatality estimation.

To achieve my study objectives, I assumed that the fatality data and carcass detection trial data I obtained from natural resource agencies were accurately reported. I assumed that I accurately interpreted reported study methods and descriptions of solar projects. Data inaccuracies or misinterpretation of methods would have diminished the accuracy of my independent fatality estimates. For biases and large sources of error that I understood from previous research on fatality estimation at wind energy projects, I endeavored to mitigate them by applying adjustment factors. For methods I believed were inappropriate, such as searches for fatalities from cars, I examined the data for evidence of bias and for opportunities to mitigate the effects of bias. I also applied a bridge from my study of the effects of variation in body mass on overall carcass detection probability to account for the disparity I found between carcasses placed in detection trials and those found as fatalities at solar projects. My estimates of fatalities at solar projects were as accurate as I could achieve but undoubtedly inaccurate to some unknown degree. Potential for inaccuracy was greatest for the smallest birds and bats. On the whole, I suspect I more often underestimated rather than overestimated fatality rates. My fatality estimates nevertheless indicate the magnitude of impacts caused by utility-scale solar projects in California, and they can serve as a collective starting point for improving methods to increase accuracy of fatality estimates.

I estimated that by 2020 annual fatalities exceeded a quarter million birds and 11,000 bats at California solar projects. My statewide fatality estimates were based on the available, nonrandom pool of monitored projects, which means they were vulnerable to geographic biases of unknown direction. At the same time, the fatality monitoring performed to date has been prone to substantial biases that largely resulted in underestimation of fatalities. Earlier estimates of regional fatalities were much lower than mine. At PV and solar thermal projects in California, Walston et al. (2016) estimated a weighted mean 9.9 bird fatalities/MW/year, whereas I estimated a weighted mean 18.9 bird fatalities/MW/year. At solar PV projects, Kosciuch et al. (2020) estimated 2.49 bird fatalities/MW/year, whereas I estimated a mean 11.6 bird fatalities/MW/year without adding fatalities caused by perimeter fences and gen-ties. The earlier regional estimates used reported estimates without sufficiently accounting for the effect of body mass on carcass detection probability. They also relied on project-level estimates exclusive of the many species represented by $F < 5$, and because many of these excluded species were small-bodied, under-estimation of $\hat{F}$ had been exacerbated. For these reasons, my fatality estimates were larger, but other biases indicate fatality estimates could be even larger. As examples, the monitors' use of cars for fatality searches and insufficient survey effort both appear to have negatively biased $\hat{F}$. Omitting the 7 fatality monitoring studies that were either based on car surveys or cursory effort, the weighted mean increases 1.25-fold from 11.605 to 14.51 bird fatalities/MW/year among PV projects.

Background mortality (i.e., mortality caused by natural processes) was often suggested as the source of fatalities for which cause of death could not be assigned (Kosciuch et al. 2020), but no reports raised the possibility of crippling bias, the rate of mortally injured animals leaving the search area undetected (Smallwood 2007). Some unknown number of animals mortally injured by exposure to the zone of solar flux, electrocution, or collision likely died, undiscovered, far from study areas. The very background mortality studies discussed by Kosciuch et al. (2020) and reported in (2013) and Althouse and Meade (2012, 2014) likely counted fatalities representative of both crippling bias and background mortality because the background mortality monitoring plots were adjacent to the solar energy projects. These studies could have lessened confounding had they begun monitoring ≥1 year in advance of project construction, and had they located study plots farther from the project to minimize counting of remains of birds that had been displaced by construction and rendered more vulnerable to predation and competition.

Estimates of solar energy's impacts could be more complete by monitoring for fatalities along transmission lines constructed to accommodate the projects. Transmission lines kill many birds, mostly from collisions but also electrocutions. Loss et al. (2014) estimated 29.6 bird collision fatalities/km/year (95% CI = 9.3–66.4) in the United States based on a mix of studies with and without adjustment by ρ. Rioux et al. (2013) estimated 110.4 bird collision fatalities/km/year (95% CI = 43.5–177.2) across Canada after adjusting by ρ. Avian fatality rates along transmission lines have been rarely studied in California. The only study of which I was aware was at Mare Island in Solano County (Hartman et al. 1992). Weighted mean fatality rates along gen-ties servicing solar projects (Table S4) could serve to estimate annual fatality rates along transmission lines that deliver power from solar projects, so long as one knows the length of transmission lines that do so.

Impacts of habitat loss

Estimates of solar energy's impacts could be more complete by also measuring numerical losses of wildlife populations caused by habitat loss. Project sites should be studied prior to construction to estimate densities in breeding and non-breeding seasons, and to measure migratory activity levels, which based on isotopes in feathers collected from dead birds found at solar projects, appears high (Conkling et al. 2020). Wildlife use of the site could be compared before and after project construction and concurrent with studies of wildlife at reference sites.

By 2020 the installed capacity of solar energy projects covered 39,409 ha in California, including 25,453 ha (64.6%) in the Mojave and Sonoran deserts. Construction grading for these projects removed all native vegetation, which continued to be suppressed through project operations. Utility-scale solar projects destroyed habitats of many wildlife species by eliminating breeding sites and forage. No studies were performed to estimate breeding and nonbreeding densities in advance of construction grading at any of the projects I reviewed. No efforts were made to estimate potential reductions in reproductive and numerical capacities of wildlife species.

Estimates of total bird nesting density are available, along with species-specific density estimates, for indicator-level analysis of impacts. Bird nesting densities of 13.27 and 14.19 nest sites/ha were estimated at study sites composed of grassland, wetland, and woodland (Young 1948, Yahner 1982). Assuming 6.94 nest sites/ha, or half the average of Young's (1948) and Yahner's (1982) densities, would more realistically represent California's annual grasslands, this density multiplied against California's 12,414 ha of utility-scale solar in non-desert environments would predict a loss of 86,153 bird nest sites.

Franzeb (1978) provided a basis for applying bird breeding density to areas lost to solar projects in California's deserts. Franzeb (1978) estimated 0.366 breeding birds/ha at a Sonoran Desert site. Projected to 25,453 ha of California's desert environments, this density would estimate 9,316 breeding birds, or 4,658 nest sites, were lost to construction grading for solar projects. Added to the estimate above for non-desert environments, I estimate that California solar projects displaced 90,811 bird nests by 2020. Assuming 25 years of operational impacts, and assuming an average fledging of 2.9 birds/nest/year (Young 1948) and a generation time of 5 years, the lost capacity of breeders and annual chick production would be 7,491,908 birds: {[nests/year × chicks/nest × number of years] + [2 adults/nest × nests/year × (number of years ÷ years/generation)]}. Averaged over 25 years of project operations, this indicator-level approach would estimate an annual loss of 299,676 birds due to habitat destruction to accommodate California's 2020 installed capacity of utility-scale solar.

Burrowing owls, in particular, face significant impacts from habitat loss caused by development of utility-scale solar. Burrowing owls happen to select terrain conditions for breeding and foraging that are also sought by developers of solar projects: flat to gentle southwest- or south-facing slopes. In the 1990s, an estimated 71% of California's entire burrowing owl population resided within the Imperial Valley, after the species had declined throughout the rest of its range in California (DeSante et al. 2007). The average density of breeding attempts was 8.13/km^2 (0.081/ha). With 1,488.5 MW of solar PV installed in Imperial County as of 2019, and with an average 2.67 ha/MW, utility-scale solar in Imperial County destroyed 3,974.3 ha of burrowing owl habitat. Assuming the

estimate of burrowing owl breeding density from DeSante et al. (2007) still applies, I estimate this level of habitat loss reduced the capacity for breeding attempts by 322 and the number of breeding adults by ≥644. Assuming an average generation time of 8 years and an average 3 chicks produced/breeding attempt, the equation in the preceding paragraph would estimate an annual loss of 1,073 burrowing owls due to habitat loss.

Another form of habitat loss, or habitat degradation, was project-generated wildfires. In June 2019, a bird landed on a power pole at CVSR, sparking a 486-ha fire that removed 84% of the project's generating capacity. The fire reportedly did not damage solar panels, but it likely destroyed many bird nests on the grasslands that were burned next to the project.

Combined impacts to birds from collision mortality and habitat loss

Assuming utility-scale solar projects eliminate breeding habitat within the project footprint, then post-construction collision mortality is largely to migrants or residents of adjacent habitat. If true, then I estimated the installed capacity of utility-scale solar in 2020 removes from California >500,000 birds/year because of combined effects of collision mortality and loss of birds to habitat destruction. Over 25 years of operations of this installed capacity, I estimated California's loss of birds will be >12.5 million. I estimated just over half of this mortality was attributable to habitat destruction (53%), and the rest to operative solar energy projects, but source-specific magnitudes of impacts likely would vary interspecifically.

For burrowing owls in particular, the estimated mean 0.182 collision fatalities/MW/year at solar PV projects applied to 1,488.5 MW of solar PV installed in Imperial County as of 2019 would estimate 271 burrowing owl fatalities/year in Imperial County, where most of California's burrowing owls live. Combined with the estimated impact of habitat loss, I estimate utility-scale solar in Imperial County removed 1,344 burrowing owls annually as of 2020. With an estimated 5,600 burrowing owls in the Imperial Valley in the 1990s, my estimated loss could prove devastating for burrowing owls in Imperial Valley.

Avian mortality at utility-scale solar projects might contribute cumulatively to an ongoing substantial decline of birds in North America (Rosenberg et al. 2019). Bat mortality at solar projects contribute cumulatively to increasingly large nationwide impacts to bats caused by wind turbines (Smallwood 2020). That many of the birds and bats killed at solar projects were special-status species should heighten concern over the ecological and economic impacts of solar energy-caused mortality. A suite of errors and biases suppress understanding of the ecological impacts of solar projects and how to mitigate them.

Additional sources of error and bias in collision fatality estimates

Fatality monitoring efforts not only varied greatly among solar projects, but they introduced biases that resulted in inaccurate fatality estimates. Monitoring that lasted <1 year or covered small portions of a project likely generated incomplete lists of affected species and hence inaccurate fatality estimates. Searches of PV projects by car yielded a third of the fatality estimates of searches of PV projects by foot. No studies performed car surveys simultaneously with pedestrian surveys. Perhaps the most substantial bias was the use of carcasses in detection trials that were larger than many of the birds and bats found as fatalities. I endeavored to offset this latter bias, whereas I identified most others as likely. I also identified additional sources of error and bias that cannot be quantified without further effort on the parts of monitors going forward.

Monitors recorded fatalities of nonvolant wildlife at only 1 project. Either nonvolant animals died only at the 1 project or monitors ignored them at other projects. In another example of potential bias, monitors removed all fatality finds to prevent double counting of fatalities. If this practice altered forage availability and hence scavenger removal rates of carcasses placed in detection trials, then bias was possible. Omissions of fatalities found

incidentally to routine searches introduced potential bias when those discoveries occurred on search plots. Also, where monitors searched daily for 5 to 7 consecutive days at beginning of monthly intervals, difficult decisions were necessary over how to treat fatalities found on the first day of each daily search sequence. Another potential bias was the practice of placing feather piles in bird carcass detection trials because doing so increased carcass persistence by offering scavengers inedible body parts that normally would not occur without flesh and bone upon a bird's death.

Monitors could not identify a fifth of all fatalities to species, which means they likely misidentified fatalities such as Allen's hummingbird (*Selasphorus sasin*) and rufous hummingbird (*Selasphorus rufus*). Such errors affect 2 species at once, the species inaccurately assigned the fatality and the species inaccurately denied it. Factors that diminish one's ability to identify fatalities to species include inexperience, insufficient motivation to examine remains carefully enough to identify them, and too much time between fatality searches. As search interval lengthens, more carcasses degrade to the point of becoming less recognizable to species. A related factor is lower detection probabilities of certain search methods. Human searchers miss more carcasses than do scent-detection dogs (Smallwood et al. 2020), and judging from the 3-fold difference in fatality rates between car and pedestrian surveys, searchers in cars likely miss more carcasses than do searchers on foot. Missed carcasses can later be found, but the delay in detection allows carcasses to be scavenged and decay, thereby increasing the likelihood they will not be identified to species. Species identification errors could not be fully quantified without viewing photographic evidence or preserved remains of all fatality finds. Such evidence was not forthcoming in responses to PRA and FOIA requests to state and federal agencies.

Mitigation measures and recommendations

Other than measures implemented to minimize hazards along powerlines, little testing was performed of candidate mitigation measures to minimize or reduce collision fatalities with solar collectors. Nearly all projects implemented mitigation measures to minimize bird collision mortality with gen-ties and medium-voltage overhead lines, and 1 implemented a measure to minimize avian collisions with solar PV panels (Dudek 2018*b*). At CVSR, for example, the gen-tie and medium-voltage overhead lines were fitted with Swan-flight Diverters SFD1520 during fatality monitoring (H. T. Harvey & Associates 2013). An ultrasonic acoustic deterrent was also implemented at Ivanpah's Unit 1 on 10 September 2014 and on 23 April 2015 at both Units 2 and 3 to reduce bat exposure to the zone of solar flux. The deterrent, however, was installed without experimental design elements that would have supported a conclusive hypothesis test of whether the deterrent reduced fatalities. Although bat fatalities declined throughout the study (Figure 4), the largest declines preceded installations of deterrents, which left the possibility that bat numbers were initially depleted by project-caused mortality. Although guidance had been prepared on how to perform experiments to test mitigation efficacy (Sinclair and DeGeorge 2016), none of the mitigation measures were implemented along with sufficient experimental design to convincingly test the measure's efficacy.

Considering the objectives of fatality monitoring and mitigation measures implemented at utility-scale solar projects, and considering what needs to be known of solar energy impacts to wildlife, I recommend the following changes and additions to wildlife studies: 1) perform baseline studies beginning ≥1 year prior to project construction to quantify relative abundance, densities in both breeding and nonbreeding seasons, and behavior patterns of resident and migratory wildlife species; 2) repeat fatality monitoring at projects where it was performed inadequately; 3) either monitor all new utility-scale solar projects for fatalities, or sample projects from the available pool of projects to obtain region-wide fatality estimates; 4) improve scientific access, transparency, and data sharing; 5) introduce peer review as a required standard of report preparation; 6) increase methodological standardization where it is most needed; 7) minimize fatality search intervals or use scent-detection dogs (Paula et al. 2011, Mathews et al. 2013, Smallwood et al. 2020); 8) treat incidental fatality finds just like those found in scheduled searches, so long as they were located on sampling plots; 9) whenever trying a new search method,

compare it to the conventional method through concurrent implementation of methods on, minimally, a suitable subsample of the search area; 10) integrate carcass detection trials into routine fatality monitoring, using appropriate species to quantify overall detection probability (Smallwood et al. 2018); 11) quantify and report observer error rates associated with monitoring, such as carcass detection rates and species misidentifications; 12) report species-specific use rates and fatality rates in addition to use rates and fatality rates of all birds and all bats; and 13) implement tenets of experimental design to test hypothesized causal factors and the efficacy of mitigation measures (Sinclair and DeGeorge 2016, Smallwood and Bell 2020*a*).

Based on the impacts I quantified in this review, my first recommendation on performing baseline studies is of high priority. The reports I reviewed were overly focused on collision mortality and paid no attention to impacts of habitat loss. Whereas collision mortality is substantial, more animals are lost to habitat destruction caused by the development of utility-scale solar projects. Resource agencies and permitting authorities need to view the impacts and how to mitigate them more comprehensively. I suggest directing 2 to 3 times more effort into measuring and mitigating habitat impacts than collision impacts. I suggest implementing macro-siting strategies, and I note that I saw amid the data and reports I received via PRA and FOIA requests no evidence of siting to minimize impacts to wildlife. One strategy would be to site projects to avoid migration clusters or locations where rare or declining populations of particular species occur (Ruegg et al. 2020). Another would be to site projects to minimize collision mortality of all birds and bats, and yet another would be to site to minimize loss of breeding sites.

I suggest the formulation of a research fund to assess impacts of habitat loss, explore methodological improvements to more accurately predict and estimate impacts, quantify the effects of causal factors, and test the efficacy of mitigation measures. An example of research that would vastly improve understanding of causal factors of collision mortality would be surveys performed by behavioral ecologists. As in wind energy projects, the most effective means to learn of the circumstances of fatalities is to study animal behavior in the context of the project specific to birds (Hoover and Morrison 2005, Smallwood et al. 2009*a*,*b*; Hull and Muir 2013) and bats (Horn et al. 2008, Cryan et al. 2014). In my experience, careful observation of living animals can determine collision factors more effectively than can collections of dead animals (Smallwood et al. 2017, Smallwood 2017*b*, Smallwood and Bell 2020*a*,*b*). Lastly, I suggest follow-up measures to reduce and compensate for impacts revealed by monitoring.

MANAGEMENT IMPLICATIONS

In light of the magnitudes of solar energy impacts to wildlife, it would be prudent to slow the development of utility-scale solar projects long enough to formulate more accurate impacts assessments and more effective project decision-making, mitigation, and oversight. More than sufficient capacities exist for distributed generation and energy conservation to compensate for the time needed to develop policies and methods for safer development of utility-scale solar energy. Time is needed to develop decision-making frameworks that compare costs and benefits of solar technology, such as solar thermal versus PV, and alternative project locations. Time is needed to improve fatality monitoring and measurement of impacts, including routine implementation of baseline studies. Time is also needed to develop a more transparent oversight process, along with consequences for exceedance of mortality thresholds or for failing to meet standards of baseline studies and fatality monitoring.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data available in article supplementary material and in cited reports. Cited reports of fatality monitoring are also available from the author on request.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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Automotive LOGISTICS GLOBAL SHANGHAI

Electric car carriers promise to pack a punch

By Namrita Chow | 28 March 2022

Austrian trailer manufacturer Kässbohrer is developing a battery-powered car transporter with Swiss engineering firm Designwerk Technologies that promises to make vehicle deliveries by road a cleaner thing altogether. Namrita Chow talks to Tobias Wülser and Dr Markus Guggenbichler

Automakers are under pressure to show their supply chains are as close to carbon neutral as possible. The transport of their brand new, fully built vehicles is now the subject of scrutiny.

Those logistics providers with facilities to help OEMs further offset their carbon footprints will gain traction in an industry embracing the transition to greener alternatives.

In Europe, the pressure is acute, as EU mandates call for a ban to fossil fuel heavy vehicles as soon as 2040. Those weighing under 26 tonnes are expected to meet the carbon-neutral mandate as early as 2035 in specific markets.

In a special spotlight interview, *Automotive Logistics* talked exclusively with German equipment manufacturer Kässbohrer Transport Technik and Designwerk Products, the companies behind a customised electric car carrier built in collaboration with Swiss finished vehicle logistics player, Galliker Transport.

The truck is the first fully electrified, full-size car transporter and is based on a Futuricum e-truck. Futuricum is a division of Designwerk that makes electric trucks, mobile rapid chargers, and modular battery systems for electric vehicles. The company says that electric trucks will be an important to the future of mid and long-distance road transport.

Designwerk, the mother company of Futuricum, is currently working on megawatt battery, buffered charging solutions with high-speed charging especially for e-trucks like the Kässbohrer car transporter.

Dr Markus Guggenbichler, head of sales and product development at Kässbohrer, and Tobias Wülser, founder at Designwerk Products, talk to Namrita Chow about the sustainable contribution the technology promises for the industry and whether this pilot is the gamechanger heralding the future of electric transporters for the finished vehicle logistics sector.

Truck and battery capacity

Namrita Chow: This electric full-size car transporter, which includes electric mechanisms for the loading and unloading of passenger cars, is now in use. Could you tell us a bit about its capacity? What is the total permissible load and how many cars is it able to carry?

Dr Markus Guggenbichler: With this first electric articulated vehicle transporter we can load eight cars. The loading possibilities correspond to a conventional car transporter, with the exception that the height above the driver's cab and at the first loading position behind the cab is somewhat limited due to the vehicle height.

To design the world's first electric car transporter not in the laboratory but for normal logistics use was a key objective from the outset, and we have succeeded in doing so, with zero emissions and maximal loading capabilities for cars.

The electrified car transporter has a battery capacity of 900 kWh and 500kW (680HP) drive power. The storage capacity of the electric truck consists of four 225kWh lithium-ion batteries. In comparison, an average electric passenger car has a capacity of 40 to 60kWh net energy content.

Designwerk founders Frank Loacker (left) and Tobias Wülser

Could you explain a little bit about the battery powering this electric car carrier? Is this such that the overall range is increased?

Tobias Wülser: The cumulative battery capacity increases the total range of the truck. The four Designwerk batteries systems sum up to a total installed battery capacity of 869.6kWh and a total range of approximately 500km with a full load.

Dr Markus Guggenbichler: The batteries work together in one pack. They can be recharged at all standard charging stations. Usually, 150 KW charging stations are already available today. With these high capacities, however, Designwerk offers coordinated charging options up to 350kW. This means that rapid recharging – 80% of capacity in less than two hours – is possible with this electric car transporter.

Why did you create such a large capacity battery?

Tobias Wülser: The answer is simple. We developed the 900kWh Futuricum e-trucks because no one else can do that right now. We are frontrunners in the field of electromobility for commercial vehicles.

We own the segments of niche e-trucks for special applications. These are electric trucks no OEM offers [and include] special electric vehicles with four or five axles, e-trucks with 900kWh battery systems for long-range and heavy-duty transport, or vehicles with additional auxiliary drives, which we electrify as

The four Designwerk batteries systems sum up to a total installed battery capacity of 869.6kWh and a total range of approximately 500km with a full load

Why this level of power is preferable for a car carrier?

Tobias Wülser: *Our goal was to drive with an electric motor drivetrain that does not need to be shifted into different gears. This allows top speeds on motorways of 86 km/h and gradients of 18%. The gearbox is a complete in-house development by Designwerk.*

My understanding is that the total weight of the four battery packs is about 5,440kg. Does this extra weight affect the range of the truck?

Tobias Wülser: The vehicle's weight plays a role in terms of rolling resistance. The far greater impact on such an electric truck is the air resistance.

From where are these battery modules sourced?

Tobias Wülser: In this arrangement we have resorted to a high-performance cell from the Asian region, which offers us better performance compared to price and weight.

Charging infrastructure

Are charging points exclusively located at the company depot? What type of charger is this and how long does it take to charge 100%?

Dr Markus Guggenbichler, head of sales and product development at Kässbohrer

Dr Markus Guggenbichler: We can charge the vehicles during the set-up with the usual high-voltage network. There is a public charging station in the immediate vicinity. The vehicle has a CCS [combined charging system] Type 2 charging connection, so it can be charged at an external DC charging station or with AC Type 2.

Tobias Wülser: Depending on the local infrastructure the Futuricum electric truck is equipped to be charged at different speeds. With a 150kW CCS charger it will take approximately 4.1 hours up to 80% state of charge. With a 350kW CCS charger you can reduce the charging duration to 1.7 hours for an 80% state of charge. The Designwerk battery systems built in this truck are set up to charge up to 80% state of charge to prolong the battery life.

What about charging en route*? Does the electric car carrier have to travel on predestined routes? Have you worked with local authorities to plan routes with the required charging facilities installed?*

Dr Markus Guggenbichler: The deployment and route planning was carried out by the customer. In particular, the customer's own existing infrastructure was taken into account.

Public charging points usually represent a possible back-up scenario.

r application

What are Kässbohrer's plans for moving from pilot project stage to roll out of more such vehicles?

Dr Markus Guggenbichler: Based on the experience of the pilot projects to date, we would like to provide standardised body configurations suitable for battery-electric trucks for different key applications, such as shuttle transport or vehicle distribution, which can be assembled from a modular system. This should be possible in the near future. Just as Kässbohrer developed the first (fuel) car transporter almost a century ago, we are sure that, together with our partners, we will also be able to make important contributions to the zero-emission future of the industry.

What specific considerations did you have to make in building the transporter for Galliker Transport?

Tobias Wülser: With this project, our company wanted to move up into the champions' league of vehicle construction. On the one hand, we are the first to have tackled the problem of long ranges for car transporters. In addition, there were the battery positions as well as the axle loads and, of course, the length extensions of +1 metre.

Regulation driving change

The EU is pushing hard for our transport industry to become carbon neutral by 2050. The latest update to Regulation 2019/1242 for emissions from heavy-duty vehicles is due out in Q4 2022. Do you see these regulations as a major incentive to electrify the fleet at Kässbohrer?

Dr Markus Guggenbichler: Inspired by these legal objectives, we currently see a strong interest in projects where the battery-electric truck is to be tested in various specific uses. However, with the current costs of electrification, economic efficiency calculations naturally play a role, not only in these projects.

Each member state of the EU has a host of incentives to encourage the switch to zero and low-emission, heavy-duty vehicles. How do these incentives apply to you and your customers?

Dr Markus Guggenbichler: National funding opportunities are important for pilot projects, of course. However, these subsidies are handled by the customers and operators in each case, with their national authorities, and must also be applied for by the transport companies.

What does the production and trial of this transporter promise for the those tasked with delivering finished vehicles in more sustainable ways on the road?

Wülser: With the completion of this electric car transporter, we are making a clear statement. passenger vehicles can now be delivered to dealerships with zero emissions. Making a further

contribution towards sustainable mobility is important to both automotive manufacturers and us.

We are also developing a battery-backed DC charger. With the Designwerk MBDC-18-21 you can charge trucks, buses, ships and aircraft in record time. Its high-charging power and low operating costs make it ideal for use in fleet operations, the commercial vehicle industry, by vehicle manufacturers, in test centres or during events.

Dr Markus Guggenbichler: It is not measured in kilowatts but what is also crucial for the success of innovation in the traditional vehicle industry is entrepreneurship. Private-sector initiatives and visions o fthe future, such as we have developed in our joint project [here] is about tackling the future, in the truest sense of the word!

(Development team l to r): Roland Schantel, Kässbohrer; Tobias Wülser, founder Designwerk; Felix Felder, fleet manager, Galliker; Dr Markus Guggenbichler, head of sales and product development Kässbohrer; Horst Foessl, head of engineering, Kässbohrer; Günther Percht, CEO of Kässbohrer

Oxnard Planning Commission Agenda October 20, 2022

Item F. 1. Public Hearing Port of Hueneme Outdoor Vehicle Storage Facility

Comments: FEIR and Special Use Permit

Submitted by Shirley Godwin godwinc@earthlink.net

The EIR consultants have minimized the impacts of locating this facility at this particular location. While Hueneme Road is not designated a State or City scenic highway, it is designated as part of the Coastal Scenic Drive which extends from PCH (HWY1) along Hueneme Road, continuing through the City of Port Hueneme and heading north. It is also the Coastal Bikeway Route. Signs are posted along the way. Therefore, if the landscaping, chain link fencing and cloth wrapping are not maintained, this site will become a visual blight.

The consultants state that it will be maintained because the Special Use Permit requires that the site meet Oxnard's 1986 landscape maintenance requirements or legal action will be taken. Unfortunately, the City has found this difficult. For example, the City has been unable to get the private property owner of the Halaco plant site on Perkins Road to even clean up the perimeter of the property.

I'm including 4 photos that I took as examples of chain link fencing in Oxnard with weeds and torn cloth wrap or slats: the busy intersection at the NW corner of Saviers Road and Pleasant Valley and two properties on Arcturas Ave. used by customers of the Port of Hueneme. These properties have remained in this blighted condition for about 10 years.

Another issue with using this 34 acre site for vehicle storage is the proximity to the Ormond Wetlands Preserve. The project description states that the land to the south of the proposed project is "vacant." That property is owned by The Nature Conservancy and part of the Ormond Restoration area with restoration planning by The Nature Conservancy, the State Coastal Conservancy and the City of Oxnard as partners. TNC gives educational tours of their property and plans call for nature trails, signage and public access.

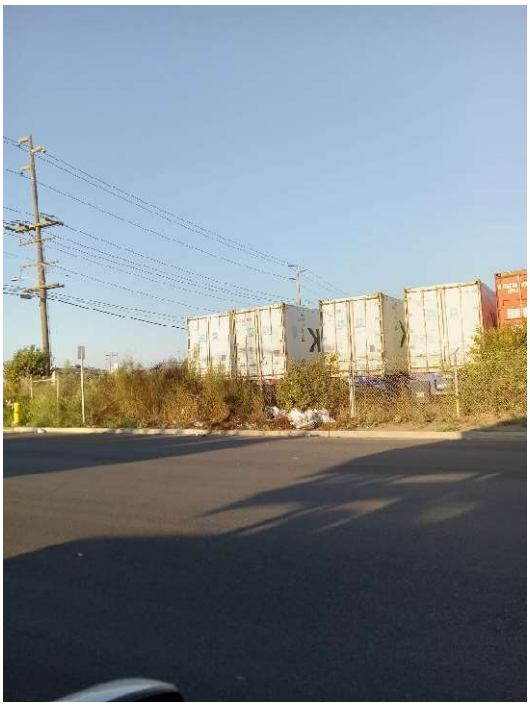
NW corner of Saviers Road and Pleasant Valley Road

OCTOBER 16, 2022

OCTOBER 16, 2022

OCTOBER 16, 2022

6001 Arcturas Ave.



OCTOBER 16, 20

5980 Arcturas Ave.

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Elliott MacDougall
Pat McElroy
Ivette Peralta
Peter Schuyler

Sigrid Wright *CEO*

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Paul Relis
Selma Rubin, *in memoriam*

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Sally Terrell
Michelle Weinman
Deborah Williams

October 20, 2022

Re: Public Hearing: Port of Hueneme - Temporary Outdoor Vehicle Storage Facility

Dear Oxnard Planning Commissioners,

The Community Environmental Council (CEC), founded in 1970, has worked for over 50 years to pioneer environmental solutions in California. For the last 15 years we have focused on building on-the-ground momentum to reverse the threat of the climate crisis, working most closely in Ventura, Santa Barbara, and San Luis Obispo counties. Our programs work across energy, transportation, and buildings to mitigate carbon emissions, sequester carbon in natural and working lands, and build equitable climate resilient communities.

CEC has reviewed the Final EIR and the staff recommendation to proceed with the Temporary Outdoor Vehicle Storage Facility; however, **CEC urges the Oxnard Planning Commission to reject the FEIR and to vote NO on the proposed expansion of the Port.**

CEC has collaborated on several projects and initiatives in Oxnard and the broader Ventura County region to advance building electrification, plan for and scale EV adoption, and build out EV charging infrastructure. CEC has supported, and commends, the City on its decision to join the Clean Power Alliance, draft a strong Climate Adaptation Plan, and conduct a Sustainable Transportation Plan. Additionally, CEC has worked closely with the Port of Hueneme for years to support and collaborate on their electrification efforts from supporting the installation of EV charging stations on site, to assessing the feasibility of electrifying the goods movement vehicles that work with the Port. Our mission is to accelerate these and other efforts community wide. However, our intention is to ensure that this work is done equitably, in a way that builds community resilience and does not reinforce existing systemic inequities.

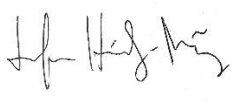
The communities of South Oxnard have long been burdened with the impacts of an industrialized coastline. They have fought to ensure that their families and neighbors no longer have to live in sacrifice zones, where their health and well-being are considered a necessary trade off in the name of economic progress.

CEC cannot support expansion of the Port in the absence of a strong target for electrification, stronger workforce opportunities and protections for jobs that would be created, and a full analysis of the potential near- and long-term pollution impacts from increased trucking and car trips on already impacted region.

We urge the Planning Commission to affirm the agency of the people of South Oxnard to take an active role in shaping the resilient future that is right for their particular community - even if that choice might seem at odds with the system they are operating in. We urge the Planning Commission to fully consider the impacts of increased diesel trucking in the neighborhoods surrounding the proposed project area. We urge the Planning Commission to consider the options that community members and CBOs in the region have uplifted as alternatives to the current proposal.

We thank you for the opportunity to comment on this project.

Respectfully,



Jennifer Hernandez
Climate Justice Manager
Community Environmental Council

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'alicia gallegos' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 5:57 PM
Reply-To: alicia gallegos <alizyjosh@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Alicia Gallegos

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Kimberly Rice <ricekimmy@gmail.com> Wed, Oct 19, 2022 at 6:18 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Kimberly Rice

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Eva Reynoso <evareynoso21@gmail.com> Wed, Oct 19, 2022 at 6:52 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners, I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods. It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage. The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community. The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime. Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks. This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely, Eva Reynoso

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Aylin Fernandez <afernandez18@oxnardunion.org> Wed, Oct 19, 2022 at 6:53 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Aylin Fernandez

This is a student email account managed by Oxnard Union High School District. The contents of this email are governed by the laws of the state and the board policies of the school district.

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Zaide Pasion <zaidepasion@gmail.com> Wed, Oct 19, 2022 at 7:00 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Tara Robinson <tararob@att.net> Wed, Oct 19, 2022 at 7:05 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Aracely Marin <aracelymarin1114@gmail.com> Wed, Oct 19, 2022 at 7:05 PM
To: planning@oxnard.org

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Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Zac Sherar <zsherar@gmail.com> Wed, Oct 19, 2022 at 7:05 PM
To: planning@oxnard.org

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Trinity Tran <talatrinity@gmail.com> Wed, Oct 19, 2022 at 7:06 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Amanda Immer <amandaimmer@gmail.com> Wed, Oct 19, 2022 at 7:06 PM
To: planning@oxnard.org

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Amanda I.

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Hattie Ellison <hattie.ellison.10@gmail.com> Wed, Oct 19, 2022 at 7:06 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Jorge Palafox <jorge_palafox@ucsb.edu> Wed, Oct 19, 2022 at 7:06 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Andie McNeil <aemcneil04@gmail.com> Wed, Oct 19, 2022 at 7:06 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Andie McNeil

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Subject: 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Vanessa Makhlouf <venemak2003@gmail.com> Wed, Oct 19, 2022 at 7:07 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

rodega@umail.ucsb.edu <rodega@umail.ucsb.edu> Wed, Oct 19, 2022 at 7:08 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Robin Odega

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

George Pineda Jr. <georgepineda5000@gmail.com> Wed, Oct 19, 2022 at 7:17 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Evelyn Mendez' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 7:25 PM
Reply-To: Evelyn Mendez <xah.evelyn11@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Evelyn Xahuentitla

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Anastatia ortiz <aortiz48@oxnardunion.org> Wed, Oct 19, 2022 at 7:29 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Anastatia Ortiz

This is a student email account managed by Oxnard Union High School District. The contents of this email are governed by the laws of the state and the board policies of the school district.

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Julissa Lopez' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 8:04 PM
Reply-To: Julissa Lopez <julissal12@icloud.com>
To: planning@oxnard.org

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Julissa Lopez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Subject: 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Alex Masci <alexmasci22@gmail.com> Wed, Oct 19, 2022 at 8:23 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Alex Masci

--

Alex Masci
(she/her/hers)
alexmasci22@gmail.com
805.886.0559

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Selina Magallon' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 8:46 PM
Reply-To: Selina Magallon <Seli_2720@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Natalie Chaparro <natalie.celeste99@gmail.com> Wed, Oct 19, 2022 at 11:22 PM
To: planning@oxnard.org

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Natalie Chaparro

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Monse Santoyo <monserrat.santoyo12@gmail.com> Wed, Oct 19, 2022 at 11:23 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Monserrat Santoyo

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Jada Escamilla <jadaescamilla16@gmail.com> Wed, Oct 19, 2022 at 11:44 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Jada Escamilla

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Bryna Sullivan' via Planning <planning@oxnard.org> Wed, Oct 19, 2022 at 11:56 PM
Reply-To: Bryna Sullivan <sullivanbryna@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Bryna S.

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Dani Espindola <daniespindola587@gmail.com> Thu, Oct 20, 2022 at 12:12 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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environmental justice!

Sincerely,

Daniella Espindola

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

王 宇迪 <Muriel_didi@outlook.com> Thu, Oct 20, 2022 at 12:39 AM
To: "planning@oxnard.org" <planning@oxnard.org>

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

王 宇迪 <Muriel_didi@outlook.com> Thu, Oct 20, 2022 at 12:39 AM
To: "planning@oxnard.org" <planning@oxnard.org>

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Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

2 messages

'Alexis Lopez' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 5:45 AM
Reply-To: Alexis Lopez <alexisl135@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Sent from my iPhone

'Alyssa Ramirez' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 6:59 AM
Reply-To: Alyssa Ramirez <alyssa.ramirez00@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Alyssa Ramirez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Katya Acuña <katya_acuna@hotmail.com> Thu, Oct 20, 2022 at 7:28 AM
To: "planning@oxnard.org" <planning@oxnard.org>

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Katya Acuña

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Daniel O.' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 7:57 AM
Reply-To: "Daniel O." <qinectar@pm.me>
To: "planning@oxnard.org" <planning@oxnard.org>

Dear Oxnard Planning Commissioners,

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Daniel O

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Mariam Gendi <basantgendi123@gmail.com> Thu, Oct 20, 2022 at 8:35 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Today's Public Hearing - Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Rachel Kim <sueyonie@gmail.com> Thu, Oct 20, 2022 at 8:49 AM
To: planning@oxnard.org

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit. Oxnard deserves clean air and environmental justice!

Sincerely,
Rachel

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Bella Abbatoye' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 8:56 AM
Reply-To: Bella Abbatoye <bellaabbatoye@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Bella Abbatoye

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Sara Reynoso' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 9:04 AM
Reply-To: Sara Reynoso <sarareynoso1014@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Sara Reynoso

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Leila Benoun <lbenoun000@gmail.com> Thu, Oct 20, 2022 at 9:08 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Leila Kaseke
Ventura County Resident

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Elisabeth Lamar <kissmyblog@gmail.com> Thu, Oct 20, 2022 at 9:08 AM
To: planning@oxnard.org

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Lisa Nguyen <lisa.marie.nguy3n@gmail.com> Thu, Oct 20, 2022 at 9:21 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Lisa Marie Nguyen

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Cristian Rodriguez' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 9:47 AM
Reply-To: Cristian Rodriguez <c7rodrig@ucsd.edu>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Cristian Rodriguez

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Jillian Hall <jillian.hall520@gmail.com> Thu, Oct 20, 2022 at 9:54 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

David Camacho <david.camacho11115@gmail.com> Thu, Oct 20, 2022 at 10:04 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Adriana <adriana.bracamontes217@gmail.com> Thu, Oct 20, 2022 at 10:27 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Adriana Bracamontes

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Lisette Espinosa <lespinosa15@students.claremontmckenna.edu> Thu, Oct 20, 2022 at 11:08 AM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city. The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Lisette Espinosa

--
Lisette Espinosa
Claremont Mckenna College | Class of 2015
805 - 890 - 6067

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Zuleth Lucero' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 11:16 AM
Reply-To: Zuleth Lucero <zlucero@mail.fresnostate.edu>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

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This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Zuleth Lucero

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Eliah Tumalan' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 11:36 AM
Reply-To: Eliah Tumalan <etumalan@ucsc.edu>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Eliah Tumalan

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Yari Jimenez <loveyari4562@gmail.com> Thu, Oct 20, 2022 at 12:16 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Yaritza

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Rafael Ceja' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 12:19 PM
Reply-To: Rafael Ceja <rafaelceja777@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Rafael ceja

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

3 messages

'Rafael Ceja' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 12:19 PM
Reply-To: Rafael Ceja <rafaelceja777@yahoo.com>
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Sincerely,
Rafael ceja

Sent from my iPhone

'Bertha Guzman' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 1:29 PM
Reply-To: Bertha Guzman <bertha.guzman02@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

Sent from my iPhone

'Bertha Guzman' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 1:29 PM
Reply-To: Bertha Guzman <bertha.guzman02@icloud.com>
To: planning@oxnard.org

[Quoted text hidden]

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

s_t_g@umail.ucsb.edu <s_t_g@umail.ucsb.edu> Thu, Oct 20, 2022 at 1:31 PM
To: planning@oxnard.org, Sofi@causenow.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,

S. Tara Grover

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Kathryn Masci <Kathryn@masciandmasci.com> Thu, Oct 20, 2022 at 1:33 PM
To: "planning@oxnard.org" <planning@oxnard.org>

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Kathryn Masci

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

2 messages

'Christian Sanjose' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 1:56 PM
Reply-To: Christian Sanjose <christian.sanjose95@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Best,
Christian San Jose

'Christiana Pennington' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 1:57 PM
Reply-To: Christiana Pennington <cnp6@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Christiana

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Gabriela Magallon' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 2:10 PM
Reply-To: Gabriela Magallon <gabriela2720@yahoo.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Cynthia Echeverria <cynthiare27@gmail.com> Thu, Oct 20, 2022 at 2:14 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Sincerely,
Cynthia Echeverria

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Eric Martinez <emarti2195@gmail.com> Thu, Oct 20, 2022 at 2:22 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

It is my personal opinion that this project should not go forward. I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage.

The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community.

The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks.
This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime.

Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Eric Martinez

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Natalie Alhabash' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 2:38 PM
Reply-To: Natalie Alhabash <natalie.alhabash@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,
Natalie

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Molly McCoy <mollymccoyx@gmail.com> Thu, Oct 20, 2022 at 2:53 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. As a Ventura County resident and environmental science college student, I'm asking that you do not certify the FEIR and deny the Special Use Permit. Oxnard deserves clean air and environmental justice!

Sincerely,
Molly McCoy

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Alina Tong <atong@callutheran.edu> Thu, Oct 20, 2022 at 2:54 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and

environmental justice!

Sincerely,

Alina Tong

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Please Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

2 messages

Jonathan Ullman <jonathan.ullman@sierraclub.org> Thu, Oct 20, 2022 at 2:57 PM
To: planning@oxnard.org
Cc: Elisabeth Lamar <elisabethlamar@hotmail.com>, "DAVIDGOLD4@aol.com" <davidgold4@aol.com>, James Hines <Jhcasitas@gmail.com>, Katie Davis <kdavis2468@gmail.com>

Dear Oxnard Planning Commission members:

The Sierra Club Santa Barbara Chapter representing Ventura County and members who directly enjoy and benefit from restored wetlands adjacent to the property in the City of Oxnard and the restoration of these lands ask the Oxnard City Planning Commission to vote no on accepting the EIR and vote no to any permitting. Please instruct planning staff to return with findings of denial.

This is a bad project.

Sincerely,

Jonathan Ullman
Director, Sierra Club Santa Barbara-Ventura Chapter

--
Jonathan Ullman, Director
Sierra Club Santa Barbara-Ventura Chapter

P O Box 31241
Santa Barbara, CA 93130-1241
Phone: (805) 617-3106

Jonathan Ullman <jonathan.ullman@sierraclub.org> Thu, Oct 20, 2022 at 3:25 PM
To: planning@oxnard.org
Cc: Elisabeth Lamar <elisabethlamar@hotmail.com>, "DAVIDGOLD4@aol.com" <davidgold4@aol.com>, James Hines <Jhcasitas@gmail.com>, Katie Davis <kdavis2468@gmail.com>

A correction to our 2:57 p.m. email.

On Thu, Oct 20, 2022 at 2:57 PM Jonathan Ullman <jonathan.ullman@sierraclub.org> wrote:

> Dear Oxnard Planning Commission members:
>
> The Sierra Club Santa Barbara-**Ventura** Chapter representing Ventura County and members who directly enjoy and benefit from restored wetlands adjacent to the property in the City of Oxnard and the restoration of these lands ask the Oxnard City Planning Commission to vote no on accepting the EIR and vote no to any permitting. Please instruct planning staff to return with findings of denial.
>
> This is a bad project.
>
> Sincerely,
>
> Jonathan Ullman
> Director, Sierra Club Santa Barbara-Ventura Chapter
>
> --
> Jonathan Ullman, Director
> Sierra Club Santa Barbara-Ventura Chapter

P O Box 31241
Santa Barbara, CA 93130-1241
Phone: (805) 617-3106

[Quoted text hidden]

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

'Rebecca Carasco' via Planning <planning@oxnard.org> Thu, Oct 20, 2022 at 3:40 PM
Reply-To: Rebecca Carasco <kcarasco@icloud.com>
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks.

This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Grace Carasco

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Keenan Hancock <kphancoc@usc.edu> Thu, Oct 20, 2022 at 3:44 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods. It is not accurate to describe this project as temporary when the FEIR fails to say what the long term plans are for Port Storage after the 3-5 years. It has been submitted to the record that the Port of Hueneme and GLOVIS already have plans, started contracts, and applied for grants to start a much bigger 250 acre expansion project, over seven times as big as this one farther down Hueneme Road, but it was left out of the FEIR. There cannot be a vote on this project without a study on long-term plans for Port storage. The FEIR states the project will not be expanding more shipments into the port, but it also says the project is going to allow more shipments from GLOVIS to create more jobs at the port. Both cannot be true. This project will only bring 14 jobs, all of which are contracted by GLOVIS that pay around minimum wage and are non-union. We want long-term high-paying union jobs in our community. The Port has said cars stored at the34-acre site will be picked up by diesel trucks to transport them to dealerships around the country but the FEIR does not consider impacts to air quality from diesel trucks. This project will bring more diesel trucks on Hueneme Road, polluting our air with more cancer causing diesel exhaust. Diesel exhaust is the #1 cancer-causing air pollutant and exposure can result in lung function damage in children that lasts a lifetime. Right now, the port is using 31 acres of extra storage at the naval base to help the Port of LA during the pandemic. Instead of turning more and more land in South Oxnard into port storage which brings more and more polluting trucks to our neighborhoods, the FEIR should consider other options like using space in the navy base and the use of zero emission trucks. This FEIR fails to accurately examine the negative impacts of this project. I'm asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Keenan Hancock
--
Keenan P. Hancock
Pharm. D, M.S. HCDA
Tel: 1(760) 310-2214

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] 10/20 Public Hearing-Public comment to Vote NO on the The Port of Hueneme –Temporary Outdoor Vehicle Storage Facility Project

1 message

Bowen Liu <bowenliu@ucsb.edu> Thu, Oct 20, 2022 at 3:50 PM
To: planning@oxnard.org

Dear Oxnard Planning Commissioners,

I am writing to urge you to reject the Final EIR (FEIR) and vote NO on the 34-Acre GLOVIS Port Expansion. As Commissioners, it is your job to conduct fair hearings that work to preserve the environment and health of Oxnard residents and avoid using false or inaccurate information when making important decisions for our city.The FEIR fails to include an accurate project description, does not consider impacts to air quality and pollution from diesel trucks, and avoids consideration of alternatives to alleviate the pollution burden on South Oxnard neighborhoods.

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This FEIR fails to accurately examine the negative impacts of this project. I’m asking that you do not certify the FEIR and deny the Special Use Permit.Oxnard deserves clean air and environmental justice!

Sincerely,

Sent from my iPhone

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Fwd: Item F-1: Port of Hueneme - Temporary Outdoor Vehicle Storage Facility Special Use Permit PZ 18-500-02

1 message

Chaparro, Rose <rose.chaparro@oxnard.org> Thu, Oct 20, 2022 at 11:15 AM
Cc: Alexander Nguyen <alexander.nguyen@oxnard.org>, "Golden, Ashley" <ashley.golden@oxnard.org>, "Klima, Shiri" <shiri.klima@oxnard.org>, Stephen Fischer <stephen.fischer@oxnard.org>, Planning <planning@oxnard.org>, Jay Dobrowalski <jay.dobrowalski@oxnard.org>

Dear Council,

FYI - Please find attached below written comments received.

Rose Chaparro, City Clerk
City of Oxnard
300 West Third Street
Oxnard, CA 93030
Main Line: (805) 385-7803
rose.chaparro@oxnard.org

CITY OF OXNARD CALIFORNIA

---------- Forwarded message ---------
From: **lucy cartagena** <sleepoutventuracounty@gmail.com>
Date: Thu, Oct 20, 2022 at 9:35 AM
Subject: Item F-1: Port of Hueneme - Temporary Outdoor Vehicle Storage Facility Special Use Permit PZ 18-500-02
To: <cityclerk@oxnard.org>

My name us Lucy Cartagena. Iam a resident of Oxnard, and founder of Familys First, a non-profit that provides parenting classes as well as works in the community to raise literacy in our community.
I support the project as it aligns with the betterment of our society in ending global warming and raises the astetics of that blighted Part of our City that has been generational neglected.
I'm afraid those opposed the project still do not even have a plan, project or something to bring to the table or funding to implement thier pipe dream.
Oxnard , needs to move forward and change the landscape of that area today so that it can pave the way for those opposed to raise the funds needed to do what they only invision for tomorrow.

To not support movement or buetification of the Ports project will only leave that area that is currently neglected by the city to contiue for possibly another 20 years. Unless the opposition has concrete funding, with blueprint plans for that area it will contiue to be thier pipe dream, as lovely as it sounds. But, this 1 project will not fix the surrounding, nor will the opposition. So that leaves our community to grapple with the outcome of something that can benefit our communty, or nothing and contiue wishing for something.

And, on another note, I urge the commission to direct CAUSE and its affiliates to stop spreading false information of the project to the communty. It is not fair to the Port and all its wonderful employees to be slandered.

~Lucy

PROJECT NAME: Port Temporary Vehicle Storage; PLANNING AND ZONING PERMIT NO. 18-500-02 (Special Use Permit); (South Winds and Cypress Neighborhoods)

Planning Commissioners,

Thank you for taking the time to read my email concerning the temporary vehicle storage. There are certain projects that come across the docket, that benefit the community, this being one of them. The Port of Hueneme is an economic driver for the county as well as the City of Oxnard. Being an Oxnard resident, and as part of my daily job duties, I'm constantly in the Port. I see how much work is provided to local residents, with goods, cargo and vehicle movement. In years past, vehicles were stored at Camarillo and Oxnard Airports, in vacant fields, and behind the Auto Center in Ventura. All receiving important additional income, that were turned into upgraded features for our local residents. The Camarillo Airport installed more public hangers and Oxnard just repaved the runway with drainage improvements. My point is that this temporary vehicle storage will benefit the city, with more tax revenue without any out of pocket expenses. And after 5 years it will be returned to the state that it currently sits. The Port of Hueneme currently has a Community Workforce Agreement, that generates additional work for us local residents and in turn we spend within the community.

The Port of Hueneme continues to move forward with all electric cranes and electric drayage trucks for moving cargo, and the majority of the vehicles coming off the cargo ships are all electric. If we want to move forward with improving our community and clean up what has been left to us, we need to make strategic partnerships with public and private stakeholders when it benefits everyone. This partnership makes so much sense in the job market and tax revenue. I appreciate the time the commissioners spend on topics like this. Thank You.

Fraternally,

Jay Turner

Proud Oxnard Resident

WISHTOYO
CHUMASH FOUNDATION
FIRST NATIONS ECOLOGICAL CONSERVATION ALLIANCE

City of Oxnard, Planning Division
Attn: Jay Dobrowalski, Senior Planner
214 South C Street
Oxnard, CA 93030
jay.dobrowalski@oxnard.org

Dear Jay Dobrowalski,

On Behalf of the Wishtoyo Foundation ("Wishtoyo") we submit the following comments on the Final Environmental Impact Report SCH NO. 2020069039 (FEIR) for the Port of Hueneme Temporary Outdoor Vehicle Storage Project ("Project").

Founded in 1997, Wishtoyo Foundation is a California 501(c)(3) nonprofit public interest organization with members composed of Chumash Native Americans, First Nations People, and Santa Barbara, Ventura, and Los Angeles County residents. Wishtoyo is place, organization, and movement inspiring people to live in harmony with our Earth again. Wishtoyo serves as a "rainbow bridge" linking Chumash and Indigenous lifeways with the protection of natural and cultural resources, utilizing traditional ecological knowledge to provide environmental and cultural preservation and justice, education, research, and advocacy.

City of Oxnard's Response to Comments

In brief, the FEIR's "Global Responses" fail to adequately respond to the community's comments. The FEIR, if approved, will greenlight a parking expansion with negative impacts to the environment and the animal and plant species, which it supports, and the Oxnard community.

The City's Global Response 3 ("GR-3") failed to properly respond to community comments over piecemealing of the project and expansion of the port. The FEIR has only included analysis of the 34-acre temporary storage facility, but fails to include any analysis of a 250-acre permanent storage facility that has not yet been subject to environmental review. The project in question is a

temporary vehicle storage facility that was planned in response to the Port's contracts with GLOVIS. The FEIR makes no mention of a transitional plan or where vehicles will be stored after this temporary term. As referenced in the CAUSE comment letter submitted in February of this year, the Port of Hueneme has previously sought funding for the 250-acre Multimodal Logistics Park. Oxnard Harbor District and the City of Oxnard have long known of this 34-acre facility as a stop-gap measure that will give the Port of Hueneme and City of Oxnard time to meet regulatory requirements for the longer term 250-acre project. The City's GR-3 response clearly demonstrates the City's lack of understanding of the definition of "reasonably foreseeable" and "speculative". The absence of applications for the 250-acre project to the City of Oxnard does not preclude the definition of reasonably foreseeable. As addressed in the CAUSE comment letter, substantive evidence exists in which the Port of Hueneme seeks to expand its operations and land acquisitions in Oxnard and the surrounding areas in order to keep up with its contracts with GLOVIS.

Follow-up Biological Resources Inventory - 2022

The City's Follow-up Biological Resources Inventory included in Appendix FA in response to public comments concerning impacts to biological resources is woefully inadequate. For example, the first bird species of special concern listed is the Tricolored Blackbird. The inventory claims "Not expected to occur. This species has not been documented in Ventura County since 1994". The Consultant Firm, Dudek, referenced the CDFW CNDDB database in this determination. The CNDDB database lacks input from citizen science projects, current research, and is overall exceptionally outdated and omits crucial plant and wildlife data. Surprisingly, Dudek also referenced the database, ebird, for some of its other determinations in the biological resources inventory. If they had referenced the ebird database when making a determination for the Tricolored Blackbird, they would have found that Tricolored Blackbirds have been seen throughout Ventura County as recently as the summer of 2022, as well as the Ormond Beach wetlands, adjacent to the project site. I have personally observed a Tricolored Blackbird at Ormond Beach Wetlands in 2017 and ebird includes multiple pictures of the species at Ormond. There is no explanation why Dudek did not use ebird for their claims for this

particular species. The inventory also claimed that "the site lacks suitable wetland habitat to support this species". Tricolored Blackbirds are not wetland obligate species. These blackbirds are known to forage rice fields, alfalfa, irrigated pastures, ripening or cut grainfields, annual grasslands, and even disturbed areas such as cattle feed lots and dairies[1]. Although the site is comprised of disturbed upland/grassland, it is entirely possible for Tricolored blackbirds, which have been observed in the adjacent wetlands, to use the project site.

This follow-up inventory did little more than the biological resources inventory used in the Draft EIR and completely failed to analyze the impacts to sensitive and listed species that use the project site and the adjacent habitats that could be affected by the project. These would include, but are not limited to the Peregrine Falcon, White-tailed Kite, Red-tailed Hawk, Tricolored Blackbird, Belding's Savannah Sparrow, California glossy snake, San Diegan Tiger Whiptail, and Western Pond Turtle.

The City and its consultants must take their obligation to properly analyze the Project's impacts to biological resources seriously. To date, the analysis of impacts to biological resources has been entirely lacking and has omitted impacts to the sensitive plants and wildlife that exist in the project area and the adjacent habitats. Please see attached letter from February of this year detailing Wishtoyo's concerns with the environmental review of this project. The City has a duty to inform its citizens of all of the impacts that a project will have on the environment and has failed to do so.

Mati Waiya
Executive Director
Wishtoyo Chumash Foundation

Tevin Schmitt
Watershed Scientist
Wishtoyo Chumash Foundation

[1] Tricolored Blackbird Working Group. 2007. Conservation Plan for the Tricolored Blackbird (Agelaius tricolor). Susan Kester (ed.). Sustainable Conservation. San Francisco, CA.

WISHTOYO
CHUMASH FOUNDATION
FIRST NATIONS ECOLOGICAL CONSERVATION ALLIANCE

Attachment: Wishtoyo Foundation February 14th, 2022 Comment Letter

WISHTOYO
CHUMASH FOUNDATION
FIRST NATIONS ECOLOGICAL CONSERVATION ALLIANCE

February 14, 2022

City of Oxnard, Planning Division

Attn: Jay Dobrowalski, Associate Planner

214 South C Street

Oxnard, CA 93030

jay.dobrowalski@oxnard.org

Dear Jay Dobrowalski,

On Behalf of the Wishtoyo Foundation ("Wishtoyo") we submit the following comments on the Draft Environmental Impact Report SCH NO. 2020069039 (DEIR) for the Port of Hueneme Temporary Outdoor Vehicle Storage Project ("Project").

Founded in 1997, Wishtoyo Foundation is a California 501(c)(3) nonprofit public interest organization with members composed of Chumash Native Americans, First Nations People, and Santa Barbara, Ventura, and Los Angeles County residents. Wishtoyo is place, organization, and movement inspiring people to live in harmony with our Earth again. Wishtoyo serves as a "rainbow bridge" linking Chumash and Indigenous lifeways with the protection of natural and cultural resources, utilizing traditional ecological knowledge to provide environmental and cultural preservation and justice, education, research, and advocacy.

Project Description and Piecemeal

The DEIR has failed to properly disclose and analyze the full Project to include 1) the temporary vehicle storage facility discussed in this DEIR as Phase I and 2) the 250-acre permanent vehicle storage facility as Phase II of the Project. Separating these two phases is an impermissible

piecemeal of projects under the California Environmental Quality Act ("CEQA") environmental review process. The CEQA Guidelines define "project" broadly as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment …." (Guidelines, § 15378, subd. (a)). Further, environmental analysis must include the environmental effects of future expansion or other action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects.

Phase II is a reasonably foreseeable consequence of the Project because the only purpose of the initial temporary facility is to serve as a bridge to the Port's expansion of vehicle storage capabilities while the Port seeks the necessary approvals for the second facility. The Project is just Phase I of the Port's expansion and is only being proposed in anticipation for the Port to expand its operations permanently. Officials from the Port have been clear about this with certain members of the community and the City. (See Attachment A[1]). While the Port has disclosed this two-phase approach to some, it and the City failed to include this necessary information in the DEIR and failed to provide the legally mandated environmental review of all aspects of the Project, including Phase I and Phase II. Thus, because the City and the Port knew and have been planning on implementing Phase I and Phase II of the Port's vehicle storage expansion since the beginning, Phase II is a reasonably foreseeable consequence of the Project.

The future expansion of Phase II will also change the scope and nature of the environmental effects of the Project. First, Phase II will be a permanent vehicle storage facility, not a five-year Project as analyzed in the DEIR. The DEIR did not analyze the environmental impacts of a permanent vehicle storage facility. The DEIR must be conducted including analysis on the temporary and potential permanent siting of Phase I at the Project's current location and the permanent siting of Phase II of the Project. The location of the Phase II vehicle storage facility must be disclosed in this DEIR to fully inform the public of its environmental impacts. Second, Phase II will very likely include more driving and parking of vehicles not analyzed in the DEIR, thus increasing the traffic impacts, air and water pollution associated with driving and parking,

[1] See Attachment A for Declaration of Lucas Zucker

environmental justice concerns, impacts to Chumash cultural and natural cultural resources, and be further inconsistent with the City's general plan and wetlands restoration plans. Lastly, the DEIR misled the public into thinking the whole Project would be a minimal temporary hindrance to their community, instead of the hidden reality that the Project is just Phase I of the Port's expansion and a much larger and permanent vehicle storage facility.

Tribal Cultural Resources

The County failed to adequately analyze the impacts of the project on cultural resources. The DEIR expresses a clear bias against the recognition that the Chumash people live in Oxnard and near the Project area today; that they have strong relationships with the Project area; that they currently utilize natural cultural resources throughout the Project area; and that Chumash tribes, bands, and clans are sovereign entities.

The EIR misuses the term "cultural site" by using it synonymously with "archeological site" showing a clear lack of understanding of what a cultural site is. Archeological sites are locations identified to be of archeological value to researchers. Cultural sites include archeological sites, but also include many locations that are of little interest to archeologists, such as village sites where the ground has been previously disturbed and areas where sedimentation has relocated Chumash artifacts. Furthermore, cultural sites also include but are not limited to sacred sites, gathering locations, and cultural landscapes.

Further, the City abused its discretion when failing to locate Tribal Cultural Resources widely known to likely be present in the Project area through the use of the best available and widely used technology and methods. Wishtoyo requests that specially trained forensic canines in combination with ground penetrating radar are utilized to identify the location of all Native American burials and cultural remains within the project site. These techniques were used to reliably identify the location of Ohlone/Esselen burials in the KB Homes Development in Santa Cruz and for other development projects. Wishtoyo used forensic canines to detect the presence of Chumash ancestral remains/burials for the Santa Clara River Estuary / McGrath State Beach Campground Relocation and Estuary Restoration Feasibility Study with California

State Parks. (Attachment 1[2]) The use of specially trained canine forensics and ground penetrating radar, represent the best available technology and most reliable means for the identification of Native American burials, and thus should be used to identify potential impacts to Chumash Tribal Cultural Resources and to mitigate those impacts to a less than significant effect.

Under CEQA and California law, when cultural resources are identified, the preferred mitigation measure is avoidance, and if avoidance is not feasible, preservation in place as defined by the local Native nations. (CEQA Guidelines §15126.4). Avoidance and preservation in place mitigation measures cannot be implemented if Tribal Cultural Resources are not identified before the approval of the Project and its CEQA documents. Therefore, the Project's mitigation measure MM CUL-2 is an insufficient mitigation of potential impacts to cultural resources. The presence of a Native American Monitor only during subsurface grading, trenching, and construction will not avoid impact to cultural resources. This is because once construction begins and no commitments to avoidance or preservation in place are secured, a monitor can only do so much (if anything) to secure lesser protections (such as movement of the resource to another location away from its Village location or burial ground, or recovery of the resource for storage or display in a museum) for the resources which are often damaged or destroyed by the excavating activity that resulted in its discovery. Additionally, the DEIR's use of monitors is flawed because the DEIR fails to identify the process of selecting the Native American Monitor, and fails to contain procedures to ensure monitors from the proper Chumash Nations will be present during construction to best protect un-detected Chumash remain from harm and to help determine proper actions that must be taken to protect and preserve the Chumash remains encountered.

The DEIR has completely failed in its analysis of Project impacts to Tribal cultural resources and must properly categorize the finding of unidentified Tribal Cultural Resources and ancestral remains as a "potential significant impact" that must have adequate mitigation measures to ensure the proper consultation protocols and protections are in place.

Water Quality and Wetlands

[2] See Attachment 1 for the Santa Clara River Estuary / McGrath State Beach Campground Relocation and Estuary Restoration Feasibility Study showing Wishtoyo's use of canine forensic dogs.

1. No analysis of Specific Water Quality Impacts

The DEIR failed to analyze the type and amounts of hazardous materials and toxic metals associated with vehicle liquids and fluids (fuel, coolant, oil, etc.), vehicle tires, vehicle brake pads, vehicle paint, and the environmental impact these hazardous materials and metals will have on the wetlands. Southern California Coastal Water Research Project (SCCWRP) conducted a study on water quality and toxicity of runoff from parking facilities during storm events. (Attachment 2[3]) The study found that runoff from these sites have high concentrations of Iron, Zinc, Copper, and Lead. (Id. at ii.) These pollutants are derived from the wear of breaks, tires, and other exposed auto parts, and spills of automotive fluids. Parking facilities also tend to accumulate wind and atmospheric transported pollutants over time (Id. at 1). Furthermore, because this Project is located on the coast, the salt in the air at the Project site will wear the paint and metal parts of the cars at an accelerated rate, leading to increased concentrations of metals discharged from the site in stormwater during rain events. Metal pollutants have acute, chronic, and sub-lethal effects on marine and aquatic life in the Pacific Ocean and Ormond Beach Wetlands. (Id. at 32). They can also biomagnify in the food chain, and cause these acute, chronic, and sublethal impacts on avian species. Without this necessary analysis on hazardous materials and metal pollutants that would be contained in stormwater discharges from the Project site, the City has not informed the public on the environmental impacts of the Project, needed mitigation to prevent impacts to aquatic and avian species in receiving waters, and should not have found less than significant impact in the DEIR. The DEIR provides no information regarding hazardous materials for the public and decision makers to evaluate and comment on, thus failing to meet the requirements of CEQA. The DEIR must fully analyze the impacts of the Project on Ormond Beach Wetlands and specifically, the impacts of metals and hazardous materials discharged from the Project site during storm events.

The DEIR failed to analyze whether the stormwater discharges from the Project site during or after construction will meet Clean Water Act Water Quality Standards; will harm wildlife, recreational, cultural, or tribal ceremonial beneficial uses; and will cause or contribute to harms to Clean Water Act 303(d) listed impaired waterways. As detailed above, sufficient information exists that indicates the contaminants in stormwater discharges from the Project will harm the

[3] Southern California Coastal Water Research Project, *Technical Report 343, Characteristics of Parking Lot Runoff Produced by Simulated Runoff* (July, 2001).

beneficial uses of the Ormond Lagoon Waterway, Ormond Lagoon, and the Pacific Ocean. In addition, further analysis is required because the Ormond Lagoon Waterway / Lagoon are listed by the U.S. EPA and State Water Resources Control Board on the Clean Water Act 303(d) list as impaired for bacteria, pH, and trash. (Attachment 3[4]) Thus, a comprehensive analysis is needed that ensures the project is not causing or contributing to these impairments. For instance, as detailed above, an analysis of impacts of metals and other pollutants in stormwater discharges from the Project is needed in part to see if the Project's discharges will cause or contribute to the pH impairments in the Ormond Beach Lagoon identified on the 303(d) list. In addition, a comprehensive EIR analysis is needed, along with a comprehensive analysis of mitigation measures, to prevent the Project from accumulating and discharging trash into Ormond Lagoon Waterway and Ormond Lagoon, and the Pacific Ocean.17 This is especially the case because it is critical the Project does not cause or contribute to trash pollution of these waters, which are already 303(d) listed for trash. (See attachment 3.) Without this analysis, it is likely that the well-known trash littering and accumulation problem that plagues these waters and Oxnard's streets near the wetlands, will be deposited onto the Project site (via littering / dumping activities, or via wind), and then will be conveyed either by wind or stormwater discharges from the Project's graded and graveled surfaces into the adjacent Ormond Lagoon Water Way, Ormond Lagoon, tšumaš Creek, or the Pacific Ocean.

The City failed to implement necessary mitigation measures that would reduce the environmental impacts of metals, trash and hazardous materials to less than significant levels. As discussed in the SCCWRP report, best management practices are needed to reduce the toxicity of stormwater runoff from parking facilities. (Attachment 2 at iii.) Best management practices could include bioretention areas that allow runoff from the Project to pond and filter through vegetation and soil. The Project could also include sand beds to filter the runoff and planted wetland vegetation to naturally treat and filter runoff before it enters Ormond Lagoon Waterway (Attachment 4[5]). The DEIR failed to analyze or require any, and the necessary, best management practices for stormwater runoff to ensure the hazardous materials, trash, and

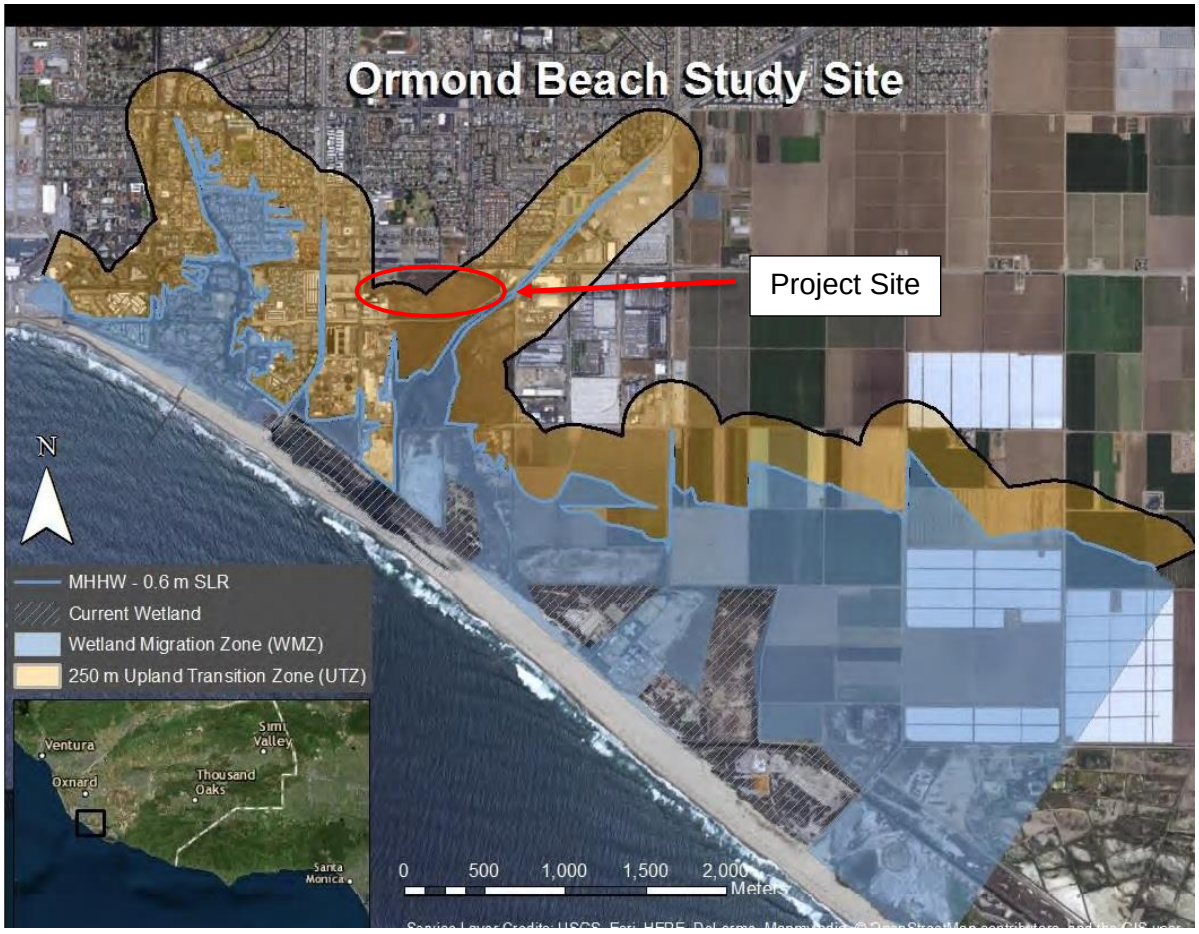
[4] February 5, 2018 State Water Board Transmittal to the U.S. EPA – that includes relevant excerpts from the State Water Board's 303(d) list approvals and 2014 / 2016 California Integrated report; U.S. EPA Approved California 2014-2016 Clean Water Act 303(d) List of Impaired Waters dated April 6, 2018.
[5] Stormwater Management Practices at EPA Facilities (February 2017), (last accessed 1/28/2019) *available at* https://www.epa.gov/greeningepa/stormwater-management-practices-epa-facilities

metals associated with the Project would not impact water quality or the wetlands, during or after construction of the Project.

2. No analysis of Wetland Retreat in Response to Sea Level Rise

The DEIR did not properly consider the Project's consistency with Oxnard's certified Local Coastal Plan ("LCP") and the other approvals that may be required. If any portion of the project site is within the coastal zone, a coastal development permit and possibly an LCP amendment will be necessary. According to a study conducted by UCLA, the project site is located in the future Upland Transition Zone ("UTZ") of Ormond Beach Wetlands (Attachment 5[6] ("UCLA Study" or "Study")). The Study predicts that the mean sea level will rise 0.6 m by 2050 due to projected impacts from climate change. (Id. at 11). The UCLA Study predicted that Southern California wetland habitat will naturally retreat inland. The preservation of habitat inland of these wetland areas is essential for their successful retreat. The project lies in an important location for UTZ wetland habitat (Id. at 37, Figure 14). The construction of this temporary parking facility and disturbance of this land would significantly degrade the suitability of this habitat for future sea level rise conditions, and would impair and prevent future reclaiming of the Ormond Beach wetlands Project site needed for the wetland habitat and the endangered wildlife (see below) that depends on it to exist. The DEIR failed to consider any projections of sea level rise or wetland retreat, the associated impacts of the Project on future Ormond Beach Wetlands habitat and the endangered species that rely on the Ormond Beach Wetlands, and City of Oxnard must prepare a full EIR to further analyze the Project's impacts on retreating wetlands and UTZ habitat.

[6] UCLA Institute of the Environment and Sustainability, *Evaluating Physical Suitability, Land Use, and Cost Feasibility for Acquiring Land for Wetland Transgression in Selected Southern California Wetlands*, (last accessed 1/28/2022) *available at* https://www.ioes.ucla.edu/wp-content/uploads/wetlandspracticum_finalreport.pdf.



Furthermore, the DEIR must evaluate the Project's direct, indirect, and cumulative impact on all community restoration and public access plans for the Ormond Beach Wetlands, including The Ormond Beach Restoration and Public Access Plan. While an EIR is required (1) to analyze the Project's impacts on all restoration and public access plans for the Ormond Beach Wetlands, and to ensure consistency and no impacts to these plans, and (2) that includes scoping with the Oxnard community, California government agencies (such as the Coastal Conservancy), and nonprofits (such as the Nature Conservancy involved in such restoration plans to inform this analysis), the DEIR fails to analyze the impacts on all restoration and public access plans for the Ormond Beach Wetlands, and fails to analyze whether the Project will make the Ormond Beach Wetlands less or non-tourist/visitor friendly (a critical element to improving the local economy and providing a fulfilling experience that attracts residents and visitors), thereby being harmful or inconsistent with the Ormond Beach Restoration and Public Access Plan. For instance, see attached presentation of the Ormond Beach Restoration and Public Access Plan. (Attachment

6[7]). A comprehensive analysis must be undertaken as to how the Project impacts public access to the Wetlands and enjoyment of the Wetlands, such as interaction with wildlife, aesthetic enjoyment and views when walking through and enjoying the wetlands, and spiritual enjoyment. Further, the Project must be considered, and if it moves forward, planned in conjunction with any Ormond Beach Wetlands preservation, public access, and restoration project.

Harms to Wildlife

1. **Poor Survey and Literature Review Informing the DEIR's Biological Resources Analysis**

The DEIR utterly fails in its analysis of the Project's impacts to sensitive wildlife and surrounding ecosystems. The DEIR fails to even mention more than 20 listed or special status species that are known to exist in the area. The literature review and reconnaissance-level surveys conducted in 2018 and 2020 proved to be woefully inadequate in determining the full scope of impacts this project would have on wildlife and sensitive species habitats.

The reconnaissance-level surveys were conducted in April 2018 and October 2020. The 2018 survey was conducted between 10 and 11 am and the 2020 survey was conducted between 9:30 and 10:30 am. Both of these surveys were conducted too late in the day for representative avian species observations. April is typically too early for representative breeding bird surveys and October does not represent breeding season counts, and is too late in the year for a representative list of fall-migrating avian species. The description of these surveys included no standardized methodology for how these surveys were conducted, making them impossible to replicate or determine if observed species were identified and quantified properly. No nocturnal surveys were conducted to determine the presence of anuran species in the project location and no special status anuran species are mentioned in the DEIR. No surveys were conducted to determine bat species presence near the Project area and no special status bat species are mentioned in the DEIR.

2. **Listed and Special Status Species Missing from DEIR**

[7] For additional information regarding the Ormond Beach Restoration Project please see attachments 18-22

The DEIR's lack of analysis of impacts to biological resources in the Project area and adjacent Ormond Beach Wetlands demonstrates the City's complete ignorance of local ecology and biological resources. The use of the CNDDB and poorly conducted reconnaissance surveys provided meek species lists that are not at all representative of the project site or Ormond Wetlands. The DEIR failed to analyze the Project's full impact on listed and special status species that exist in the Project area.

More than 200 bird species are known to use the Ormond Beach Wetlands for breeding, foraging, roosting, and migration. Among these avian species are multiple species of "birds of prey" which are protected under California Fish and Game Code section 3503.5. Birds of prey that exist in the project area and adjacent wetlands that are not included in the DEIR include: White-tailed Kite, Northern Harrier, Red-tailed Hawk, Red-shouldered Hawk, Cooper's Hawk, Sharp-shinned Hawk, American Kestrel, Peregrine Falcon, Merlin, and Osprey. A Red-tailed Hawk was even observed during a reconnaissance survey, but was not included as a special status species. All of these species have been observed either in the project area, or in the adjacent wetlands. All of these species are protected under California law and the DEIR must include analysis on the Project's impacts to birds of prey.

Salt marsh and coastal wetland habitats have declined up to 90% in California, making Ormond Beach Wetlands a rare gem and an exceptionally important area for sensitive and endangered plants, invertebrates, fish, amphibians, reptiles, mammals, and birds. The Project may have a significant impact on the ecosystems on which these species rely. The Project will have stormwater runoff exit the facility and drain into Ormond Lagoon Waterway, and eventually into Ormond Lagoon. As mentioned in the Water Quality and Wetlands section, the Project area will be in the Upland Transitional Zone according to sea level rise and wetland retreat projections. Species that rely on mixed vegetation communities will also need to retreat with wetlands, and will not be able to do so if the proposed Project area is disturbed further. As observed in the reconnaissance surveys performed for the DEIR, the Project area provides habitat for multiple prey species including small song birds and gopher snakes. If a parking lot, even temporary, is built here, this will limit foraging habitat for birds of prey and may increase the likelihood of harm from Project associated toxins or vehicle strikes.

The DEIR failed to include an impact analysis of multiple California Species of Special Concern and Fully Protected species that are known to occur in and near the Project Area. The fully protected species the DEIR failed to analyze, or even mention, are the White-tailed Kite and Peregrine Falcon. As well as birds of prey, these species are also fully protected under California law FGC 3511. Species of Special Concern that are known to occur in and near the Project area, but do not appear in the DEIR are: San Diegan tiger whiptail, Blainville's horned lizard, coast patch-nosed Snake, south coast garter snake, California glossy snake, western spadefoot, western pond turtle, and coast range newt. As these species are listed as species of special concern in California and are known to exist in the project area and surrounding habitats, the DEIR must include these species and analyses of Project impacts to these sensitive species.

The DEIR failed to include an impact analysis of multiple federally listed species that are known to occur in and near the Project Area. These species include California orcutt grass, Gambel's watercress, marsh sandwort, spreading navarretia, Marbled Murrelet, Southwestern Willow Flycatcher, and vernal pool fairy shrimp. The DEIR must include these listed species and an analysis of Project impacts to these sensitive species and their habitats.

3. Impacts to Sensitive Wildlife and Their Habitats

Of great concern are the Project's hazardous materials, trash, and metals entering the Ormond Lagoon Waterway and Ormond Lagoon through stormwater runoff, polluting the waters and harming the endangered tidewater goby that reside in the two water bodies. The U.S. Fish and Wildlife Service lists Ormond Lagoon Waterway and tšumaš Creek in the LA/Ventura Recovery Unit in their Recovery Plan for the endangered tidewater goby. (Attachment 7[8] at Figure B-17). The DEIR provides no analysis of direct, indirect, and cumulative impacts from the Project on the tidewater goby, even though the project will discharge stormwater into the goby's habitat which is located only 125 feet from the proposed Project site. Vital habitat for the tidewater goby has been lost or impacted by metal and industrial pollution in other streams. There is precedent

[8] Pacific Region U.S. Fish and Wildlife Service, Recovery Plan for the Tidewater Goby (December, 2005)

of tidewater goby habitat becoming “Water Quality Limited” due to pollution associated with metal toxicity. The State Water Quality Control Board lists tidewater goby habitat in Goleta Slough as “Water Quality Limited”; partially due to metal pollutants which harm the species (Id. at C-26). The US Fish and Wildlife Service specifically lists “watercourse contamination resulting from vehicular activity in the vicinity of lagoons" as a threat to the tidewater goby’s habitat (Attachment 8 at pg. 3[9]) The hazardous materials from the Project, including Iron, Zinc, Copper, trash, and Lead, will contaminate the goby’s habitat and will contribute to the take of the tidewater goby, violating the Endangered Species Act and preventing the recovery of the species. The City must analyze the impact the Project will have on water quality of Ormond Lagoon Waterway and Ormond Lagoon and the Project’s impact on tidewater goby and its habitat.

The hazardous materials, trash, and metals discharged during storm events from the Project will also have a significant impact on the endangered California Least Tern. California Least Terns nest at Ormond Beach Wetlands from mid-April to late September. (Attachment 9[10] at 1). Ormond Lagoon Waterway flows into Ormond Lagoon, which is an important foraging habitat for California Least Terns. Toxins and metals introduced from the Project’s runoff during storm events can accumulate in the tissues and gills of small fish species which are eaten by California Least Terns and fed to their young. Southern California Coastal Water Research Project (SCCWRP) conducted a study on aquatic toxicants and their presence in seabird eggshells. The study focused on four seabird species including the California Least Tern (Attachment 10[11] at 2). Heavy metals, as well as other toxicants were found in all of their California Least Tern eggshell samples (Id. at 7). California Least Terns are susceptible to the biomagnification of these toxicants due to their foraging habits in near-shore environments (Id. at 23). The MND failed to analyze the Project’s direct, indirect, secondary, and cumulative impacts from metal and other hazardous materials entering into waterways during storm events, accumulating in small fish and benthic macroinvertebrates, and impacting the endangered

[9] U.S. Fish and Wildlife Service, *Tidewater Goby*, Humboldt Bay, (last accessed 1/28/2019) *available at* https://www.fws.gov/refuge/Humboldt_Bay/wildlife_and_habitat/TidewaterGoby.html.
[10] California Department of Fish and Game South Coast Region, California Least Tern Breeding Survey 2009 Season (July, 2010)
[11] Southern California Coastal Water Research Project, *Technical Report 944, Contaminant Bioaccumulation in Seabird Eggs of the Southern California Bight* (September, 2016).

California Least Tern. The City must prepare a full EIR because the Project may harm endangered species, a harm that must be adequately analyzed.

The DEIR completely failed to analyze the Project's potential impacts on the Peregrine Falcon, a California fully protected species. The DEIR does not even mention Peregrine Falcons in the Biological Resources section, even though they are found throughout the region and observed frequently at Ormond Beach and in Oxnard. The Project description includes 240 vehicle trips to the temporary vehicle storage facility per day. Though the DEIR claims this is fewer trips and vehicle miles in the region because the site is closer to the Port than existing storage facilities, this is increasing vehicle traffic to a site adjacent to the Ormond Beach Wetlands and important hunting habitat for Peregrine Falcons. Studies on Peregrine Falcon mortality have found that collisions with motorized vehicles make up a significant percentage of deaths for fledgling, juvenile, and adult falcons (Attachment 11[12]). As mentioned in the water quality impacts section of this letter, the bioaccumulation of metals and other pollutants originating from this Project may impact California Least Terns and other foraging sea and shore birds. Terns, plovers, and other shore birds are important sources of prey for Peregrine Falcons, which are apex predators that specialize in hunting avian species. Bioaccumulation of metals and toxicants could have an even more severe effect on falcons since they prey on birds that are already affected by bioaccumulation. Heavy metals can significantly limit immune mechanisms in birds of prey, and increase their susceptibility to bacteria and parasite infection (Attachment 12[13]). Since the DEIR completely failed to recognize the Peregrine Falcon and its habitat in the Project and surrounding areas, there was no analysis on potential impacts to the fully protected species. The DEIR must include an analysis of impacts on Peregrine Falcons and must include Mitigation Measures for these impacts.

Further, the Project's location is connected to a greater wildlife corridor and the MND failed to analyze how the Project will impact wildlife accessing and using the neighboring wetlands. The

[12] Gahbauer, Marcel & Bird, David & Clark, Kathleen & French, Tom & Brauning, Dan & Mcmorris, F.. (2015). Productivity, Mortality, and Management of Urban Peregrine Falcons in Northeastern North America. The Journal of Wildlife Management. 79. 10.1002/jwmg.803.
[13] Pyzik, E., Dec, M., Stępień-Pyśniak, D., Marek, A., Piedra, J., Chałabis-Mazurek, A., Szczepaniak, K., & Urban-Chmiel, R. (2021). The presence of pathogens and heavy metals in urban peregrine falcons (*Falco peregrinus*). *Veterinary world*, *14*(7), 1741–1751. https://doi.org/10.14202/vetworld.2021.1741-1751

Project's proximity to Ormond Beach Wetlands and future designation as Upland Transitional Zone habitat makes the Project area an important habitat for wetland species and species that rely on transitional habitat zones. UTZs provide wildlife habitat, high tide refugia for wetland species, and vital space for the wetland to migrate in response to climate change and sea level rise (Attachment 13[14], pg. 3-427). The City must conduct an analysis to determine the impacts of vehicle storage, grading, fencing, and hazardous materials entering the waterways on the wildlife corridor associated with the area and the wetlands.

DEIR also completely failed to analyze the Project's impacts on the White-tailed Kite, a fully protected species under California Law. There is no mention of the White-tailed Kite in the DEIR, even though the species is found frequently in Ventura County, Ormond Beach Wetlands, and hunting in open spaces and along roadways. The DEIR completely failed to analyze potential impacts the project may have on any raptor species in the Project area. 1) The project will be grading and graveling 34 acres of open space. Though this lot may be disturbed, the Project site is habitat for prey species like mice, voles, gophers, snakes, song birds, and ground squirrels. Left as it is, the space is 34 acres of hunting habitat for White-tailed Kites, Cooper's Hawks, Sharp-shinned Hawks, Northern Harriers, Red-shouldered Hawks, Red-tailed hawks, Great Horned Owls, Barn Owls, Burrowing Owls, Merlins, American Kestrels, and Peregrine Falcons. 2) The project will be increasing vehicle traffic with 240 vehicle trips to the Project site per day. A study conducted on North American urban raptor species found that vehicular strikes were the leading cause of mortality for 39% of the raptor species studied (Attachment 14[15]). 3) The temporary vehicle storage facility may introduce heavy metals pollution to the site and increase these pollutants' concentrations in the adjacent waterways and wetlands. A review of bioaccumulation of heavy metals in the food web found that carnivorous birds experience the highest concentration of toxic heavy metals as a result of bioaccumulation of these pollutants (Attachment 15[16]). The DEIR completely failed to look into possible pathways for the Project's pollutants to enter the food web and impact sensitive birds of prey like the White-tailed Kite.

[14] Brian Fulfrost, Meg Marriott, Christina Sloop, David Thomson, Laura Valoppi, Management of Marsh-Upland Transitional Habitats
[15] Hager, Stephen. (2009). Human-Related Threats to Urban Raptors. Journal of Raptor Research. 43. 210-226. 10.3356/JRR-08-63.1.
[16] Hazrat Ali & Ezzat Khan (2019) Trophic transfer, bioaccumulation, and biomagnification of non-essential hazardous heavy metals and metalloids in food chains/webs—Concepts and implications for

Though the DEIR included the Burrowing Owl in its meager species list, it did not include any analysis of impacts to the species. As mentioned above, the Project site comprises 34 acres of habitat used by multiple rodent species, including ground squirrels. Burrowing Owls depend on burrowing mammal species, especially ground squirrels, for their breeding habitat and burrows. Burrow availability is a key limiting resource for Burrowing Owls. Ground squirrels are essential for providing habitat and the recovery of the Burrowing Owl (Attachment 16[17]). By grading, graveling, and turning this area into a vehicle storage facility, the Project will remove 34 acres of possible breeding, burrowing, and foraging habitat for the Burrowing Owl.

Without analyzing the negative impacts that the Project will have on wildlife, especially endangered and threatened species, the City failed to provide sufficient disclosure of the Project's environmental effects to allow the public and decision makers to evaluate and comment on the project's environmental consequences.

Air Quality

The DEIR's analysis of air quality and greenhouse gas impacts lacks any information regarding increased emissions from cold-starting engines. If 240 vehicles per day will be started and driven to the vehicle storage facility, that is 240 cold-starts per day. These vehicles will also be started and driven off the parking facility to distributors and customers regularly. The DEIR also states that up to 30,000 vehicles will be stored at this facility annually, bringing the total to at least 60,000 cold starts per year (engine ignition when leaving the Port, and engine ignition when leaving the storage facility). Catalytic systems that vehicles use to reduce greenhouse gas emissions are only designed to work at the vehicles' normal operating temperature. When a vehicle is cold started, carbon monoxide and total hydrocarbon emissions increase significantly

wildlife and human health, Human and Ecological Risk Assessment: An International Journal, 25:6, 1353-1376, DOI: 10.1080/10807039.2018.1469398

[17] See Attachment 16 for the Field Notes Entry from the Carlsbad Fish and Wildlife Office.

over normal driving conditions (Attachment 17[18]). The DEIR must include a full analysis of the Project's greenhouse gas emissions, including increased emissions associated with cold-start.

While the DEIR did analyze specific localized emissions, there is no discussion on how the emissions will contribute to climate change and sea level rise contributing to the retreating wetlands. Further there is no discussion on how the Project hindering the goals of Assembly Bill 32 "in reducing … annual emissions of 14 tons of carbon dioxide equivalent for every man, woman and child in California down to about 10 tons per person by 2020… [and the fact that] [e]very part of California's economy needs to play a role in reducing greenhouse gas emissions."[19] The DEIR fails to mitigate against or analyze the significant direct, indirect, and cumulative impacts, thus the DEIR must fully analyze the issue and provide the necessary mitigation measures needed.

Traffic Congestion

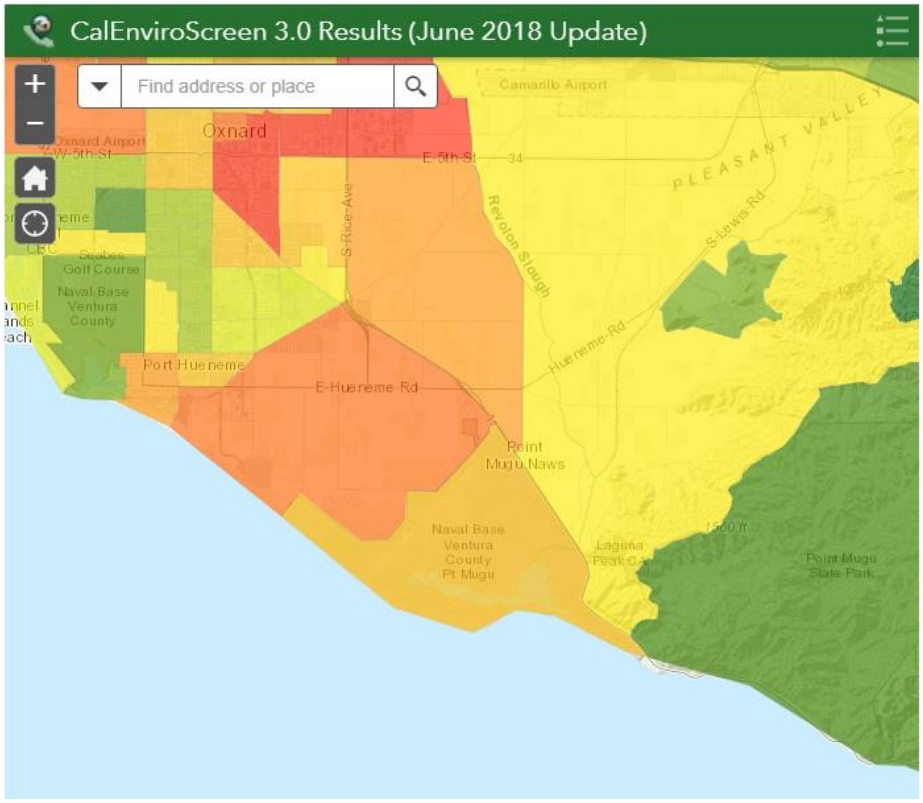
The DEIR misleads the public concerning the Project's impacts on traffic congestion in South Oxnard. The DEIR states that there will be less than significant impact on traffic congestion because these vehicles would normally be sent to other facilities in the region. This is misleading and a poor analysis of the Project's impacts. There will be 240 vehicle trips to the Project site per day associated with this project. That is 240 more vehicles on the road per day traveling to the Project site. Current operations have these vehicles moving to storage by car carrier to other facilities and impacting traffic elsewhere in the county. The DEIR fails to analyze specific impacts to traffic congestion in the community surrounding the Project area. South Oxnard is already burdened by an industrialized coastline and continuous shipping of freight and cargo along Hueneme Rd. The DEIR must include this analysis, focused on South Oxnard and the cumulative traffic impacts to which this project would contribute.

DEIR is Inconsistent with the City of Oxnard's duty to address Environmental Justice in Government Planning

[18] Christos Dardiotis, Giorgio Martini, Alessandro Marotta, Urbano Manfredi. Low-temperature cold-start gaseous emissions of late technology passenger cars. Applied Energy. Volume 111. 2013. Pages 468-478. ISSN 0306-2619. https://doi.org/10.1016/j.apenergy.2013.04.093.
[19] *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal. 4th 204, 220.

WISHTOYO
CHUMASH FOUNDATION
FIRST NATIONS ECOLOGICAL CONSERVATION ALLIANCE

The DEIR fails to mention the City of Oxnard's requirement to address Environmental Justice in the City's General Plan, as is required by SB 1000. The Project would have major impacts on disproportionately burdened communities in South Oxnard. According to the Office of Environmental Health Hazard Assessment (OEHHA) and their program, CalEnviroScreen 3.0, Oxnard is a community disproportionately burdened by environmental pollution. The program identifies the region, where the Project is located, is in the 98th percentile for the pollution burden rating. This census district had the highest Pollution Burden Percentile out of the Oxnard districts and is considered to be a disadvantaged community under SB535. The DEIR ignored the community's comments and requests that the DEIR analyze the extent to which the Project's cumulative impacts on air quality, traffic congestion, aesthetics, and impacts from discharge of hazardous materials (including trash and metals) into receiving waterways will increase the pollution burdens felt by the Oxnard disproportionately burdened community. The City must conduct further analysis of the Project's cumulative impacts on the Oxnard community, as a disadvantaged community that is already disproportionately burdened by environmental pollution. Failure to include this analysis would result in the DEIR being inconsistent with the City of Oxnard's 2030 General Plan and the City's failure to comply with SB 1000.



Census Tract: 6111004715

Population:	5,020
CalEnviroScreen 3.0 Percentile:	80-85%
Pollution Burden Percentile:	98
Population Characteristics Percentile:	53
Ozone:	40
PM 2.5:	41
Diesel:	56
Pesticides:	100
Toxic Releases:	77
Traffic:	17
Drinking Water:	85
Cleanups:	96
Groundwater Threats:	89
Hazardous Waste:	67
Impaired Water:	81
Solid Waste:	93
Asthma:	29
Low Birth Weight:	52
Cardiovascular Rate:	26
Education:	79
Linguistic Isolation:	72
Poverty:	71
Unemployment:	61
Housing Burden:	59

Conclusion

As discussed at length in this letter, the DEIR utterly failed to analyze the full impacts the Project would have on cultural resources, water quality, wetlands, biological resources, air quality, traffic congestion, and environmental justice. The DEIR also failed to analyze the project as a whole and failed to inform the public of the Port of Hueneme's full expansion plan, which includes the 250-acre permanent vehicle storage facility. The EIR must be redrafted to include this full analysis, and must include a complete analysis of the Project's impacts to the environment. The City of Oxnard cannot proceed with this woefully inadequate environmental review.

Mati Waiya
Executive Director
Wishtoyo Chumash Foundation

Tevin Schmitt
Watershed Scientist
Wishtoyo Chumash Foundation

Eva Pagaling
Watershed Science Intern
Wishtoyo Chumash Foundation

CITY OF OXNARD CALIFORNIA

Solis, Rogelio <rogelio.solis@oxnard.org>

[Ask Planning Action] Fw: Port of Hueneme request for Vehicle Storage Facility at Ormond Beach

2 messages

Irene <ireneraus@hotmail.com> Thu, Oct 20, 2022 at 3:36 PM
To: "planning@oxnard.org" <planning@oxnard.org>, "cityclerk@oxnard.org" <cityclerk@oxnard.org>
Cc: Larry Godwin <godwinc@earthlink.net>, "john.zaragoza@oxnard.org" <john.zaragoza@oxnard.org>, Aaron Greer <ffamgreer@aol.com>, "Chair, Ventura County Surfrider" <chair@ventura.surfrider.org>, "ashley.golden@oxnard.org" <ashley.golden@oxnard.org>

Sent from Windows Mail

From: Irene
Sent: Thursday, October 20, 2022 3:03 PM
To: cityclerk@oxnard.org
Cc: Larry Godwin

To: the City of Oxnard and Planning Commissioners

Re: Port of Hueneme request for Vehicle Storage Facility at Ormond Beach
a. Adopt a Resolution certifying Final Environmental Impact Report (EIR) No. 22-01 for the Port of Hueneme - Temporary Outdoor Vehicle Storage Facility (Governor's Office of Planning and Research State Clearinghouse No. 2020069039); and

b. Adopt a Resolution approving Planning and Zoning Permit No. 18-500-02 (Special Use Permit) for a vehicle storage facility, subject to certain findings and conditions.

For Oxnard,
Please OPPOSE the Port of Hueneme Vehicle Storage at this location.
Oxnard can do better! A car park at Ormond is an imposition efforts any hope for a public project at Ormond.
Despite the Port's claim that the project is temporary, it is an eyesore to the adjacent community already in need of improvements, and a threat to existing rare native coastal environment. This rare parcel is virtually the last remaining native land on our coastline… needs to be protected for a preserve at Ormond for the generations!

Irene Rauschenberger
Oxnard Resident

Sent from Windows Mail

Dobrowalski, Jay <jay.dobrowalski@oxnard.org> Thu, Oct 20, 2022 at 3:37 PM
To: "Loera, Miriam" <miriam.loera@oxnard.org>, Rogelio Solis <rogelio.solis@oxnard.org>

Hi Roy and Miriam,
Here is another comment letter.
Thanks,

Jay Dobrowalski | Planning Supervisor
Community Development Department
214 S C Street | Oxnard, CA 93030
O: 805.385.3948 | F: 805.385.7417
www.oxnard.org

Effective February 14, 2022, the Service Center and all public-interfacing City buildings will be open to the public.

Online services remain available through our online portal at www.oxnard.org/planning

- General inquiries should be sent via email to Planning@oxnard.org.
- For new applications, email us at planning@oxnard.org. Large projects can be shipped with prior authorization. Smaller projects may be submitted via email.
- For existing applications, contact your assigned Case Planner by direct email.

For the most up to date information on COVID-19 please visit https://www.venturacountyrecovers.org/

---------- Forwarded message ---------
From: **Chaparro, Rose** <rose.chaparro@oxnard.org>
Date: Thu, Oct 20, 2022 at 3:27 PM
Subject: Fwd: Port of Hueneme request for Vehicle Storage Facility at Ormond Beach
To: Joe Pearson II <Joe.Pearson@oxnard.org>, Jay Dobrowalski <jay.dobrowalski@oxnard.org>, Miriam Loera <miriam.loera@oxnard.org>, City Clerk <cityclerk@oxnard.org>

Hi Joe,

FYI - Additional public written comments received.

Rose Chaparro, City Clerk
City of Oxnard
300 West Third Street
Oxnard, CA 93030
Main Line: (805) 385-7803
rose.chaparro@oxnard.org

---------- Forwarded message ---------
From: **Irene** <ireneraus@hotmail.com>
Date: Thu, Oct 20, 2022 at 3:03 PM
Subject: Port of Hueneme request for Vehicle Storage Facility at Ormond Beach
To: cityclerk@oxnard.org <cityclerk@oxnard.org>
Cc: Larry Godwin <godwinc@earthlink.net>

To: the City of Oxnard and Planning Commissioners

Re: Port of Hueneme request for Vehicle Storage Facility at Ormond Beach

a. Adopt a Resolution certifying Final Environmental Impact Report (EIR) No. 22-01 for the Port of Hueneme - Temporary Outdoor Vehicle Storage Facility (Governor's Office of Planning and Research State Clearinghouse No. 2020069039); and

b. Adopt a Resolution approving Planning and Zoning Permit No. 18-500-02 (Special Use Permit) for a vehicle storage facility, subject to certain findings and conditions.

For Oxnard,
Please OPPOSE the Port of Hueneme Vehicle Storage at this location; Oxnard can do better!
A car parking lot at Ormond is an imposition on **efforts made for decades for an Ormond Beach public project, Oxnard lets get it done!** Despite the Port's claim that the project is temporary, it is an eyesore to the adjacent community already in need of improvements, and a threat to existing rare native coastal environment.

Important is Oxnard's coastline is virtually built out, this rare parcel is virtually the last remaining native land on our coastline… that should be developed into a preserve for the generations!

[Quoted text hidden]