

**City of Irvine 2045 General Plan Update
Program Environmental Impact Report
SCH #2023070463**

Letters of Comment and Responses

The following letters of comment were received from interested parties, local agencies, state agencies, and individuals who attended a Transportation Commission Special Meeting during the public review period (March 15 to April 29, 2024) of the Draft PEIR. A copy of each comment letter along with corresponding staff responses is included here. Some of the comments did not address the adequacy of the environmental document; however, staff has attempted to provide appropriate responses to all comments as a courtesy to the commenter. Some of the comments received resulted in changes to the Draft PEIR text. These text changes are indicated by ~~strikeout~~ (deleted) and underline (inserted) markings in the Final PEIR text. Revisions to the Draft PEIR are intended to correct minor discrepancies and provide additional clarification. The revisions do not affect the conclusions of the document.

Letter	Author	Page Number
Interested Parties		
A	Michael Chambers	RTC-3
B	Haibo Liu	RTC-4
C	Nissreen Qamhiyah	RTC-5
D	J. H. Zech (3/17/24)	RTC-6
E	David O	RTC-8
F	Susan Sayre	RTC-9
G	J. H. Zech (4/20/24)	RTC-10
H	John Brock (4/22/24)	RTC-12
I	California Cultural Resource Preservation Alliance, Inc.	RTC-14
J	Adriana Maestas	RTC-15
K	J. H. Zech (4/29/24)	RTC-16
L	John Brock (4/29/24)	RTC-17
M	Climate Action Campaign	RTC-19
N	Irvine Ranch Conservancy	RTC-27
Local Agencies		
O	Irvine Ranch Water District	RTC-30
P	South Coast Air Quality Management District	RTC-32
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State Agencies		
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U	California Department of Transportation	RTC-69

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V	California Department of Fish and Wildlife	RTC-74
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W	Transportation Commission Special Meeting	RTC-87

Letter T

From: Zachariasen, Judith@DOC
To: GPUUpdate 2045
Cc: OLRA@DOC; OPR State Clearinghouse
Subject: General Plan Draft PEIR - SCH No. 2023070463
Date: Friday, April 19, 2024 9:57:12 AM
Attachments: image001.png

CAUTION: EXTERNAL EMAIL

Dear Alyssa Matheus,

T-1 The California Geological Survey (CGS) has received the Draft Program Environmental Impact Report (PEIR) for the Irvine 2045 General Plan Update. This email conveys the following comments from CGS concerning geologic issues related to the project area:

T-2 1. Liquefaction and Landslide Hazards

The draft PEIR addresses these hazards but includes a number of errors, omissions, or misrepresentations of geologic and seismic conditions.

- a. Figure 4.5-1, "Seismic Hazards," includes Earthquake Zones of Required Investigation (ZORI) mapped by CGS only for liquefaction hazard. However, CGS has also mapped ZORI for earthquake-induced landslide hazards within the boundaries of the City of Irvine. Figure 4.5-1 should be revised to show both of these seismic hazards. We note that Figure 4.5-2, which depicts deep-seated landslide susceptibility, is related to but different than earthquake-induced landslide hazard. For example, development in ZORI carries state-defined requirements for addressing the hazard. In addition, the first paragraph of Section 4.5.5.1.b states that, "Figure 4.5-2 identifies the areas of the City that are considered vulnerable to seismic induced landslides." This sentence should be revised, as the areas of deep-seated landslide susceptibility are not specifically areas subject to seismically induced landsliding.

The combined extent of the relevant Earthquake Zones of Required Investigation Maps (EZRIM) can be viewed here: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>

Individual Seismic Hazard Zone Reports, EZRIM, and associated GIS data are available for download here:

[https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?](https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps)
[map=regulatorymaps](https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps)

- T-3 b. On page 4.5-4, the draft PEIR states, "Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides." This is incorrect. Liquefaction and earthquake-induced landslides, though both generated by seismic shaking, are two distinct hazards. And, in large part, they do not occur in the same location. So, in general, liquefaction hazard zones do not "contain" or overlap with earthquake-induced landslide hazard zones. This sentence should be revised to correct this misrepresentation.

- T-4 c. In the first paragraph of Section 4.5.5.1.b, the last sentence, "Even these areas;[sic] however, are designated as having a moderately low risk of landslides due to seismic conditions, and a low likelihood of a landslide under other conditions," should be supported with evidence, which has not been provided in the text. If this information comes from an outside reference, a citation should be provided.

T-5 2. Ground Shaking Hazards

The draft PEIR addresses this hazard but contains some issues that should be corrected or

T-1 This comment is introductory and does not address the adequacy of the PEIR, but it will be forwarded to the decision makers for their review and consideration. See responses to specific comments below.

T-2 A new Figure 4.5-2 Earthquake Induced Landslide Susceptibility has been added to Final PEIR and attached to the end of the responses to this letter. Figure 4.5-2 of the Draft PEIR referenced in this comment has been renumbered as Figure 4.5-3. With the addition of the new Figure 4.5-2 Earthquake Induced Landslide Susceptibility, the statement from Section 4.5.5.1.b of the PEIR quoted in this comment is now correct.

T-3 The statement quoted in this comment has been deleted from the Final PEIR. A new figure presenting earthquake induced landslide susceptibility has been added to Section 4.5.1.1 Surface Rupture of the Final PEIR. Deletion of this statement and addition of the new figure makes clear the distinction between earthquake-induced landslides and liquefaction. Page 4.5-4 of the Final PEIR has been revised as follows:
~~Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toes of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.~~

T-4 Section 4.5.5.1.b of the Final PEIR has been clarified to provide reference to the City's Local Hazard Mitigation Plan (LHMP), which is the source of this statement. This discussion has also been revised to discuss deep-seated landslide susceptibility based on information from the City's LHMP:
~~Even these areas; h~~ However, the City's LHMP documents that these areas are designated as having a moderately low risk of landslides due to seismic conditions, and a low likelihood of a landslide under other conditions. Additionally, the California Geological Survey has mapped deep seated landslide hazards, which uses a scale of landslide susceptibility that is based on slope steepness and the strength of the underlying rock, with 0 being no susceptibility and 10 being the highest susceptibility. Figure 4.5-3

LETTER

RESPONSE

clarified. In the middle of the second paragraph of Section 4.5.1.2, the consultants write that the Third Uniform California Earthquake Rupture Forecast (UCERF3) "provides the most recent assessment of the probability of a major earthquake on various faults between 2015 to 2044" and reports that the "San Joaquin Hills Fault, located within the City, has a 40 percent probability of a major earthquake occurring while the Newport-Inglewood Fault, located 8 miles from the City, has a 95 percent probability of occurring." In the last sentence of the paragraph, the consultants write that "the likelihood of a powerful earthquake occurring along these faults [Newport-Inglewood and San Joaquin Hills] per the 2015 Third Uniform California Earthquake Rupture Forecast within the next 25 years is exceptionally low." These two statements appear inconsistent, as 40% and 95% probabilities of occurrence could hardly be considered "exceptionally low." CGS recommends the consultants review this section and the references that inform it and clarify the text to indicate consistently the level of hazard associated with ground shaking from these nearby earthquake sources. This text is repeated in Section 4.5.5.1.a, and should be addressed there as well.

T-6

3. Other

In the last paragraph of Section 4.5.2.3d (p. 4.5-12), the report mentions the "Northridge" earthquake. This should be "Northridge."

T-7

If you have any additional comments or questions, please feel free to call or email.

Thank you,
Judy Zachariasen



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T-4 (cont.)

identifies the deep-seated landslide susceptibility for Irvine. Areas in the foothills of the Santa Ana Mountains and San Joaquin Hills show the greatest susceptibility within the City.

See page 55 of the City's LHMP, which is available online here: <https://online.flippingbook.com/view/792205/78/>

T-5

The probability of both earthquakes as presented in the Draft PEIR was off by two decimal points. Page 4.5-4 of the Final PEIR has been revised to state the following:

The San Joaquin Hills Fault, located within the City, has a ~~400.40~~ 40 percent probability of a major earthquake occurring while the Newport-Inglewood Fault, located 8 miles from the City, has a ~~950.95~~ 95 percent probability of a major earthquake occurring. The 2015 Third Uniform California Earthquake Rupture Forecast classifies the probability of an earthquake occurring on either of these faults as negligible.

These revisions have also been made to Section 4.5.5.1.a of the Final PEIR.

T-6

Section 4.5.2.3d (p. 4.5-12) has been revised as follows:

The largest and most recent earthquake to occur within 100 miles of the City of Irvine was the 6.7 magnitude ~~Northridge~~ Northridge Earthquake in 1994 that occurred approximately 56 miles from the City. Additional earthquakes that have occurred within the region since the beginning of the twentieth century are presented in Table 4.5-2.

T-7

This comment is conclusionary and does not address the adequacy of the PEIR, but it will be forwarded to the decision makers for their review and consideration.

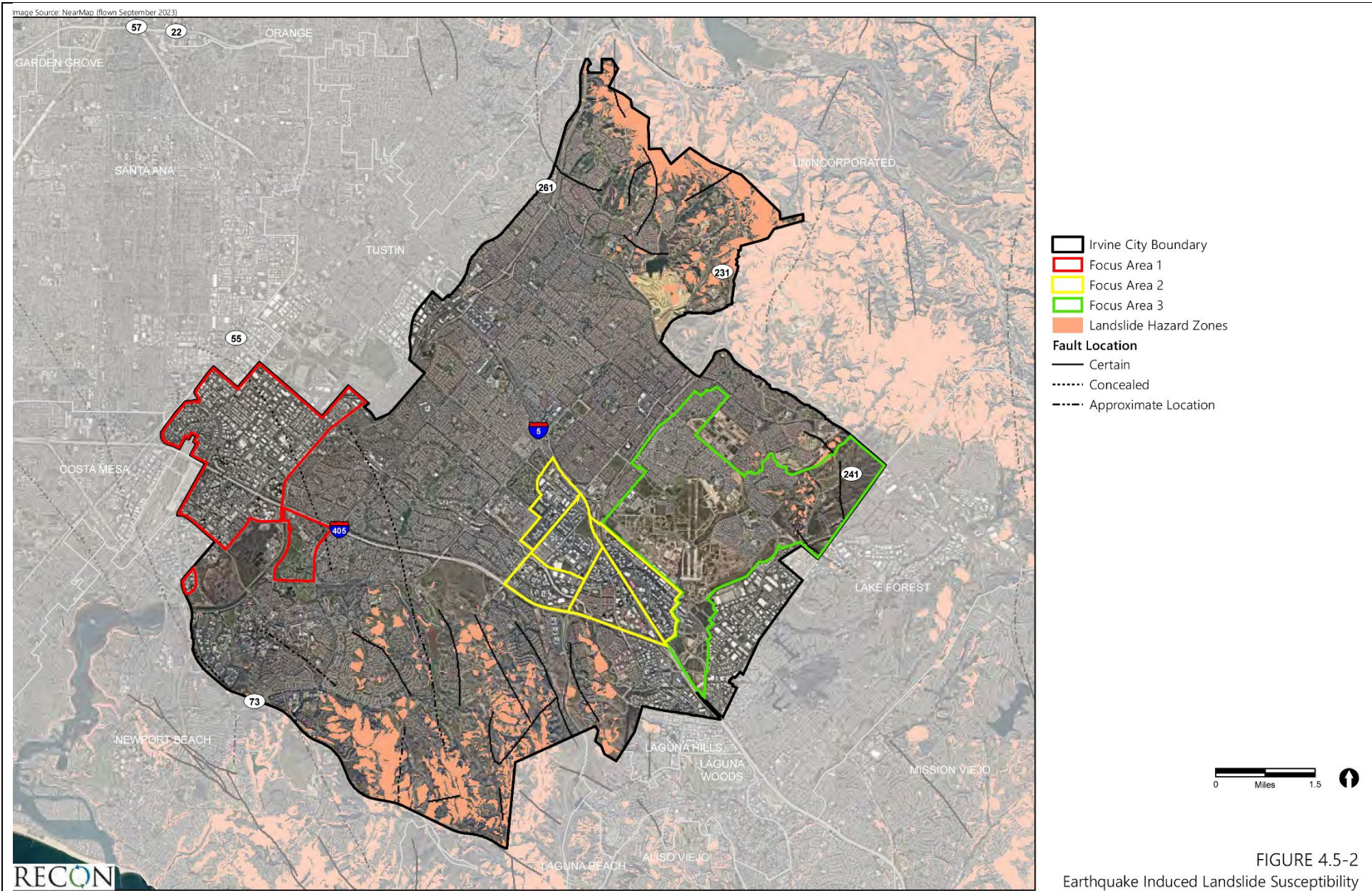


FIGURE 4.5-2
Earthquake Induced Landslide Susceptibility