

1 BEFORE THE LAND USE BOARD OF APPEALS
2 OF THE STATE OF OREGON

3
4 WINSTON CHANG,
5 *Petitioner,*

6
7 vs.

8
9 CLACKAMAS COUNTY,
10 *Respondent,*

11 and

12
13 BUCKNER CREEK SOLAR, LLC,
14 *Intervenor-Respondent.*

15
16
17 LUBA No. 2019-061

18
19 FINAL OPINION
20 AND ORDER

21
22 Appeal from Clackamas County.

23
24 Charles W. Woodward, IV, Eugene, filed the petition for review and a
25 reply brief, and argued on behalf of petitioner. With him on the brief was Sean
26 T. Malone.

27
28 Nathan K. Boderman, Assistant Clackamas County Counsel, filed a
29 response brief. With him on the brief was Stephen L. Madkour, Clackamas
30 County Counsel.

31
32 Sara A. H. Sayles, Portland, filed a response brief and argued on behalf of
33 intervenor-respondent. With her on the brief was Damien R. Hall and Ball Janik
34 LLP.

35
36 ZAMUDIO, Board Chair; RUDD, Board Member, participated in the
37 decision.

1 RYAN, Board Member, did not participate in the decision.

2

3 REMANDED

09/30/2019

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5 You are entitled to judicial review of this Order. Judicial review is
6 governed by the provisions of ORS 197.850.

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NATURE OF THE DECISION

Petitioner appeals a county hearings officer’s decision approving a conditional use permit for a ten-acre solar power generation facility.

MOTION TO INTERVENE

Buckner Creek Solar, LLC (intervenor) moves to intervene on the side of the respondent. No party opposes the motion and it is allowed.

SUPPLEMENTAL RECORD

On July 8, 2019, the county transmitted the original record in electronic format. No party filed any record objections. On July 29, 2019, petitioner filed the petition for review, arguing, among other things, that part of the challenged decision is not supported by substantial evidence. On August 19, 2019, the county filed a response brief, accepting and incorporating by reference intervenor’s response brief, which was also filed on August 19, 2019. In addition, the county attached to its response brief a document dated May 2, 2019, that appears to be intervenor’s final written submittal during the local proceeding. That document includes a table intended to persuade the hearings officer that a solar farm use poses less of a fire hazard than the existing tree farm use, as required by the applicable criteria at issue in the first assignment of error. The county explained that the document “was placed before and not rejected by the County Hearings Officer,” but that the document was “inadvertently omitted from the record transmitted to LUBA.” Respondent’s Response Brief 1. It appears to us that the

1 hearings officer referred to and relied upon the omitted document in the
2 challenged decision. The county asks that the document be included in the LUBA
3 record as a supplement to the original record.

4 Under our rules, omissions from the record are subject to record objections
5 and the record is usually settled prior to briefing. *See* OAR 661-010-0026(2)(a)
6 (providing basis for record objections that “[t]he record does not include all
7 materials included as part of the record during the proceedings before the final
8 decision maker”); OAR 661-010-0026(6) (providing that a record objection
9 suspends the time limits for all further procedures and that the Board will resolve
10 record objections and issue an order settling the record “and setting forth the
11 schedule for subsequent events”). However, we have allowed late supplements
12 to the record if the timing of submission does not prejudice any party’s substantial
13 rights. *See* OAR 661-010-0005 (technical violations of LUBA’s rules do not
14 affect review unless the violation prejudices a party’s substantial rights); *see also*
15 *Save Downtown Canby v. City of Canby*, 70 Or LUBA 68, *aff’d*, 267 Or App 124,
16 340 P3d 173 (2014); *Conte v. City of Eugene*, 65 Or LUBA 326 (2012). Petitioner
17 does not object to the supplemental record, does not dispute that the document
18 was improperly omitted from the record, and does not argue that the late
19 supplement to the record would prejudice his substantial rights. Thus, there is no
20 question that the document should be included in the original record based on our
21 review of the hearings officer’s decision and the county’s unchallenged

1 representations. The record is supplemented with the sixteen-page document
2 appended to the county’s response brief.¹

3 **FACTS**

4 The subject property is comprised of approximately 43.72 acres and is
5 zoned Agriculture Forest (AG/F). The property is currently developed with a
6 single-family residence and accessory buildings. An area of the property is
7 forested, and another area of the property is used as a Christmas tree farm. The
8 southwestern portion of the property is steep and slopes down to a creek. That
9 area contains landslide scarps.²

10 Intervenor applied to the county for conditional use approval to site a 10-
11 acre solar facility on the property in a flat area that is currently used for growing
12 Christmas trees. The proposed solar facility will include an array of solar panels,
13 perimeter fencing, overhead poles and lines, and internal access roads. Record
14 1233, 1253.

¹ The supplemental record is marked as an Appendix to the county’s response brief. In this decision we will refer to the supplemental record as RB App.

² The term “landslide scarp” is used frequently in the record and briefing. However, “scarp” is not defined in the Clackamas County Zoning and Development Ordinance (ZDO), the challenged decision, or the parties’ briefing. The dictionary defines “scarp” as “a line of cliffs produced by faulting or erosion,” and “escarpment” as “a long cliff or steep slope separating two comparatively level or more gently sloping surfaces and resulting from erosion or faulting.” *Webster’s Third New Int’l Dictionary* 2026, 775 (unabridged ed 2002). In this decision, we understand “scarp” means a steep bank or slope, and “landslide scarp,” means a steep bank or slope formed by a landslide.

1 County planning staff approved the solar facility with conditions.
2 Petitioner appealed to the county hearings officer, who, after a public hearing,
3 approved the solar facility with conditions. This appeal followed.

4 **FIRST ASSIGNMENT OF ERROR**

5 Clackamas County Zoning and Development Ordinance (ZDO)
6 406.05(A)(1)(b) provides that “commercial utility facilities for the purpose of
7 generating power” may be allowed as a conditional use in the AG/F zone,
8 provided that: “The proposed use will not significantly increase fire hazard or
9 significantly increase fire suppression costs or significantly increase risks to fire
10 suppression personnel.”³ ZDO 406.05(A)(1)(b) implements and adopts verbatim
11 OAR 660-006-0025(5)(b), which is part of the state-wide administrative rules
12 adopted by the Department of Land Conservation and Development regulating
13 uses authorized in forest zones. We review the county’s interpretation of local
14 law that implements state law to determine whether the county properly
15 construed the applicable law. ORS 197.835(9)(a)(D).

16 We have previously explained that, for purposes of determining whether
17 the proposed use will significantly increase fire hazard or risk to fire suppression
18 personnel, the decisionmaker must compare the fire hazard and risks posed by

³ In *York v. Clackamas County*, ___ Or LUBA ___ (LUBA No 2018-145, Apr 10, 2019) (slip op at 11), we concluded that a solar power generating facility is a type of “commercial utility facilities for the purpose of generating power” allowed as a conditional use in the forest zone.

1 the existing use to those posed by the proposed use. *York*, ___ Or LUBA ___
2 (LUBA No 2018-145, Apr 10, 2019) (slip op at 36).

3 **A. Fire Hazard**

4 During the local proceeding, petitioner argued that the solar farm
5 significantly increases fire hazard.

6 “[I]t is a reasonable assumption that a high voltage power facility
7 that is unmanned in the middle of a residential neighborhood,
8 inherently increases the fire risk for all residents.

9 “Ways that a solar panel can catch fire: an arc flash can occur in a
10 short circuit. Flammable components of the PV panels include the
11 thin layers of polymer encapsulates surrounding the PV cells,
12 polymer backsheets, plastic junction boxes on rear of panel, and
13 insulation on wiring * * *.” Record 536.

14 Petitioner included examples of articles and videos reporting fires on solar
15 farms. One fire in the United Kingdom burned a high voltage output cable at a
16 control box. Two fires in California were reportedly caused by rodents damaging
17 solar panel wires. Another fire in California was suspected to have been caused
18 by a spark underneath a solar panel. However, the cause of the spark is not in the
19 record. Record 536.

20 Intervenor responded that the proposed solar farm poses less of a fire
21 hazard than the existing Christmas tree farm. Intervenor explained that certain
22 approval criteria provide increased safety at a solar facility as compared to a tree
23 farm. For example, ZDO 406.08(A) requires a fuel firebreak around the solar

1 structures, while a Christmas tree farm does not require a firebreak.⁴ Intervenor
2 also explained that, unlike a tree farm, the solar farm use is required to construct
3 roads with turnarounds accessible by fire department vehicles and obtain written
4 approval from the local fire district for planned access, circulation, fire lanes, and
5 water source supply. Intervenor explained that a tree farm is comprised of trees
6 with no spacing or maintenance requirements, while the solar farm will be
7 comprised of solar panels (which intervenor stated are non-combustible) and
8 native grasses regularly maintained as required by the weed mitigation plan. RB
9 App 4. Intervenor argued that those differences, combined with evidence of fires
10 on Christmas tree farms, support a conclusion that there is a higher risk of fire at
11 a Christmas tree farm than a solar farm. RB App 3. Intervenor also argued that,
12 based on evidence in the record, personal property damage from tree farm fires
13 exceeds personal property damage from solar farm fires. RB App 5.

14 The hearings officer found:

15 “[Intervenor] provided a table that demonstrates all the ways that the
16 solar farm would be less of a fire hazard than the Christmas tree
17 farm. I agree with [intervenor’s] conclusions. While there is
18 evidence on both sides, fires on Christmas tree farms appear to be
19 more common and certainly to be more hazardous resulting in
20 greater damage. I agree with [intervenor] that the proposed solar
21 farm would not increase, let alone significantly increase, the fire
22 hazard over that of the existing Christmas tree farm.” Record 19–

⁴ ZDO 202 defines “structure” as “[a]nything constructed or erected, which requires location on the ground or attached to something having a location on the ground.”

1 20.

2 **1. Adequate Findings**

3 Petitioner first argues that the hearings officer’s decision fails to respond
4 to petitioner’s argument that the solar farm has a higher inherent risk of fire than
5 a Christmas tree farm because solar farm components conduct electricity and
6 electrical discharges can ignite combustible materials. We understand that
7 argument as a challenge to adequacy of the hearings officer’s findings. Adequate
8 findings set out the applicable approval criteria and explain the facts relied upon
9 to reach the conclusion whether the applicable criteria are satisfied. *Heiller v.*
10 *Josephine County*, 23 Or LUBA 551, 556 (1992). Findings must address and
11 respond to specific issues relevant to compliance with applicable approval
12 standards that were raised in the proceedings below. *Id*; *Space Age Fuel, Inc. v.*
13 *Umatilla County*, 72 Or LUBA 92 (2015). However, local governments are not
14 required to address in their findings every conflict in the evidence or every
15 criticism that is made of particular evidence. *Knight v. City of Eugene*, 41 Or
16 LUBA 279 (2002).

17 We first note that the hearings officer specifically acknowledged
18 petitioner’s argument regarding inherent ignition risk. The finding states:
19 “According to [petitioner], solar farms are inherently dangerous fire risks and
20 risks to fire suppression personnel.” Record 19. In the findings quoted above, the
21 hearings officer identified the applicable standard and explained the facts relied
22 upon to reach his conclusion that the proposed solar farm would not increase, let

1 alone significantly increase, fire hazards compared to the existing Christmas tree
2 farm. Instead, the hearings officer concluded that the solar farm would be less of
3 a fire hazard than the Christmas tree farm. The hearings officer considered the
4 arguments and evidence on both sides and agreed with intervenor and relied on
5 intervenor's summary of the evidence. The hearings officer's findings are
6 adequate.

7 **2. Substantial Evidence**

8 Petitioner also argues that the hearings officer's finding that the solar farm
9 provides no increased risk of fire is not supported by substantial evidence in the
10 record.⁵ ORS 197.835(9)(a)(C). "Substantial evidence exists to support a finding
11 of fact when the record, viewed as a whole, would permit a reasonable person to
12 make that finding." *Dodd v. Hood River County*, 317 Or 172, 855 P2d 608 (1993)
13 (citing *Younger v. City of Portland*, 305 Or 346, 351–52, 752 P2d 262 (1988)).
14 Specifically, petitioner argues that the hearings officer's finding that fires on tree
15 farms are more common, more hazardous, and result in greater damage are not
16 supported by substantial evidence in the record.

⁵ Petitioner also argues that the table the hearings officer relied upon is not in the LUBA record. That table is contained in the supplemental record. See n 1. In addition, as intervenor points out, the table contains a summary and comparison of other evidence that was included in the original record. For both of those reasons, petitioner's argument provides no basis for remand, and we discuss it no further in this decision.

1 Petitioner points to evidence in the record that there is no national database
2 that measures the incidence of solar farm fires. Record 536. The record contains
3 multiple articles that demonstrate fires on Christmas tree farms are frequent
4 compared to fires on solar farms. Record 46–89. Those articles are evidence upon
5 which a reasonable person would rely, even in light of other evidence in the
6 record indicating that there may not be complete or accurate counts of incidences
7 of fires on solar farms. We conclude that the record, viewed as a whole, would
8 permit a reasonable person to make a finding that fires on tree farms are more
9 common, more hazardous, and result in greater damage. Thus, substantial
10 evidence supports the hearings officer’s findings.

11 **B. Risk to Fire Suppression Personnel**

12 ZDO 406.05(A)(1)(b) requires the applicant to establish that “[t]he
13 proposed use will not * * * significantly increase risks to fire suppression
14 personnel.” During the local proceeding, petitioner argued that the solar farm
15 significantly increases risk to fire suppression personnel, particularly because the
16 solar panels essentially cannot be turned off and therefore represent a live danger.
17 Petitioner explained:

18 “The panels generate DC current and cannot be turned off unless the
19 panels are 100% covered and shielded from sunlight. A study from
20 Ohio State University in 2015 described the real dangers of these
21 facilities: ‘In Summary the danger of electrical shock to system
22 owners, Firefighters or Emergency responders who come into
23 contact with damaged PV systems is real, with the potential to be
24 fatal and should be taken seriously.’ Another quote from the Fire
25 Protection Research Foundation is as follows: ‘The inability to de-

1 energize individual photovoltaic panels exposed to sunlight cannot
2 be overemphasized. It is absolutely imperative that emergency
3 responders always treat the systems and all its components as
4 energized.” Record 537.

5 Intervenor responded that with proper training, fire suppression personnel
6 would not be subject to significantly increased risk. Intervenor suggested a
7 condition of approval that intervenor offer a fire safety training course to the local
8 fire district. The hearings officer agreed with intervenor that, as conditioned, the
9 solar farm would not significantly increase risks to fire suppression personnel.

10 The decision includes the following condition:

11 “VI. Clackamas RFPD#1

12 “1) Prior to the issuance of building permits, the applicant will
13 offer a fire safety training for the solar farm to the RFP #1. If
14 the offer is accepted within 30 days, the applicant will provide
15 such training.” Record 24 (underscoring in original; boldface
16 omitted).

17 Petitioner argues that the hearings officer’s findings are inadequate
18 because the hearings officer failed to compare the risk to fire suppression
19 personnel from fire suppression activities on a tree farm to the risk to fire
20 suppression personnel from fire suppression activities on a solar farm. We also
21 understand petitioner to argue that the condition of approval is ineffective to
22 establish compliance with ZDO 406.05(A)(1)(b) with respect to risks to fire
23 suppression personnel. We agree with petitioner on both issues.

24 As we explained in *York*, the decisionmaker must compare the risks posed
25 by the existing use to those posed by the proposed use. *York*, ___ Or LUBA ___

1 (LUBA No 2018-145, Apr 10, 2019) (slip op at 36). The hearings officer did not
2 make any findings regarding the existing risks to fire suppression personnel or
3 any findings meaningfully evaluating and comparing increased risks to fire
4 suppression personnel. Thus, we remand for further findings.

5 The hearings officer appears to have concluded that the solar farm poses
6 significant increased risks to fire suppression personnel, but that those risks could
7 be mitigated by training so that the increased risks are not significant. The
8 uncontroverted evidence in the record demonstrates that solar power generation
9 equipment poses a substantial and unique safety risk to fire suppression
10 personnel. The solar panels generate an electrical current that cannot be turned
11 off unless the panels are 100 percent covered and shielded from sunlight. Fire
12 suppression personnel who come into contact with a damaged solar power
13 generation system could sustain serious and potentially fatal injury. Thus, fire
14 suppression personnel need training to deal with responding to fire and other
15 emergencies at the solar facility.

16 It may be that responding fire departments already provide such training.
17 It may be that future mandatory training could mitigate the risk. However, we
18 agree with petitioner that the record establishes that the risks are significant and
19 that Condition VI is inadequate to ensure that significant risks will be mitigated.
20 Thus, the decision must be remanded. *See Neighbors for Livability v. City of*
21 *Beaverton*, 37 Or LUBA 408 (1999), *rev'd and rem'd on other grounds*, 168 Or
22 App 501, 4 P3d 765 (2000) (an ineffective condition may result in remand where

1 the condition is necessary to ensure compliance with a relevant approval
2 criterion).

3 On remand, the county must make additional findings and conclusions
4 regarding comparative risks to fire suppression personnel and mitigation
5 measures.⁶

6 The first assignment of error is denied, in part, and sustained, in part.

7 **SECOND ASSIGNMENT OF ERROR**

8 Conditional uses must comply with ZDO development standards. ZDO
9 1203.03(F). ZDO 1003.02(B) provides that “[n]o development or grading shall
10 be allowed in areas of land movement, slump or earth flow, and mud or debris
11 flow,” unless (1) identified hazards are stabilized “based on established and
12 proven engineering techniques which ensure protection of public and private
13 property,” or (2) the applicant provides “[a]n engineering geologic study
14 approved by the County establishing that the site is stable for the proposed use
15 and development.”

16 Based on the Department of Geology and Mineral Industries (DOGAMI)
17 Statewide Information Layer for Oregon (SLIDO) website, petitioner argued that
18 “[a]bout a quarter to one-third of the proposed site lies directly within a mass
19 movement hazard area, characterized by DOGAMI as a moderate landslide risk.”

⁶ We affirmed the hearings officer’s findings that fires on tree farms are more common, more hazardous, and result in greater damage. Those finding may be relevant to the analysis of comparative risk to fire suppression personnel.

1 Record 1218 (underscoring and boldface omitted). Petitioner submitted a map
2 that superimposed the proposed site of the solar facility onto a SLIDO map,
3 showing a portion of the western area where the solar array is proposed to be
4 located in yellow, indicating the area is defined by DOGAMI as “Moderate-
5 Landsliding possible.” Record 1219–20. The map also shows areas to the west of
6 the solar array as orange and red, indicating that the orange areas are “High-
7 Landsliding likely,” and the red areas are “Very High-Existing Landslide.” *Id.*
8 Petitioner requested that the county require an engineering geotechnical study to
9 establish suitability or stabilization of the landslide risk area. Record 1159.

10 Differently, the county planning staff report concluded that “the area
11 proposed for use is, in fact, not an area of land movement, slump or earth flow,
12 and mud or debris flow.” Record 1214. At the hearing, the hearings official asked
13 staff to elaborate, and staff responded:

14 “There are no identified landslides at the location of the proposed
15 photovoltaic, there are no scarps, there’s no landslide deposits where
16 they’re putting that; there is in fact right at the slope break, at the
17 tree line; and that’s where it drops off significantly, and that’s where
18 my mapping shows scarps and debris flow, both historic and older.
19 Once you get up on top, yes, ultimately, I assume that this slope is
20 moving that way and that is why it got risked * * * on the map in
21 that way but you can say that about any property near any slope * *
22 * nature wants things to be flat. The way I’m interpreting the SLIDO
23 map, * * * due to the nearby slope at some point in geologic time,
24 there is risk of slide, there is no currently mapped landslide scarp in
25 that location, however.” Audio Recording 5:24–6:10.

26 Staff testified elsewhere as follows:

1 “[T]he southwestern portion of the property is steep, sloping down
2 to a creek off-site. There is a mapped landslide scarp along the top
3 of this feature, which forms the approximate westerly boundary of
4 the proposed solar array. County maps do not indicate any land
5 movement in that area proposed for use.” Record 1208.

6 “[I]nformation available to staff including from the SLIDO slide
7 indicates the area proposed for use is in fact not an area of land
8 movement, slump, earthflow, or mud or debris flow.” Record 1214.

9 “[The development] is not an area that we map as actively moving,
10 with any expectation for it to become actively moving any time in
11 human terms.” Audio Recording 20:02–20:12.

12 The hearings officer interpreted ZDO 1003.02(B) and determined that “an
13 area of land movement” is “an area where a land slide or some other earth
14 movement has already occurred—not an area where such activity *could* occur,”
15 and, thus, “ZDO 1003.02(B) applies to areas where ‘land movement, slump or
16 earth flow, and mud or debris flow’ has occurred rather than where it might
17 occur.” Record 16 (emphasis in original). The hearings officer concluded that
18 ZDO 1003.02(B) is not applicable.⁷

⁷ In the alternative, the hearings officer found:

“[I]f a reviewing body determines that ZDO 1003.02(B) is applicable then the following condition of approval is included:

““The applicant shall provide an engineering geologic study approved by the County establishing that the site is stable for the proposed use and development pursuant to ZDO 1003.02(B)(2).” Record 16.

1 In the second assignment of error, petitioner argues that the hearings
2 officer “made inadequate findings not based on substantial evidence and
3 misconstrued ZDO 1003.02(B), regarding land movement and geologic hazards.”
4 Petition for Review 18.

5 **A. Adequate Findings**

6 Petitioner argues that the hearings officer’s findings are inadequate
7 because the hearings officer “should have responded to whether the yellow,
8 moderate hazard identified by DOGAMI’s SLIDO maps constitute ‘land
9 movement.’” Petition for Review 35. Adequate findings set out the applicable
10 approval criteria and explain the facts relied upon to reach the conclusion whether
11 the applicable criteria are satisfied. *Heiller*, 23 Or LUBA at 556. The hearings
12 officer found:

13 “According to [petitioner], portions of the area proposed for the
14 solar farm are in areas of moderate land slide risk as demonstrated
15 by DOGAMI maps. Staff explained at the public hearing merely
16 being in an area of moderate land slide risk is not the same thing as
17 being in an area of ‘land movement.’ According to staff, an area of
18 land movement is an area where a land slide or some other earth
19 movement has already occurred—not an area where such activity
20 *could* occur. I agree with staff that ZDO 1003.02(B) applies to areas
21 where ‘land movement, slump or earth flow, and mud or debris
22 flow’ has occurred rather than where it might occur. Therefore, ZDO
23 1003.02(B) is not applicable.” Record 16 (emphasis in original).

24 The hearings officer referred to the DOGAMI map and used the same
25 language that describes the yellow area—“moderate.” The hearings officer
26 expressly found that “an area of moderate land slide risk is not the same thing as

1 * * * an area of ‘land movement.’” Those findings are adequate to explain why
2 the hearings officer concluded ZDO 1003.02(B) does not apply.

3 **B. Interpretation of ZDO 1003.02(B)**

4 Petitioner argues that the hearings officer misconstrued the term “areas of
5 land movement” in ZDO 1003.02(B). The interpretive dispute is temporal.
6 Petitioner argues that “areas of land movement” include areas that are at risk of
7 moving in the future. Differently, the hearings officer determined that “an area
8 of land movement is an area where a land slide or some other earth movement
9 has already occurred—not an area where such activity *could* occur.” We review
10 the hearings officer’s interpretation for legal correctness, by examining text,
11 context, and any pertinent legislative history. *State v. Gaines*, 346 Or 160, 171–
12 72, 206 P3d 1042 (2009); *PGE v. Bureau of Labor and Industries*, 317 Or 606,
13 859 P2d 1143 (1993). Petitioner disagrees with the hearings officer’s
14 interpretation. However, petitioner provides no textual or contextual analysis
15 supporting his preferred interpretation.

16 Intervenor argues, and we agree, that the phrase “areas of land movement”
17 “contains no forward-looking elements or use of the future tense.” Intervenor’s
18 Response Brief 27. The term “movement” is a noun that means, “the action or
19 process of moving; *esp* : change of place or position or posture.” *Webster’s Third*
20 *New Int’l Dictionary* 1480 (unabridged ed 2002). The plain meaning of the term
21 movement supports the hearings officer’s interpretation that, to classify land as

1 an “area[] of land movement,” the land at question must show evidence of “the
2 action or process of moving.”

3 We affirm the hearings officer’s interpretation of ZDO 1003.02(B) as
4 consistent with the text of that regulation.

5 **C. Substantial Evidence**

6 Petitioner argues that the hearings officer’s findings are not supported by
7 substantial evidence because, according to petitioner, there is no evidence in the
8 record that demonstrates that the area that petitioner identified as a moderate
9 landslide risk is an area of land that *could* move as opposed to an area of land that
10 *has* moved. Petitioner directs us to the following exchange between the hearings
11 officer and planning staff at the hearing:

12 “Hearings Officer: So, ‘areas of land movement,’ it’s your position
13 that means land that already moved * * *.

14 “Staff: If they were going to put it in that orange-y area, then we’d
15 be asking for some engineering information. That is not in that area.

16 “Hearings Officer: So, if you were going to give a definition of what
17 does ‘areas of land movement’ mean, what would you say?

18 “Staff: I would say it’s mapped nicely right there.

19 “Hearings Officer: So, this landscape scarp flanks map?

20 “Staff: Well, you have got the dark shade, that’s the area of
21 historically active movement, ‘historically’ is not defined but we
22 tend to think of that in human terms of time; the lighter shade is
23 ancient landslide topography, its hummocky earth, it could have
24 been there literally for millions of years, but it does show evidence
25 of past movement. And that’s why it got picked up. And this is

1 actually LIDAR mapping.” Audio Recording at 12:38–14:53.

2 Petitioner argues that these exchanges show that staff agrees that the
3 yellow areas on the SLIDO map contain evidence of past land movement.
4 Intervenor disagrees, arguing that the staff’s statement described county
5 mapping, and not the SLIDO map. Intervenor points out that the hearings officer
6 described the map being discussed as the “landscape scarp flanks map.”
7 Intervenor contends that the map that staff referred to at the hearing is a county
8 map located in the record at 1145. That map shows the subject property
9 highlighted in yellow, with landslide features on properties east of the subject
10 property. Those landslide features are medium orange with a gray-shaded,
11 darker-orange area. The map legend explains that medium orange depicts
12 “landslide deposits” and darker orange depicts “landslide scarp flanks.” Record
13 1146.

14 The map that intervenor directs us to is more consistent with staff’s
15 statements describing the “orange-y area” and the “dark shade” area. However,
16 in the record, those maps are attached to an email from planning staff to
17 intervenor’s attorney dated March 28, 2019. The public hearing was held on
18 March 21, 2019. We have no way on this record to confirm that the map that the
19 county emailed to intervenor’s attorney is the same map that the staff referred to
20 at the public hearing. The staff’s visual presentation at the hearing is not included
21 in the record. Our inability to resolve that evidentiary dispute on this record cuts

1 both ways. The record also does not support petitioner’s assertion that staff
2 agreed that the yellow areas on the SLIDO map are areas of past land movement.

3 Nevertheless, we agree with intervenor that the record, as a whole,
4 supports the hearings officer’s conclusion that the area that petitioner identified
5 as a moderate landslide risk is an area of land that *could* move as opposed to an
6 area of land that *has* moved. The county maps indicate that there are “landslide
7 scarps” on the subject property, but no landslide deposits or landslide scarp flanks
8 are mapped in the area proposed to be developed with the solar array. Record
9 1145. County planning staff’s testimony is consistent with those maps, as set out
10 above.

11 The parties dispute whether the SLIDO map or the County map control the
12 issue. ZDO 1003.02(E) provides, in part: “The principal source of information
13 for determining mass movement hazards is the State Department of Geology and
14 Mineral Industries (DOGAMI) Bulletin 99 and accompanying maps.” Petitioner
15 does not address Bulletin 99 or explain whether the SLIDO map petitioner relies
16 upon is a map that “accompanies” Bulletin 99.⁸

⁸ Petitioner provided DOGAMI’s SLIDO source explanation:

“The landslide susceptibility overview map of Oregon uses three statewide data sets: 1) geologic map (a pre-release version of the Oregon Geologic Data Compilation, release 6), 2) landslide inventory (Statewide Landslide Information Layer for Oregon [SLIDO] release 3.2), and 3) slope map (lidar-derived data and U.S. Geological Survey national elevation data). We combined

1 Intervenor points to expert testimony in the record from intervenor’s
2 professional engineer and surveyor:

3 “DOGAMI Bulletin 99, Geology and Geologic Hazards of
4 Northwestern Clackamas County, Oregon indicates that slopes 10%
5 or less have minimal risk for unstable slopes or landslides. The
6 project area slopes are generally less than 5%, with slopes on the
7 westerly boundary of the project ranging from 5% to 10%. The
8 project is not in a moderate or high risk area for unstable slopes or
9 landslides.” Record 1148.

10 Staff’s testimony, and the hearings officer’s conclusions, are based on
11 review of *both* the county maps and SLIDO maps of the area. The parties dispute
12 reduces to whether the SLIDO map demonstrates that the solar facility will
13 involve grading or development in an “area[] of land movement.” ZDO
14 1003.02(B). The hearings officer concluded that the SLIDO map shows areas of
15 landslide risk, and that evidence of susceptibility is not evidence of actual mass
16 movement. The SLIDO map depicts landslide susceptibility and does not
17 conclusively demonstrate that an area depicted as “moderate risk – landslide
18 possible” is an “area[] of land movement.” Thus, the hearings officer’s choice

generalized geology and landslide inventory to determine landslide area per geologic unit area and to establish classes of low, moderate, and high landslide density. Then we calculated spatial statistics of the slope map to determine classes of low, moderate, and high slopes prone to landsliding within each geologic unit. Using a hazard matrix, we combined these two data sets, landslide density and slopes prone to landsliding, with the original landslide inventory to establish final landslide susceptibility overview map zones.” Record 1219.

1 was not which map he relied upon, but whether he agreed with petitioner that the
2 DOGAMI map established an area of land movement in the development area.
3 The hearings officer disagreed with petitioner on that point.

4 Substantial evidence in the record, including county maps, staff testimony,
5 and intervenor's expert testimony support the hearings officer's conclusion that
6 demonstrates that the area of land proposed to be developed is not an area of land
7 that has moved. The hearings officer correctly concluded that intervenor does not
8 propose to grade or develop in areas of land movement.

9 The second assignment of error is denied.⁹

10 **THIRD ASSIGNMENT OF ERROR**

11 ZDO 1003.02(D) prohibits diversion of storm water into areas with steep
12 slopes and "areas of land movement, slump or earth flow, and mud or debris
13 flow."¹⁰ ZDO 1003.02(B). Petitioner submitted evidence regarding runoff from
14 solar panels and studies allegedly showing that the proposed solar facility would
15 cause drainage problems on surrounding properties. That evidence included a
16 case study of water runoff from grading of a solar facility in North Carolina. *Id.*
17 Petitioner argued that "[g]rading from the construction has the high possibility of

⁹ Petitioner also challenges the alternative condition of approval. See n 7. We affirm the hearings officer's decision that ZDO 1003.02(B) does not apply to the decision. Accordingly, we need not and do not reach petitioner's challenges to the alternative condition of approval.

¹⁰ ZDO 1003.02(D) provides: "Diversion of storm water into these areas shall be prohibited."

1 redirecting water flow and changing the volume and velocity of runoff water
2 directly towards the ‘Very High-Existing Landslide Area’ just due west of the
3 site which would be in violation of [ZDO] 1003.02(D).” Record 530
4 (underscoring and boldface omitted).

5 The hearings officer found that petitioner’s argument regarding the
6 dangers of drainage from solar facilities relied upon a study from North Carolina
7 of a 31-acre facility located on steep slopes, which the hearings officer concluded
8 was “a much different situation than the present proposal.” Record 17. In this
9 case, the proposed solar facility will be situated on 10 acres of nearly level ground
10 and the solar arrays will be installed on poles placed on the ground. Thus, the
11 hearings officer found that the development would result in “very little
12 impervious surface.” *Id.* The application includes an erosion, sediment, and soil
13 compaction plan that explains how these issues will be managed and minimized
14 both during and after construction. Record 1251–55. For example, after
15 installation, the site will be planted with native grasses. The hearings officer
16 rejected petitioner’s argument that the solar facility presents a danger of soil
17 erosion or offsite flooding. Record 17.

18 The hearings officer found that the solar farm development will not violate
19 the prohibition in ZDO 1003.02(D) “because compliance with ZDO 1006 will
20 require that the proposed use not divert storm water onto mass movement areas.”
21 Record 16.

1 ZDO 1006 provides general development standards for surface water
2 management and erosion control.¹¹ The development must provide “[p]ositive
3 drainage and adequate conveyance of surface water * * * from roofs, footings,
4 foundations, and other impervious or near-impervious surfaces to an appropriate
5 discharge point.” ZDO 1006.06(A). The applicant must provide “a preliminary
6 statement of feasibility from the surface water management regulatory
7 authority,” in this case, the county engineering department. ZDO 1006.06(C).¹²

8 “Development shall be planned, designed, constructed, and
9 maintained to:

- 10 “1. Protect and preserve existing natural drainage channels to the
11 maximum practicable extent;
- 12 “2. Protect development from flood hazards;
- 13 “3. Provide a system by which water within the development will
14 be controlled without causing damage or harm to the natural
15 environment, or to property or persons within the drainage
16 basin;
- 17 “4. Ensure that waters drained from the development are
18 substantially free of pollutants, including sedimentary
19 materials, through such construction and drainage techniques
20 as sedimentation ponds, reseeded, and phasing of grading;
21 and

¹¹ The parties do not argue that there is any meaningful distinction between surface water and storm water. Thus, we express no opinion on that matter.

¹² The hearings officer decision states that the county engineering department provided a statement of feasibility that satisfies ZDO 1006.06. Record 17.

1 “5. Ensure that waters are drained from the development in such
2 a manner that will not cause erosion to any greater extent than
3 would occur in the absence of development.” ZDO
4 1006.06(D).

5 Petitioner argues that the hearings officer misconstrued ZDO 1003.02(D)
6 and that the findings that ZDO 1003.02(D) will be satisfied by ZDO 1006 are
7 inadequate and unsupported by substantial evidence. Petitioner argues that ZDO
8 1006 does not contain the same prohibition on diverting storm water in ZDO
9 1003.02(D) and, thus, feasibility findings related to ZDO 1006 does not address
10 the storm water diversion prohibition. Petitioner points to the erosion control plan
11 map, which shows that water will flow toward the scarp area to the west of the
12 property. Record 32.

13 The parties appear to agree that the area due west of the proposed solar
14 array is an “area[] of land movement.” The parties dispute whether the solar
15 development will divert water into that area.

16 Intervenor responds that substantial evidence in the record supports a
17 conclusion that the development will not “divert” any storm water because the
18 solar facility development will not modify the natural drainage on the property
19 “as it relates to direction, velocity, and volume of stormwater flows.” Intervenor’s
20 Response Brief 29. Intervenor notes that the erosion control plan map indicates
21 only that water will continue to flow downhill. Intervenor argues that the hearings
22 officer properly construed ZDO 1003.02(D) as satisfied by compliance with ZDO
23 1006 surface water regulations. Intervenor argues that ZDO 1006.06(A) requires
24 “[p]ositive drainage and adequate conveyance of surface water * * * from roofs,

1 footings, foundations, and other impervious or near-impervious surfaces to an
2 appropriate discharge point.” Intervenor assumes that that the county would not
3 consider an area of mass movement “an appropriate discharge point,” thus,
4 compliance with ZDO 1006.06(A) ensures compliance with ZDO 1003.02(D).

5 We agree with intervenor that evidence that water will flow downhill does
6 not necessarily constitute evidence that storm water is “diverted.” However, a
7 problem with intervenor’s response is that the hearings officer did not find that
8 the solar facility development will not modify the natural drainage on the
9 property “as it relates to direction, velocity, and volume of stormwater flows.”
10 While evidence in the record may support such findings, we agree with petitioner
11 that the hearings officer’s finding that ZDO 1003.02(D) as satisfied by
12 compliance with ZDO 1006 is inadequate and misconstrues ZDO 1003.02(D).
13 ZDO 1006 does not contain the same prohibition on diverting storm water in
14 ZDO 1003.02(D). We will not assume that county planning staff, in reviewing
15 compliance with ZDO 1006.06(A), would consider the separate prohibition in
16 ZDO 1003.02(D).

17 We conclude that the hearings officer’s findings regarding compliance
18 with ZDO 1003.02(D) are insufficient to establish compliance with that standard.
19 We also conclude that the hearings officer erred by finding that compliance with
20 ZDO 1003.02(D) is satisfied by compliance with ZDO 1006. On remand, the
21 hearings officer must decide whether the development complies with the
22 prohibition in ZDO 1003.02(D) as in independent approval criteria.

- 1 The third assignment of error is sustained.
- 2 The county's decision is remanded.