

1 BEFORE THE LAND USE BOARD OF APPEALS

2 OF THE STATE OF OREGON

3
4 WESTSIDE ROCK,
5 *Petitioner,*

6
7 and

8
9 OREGON CONCRETE & AGGREGATE
10 PRODUCERS ASSOCIATION,
11 *Intervenor-Petitioner,*

12
13 vs.

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15 CLACKAMAS COUNTY,
16 *Respondent,*

17
18 and

19
20 MULINO MOLALLA NEIGHBORS UNITED,
21 WARREN L. JONES, BARBARA JONES,
22 RICHARD J. MILLER, JR., H. JOAN MILLER,
23 and LAURIE FREEMAN SWANSON,
24 *Intervenor-Respondents.*

25
26 LUBA No. 2005-103

27
28 FINAL OPINION
29 AND ORDER

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31 Appeal from Clackamas County.

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33 John M. Junkin, Portland, filed a petition for review and argued on behalf of
34 petitioner. With him on the brief was Bullivant Houser Bailey, PC.

35
36 Todd Sadlo, Portland, and Richard Angstrom, Jr., Salem, filed a petition for review
37 on behalf of intervenor-petitioner. Todd Sadlo argued on behalf of intervenor-petitioner.

38
39 No appearance by Clackamas County.

40
41 Jeffrey L. Kleinman, Portland, filed a response brief and argued on behalf of
42 intervenor-respondents Mulino Molalla Neighbors United, Warren L. Jones, Barbara Jones,
43 Richard J. Miller, Jr., and H. Joan Miller.

44
45 Dana L. Krawczuk, Portland, filed a response brief on behalf of intervenor-

1 respondent Laurie Freeman Swanson. With her on the brief was Ball Janik, LLP.

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3 HOLSTUN, Board Member; DAVIES, Board Chair; BASSHAM, Board Member,
4 participated in the decision.

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AFFIRMED

02/15/2006

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

NATURE OF THE DECISION

Petitioner appeals a county decision that denies its application for approval of a Mineral and Aggregate Overlay Zoning District for an approximately 200-acre property located next to the Molalla River near the City of Molalla.

FACTS

A. *Molalla River Reserve, Inc. v. Clackamas County*, 42 Or LUBA 251 (2002) (MRR)

In *MRR* we remanded the county’s first decision, which denied approval of a Mineral and Aggregate Overlay zoning district for the subject property. This appeal concerns the county’s second decision, following our remand in *MRR*, which again denies approval of the Mineral and Aggregate Overlay that would allow the property to be mined.

The Land Conservation and Development Commission (LCDC) has adopted an administrative rule that specifically governs planning for mineral and aggregate resources under Statewide Planning Goal 5 (Natural Resources, Scenic and Historic Areas, and Open Spaces). OAR 660-023-0180. Under that rule, a structured, step-by-step analysis is required when local governments consider applicant-initiated requests to mine mineral and aggregate resources. The rule sometimes limits the factors that may be considered and calls for an analysis that is guided by clear and objective standards. Other times the analysis under the rule is more subjective and requires application of subjective considerations. The rule initially sets out criteria that a local government must apply to determine whether a mineral and aggregate site is “significant.” OAR 660-023-0180(3). In its first decision in this matter, the county determined the subject mineral and aggregate site is significant. The county’s determination that the subject property is a significant aggregate resource site was not challenged in *MRR*, and it is not an issue in this appeal.

1 The next step under the Goal 5 rule, after a mineral and aggregate site has been found
2 to be significant, is to determine whether mining the site would result in certain specified
3 types of “conflicts.” OAR 660-023-0180(5)(a) and (b). If such conflicts are identified, the
4 local government is then directed to determine if the conflict can be “minimized.”¹ OAR
5 660-023-0180(5)(c).² In carrying out this conflict minimization step, the local government
6 must consider “reasonable and practicable measures that would minimize the conflicts.” In
7 its first decision, the county identified mining-related dust and turbidity as conflicts that
8 could not be minimized.³ Our decision in *MRR* to remand the county’s decision was based,
9 in part, on our conclusion that the county’s dust conflict findings were inadequate, but as we
10 have already noted dust conflicts are no longer an issue. In *MRR* we rejected the applicant’s
11 substantial evidence challenge to the county’s findings that turbidity conflicts could not be
12 minimized.⁴ Because the county’s findings that turbidity conflicts could not be minimized

¹ Conflict minimization is one of the inquiries under the rule that is sometimes governed by relatively clear and objective environmental standards. OAR 660-023-0180(1)(g) governs the inquiry into whether identified conflicts can be minimized:

“‘Minimize a conflict’ means to reduce an identified conflict to a level that is no longer significant. For those types of conflicts addressed by local, state, or federal standards (such as the Department of Environmental Quality standards for noise and dust levels), to ‘minimize a conflict’ means to ensure conformance to the applicable standard.”

² OAR 660-023-0180(5)(c), the conflict minimization step, provides in relevant part:

“The local government shall determine reasonable and practicable measures that would minimize the conflicts identified under subsection (b) of this section. * * * If reasonable and practicable measures are identified to minimize all identified conflicts, mining shall be allowed at the site and subsection (d) of this section is not applicable. If identified conflicts cannot be minimized, subsection (d) of this section applies.”

³ The conflicts that may be considered under OAR 660-023-0180(5)(b) and (c) are limited, but they include “dust” and “other discharges.” In *MRR* the two conflicts at issue were dust and potential discharges from the mine into the Molalla River that would increase turbidity.

⁴ Turbidity is a conflict that is governed by a Department of Environmental Quality (DEQ) standard. As relevant, OAR 340-041-0036 provides the following turbidity standard:

1 were not successfully challenged in *MRR*, the focus then shifted to the next step under OAR
2 660-023-0180.

3 If a local government identifies conflicts that cannot be minimized, OAR 660-023-
4 0180(5)(d) requires that the local government “determine the [economic, social,
5 environmental, and energy (ESEE)] consequences of either allowing, limiting or not allowing
6 mining.”⁵ In performing that ESEE analysis, a local government is directed to consider only
7 the identified conflicts that cannot be minimized. In *MRR* the required ESEE analysis was,
8 therefore, limited to dust and turbidity. Citing the lack of an applicant-prepared ESEE
9 analysis, the county denied the requested mineral and aggregate overlay. In *MRR* we
10 concluded that the county erred in denying the request for that reason:

11 “OAR 660-023-0180[(5)](d) simply dictates that the county ‘determine the
12 ESEE consequences of either allowing, limiting, or not allowing mining at the
13 site’ and make its decision accordingly. The county may not cite the lack of
14 an applicant-prepared ESEE analysis document to excuse performing its
15 obligation to ‘determine the ESEE consequences of either allowing, limiting,
16 or not allowing mining’ and rendering an ultimate decision on the request that
17 is consistent with that determination.” *MRR*, 42 Or LUBA at 275.

“Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. * * *”

⁵ The complete text of OAR 660-023-0180(5)(d) is as follows:

“The local government shall determine any significant conflicts identified under the requirements of subsection (c) of this section that cannot be minimized. Based on these conflicts only, local government shall determine the ESEE consequences of either allowing, limiting, or not allowing mining at the site. Local governments shall reach this decision by weighing these ESEE consequences, with consideration of the following:

- “(A) The degree of adverse effect on existing land uses within the impact area;
- “(B) Reasonable and practicable measures that could be taken to reduce the identified adverse effects; and
- “(C) The probable duration of the mining operation and the proposed post-mining use of the site.”

1 In summary, in our decision in *MRR*, we remanded the county’s decision so that it
2 could determine, based on the identified dust and turbidity conflicts, “the ESEE consequence
3 of * * * allowing, limiting, or not allowing mining at the site,” as required by OAR 660-023-
4 0180(5)(d).

5 **B. The Limited Mine Plan**

6 **1. The Collaborative Process**

7 On remand, Westside Rock, the petitioner in this appeal, replaced Molalla River
8 Reserve, who was the applicant and petitioner in *MRR*. Petitioner requested that the county
9 allow it time to enter into a collaborative process with the project opponents to determine
10 whether all parties could agree on an acceptable modified or limited proposal to mine the
11 property. That collaborative process principally involved experts hired by petitioner and one
12 of the intervenor-respondents in *MRR*, the Canby Utility Board (CUB). CUB operates a
13 municipal water treatment and supply system, with water intakes on the Molalla River, 13.5
14 miles downstream from the proposed mining site. While the parties dispute the scope of
15 CUB’s turbidity concerns, CUB’s concerns that the proposed mine might cause turbid
16 discharges into the water utilized in its water system was certainly a primary concern. As a
17 result of the post-remand collaborative process, CUB ultimately determined that its turbidity
18 concerns were adequately addressed by the Limited Mine Plan proposal that replaced the
19 Original Mine Plan.⁶ CUB is not a party in this appeal of the county’s decision on remand,
20 and CUB appeared during the hearing before the board of county commissioners and
21 supported the application. Record 46-51.⁷ We discuss the experts involved in the

⁶ Like the parties, we refer to the modified mining proposal as the Limited Mine Plan. We will refer to the first mining plan that was proposed in *MRR* as the Original Mine Plan. We discuss the major components of that Limited Mine Plan later in this opinion.

⁷ In their testimony, CUB’s board chair and general manager commented on the reduced size of the proposal, its redesign and the monitoring plan that will be implemented during the 10 years the mines will be active that will allow further corrective action to be taken if necessary.

1 collaborative process in more detail later in this opinion. Although petitioner's and CUB's
2 experts participated directly in this collaborative process, intervenor-respondents did not
3 participate directly. Rather, David Madison, an engineer and an individual member of
4 intervenor-respondent Mulino Molalla Neighbors United (MMNU), was allowed to
5 participate in the process as an observer until sometime in October 2004, when the
6 collaborative process apparently proceeded to final conclusion shortly thereafter without his
7 participation.

8 **2. Key Features of the Limited Mine Plan and Turbidity Risks**

9 We briefly describe the key features of the Limited Mine Plan below and note some
10 of the issues that are presented regarding its possible interaction with the nearby Molalla
11 River.

12 **a. Avulsion**

13 The Original Mine Plan proposed to extract 8.8 million tons of sand and gravel from
14 a 90-acre portion of the subject property over a period of 20 to 25 years. The Limited Mine
15 Plan is smaller; it reduces the area to be mined by approximately 35 acres and the period of
16 active mining to 10 years. The Original Mine Plan called for two large phases and would
17 have left two large pits, approximately 60 feet in depth, next to the river. The nearby river
18 channel in this area is approximately 16 feet deep. The Limited Mine Plan will occur in four
19 phases and leave four separate ponds of approximately 60 feet in depth. The Original Mine
20 Plan proposed to mine within 155 feet of the current main channel of the Molalla River. The
21 Limited Mine Plan sets the area to be mined back 300 to 400 feet from the existing river
22 channel. The respective footprints and locations of the original mining proposal and the
23 Limited Mine Proposal are depicted in a map at page 393 of the record.

24 The principle reason the area to be mined was set back from the existing river
25 channel in the Limited Mine Plan was to address concerns that the main river channel might
26 migrate over time away from the steep banks on the north side of the river, toward the mine

1 in the floodplain along the south side of the river, and ultimately capture the pits that will be
2 created by the mining proposal. Such capture could result in an avulsion or relocation of the
3 main river channel so that it would flow through the pits. In the event of such an “avulsion,”
4 there does not appear to be any serious dispute that such a relocation of the main river
5 channel would cause a significant increase in turbidity for an extended period of time and
6 that there could be serious impacts on nearby properties, both upstream and downstream.⁸
7 The original mining proposal was located partially within what is called the Channel
8 Migration Zone (CMZ). The CMZ includes the area along the existing main channel of the
9 river where the main channel can be expected to migrate over time. Because the Original
10 Mine Plan called for mining within the CMZ, the chances that the main channel of the river
11 would meander south, capture the mining pits and result in significant turbidity were higher
12 than would be the case if all mining was removed from the CMZ. Petitioner claims that the
13 Limited Mine Plan removes all mining from the CMZ; intervenor-respondents dispute that
14 claim.

15 Figure A-4 at Record 396 shows a revetment that will be constructed along the river-
16 side of the pit walls for phases 2 and 3. The revetment is a channel that ranges from six feet
17 to ten feet deep, and is 28-feet wide. Record 272. It will be filled with riprap and is
18 designed to protect the pits from being captured by the river in the event the channel

⁸ The opponents offered the following explanation of the possible consequences of an avulsion:

“The avulsion of a river into a rock mine pit has occurred in the River Island Pit on the Clackamas River from river mile 14 to river mile 15 and would have had even greater environmental impacts if the pits had been 60 feet deep. The river moves gravel from the riverbed into the pit during every high flow event multiple times per year, which causes the upstream river channel to cut deeper and become straighter as it has increased velocity and increased erosion energy. The stream reach downstream of a mine pit avulsion is robbed of gravel that has been captured in the pit rather than continuously rolled downstream. Gravel beds will disappear downstream and not return until after the pit is filled and again passes the bed load gravel through the previous pit area. A 60-foot deep pit with 4.5 million tons of gravel removed may take decades to centuries to refill before it will release rock to the downstream river. The erosion that occurs because of a river avulsion always greatly increases the discharge of turbidity into the river.” Record 633.

1 meanders from its present location to the proposed location for the pits. The parties dispute
2 the significance that should be attributed to this revetment. Petitioner contends it assures that
3 the proposed pits are located outside the CMZ and that there is no possibility of an avulsion
4 that would cause turbidity. Intervenor-respondents dispute that contention.

5 **b. Overtopping**

6 Both the original proposal and the Limited Mine Plan call for mining in the
7 floodplain of the Molalla River.⁹ Although there appears to be a minor dispute about
8 whether the area to be mined under the Limited Mine Plan protrudes slightly into the 2-year
9 floodplain close to the river's edge, there is no dispute that portions of the area that will be
10 mined under the Limited Mine Plan are located within the larger 10-year and 100-year
11 floodplain.¹⁰ Record 235. During those more extensive 10-year and 100-year flood events,
12 water will "overtop" the areas that are being mined, creating the possibility that mine water
13 that is heavily laden with silt will enter the river and increase turbidity in the river. The
14 Limited Mine Plan proposes to halt mining between the months of February and April, when
15 the chance of experiencing a flood event that will overtop the area being mined is highest.
16 When mining is halted, suspended solids in the water will settle to the bottom of the pits and
17 leave the pit water less turbid. Petitioner contends that anytime floodwaters overtop the
18 areas to be mined under the Limited Mine Plan the floodwaters will be highly turbid and the
19 water in the mine pits will be comparatively less turbid, with the result that the mine will

⁹ The floodplain is a different area than the CMZ. The CMZ area is determined by estimating where the main river channel has migrated in the past and may migrate in the future; the floodplain is defined by the geographic scope of the floodwaters associated with a flood of specified frequencies. The floodplain of a more frequent flood event, say a 2-year flood, is significantly smaller than the floodplain for a less frequent flood event, say a 100-year flood. There is evidence in the record that the serious flooding that was experienced along the Molalla River and elsewhere on the Willamette River system generally in 1996 was considered to be a 50 or 60-year flood.

¹⁰ Figure 2-4 of the Limited Mine Plan appears to show a slight intrusion of the 2-year floodplain into the area that would be mined. Record 235.

1 result in a “zero” increase in turbidity in the river during flood events.¹¹ Intervenor-
2 respondents dispute that contention.

3 A second type of overtopping, independent of flood events, is a potential risk. The
4 four phases of mining will dig down into the water table. The water table that now lies
5 below the surface is not level. As the overburden is removed to allow the sand and gravel to
6 be extracted, the surface of the water table is exposed and the surface of that exposed water
7 table becomes level. When this happens, turbid water in the pit could flow onto the surface
8 at the lower end of the pit and ultimately make its way into the river.¹² Petitioner’s experts
9 and CUB’s experts concluded that the mining pits have been designed and can be maintained
10 such that such overtopping could be prevented.¹³ Intervenor-respondents dispute that
11 conclusion.

12 **c. Groundwater**

13 Another risk of increased turbidity in the river from the mine that was considered is
14 transmission of turbid water from the mine to the scour channel that lies between the

¹¹ In fact, petitioner contends that because the mine pits replace agricultural use of the property which can contribute significant turbidity during flood events, the Limited Mine Plan will actually reduce turbidity compared to existing conditions. Petitioner also points out that vegetative buffers are planned between the mine and the river that will further reduce the danger of turbid releases from the property during flood events.

¹² CUB expert Jeff Berry (Berry) described the phenomenon as follows:

“* * * The water table is sloped below ground and so is the ground surface; and as you open a pit and expose the ground water surface to the atmosphere that surface no longer is sloped and it becomes flat and it seeks a level plain. When that happens, one end drops down and the other end comes up and when that ground water surface, that is now a surface water surface, comes up it has the potential, if the ground level is low enough, it has the potential to overflow at the surface. So, you have ground water that is actually coming out of the ground on the downstream end. That is what I mean by overflow or overtopping. * * *” Record 52.

¹³ Because the surface waters in the four pits will be at different elevations, turbid water from higher pits may run into lower pits. But petitioner’s and CUB’s experts apparently agreed that overtopping from the lowest pit onto the surface during non-flood events could be avoided.

1 proposed mine pits and the main channel of the river.¹⁴ There is dry land between the scour
2 channel and the river and between the scour channel and the proposed mine pits. Water in
3 the proposed mine pits will percolate and travel down-gradient through the subsurface soils
4 in this intervening area and eventually make its way to the scour channel that at times is
5 connected with the main channel of the river. If the water that percolates into the scour
6 channel from the pits is more turbid than the water in the river, it could increase river
7 turbidity. Petitioner’s and CUB’s experts concluded that the intervening soils are such that
8 they will filter suspended soils out of the pit water and prevent transmission of turbid water
9 from the pits to the scour channel via groundwater transmission. This potential source of
10 turbidity was not the focus during the local proceedings. The turbidity risk associated with
11 avulsion and overtopping was the focus.

12 With the above general understanding of the proposal and the turbidity risks, we turn
13 to petitioner’s and intervenor-petitioner’s assignments of error.

14 **PETITIONER’S FIRST ASSIGNMENT OF ERROR**

15 **OREGON CONCRETE AND AGGREGATE PRODUCERS ASSOCIATION’S**
16 **(OCAPA’S) FIRST ASSIGNMENT OF ERROR**

17 As we have already noted, in reviewing the Original Mine Plan, the county was
18 required to determine whether the mine would meet applicable state standards for turbidity.
19 If so, the mine’s turbidity impacts would be “minimized,” within the meaning of OAR 660-
20 023-0180(5)(c) and 660-023-0180(1)(g). *See* ns 1 and 2. The applicable DEQ turbidity
21 standard requires that the mine must not increase turbidity in the river by more than 10
22 percent. *See* n 4. The county found that the first mine plan did not satisfy the DEQ 10
23 percent turbidity standard, and for that reason the turbidity conflict was not “minimized.” In
24 *MRR* we rejected petitioner’s challenge to that finding.

¹⁴ The scour channel is a depression between the proposed mine site and the current river channel that was formerly a main channel of the river. Except during some flood events, surface water from the main channel does not now flow into the scour channel.

1 Notwithstanding that LUBA rejected petitioner’s challenge to the turbidity
2 minimization finding, LUBA nevertheless remanded the county’s decision in *MRR*, so that
3 the county could proceed with the next step in the OAR 660-023-0180 process. Under that
4 step, based solely on conflicts that cannot be minimized, the county is required to “determine
5 the ESEE consequences of * * * allowing, limiting, or not allowing mining at the site.” The
6 county addressed that second step on remand and in doing so took the position that the
7 question of whether turbidity could be minimized had been resolved in *MRR* and was the
8 “law of the case.” Supplemental Record 34. Petitioner and OCAPA understand that county
9 finding to express the position that, under the waiver principle discussed in *Beck v. City of*
10 *Tillamook*, 313 Or 148, 153-54, 831 P2d 678 (1992), the issue of whether turbidity could be
11 minimized could not be reconsidered by the county on remand.¹⁵

12 Both of these assignments of error proceed from a premise that the Limited Mine
13 Plan that was prepared by petitioner’s and CUB’s experts on remand demonstrates that the
14 proposed mine will not violate the ten percent turbidity standard, with the result that the
15 turbidity conflict is minimized under OAR 660-023-0180(5)(c). From that premise,
16 petitioner and OCAPA (petitioners) argue it makes no sense to deny mining under the ESEE
17 analysis step required by OAR 660-023-0180(5)(d), when that step would ordinarily not be
18 reached unless the turbidity conflict cannot be minimized. It is not entirely clear whether
19 petitioners are arguing the county erred by refusing to revisit the conflict minimization step
20 and failing to consider whether the Limited Mine Plan will be sufficient to minimize the
21 turbidity conflict under OAR 660-023-0180(5)(c). Petitioners appear to make a closely

¹⁵ Under *Beck*, if a petitioner prevails at LUBA on some issues and the appealed decision is remanded, but other issues are resolved adversely to the petitioner, the petitioner must seek appellate court review of the issues resolved adversely to petitioner to preserve those issues for review. If such an appeal is not filed, the issues resolved against the petitioner are waived, and those issues cannot be raised in the local proceedings on remand or in a subsequent appeal of the local government’s decision on remand. In *MRR*, petitioner’s challenge to the county’s findings that the turbidity impacts associated with the original mine plan could not be minimized was resolved adversely to the petitioner in that appeal. Our decision in *MRR* was not appealed to the Court of Appeals.

1 related argument that even if the county was not obligated to revisit the conflict minimization
2 step in OAR 660-023-0180(5)(c), because the Limited Mine Plan now establishes as a matter
3 of law that the turbidity impact will be “minimized” within the meaning of OAR 660-023-
4 0180(5)(c) and 660-023-0180(1)(g), the county could not apply the more subjective ESEE
5 analysis step to deny mining in this case. We consider both arguments below.

6 If petitioner or OCAPA had asked the county to revisit the question of whether mine-
7 related turbidity was “minimized” under the Limited Mine Plan that was developed on
8 remand, we likely would agree with petitioners that the county would not be barred by *Beck*
9 from considering that question. The relevant “issue” that was resolved in *MRR* was whether
10 the turbidity impacts of the “Original Mine Plan” could be “minimized,” within the meaning
11 of OAR 660-023-0180(5)(c) and 660-023-0180(1)(g). Once the decision was made to allow
12 the applicant to significantly modify the Original Mine Plan, and proceed instead with the
13 Limited Mine Plan, a different issue is raised—whether turbidity impacts of the “Limited
14 Mine Plan” can be minimized within the meaning of OAR 660-023-0180(5)(c) and 660-023-
15 0180(1)(g). Because the mining plans are quite different, the latter issue was not finally
16 resolved in *MRR*, and *Beck* would not bar the county from considering that issue.

17 As intervenor-respondents point out, petitioner’s counsel did not ask the county to
18 revisit this issue on remand. Petitioner’s counsel stated:

19 “* * * I would agree though that there is certain law of the case, if you will,
20 that when it comes to turbidity, based upon the original mine plan there was a
21 determination made that that conflict could not be minimized. That is the law
22 of the case. In coming back with a limited mining plan, we understand we are
23 now beyond that conflict test of how to minimize; we’re now on to the ESEE
24 part of it. * * * [A]s [county counsel] pointed out it basically gives you a
25 second opportunity to review this and I believe the ESEE was there; because
26 in the event that you had conflicts and were unable to minimize those
27 conflicts, you could still go ahead and approve either limited [mining] or
28 approve [the] mining plan. * * *” Supplemental Record 182.

29 The above is not a request to revisit the issue of whether turbidity conflicts are
30 minimized under OAR 660-023-0180(5)(c). To the contrary, the above appears to be an

1 explicit recognition that the county need not revisit the conflict minimization inquiry under
2 the rule. The county did not err by failing to consider whether the Limited Mine Plan will be
3 sufficient to minimize the turbidity conflict under OAR 660-023-0180(5)(c).

4 Finally, as noted above, petitioners may be arguing under these assignments of error
5 that the county erred by denying the proposed mining under the ESEE step, when the
6 Limited Mine Plan establishes as a matter of law that the turbidity impact will be
7 “minimized,” within the meaning of OAR 660-023-0180(5)(c) and 660-023-0180(1)(g).¹⁶
8 We reject that argument as well, because petitioners have not established that the Limited
9 Mine Plan establishes compliance with the ten percent standard as a matter of law. *See*
10 *Jurgenson v. Union County Court*, 42 Or App 505, 510, 600 P2d 1241 (1979) (denial of land
11 use permit is supported by substantial evidence “unless the reviewing court can say that the
12 proponent of change sustained his burden of proof as a matter of law”).

13 As we explain later in this opinion, the multi-disciplinary team that prepared the
14 Limited Mine Plan presented a strong, well-documented plan in support of the application for
15 approval for a smaller redesigned mine pan for the subject property. There can be no doubt
16 that, as compared to the Original Mine Plan, the Limited Mine Plan reduces the chances of
17 turbid water discharges to the Molalla River to a small or an exceedingly remote possibility,
18 depending on which expert is believed. Had the county considered and decided that the
19 Limited Mine Plan would comply with the ten percent standard, such a decision would
20 almost certainly be supported by substantial evidence, *i.e.*, evidence a reasonable person
21 would believe supports the decision made. *Dodd v. Hood River County*, 317 Or 172, 179,
22 855 P2d 608 (1993); *Younger v. City of Portland*, 305 Or 346, 351-52, 752 P2d 262 (1988).
23 However, the experts’ confidence that the Limited Mine Plan would eliminate the risk of

¹⁶ Shortly after the statement of petitioner’s counsel quoted in the text, petitioner’s counsel went on to take the position that the Limited Mine Plan will reduce turbidity so that the ten percent standard is met and that mining could not be denied under the ESEE consequences step of the rule if the mining proposed under the Limited Mine Plan would satisfy the conflict minimization step of the rule.

1 increased turbidity in the river was not in all cases as unqualified as petitioners argue it was,
2 and it is clear that the challenges to the Limited Mine Plan by the expert that testified on
3 behalf of the opponents raised questions about the potential for turbidity that remained under
4 the Limited Mine Plan.

5 Petitioner's and OCAPA's first assignments of error are denied.

6 **PETITIONER'S SECOND ASSIGNMENT OF ERROR**

7 Under its second assignment of error, petitioner contends that it was error for the
8 county "to ignore measures proposed by the applicant and to consider only whether its own
9 proposed measures--moving the extraction area off the floodplain and the water
10 table--qualify as reasonable and practicable measures." Petition for Review 17.

11 At pages 12 through 19 of their brief, intervenor-respondents identify numerous
12 findings in the challenged decision that address the applicant's proposed measures to limit
13 turbidity. Those findings demonstrate that it is inaccurate to say the county ignored the
14 measures the applicant proposed. The possibilities of moving extraction from the floodplain
15 and out of the water table were mentioned by the county, but the county clearly recognized
16 that those measures were not acceptable to the applicant. The county ultimately did not
17 agree that petitioner's proposed measures to avoid turbid discharges into the river were
18 sufficient to reduce that risk to an acceptable level, but the county did not ignore petitioner's
19 proposed measures to reduce the chances of turbid discharges into the river.

20 Petitioner's second assignment of error is denied.

21 **PETITIONER'S THIRD ASSIGNMENT OF ERROR**

22 In its third assignment of error, petitioner assigns error to the county's finding that the
23 applicant failed to provide a certification that the proposed mines would not result in a rise of
24 floodwater elevation. Such a certification is required by the county's floodplain
25 development ordinance. Petitioner first contends that the legal standards by which
26 applications for mining are reviewed under OAR 660-023-0180 are exclusive. *Morse Bros.*

1 *Inc. v. Columbia County*, 37 Or LUBA 85, 92 (1999), *aff'd* 165 Or App 512, 996 P2d 1023
2 (2000). Because OAR 660-023-0180 does not include a requirement for such a certification,
3 petitioner contends the requirement was improperly applied to its application. Petitioner also
4 argues that the record shows the proposal will not cause a rise in the flood level and that the
5 county erred by not explaining in its findings why the disputed certification must be supplied
6 now and why it could not be supplied at a later date.

7 A no-rise certification was provided with the original application. Because the mine
8 plan changed with submission of the Limited Mine Plan, planning staff took the position in a
9 February 1, 2005 report that a new no-rise certification would be required. In a February 22,
10 2005 memorandum, petitioner's expert Newton took the position that because the Limited
11 Mine Plan called for mining a small area, and because it had already been determined that
12 the larger original mine plan would not cause flood elevations to increase, it followed that the
13 Limited Mine Plan would not cause flood elevations to increase. Although a certification to
14 that effect was sent to the county, it was sent after the evidentiary record on remand closed,
15 and the county refused to accept it and include it in the record.

16 Intervenor-respondents contend that because petitioner never raised any issue
17 concerning whether OAR 660-023-0180 bars the county from requiring a no-rise
18 certification as part of its review of the proposal for mining, it is precluded from raising that
19 issue for the first time at LUBA. We agree with intervenor-respondents.

20 However, while we agree with intervenor-respondents that petitioner waived its first
21 argument under this assignment of error, petitioner also argues that the county's findings do
22 not establish that the no-rise certification must be supplied now, as part of the application for
23 the overlay zone. Respondent has not appeared in this appeal, and intervenor-respondents do
24 not respond to this second argument. The county's findings simply state that the certification
25 is required, but do not cite or identify the section of the floodplain ordinance that requires the
26 no-rise certification. We have not been able to find a copy of the floodplain ordinance to

1 determine whether it in fact requires that the no-rise certification be provided at this time or
2 whether the certification could be provided at a later date.

3 We agree with petitioner that the county's findings should have identified the
4 floodplain ordinance requirement that it was relying on to insist that the no-rise certification
5 be supplied with the applicant's request for overlay zone approval and that denial of the
6 request would be the consequence for not supplying that no-rise certification before the
7 record on remand closed.¹⁷

8 The third assignment of error is sustained.

9 **PETITIONER'S FOURTH ASSIGNMENT OF ERROR**

10 The county's decision on remand includes the following sentence:

11 "The applicant's plan is comprised by Addendum 1 to the applicant's remand
12 submittal, the entirety of which is marked as Exhibit 1 of the record. * * *"
13 Supplemental Record 6.

14 Addendum 1 appears at Record 382-402. Addendum 1 is the final revised Limited
15 Mine Plan dated December 17, 2004. It revises the Limited Mine Plan that had been
16 prepared prior to that December 17, 2004 amendment to propose four phases in place of the
17 three phase approach that was proposed earlier. Petitioner contends the applicant's Limited
18 Mine Plan in fact begins at Record 93 and continues through Record 402 and must be read as
19 a whole. Petitioner contends the Limited Mine Plan also includes 30 proposed conditions of
20 approval that were transmitted to the county as an attachment to a February 2, 2005 letter, as
21 well as subsequent proposed modifications to conditions 29 and 30 that were transmitted to
22 the county as an attachment to a February 15, 2005 letter. Petitioner argues:

¹⁷ Because both petitioner and intervenor-respondents assume the failure to submit the no-rise certificate was a separate and independent basis for denial of the application, we have not questioned that assumption. However, it is far from clear to us that the county in fact relied on the applicant's failure to submit a no-rise certification before the close of the record on remand as a separate and independent basis for its decision in this matter.

1 “The County’s finding that the applicant’s ‘entire’ plan is located in Exhibit 1
2 omits a significant portion of that plan, is material to its conclusions, is
3 facially incorrect, and is not based on substantial evidence in the record. The
4 issue presented to the County was whether the applicant’s Site-specific
5 Program and Limited Mine Plan constituted reasonable and practicable
6 measures to reduce turbidity impacts. * * * In this case, the county failed to
7 accurately identify the reasonable and practicable measures proposed by the
8 applicant to reduce turbidity and to explain why those measures were not
9 adequate to reduce or eliminate turbidity that might otherwise have been
10 attributable to the project.” Petition for Review 22.

11 The above-quoted county finding does not say what petitioner argues it says. The
12 reference to Addendum 1 was clearly not intended as a description of the *entire* Limited
13 Mine Plan. As the second clause of the sentence makes clear, Exhibit 1, not Addendum 1, is
14 the applicant’s entire remand submittal. Exhibit 1 begins with petitioner’s attorney’s
15 transmittal letter at Record 88 and continues through Record 442. Exhibit 1 includes
16 petitioner’s complete Limited Mine Plan, as well as other documents. Although the above-
17 quoted finding does not expressly reference the proposed conditions of approval that appear
18 at Record 528-35 and 774, we do not believe that means the county failed to consider them.
19 The finding does not purport to be an attempt to describe all of the documents that the county
20 considered in this matter.

21 The fourth assignment of error is denied.

22 **PETITIONER’S FIFTH ASSIGNMENT OF ERROR**

23 The three principal experts who prepared the Limited Mine Plan were David Newton
24 (Newton), Jeff Barry (Barry) and Kevin Coulton (Coulton). Newton is petitioner’s expert
25 and is a principal engineer and geologist with Newton Consultants, Inc.¹⁸ He has
26 approximately 33 years of experience. Barry and Coulton participated in preparing the
27 Limited Mine Plan on behalf of CUB. Barry is a principal hydrogeologist for Groundwater

¹⁸ Newton has a B.S in Geological Engineering and holds the following registrations in Oregon: Geologist/Engineering Geologist, Civil Engineer, Environmental Engineer, and Certified Water Rights Examiner. Record 823. Newton’s complete resume, with a lengthy list of the projects he has worked on, appears at Record 823-35.

1 Solutions, Inc.¹⁹ He has over 20 years of experience. Coulter is Oregon Water Resources
2 Program Manager for HDR Engineering.²⁰ He has approximately 22 years of experience.
3 The opponent testimony that the county principally relied on in denying the request was
4 provided by Mark Madison. Madison is a Senior Water Resources Engineer with CH2M
5 Hill.²¹ He has approximately 26 years of experience.

6 In response to questions raised by petitioner concerning Madison's credentials as an
7 expert, the board of county commissioner's adopted the following findings:

8 **"A Note Concerning Experts**

9 "Both sides were well represented by legal counsel and consultants in this
10 proceeding. The engineers testifying on behalf of the parties are qualified
11 professional engineers, duly licensed by the State of Oregon. Nonetheless, the
12 attorney for the applicant argued that Mark Madison, P.E. is not qualified to
13 offer expert testimony in this case, and that the applicant's consultants have
14 purportedly stronger qualifications to address the turbidity issues herein. * * *

15 "We do not agree with the applicant's contentions. We reviewed Mr.
16 Madison's qualifications when we heard the earlier application in this case,
17 and found him to be a qualified and credible witness. The record of that
18 proceeding shows that, as of that time, Mr. Madison had 21 years experience
19 in engineering consulting at CH2M Hill. He is licensed as an agricultural
20 engineer, civil engineer, and environmental engineer in Oregon and
21 Washington, and as an Oregon certified water rights examiner. Among his
22 specialties are modeling, design, field testing, and performance monitoring.
23 He serves as a water resource development and management principal
24 technologist firm-wide for CH2M Hill. Mr. Madison helped write new
25 wastewater reuse and industrial waste reuse regulations for DEQ. The record
26 on remand shows that Mr. Madison continues to have the same employment
27 and credentials. Obviously, he has also had almost four additional years of

¹⁹ Barry has a B.S. in Resource Management and a MS in Hydrogeology/Hydrology and holds the following registrations in Oregon: Geologist, and Certified Water Rights Examiner. Record 838. Barry's complete resume, with a lengthy list of projects he has worked on and some of his publications appear at Record 838-43.

²⁰ Coulton has a B.S. in Landscape Architecture and a B.S. and M.S. in Civil Engineering and is registered as a Professional Engineer in Oregon. Record 809. Coulter's complete resume, with a lengthy list of projects he has worked on and selected publications, appears at Record 809-22.

²¹ Madison has a B.S. in Agricultural Engineering and holds the following registrations in Oregon: Professional Engineer, Civil Engineer, Agricultural Engineer and Certified Water Rights Examiner.

1 professional experience. We find Mr. Madison to be qualified to render the
2 opinions he rendered here.” Supplemental Record 33-34.

3 Under its fifth assignment of error, petitioner contends that Madison is not qualified
4 to offer expert testimony regarding the efficacy of the Limited Mine Plan and that the county
5 erred in treating that testimony as expert testimony that could support denial of the
6 application in this matter:

7 “In these remand proceedings, the Board of Commissioners was presented
8 with a panel of experts whose qualifications to provide expert opinions
9 regarding hydrogeology, fluvial geomorphology and geologic engineering is
10 unquestionable and was not contested by any party.²² The only opposing
11 testimony by anyone in the proceeding claiming to be an expert was [given
12 by] Mr. Madison. Mr. Madison participated in the proceedings before the
13 county as the representative of an opposition group. He is a professional
14 engineer, but his background is in the fields of civil, environmental, and
15 agricultural engineering.²³ He has no expertise or experience in the fields of

²² *Webster’s Third New International Dictionary* includes the following definitions:

“**hydrogeology** * * * **1**: a branch of geology concerned with the occurrence and utilization of surface and ground water and with the functions of water in modifying the earth esp. by erosion and deposition[.]” *Webster’s Third New International Dictionary*, 1109 (unabridged ed 1981).

“**fluvial** * * * **1a**: of or relating to rivers * * * **b**: conforming to the changing course of a stream[.] *Id.* at 879.

“**geomorphology** * * * **1**: a science that deals with the land and submarine relief features of the earth’s surface and seeks a genetic interpretation of them through using the principles of physiography in its descriptive aspects and of dynamic and structural geology in its explanatory phases[.]” *Id.* at 950.

“**engineering geology** * * * a branch of geology that deals with the application of geology to engineering.” *Id.* at 752.

²³ *Webster’s Third New International Dictionary* includes the following definitions:

“**civil engineering** * * * a branch of engineering concerned primarily with public works (as land surveying, the building of highways, bridges, waterways, or harbors, or the provision of artificial water supply, sewage disposal, irrigation) but also embracing private enterprises (as railroad and airport building, private building construction, farm drainage).” *Webster’s Third New International Dictionary*, 413 (unabridged ed 1981)

“**agricultural engineering** * * * the branch of engineering that deals with the design of farm machinery, the location and planning of farm structures, farm drainage, soil management and

1 hydrogeology, fluvial geomorphology or geologic engineering. He repeatedly
2 referenced his affiliation with CH2M Hill, but that firm did not participate in
3 any of the proceedings before the county and did not assist Mr. Madison in his
4 representation of his community group. Mr. Madison is not qualified to give
5 professional opinions regarding the meander zone of the Molalla River; the
6 function of groundwater through the area; the necessary ‘freeboard’ to prevent
7 overtopping of excavated ponds on a floodplain; or the likely efficacy of the
8 Limited Mine Plan to prevent turbid releases to the river through groundwater
9 or surface water transport. In these proceedings, Mark Madison was not an
10 ‘expert’ in any sense of the word, yet the County[’s] * * * Findings treat him
11 as an expert. The County’s Findings fail to explain why the opinion of
12 experts Barry, Coulton, and Newton should be disregarded and the ‘opinion’
13 of Mr. Madison accepted.” Petition for Review 27-28.

14 Intervenor-respondents point out that Madison is not a newcomer to this proceeding.
15 In *MRR* he submitted models to predict the performance of the Original Mine Plan. *MRR*
16 Record 1358-1370B. He presented extensive testimony in which he contended that the pits
17 proposed in the Original Mine Plan would conflict with the Molalla River in ways that could
18 not be minimized. *MRR* Record 755-66. In the proceedings on remand, Madison’s
19 submittals appear at Record 628-76, 877-904 and 1236-43. The submittal at Record 628-76
20 includes 37 separate questions and requests for additional analysis that are directed at
21 petitioner’s and CUB’s experts. If one reviews those documents, one does not come away
22 with the impression that Madison is an untrained, lay, neighborhood opponent who is
23 unqualified to question the engineering assumptions and conclusions in the Limited Mine
24 Plan. If one reviews the detailed response that petitioner’s expert Newton prepared in
25 response to Madison’s 37 questions, one does not come away with the impression of an

erosion control, water supply and irrigation, rural electrification, and the processing of farm products.” *Id.* at 44.

LUBA’s 1981 edition of Webster’s Third New International Dictionary does not include a definition for “environmental engineering.” The on-line reference Wikipedia defines the term as follows:

“**Environmental engineering** is the application of science and engineering principles to improve the environment (air, water, and/or land resources), to provide healthful water, air and land for human habitation and for other organisms, and to investigate the possibilities for remediation of polluted sites. Negative environmental effects can be decreased and controlled through public education, conservation, regulations, and the application of good engineering practices.”

1 expert humoring a nonexpert. Record 779-87. There are clearly a number of points on
2 which the two disagree, but we see no basis upon which to conclude that Madison's positions
3 should be dismissed as the unwarranted fears of a person who does not understand the
4 engineering assumptions that underlie the Limited Mine Plan. To the contrary, one comes
5 away with the impression of a person who through training, experience or some combination
6 of the two is knowledgeable about the issues he is raising.

7 In response to petitioner's challenge to Madison's qualifications to offer expert
8 testimony in this matter, intervenor-respondents' attorney pointed out that the primary
9 responsibility for responding to Madison's concerns was assigned to Newton and that the
10 credentials of Madison and Newton did not differ dramatically. Intervenor-respondents'
11 attorney also noted that neither Barry nor Coulter questioned Madison's work product or his
12 credentials.

13 Finally, we note that we agree with petitioner that in a case like this one, the
14 testimony of experts is likely to be critical. Boards of county commissioners can understand
15 most of the fundamental concepts that are in play here, even if they are not trained as
16 engineers or geologists. Water, including turbid water, will flow downhill on the earth's
17 surface and down gradient under the surface. Water sometimes behaves differently on the
18 surface than it does underground. Turbid water flowing through fine soils will be filtered,
19 whereas turbid water flowing through coarse sand may not be filtered to any significant
20 degree. Floods are in some respects predictable and other respects unpredictable events.
21 Floods entering mining pits may not necessarily result in a turbidity discharge to the flooding
22 river, depending on many factors, including the comparative turbidity of the flood water and
23 the water in the pits. River channels can and do meander for a variety of reasons and the
24 likely range of those meanders can be predicted. Even if the pits are located within the
25 CMZ, physical improvements may prevent an avulsion and therefore keep the Molalla River
26 from capturing the pits during mining or during the period after mining has been completed.

1 But while a board of county commissioners (or the Land Use Board of Appeals for
2 that matter) may be able to grasp these fundamental concepts, it takes experts to collect and
3 analyze data and draw scientific and engineering conclusions from that data. In such cases it
4 frequently will come down to which of the experts the decision maker finds more believable.
5 When a decision maker's judgment regarding which expert is to be believed is challenged at
6 LUBA this Board is put in the difficult position of assessing whether, based on the record,
7 the decision maker's judgment was reasonable. That job is particularly difficult, because our
8 review is limited to the documentary record that is submitted in the appeal, and we do not
9 have the benefit of observing the experts' presentation during the local proceedings.

10 Madison's credentials and experience are certainly not as extensive as the combined
11 credentials and experience of petitioner's and CUB's experts, but petitioner has not shown
12 that Madison's training and experience as a professional engineer is insufficient to qualify
13 him to offer an expert opinion regarding the efficacy of the Limited Mine Plan to prevent
14 turbid discharges into the Molalla River.

15 The fifth assignment of error is denied.

16 **PETITIONER'S SIXTH ASSIGNMENT OF ERROR**

17 **OCAPA'S THIRD ASSIGNMENT OF ERROR**

18 **A. Introduction**

19 Under these assignments of error petitioner and OCAPA (petitioners) argue that a
20 large number of findings adopted by the county are not supported by substantial evidence. In
21 resolving that challenge we must consider the expert testimony provided by petitioner's
22 expert and CUB's expert and the testimony of Madison that in large part is a critique of the
23 Limited Mine Plan that those experts prepared. A brief discussion of our scope of review in
24 considering substantial evidence challenges is appropriate, before turning to petitioners'
25 arguments.

1 Petitioner’s multi-disciplinary team brought relevant, specialized training and
2 experience to the task of collecting and analyzing data and designing a mining operation that
3 those experts believed would avoid turbid water discharges to the Molalla River. If LUBA
4 were empowered to reweigh the evidence in this case, and reach our own conclusion
5 regarding which of the experts was more believable, we might well agree with petitioners
6 that its experts should be believed and the Limited Mine Plan poses essentially no risk of
7 increased turbidity in the river. However, LUBA is not empowered to reweigh the evidence
8 that the board of county commissioners had before it. As petitioner recognizes, in reviewing
9 its substantial evidence challenge, the ultimate question is whether “[a] reasonable person,
10 reviewing issues as complex as those presented on remand, would * * * have relied on
11 Madison’s opinions, * * * in light of the volume of contrary ‘expert’ testimony in the record
12 as a whole.” Petition for Review 29. As the Court of Appeals explained in *1000 Friends of*
13 *Oregon v. Marion County*, 116 Or App 584, 842 P2d 441 (1992):

14 “* * * Under *Younger* [*v. City of Portland*, 305 Or 346, 752 P2d 262 (1988)],
15 the courts and LUBA, in reviewing agency and local government findings,
16 must ‘evaluate the substantiality of supporting evidence by considering all the
17 evidence in the record,’ 305 Or at 356, including evidence that detracts from
18 the finding as well as evidence that lends support to it. However, the court
19 cautioned:

20 “‘We emphasize that the question LUBA is to decide on
21 remand is simply whether, in light of all evidence in the record,
22 the city’s decision was reasonable. * * * ORS 183.482(8)(c)
23 (‘Substantial evidence exists to support a finding of fact when
24 the record, viewed as a whole, would permit a reasonable
25 person to make that finding.’). Obviously, for a decision to be
26 reasonable, it need not be the decision that LUBA would have
27 made on the same evidence.’ 305 Or at 360.” 116 Or App at
28 587.

29 In concluding that LUBA had improperly reweighed the evidence in *1000 Friends of Oregon*
30 *v. Marion County*, the Court of Appeals acknowledged the difficulty of distinguishing
31 between *improperly* reweighing the evidence and *properly* determining whether the evidence
32 is such that a reasonable decision maker could have decided as it did:

1 “* * * The line between reweighing evidence and determining substantiality
2 in the light of supporting and countervailing evidence is either razor thin or
3 invisible to tribunals that must locate it, as distinct from tribunals that tell
4 others to find it. We nevertheless conclude that, in determining that the
5 county’s finding of demonstrated need is not supported by substantial
6 evidence, LUBA gravitated to the wrong side of the line.” 116 Or App at 588.

7 In reviewing petitioners’ substantial evidence challenges below, we conclude that we
8 would be required to gravitate to the wrong side of the line, and reweigh the evidence, to
9 sustain these assignments of error.

10 **B. Petitioners’ Substantial Evidence Challenges**

11 Petitioner asserts a total of 19 separate challenges to the county’s findings. OCAPA
12 asserts 13 separate challenges. Those challenges are directed at both general findings
13 regarding turbidity and at more specific findings. Many of those challenges overlap. Those
14 challenges are largely substantial evidence challenges, but at times petitioners argue that the
15 county’s findings are misleading or leave an incorrect impression. We agree with intervenor-
16 respondents that the challenges are most accurately characterized as substantial evidence
17 challenges, although some of them also are accurately characterized as undeveloped
18 challenges to the adequacy of the county’s findings.

19 Petitioners do not make any attempt to explain why *all* the findings they challenge are
20 critical or necessary to support the appealed decision. A number of them clearly are not
21 critical, but others just as clearly are critical to the county’s decision. For convenience and to
22 avoid unnecessary repetition, we have grouped those challenges for discussion, based on the
23 subject matter of the challenged findings, and we discuss them separately below.

24 **1. Turbidity Risk When Pits Flood²⁴**

25 Petitioners challenge county findings that turbid water may be discharged to the river
26 during flood events. In a February 15, 2005 memorandum, Newton states:

²⁴ We address here petitioner’s third and fifteenth challenges and OCAPA’s fourth challenge.

1 “* * * During normal operating periods the ponds were designed to promote a
2 zero discharge to the scour channel or the river. During high flood potential
3 months, February to April, active mining in the ponds would cease, resulting
4 in settled water in the ponds. In the event of inundation of the ponds by
5 floodwaters, the ponds containing this ‘settled’ water would likely have much
6 lower turbidity compared to the floodwaters, yielding a potential net
7 improvement of water quality to the river.” Record 775.

8 Petitioners contend the four-pit design proposed in the Limited Mine Plan will be constructed
9 so that it can withstand floods without releasing turbidity into the river. Petitioners contend
10 that the proposed design, along with operational limitations such as a cessation of active
11 mining during the times when major flood events are most likely, will ensure that the mine
12 will not result in turbid water releases to the river when it is flooded. In a February 22, 2005
13 memorandum, Newton disputes the notion that the pits could contribute additional turbidity
14 to the river during flood events, in part because rinse water would be transmitted to a settling
15 pond outside the 100-year floodplain. Newton dismisses contentions that flood currents
16 could result in scouring of sediments from the walls of the pits or from the bottom of the pits
17 during flood events. Record 1232-35.

18 The record includes a picture of the property that shows extensive flooding during the
19 February 1996 flood. Record 588. Madison testified:

20 “* * * All totaled, the Molalla River has had 31 floods in 70 years that would
21 overtop the mine pits and cause greatly increased turbidity in the river. Four
22 of these 31 floods are greater than or equal to the energy of the 1996 (50-year)
23 flood and have enough energy potential to create an avulsion if a 60 ft deep
24 pit exists in the meander path. The three largest floods of record occurred in
25 December and January when the applicant proposes to be in full operation.”
26 Record 630-31.

27 “Flood flows that overtop the river bank either upstream of the proposed mine
28 on the Freeman Farm or directly adjacent to the mine will flow over the edge
29 of the mine pit walls into the pit pools. Floodwater of the 50-year and 100-
30 year floods will surround the pits and flow over the sloped site dropping down
31 over the pit walls into the pools, which will be at the elevation of the
32 floodwater on the downstream West pit wall. Floodwaters will enter the pit
33 on the East upstream edge, the North edge near the river, and the South edge
34 near Macksburg Road. The pits will all overflow during flood events
35 discharging turbid waters to the scour channel and the Molalla River. The 2-

1 year flood may enter the pit by low velocity backwater via the scour channel.
2 Other larger floods such as the 50-yr. flood of 1996 flow across the entire
3 width of the valley and will surround the pits. The water rushing into the pits
4 from three sides will exit out one side at a much greater velocity and energy
5 than would exist at this point if the pits did not exist. The four pits create a
6 pool and drop cascade in what was previously a fairly constantly sloped
7 floodway. The 14 feet of slope that is spread across the site without the pits
8 will become concentrated into three drops as the flood waters rush over the
9 upstream sides of the pits in * * * short steep rapids. The energy that is
10 concentrated in these drops will cause erosion and turbidity to be scoured
11 from the pit walls and flush the turbid water from the pits into the river. No
12 design information is provided for spillways that will be required in the berms
13 between pits or for a fish egress facility. These facilities are the most critical
14 hydraulic features in the mine and a spillway failure will result in a berm
15 failure.” Record 630.

16 Madison goes on to take the position that the settling basin is not large enough to settle
17 colloidal clay which remains in suspension for over 20 days and any water spilled from the
18 settling basin with suspended sediment may make its way into the river during flood events
19 or through groundwater. Record 631.

20 Although Newton submitted a memorandum to rebut the above contentions, Record
21 1232-35, we cannot say that rebuttal was so convincing that a reasonable person could not
22 have remaining concerns that significant amounts of turbid water might make it into the
23 Molalla River during major flood events.

24 **2. Turbidity Risk Associated with the Channel Migration Zone²⁵**

25 As we have already noted, the Limited Mine Plan sets the pits back further from the
26 river channel than the Original Mine Plan. Under the Limited Mine Plan the pits are set back
27 300 to 400 feet from the existing river channel. Petitioners contend that setback removes the
28 pits from the CMZ and removes one of the main objections to the Original Mine Plan, the
29 potential for pit capture or avulsion.

²⁵ We address here OCAPA’s first, sixth and twelfth challenges.

1 Figure 5-4 of the Limited Mine Plan shows the CMZ. Record 250. That figure
2 shows a line labeled “DOGAMI PROJECTED MAXIMUM MEANDER PATH” running
3 approximately 200 to 300 feet south of and roughly parallel with the existing main channel
4 as it passes the subject property. At a distance of about 100 additional feet south of and
5 parallel with that line are two lines in about the same location. One of those lines is labeled
6 “DOGAMI PROPOSED SETBACK FROM MEANDER PATH,” and the other line is
7 labeled “KING COUNTY CMZ WITH REVETMENT.” *Id.* Still further back from the river
8 channel, approximately 600 feet from the channel, is a fourth line. That line is labeled
9 “KING COUNTY CMZ SETBACK WITHOUT REVETMENT.” *Id.*

10 Simply stated, intervenor-respondents take the position that the southernmost King
11 County CMZ line, the one 600 feet from the existing channel, is the one that should be used.
12 Because mining is proposed on the river side of that line, intervenor-respondents contend
13 mining is proposed within the CMZ. The county apparently agreed with intervenor-
14 respondents. That CMZ was identified by CUB expert Coulton, and CUB’s former expert
15 Pommier, in a report dated August 3, 2001, when CUB was opposing the Original Mine Plan.
16 Petitioner’s expert Newton offered a detailed rebuttal of that position in a March 2, 2005
17 memorandum that was submitted during the period the record was held open following the
18 board of county commissioners’ public hearing on February 16, 2005:

19 “The summary report by * * * Coulton and * * * Pommier dated August 3,
20 2001 proposed use of the King County Washington Channel Migration Zone
21 method to determine setbacks between the mine and the river. This method is
22 a ‘blanket’ standard used by the county in contrast to the site-specific analysis
23 used by DOGAMI for Oregon projects. The Coulton Report dated February
24 15, 2005 also estimates that 46 to 64 years are required for the river to migrate
25 to the proposed mine site, assuming the historic migration rate is maintained
26 over this period.^[26] This extent of channel migration is not reflected in 60
27 years of aerial photograph record, nor in channel location information for the
28 year 1852. Channel migration potential in the Coulton letter did not reflect
29 consideration that a river meander at the site would likely cut itself off,

²⁶ We quote portions of Coulton February 14, 2005 report later in this opinion.

1 stopping channel migration before it actually reaches the proposed mine site.
2 River meanders develop to a maximum arc at which point hydraulic and
3 energy conditions force the river to abandon the meander and adjust to a new,
4 relatively straight channel across the meander (the meander curve in the
5 channel is cut off). This river characteristic is the basis for the 300 to 400-
6 foot setbacks established on the basis of the detailed DOGAMI and Newton
7 analysis.

8 “The King County Method also has a provision for the installation of flood
9 protection structures, such as a revetment, to reduce the CMZ setback from a
10 river. The introduction of the revetment allows for adjustment of the CMZ
11 setback to the revetment location. This corresponds to the river meander
12 distance determined by the DOGAMI and Newton meander analysis. The
13 allowance of the King County Method to accommodate other site-specific
14 criteria in setbacks was not considered in the Coulton report or by Mr.
15 Madison.” Record 1320.

16 While the above-quoted response seems to be a reasonable argument in defense of
17 petitioner’s decision to select the closer CMZ line, the county apparently was not persuaded.
18 The February 14, 2005 report by CUB expert Coulter suggests that a fair amount of
19 uncertainty is involved in locating the CMZ. We set out parts of that report below:

20 “Based on the aerial photograph measurements, the river is estimated to be
21 migrating in a westerly direction * * * at a rate of between 4.0 to 8.3 feet per
22 year since 1944, with an average rate of 6.5 feet per year from 1944 to 2002.
23 Given the proposed 300 foot setback of project pit boundary from the river
24 and a continued trend in migration to the west, the river may reach the setback
25 in 46 years, or 62 years where there is a 400 foot setback.” Record 789.

26 “Avulsions may occur along this reach of the river; however, relative to
27 steeper reaches of the river, the avulsion risk is lower. Since channel
28 migration may be characterized by gradual erosion, observations of channel
29 changes may be effective in identifying trends in channel migration and allow
30 time for proposed mitigation measures to be modified or new measures to be
31 implemented to counter excessive channel migration. The risk management
32 plan should include monitoring of river channel changes to specifically
33 address the potential for aggradation—or rising riverbed elevations from
34 sediment deposition; if this trend is occurring the river will become
35 progressively less confined and channel migration and avulsion risk may
36 increase.” Record 791.

37 Notwithstanding expert Newton’s confidence in the selected CMZ line, we cannot
38 say the county’s view that the southernmost King County line should be used is

1 unreasonable. Coulter’s report recognizes that a fair amount of uncertainty is involved in
2 selecting the CMZ line. In this case, the adjusted King County line depends on the
3 revetment. As we explain below, questions were raised below about whether that revetment
4 would perform its intended function or, even if it did, whether it might result in river
5 dynamics that would generate added turbidity. We cannot say that the county’s selection of
6 the 600 foot CMZ line was unreasonable.

7 **3. Turbidity Risk Associated with the Revetment**²⁷

8 As noted earlier in this opinion, Figure A-4 at Record 396 shows the revetment that
9 will be constructed along the river side of the pit walls for phases 2 and 3. That revetment
10 either alters the analysis so that the pits are located outside the modified King County CMZ
11 or provides back-up protection if the DOGAMI CMZ is used to identify the CMZ. In either
12 case, petitioner argues, the revetment assures that the pits will not be captured during flood
13 events and ensures the increased turbidity that would be associated with pit capture or
14 avulsion will not occur. Petitioner challenges Madison’s characterization of that revetment
15 as a 10-foot high rock wall. We set out some of Madison’s testimony below:

16 “Appendix E of the 2001 MRR * * * application includes several tables of
17 output from an HEC-RAS model that shows the effects of floods in the area of
18 the mine with and without the mine pits. The HEC-RAS tables show the
19 flow, elevation, and velocity in the channel and the floodway on both sides of
20 the river for various flood events. The upstream edge of the proposed mine
21 which is to have a below ground revetment to stop the river from meandering
22 into the pit is near cross section 48.2. The original MRR * * * Appendix E
23 HEC-RAS tables for section 48.2 shows the velocity of flow in the river
24 channel to be very erosive. * * * The clay, silt, sand, gravel, and small
25 boulder material that compose the setback area can be readily eroded by the
26 predicted channel velocities. The channel will meander and readily erode
27 away the setback material until it reaches the revetment. The mechanism of
28 failure for the revetment is from lateral erosion of the river banks during
29 meander that eventually places the river adjacent to the revetment with no
30 setback. When this occurs, the riverbank is the revetment. * * * A revetment
31 wall that is 10 feet below ground elevation at the mine edge will be

²⁷ We address here petitioner’s fourteenth challenge.

1 undermined and have its foundation eroded away by an adjacent river channel
2 that is 16 ft below ground elevation at the mine edge.

3 “* * * * *

4 “The common rip rap size for stream bank revetments of the Molalla River for
5 recently placed rock with Corp of Engineers permits is class 2500. The
6 revetment proposed for the mine is class 1000, which is dramatically smaller
7 and lighter rock. Once the revetment has eroded away, the river channel that
8 is 16 feet deep will enter the pit that is 60 feet deep and accelerate upstream
9 down cutting.” Supplemental Record 13-14.

10 Based on the above, we cannot say a reasonable decision maker could not have
11 concluded that the revetment might not be adequate to prevent an avulsion should the river
12 meander from its current location to the area proposed for mining.

13 **4. Turbidity Risk During Post-Mining Phase²⁸**

14 Petitioners challenge county findings that the presence of the pits after the ten-year
15 mining phase is complete and the site is reclaimed will result in a continuing risk of turbid
16 discharges to the river. After reclamation the four ponds will remain, as will the vegetated
17 buffers. The county adopted findings in which it expresses concern that because the
18 monitoring program will end at the conclusion of mining and the pits will remain in the
19 floodplain, there is a continued risk of avulsion and resultant turbid discharges to the river.
20 OCAPA argues:

21 “* * * The applicant explained during the hearings on remand that, once
22 reclaimed, the ponds will not require ‘long term monitoring and adjustment.’
23 The record indicates that ‘in the reclaimed phase, the ponds will be stable
24 water features surrounded by vegetation.’ The ponds and surrounding fringe
25 riparian areas will not require maintenance or monitoring beyond the kinds of
26 stewardship common to farms and forests in the area. Under state reclamation
27 law, DOGAMI will not release its bond until reclamation is complete. The
28 statement that the ponds will be located in a ‘highly active and dynamic
29 floodplain’ is false and misleading. The ponds will be located outside of the
30 ‘active’ and ‘dynamic’ meander zone of the Molalla River, as demonstrated

²⁸ We address here petitioner’s seventh challenge and OCAPA’s ninth challenge.

1 by Newton Consultants and confirmed by third party experts including
2 DOGAMI * * *.” Intervenor-Petitioner’s Brief 22.

3 In a February 23, 2005 memorandum to the board of county commissioners, Madison
4 asked the board of county commissioners to evaluate the proposal with a perspective that
5 goes beyond the ten-year active mining phase:

6 “The applicant is asking his consultants a valid business question: is the risk
7 low enough to make this mine a profitable business venture? Every business
8 assumes some risk and assessing the risk and cost of repairs that may be
9 required during the operation of the business is normal because * * * the risk
10 needs to be weighed against the potential profit. The potential profit from this
11 rock mine is high and therefore the acceptable level of risk that can be
12 assumed can also be high. The primary difference in engineering opinion
13 between me and * * * Coulton occurs because we are evaluating the risk of
14 turbidity from different time lines. After 10 years, mining is complete, the
15 [CUB] agreement expires and the monitoring program ceases. I represent the
16 neighbors that are evaluating risk of significant damage to the river from a
17 longer term view of 50 to 100 years or more. We want the river values
18 protected for future generations.

19 “We request each Commissioner – reread ‘EXHIBIT ‘F’, Subject: Letter
20 Report on Molalla River Reserve Channel Migration risks to Jack Hammond
21 February 14, 2005, from Kevin Coulton’ with the perspective of someone who
22 is protecting the river beyond 10 years. * * *” Record 1236.

23 Madison then goes on to analyze statements in Coulton’s report and argues that they show
24 the proposal is not as free of risk as the applicant contends. Record 1237-41. In assessing
25 the long term avulsion risk, Madison notes:

26 “The Fenstermacher property immediately adjacent and downstream of the
27 proposed mine property had a meander of 150 ft to the south (toward the
28 mine) during one flood in 1996 because of aggradation as explained in my
29 February 15 letter to the County Commissioners. During the 10 years of
30 operation the applicant will pay for observations and modify or add new
31 measures to counter excessive channel migration if it appears that his business
32 is at risk. After 10 years DOGAMI will make infrequent observations and
33 will advise the county when new measures to counter excessive channel
34 migration are needed. We the county tax payers will pay for the work – as we
35 have on the Clackamas River and many of the 17 other failed rock mine pits
36 in Oregon. The risk to the taxpayers is a long term risk that is not acceptable.
37 * * *” Record 1237.

1 Because there is conflicting expert testimony on the question, we cannot say that it
2 was unreasonable for the county to find that there is a remaining risk of avulsion after active
3 mining ceases.

4 **5. Floodplain Mining *Per Se* Turbidity Risk²⁹**

5 OCAPA contends that the county erroneously found that mining in river floodplains
6 poses a *per se* risk of turbidity when all of the evidence points to the conclusion that with the
7 protections incorporated into the proposed mine, including the location of the mining pits
8 outside the CMZ, the risk of mine-caused turbidity is “too remote to be considered a
9 significant risk in this case.” Intervenor-Petitioner’s Brief 19 (emphasis in original).

10 We do not agree with OCAPA’s characterization of the county’s decision as finding
11 that mining in floodplains poses a *per se* unacceptable risk of turbidity. Madison noted other
12 areas of the river where the more gentle drop of the river produced less energy and a lower
13 risk of turbidity through avulsion. Record 634-35.³⁰ Further, as intervenor-respondents
14 note, Coulton’s February 14, 2005 report can be read to express a more circumscribed
15 endorsement of the proposal and a more cautious assessment of its level of risk.

²⁹ We address here petitioner’s eighth and tenth challenges and OCAPA’s fifth challenge.

³⁰ Madison’s February 2, 2005 memorandum includes the following observation:

“The location of the proposed mine was not selected by a geomorphologist or an environmental engineer. A farmer, who had rocks in his field and found rock 60 feet deep when he drilled holes, selected it. A farmer selected the site as a farm with rock for sale with no consideration for the location of the mine in the landscape of the river hydraulics. The amount of effort that has gone into trying to justify mining a poor site on a steep erosive section of river could have better gone to study the gravel bearing floodplain to scientifically locate a site that is safe to mine. In contrast to the high-energy river reach with 23 feet per mile of fall at the proposed site, the Molalla River near Canby has less than 5 feet of fall per mile. The Molalla River near Canby is classified as a Pastoral Zone II River which has a more stable flood plain and can be more safely mined.” Record 634-35.

1 **6. Risk Management Plan Establishes Turbidity Risk**³¹

2 In finding that the proposed mine carries significant risk of significant turbidity
3 increase in the Molalla River, the county relied in part on the following finding:

4 “* * * The [Limited Mine Plan] includes a Risk Management Plan. The Risk
5 Management plan calls for continued monitoring and groundwater modeling
6 based on original model predictions and to recalibrate the model if necessary.
7 The Risk Management Plan recognizes that there are ‘* * * uncertainties
8 associated with modeling turbidity and other impacts to the river that are
9 difficult to fully resolve by analytical methods.’ The Risk Management Plan
10 recognizes that the modeling and analysis used to justify the limited mining
11 plan and potential impacts and risks is not a perfect science.” Supplemental
12 Record 8.

13 Petitioner argues “[d]enial of permission to mine in this case cannot be premised on the
14 applicant’s agreement that there is no ‘perfect science’.” Petition for Review 35.

15 Like intervenor-respondents we do not read the county’s decision to require perfect
16 science. The county was merely pointing out that all parties recognize that mining the
17 subject property will carry with it some unavoidable level of uncertainty which carries with it
18 an unavoidable level of risk. It was the county’s job to assess the magnitude of that
19 uncertainty and risk and to determine whether the ESEE consequences of that uncertainty
20 and risk and the benefits of the mine balance in favor of allowing the Limited Mine Plan to
21 proceed.

22 **7. General Turbidity Challenges**³²

23 A number of petitioners’ challenges are directed at general county findings that the
24 proposed mining will result in additional river turbidity. Those findings add nothing to the
25 more specific turbidity findings that we discuss above. For the same reason we have rejected

³¹ We address here petitioner’s ninth challenge.

³² These general challenges include petitioner’s fourth, fifth, sixth, eleventh and twelfth challenges and OCAPA’s tenth and eleventh challenges.

1 petitioners’ substantial evidence challenges to those more specific turbidity findings, we
2 reject their substantial evidence challenge to the county’s general turbidity findings.

3 **8. Undeveloped Challenges**³³

4 A number of petitioners’ challenges are insufficiently developed for review or are
5 directed at findings that are not critical to the county’s decision. We reject them without
6 discussion.

7 **9. Challenges to Madison’s Credentials**³⁴

8 We have already rejected petitioners’ argument that the county erred by considering
9 Madison’s testimony as expert testimony. Several of petitioners’ challenges reassert that
10 position under these assignments of error, and we reject the argument here for the same
11 reasons we rejected it earlier.

12 Petitioner’s sixth assignment of error and OCAPA’s third assignment of error are
13 denied.

14 **OCAPA’S SECOND ASSIGNMENT OF ERROR**

15 In its second assignment of error, OCAPA argues the county erred by failing to
16 consider the statewide planning goals and acknowledged comprehensive plan requirements,
17 as OAR 660-023-0040(4) requires.³⁵

³³ These undeveloped challenges include petitioner’s first, second, thirteenth, seventeenth and eighteenth challenges and OCAPA’s second, third, seventh, eighth and thirteenth challenges.

³⁴ These challenges include petitioner’s sixteenth and nineteenth challenges and OCAPA’s tenth and eleventh challenges.

³⁵ OAR 660-023-0040(4) provides:

“Analyze the ESEE consequences. Local governments shall analyze the ESEE consequences that could result from decisions to allow, limit, or prohibit a conflicting use. The analysis may address each of the identified conflicting uses, or it may address a group of similar conflicting uses. A local government may conduct a single analysis for two or more resource sites that are within the same area or that are similarly situated and subject to the same zoning. The local government may establish a matrix of commonly occurring conflicting uses and apply the matrix to particular resource sites in order to facilitate the analysis. A local government may conduct a single analysis for a site containing more than one significant Goal 5 resource.

1 Intervenor-respondents argue first that the issue presented in the second assignment
2 of error was not raised below. They appear to be correct. However, even if the issue was not
3 waived, we agree with intervenor-respondents that the ESEE analysis requirement of OAR
4 660-023-0180(5)(d) supersedes the general ESEE requirement at OAR 660-023-0040(4).
5 OAR 660-023-0180(2).³⁶

6 **OCAPA’S FOURTH ASSIGNMENT OF ERROR**

7 Under its final assignment of error, OCAPA cites the county planning staff’s use of
8 the term “active floodplain” and speculates that planning staff may have confused the CMZ
9 with the floodplain. OCAPA also contends that the county erroneously found that mining in
10 the floodplain poses a *per se* unreasonable risk if turbidity.

11 We are not sure what to make of the planning staff’s use of the term “active
12 floodplain.” It may well have been a mistaken reference to the CMZ. However, we fail to
13 see how a mistake in terminology constitutes reversible error. Regarding OCAPA’s more
14 substantive point, we have already explained that we do not understand the county to have
15 found that mining in floodplains poses a *per se* unacceptable risk of turbidity. As we have
16 already noted, Madison pointed out that the reach of the Molalla River generates relatively
17 high energy as it passes the subject property, increasing the risk of mining at the subject

The ESEE analysis must consider any applicable statewide goal or acknowledged plan requirements, including the requirements of Goal 5. The analyses of the ESEE consequences shall be adopted either as part of the plan or as a land use regulation.”

³⁶ OAR 660-023-0180(2) provides in relevant part:

“* * * The requirements of [OAR 660-023-0180] modify, supplement, or supersede the requirements of the standard Goal 5 process in OAR 660-023-0030 through 660-023-0050, as follows:

“ * * * * *

“(c) Local governments shall follow the requirements of section (5) or (6) of this rule, whichever is applicable, in deciding whether to authorize the mining of a significant aggregate resource site, and OAR 660-023-0040 through 660-023-0050 in deciding whether to authorize mining of a significant mineral resource[.]”

1 property as compared to other sites where the river is more stable. *See* n 30. We do not
2 agree that the county found that mining on a floodplain poses a *per se* unacceptable risk of
3 turbidity.

4 OCAPA's fourth assignment of error is denied.

5 **CONCLUSION**

6 Although we sustain petitioner's third assignment of error, that assignment of error
7 was directed at the county's finding regarding petitioner's failure to provide a no-rise
8 certification, as required by the county's Flood Development Ordinance. That finding was at
9 most a minor, alternative basis for the county's decision to deny the request for a Mineral
10 and Aggregate Overlay Zoning District to allow mining. We reject petitioners' challenge to
11 the county's ESEE analysis under OAR 660-023-0180(5)(d), which was the county's
12 primary basis for denial. Because petitioners do not establish reversible or remandable error
13 in that primary basis for the county's decision, the county's decision must be affirmed.

14 The county's decision is affirmed.