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POLLUTION CONTROL HEARINGS BOARD ENVIRONMENTAL
FOR THE STATE OF WASHINGTON HEARINGS OFFICE

1
2
3 AIRPORT COMMUNITIES COALITION,)
4) PCHB No. 01-160
5 Appellant,)
6) FINDINGS OF FACT, CONCLUSIONS OF
7 CITIZENS AGAINST AIRPORT)
8 EXPANSION,) LAW, AND ORDER PROPOSED BY ACC
9) AND CASE
10 Intervenor,)
11)
12 v.)
13)
14 STATE OF WASHINGTON,)
15 DEPARTMENT OF ECOLOGY; and)
16 THE PORT OF SEATTLE,)
17)
18 Respondents.)
19 _____)

I. INTRODUCTION

1. This matter came on for hearing before the Pollution Control Hearings Board (Board) on March 18-29, 2002. The Board was comprised of Kaleen Cottingham, presiding, Robert V. Jensen, and Bill Lynch.

2. Appellant Airport Communities Coalition ("ACC") was represented by Peter Eglick, Kevin Stock and Michael Witek of Helsell Fetterman; and Rachael Paschal Osborn; Intervenor Citizens Against Airport Expansion ("CASE") was represented by Richard Poulin of Smith & Lowney; Respondent Washington State Department of Ecology was represented by Joan Marchioro, Thomas Young and Jeff Kray, Assistant Attorneys General; and Respondent Port of Seattle was represented by Jay Manning and Gillis Reavis of Brown Reavis & Manning, Roger Pearce and Steven Jones of Foster Pepper & Shefelman, and Port Counsel Linda Strout and Traci

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1 Goodwin.

2 3. Prefiled written direct testimony was submitted, witnesses were sworn and heard,
3 exhibits were introduced, portions of eight depositions were published, and the parties presented
4 arguments to the Board. Based upon the evidence presented, the Board makes the following
5 Findings of Fact and Conclusions of Law.

6 **II. STATEMENT OF ISSUES**

7
8 **Issue No. 1:** Did Ecology violate applicable law pertaining to public and agency notice,
9 hearing, comment and modification regarding the original 401/404 application and Amended
10 Certification?

11 **Issue No. 2:** Does Ecology's concurrence with the Port's consistency certification, issued
12 pursuant to the Coastal Zone Management Act ("CZMA"), fail to comply with the
13 requirements of the CZMA and Washington's approved Coastal Zone Management Plan?

14 **Issue No. 3:** Do the stated limitations on the temporal, operational, and geographic scope of
15 the Certification, including its limitation to "Port 404 projects," violate the requirements of
16 Section 401 of the Clean Water Act and applicable state water quality law?

17 **Issue No. 4:** Is there reasonable assurance that the Third Runway and related projects, for
18 which a Clean Water Act Section 401 ("§ 401") certification is required ("Third Runway
19 Project"), will not violate § 401 and applicable water quality law?

20 **Issue No. 5:** Must there be reasonable assurance that a proposed project will not violate §
21 401 and applicable water quality law when a § 401 Certification is issued?

22 **Issue No. 6:** Is there reasonable assurance that § 401 and applicable water quality law will
23 not be violated if the Certification relies on data, reports, and plans that were not in being at
24 the time of issuance of the Certification?

25 **Issue No. 7:** Is there reasonable assurance that § 401 and applicable water quality law will
not be violated if (1) the Certification relies on future monitoring; or (2) if the Certification
fails to require adequate pre-construction monitoring?

Issue No. 8: Is there reasonable assurance that § 401 and applicable water quality law will
not be violated as a result of low flow impacts (with the identified mitigation) of the Third
Runway Project?

1 **Issue No. 9:** Must the Port obtain a water right to implement the low stream flow conditions
2 in the certification and if so:

- 3 a) Is there reasonable assurance that § 401 and applicable water quality
4 law will not be violated in the absence of such a water right; and
5 (b) Is there reasonable assurance that § 401 and applicable water quality
6 law will not be violated in the absence of review of a water right
7 application under the State Environmental Policy Act (“SEPA”)?

8 **Issue No. 10:** Is there reasonable assurance that § 401 and applicable water quality law will
9 not be violated as a result of the stormwater impacts (with the identified mitigation) or the
10 Third Runway Project?

11 **Issue No. 11:** Is there reasonable assurance that § 401 and applicable water quality law will
12 not be violated if discharges from the airport have violated water quality standards or the
13 Port’s NPDES (§ 402) permit?

14 **Issue No. 12:** May a certification of reasonable assurance that § 401 and applicable water
15 quality law will not be violated be based upon current and future NPDES (§ 402) permits?

16 **Issue No. 13:** Is there reasonable assurance that § 401 and applicable water quality law will
17 not be violated if the certification authorizes a mixing zone without compliance with
18 applicable procedural and substantive requirements for authorization of such a zone?

19 **Issue No. 14:** Dismissed on Summary Judgment

20 **Issue No. 15:** Is there reasonable assurance that § 401 and applicable water quality law will
21 not be violated as a result of the embankment and fill criteria, including:
22 the method of determining compliance with the fill criteria;
23 embankment and wall construction specifications; and
24 groundwater discharges from the embankment and Mechanically Stabilized Earth
25 (“MSE”) wall?

Issue No. 16: Is there reasonable assurance that § 401 and applicable water quality law will
not be violated as a result of the possibility of MSE wall and embankment failure?

Issue No. 17: Is there reasonable assurance that potential migration and discharge of
existing groundwater pollutants originating from the airport (with the identified mitigation)
will not violate § 401 and applicable water quality law?

Issue No. 18: Is there reasonable assurance that § 401 and applicable water quality law will
not be violated if the Port is in violation of the terms of the MTCA Agreed Order for SeaTac
International Airport (Ecology Order No. 97TC-N122, dated 5/15/99)?

1 **Issue No. 19:** Is there reasonable assurance that § 401 and applicable water quality law will
2 not be violated as a result of wetland fill, stream alteration and identified mitigation
3 activities?

4 **Issue No. 20:** Withdrawn by Appellants

5 **Issue No. 21:** Is there reasonable assurance that § 401 and applicable water quality law will
6 not be violated where the Certification allows future amendment of its terms “by any future
7 Ecology-approved NPDES (§ 402) permit for the Seattle-Tacoma International Airport
8 (STIA)...as determined in that permit?” (*See, e.g.*, amended Certification at p. 4, § 1.f.)

9 **Issue No. 22:** Did Ecology have reasonable assurance that § 401 and applicable water
10 quality laws would not be violated when it relied on a stormwater detention system that may
11 require future compliance with dam safety regulations (chapter 173-175 WAC) and may
12 require a dam safety permit prior to commencing construction?

13 **III. PROCEDURAL HISTORY**

14 4. On October 25, 2000, the Port of Seattle (“Port”) submitted a Joint Aquatic Resources
15 Permit Application (“JARPA”) to the Army Corps of Engineers for construction of “Master Plan
16 Update” projects including a third runway and related facilities. (Ex. 1207.) Shortly thereafter,
17 on January 11, 2001, the Port submitted for approval to the Department of Ecology (“Ecology”)
18 a Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464 (“CZMA”), consistency statement.
19 (Ex. 2062.) The filing of the JARPA constituted an application to the United States Army Corps
20 of Engineers (“Corps”) for a permit pursuant to Section 404 of the Clean Water Act (33 U.S.C.
21 1344) for permission to discharge dredge or fill materials into waters of the United States, i.e.,
22 the filling of wetlands necessary for construction of the Port’s proposed Third Runway and other
23 Master Plan Update Improvements.

24 5. The JARPA application also constituted an application under Section 401 of the Clean
25 Water Act (33 U.S.C. 1341) for certification by the State of Washington as to whether or not the
Port’s proposal complied with applicable water quality law. Section 401 requires that:

1 The applicant for a federal license or permit to conduct any activity including, but not
2 limited to, the construction or operation of facilities which may result in any
3 discharge into navigable waters, shall provide the licensing or permitting agency a
4 certification from the state in which the discharge originates or will originate that any
5 such discharge will comply with the applicable provisions of 1311, 1312, 1313, 1316
6 and 1317 of this title.

7 6. On August 10, 2001, the Department of Ecology ("Ecology") issued Order No. 1996-4-
8 02325, a Section 401 certification and Coastal Zone Management Act concurrency statement for
9 the Port's proposed Third Runway and other Master Plan Update projects (the "401
10 Certification," or "401") (Ex. 2). The 401 Certification was appealed on August 23, 2001, by the
11 Airport Communities Coalition ("ACC"), and assigned PCHB Case No. 01-133.

12 7. On September 4, 2001, a prehearing conference was conducted to establish a schedule for
13 hearing a motion by ACC to stay the effectiveness of the 401 Certification. The following week,
14 on September 10, 2001, the Port of Seattle filed its own Notice of Appeal of the August 401
15 Certification which was assigned PCHB Case No. 01-150. At the same time, the Port filed with
16 the Board a Stipulation with Ecology for entry by the Board of an Agreed Order which would
17 modify the 401 Certification and, on that basis, dismiss the Port's appeal. ACC objected to entry
18 of the Order.

19 8. Ecology therefore instead withdrew the August 401 Certification and issued a new one,
20 on September 21, 2001, Order No. 1966-4-02325 (Amended-1) (Ex. 1). Pursuant to stipulation,
21 the pleadings on ACC's prior appeal and Motion for Stay were transferred to a new appeal file
22 (PCHB Case No. 01-160) for the September 401 Certification. The Board heard oral argument
23 on ACC's Motion for Stay on October 15, 2001. On December 17, 2001, the Board issued its
24 Order Granting Motion to Stay the Effectiveness of Section 401 Certification. On December 21,
25

1 2001, pursuant to motion, Citizens Against Sea-Tac Expansion ("CASE") was granted Appellant
2 Intervenor status.

3 9. There have been several other prehearing decisions in this matter, including prehearing
4 orders, orders on discovery and orders on motions in limine which have been separately reported.
5 In particular, the Board issued an order (on a one-to-one tie vote) on February 6, 2002, denying
6 ACC's motion for summary judgment on Legal Issue 9 (whether a water right is required) and
7 reserving that issue for the hearing. On March 14, 2002, the Board entered an Order Granting
8 Judgment on Issue 14, dismissing appellants SEPA claim.
9

10 10. This matter was then tried before the Board on March 18 through March 29, 2002. The
11 hearing was conducted using prefiled direct testimony and with each party given limited time for
12 direct and cross examination using a chess clock. After closing arguments on March 29, 2002,
13 the Board left the record open for several purposes, which have been separately addressed in
14 subsequent orders. The Board also set a schedule for submission by the parties of proposed
15 findings and conclusions, based on an outline previously published by the Board.
16

17 **ACRONYMS USED IN THIS OPINION**

18 401:	Section 401 of the federal Clean Water Act, 33 U.S.C. 1341; also used to 19 refer to the § 401 Certification at issue in this case, Order No. 1996-4- 02325
20 402:	Section 402 of the federal Clean Water Act, 33 U.S.C. 1342
21 404:	Section 404 of the federal Clean Water Act, 33 U.S.C. 1344
22 ACC:	Airport Communities Coalition, Appellant
23 AKART:	All Known, Available, and Reasonable methods of prevention, control, 24 and Treatment 25

1	AOMA:	Airport Operations and Maintenance Area
2	BMP:	Best management practice
3	Board:	Pollution Control Hearings Board
4	CASE:	Citizens Against Sea-Tac Expansion, Intervenor-Appellant
5	CSMP:	Comprehensive Stormwater Management Plan
6	CWA:	Federal Clean Water Act, 33 U.S.C. §§ 1251 to 1387
7	Ecology:	State of Washington Department of Ecology, Respondent
8	HPA:	Hydraulic Project Approval
9	IWS:	Sea-Tac International Airport's Industrial Wastewater System
10	KCSWDM:	King County Surface Water Design Manual
11	KCSWDM:	King County Surface Water Design Manual
12	MPU:	Master Plan Update
13	MTCA:	Model Toxics Control Act
14	NPDES:	National Pollutant Discharge Elimination System
15	NPDES:	National Pollutant Discharge Elimination System
16	PCHB:	Pollution Control Hearings Board
17	PGIS:	Pollution-Generating Impervious Surface
18	PPA:	Preferential Pathways Analysis
19	Port:	Port of Seattle, Respondent
20	RCW:	Revised Code of Washington
21	SASA:	South Aviation Support Area
22	SDS:	Sea-Tac International Airport's Stormwater Drainage System
23	SDS:	Sea-Tac International Airport's Stormwater Drainage System
24	SEPA:	Washington State Environmental Policy Act
25	SMA:	Washington State Shoreline Management Act

1	SPLP:	Synthetic precipitate leaching procedure
2	STIA:	Seattle-Tacoma International Airport
3	SWMMWW:	Ecology's Stormwater Management Manual for Western Washington
4	SWPPP:	Stormwater Pollution Prevention Plan
5	SWREM:	Surface Water Receiving Environment Monitoring Report
6	USFWS	U.S. Fish & Wildlife Service
7	WAC:	Washington Administrative Code
8	WDFW:	Washington State Department of Fish & Wildlife
9	WER:	Water Effects Ratio
10	WRIA:	Water Resource Inventory Area

11

12 **V. FINDINGS OF FACT**

13 **A. GENERAL FINDINGS OF FACT**

14 **1. DESCRIPTION OF THE PROJECT**

15

16 11. Construction of the Third Runway and related projects at Sea-Tac Airport would be, as

17 Ecology has described them, one of the largest public works projects ever undertaken in

18 Washington. (Ex. 770 (Ecology Press Release dated August 10, 2001).) The projects include a

19 new 8,500-foot parallel air-carrier runway (west of the existing runways, approximately where

20 12th Avenue South now runs -- the "Third Runway"), a 600-foot extension of Runway 34R,

21 extension of other runway areas, terminal improvements, and expansion of the South Aviation

22 Support Area for aircraft maintenance and air cargo facilities.

23

24 12. The Third Runway Project would be constructed in the Miller Creek, Walker Creek, and

25 Des Moines Creek watersheds and in wetlands at Seattle-Tacoma International Airport ("STIA"),

1 located in and within the vicinity of the City of SeaTac, King County, Washington, and in
2 wetlands at a proposed mitigation site in Auburn, King County, Washington. Ex. 2132 (Second
3 Revised Public Notice issued by Army Corps of Engineers, dated December 27, 2000) at 1.
4 Miller, Walker and Des Moines Creek are all classified as Class AA waters of the state, the
5 highest and most protective category established for state waters. (Ex. 1 (September 21, 2001,
6 401 Certification) at 2.)

7
8 13. The project would fill all or portions of 50 wetlands totaling approximately 18.37 acres.
9 (Ex. 2132 at 1.) In addition, permanent impacts would occur to an additional 2.05 acres of
10 wetlands. (Ex. 1 (§ 401 Certification) at § D.4.) The project therefore cannot proceed without a
11 permit approval under section 404 of the federal Clean Water Act, a permit program
12 administered by the U.S. Army Corps of Engineers. Section 404 permits require as a
13 prerequisite a Clean Water Act § 401 certification from the State of Washington.

14
15 14. The Third Runway Project would also require filling and reconstruction of approximately
16 980 linear feet of Miller Creek, about 1,290 linear feet of drainage channels in the Miller Creek
17 basin, and 100 linear feet of drainage channel in the Des Moines Creek basin. (Ex. 2132 at 2.)

18
19 15. The site of the proposed Third Runway is currently a wooded canyon encompassing
20 Miller Creek, the bottom of which lies approximately 150 feet below the level of STIA's existing
21 runways. To provide the site for the Third Runway, the Port proposes to fill the canyon with
22 over twenty (20) million cubic yards of fill. Under the fill, the Port would construct a drainfield
23 to capture and transport groundwater.

24
25 16. The Port proposes an elaborate system of embankments and retaining structures to keep
the 20+ million cubic yards of fill in place. One element of this would be a 135-foot-high

1 mechanically stabilized earth (“MSE”) wall with a 20-foot high sloped embankment above the
2 wall. (Kavazanjian, Tr. 4-0149 and Kavazanjian Prefiled at 3). This section of the wall would run
3 for approximately 1,500 feet (Kavazanjian, Tr. 4-149-50 and Kavazanjian Prefiled at 3; Bailey
4 Prefiled at 9). The proposed construction limit for the MSE wall comes within approximately 50
5 feet of Miller Creek. (Ex. 2018, December 2001 Wetlands Functional Assessment, App. A,
6 Figure 3.2.2-2.)

7 **2. DESCRIPTION OF THE § 401 CERTIFICATION**

8
9 **17.** The 401 Certification (Ex. 1) was issued on September 21, 2001. As discussed above in
10 the Procedural History, the September 401 Certification replaced an earlier version of the
11 Certification that was issued on August 10, 2001 (Ex. 2).

12 **18.** The 401 Certification contains conditions enumerated in fifteen sections (A through O)
13 intended to ensure compliance with all appropriate water quality law. The significant conditions
14 in the 401 certification are summarized below.

15 **19.** Condition A (water quality conditions), pp. 2-3, identifies the project area streams,
16 Miller, Walker and Des Moines Creeks, as Class 2A waters of the state under Chapter 173-201A
17 WAC, and requires an in-stream/shoreline work monitoring plan.

18 **20.** Condition B (permit duration), pp. 3-4, identifies durational limits applicable to the major
19 conditions of the Certification.

20 **21.** Condition D (wetland, stream and riparian mitigation), pp. 6-14, is intended to address
21 mitigation of impacts to wetlands, streams and riparian areas. This section incorporates by
22 reference the Natural Resources Mitigation Plan (NRMP) (Ex. 2014). This condition identifies
23 required mitigation, performance standards and monitoring requirements for wetlands, streams
24
25

1 and riparian areas.

2 22. Condition E of the certification (fill criteria), pp. 14-19, addresses the importation of fill
3 material to be used in construction of the third runway, the runway safety areas, the South
4 Aviation Support Area and other as-yet-undetermined projects.

5 23. Condition F of the Certification (transport of contaminants), pp. 19-20, is intended to
6 address the potential risk of migration of contaminants from the Airport Operations and
7 Maintenance Area to other parts of the Airport via subsurface utility lines or other preferred
8 pathways.
9

10 24. Condition I of the Certification (mitigation of low flow impacts), pp. 22-25, discusses
11 mitigation of low flow impacts, including impacts to Des Moines Creek, Walker Creek, and
12 Miller Creek.

13 25. Condition J of the Certification (stormwater requirements), pp. 25-28, addresses the
14 operational stormwater requirements. Condition J incorporates by reference the Comprehensive
15 Stormwater Management Plan (CSMP) (Ex. 1213).
16

17 **B. ISSUE-SPECIFIC FINDINGS OF FACT**

18 **1. WATER QUALITY AND STORMWATER FINDINGS OF**
19 **FACT**

20 **Ecology's Reasonable Assurance Standard, Limitations in the 401**
21 **Certification, and Post-Certification Information**

22 26. In applying the reasonable assurance standard Ecology follows the two-step process set
23 forth in *Friends of the Earth v. Dept. of Ecology*, PCHB No. 87-63. (Kenny, Tr. 1-0208; and
24 Kenny Prefiled Testimony at 5.) Ann Kenny, Ecology's current Federal Permit Coordinator for
25 the Third Runway Project, described the two-step process as follows:

1 The first step is looking at the preponderance of the evidence before us, and that means
2 looking at all of the technical documents submitted to us by an applicant, going out to the site
3 to look at site conditions, doing our own review, our own site investigation, meeting with the
4 applicant, and determining in our judgment that a project can or won't meet water quality
5 standards. If we determine that it can, we look for areas where we still may have questions or
6 need additional information where we still have some uncertainty, and we will develop
7 conditions and place those conditions in the 401.

8 (Kenny, Tr. at 1-0208 - 209; *see also* Luster, Tr. at 2-0072 - 73, Luster Prefiled at 4-6 and Ex.
9 207 at 36-38.)

10 27. While some conditions in the 401 Certification are standard boilerplate, it imposes other
11 conditions where Ecology has uncertainties whether the project will comply with water quality
12 standards. (Kenny Prefiled at 5, and Kenny Tr. at 1-0135 - 136.) The conditions are supposed to
13 address the uncertainties uncovered in Ecology's reasonable assurance analysis. (*Id.*)

14 28. In issuing this Certification, Ecology did not address many of the impacts associated with
15 the proposed project that are currently adversely affecting water quality or that will adversely
16 affect water quality as a result of the project. (Luster Prefiled at 5.) The agency also identified a
17 number of significant impacts during its review and in the Certification, but required only that
18 they be handled through future submittals of new information by the Port. (*Id.*)

19 29. Where the conditions require the Port to submit new information never before seen by
20 Ecology, that information cannot resolve any uncertainty until after Ecology has had the
21 opportunity to review, consider and approve the new information and its impact on water quality
22 issues. (Kenny, Tr. at 1-0136.) For this reason, Ecology reserves the right in the 401
23 Certification to review and approve all new plans. (*Id.*) To the extent the conditions that form
24 the basis of Ecology's reasonable assurance determination have yet to be met, the uncertainty
25 that the condition was to address continues to exist. (Kenny, Tr. at 1-0136.)

1 30. In recognition that the Port had yet to provide the necessary information to resolve
2 fundamental uncertainties over whether the project could comply with water quality standards,
3 Ecology included numerous conditions in the 401 that require the Port to submit additional data,
4 plans and reports. (Kenny, Tr. at 1-0134 - 135; Luster Prefiled at 6.) The list of additional
5 information Ecology seeks through the conditions is very long: a mitigation plan for permanent
6 impacts to the Wetland 17A complex (Ex. 1, Condition D.4); a plan to prevent interception of
7 contaminated groundwater and to monitor potential contaminant transport via subsurface utilities
8 (Ex. 1, Condition F.1); a revised Natural Resources Mitigation Plan (“NRMP”) (Ex. 1, Condition
9 D.1); a Surface Water and Groundwater Monitoring Plan (Ex. 1, Condition E.3); a revised Low
10 Streamflow Analysis and Low Flow Offset Proposal (Ex. 1, Condition L.1); a Construction
11 Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plan (Ex. 1, Conditions
12 H.3 and K.1); a Spill Prevention and Containment Plan (Ex. 1, Condition L.1); a site specific
13 study before stormwater from new surfaces can be discharged into receiving waters (Ex. 1,
14 Condition J.2.a); and a Stormwater Facilities Operation and Maintenance Plan (Ex. 1, Condition
15 J.2.f).

16
17
18 31. Each of these conditions addresses essential components of the Third Runway project and
19 the proposed mitigation. Without the information, it was (and still is) pure speculation whether
20 or not the project will result in violation of water quality standards. Testimony at the hearing
21 established that most of these plans have not been finalized and approved, and some have yet to
22 even be submitted. Ecology repeatedly admitted at the hearing and in depositions that these
23 post-certification plans and reports are needed for Ecology to have reasonable assurance that the
24 project will comply with water quality laws.
25

1 32. For example, Ecology admits that it has not approved the Port's plan for mitigation of
2 permanent impacts to the Wetland 17A complex, even while acknowledging that an approved
3 plan is needed for reasonable assurance and that none existed when Ecology issued the 401 in
4 September. (Kenny, Tr. at 1-0153 - 156; Kenny Dep. at 257.) Similarly, Ecology again admits
5 that the Port did not submit a Surface Water and Groundwater Monitoring Plan until after
6 Ecology issued the 401. Ecology concedes that the plan is needed for reasonable assurance --
7 but that Ecology has yet to approve it. (Kenny, Tr. at 1-0176 - 177; Kenny Dep. at 304, 306.)
8 Ecology admits that until Ecology approves the plan, the uncertainty in its reasonable assurance
9 analysis remains. (Kenny, Tr. at 1-0177.) In fact, Ecology will be asking the Port to make
10 revisions. (Kenny Dep. 305-06.)
11

12 33. The Port submitted revisions to the NRMP in November 2001 (three months after
13 issuance of the August 401), and Ecology still has yet to approve it. (Kenny, Tr. at 1-0154 - 155;
14 Kenny Dep. at 232.) Repeatedly, Ann Kenny admitted at the hearing and in her deposition that
15 Ecology needs the multiple revisions to the NRMP and the further information the Port is to
16 supply in the revised NRMP to have reasonable assurance. (Provide information on shade cloth
17 to have reasonable assurance: Kenny, Tr. at 1-0140 -141 and Kenny Dep. at 161; Revise to
18 provide for monitoring hydrologic conditions of wetlands to have reasonable assurance: Kenny
19 Dep. at 163; Revise to require observable surface flow in Miller Creek at all times to have
20 reasonable assurance: Kenny, Tr. at 1-0143 - 144 and Kenny Dep. at 176 - 77; Provide
21 information on irrigation system to support mitigation for Miller Creek relocation to have
22 reasonable assurance: Kenny, Tr. at 1-0145 -146 and Kenny Dep. at 180; Provide information
23 on sediment migration for reasonable assurance: Kenny, Tr. at 1-0147 - 148 and Kenny Dep. at
24
25

1 181; Provide information on Miller Creek instream and buffer enhancements to have reasonable
2 assurance: Kenny, Tr. at 1-0148 - 150 and Kenny Dep. at 182; Provide details of stream
3 diversion and flow dispersion structures to have reasonable assurance: Kenny, Tr. at 1-0151 and
4 Kenny Dep. at 183; and Provide information concerning post-construction hydrological support
5 for Wetlands 9, 11, and 44a to have reasonable assurance: Kenny Tr. at 1-0151 - 153 and Kenny
6 Dep. at 185-86.) None of these revisions or further information was available to Ecology when it
7 issued the 401 in August or again in September and, therefore, could not have formed the basis
8 of reasonable assurance. Even today, in light of Ecology's admissions, they cannot form the
9 basis of reasonable assurance given that Ecology has yet to approve them.
10
11

12 34. Indeed, the more central the issue is to the protection of state waters, the farther away
13 Ecology is from having even a post-hoc basis for certification. For example, in October 2001
14 (two months after Ecology issued the 401 Certification) the Port discovered and advised Ecology
15 of a modeling error in the low flow plan Ecology relied upon for reasonable assurance. (Kenny,
16 Tr. at 1-0191 and Kenny Prefiled at 20.) In addition, the Port submitted a revised low flow plan
17 in December 2001. (Kenny, Tr. at 1-0191; Kenny Prefiled at 20; Kenny Dep. at 230.) It
18 contains so many changes that Ecology required the Port to submit a "validation report" on the
19 modeling which underlies its critical assumptions. (Kenny, Tr. at 1-0192; Kenny Dep. at 215.)
20 As of the hearing, the Port had submitted the validation report for Walker and Miller Creeks but
21 not for Des Moines Creek. (Kenny, Tr. at 1-0192 - 193.) And still yet, Ecology anticipates
22 asking the Port in writing to make corrections to the revised December 2001 low flow plan.
23 (Kenny, Tr. at 1-0194.)
24
25

35. Ecology's Federal Permit Coordinator admitted that Ecology does not have reasonable

1 assurance without these missing analyses -- even though the 401 was issued last September.

2
3 Q. And so ultimately what Ecology is going to get from the port is a corrected, revised
December 2001 low-flow analysis; is that right?

4 A. Yes.

5 Q. You're going to take the comments from Mr. Whiting, from Mr. Garland and Mr. Abbasi
6 and you're ultimately going to be writing a letter to the port, asking the port to make
7 revisions to that corrected revised December 2001 low-flow plan?

8 A. That's correct.

9 Q. And Ecology needs those corrections to the revised corrected December 2001 low-flow
10 plan in order to have reasonable assurance for purposes of the 401 that was issued to the
port; isn't that true?

11 A. That's correct.

12 (Kenny, Tr. at 1-0194.)

13 36. The Port also has yet to submit the site-specific study required by Condition J.2.a
14 (Kenny, Tr. at 1-0195; Kenny Dep. at 320) or the Stormwater Facilities Operations and
15 Maintenance Plan required by Condition J.2.f. (Kenny, Tr. at 1-0189 - 190; Kenny Dep. at 321.)
16 Ecology now admits, as it must, that both are necessary for reasonable assurance. (Kenny, Tr. at
17 1-0181 - 182, 1-0189 - 190; Kenny Dep. at 316, 322.) The site-specific study is needed to set
18 appropriate effluent limitations in the Port's NPDES permit to address metal contaminants from
19 Third Runway Project new impervious surfaces. (Kenny, Tr. at 1-0179; and Kenny Dep. at 318.)

21 **Stormwater Detention and Dam Safety**

22 37. The Port's proposed Third Runway Project would include stormwater management
23 facilities of Pharaonic proportions, which even by themselves, separate from the overall Third
24 Runway Project, would normally require careful review due to their size and location in close
25

1 proximity to sensitive aquatic resources. The 401 Certification (Condition G, p. 20)
2 acknowledges that some of the Port's proposed stormwater management facilities will be subject
3 to dam safety regulations (Chapter 173-175 WAC), but does not require the Port to obtain dam
4 safety permits, or even identify which stormwater management facilities will be subject to dam
5 safety regulations, prior to issuance of the Certification.
6

7 38. Condition G of the 401 Certification, addressing dam safety requirements, consists of two
8 sentences:

9 All facilities identified in Table 3-1 of the Comprehensive Stormwater Management
10 Plan ("CSMP") that meet the requirements of Chapter 173-175 WAC (dam safety
11 regulations) shall obtain a dam safety permit from Ecology prior to commencement of
12 construction. If any stormwater facilities identified in the CSMP change during final
13 design such that they meet the requirements of Chapter 173-175 WAC, those
14 facilities shall obtain a dam safety permit from Ecology prior to commencement of
15 construction.

16 39. Table 3-1 of the CSMP (Ex. 1213) identifies five different ponds that will impound
17 volumes of water between 15.7 acre feet (Pond F) to 92 acre feet (SASA Pond). For reference,
18 92 acre feet is equivalent to the amount of water that can be held in 28 Olympic-size swimming
19 pools. Pond G, which will retain 28.7 acre feet of stormwater, has a berm or earthen retaining
20 structure which will abut the 50-foot buffer for Miller Creek. (See Plan Sheet C-135 included in
21 Appendix D to the CSMP, Exhibit 1213.) As ACC expert William Rozeboom stated, "From the
22 available drawings, it is apparent that Pond G, and possibly Pond D, exceed the size (and danger)
23 thresholds which necessitate dam safety reviews." (Rozeboom Prefiled Testimony, Ex. D (at
24 p. 13).)

25 **Stormwater Impacts**

40. The Port's construction of the proposed MPU projects, including the Third Runway and

1 new taxiways, will result in increased stormwater runoff and -- unless the stormwater is
2 adequately treated -- increased chemical burdens to the creeks. (Strand, Tr. at 4-0196.)

3
4 41. Construction of the Master Plan Update improvements will add approximately 106 acres
5 (net) of new impervious surface area in the Miller Creek watershed, approximately six acres in
6 the Walker Creek watershed, and approximately 128 acres in the Des Moines Creek watershed.
7 (Ex. 1213, CSMP Vol. 1 at 4-4 (Table 4-1), 5-4.) In addition, runoff from approximately 67
8 acres of new impervious surface will be directed to the IWS. (Ex. 1213, CSMP Vol. 1 at 4-4
9 (Table 4-1).) The total change in impervious area between 1994 baseline and projected 2006
10 future conditions is approximately 305.7 acres. (Ex. 1213, CSMP Vol. 1 at 4-4 (Table 4-1).)

11
12 42. Construction of the Third Runway and connecting taxiways (not including other MPU
13 projects) will add approximately 156 acres of pollution-generating impervious surface ("PGIS")
14 area to the STIA stormwater drainage system. (Ex. 1213, CSMP Vol. 1 at 7-3; Table 7-1.)

15 43. Most of the stormwater runoff from the Third Runway would go to the stormwater
16 drainage system or "SDS", not into the Port's industrial wastewater system or "IWS".
17 (Fitzpatrick, Tr. at 5-0069-0070.) The IWS is described in the Permit Fact Sheet (Ex. 136 at 6-
18 9). The SDS is described in the Permit Fact Sheet (Ex. 136 at 11-12).

19
20 44. The Third Runway and new taxiways will drain to Miller Creek via two new outfalls
21 (SDW1A and SDW1B); to Walker Creek via one new outfall (SDW2); and to Des Moines Creek
22 via an existing outfall (SDS7). (Ex. 1213, CSMP Vol. 1 at 7-3, and at Figure 5-3.)

23 45. The water quality of Third Runway stormwater runoff is expected to be similar to the
24 water quality of stormwater discharged through Outfall SDS3 in recent years. (Ex. 1213, CSMP
25 Vol. 1 at 7-3.) Subbasin SDS3 consists almost exclusively of runways, taxiways, and grass

1 infields. (Ex. 1213, CSMP Vol. 1 at 7-3.) The Third Runway and new taxiways will add more
2 of the same. Thus, when Ecology and the Port evaluate expected water quality impacts from
3 construction of the Third Runway, they use SDS3 discharges as a surrogate for future Third
4 Runway-related discharges. (Ex. 645 at 1; Ex. 646 at 1; Ex. 652 at 20.)

5
6 46. Stormwater from the vast majority of STIA's airfield is discharged through outfall SDS3.
7 (See, e.g., Ex. 424, Figure 2-2 (Map of NPDES Drainage Subbasins).) The industrial activities
8 occurring in the SDS3 subbasin are runway/taxiway deicing/anti-icing, and aircraft taxi, takeoff
9 and landings. (Ex. 425 (SWPPP) Table 2.) These are the same activities expected to occur on
10 the Third Runway and new taxiways.

11
12 47. Stormwater discharges from Outfall SDS3 flow through a swale to the Northwest Ponds
13 and into the west tributary of Des Moines Creek. (Ex. 425 (SWPPP) Table 2.)

14
15 48. There are no non-Port contributors of stormwater upstream of SDS3, and all stormwater
16 that discharges through SDS3 is runoff from the Port of Seattle. (Fitzpatrick, Tr. at 5-128-129.)

17
18 49. The water quality criterion for copper has not been met in the receiving water. Ecology
19 acknowledged this four years ago in the Port's NPDES Permit Fact Sheet (Ex. 136), based on
20 information it had five years ago from the 1997 Stormwater Receiving Environment Monitoring
21 Report (Ex. 426). (Fitzpatrick Dep. at 101; Fitzpatrick, Tr. at 5-0071.)

22
23 50. The non-construction stormwater runoff from the runways at STIA includes elevated
24 levels of copper. (Fitzpatrick Dep. at 94; Ex. 6 at 110 (sample data for "Airfield" outfalls).) The
25 airfield runways are a source area for copper. (Fitzpatrick Dep. at 94.) The copper may be
originating from aircraft tires. (Fitzpatrick Dep. at 95, 100-101.) It is highly unlikely that the
Port can adequately control that source of copper. (Fitzpatrick Dep. at 102.)

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51. In the Port's previous NPDES permit, which took effect in 1994, Ecology required the Port to conduct a "Receiving Environment Monitoring Study" evaluating the impact of STIA's stormwater discharges to Miller and Des Moines Creeks. (Ex. 800 (NPDES Permit No WA-002465-1, dated June 30, 1994) at 30-32 (Spec. Cond. S8); Ex. 426 at *viii*, 1.) The resulting 1997 Stormwater Receiving Environment Monitoring Report ("SWREM Report") confirmed that metals concentrations exceeded federal and state water quality criteria both above and below STIA stormwater outfalls, and in STIA's stormwater discharges. (Ex. 426 at *x*, 33-39; Willing Tr. at 4-20-21, 73-74, 76; Strand Tr. at 4-184-188, 5-5-7.)

52. As described in the SWREM Report, the Port monitored dissolved metals concentrations at stormwater outfalls and at in-stream locations upstream and downstream of the Port's discharges in Miller and Des Moines Creeks. (Ex. 426 at *x*, 33-34.) The Port compared the measured metals concentrations with federal and state water quality criteria and standards. (Ex. 426 at *x*, 34.) The Port reported, "For Des Moines Creek, copper and zinc were exceeded upstream and downstream of the outfall." (Ex. 426 at *x*.) "For Miller Creek, zinc exceeded the [water quality] criterion upstream and downstream, but copper only downstream of the outfall." (Ex. 426 at *x*.)

53. With respect to Des Moines Creek, the 1997 SWREM Report states, "Copper and zinc [criteria] were exceeded in samples from both upstream and downstream of the discharge, as well as in the storm water discharge itself. However, dissolved zinc concentrations downstream of storm water discharges in Des Moines Creek only exceeded the criterion about 20 percent of the time." (Ex. 426 at 35.) The Report shows that the high (i.e., above-the-standard) levels of dissolved copper discharged from STIA's outfalls caused the concentrations of dissolved copper

1 in Des Moines Creek to increase -- specifically, the concentrations downstream from the Port's
2 discharges are greater than the upstream concentrations, and both exceed the water quality
3 criteria for copper. (Ex. 426 at 39 (Table 23).)
4

5 54. The 1997 SWREM Report states that in Des Moines Creek, dissolved copper
6 concentrations were highest in samples from the storm water outfalls, "particularly SDS3 (45.5
7 ug/l) and SDE4 (34 ug/l)." (Ex. 426 at 38.)

8 55. Stormwater sampling data presented in the Port's 2001 Annual Stormwater Monitoring
9 Report also shows that copper levels in SDS3's discharges are higher than the copper levels in
10 other STIA stormwater discharges. (See, Ex. 6 at 105, 106, 110, and 20 (Table 10).)
11 Specifically, the sampling data indicates that more than 75% of the stormwater discharges from
12 "all outfalls" at STIA exceed the Port-calculated acute freshwater criteria for copper. (Ex. 6 at
13 105 (sampling results of "all outfalls"), and at 20, Table 4 (calculating an acute water quality
14 criterion for copper of 10.3 ug/l, or 0.0103 mg/l, at an assumed hardness of 56 mg/l).) The
15 copper levels in stormwater discharges from the "airfield only" outfalls are higher. (Ex. 6 at
16 110.) And the copper levels in stormwater discharges from SDS3 -- the outfall that drains most
17 of the airfield -- are higher still. (Ex. 6 at 106.) In 1998, Ecology informed the Port that:
18

19
20 Currently, based on information provided by the Port, Des Moines and Miller Creeks
21 are not meeting water quality standards for copper, zinc, temperature as well as fecal
coliform.

22 (Ex. 803 at 6.) Further, Ecology's current NPDES Permit Fact Sheet for Sea-Tac reports that
23 "concentrations of total recoverable copper in ambient waters both upstream and downstream of
24 the [Port's] stormwater discharges generally exceeded the water quality criteria" (Ex. 136
25 (Fact Sheet for NPDES Permit WA-002465-1, Seattle-Tacoma International Airport) at 26.)

1 Lisa Austin (formerly Zinner), who served as Ecology's water quality technical lead on the 401
2 water quality certification for the master plan improvements at SeaTac airport until 1999
3 (Fitzpatrick, Tr. at 5-39), recommended placing Miller or Des Moines Creek on the 303(d) list
4 for copper. (Fitzpatrick, Tr. at 5-128.)

5
6 56. The Port's manager of the aviation environmental program at STIA, Elizabeth Leavitt,
7 testified that Des Moines Creek is on the CWA 303(d) list for fecal coliform. (Leavitt, Tr. at 7-
8 0182; Fitzpatrick, Tr. at 5-0122.) Ms. Leavitt further testified that the Port had a study done by a
9 consultant showing that fecal coliforms attributable to humans were coming off STIA property.
10 (Leavitt, Tr. at 7-0195.)

11
12 57. Washington's 303(d) list has not been updated since 1998. EPA did not require states to
13 submit a 303(d) list in 2000. (See, Ecology's web page at
14 <http://www.ecy.wa.gov/programs/wq/303d/index.html>.) In response to questions from the
15 Board, Ecology's Gordon White testified that Ecology had discussed the impact of a possible
16 303(d) listing on reasonable assurances, as well as the relationship of the 303(d) list to "potential
17 discharges from the Port." (White, Tr. at 7-0176.)

18
19 58. In the 1998 401 Certification -- issued by Ecology for the proposed STIA Master Plan
20 Update projects, and later withdrawn -- Ecology stated:

21 Both Des Moines Creek and Miller Creek have been identified as having excessively
22 high storm flows and levels of contaminants above state water quality criteria. These
23 high storm flows and contaminant levels prevent some characteristic uses of Class
AA waterbodies from being met.

24 (Ex. 1104 (401 Cert. dated July 20, 1998) at 10.)

25 59. More recently, in February, 2001, the City of Des Moines released a report detailing the

1 results of a five-year, in-stream water quality monitoring program in Des Moines Creek and
2 three other area creeks. (Ex. 686 (Five-Year Project Report, City of Des Moines Water Quality
3 Monitoring Program).) After monitoring 25 storm events and 15 base flow events at eight
4 sampling stations in the four creeks studied (Ex. 686 at 13), the Report showed that the sampling
5 station closest to STIA -- upper Des Moines Creek station "DM-1" -- shared both the highest
6 total copper concentrations (Ex. 686 at 57), and the highest storm and base flow dissolved copper
7 concentrations. (Ex. 686 at 54.) The Report concluded that 40% of the storm flow samples at
8 sampling station DM-1 exceeded the Washington state Class AA water quality criterion for
9 dissolved copper -- the highest "All Years" percentage of any monitoring station. (Ex. 686 at 56
10 (Table 14).) The Report further concluded, "runoff carrying pollutants from SeaTac Airport
11 (which is located upstream of station DM-1) may be responsible for higher dissolved copper
12 concentrations in upper Des Moines Creek." (Ex. 686 at 54.)

15 60. ACC's fisheries biologist and water quality expert Dr. John Strand testified, "there is
16 evidence that violations of Toxic Substances (water quality) Criteria in Miller Creek and Des
17 Moines Creek, particularly for copper, lead, and zinc, occur as a result of stormwater discharged
18 by the STIA, and will continue, and worsen as a result of the Port of Seattle's (Port) Master Plan
19 Update Improvements." (Strand Prefiled Testimony at 2, ¶ 3.) STIA airfield discharges also
20 contribute turbidity and glycols, which are used to de-ice and prevent icing on aircraft. (Strand,
21 Tr. at 4-0184.)

23 61. The Port offered a May 2000 Whole Effluent Toxicity Test as evidence that the
24 stormwater discharges from SDS3 have no ill effects. (Wisdom, Tr. at 8-0041-42, 8-0045-47.)
25 However, with respect to the WET test, the Port's expert Dr. Charles Wisdom conceded that the

1 Port's Annual Stormwater Reports (Exs. 139, 1193, and 6) indicate that 75 percent of the
2 recorded samples taken at SDS 3 have higher levels of copper than those used for the WET test.
3 (Wisdom, Tr. at 8-0071.) Dr. Wisdom also conceded that the WET test samples were not taken
4 during the late August conditions that have produced the top three recorded copper
5 concentrations at SDS3. (Wisdom, Tr. at 8-0071-72.)

7 Stormwater Discharges and Treatment BMPs

8 62. The primary water quality "treatment BMP" proposed for the stormwater that will runoff
9 from the new impervious areas of the third runway and taxiways is "filter strips." (See, Ex.
10 1213, CSMP Vol. 1 at 7-3, at Table 7-8, and at 2-7 ("The primary water quality BMP for
11 impervious surfaces such as runways and taxiways would be filter strips.").)

12 63. Filter strips are the existing treatment BMPs currently in place at SDS3. (Ex. 1213,
13 CSMP Vol. 1 at Table 4-6.) Significantly, in a preliminary version of the CSMP, the Port stated:

14 No formal water quality treatment BMPs are in place for the SDS. However, it is
15 likely that incidental water quality treatment does occur by existing STIA facilities.
16 Studies of these facilities have not been conducted to determine their effectiveness in
17 removing pollutants.

18 (Ex. 652 (Preliminary CSMP, Appendix F, July 1998 Draft) at 10.)

19 64. The Port does not use compost peat filters, sand filters, or activated media filters at STIA.
20 (Fitzpatrick, Tr. at 5-0101.)

21 65. While they may be effective to remove suspended solids including particulate metals,
22 filter strips and biofiltration swales are not effective in removing dissolved metals from
23 stormwater. (See, Willing Prefiled Testimony at 11-13, ¶¶ 26, 29.) ACC's water quality expert,
24 Dr. Peter Willing, identified several reasons why filter strips and biofiltration swales are not
25

1 effective in treating stormwater at SeaTac. These include the relative lack of suspended
2 particulate matter in STIA's stormwater waste stream, and the difficulty of achieving a level
3 flow-spreading configuration in such facilities. In addition, Dr. Willing testified that the
4 chemistry of both runoff and receiving waters tends to favor the more toxic dissolved state
5 instead of the less toxic particulate bound state. (Willing Prefiled at 13, ¶ 29.)
6

7 66. Ecology recognizes that basic treatment BMPs such as filter strips, standing alone, are
8 inadequate to treat the dissolved copper in STIA's airfield runoff. In late June of 1998, Ecology
9 and Port staff conducted a Reasonable Potential Analysis to determine whether stormwater
10 discharges from the proposed Third Runway had a reasonable potential to exceed water quality
11 standards. (Ex. 646 at 1; Ex. 652 at 18; Ex. 803 at 2 ("Bullet 1"), 8 (Par. C4d.)) Using data
12 from Outfall SDS3 to represent predicted runoff from the Third Runway, determining surface
13 water quality criteria based on stated hardness values, and considering expected "removal
14 efficiencies" of various BMPs, the Reasonable Potential Analysis predicted resulting "effluent
15 pollutant concentrations." (Ex. 646 at 1-2.) The Reasonable Potential Analysis predicted that
16 "Copper concentrations after treatment remained higher than the criteria." (Ex. 646 at 2; Ex. 652
17 at 20.)
18

19 67. Within months -- and after the Port appealed the July 20, 1998, 401 certification and
20 requested "minor revisions" to the certification (Ex. 803 at 1) -- Ecology informed the Port that
21 its proposed stormwater treatment BMPs were inadequate to assure compliance with water
22 quality standards. (Ex. 803 at 6.) Specifically, Ecology stated:
23

24 Data provided by the Port show that the BMPs proposed by the Port will not achieve
25 the levels of treatment necessary to meet the [state water quality] criteria. In addition,
data show that with the proposed treatment system, discharges of copper would not

1 only be above the criteria but would also exceed levels identified as harmful to
2 salmon, and would therefore also violate the characteristic uses of the waterbody as
3 described in 173-201A-030(1) WAC. Given this, the BMPs proposed by the Port are
not adequate to meet water quality standards.

4 (Ex. 803 at 6.) As a result, Ecology concluded, "The Port must go beyond minimum
5 BMPs in order for the project to be certified." (Ex. 803 at 8.)

6 68. In contrast to its previous recognition that basic BMPs are inadequate to treat dissolved
7 metals, Ecology's current 401 acquiesces in the Port's proposal to use basic BMPs to address the
8 toxic metals in STIA's stormwater discharges. (Ex. 1 at 27-28.)

9 69. Yet in developing its Stormwater Management Manual for Western Washington
10 (SWMMWW), Ecology found that the basic treatment menu of BMPs is not sufficient to assure
11 that the concentrations of dissolved metals in stormwater discharges from industrial and
12 commercial land uses will comply with water quality standards. (O'Brien, Tr. at 6-0036-37.)
13 Ecology learned that "We couldn't make the presumption that if we applied basic treatment
14 facilities to the storm water, . . . there wouldn't be a water quality standard violation." (O'Brien,
15 Tr. at 6-0037.) Ecology therefore created an enhanced treatment menu of BMP options that
16 applies to industrial and commercial land use sites and high-use road systems, to restrict the
17 available BMP options to those that Ecology has determined have the potential to achieve a
18 higher degree of dissolved metals removal. (O'Brien, Tr. at 6-37.)

19 70. Ecology's Edward O'Brien, one of the authors of the SWMMWW, testified that the Third
20 Runway project would result in the application of the enhanced treatment menu if the
21 SWMMWW had been applied. (O'Brien Prefiled at 4; O'Brien, Tr. at 6-0049, 6-54; O'Brien
22 Prefiled at 4.) Along with infiltration, large sand filters, amended sand filters, and stormwater
23
24
25

1 treatment wetlands, the SWMMWW's enhanced treatment menu recommends the use of "two
2 facility treatment trains" to remove dissolved metals. (Ex. 1266 at 3-6 - 3-7.) Filter strips are
3 only available as treatment BMPs when applied in combination with Linear Sand Filters in a two
4 facility treatment train. (Ex. 1266 at 3-7, Table 3.2 ("Treatment Trains for Dissolved Metals
5 Removal").)

7 71. The current Port proposal does not select water quality treatment BMPs from the
8 enhanced treatment menu found in either the SWMMWW or the KCSWDM. King County's
9 stormwater expert testified it is not known whether the BMPs proposed by the Port will result in
10 discharges that comply with the state water quality standards. (Whiting, Tr. at 7-0111.) He
11 further testified that compliance with the SWMMWW's treatment requirements would not ensure
12 compliance with state water quality standards. (Whiting, Tr. at 7-0111.)

14 72. The basic treatment menu of BMPs from the KCSWDM that was used by the Port is not
15 designed to control for soluble metals. (Whiting, Tr. at 7-0112.) Its performance goal is 80
16 percent total suspended solids removal. (Whiting, Tr. at 7-0112.) The proposed Third Runway
17 project was reviewed under the basic menu of the KCSWDM, not the resource stream protection
18 menu, which addresses high dissolved copper concentrations. (Whiting, Tr. at 7-0095-96, 7-
19 0112.)

21 73. Under the Port's NPDES Permit (Ex. 3), "BMPs shall be selected from the most recent
22 published edition of the SWMM, or other manuals determined to be equivalent by the
23 Department, available at least one hundred twenty (120) days before the selection of the BMPs."
24 (Ex. 3 at 39 (Condition S12(B)(5)).) The Port's selection of BMPs is contained in the CSMP,
25 dated July, 2001 (Ex. 1213), and in the Port's Stormwater Pollution Prevention Plan ("SWPPP")

1 (Ex. 425). The updated SWPPP was submitted on December 19, 2001. (Ex. 425 at iv.)

2 74. Ecology's SWMMWW was published in September, 2001(O'Brien, Tr. at 6-0036, 6-
3 0064) and was not available at least one hundred twenty (120) days before the Port's selection of
4 BMPs.
5

6 75. King County's 1998 Surface Water Design Manual has not yet been determined to be the
7 equivalent of Ecology's SWMM. (O'Brien, Tr. at 6-0059-60.)

8 76. The 401 essentially addresses the increased volumes of stormwater resulting from the
9 new PGIS in two ways: through the retrofitting of existing stormwater facilities, and through the
10 construction of new facilities to handle additional runoff.

11 77. The 401 only requires flow control retrofitting to be implemented if the Port determines
12 that it is feasible. (See, Ex. 1 at 26, Cond. J.1.c ("the Port must demonstrate that twenty (20)
13 percent of retrofitting has occurred unless demonstrated that a twenty (20) percent rate isn't
14 feasible".) The 401 does not define the term "feasible." (Ex. 1.) And respondents were unable
15 to articulate a consistent standard or definition for the term as used in the 401. (Stöckdale Dep.
16 at 74-77; White, Tr. at 7-0158-159; Fendt, Tr. at 8-0113-119.)
17

18 78. The Port has already rejected various stormwater treatment upgrades in the SDS3 basin
19 as "infeasible" due to cost or otherwise "not practicable". (See, Ex. 1213, CSMP Vol. 1 at Figure
20 7-1 (identifying "Existing Pollution-Generating Impervious Area Not Fully Treated for which
21 Retrofitting is Impracticable"), 7-10 through 7-12 (discussion); Ex. 1213, Vol. 4, Appendix M
22 ("Water Quality BMP Cost Estimates for Areas Determined to be Non-Practicable for
23 Retrofitting".) This includes approximately 44.6 acres of existing impervious surface draining
24 through Outfall SDS3. (Ex. 1213, CSMP Vol. 1 at 7-12, and Table 7-8.)
25

1 79. Stormwater discharges at STIA have been regulated under a NPDES permit since 1994.
2 (Exh. 745 (NPDES Permit No. WA-002465-1, dated June 30, 1994, at 1, 14 (Cond. S2.(B.)))
3 The Port's current NPDES permit was issued in February, 1998. (Exh. 3 at 1; Fitzpatrick
4 Prefiled at 3.) The Port's current NPDES permit is not a first-round stormwater permit

5
6 80. The Port's NPDES permit does not authorize a mixing zone for stormwater discharges.
7 (Exh. 3 at 8-12 (Cond. S1); Fitzpatrick, Tr. at 5-0045.) The current Permit Fact Sheet
8 acknowledges that, "Assuming no mixing zone, the stormwater discharges from Sea-Tac Airport
9 show reasonable potential to violate the water quality criteria for copper, lead, and zinc." (Exh.
10 136 at 29.)¹

11 81. "Unless a mixing zone's been granted, compliance with surface water quality criteria is at
12 the point of discharge." (Drabek Dep. at 59.) As reflected in an internal memorandum, the Port's
13 consultants agree. (See, Exh. 663 at 1 (if a mixing zone is not allowed, "standards must be met at
14 end-of-pipe."))

15
16 82. Given the undisputed absence of a mixing zone, the Port's stormwater sampling data
17 confirms that the Port's stormwater discharges plainly are not meeting surface water quality
18 standards at the point of discharge. According to the Port's 2001 Annual Stormwater Monitoring
19 Report, both the Port's 7-year median "landside" and "airfield" stormwater discharge

20
21 ¹ An employee of Port consultant Parametrix came to the same conclusion. With reference to the copper
standard in Miller and Des Moines Creeks, the consultant wrote:

22 I looked at the receiving stream (upstream) data to determine whether the receiving stream is in
23 compliance with the standards.

24 * * *

25 Using methods analogous to the Reasonable Potential Analysis, I calculated the 90th percentile
value for instream copper data and compared it to the standard for the 10th percentile hardness
value. Neither stream is currently in compliance

Ex. 630 at 1.

1 concentrations of copper more than double the Washington state standard for class AA waters,
2 calculated at 56 mg/l hardness. (Exh. 6 at 20 (Table 4).)² Similarly, the Port's 7-year median
3 "landside" discharge concentrations of zinc more than double the Washington state standard for
4 class AA waters, again calculated at 56 mg/l hardness. (Exh. 6 at 20 (Table 4).) In addition, the
5 Port's 7-year median "landside" discharges of fecal coliform more than double the Washington
6 state standard for class AA waters. (Exh. 6 at 20 (Table 4).)

8 83. Detailed, sample-specific information presented in the Port's 2001 Annual Report
9 confirms that most of the Port's stormwater discharges exceed the water quality criteria for
10 copper at the point of discharge. Individual sample results show that the copper levels in more
11 than 75% of the stormwater discharges from "all outfalls" at STIA exceed the Port-calculated
12 acute freshwater criteria for copper at an assumed hardness of 56 mg/l. (Exh. 6 at 105 (sampling
13 results of "all outfalls"), and at 20, Table 4 (calculating an acute water quality criterion for
14 copper of 10.3 ug/l, or 0.0103 mg/l).) The copper levels in stormwater discharges from the
15 "airfield only" outfalls (SDS3, SDS4, SDN3, and SDN4) are higher. (Exh. 6 at 110.) And the
16 copper levels in stormwater discharges from SDS3 -- the outfall that drains most of the airfield --
17 are higher still. (Exh. 6 at 106.)

19 84. Most significantly, in each category of outfalls shown, at least 75% of the samples
20 exceeded the Port-calculated acute fresh water copper criterion of 10.3 ug/l, or 0.0103 mg/l. (Ex.
21 6 at 20, Table 4 (calculating acute water quality criterion for copper), 105 (all outfalls), 110
22 ("airfield only" outfalls), and 106 (SDS3).) In the samples of stormwater discharges from SDS3,
23

24
25 ² The same table indicates that STIA's 7-year median "airfield" copper concentration is higher than the
comparable "landside" concentration. Exh. 6 at 20 (Table 4).

1 the copper concentrations in at least 75% of the samples more than double the Port-calculated
2 acute criterion. (Ex. 6 at 106.) And the copper concentrations in fully one-quarter of the
3 samples from SDS3 more than quadruple the Port-calculated standard. (Ex. 6 at 106.)
4

5 85. The Port's consultant, Dr. William Stubblefield, also testified that exceedances of water
6 quality standards for copper and zinc have been observed in Des Moines Creek and the
7 tributaries to Des Moines Creek. (Stubblefield Prefiled at 16; Stubblefield, Tr. at 9-0065, 9-
8 0081-82.) Dr. Stubblefield testified that these exceedances are associated with storm events.
9 (Stubblefield Prefiled at 16; Stubblefield, Tr. at 9-0065.) Dr. Stubblefield further testified that
10 these exceedances of the water quality standards for copper have been observed in "samples that
11 were taken in the west branch of Des Moines Creek, the east branch of Des Moines Creek and
12 Des Moines Creek below the weir. Stubblefield, Tr. at 9-0081-82.
13

14 86. ACC and CASE presented evidence that discharges of stormwater from two of the Port's
15 stormwater outfalls collected during the parties' site visits in this appeal likewise exceed the
16 freshwater acute criteria. (Ex. 360, Ex. 361, Ex. 358.) On Monday, January 28, 2002,
17 Appellants collected nine grab samples -- six at Outfall SDS1, and three at Outfall SDS3.
18 (Wingard Prefiled at 5.) On Thursday, January 31, 2002, appellants collected three samples at
19 SDS3. (Wingard Prefiled at 6.) On each occasion, appellants used laboratory-prepared sample
20 bottles, chain-of-custody documents, and sampling procedures that were reasonable and
21 appropriate to the time constraints of the site visit. (Wingard Prefiled at 5-6; Wingard, Tr. at 4-
22 0121-122, 4-0126-128; Willing Prefiled at 10-11
23

24 87. Among other parameters, appellants sampled the Port's stormwater discharges for
25 dissolved and total recoverable copper, dissolved and total recoverable zinc, and hardness. (Ex.

1 360, Ex. 361.) Based on the results of the hardness analysis, Dr. Peter Willing, ACC's water
2 quality expert, determined the applicable freshwater acute criteria for copper and zinc. (Ex. 358;
3 Willing, Tr. at 4-0022; Willing Prefiled at 11.) Comparison of the laboratory analyses and the
4 calculated criteria indicates that all four total recoverable copper samples exceeded the calculated
5 criteria³; three of four dissolved copper samples exceeded the calculated criteria; two of four
6 total recoverable zinc samples exceeded the calculated criteria; and two of four dissolved zinc
7 samples exceeded the calculated criteria. (Ex. 360, Ex. 361, Ex. 358.)

8
9 88. During the first site visit, Dr. John Strand also took two sets of turbidity samples at
10 Outfall SDS-1 using a calibrated nephelometer. (Strand Tr. at 4-193-195; 5-2; Willing Tr. at 4-
11 23-24.) The results of the first set of samples showed 31 NTU upstream and 281 NTU
12 downstream of the Port's stormwater discharge. (Willing Tr. at 4-23-24.) The results of the
13 second set of samples showed 31.2 NTU upstream and 299 NTU downstream of the Port's
14 stormwater discharge. Dr. Strand testified, "turbidity readings I obtained onsite by using a
15 properly calibrated turbidimeter indicated a nearly 10-fold increase in turbidity above ambient
16 (299 vs. 31 NTU [nephelometric turbidity unit], respectively), which greatly exceeds the 5 NTU
17 increase over background allowed by the Washington State Water Quality Criteria for Class AA
18 Freshwater (Chapter 173-201A[.030] WAC)." (Strand Prefiled at 8.) Dr. Willing concluded,
19 "Based on the samples recovered from the site visit, the discharge appeared to be in violation of
20 water quality standards for turbidity, and was discharging wastewater in excess of water quality
21 standards for copper." (Willing Prefiled at 11.) The Board also received evidence concerning
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23
24

25 ³ The concentration of dissolved copper in sample 007, taken from SDS3 on January 28, 2002 was 223 ug/l -
- over ten times the acute freshwater criteria of 18.6 ug/l. Exh. 360 at 21; Exh. 358.

1 exceedances of the turbidity standard in the Port's construction-related stormwater discharges.
2 (Drabek Dep. at 107-08; 121-23, and Drabek Dep. Exs. 7, 11, 12, 13; Wingard Prefiled at 4-5;
3 Wingard, Tr. at 4-0127-131.)

4
5 89. There are no effluent limitations on stormwater discharges in the Port's current NPDES
6 permit. (Ex. 3 at 8-12 (Cond. S1); Fitzpatrick Dep. at 29-30 ("no final effluent limitations");
7 Fitzpatrick Dep. at 31 (no "numeric or narrative effluent limitations"); Fitzpatrick, Tr. at 5-0041
8 ("no numeric effluent limits"), 5-0060 (no "water quality based limits".) Mr. Drabek, Ecology's
9 former NPDES permit manager for STIA , agreed that Permit Condition S2.B.1 ("Non-
10 Construction Stormwater") does not identify any effluent limits. (Drabek Dep. at 41.) Ecology's
11 Kevin Fitzpatrick describes BMP requirements as "technology-based effluent limitations[.]"
12 (Fitzpatrick, Tr. at 5-41, 5-110). In reality, the permit does not limit the quantity, rate, or
13 concentration of metals contained in stormwater discharged from STIA (Ex. 3 at 8-12
14

15 90. With respect to metals concentrations in stormwater, the permit imposes only monitoring
16 and reporting requirements -- but no quantified, enforceable limits on discharges. (Ex. 3 at 14-18
17 (Cond. S2.B-S2.I); see also, Fitzpatrick Dep. at 30 Pollutant concentrations in stormwater are
18 highest in the first part of the storm, as pollutants are washed off in the storm's "first flush".
19 (Fitzpatrick, Prefiled at 5.) Nevertheless, with the exception of seasonal monitoring of glycols
20 discharged through outfalls 003 and 007, the Port's NPDES permit does not require "first flush"
21 sampling. (Ex. 3 at 14-15 (Cond. S2B); Ex. 424.) And except for discharges resulting in known
22 violations, the Port is not required to report monitoring results for construction stormwater
23 discharged to Des Moines Creek or Miller Creek. (Ex. 3, Permit at 16-17 (Cond. S2.C); Drabek
24
25

1 Dep. at 25-28.)⁴

2 91. In Ecology's view, the Port's NPDES permit addresses stormwater discharges through
3 source control BMPs and treatment BMPs, rather than effluent limitations. (Fitzpatrick, Tr. at 5-
4 41; Fitzpatrick Prefiled at 3-4.) Various "source control" BMPs redirecting deicing and anti-
5 icing agents away from the SDS to the IWS were implemented between 7/95 and 9/97. (Ex. 425,
6 Table 5 ("Summary of Completed BMPS").) Other ongoing source control BMPs for the STIA
7 airfield include runway sweeping, catchbasin cleaning, and spill control plans. (Ex. 1213, CSMP
8 Vol. 1 at Table 4-6.)

9
10 92. However, the permit does not require the Port to select or implement any particular
11 treatment BMP -- or to assure that any BMPs selected are adequate to assure that STIA's
12 stormwater discharges comply with water quality standards. (See, Ex. 3 at 37-39, Cond. S12.
13 ("Stormwater Pollution Prevention Plan (SWPPP) for Airport Operations").)⁵ The STIA Facility
14 SWPPP does not identify or select any treatment BMPs either. The SWPPP does not identify --
15 or require the Port to implement and maintain --any treatment BMPs, such as filter strips,
16 compost/peat filters, sand filters, activated media filters, or wet ponds. (See, Ex. 425 at 9-31
17 (identifying and discussing only operational and source control BMPs

18
19 93. Based on these facts, we find that the treatment and source control BMPs in place at
20 STIA have not prevented ongoing discharges of stormwater that cause or contribute to
21 exceedances of toxic metals criteria in the receiving waters
22

23
24 ⁴ Ecology's General Permit for Construction-Related Stormwater Discharges does not apply to STIA.
Drabek Dep. at 31.

25 ⁵ The permit identifies preventing violations of water quality standards as an "objective" rather than a
"general requirement." Exh. 3 at 37.

1 94. Kevin Fitzpatrick, Ecology's water quality technical lead for the 401 certification,
2 testified it is his understanding that the NPDES permit for Sea-Tac International Airport includes
3 a compliance schedule for stormwater discharges.⁶ (Fitzpatrick Dep. at 28.) Asked whether the
4 Port's compliance with its NPDES permit assures Ecology that STIA's stormwater discharges
5 comply with water quality standards, Mr. Fitzpatrick stated, "What it assures Ecology is that they
6 are on a compliance schedule by complying with the permit to achieve compliance with these
7 standards." (Fitzpatrick Dep. at 28.)

9 95. Mr. Fitzpatrick described the NPDES permit as an "iterative process" (Fitzpatrick Dep. at
10 102) that, over the course of several permit cycles, will build toward setting effluent limits on the
11 Port's non-construction stormwater discharges. (Fitzpatrick Dep. at 102-03.) When asked how
12 much time Ecology has to impose effluent limits on stormwater discharges, Mr. Fitzpatrick
13 testified,

15 A. The only thing that we're required to do for stormwater right now, at least from
16 EPA, the only thing we're required to do for stormwater right now is to put BMPs on
17 those. So we're I think considerably ahead of the game here in that for at least moving
18 towards putting water quality-based limits, through the information that we're gathering,
19 we're at least moving towards putting water quality-based limits into effect for this
20 facility.

21 Q. Let me see if I understand you. Despite known exceedances of state water
22 quality criteria for copper that are identified in the fact sheet, your understanding is that
23 Ecology is under no obligation to impose any effluent limits on copper stormwater runoff
24 and that requiring BMPs is good enough?

25 A. No, I'm saying that EPA says it's good enough to require BMPs."
(Fitzpatrick Dep. at 103-104.)

⁶ Mr. Fitzpatrick also testified he was speaking for the Department of Ecology, and that he was authorized to speak on policy relating to Ecology's water quality program. (Fitzpatrick Tr. at 5-57-58.)

1 96. Mr. Fitzpatrick's reference to EPA alludes to EPA's "Interim Permitting Approach" of
2 "using best management practices (BMPs) in first-round storm water permits, and expanded or
3 better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of
4 water quality standards." (Fitzpatrick Prefiled at 4, quoting "EPA Memorandum from Robert
5 Percisepe regarding Interim Permitting Approach for Water Quality Based Effluent Limitations
6 in Stormwater Permits, p.2.") Mr. Fitzpatrick asserts that BMPs may be used as a "substitute"
7 for numeric effluent limits on stormwater in NPDES permits. (Fitzpatrick Prefiled at 4.)
8

9 97. Mr. Fitzpatrick testified that what Ecology envisions "with the reissuance of the next
10 NPDES permit is building toward taking the next step here from simple application of BMPs as
11 effluent limits to actually building toward water quality based effluent limits." (Fitzpatrick, Tr.
12 at 5-69.) Mr. Fitzpatrick also testified the regulations allow Ecology to put a facility on a 12-
13 year compliance schedule that begins "when we put on what we know to be final stormwater
14 effluent limits." (Fitzpatrick Dep. at 103; Fitzpatrick, Tr. at 5-0066 ("up to twelve years"), 5-
15 0069 (same).
16

17 98. This compliance schedule process is illustrated by the approach taken to metals
18 concentrations in STIA stormwater runoff. As early as 1999, Ecology and the Port became
19 aware that metals concentrations in untreated stormwater runoff from uncoated, galvanized metal
20 roofs at STIA was causing toxicity in discharges from Outfall SDN1. (Ex. 139 at 29. Strand,
21 Tr. at 4-186-7.) Discharges from SDN1 failed the performance standard in 7 of 9 Whole
22 Effluent Toxicity tests. (Ex. 1169 at 3.) Test results indicated that survival rates in samples of
23 100% effluent ranged from a high of 80% to a low of just 10%. (Ex. 1169 at 13 (Table).) The
24 Port concedes that "significant toxicity was found in multiple SDN1 samples." (Ex. 6 at 37.)
25

1 Source tracing confirmed that the toxicity in SDN1 stormwater was attributable to zinc from
2 galvanized roofs. (Ex. 6 at 36-37.)

3 99. The Port has proposed to address this ongoing discharge through a plan to "develop a
4 retrofit schedule and submit it to Ecology for concurrence by the end of the next NPDES Permit
5 cycle" -- *i.e.*, by 2007. (Ex. 1213, CSMP Vol. 1 at 7-14.) No BMPs have been implemented to
6 control the source of toxicity, or to treat the stormwater discharging through SDN1. (Ex. 425
7 (SWPPP) at Table 5 ("Summary of Completed BMPS").) The Port's proposal to submit a retrofit
8 schedule to Ecology may involve no more than routing the rooftop runoff through a Basic
9 Water Quality Menu treatment BMP (Ex. 1213, CSMP Vol. 1 at 7-15), although the King
10 County Manual's basic treatment menu of BMPs is not designed to control for soluble metals.
11 (Whiting, Tr. at 7-112.)
12

13 100. With respect to the 401 Certification's retrofit provisions, Tom Luster,
14 testified:
15

16 I would say this condition doesn't provide adequate assurance for at least three
17 reasons actually. There are two statements within this condition that leave it open
18 to later interpretation as to whether the retrofitting will occur. The first is near the
19 middle of the paragraph, if the port demonstrates that the retrofitting is not
20 feasible for some reason, although that determination of feasibility is not spelled
21 out here. Also, the last sentence states that if the retrofitting conflicts with the
22 construction schedule in some way, retrofitting may be delayed or not occur. But
23 there aren't enough specific conditions that would further describe how and when
24 retrofitting may not occur. Another issue that's not stated here but is directly
25 related is that if the retrofitting is going to be using the same BMPs that are
currently in place at the airport and which have been shown to result in
exceedances of numeric criteria from the existing discharges, then the retrofitting
in and of itself is not enough to determine or to insure that water quality standards
are going to be met even with the additional amount of impervious surface being
retrofitted.

(Luster, Tr. at 2-124-125.)

1
2 101. As noted in an earlier finding, the Port's NPDES permit is not a "first-round"
3 stormwater permit. Neither Ecology nor the Port has identified any "expanded or better-tailored"
4 treatment BMPs imposed under the current NPDES permit to address the high levels of copper in
5 STIA's stormwater runoff.

6 102. This failure to identify or implement BMPs under the NPDES permit highlights a
7 significant difference between the standards governing the 402 permit and the 401 Certification.

8 As Tom Luster explained,

9
10 section 401(D) requires that certifications include effluent limitations and monitoring
11 measures necessary to insure water quality standards are met. Section 402(A) of the
12 Clean Water Act instead has a may provision. The permit, the NPDES permit may
13 include those same provisions or may include other measures that are meant to get to
14 compliance with standards over time. This is in part in recognition of the continual
15 process of the 402 permit is not a one-time decision, it's upgraded every five years,
and eventually if those measures included in a 402 are put into place, the goal is to
eventually meet water quality standards. With a 401 it's a one-time opportunity for
the state to determine, based on the information available at the time, that standards
will be met.

16 (Luster Tr. at 2-126.)

17 **Ecology's Reservation of Authority to Revise the 401 by means of the NPDES**
18 **Permit**

19 103. Whether the NPDES process is well-suited in general and has succeeded in the
20 specific case of the Port in preventing violation of water quality standards is relevant to our
21 review here because of the relationship which the September 401 establishes with the 402
22 NPDES process. The August 10, 2001 401 Certification was amended at the Port's request
23 (Kenny Dep. at 94-98.) to include, in the September 401 a revised version of 401 Condition B1.
24 (Ex. 1 at 4; Ex. 2 at 3.) Originally, Cond. B1 simply provided that "This Order shall be valid
25

1 during construction and long-term operation and maintenance of the project." (Ex. 2 at 3
2 (August 10, 2001 401 at 3, Cond. B1.)) As revised, Condition B1 in the September 401 now
3 provides in pertinent part that:

4 "This Order shall be valid during construction of the project. The following
5 provisions of this Order shall be valid during long-term operation and maintenance of
6 the project:

7 1. * *

8 (f) In Condition J, Operational Stormwater Requirements, as follows: **Those**
9 **provisions of this condition, including the Comprehensive Stormwater**
10 **Management Plan, that are incorporated into and superceded by any future**
11 **Ecology-approved NPDES permit for the Seattle-Tacoma International Airport**
12 **(STIA), shall be superceded as determined in that permit.** Any conditions not
13 incorporated into a future Ecology-approved NPDES permit for STIA shall remain in
14 effect as provided in this condition.

15 Ex. 1 at 4 (emphasis added). The condition's reference to "any future Ecology-approved NPDES
16 permit" is broad enough to include the NPDES permit that will shortly replace the Port's current
17 permit upon its expiration on June 30, 2002 -- a permit for which the Port has already applied.
18 (Ex. 754 (NPDES Permit Renewal Application, dated December 20, 2001.))

19 104. Ecology's Ann Kenny confirmed this in her deposition testimony:

20 Q: Looking at [401] Condition B1(f) on [page 4], am I to understand -- is it a
21 correct interpretation of that condition that this current 401 certificate can be
22 amended by a future NPDES permit?

23 A: That is correct.

24 Q: And given that, can't the conditions of the 401 certificate be lessened
25 because it can be modified by a future NPDES permit?

A: They could be, but that's not likely.

Q: You agree that the potential exists for the conditions in the 401 certificate
to be modified to result in lesser protection of water quality because it can be
modified by a future NPDES permit?

1 A: In theory, the conditions could be modified to a lesser standard.

2 Q: And that's because the standards for reviewing and approving NPDES
3 permits are different than the standards for reviewing and approving 401
4 certifications?

5 A: I can't speak to the exact standards used for reviewing 402 --

6 Q: Sure. At a minimum you know you don't need reasonable assurance to
7 issue a 402 permit?

8 A: That's my understanding.

9 (Kenny Dep. at 149-50.)

10 105. Other aspects of the 401 also appear to be designed to allow for adoption of
11 standards other than those state water quality standards which, per section 401, must form the
12 basis for a reasonable certainty certification. Specifically, 401 Condition J2(a) only prohibits the
13 discharge to state receiving waters of stormwater from new pollution-generating impervious
14 surfaces (PGIS) until "a site specific study, e.g., a Water Effects Ratio Study (WERS) has been
15 completed and approved by Ecology and appropriate limitations and monitoring requirements
16 have been established in the Port's NPDES permit." (Ex. 1 at 27 (Cond. J2(a).)) The 401 does
17 not establish any deadline for the study, but requires the Port to consult with Ecology to
18 determine an appropriate time for its submittal, which will clearly be well after the Board has
19 completed its review of the 401 certification. (Ex. 1 at 27 (Cond. J2(a)); Fitzpatrick Tr. at 5-43.)
20 In addition, the 401 does not preclude the use of a "compliance schedule" for new discharges
21 from the Third Runway or new taxiways, nor does it prohibit new discharges from such new
22 PGIS until new effluent limitations actually become effective under a future NPDES permit.
23
24

25 106. The Port's consultant in environmental toxicology, Dr. William Stubblefield,

1 described WER studies as a procedure for modifying a national water quality criterion.

2 (Stubblefield Tr. at 9-54-55.) Dr. Stubblefield explained that the "ratio" resulting from the WER
3 study "is used to modify the national criterion. So you basically just multiply it times that value,
4 what the original standard value was." (Stubblefield Tr. at 9-56.) In an example using the value
5 "2" for the national criterion or state standard, Dr. Stubblefield testified:

7 "If you had a water effect ratio that was derived from the lab data of 3, then the [two]
8 would actually just be multiplied together, and so you would modify the state
9 standard to be 6 in this particular case. So it's merely an arithmetic movement of the
value."

10 (Stubblefield Tr. at 9-57.) Dr. Stubblefield testified that, in his opinion, it is likely a
11 WER for STIA would "increase the state standard." (Stubblefield Tr. at 9-67.)

12 107. Ecology's Kevin Fitzpatrick testified the study is intended to "advance our
13 knowledge as to just exactly how metals in stormwater discharges would behave in the receiving
14 water." (Fitzpatrick Tr. at 5-43.) The WER study is intended to determine whether there are
15 seasonal or local conditions in the local streams that might affect the partitioning of metals in the
16 receiving waters. Fitzpatrick, Tr. at 5-0052-53. Mr. Fitzpatrick conceded that the difficulties
17 inherent in obtaining a representative sample of stormwater can be resolved without doing a
18 WER study. (Fitzpatrick, Tr. at 5-90.)

19
20 108. The Port's internal documents give some insight into current exceedances of state
21 water quality standards and the Port's expectations for the WERS study anticipated by the 401.
22 After looking at the "best existing data" to determine whether the receiving waters are in
23 compliance with water quality standards below STIA -- and determining that "[n]either stream is
24 currently in compliance" -- a Port consultant wrote, "a WER of 2 or more for Des Moines and 4
25

1 or more for Miller (both of which seem like pretty reasonable bets) would get the receiving
2 streams to 'compliance.'" (Ex. 630 at 1 (internal quotation marks in original.)) Another Port
3 consultant calculated the reasonable potential to exceed water quality criteria ("WQC") in a
4 September, 1999 memo. (Ex. 645 at 1.) The consultant considered ten different cases with
5 different variables and reported:

7 [O]nly Case #10 resulted in all the predicted exceedence [sic] values being negative
8 (i.e., the WQC was achieved). . . . The conclusion I have from these simulation
9 results is that the WER is more important than either the volume for mixing or the
10 flow detention amount in terms of achieving WQC compliance. A WER value of 3 or
11 greater is needed for WQC compliance.

12 (Ex. 645 at 5 (emphasis added.)) The consultant reiterated, "Using this magnitude for the
13 WER, in combination with a greater amount of allowable mixing volume in the NW
14 Ponds will allow the Port to achieve WQC compliance in Des Moines Creek." (Ex. 645
15 at 6.)

16 109. With respect to copper levels in Des Moines Creek, Dr. Stubblefield
17 testified that a WER of 3 "would make it so that there were no longer an exceedance; in
18 other words, the standard would be higher and the exceedance wouldn't exist."

19 (Stubblefield Tr. at 9-67.) With respect to zinc levels in Miller Creek, Dr. Stubblefield
20 testified "it is likely that a water effect ratio associated with zinc would increase the state
21 standard and there would be no exceedances"

22 110. Once again, it appears that the plan intended under the 401 condition is to
23 conduct the WERS and then alter the 401 requirements, as the condition authorizes, after 401
24 certification, including Board review is finalized . In a very real sense then, the certification is
25 not based on reasonable assurance that the proposed project will comply with the current state

1 water quality standards, but on the expectation that those standards will be administratively
2 modified for the Port project after construction has commenced and the Board's quasi-judicial
3 review is in the past.
4

5 111. The Port's consultant also prepared a "Water Resources Analysis Schedule"
6 detailing a 59-step project including, in chronological order, a Reasonable Potential Analysis, a
7 Water Effects Ratio, and Negotiations with Ecology. (Ex. 647.) One element of the negotiations
8 is to "Develop Compliance Schedule." (Ex. 647.) The Schedule does not include any steps for
9 determining or implementing water quality-based effluent limitations. (Ex. 647.) This exhibit
10 strengthens the impression that the 401 anticipates the (improper) authorization of a compliance
11 schedule for new discharges.
12

13 Mixing Zones

14 112. The Port's proposed MPU projects include work that would occur in water or
15 adjacent to water along the shoreline. (Kenny Tr. at 1-126.) This work includes relocating the
16 channel of Miller Creek, and numerous instream projects such as demolishing existing bridge
17 abutments. (Ex. 1207 at 4 and Sheets 14, 20-23.)
18

19 113. In Condition A(2)(d), the 401 authorizes mixing zones for turbidity resulting from
20 instream and shoreline construction activities. (Ex. 1 at 2-3, Condition A(2)(d), (g); Fitzpatrick
21 Prefiled at 13; Fitzpatrick, Tr. at 5-0045.) Condition (A)(2)(d) requires the Port to "demonstrate
22 to Ecology that any mixing zone is minimized in accordance with WAC 173-201A-100(6)."
23 (Ex. 1 at 2-3.) However, the 401 places no specific limitations on the size or scope of the
24 preauthorized mixing zones. (Ex. 1 at 2-3 (Cond. A(2)).)
25

114. According to Ecology, the mixing zones are intended to authorize the "temporary

1 suspension" of water quality standards for turbidity during the construction of in-water projects.
2 (Kenny Tr. at 1-127.) The 401 also contemplates exceedances of the turbidity standard beyond
3 the mixing zones, describing what actions should be taken in the event that "monitoring
4 indicates turbidity standards are not being met at the boundary of the mixing zone" (Ex. 1
5 at 3, Cond. A(2)(g)) However, the 401 does not require the Port to stop work, or to stop the
6 exceedance of the turbidity standard in such an event. (Ex. 1 at 3, Cond. A(2)(g)) The 401 also
7 does not require the Port to notify Ecology when such an exceedance occurs. (Ex. 1 at 3, Cond.
8 A(2)(g)-(h)).
9

10 115. Ecology did not require the Port to provide any supporting information regarding
11 the impact of temporary turbidity mixing zones. (Kenny Tr. at 1-129.) Instead, Ann Kenny,
12 Ecology's coordinator for and primary author of the 401, asked the Port "whether they thought
13 they would be able to construct their projects" and meet the regulatory criteria, and based the 401
14 on the Port's response that "they thought they would be able to meet those requirements."
15 (Kenny Tr. at 1-129.)
16

17 116. Ecology did not require review and approval of mixing zones that were expected
18 to occur through construction of the MPU projects because it did not believe such a process was
19 required for temporary construction activities. (Kenny Dep. at 139-40; Kenny Tr. at 1-128-29.)
20 Ms. Kenny testified, "We didn't do any such review because that is not what is required by this
21 particular statute." (Kenny Tr. at 1-128-129, 130.)
22

23 117. Ecology did not wait until after the Port obtained HPA approval from WDFW to
24 authorize the mixing zone. (Kenny Tr. at 1-210-211.) Ms. Kenny testified she did not know
25 whether the Port had obtained all of the necessary local and state permits and approvals for its

1 in-stream construction activities. (Kenny Tr. at 1-208.) Ms. Kenny explained, "The way this
2 section works is that . . . every developer that wants to use this provision of the WAC for
3 temporary turbidity, suspension of those temporary turbidity limits, they do it, and then we go
4 out and if we get a complaint, we check at that point to see if those provisions have been
5 complied with." (Kenny Tr. at 1-209.)

7 118. The 401 does not require the Port to identify or implement best management
8 practices before authorizing the mixing zone for turbidity. (Ex. 1 at 2-3 (Cond. A2.)). It calls for
9 the Port to submit a "monitoring" plan for review at some unspecified point in the future, prior to
10 the start of construction (Ex. 1 at 2-3 (Cond. A2(a.)) The 401 pre-authorizes mixing zones, and
11 it defers -- at least until the Port submits the monitoring plan, if then -- any demonstration that
12 the proposed construction in streams can and will occur in compliance with applicable standards,
13 including the requirement for minimization in accordance with WAC 173-201A-100(6).
14 (Kenny Tr. at 1-131-132.) As a result, neither Ecology nor the Board has any basis for
15 determining now that there is reasonable assurance that water quality standards will not be
16 violated as a result of the in-stream work.

18 2. LOW FLOW FINDINGS OF FACT

19 Introduction

20 21 119. The streams affected by the Port's Third Runway Project, Des Moines, Miller and
22 Walker Creeks, are designated as Class AA streams under state water quality standards. WAC
23 173-201A-130. This classification designates the streams as "extraordinary" waters and confers
24 the highest level of protection under state water quality regulations. WAC 173-201A-030(1).

25 120. Des Moines, Miller and Walker Creeks support a diverse and abundant fish fauna,

1 including salmon and trout. Strand Prefiled at ¶ 4; Nelson, Tr. at 1-0068 to 1-0069)

2 Maintenance and protection of fish habitat is a characteristic use of Class AA streams. WAC
3 173-201A-030.
4

5 121. Des Moines, Miller and Walker Creeks also support a significant amount of
6 public recreation, flowing through public parks in Des Moines and Normandy Park, before
7 finally discharging to Puget Sound. (Nelson Prefiled at 2-3; Nelson, Tr. at 1-0067) Maintenance
8 of recreational uses is a characteristic use of Class AA streams. WAC 173-201A-030.

9 122. Des Moines, Miller and Walker Creeks are small streams that flow at very low
10 levels during the summer months. (Ex. 1308.) The removal of even small quantities of water
11 from these streams poses significant hazards to their aquatic health. (Luster Prefiled at 21.)
12

13 123. Sea-Tac International Airport comprises a significant portion of the Des Moines,
14 Miller and Walker Creek watersheds. (Rozeboom, Tr. at 10-0112 to 10-0113.) The Third
15 Runway Project will reduce already low flows in Des Moines, Walker and Miller Creeks during
16 the summer season. This reduction is expected to degrade their ability to support characteristic
17 uses, and mitigation is therefore required. (Ex. 1.)
18

19 124. The conditions contained in Section I of the September 21, 2001 § 401
20 Certification (Ex. 1), pertaining to low stream flow mitigation, ostensibly are intended to offset
21 the reduction in flow that will occur in Des Moines, Miller and Walker Creeks. (Ex. 1, Ex.
22 1308.) The Port has prepared a low flow mitigation plan that proposes to capture stormwater in
23 “reserve storage,” and release it at precise rates during a specified mitigation period in Walker
24 and Des Moines Creeks. (Ex. 1308.) The Port has determined that mitigation is not necessary
25 for Miller Creek. (Ex. 1308.) For various reasons described below, the Port’s low flow plan is

1 not adequate to mitigate the reduction in stream flow caused by the Third Runway, along with
2 the commensurate degradation of water quality.
3

4 **Early History of the Low Flow Plan**

5 125. The Port has, over the past several years, proposed and revised a number of low
6 flow mitigation plans for the Third Runway Project. (Exs. 1107, 1108, 681, 1217.)

7 126. In 1999, Ecology contracted with King County Department of Natural Resources
8 to review the Port's stormwater management plan, which was being developed using certain
9 elements of the King County Surface Water Design Manual (KCSWDM) standards. (Whiting,
10 Tr. at 7-0076, 7-0106; Rozeboom Direct at ¶¶ 6-8; Ex. 40 at ¶ 2.) When the Port's low flow plan
11 was segregated from the stormwater plan in December 2000, King County reviewed that
12 document too. (Whiting, Tr. at 7-0076; 7-0082 to 7-0083.) The KCSWDM (Ex. 2068) was
13 being used for technical standards, but does not contain performance standards against which the
14 viability and success of the Port's low flow mitigation proposal can be evaluated. (Whiting, Tr.
15 at 7-0088, 7-0116 to 7-0117; Ex. 40; Willing Prefiled at ¶ 16.)
16

17 127. Throughout this process, King County warned that its review encompassed
18 stormwater modeling and facility design elements only. (Ex. 40; Ex. 48; Ex. 1269.) King
19 County did not review the plan's groundwater modeling components, (Ex. 458; Ex. 1269;
20 Whiting, Tr. at 7-0104), nor did it provide official review the biological impacts of the low flow
21 plan. (Ex. 458; Whiting, Tr. at 7-0132 to 7-0133.)
22

23 128. The Port issued an incomplete draft of the low flow mitigation plan in July 2001.
24 (Ex. 1259; Whiting, Tr. at 7-0118; Willing Prefiled at ¶ 17; Rozeboom Prefiled at ¶ 10; Luster
25 Prefiled at 22; Ex. 513; Ex. 40.) King County recommended to Ecology that a complete plan be

1 required of the Port prior to issuance of the § 401 Certification. (Ex. 40; Whiting, Tr. at 7-0118
2 to 7-0119.) Ecology nevertheless issued the § 401 Certification based on the incomplete July
3 2001 LFP. (Ex. 2, Ex. 1.) The requirements contained in Condition I of the Certification
4 provide a detailed survey of the Plan's omissions (Ex. 1), and are based in large part on the King
5 County 8-3-01 review of the July 2001 draft LFP. (Whiting, Tr. at 7-0083 to 7-0084.)
6

7 129. Ecology accepted the July 2001 Low Flow draft in part because it believed, based
8 on King County's review, that the impacts of the Third Runway Project on local streams were
9 adequately modeled and identified. (Hellwig Dep. at 193, lines 10-19, 258, lines 14-22.)
10 Subsequent revisions to the Low Flow Plan, including analysis of impacts to Des Moines, Miller
11 and Walker Creeks, proved that assumption incorrect. (Ex. 458; Whiting, Tr. at 7-0088.)
12

13 130. Gordon White, Ecology's 401 signatory, relied entirely upon technical experts
14 within Ecology staff to reach his decision to sign the Certification. Mr. White was not directly
15 advised by King County of its concerns regarding the Low Flow Plan, and Ecology had no other
16 technical staff person who provided him with the information necessary to establish that
17 reasonable assurance did in fact exist with respect to this critical element of the project. (White,
18 Tr. at 7-0160 to 7-0161, 7-0168, 7-0172 to 7-0173.)
19

20 **December 2001 Low Flow Plan**

21 131. Pursuant to the requirements of the 401 Certification (Ex. 1), the Port submitted a
22 revised low flow mitigation plan in December 2001. (Ex. 1308) The new version contains
23 substantial flaws. It is also incomplete, and Ecology has not yet approved the plan as required by
24 the 401 Certification. (Kenny, Tr. at 1-0193 to 1-0194; Kenny Dep. at 225-26.)
25

132. King County reviewed the December 2001 Low Flow Plan, and identified a

1 number of problems. The new low flow plan “did not satisfy all of [King County’s] concerns,
2 and it raised a couple of new ones.” (Whiting, Tr. at 7-0084.) In particular, a substantial number
3 of unanticipated changes were made in the December LFP involving re-running all six models
4 for the project. (Whiting, Tr. at 7-0089.) In a February 23, 2002 review memorandum, King
5 County indicated that it could not concur in the low flow plan until satisfied that certain
6 assumptions were justified and mistakes corrected. (Ex. 458; Whiting, Tr. at 7-0124 to 7-0125.)

7
8 133. In February 2002, Ecology directed the Port to prepare validation reports to
9 determine whether the new LFP modeling assumptions and conclusions were valid. Ecology
10 further directed the Port to produce a ‘corrected’ version of the December 2001 Low Flow Plan,
11 in a format not yet determined. (Kenny Dep. at 226-28.) Ecology’s § 401 coordinator testified
12 at hearing that the agency does not and cannot have ‘reasonable assurance’ that the plan will
13 mitigate for harm to water quality in Des Moines, Miller and Walker Creeks until, at a minimum,
14 this latest review process is complete. (Kenny, Tr. at 1-0192 to 1-0193; Kenny Dep. at 222-230.)

15
16 134. At the time of hearing, Ecology had not yet received all the Port’s submittals in
17 response to the King County comments, and had approved none of those it had received.
18 (Kenny, Tr. at 1-0191 to 1-0192; Hellwig Dep. at 256, lines 4-7.) Ecology requires submission
19 and approval of several documents, not yet received from the Port, in order to have reasonable
20 assurance that the Third Runway Project will not violate water quality standards. (Kenny, Tr. at
21 1-0193.)

22 Low Flow Modeling Generally

23
24 135. In order to identify low flow impacts, the Port modeled both pre- and post-
25 construction hydrologic conditions in Miller, Walker and Des Moines Creeks. The difference

1 between the two conditions is intended to represent the streamflow impacts caused by the Third
2 Runway project for which mitigation is required. (Ex. 1308.)

3
4 136. The pre-construction model was based on the land use in the area in 1994. Using
5 the HSPF program, the Port analyzed how, in the context of the 1994 land uses, various levels of
6 rainfall (derived from a variable period of record) would reach the streams – through direct
7 runoff, stormwater system drainage, or groundwater infiltration and flow paths. This analysis
8 was then used to model the lowest 7-day period of low flows for each year and the seasonal
9 windows within which those low flows occur. From this information the Port selected the
10 threshold flows below which mitigation would be required (0.33 cfs for Des Moines Creek, 0.77
11 cfs for Walker Creek, and 0.73 cfs for Miller Creek) and the mitigation window (July 24-Oct 24
12 for Walker Creek and July 30-Oct 31 for Des Moines Creek). (Ex. 1308.)

13
14 137. For post-construction modeling, the Port projected land uses for the year 2006
15 (including the embankment and new runway, but excluding the Industrial Wastewater System
16 (IWS) and Des Moines basin fill borrow areas). Again, the Port analyzed, using HSPF plus two
17 groundwater models (Hydrus and Slice), how differing levels of rainfall on those surfaces would
18 reach the streams through infiltration and run-off. Utilizing the results from the various rainfall
19 scenarios, the Port projected summer streamflows following completion of the Third Runway
20 project. (Leytham, Tr. at 3-0009 to 3-0011.) Comparing its 2006 results to the 1994 low flow
21 conditions, the Port calculated its mitigation requirements to be 0.11 cfs for Walker Creek, 0.08
22 cfs for Des Moines Creek, and 0 cfs for Miller Creek. (Ex. 1308.)

23
24 **Calibration**

25 138. Calibration is a critical step in model development, by which the model output,

1 achieved through simulation of environmental conditions, is compared with actual, observed data
2 (such as stream gauge records) to determine whether model predictions are valid and reliable.
3 (Whiting, Tr. at 7-0084 to 7-0086; Leytham, Tr. at 3-0006; 3-0043 to 3-0045.) Model calibration
4 was done for each of the three affected streams. (Ex. 1308; Whiting, Tr. 7-0087.)
5

6 139. The Port's calibration of low flow modeling is inadequate. The simulations of
7 streamflow in Walker Creek and Des Moines Creek do not match the historic data recorded at
8 upstream gauges in the basins, a problem admitted in the Low Flow Plan and pointed out to the
9 Port repeatedly by the King County and ACC reviewers. (Ex. 1308; Leytham, Tr. at 3-0005 to
10 3-0008, 3-0025 to 3-0026; Rozeboom, Tr. at 3-0168 to 30169; Whiting, Tr. at 7-0121 to 7-0122.)
11 In Walker Creek, the Port's modeling under-simulates peak and low flows as reported on stream
12 gauges and utilizes assumptions about tributary groundwater that are inconsistent with actual
13 conditions. (Leytham Prefiled at ¶¶ 7-16; Rozeboom, Tr. at 10-0115 to 10-0118.)
14

15 140. In Miller Creek, model inputs are inaccurate. (Leytham Prefiled at ¶¶ 17-20.)
16 The modelers inexplicably assigned inconsistent values to certain parameters (e.g. infiltration
17 values for till/grass in the Miller and Walker Creek basins), leading to differing results in how
18 much water percolates slowly to groundwater and thence to the stream versus quickly running
19 off as surface flow. (Leytham Prefiled at ¶¶ 26-31; Leytham, Tr. at 3-0016 to 3-0018.)
20

21 141. In Des Moines Creek, modeling also consistently under-simulated flows.
22 (Leytham Prefiled at ¶¶ 21-24; Willing Prefiled at ¶ 19; Rozeboom, Tr. at 3-0169, 10-0113 to 10-
23 0114.) Not a single witness for any party testified in favor of the accuracy of the Des Moines
24 Creek calibration. (Rozeboom, Tr. at 10-0115 to 10-0116.)
25

1
2 142. One consequence of inaccurate calibration is its impact on determining whether
3 mitigation is adequate. Ecology will look to the calibrated figures, not actual data, to determine
4 whether the Port's mitigation fully offsets impacts. If the modeled flows underestimate actual
5 impacts, impacts will occur that are not mitigated. (Rozeboom, Tr. at 3-0204 to 3-0206.)

6 143. King County review of the Des Moines Creek calibration was complicated by the
7 Port's use of a pre-existing King County model. Although the calibration was deemed to be
8 poor, it put the reviewer in the difficult position of criticizing the work of his own department.
9 (Ex. 458; Whiting, Tr. at 7-0092 to 7-0093, 7-0122 to 7-0123.) The Port claimed that it was
10 directed by King County not to revise the Des Moines calibration, however, the record flatly
11 contradicts this assertion. (Fendt Prefiled at ¶¶; Fendt, Tr. at 3-0144 to 3-0145.) Among other
12 omissions, the Port failed to compare model results with the Tye Weir gage data as specifically
13 required in the 401 Certification. (Ex. 1; Whiting, Tr. at 7-0092, 7-0122 to 7-0123.)
14

15 144. These calibration problems led King County to conclude there "is less than a good
16 match" and even a "poor match" between observed data and model results. (Ex. 458; Whiting,
17 Tr. at 7-0121 to 7-0122.) Because the Port re-assessed critical model inputs in November 2001,
18 model assumptions were altered in the December 2001 LFP. This led King County to request a
19 validation report for each stream, to determine whether further re-adjustments were needed. (Ex.
20 458; Whiting, Tr. at 7-0088, 7-0128 to 7-0129; Kenny Dep. at 213-15.)
21

22 145. In modeling embankment groundwater movement, the Hydrus and Slice model
23 results were not calibrated at all. Although the Port collected data in 1998 analyzing infiltration
24 and groundwater flow through parts of the embankment already in place, those results were
25 rejected by the Port's groundwater modelers in selecting assumptions about infiltration and flow

1 rates through the interior of the future embankment. Actual embankment infiltration rates are
2 significantly less than that assumed in the Port's models, as demonstrated by the pools of water
3 readily observed on the existing embankment. (Leytham, Tr. at 3-0014 to 3-0015, 3-0035 to 3-
4 0036; Leytham Prefiled, Att. I.) This lack of correlation between actual and modeled infiltration
5 rates seriously undermines the Port's projections for contributions to summertime base flow to
6 Miller and Walker Creeks. (Leytham Prefiled at ¶¶ 32-41; Lucia Prefiled at ¶ 7.)

8 146. The Port's failure to calibrate is particularly important given its simultaneous
9 oversimplifying (and incorrect) assumption that the millions of cubic yards of fill materials
10 within the embankment will be homogeneous, (Lucia Prefiled at ¶¶ 24-32; Leytham Prefiled at
11 ¶¶ 32-41.), coupled with its use of a one-dimensional Hydrus model, which does not model the
12 movement of water laterally through the embankment and therefore overpredicts the rate at
13 which water will move downward through the embankment and arrive at streams. (Lucia
14 Prefiled at ¶¶ 36-41.)

15 147. Finally, the Low Flow Plan fails to address calibration requirements set forth in
16 the § 401 Certification. The Plan does not present data regarding low flow simulations at the
17 Tyee Golf Course Weir gauge as specifically required by Condition I.1.b.i of the § 401
18 Certification. (Ex. 1; Leytham Prefiled at ¶ 24; Ex. 458.) The basis for this requirement is that
19 the Tyee gauge is a more geographically appropriate source of gauging data. (Whiting, Tr. at 7-
20 0123 to 7-0124.) The 401 Certification also requires a discussion of the accuracy of the
21 calibration in predicting low flows at upper stream gauges and a statement of adequacy of the
22 calibrations for the purpose of low flow simulation. (Ex. 1.) The minimal discussion in the
23 December 2001 plan falls far short of these requirements. (Rozeboom Prefiled at ¶ 13.)
24
25

1
2 **Multiple Models**

3 148. A second fundamental problem with the Port's approach is the mix-and-match
4 modeling it employed to determine how the embankment will affect streamflow. To assess
5 rainfall infiltration into the embankment, the Port used HSPF, the model used to track the fate of
6 rainfall throughout the Third Runway project. But HSPF cannot model vertical groundwater
7 flow, so the HSPF results from atop the embankment became input for Hydrus, a model that
8 analyzed how water would infiltrate and flow through the embankment until it reached the
9 bottom. The Port elected to use a one-dimensional version of Hydrus, however, and so had to
10 employ a third model, called Slice, to assess how water at the bottom of the embankment would
11 move laterally to the toe and discharge to the surface. This 1-D Hydrus oversimplified water
12 travel times, and ignored lateral movement of water, resulting in a likely over-prediction of the
13 rate at which water moves through the embankment. (Lucia Prefiled at ¶¶ 33-34; Lucia, Tr. at 3-
14 0076 to 3-0077; Leytham Prefiled at ¶ 35.)

15
16 149. Slice output then became input for the watershed-scale HSPF model, which was
17 used to finally assess when and in what quantities water would discharge to streams. (Leytham
18 Prefiled at ¶ 36.) These multiple transitions between programs added undesirable complexity
19 and significant potential for human error, as data was worked through the several transitions
20 from one program to another. (Lucia Prefiled at ¶ 35; Leytham, Tr. at 3-0011.) Indeed one
21 major error was identified in October 2001. (Ex. 1308; Ex. 460.)

22
23 150. It is not per se improper to use multiple models to assess impacts of a project, but
24 there must be a sound basis for integrating model results. For the low flow model of the
25 embankment, the Port chose to use HSPF estimates of groundwater flow for current conditions,

1 then compared that against Hydrus/Slice results for future conditions to arrive at its estimate of
2 impacts. This is not a valid analytical approach. (Rozeboom Prefiled at ¶ 24; Rozeboom, Tr. at
3 3-0170 to 3-0171; 10-0123 to 10-0124.) As a result, the existing and future conditions model
4 results are not reliable for purposes of determining impacts to streams.
5

6 Target Flows

7 151. The Low Flow Plan indicates that the impacts of the Third Runway Project will
8 reduce base flows in local streams as early as June each year, when streamflows drop to their
9 seasonal lows. Mitigation, however, will not commence until July 24 for Des Moines Creek and
10 August 1 for Walker Creek. (Ex. 1308.) The 401 requires only that the Port monitor adverse
11 impacts to aquatic biota during June and July. (Ex. 1.) The type of biological monitoring called
12 for in the 401 Certification will not detect potential early impacts associated with discharge of
13 stormwater to the project streams. (Strand Prefiled at ¶¶ 41-42.) The Port has not conducted
14 IFIM studies to determine appropriate instream flow quantities. (Willing, Tr. at 4-0078 to 4-
15 0079.)
16

17 152. King County expressed concern that Des Moines and Walker Creeks would be
18 adversely impacted in early summer. (Exhibit 1269; Ex. 458; Whiting, Tr. at 7-1030 to 7-0131)
19 Because the King County-Ecology contract scope did not involve assessing biological impacts, it
20 was left to Ecology to determine the early-summer harm to streams. (Whiting, Tr. at 7-0133.
21 But Ecology assigned no staff biologist to provide analysis on this issue. (White, Tr. at 7-0169
22 to 7-0170.) Nor does the December LFP contain information to support the assertion that there
23 will be no early summer impacts. (Ex. 1308; Whiting, Tr. at 0132.) The harm to Des Moines,
24 Miller and Walker Creeks will have already occurred before the Port or Ecology determines that
25

1 early summer mitigation is needed, if in fact that can be determined at all. (Ex. 1; Strand
2 Prefiled at ¶ 41.)
3

4 153. The early summer mitigation question is compounded by the proposal to fill the
5 mitigation reservoirs with stormwater that would otherwise be headed to the streams during low
6 flow periods. (Ex. 458; Whiting, Tr. at 8-0090.) This vault-filling will essentially rob the
7 streams of early summer flows. (Whiting, Tr. at 7-0129 to 7-0130.) For example, at present, the
8 mean fill time for the Walker Creek “mitigation” reservoir is 71 days, with a maximum
9 (presumably occurring during low rainfall years) of 213 days. (Ex. 1308.) King County
10 recommended that reservoir filling occur only during the winter season and take no longer than
11 60 days in order to ensure adequate natural recharge to the streams coming into the summer
12 season. (Ex. 458.) This recommendation was not included in the December LFP. (Whiting, Tr.
13 at 7-0130.)
14

15 **Model Inclusiveness: IWS & Borrow Pits**

16 154. The Port’s model of 1994 versus 2006 conditions excludes two activities that now
17 have and will continue to have significant effects on stream flow conditions: the lining of
18 lagoons for the Industrial Wastewater System (IWS) and the excavation of fill materials from
19 borrow areas in the Des Moines Creek basin. (Rozeboom, Tr. at 3-0169 to 3-0170.)
20

21 155. The leak prevention efforts for the IWS are intended to reduce the amount of
22 water infiltrating to groundwater from the IWS lagoons and areas that formerly discharged to the
23 stormwater system. This reduction in infiltration will reduce base flows in Des Moines and
24 Walker Creeks. (Rozeboom Prefiled at ¶¶ 15-17.) This alteration in land use, which is
25 significant because of area drained by the lagoons, was not included as a part of the low flow

1 modeling. (Rozeboom, Tr. at 3-0200 to 3-0201, 10-0119 to 10-0120.) As a result, the “existing”
2 conditions model actually uses future land use acreages that exclude 163 acres that are now
3 contributing water (through infiltration and groundwater flow) to Des Moines and Miller Creek
4 stream flow. (Rozeboom Prefiled at ¶ 17.) Consequently, the existing conditions model
5 significantly underestimates contribution to flows in the two affected streams, contributing to an
6 underestimation of post-construction target flows. (Rozeboom Prefiled at ¶¶ 18-19.)
7

8 156. The low flow model incorrectly assumes no land use changes with respect to
9 borrow areas in the Des Moines Creek basin. Three large, now-forested borrow areas will be
10 mined for 6.7 million cubic yards of fill material for the embankment. Two of the areas have
11 been zoned for conversion to aviation facilities at the Port’s request, thus adding significant
12 impervious surface in the basin. (Rozeboom, Tr. at 3-0184 to 3-0185; Cheyne, Tr. at 9-0024 to
13 9-0028.) The conversion from forest to impervious cover would be expected to alter surface run-
14 off and reduce base flows in Des Moines Creek. (Whiting, Tr. at 7-0147; Rozeboom, Tr. at 10-
15 0118 to 10-0119.) This change was not modeled as a part of the future conditions element of the
16 Low Flow Plan. (Rozeboom Prefiled at ¶¶ 20-22.) Thus, although the hydrologic impacts of
17 placing the soil into the embankment is modeled intensively in the Miller/Walker basins, the
18 impacts of its removal from the Des Moines Creek basin are not considered at all. Similarly,
19 conversion of this forested property to impervious surface and attendant impacts on low flow in
20 Des Moines Creek, are ignored.
21
22

23 **Particular Groundwater Model Problems**

24 157. The Hydrus/Slice model assumes steady-state conditions, and the Low Flow Plan
25 makes no contingency for the lag time between when the embankment is built and the arrival of

1 water, flowing through the embankment to its drainage layer, at the rates predicted in the model.
2
3 In the interim, the embankment will contribute less water to the streams than predicted. (Lucia
4 Prefiled at ¶¶ 20-23.) Preliminary analyses of embankment groundwater flow under “wetting
5 up” conditions were performed by one of ACC’s hydrogeologic experts, resulting in the
6 unsurprising determination that many, many months (several years) will pass before water in the
7 taller portions of the embankment emerges as base flow for Miller and Walker Creeks. (Lucia
8 Prefiled at ¶¶ 23, 25-41, illus.; Lucia, Tr. at 3-0059 to 3-0065, 3-0126 to 3-0127.) Inadequate
9 mitigation water will be available for the affected streams before steady state conditions are met.
10
11 (Lucia, Tr. at 3-0065 to 3-0066.)

12 158. The Hydrus model relies on a single set of soil parameters to represent the
13 behavior of 20 million cubic yards of fill that will be obtained from a variety of sources. This
14 gross simplification will lead to significant discrepancies between predicted streamflows and
15 what would actually occur after construction. (Lucia Prefiled at ¶¶ 24-32; Lucia, Tr. at 3-0048 to
16 3-0059; Ex. 705.) The Hydrus/Slice model also fails to take into account the Port’s recent
17 proposal to excavate “seismically questionable materials” at the base of the embankment.
18 Removing these wetland soils would (in addition to other impacts) reduce the amount of water
19 seeping to the streams during low flow periods. (Rozeboom Prefiled at ¶ 25; Rozeboom, Tr. at
20 3-0170.)

22 159. The Port’s HSPF watershed model assumes reintroduction of deep groundwater
23 into Miller Creek, an alteration from the model prepared by Pacific Groundwater Group in June
24 2000. No explanation was provided as to why or how this water will now appear in Miller Creek
25 at times which ameliorate low flow impacts of the embankment. (Rozeboom Prefiled at ¶ 26.)

1
2 160. Double-counting of groundwater occurs in the Miller Creek model. (Rozeboom
3 Prefiled at ¶ 27; Ex. 458.) The model also overestimates the infiltration capacity of the
4 embankment itself, utilizing rainfall data that masks accelerated runoff during high intensity
5 rainfall events. (Rozeboom, Tr. at 3-0171 to 3-0173, 3-0174 to 3-0175, 10-0120 to 10-0123.)
6 This error is compounded by incorrect assumptions about hydraulic conductivity of embankment
7 soils. (Rozeboom Prefiled at ¶¶ 28-29; Leytham Prefiled at ¶¶ 38-41.) As a result, the model
8 overestimates the amount of groundwater that will infiltrate into the embankment and be
9 available to support base flows during low flow periods. (Leytham, Tr. at 3-0010 to 3-0016, 3-
10 0028 to 3-0029; 3-0035 to 3-036.)
11

12 **Water Quality Problems**

13 161. The Low Flow Plan relies on the use of long-term dead storage of stormwater, a
14 new and untested source for low flow augmentation. (Willing, Tr. at 3-0215 to 3-0216.) The
15 stormwater will be derived from the airport runways, where pollutants, dissolved metals in
16 particular, will collect. The stormwater will then flow across the grass swales adjacent to the
17 runways and taxiways. (Ex. 1308.) These types of swales are not an adequate treatment system
18 to eliminate dissolved metals from the water column.
19

20 162. The stormwater will then be deposited into the Port's reservoir vaults, where the
21 dissolved metals will accumulate, along with other settleable solids and particulate-based
22 pollutants from the airport stormwater runoff. That dead storage water would be released up to
23 nine months later under low-flow conditions. The low flow plan makes no provision for water
24 quality treatment or dilution of concentrated pollutants prior to release to receiving waters.
25 (Rozeboom Prefiled, Ex. F at ¶ 10 and Ex. C at 6, ¶ 5; Willing Prefiled at ¶¶ 15, 20; Whiting, Tr.

1 at 8-0091; see also, findings related to Issue No. 10 (stormwater impacts).)

2
3 163. It is reasonable to expect that the detained stormwater used for low flow
4 mitigation, when released to the streams between July and October, will contain pollutants that
5 hold significant potential to degrade the receiving waters and harm aquatic biota. (Willing, Tr. at
6 3-0080 to 3-0083.)

7 **Low Flow Plan Contingencies**

8 164. Finally, the 401 requires that the Port “include contingency measures to offset
9 reduced recharge in the event the Third Runway embankment fill . . . does not meet performance
10 standards for infiltration rates.” (Ex. 1.) But the low flow plan proposes only that, if the
11 embankment fails to infiltrate the projected amounts of water, the Port will “adapt water
12 management practices to the as-built conditions.” (Ex. 1308.) The Port refuses to use enhanced
13 infiltration (i.e., artificially pushing water through the embankment) because of concerns about
14 embankment instability. (Ex. 1308, App. C.) The Port’s history of its inability to obtain
15 mitigation water for low flow augmentation indicates that the proposed adaptation of water
16 practices is unworkable.
17
18

19 **3. WATER RIGHTS FINDINGS OF FACT**

20 **The Port’s Low Flow Augmentation Plan**

21 165. Sea-Tac International Airport is embraced and traversed by three streams: Des
22 Moines, Miller and Walker Creeks. The three streams, classified as AA under state water quality
23 standards, support recreational uses and provide habitat for a variety of fish species. (Nelson
24 Prefiled at 2-3; Strand Prefiled at ¶ 4; Strand Tr. at 4-180 to 4-181) Reduction of flow in the
25

1 streams, which already flow at very low rates in the summer, will impair these uses. (Luster
2 Prefiled at 221.)

3
4 166. The Third Runway Project will significantly alter the hydrology of the airport
5 property. The removal of 6 million cubic yards (mcy) of fill material in the Des Moines basin,
6 its emplacement, along with another 13 mcy, in the Miller/Walker basins to construct the
7 massive embankment, and the construction of 300-plus acres of new impervious surface will all
8 contribute to the reduction of flow in the adjacent streams. (Ex. 1213.) These impacts will be
9 permanent. Further, they will affect the streams throughout their length, from above the “point
10 of compliance,” where the Port proposes to introduce mitigation water into the streams, to their
11 point of discharge (Puget Sound for Miller and Des Moines, Miller Creek for Walker Creek).
12 (Rozeboom, Tr. at 10-0113)

13
14 167. Because of these impacts, the Port must mitigate through low flow augmentation
15 in Des Moines and Walker Creeks. (Exs. 1, 1308) The proposed source of water for the low
16 flow augmentation plan is rain water running off the Port’s property following rainfall events,
17 commonly known as stormwater. The Port proposes to capture, detain and then release 19.0
18 acre-feet of stormwater to Walker Creek at the rate of .11 cubic feet per second (cfs),
19 continuously between August 1 and October 31 each year. The Port’s augmentation plan also
20 involves the release of 13.5 acre-feet of water to Des Moines Creek at the rate of 0.08 cfs,
21 continuously between July 24 and October 24 each year. The Port does not propose any low
22 flow mitigation for Miller Creek. (Ex. 1308.)

23
24 **History of the Port’s low flow augmentation plan and water rights**

25 168. The Port has contemplated augmentation of stream flow in Des Moines Creek

1 since at least 1998, when it issued the first Des Moines Creek Flow Augmentation Plan. (Ex.
2 1107.)

3
4 169. Between 1998 and 2000, the Port's proposed source of water for low flow
5 mitigation was the Tyee Golf Course well. In August 2000, the Port submitted a water right
6 change application to the Department of Ecology, requesting an added purpose of use of "flow
7 augmentation for Des Moines Creek." (Ex. 577; Ex. 578; Smith, Tr. at 8-0001 to 8-0002.) The
8 Tyee transfer application has never been acted on. (D. Swenson, Tr. at 3-0139 to 3-0130.) In
9 September 2000, the Port prepared a revised low flow augmentation plan proposing Seattle
10 Public Utilities (SPU) municipal service to the airport as a new source of water. (Ex. 681; Smith,
11 Tr. at 8-0004 to 8-0005.) That proposal was subsequently withdrawn when Ecology met with
12 Port and SPU representatives and informed them that SPU would be required to submit a water
13 right change application adding low flow augmentation as a purpose of use to its municipal water
14 right claim. (D. Swenson, Tr. at 3-0134 to 3-0135.)

15
16 170. In December 2000, the Port issued a low flow plan that, for the first time,
17 discussed the use of stormwater as a source of streamflow augmentation. (Ex. 1154; Smith, Tr.
18 at 8-0006 to 8-0007.)

19
20 171. Water availability was not an issue when the Port's contemplated using the Tyee
21 well or municipal water. The Port therefore proposed generous mitigation for Des Moines
22 Creek, i.e., maintaining a target flow rate of 1 cfs. (Ex. 681; Fendt, Tr. at 8-0139 to 8-0140.)
23 The Port, however, has been unable to obtain the rights to use those sources. (D. Swenson, Tr. at
24 3-0130, 3-0135.) The Port's proposal to mitigate at a lesser rate coincided with two events:
25 recognition that Miller and Walker Creeks would also require low flow mitigation and the

1 decision to use stormwater as a mitigation source. (Ex. 681; Smith Tr. at 8-0006 to 8-0007.)

2 The cost and complexity of the Port's low flow mitigation obligations increased with these new
3 factors. (Exs. 681, 1154, 1308.)

4
5 172. The Port's proposal to use stormwater as a source for low flow mitigation raised
6 the question, late in the 401 application process, whether a water right was required. Some
7 believed this was a "gray area" in the law. (Hellwig Dep. at 188-89, 261-62; Fitzsimmons Dep.
8 at 95-96.) Ecology's decision to waive the water right requirement was made at the highest level
9 of the agency, by Ecology's "senior management team," led by director Tom Fitzsimmons.
10 (Hellwig Dep. at 189; Fitzsimmons Dep. at 93-94.)

11 **Low Flow Mitigation & Water Rights**

12
13 173. Water right decisions are normally made by the Water Resources Program of the
14 Department of Ecology, at the regional office level in one of the agency's four regional offices.
15 (D. Swenson, Tr. at 3-0128 to 3-0129; Barwin, Tr. at 3-0146; Schlender, Tr. at 3-0163 to 3-
16 0164.)

17
18 174. Ecology requires water users to obtain water rights for low flow mitigation that
19 involves augmentation with a water supply. Examples cited at the hearing include the Conifer
20 Ridge water right, the Kitsap Public Utility District (Seabeck) water right, and the Trendwest
21 instream water rights in the Yakima River basin. (D. Swenson, Tr. at 3-0131 to 3-00132;
22 Barwin, Tr. at 3-0155.) Ecology also requires a water right for the use of stormwater for
23 purposes such as irrigation or domestic supply. (D. Swenson, Tr. at 3-0134.) In addition, the
24 Board required a water right for the low flow mitigation plan proposed by Battle Mountain Gold
25 for the Crown Jewel gold mine. *Okanogan Highlands Alliance v. Ecology*, PCHB No. 97-146, *et*

1
2 *seq.*, Summary Judgment on Stipulated Issues Nos. 20, 21 and 22 (10/23/98). (Barwin, Tr. at 3-
3 0146 to 3-0150.)

4 175. Several mechanisms are available for creation of flow augmentation water rights,
5 including the grant of new rights (e.g., Conifer Ridge), the transfer of existing rights, and the
6 creation of trust water rights. (Barwin, Tr. at 3-0154 to 3-0155.)

7 **Stormwater Management**

8 176. The purpose of stormwater management is to attenuate peak and low flow impacts
9 of, and water quality degradation from, water running off of impervious surfaces. Stormwater
10 management often involves the capture of water in detention facilities that release water directly
11 to streams or infiltrate water to groundwater. (S. Swensen Pre-filed at ¶¶ 8, 11-12; Ex. 80.) The
12 Department of Ecology does not require water rights for stormwater detention facilities.
13

14 177. The two major guidance documents for managing western Washington
15 stormwater, the 1998 King County Surface Water Design Manual (Ex. 2068) and the 2001
16 Ecology Manual (Ex. 1266), both recognize that stormwater can also be utilized to maintain base
17 flows in streams during low flow period. (S. Swensen Prefiled at ¶¶ 9-11; Whiting, Tr. at 7-0103
18 to 7-0104, 7-0117 to 7-0118.) The method described in both manuals involves infiltration of
19 stormwater into the ground, which eventually re-emerges as base flow in affected streams. (Ex.
20 2068; Ex. 1266; O'Brien, Tr. at 6-0055 to 6-0057; Ex. 80; S. Swensen Prefiled at ¶ 10.)
21 However, infiltration facilities cannot achieve the precise timing and level of assurance required
22 to mitigate Third Runway project low flow impacts on local streams. (S. Swensen, Tr. at 8-184.)
23 The Port's stormwater management plan does not utilize infiltration facilities for the Third
24 Runway embankment. (Ex. 1308 at App. C.)
25

1
2 178. The Port's proposed low flow augmentation method, targeted release of specified
3 quantities of water to streams during specified time periods, is not discussed or contained in
4 either the King County or Ecology manuals. None of the Port or Ecology's independent
5 stormwater experts have ever encountered a stormwater management plan that involved the
6 targeted release of stormwater to streams during specific time periods. (O'Brien, Tr. at 3-0067 to
7 3-0068; S. Swensen, Tr. at 8-0184 to 8-0185; Whiting, Tr. at 7-0116 to 7-0118; Ex. 40; Willing
8 Prefiled at ¶ 15; Willing, Tr. at 3-0215 to 3-0216.)

9
10 179. The Port's low flow augmentation plan uses stormwater as a source of water, but
11 is not a stormwater management technique.

12 180. Low flow augmentation is a type of water use for which Ecology requires a water
13 right. Ecology water resource managers do issue instream flow water rights for mitigation
14 purposes, either to offset the impacts of another water usage, or to offset the hydrologic impacts
15 of the project. (D. Swenson, Tr. at 3-0131 to 0132, 3-0135; Barwin, Tr. at 3-0148, 3-0153.)
16 Ecology requires water rights for the beneficial use of stormwater. (D. Swenson, Tr. at 3-0134;
17 Barwin, Tr. at 3-0156 to 3-0157.)

18
19 **Water Resource Management in Des Moines, Miller and Walker Creeks**

20 181. There are several pending applications for new water rights in the vicinity of Des
21 Moines, Miller, and Walker Creeks, as identified on a recent Water Rights Application Tracking
22 System (WRATS) printout prepared by the Northwest Regional Office of the Department of
23 Ecology. Groundwater applications are pending for several municipal and industrial water users.
24 (Ex. 758; D. Swenson, Tr. at 3-0135 to 3-0140.)

25 182. In Washington, ground and surface waters are managed as an integrated resource.

1
2 In the water right process, Ecology considers the impacts of groundwater pumping on surface
3 waters when the target aquifer is hydraulically connected to a stream or river. (D. Swenson, Tr.
4 at 3-0140 to 3-0141.) Des Moines, Miller and Walker Creeks are presently closed to the
5 issuance of new 'consumptive' water rights. WAC 173-509-040(1). Although applications are
6 pending, neither surface nor ground water rights are being issued in this area at this time. (Ex.
7 758.)

8 183. The Department of Ecology is implementing a watershed planning process,
9 authorized by Chapter 90.82 RCW, in concert with local governments and interested
10 stakeholders. Watershed planning units are authorized to re-examine stream closures and
11 instream flow regulations, such as those set forth at WAC 173-500 *et seq.* Ecology is completing
12 a guidance document for instream flow setting. That report is designed to provide guidance to
13 watershed planning units that seek to alter established closures and instream flow regulations in
14 the future. The document advises that instream flows may be set in a manner that emphasizes
15 out-of-stream uses and is less protective for fish. It is expected that watershed planning groups
16 may recommend to Ecology to open closed basins and amend instream flows in the future. (Ex.
17 757; Rushton, Tr. at 3-0209 to -0211.)

18
19
20 184. The Port did not conduct review of the Third Runway low flow augmentation
21 plan pursuant to the State Environmental Policy Act (SEPA), Ch. 43.21C RCW. Because the
22 Port did not obtain or tender a water right application, no SEPA review was conducted under the
23 auspices of the state water code.

24 **4. FILL CRITERIA, EMBANKMENT AND MSE WALL FINDINGS**
25 **OF FACT**

1
2 185. The principal feature of the Port's proposed Master Plan Update improvements is
3 the Third Runway which would be constructed west of the two existing airport runways.
4 Moving west from the existing runways, the ground elevation drops and forms the drainage
5 basins for Des Moines, Miller, and Walker Creeks. To construct a Third Runway, the existing
6 drainage basins west of the airport would need to be filled with 20 million cubic yards of
7 material. Twenty million cubic yards is equivalent to 40 football fields each stacked 300 feet
8 high with material. (Ex. 770.) The fill material would be stabilized by an embankment that
9 would extend the entire length of the 8,500-foot runway. In places, the embankment will be
10 retained by a mechanically stabilized earth ("MSE") wall 135 feet high at its tallest point (and
11 further topped with a twenty-foot-high sloped embankment for a total height of 155 feet), for a
12 distance of 1,500 feet.
13

14 186. The embankment would be constructed upon a rock drainfield three feet thick (the
15 "drainage layer") which is designed to collect groundwater seepage through the embankment and
16 transport this water under the MSE wall to wetlands between the wall and relocated Miller
17 Creek. As the 401 Certification acknowledges, "the use of imported fill for projects for which
18 the Section 404 permit was sought...may result in impacts to wetlands or other waters of the
19 state." 401 Certification (Ex. 1) at p. 14. There is a risk that surface water runoff from the
20 embankment could transport embankment contaminants to area wetlands and streams. (Dr. John
21 Strand Prefiled Testimony at ¶33.) Further, groundwater percolating through the embankment to
22 wetlands and streams below could transport contaminants to those waters. (Dr. Patrick Lucia
23 Prefiled Testimony at ¶8.)
24
25

187. The 401 Certification allows for soil contaminated with total petroleum

1 hydrocarbons and metals above natural background levels to be placed next to the three-foot-
2 thick gravel drainage layer underlying the entire embankment. Placement of the contaminated
3 fill next to the gravel drainage layer “provides a short path by which these contaminants can be
4 transported to the creeks.” *Id.*

5
6 188. The 401 proposes to address this risk through imposition of procedures and
7 criteria concerning placement of fill at the site. 401 Condition E (Ex. 1 at pp. 14-19). The 401
8 Certification generally defines acceptable fill sources as including state-certified borrow pits,
9 contractor-certified construction sites and Port of Seattle owned properties, and defines
10 prohibited fill sources as fill sources which “in whole or in part consist of soils or materials that
11 are determined to be contaminated following a Phase 1 or Phase 2 site assessment.” State
12 Certified borrow pits are “those that the Washington Department of Transportation has found to
13 have geotechnically suitable material. The Washington Department of Transportation testing
14 does not included testing for contaminants.” (Ex. 262, at p. 40.)

15
16 189. The lynchpin of Condition E are numeric fill criteria establishing allowable
17 concentration limits for certain identified contaminants -- metals and components of total
18 petroleum hydrocarbons -- stated in allowable milligrams of contaminant per kilogram of soil.
19 (401 Certification Condition E at p. 17.) In her hearing testimony, Ann Kenny, principal author
20 of and coordinator for Ecology’s 401 decision, admitted that she herself was not involved in the
21 development of the fill criteria. (Kenny, Tr. at 1-0158, line 19.) Instead, she relied “exclusively
22 on Kevin Fitzpatrick to make [her] recommendation to Ray Hellwig and Gordon White that the
23 conditions in [Condition E] of the certification provided Ecology reasonable assurance.” (*Id.* at
24 lines 20-24.)
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190. Initial “screening” of fill sources is said to occur under the 401 through “Phase I” assessment procedures. However these are largely paperwork exercises which provide no definitive information concerning the actual level of contamination of proposed fill. (Fitzpatrick, Tr. at 5-0055, line 10, to 5-0056, line 16; Lucia, Tr. at 3-0112, line 24, to 3-0113, line 21.)

191. Sampling only comes at the end of the fill assessment process under the 401. It is required for thirteen metals and total petroleum hydrocarbons. (401 Certification, at p. 16.) The results of the sampling are then compared to the numeric fill criteria in the 401 Certification (at p. 17) to “determine the suitability of the fill source for Port 404 projects.” *Id.*

192. Whether such sampling provides adequate protection against violation of water quality standards depends on the criteria against which samples are tested and on whether sufficient samples are taken to provide an accurate picture of fill contamination. Ecology based the numeric fill criteria on MTCA⁷ Method A cleanup criteria⁸ which have been established under legislation for remediation of contaminated sites. Appellants question whether it is appropriate to base criteria for protection of clean sites and Class AA waters on standards adopted for effecting economically feasible clean-ups of sites which have already been contaminated. They point among other things to the prohibition in Washington’s toxic substances water quality criterion which states:

Toxic substances *shall not be introduced above natural background levels* in waters of the state which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department.

⁷ The Model Toxics Control Act, Chapter 70.107D RCW.

⁸ (Yee, Tr. at 6-0033, lines 15-18.)

1 WAC 173-201A-040(1) (emphasis added).

2
3 193. On cross examination Chung Yee, from Ecology's Toxics Clean-Up Program,
4 acknowledged that in some cases the 401 certification criteria were based MTCA Method A
5 standards rather than natural background levels:

6 Question: So can you tell me for arsenic what the Method A clean-up level is for
7 arsenic?

8 Answer: It is twenty.

9 Question: And do you have the natural background for arsenic on that chart?

10 Answer: Yes.

11 Question: Can you tell us what that is?

12 Answer: It's seven.

13 Question: And, in fact, when there was a Method A standard for a constituent,
14 wasn't that the one that was adopted into the 401 Certification?

15 Answer: Yes.

16 (Yee, Tr. at 6-033, lines 7-17.)

17
18 194. Mr. Yee also acknowledged that, as part of his work on the 401 fill criteria, he
19 was asked to respond to comments and concerns raised by Peter Kmet, a senior environmental
20 engineer in Ecology's Toxics Clean-up Program. Yee, Tr. at 6-003, lines 1-4. Mr. Yee
21 acknowledged that he had not done so, despite Mr. Kmet's recommendation that MTCA not be
22 used for the establishment of fill criteria for the Third Runway Project. (Yee, Tr. at 6-009, lines
23 3-14; *see also* Ex. 22; Deposition of Peter Kmet, page 26, lines 8-23.) Mr. Kmet also raised
24 concerns about allowing petroleum contaminated soils (Ex. 33), the sampling frequency (Ex. 15),
25 and the need for statistical methods for evaluating sampling data (Ex. 15).

1 195. In his testimony before the Board, Mr. Yee stated that he “used the three-phase
2 partitioning model to derive this criteria [the 401 numeric criteria]. The model is designed to
3 calculate soil concentrations that would protect the ground water or the surface water.” Yee, Tr.
4 at 5-0156, lines 22-25.
5

6 196. However, a comparison of the contamination levels allowed in the 401 with Mr.
7 Yee’s three-phase calculations demonstrated that, for seven of the thirteen contaminants of
8 concern, the Certification allows contamination at levels above the calculated values derived by
9 Mr. Yee for the protection of surface water and/or groundwater. While it appears that a few of
10 the constituents such as beryllium, copper and zinc were in fact set to natural background, for
11 many of the constituents such as arsenic, cadmium, lead and mercury, the 401 Certification
12 limits are substantially higher than natural background.
13

14 197. For example, the 401 limit for antimony is 16 mg/kg, yet Mr. Yee calculated that
15 the allowable level of antimony for the protection of ground water should be no more than 5.79
16 mg/kg.⁹ The 401 allows arsenic at concentrations of 29 mg/kg, yet Mr. Yee calculated that no
17 more than 2.92 mg/kg of arsenic should be allowed for the protection of ground water. The 401
18 Certification allows 2 mg/kg of cadmium, yet Mr. Yee calculated that to protect surface water no
19 more than .09 mg/kg of cadmium should be allowed in the soil and no more than .69 mg/kg of
20 cadmium should be allowed in the soil to protect ground water. The 401 Certification allows
21 lead at levels of up to 250 mg/kg, yet Mr. Yee calculated that no more than 234 mg/kg of lead
22 should be allowed for the protection of surface water. For mercury, the 401 Certification allows
23
24

25 ⁹ All the three phase calculated values referenced in this paragraph come from a spreadsheet prepared by Chung Yee that is in the record as Exhibit 25 and Exhibit 2122.

1 2 mg/kg, yet Mr. Yee calculated that for the protection of surface water the standard should be
 2 no more than .01 mg/kg. The 401 Certification allows 5 mg/kg of selenium in the soil, yet Mr.
 3 Yee calculated that for the protection of surface water no more than .52 mg/kg of selenium
 4 should be allowed in the soil. Finally, the 401 Certification allows 5 mg/kg of silver, and yet Mr.
 5 Yee calculated that no more than .28 mg/kg of silver should be allowed based on the protection
 6 of surface water.
 7

8 198. Mr. Yee indicated that in some instances he adjusted his calculated 401
 9 contaminant limits based upon Ecology Publication 94-115, Natural Background for Soil Metals
 10 in Puget Sound, or upon the practical quantitation limit (“PQL”)¹⁰ he found in a 1993 Ecology
 11 implementation memo. (Yee, Tr. at 5-0158, lines 11-12; at 5-0162, line 17 to 5-0165, line 24;
 12 *see also* Ex. 2126.) A comparison of the values he calculated with the values he adjusted to is
 13 presented in the table below:
 14

Contaminant	401 ¹¹	Surface Water ¹²	Ground Water ¹³	Natural Background ¹⁴
Antimony	16		5.79	Na
Arsenic	20		2.92	7
Cadmium	2	.09	0.69	1

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 21 ¹⁰ A PQL is defined in the MTCA Regulations as “the lowest concentration that can be reliably measured within specified limits of precision, accuracy, representativeness, completeness and comparability during routine laboratory conditions, using Department approved methods.” WAC 173-340-200.

22 ¹¹ Values taken from numeric criteria in 401 certification (page 17); and is identical to the last column of Attachment E, Table 1 (Ecology criteria applicable for remainder of embankment and other Port 404 projects). All values stated in milligrams per kilogram (mg/kg).

23 ¹² Taken from Exhibit 2121, 3-phase model calculations prepared by Chung Yee for deriving safe soil concentrations for the protection of surface water.

24 ¹³ Taken from Exhibit 2121, 3-phase model calculations prepared by Chung Yee for deriving safe soil concentrations for the protection of ground water.

25 ¹⁴ Per Ecology publication 94- Puget Sound Natural Background levels. Na indicates that there is no natural background data in the publication for a contaminant.

Lead	250	234		24
Mercury	2	.01		.07
Selenium	5	0.52		Na
Silver	5	0.28		Na

199. In making adjustments up to the practical quantitation limit, Mr. Yee misread the “thumbs up” icon in the Ecology implementation memo. Mr. Yee believed it to be a recommendation as to a PQL level when in fact, as Mr. Yee admitted during trial, the thumbs up on the PQL table is not a recommendation, but an indication that there are other test methods available with lower PQLs. (Yee, Tr. at 6-0011; *see also*, Exhibit 2126.) Actual sampling data supplied by the Port indicates that its testing methodologies are in fact capable of detecting concentration limits, for nearly all the contaminants of concern, at levels below .5 mg/kg. – significantly lower than the PQLs utilized by Mr. Yee. (Ex. 294, Appendix A, pp. 2-7 of 19.)

200. The numeric criteria on page 17 of the 401 Certification allow for concentrations of gasoline to be present at 30 mg/kg and diesel and heavy oil at up to 2,000 mg/kg. (401 Certification, p. 17.) Allowing these petroleum contaminants in the soil is facially inconsistent with Washington’s toxic substances water quality standard which generally prohibits the introduction of substances above natural back ground levels in waters of the state which includes wetlands. *See, e.g.*, WAC 173-201A-040(1) and WAC 173-201A-020. As the Board noted in its Order Granting the Stay, gasoline, diesel and heavy oils are not naturally occurring in the Puget Sound soils. (Stay Decision at page 17.)

201. Mr. Yee acknowledged in his testimony that Peter Kmet, Senior Engineer in Ecology’s Toxics Cleanup Program, raised concerns about allowing concentrations of petroleum

1 hydrocarbons in the fill as early as September of 2000. (Yee, Tr. at 6-0008, lines 5-16; *see also*
2 Exhibit 33.) In his testimony before the Board, Ecology's Kevin Fitzpatrick admitted that it was
3 "an error in our logic [to allow petroleum contaminated soils] in that you would not have what
4 are essentially man-made constituents on an uncontaminated site." (Fitzpatrick, Tr. at 5-0051,
5 lines 3-5.) Mr. Fitzpatrick then claimed that despite the explicit allowance for petroleum
6 contamination of a certain level in the 401 (at page 17 and Table 1 of Attachment E), they would
7 nevertheless be barred under Certification condition E(1)(d) because that section generally
8 prohibited fill "which consists in whole or in part of materials that are determined to be
9 contaminated following the phase I or phase II site assessment." Mr. Fitzpatrick explained that:

11 My interpretation is that because we are prohibiting contaminated fill sources, fill that
12 is contaminated from a man-made source or human origin, which would be for
13 gasoline, you know, human origin, or if you have gasoline, diesel or the heavy oils
14 it's a good bet that you have human origin for that contamination, that our prohibition
of not even considering the contaminated sources for use as fill material would
eliminate that.

15 (Fitzpatrick, Tr. at 5-052, lines 6-13.)

16 202. The Port's interpretation of what the 401 allows with respect to petroleum
17 contaminated soils has differed from Ecology's at various points. One Port consultant testified
18 that TPHs are allowed under the 401 Certification and that "because TPH or petroleum is
19 decayed plant matter that has been highly condensed it is absolutely normal to see TPH when
20 you go out into the environment and test for it naturally." (Gould, Tr. at 9-0109, lines 15-18.)
21 However, later during cross examination she eventually conceded that gasoline is a refined
22 petroleum product that would not be found in its refined state in nature. (Gould, Tr. at 9-0123,
23 line 22.) During cross examination another Port consultant admitted that the Port has already
24
25

1 imported petroleum contaminated soils from the Black River Quarry site, the Summit Ridge site,
2 the First Avenue Bridge site, and from three additional locations at the Airport. (Clark, Tr. at 9-
3 0138, line 18, to 9-0140, line 2.)

4 203. Under the 401 Certification, proposed fill criteria are to be applied based on
5 sampling and testing protocols. The fill source sampling is governed by a chart on page 16 of
6 the 401 Certification, which requires no more than six samples from a fill source **greater** than
7 100,000 cubic yards. Peter Kmet, Ecology's toxics cleanup program senior engineer,
8 recommended that ten samples be required for every 2,000 cubic yards for Port-owned properties
9 and construction sites, with one additional sample for every 500 cubic yards. Even for so-called
10 "native" borrow pits, Mr. Kmet recommended 15 samples for sites between 50,000 and 500,000
11 cubic yards plus one sample for every additional 100,000 yards. (Yee, Tr. at 6-003, line 16, to 6-
12 004, line 25; *see also* Exhibit 15.) The 401 Certification requires substantially less.

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15 204. Appellant's expert Dr. Pat Lucia explained that, to ensure protection of water
16 resources, the 401 Certification should have required a determination for each site of the number
17 of samples needed to reach a "95% confidence level that you will meet the [contaminant]
18 criteria." Lucia, Tr. at 3-0114, lines 3- 6.) The 401 Certification falls far short of this standard.
19 Peter Kmet made the same recommendation. (Kmet Dep. at page 44, line 14, to page 45, line 3.)

20 205. During the hearing, it was suggested by the Port that, despite the less stringent
21 terms of the written 401 Certification, reasonable assurance could be found because someone at
22 Ecology could review the samples to determine the variability and decide if more samples were
23 needed to reach the 95% confidence level. However, testimony before the Board and the terms
24 of the 401 itself do not support this suggestion.
25

1 206. Uncertainty between Ecology and the Port over the exact nature of the assurance
2 provided in the 401 Certification concerning fill contamination was also reflected in their
3 testimony concerning the synthetic precipitate leaching procedure (“SPLP”) added to the fill
4 criteria in the September 401 Certification. It states:

5 If proposed fill (for either the drainage layer cover or the rest of the embankment or
6 other Port 404 projects) does not meet the fill criteria in condition E(1)(b), the Port
7 can demonstrate the suitability of the fill by employing a [SPLP], SW-846 Method
8 1312. SPLP testing shall be conducted according to the SPLP work plan, attachment
E, or as amended in the future.

9 207. Again, the Department of Ecology and the Port have differing interpretations on
10 how the SPLP procedure is to be employed and what it would allow. Ecology’s Ann Kenney
11 testified that the SPLP procedure could **not** be used to approve material that exceeded MTCA
12 Method A standards:

13 Q: And just so we have got it on the record, it’s Ecology’s position that MTCA
14 Method A provides the upper bound limits.

15 A: That’s correct except for, and then there is some qualifications for barium,
16 selenium and silver.

17 (Kenny, Tr. at 1-0179, lines 17-21.)¹⁵

18 208. However, in her testimony Port environmental consultant Elizabeth Clark
19 acknowledged that, after site sampling shows that a site has failed the MTCA Method A based
20 initial screening criteria, the Port uses the SPLP to nevertheless **approve** the importation of fill
21 material. According to Ms. Clark, the Port has already accepted fill material from the Black
22 River Quarry site, the Kent-Kangley pit, the Marine View pit and CIT pit #3(four of the seven
23

24 _____
25 ¹⁵ In his testimony Mr. Yee confirmed that in each instance where there was a Method A standard for a constituent the Method A standard was the one adopted into the 401 Certification. (Yee, Tr. at 6-0033, lines 15-18.)

1 sites that were being used as fill sources at the time of the hearing) based upon the use of SPLP
2 test results. (Clark, Tr. at 9-0134, line 14, to 9-0136, line 5.) Thus, where the Port encounters
3 significant variability in soil, rather than conducting additional sampling to characterize the
4 extent of contamination to an acceptable confidence limit, the Port has interpreted the 401
5 Certification to allow use of the SPLP method to nevertheless justify fill importation.
6

7 209. Attachment E to the 401 Certification describes the SPLP as a test in which fluid
8 is passed through a soil sample with the fluid then collected and analyzed for contaminants. The
9 screening procedure states that, “results from the SPLP will then be compared to fresh water
10 ambient water quality criteria . . . in WAC 173-201A-040 (adjusted for PQLs).” (401 at
11 Attachment E, p. 3.) This SPLP procedure is not a feasible procedure for determining whether or
12 not there will be reasonable assurance of compliance with water quality standards, for several
13 reasons. First, the SPLP procedure as laid out in 401 Attachment E does not address the
14 complete set of water quality standards which applied under Section 401. Instead, it only
15 addresses the toxic substances surface water standards (WAC 197-201A-040), and ignores state
16 ground water standards such as Chapter 173-200 WAC.
17

18 210. Second, according to Condition E of the Certification only one SPLP sample is
19 required to be collected for each original screening sample that exceeds the screening criteria.
20 There is therefore no statistically meaningful test protocol for using the SPLP. (401 Certification
21 Attachment E, p. 3; Dr. Patrick Lucia Prefiled Testimony at ¶17.)
22

23 211. Third, the SPLP method as employed by the Port is in large part incapable of
24 detecting contaminants of concern at the levels established in WAC 173-201A-040. The
25 freshwater criteria listed in WAC 173-201A utilized as a benchmark for the SPLP testing are

1 hardness-dependent. Port consultant Linn Gould calculated the hardness-adjusted freshwater
2 chronic criteria for the constituents of concern listed in the 401 Certification. (Exhibit 280.) Ten
3 of the 13 metals listed in the 401 Certification have a hardness-adjusted freshwater chronic
4 standard **lower** than 50 micrograms/liter. The SPLP procedure is, however, ineffective at
5 determining compliance with water quality standards for these metals because, as designed in the
6 401, the SPLP's reporting limit is **higher** than the 401 contamination limit.¹⁶ This is evident
7 from the baseline chemical characterization report for the Black River Quarry, a source of fill
8 already utilized by the Port. (Ex. 294.) That report states copper concentrations from six
9 samples ranged from 95.7 to 131 mg/kg – more than three times the 36 mg/kg limit for copper in
10 the 401 Certification. This fill material was then tested under the SPLP and **approved** because
11 copper was not detected “above the reporting limit¹⁷ of .05 mg/kg (mg/l) [or 50 ug/l]¹⁸ using
12 SPLP methodology.” (Exhibit 294 at p. 2.) In fact, the SPLP test results in that report indicate
13 that, for each contaminant tested, the reporting limit was 50 micrograms/liter so that any
14 contaminant that had a WAC 173-201A-040 hardness adjusted criterion lower than 50
15 micrograms/liter could not be detected.
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18 212. Finally, WAC 173-201A-040, the surface water toxic substances criteria, do not
19 establish standards for antimony, beryllium, silver and thallium which are all listed as
20 constituents of concern under the 401 Certification. Thus there is no standard in WAC 173-
21

22 ¹⁶ The 10 metals with hardness adjusted fresh water chronic criterion less than 50 micrograms/liter include
23 antimony, beryllium, cadmium, total chromium, copper, lead, mercury, selenium, silver and thalium. See Ex. 280.
24 The SPLP is not used to test for petroleum contamination.

25 ¹⁷ The reporting limit is the lowest concentration that can be measured for a sample using the test procedure
employed.

¹⁸ Milligrams per liter can be converted to micrograms per liter by multiplying by 1000, thus .05 mg/l X 1000 = 50
micrograms/liter.

1 201A-040 for these contaminants by which to evaluate the SPLP test results.

2 213. One of the significant differences between the September 21 certification now
3 before the Board and the former August 10 certification is the inclusion of additional
4 “compliance options” under Condition E. One of these allows construction of a “wedge” (also
5 called the “drainage layer cover”) of purportedly less contaminated soil 40 feet thick at the face
6 of the embankment sloping back at a rate of 2% as a substitute for applying the fill contaminant
7 limitations listed in the August 10 401 Certification to “material within the top six feet of the
8 existing ground surface and/or within the first six feet of the embankment.” (September 401
9 Certification at p. 18.) During trial, the Port suggested that the wedge alternative was mandated
10 by the USFWS Biological Opinion. However, the Port’s new “wedge” compliance option is
11 actually not consistent with the requirements of the Biological Opinion. (Lucia Prefiled
12 Testimony, at ¶ 13.) As Dr. Lucia explained, the Biological Opinion adopted more stringent
13 standards to be applied to the “surficial three feet,” and this requirement is not incorporated
14 within the text of the September 21 401 Certification, and may in fact be exceeded for
15 chromium, lead, and selenium. *Id.*

16 214. At the hearing, the Port offered a last-minute report based on a model prepared by
17 Dr. Michael Riley as evidence of the protectiveness of this approach. (Exhibit 1320.) However,
18 the model assumed there would be no gasoline, diesel or oil in the drainage layer cover (the
19 “wedge”) despite the terms of the 401 which allow for their presence. (Riley, Tr. at 9-0175, lines
20 15-18.) Further, the model was not based upon the 401 contaminant criteria, but instead upon
21 SPLP test results for one site, the Kent-Kangley pit. (Riley, Tr. at 9-0171, line 24, to 9-0172,
22 line 6.) When model runs were performed to test the protectiveness of the standards for
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1 petroleum hydrocarbons, the tests were not run based upon the allowable limits under the 401
2 Certification. (Riley, Tr. at 9-0175, lines 15-18.)

3 215. Dr. Pat Lucia identified fundamental flaws in the overall model. Dr. Lucia
4 explained that, while the model made reasonable assumptions about the leaching of metals in the
5 general embankment fill, the model made unsupportable assumptions about the adsorptive
6 capacity of the drainage layer cover. (Lucia, Tr. at 10-0095, line 15, to 10-0100, line 6.)
7 According to Dr. Lucia, the errors in modeling the adsorptive capacity of the drainage layer
8 resulted in the erroneous prediction that it would act like a “huge sponge,” adsorbing any metals
9 liberated in the general embankment fill. (*Id.* at 10-0097, line 11, to 10-0098, line 21.)

11 216. The fundamental flaw is that Dr. Riley assumed the partitioning ratio (the ratio of
12 contaminants in soil particles compared to the ratio of contaminants in liquid) for particles
13 leaching from the fill could be reversed and used to model the adsorption of metals onto soil
14 particles in the drainage layer cover. Dr. Riley assumed that the adsorption process could be
15 modeled as the reverse of the leaching process.
16

17 217. However, Dr. Lucia pointed out that the two processes are different and should
18 have been modeled differently. The partitioning factor used for leaching should be high because
19 that number represents the separation of contaminants firmly and internally attached to soil
20 particles by geologic processes. (Lucia, Tr. at 10-0098, lines 13-15.) By comparison, the
21 partitioning factor for the absorption of metals onto soil particles in the drainage layer cover
22 should be significantly lower because that number represents the attachment of particles to the
23 outside surface of soil particles. (*Id.* at lines 18-21.) As a result, the partitioning factor for the
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1 absorption of metals was overestimated (and thus the ability of the drainage layer to adsorb
2 metals was overestimated) by an order of magnitude. (*Id.* at 10-100, lines 1-6.)

3 Seismic Risk

4 218. The Port proposes to construct three retaining walls to support portions of the fill
5 embankment and limit the extent of filling along Miller Creek. (Bailey Prefiled at 2-3 and Hart
6 Crower, Geotechnical Summary Report at 2, Ex. 154.) The largest of these is a monolithic,
7 mechanically stabilized earthen (MSE) wall 135 feet in height with an additional twenty-foot high
8 sloped embankment sitting at the top of the wall. (Kavazanjian, Tr. at 4-0149; and Kavazanjian
9 Prefiled at 3.) The height of the proposed MSE wall is equivalent to the height of a fifteen-story
10 office building and will stretch for approximately 1,500 feet at its highest point. (Kavazanjian, Tr.
11 at 4-0149 - 50; Kavazanjian Prefiled at 3; Bailey Prefiled at 9.)

13 219. The Puget Sound region, including SeaTac Airport, suffered a magnitude 6.8
14 earthquake on February 28, 2001. (Ex. 403 (Geosyntec Letter dated 3/15/01 regarding implications
15 of Nisqually Earthquake).) The Port proposes to construct the fifteen-story MSE wall in a
16 seismically sensitive area as evidenced by damage from the Nisqually quake at SeaTac Airport.
17 (*Id.*) With respect to the Nisqually quake, the Earthquake Engineering Research Institute warned
18 that “some of the media and official commentary have overly simplified the comparisons between
19 this event and similar magnitude events like the Northridge [California] earthquake. In this regard,
20 the much lesser damage from this event has the potential for lulling citizens and officials into a false
21 sense of security concerning seismic safety.” (*Id.*)

22 220. With this knowledge, the Port proposes to construct the MSE Wall based on a
23 seismic design event with a 10 percent probability of exceedance in 50 years (average return of 475
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1 years). (Bailey Prefiled at 1.) This equates to an average magnitude of 6.7 for the design
2 earthquake. (Kavazanjian, Tr. at 4-0174 - 175.) In contrast, the designers for the new Tacoma
3 Narrows Bridge use the more conservative 3% in 75 years design event with an average return of
4 2,500 years. (Kavazanjian Prefiled at 9.) Similarly, the design for a new Alaskan Way viaduct in
5 Seattle calls for use of the 3% in 75 years design event. (Kavazanjian, Tr at 4-0173 - 174.) The
6 Port's selection of the less protective "design earthquake" standard ignores the threat to aquatic
7 resources of a wall failure and the relatively long required service life of the embankment
8 compared to other less critical commercial structures. (Kavazanjian Prefiled at 18.)

9
10 221. Remarkably, the design of the MSE wall is not complete and is still evolving.
11 (Kavazanjian Prefiled at 3.) Substantial changes in design that create significant new
12 environmental impacts have been made since Ecology issued the 401. (*Id.*) The Port's analyses
13 of the soils beneath the proposed site of the MSE wall showed that the native soils were soft or
14 loose and would not provide a suitable foundation due to seismic shaking (termed "liquefaction").
15 (Bailey Prefiled at 3.) As a result, the Port proposed using in-ground "stone columns" to support
16 the MSE structure to avoid "an open excavation immediately adjacent to Miller Creek and
17 associated wetlands" and to avoid "any potential short-term impacts associated with temporary
18 construction dewatering." (Ex. 1244 at III-28; Kavazanjian, Tr. at 4-0159 - 60.) Now, reversing
19 course after studying stone column field tests, the Port concluded that better construction reliability
20 would be achieved by removing and replacing the soils, which were deemed poor for foundational
21 purposes, but which are part of the natural system through which water is currently supplied to
22 maintain area aquatic resources. (Hart Crowser November 2, 2001 Geotechnical Report at 33 (Ex.
23 154); Bailey Prefiled at 17; Kavazanjian, Tr. at 4-0159 - 161; Kavazanjian Prefiled at 6.) The
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1 excavation may well “encroach upon Miller Creek in some locations, requiring relocation of the
2 stream channel.” (Kavazanjian Prefiled at 6.) Discharge from the dewatering system represents
3 yet another undocumented impact of the recent design change. (*Id.*)

4 **5. GROUNDWATER AND WETLANDS FINDINGS OF FACT**

5 **MTCA Agreed Order Not Implemented**

6 222. The Des Moines and Miller Creek watersheds are notable for their groundwater
7 connections. (Strunk, Tr. at 9-0187; Azous Prefiled at 6; Azous, Tr. at 2-0145; Wang, Tr. at 6-
8 0104.) The majority of the existing wetlands west of the airport are hydrologically maintained
9 by groundwater and seeps that emanate from a shallow groundwater aquifer that daylights along
10 the western slope of the plateau that the Port proposes to fill. (Strunk, Tr. at 9-0187; Azous, Tr.
11 at 2-0145, 0173-174.)

12 223. There is no dispute that the groundwater immediately east of the proposed third
13 runway site and underneath the airport operations and maintenance area (“AOMA”) is
14 contaminated. Jet fuel, gasoline, industrial solvents, mineral spirits, lubricating oil and aircraft
15 deicing fluids are all found in the soil and groundwater within the AOMA. (Ex. 72 at 2.)

16 “Contaminated ground water is present in the perched water bearing zones in isolated areas of
17 the AOMA.” (Strunk Prefiled at 4; Strunk, Tr. at 9-0186-187.) “Ground water impacted above
18 Ecology Model Toxics Control Act (MTCA) standards are contained within the boundaries of the
19 AOMA in both the perched water bearing zone and the Qva aquifer.” (*Id.*; Wang, Tr. at 6-0104.)
20 The contaminated Qva aquifer flows generally to the west and northwest from the AOMA in the
21 direction of Miller Creek and the sloped wetlands. (Wang, Tr. at 6-084.) Contaminant fate and
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1 transport via groundwater can be a serious threat to any wetlands or streams dependent upon
2 ground water for recharge. (Strand, Tr. 4-200 and 201.)

3 224. As a result of the extensive contamination within the AOMA, Ecology negotiated
4 MTCA Agreed Order No. 97TC-N122 with the Port. (Ex. 72.) The Agreed Order requires the
5 Port to develop an actual model to predict groundwater flow and contaminant fate and transport
6 beneath the Airport. Governor Locke's formal certification to the U.S. Secretary of
7 Transportation, required pursuant to federal law, explicitly provides that completion of the
8 groundwater flow and contaminant fate and transport model was required in order for the State to
9 find, with "reasonable assurance," that the Third Runway Project would "comply with applicable
10 air and water quality standards." (Ex. 1085 at 2.)

11
12 225. Despite the Governor's certification, the 401 only directs the Port to prepare a
13 BMP construction and monitoring plan for utility corridors (Condition F.1), to train staff in the
14 detection of hazardous materials and contaminated soils and water (Condition F.2), and to update
15 the contaminant inventory (Condition F.3). The Certification never mentions the Governor's
16 commitment or the Agreed Order itself. Instead of requiring the Port during certification review
17 to identify the type and extent of contamination present, complete the contaminant fate and
18 transport modeling required by the Agreed Order and the Governor's certification, determine the
19 measures necessary to prevent the contamination from moving to nearby surface waters, and
20 prepare contingency plans that would be put in place should these measures fail, Condition F.1
21 of the Certification merely requires the Port to provide a future submittal. (Luster Prefiled
22 Testimony at 24.)
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1 226. In fact, the contaminant fate and transport model required under the Agreed Order
2 is still not complete, although its completion is long since overdue under the Order itself.
3 (Wang, Tr. at 6-0101; Strunk, Tr. at 9-0190 - 191.) Rather than require the Port to complete the
4 fate and transport model, Ecology accepted a superficial Preferential Pathways Analysis (“PPA”)
5 of the potential for existing groundwater contaminants to migrate to and be impacted by Third
6 Runway and embankment construction. (Ex. 1254.) The conclusions in the PPA are based upon
7 a “conceptual understanding of the geologic conditions at the airport,” whereas the Agreed Order
8 requires a completed numeric model of the fate and transport of contaminants. (Strunk, Tr. at 9-
9 0188 - 189; and Ex. 72.)

11 227. Rather than use groundwater quality criteria as the measuring stick, the PPA uses
12 MTCA Method A and B groundwater cleanup levels. (Strunk, Tr. at 09-199.) And, while the
13 location of contaminants is known in some instances and not known in others, the PPA fails to
14 consider the impact of embankment and wall subgrade improvements and dewatering on
15 groundwater flow and contaminant fate and transport. (Ex. 1254; Wang, Tr at 6-0102; and
16 Kavazanjian Prefiled Testimony at 7.)

18 228. The PPA also fails to address the impact of borrow site excavation on the fate and
19 transport of contaminants in the Qva aquifer. (Wang, Tr. at 6-0102.) In addition, the PPA fails
20 to address whole categories of pollutants, particularly organic solvents, metals and glycols that
21 are suspected to lie beneath the airport. (Ex. 1254.)

23 229. Of particular note, although the PPA concludes that the proposed third runway
24 construction “should not create a preferred pathway for the existing Qva contamination in the
25 AOMA to migrate to the third runway area” (Ex. 1254 at 10), the PPA comes to this conclusion

1 without analyzing at all whether the drainage layer underneath the embankment will be a
2 preferential pathway for contaminants. (Strunk, Tr. at 9-0188.)

3 **Loss of Wetlands and Functions Not Replaced or Mitigated**

4 230. Legal Issue 19 puts before the Board the question of whether the Port's wetland
5 mitigation proposal incorporated into the 401 Certification provides reasonable assurance of
6 compliance with water quality standards. Over twenty acres of wetlands would be permanently
7 lost (the overwhelming majority through fill) as part of the Port's proposal. The project would
8 also require the relocation of an approximately 1000 foot portion of Miller Creek. The Port's
9 proposal to mitigate these impacts is contained in the Natural Resources Mitigation Plan
10 ("NRMP").¹⁹ (See Ex. 2014.)

11
12 231. Approximately 30 acres of wetland mitigation is proposed at a site several miles
13 away, near Auburn, along the Green River (the "Auburn Offsite Mitigation"). (Sheldon,²⁰ Tr. at
14 10-0072, lines 1-5; Stockdale, Tr. at page 6-197, lines 7-14.) The Green River basin is not in the
15 same hydrologic or biologic watershed as Miller, Walker or Des Moines Creeks. Stockdale, Tr.
16 at 6-0197, lines 7-14.) Although within the same administratively defined Water Resource
17 Inventory Area ("WRIA"), the Green River watershed is approximately 309,000 acres, compared
18 to the approximately 5,000 acre Miller Creek watershed. (*Id.*; Sheldon, Tr. at 10-0071, lines 2-8.)
19 Given the difference in size of these basins, the loss of 20-plus acres of wetlands in the Miller
20 Creek Basin has a much greater relative impact than could be offset with 30 acres of mitigation
21
22

23
24 ¹⁹ Significantly, changes were made to the NRMP in November 2001 which have yet to be formally adopted by
Ecology. Ann Kenny Tr. 1-137, lines 18-24.

25 ²⁰ During Cross examination Ecology's Erik Stockdale acknowledged that Ms. Sheldon was Ecology's first choice
as an expert to review the NRMP. Erik Stockdale Transcript, page 6-0195, line 23 through page 6-196, line 2.

1 in the 309,000 acre Green River basin. (Sheldon, Tr. at 10-0071, line 15 through page 10-72,
2 line 5.)

3 232. Although mitigation out of a biologic or hydrologic watershed is permissible for
4 infrastructure development (provided it is within the same WRIA), Ecology is “not required to
5 grant approval to a mitigation plan that the department finds does not provide equal or better
6 biological functions with the watershed or bay.” RCW 90.74.020(2). Here the Board finds that
7 the Third Runway proposal, and, consequently the NRMP, does not provide better or equal
8 biological functions.
9

10 233. The Port’s proposed in-basin mitigation is not “in-kind” (it does not mitigate for
11 the appropriate types of wetlands that would be lost), nor does it mitigate lost wetland function.
12 Ms. Amanda Azous, a wetland scientist testifying on behalf of appellants, testified that
13 approximately 21% of the total riparian wetlands in the Miller Creek watershed would be
14 eliminated. (Azous, Tr. at 2-0130, lines 12-18.) There is no proposal in the NRMP to create
15 riparian wetlands in Miller Creek basin to mitigate this impact.
16

17 234. Importantly, the Port’s mitigation proposal does not mitigate for lost wetland
18 function because the focus of the mitigation offered is on flood storage at the expense of other
19 wetland functions. (Azous Prefiled Testimony at ¶¶ 8-9.) For example, the highest-ranking
20 wetland functions being eliminated from the watershed in the greatest proportion are nutrient
21 sediment trapping (76% of the wetland acres), groundwater discharge/recharge (71%), habitat for
22 small mammals (70%), and passerine bird habitat (68%). (*Id.* at ¶ 8.) Fifty percent are highly
23 valued for export of organic material, 48% are ranked moderate-to-high for providing amphibian
24 habitat, and 43% are ranked moderate-to-high for anadromous fish habitat. (*Id.*)
25

1 235. Significantly, 92 percent of the eliminated wetlands are low-to-moderate for
2 waterfowl habitat, and 80 percent are low-to-moderate for flood storage. (*Id.* at ¶ 9.) Yet they
3 are targeted for replacement in the NRMP. (*Id.*; see also Ex. 2014 (NRMP) at Table 1.3-1 and
4 pages 1-1 and 1-2.)

5 236. Just over 50 acres (50 % of the in-basin mitigation acres) will be enhanced
6 “upland buffer” area. (Azous Prefiled Testimony at ¶ 11.) Twenty-one acres (21 %) of the in-
7 basin mitigation proposal is enhancement of existing wetlands. (*Id.*)

8 237. Miller Creek would receive buffer protection under either the Sea-Tac Municipal
9 Code (§ 15.30.340) or under the King County Code (§ 21A.24.360) Miller Creek is already
10 effectively buffered from new development to a distance of 100 feet by these regulations.
11 (Azous Prefiled Testimony at ¶ 14.) As a result, the Port’s proposal to provide a buffer of an
12 average of 100 feet along Miller Creek adds no protection to these resources beyond the
13 protection of existing regulations. (*Id.*)

14 238. A key component of the Port’s mitigation proposal is 50.66 acres of upland buffer
15 enhancement, but such upland riparian buffers cannot replace the functions provided by
16 wetlands. Amanda Azous Prefiled Testimony at ¶ 17. (Sheldon Prefiled Testimony at ¶¶ 22,
17 31.) Wetlands and streams are aquatic resources and provide functions that are uniquely
18 different from terrestrial resources such as upland riparian buffers. (Azous Prefiled Testimony at
19 ¶ 17.) Just as it would be senseless to trade upland buffer for allowing the filling of a creek,
20 upland buffer cannot be justifiably traded for filling wetlands. Buffers are intended to protect
21 aquatic resources not replace them. *Id.*

1 239. The key to the difference in functions provided to the watershed by upland buffers
2 as compared with aquatic resources is the presence of water. *Id.* at ¶ 18. Water provides the
3 conditions allowing a whole host of chemical and biological processes to occur that are not
4 found in terrestrial environments. *Id.*

5 240. Riparian buffers may be an appropriate component of a wetlands mitigation plan,
6 but only as an adjunct to meeting the baseline criteria of no-net loss of aquatic resources.
7 Amanda Azous Prefiled Testimony at ¶ 22. No-net loss is measured in both acreage and
8 function, so in order to achieve no net loss in acreage, projects must, *at minimum*, restore or
9 create an equal area of wetland. *Id.* Enhancement activities and upland preservation should not
10 be used in exchange for the baseline acres and are not a substitute for replacement of actual
11 wetland losses. *Id.*

12 241. Ecology wetlands scientist Erik Stockdale acknowledged before the Board that
13 the NRMP does not provide any in-basin wetland creation. Erik Stockdale transcript 6-0197,
14 lines 17-19.

15 242. Testimony before the Board confirmed that there were opportunities for in-basin
16 mitigation that were apparently overlooked because they were smaller in size. For example, Ms.
17 Azous identified one of these in-basin mitigation opportunities as the headwater wetland in the
18 Walker Creek basin. (Azous, Tr. at 2-0175, lines 17-21; at 2-0178, lines 9-11 (colloquy with
19 Board member Lynch).) Mr. Stockdale also acknowledged on cross-examination that there were
20 in-basin mitigation opportunities in Walker, Miller, and Des Moines Creek basins that had not
21 been pursued and that Mr. Stockdale had documented the Port's failure to pursue all in-basin
22 mitigation opportunities in a February 2000 memorandum. (Stockdale, Tr. at 6-0196 at lines 8-
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24
25

1 21; Ex. 173.)

2 243. The Port proposes as its key in-basin mitigation site 6.6 acres of what is known as
3 the Vacca farm property. The Port gives itself too much credit for this portion of the mitigation
4 proposal by treating the Vacca Farm site as a “restoration” project when it is, at best, an
5 enhancement project. The Department of Ecology publication 92-08 (1992), Wetland Mitigation
6 Ratios: Defining Equivalency, (at p. 14) explains the difference between wetland restoration,
7 creation and enhancement:
8

9 244. Wetlands restoration refers to the reestablishment of a wetland in an area where a
10 wetland historically existed but which now performs little or no wetland functions. Wetlands
11 creation refers to the construction of a wetland in an area that was not a wetland in the recent
12 past. Enhancement refers to increasing one or more functions of an existing wetland.

13 245. The ratios are useful tools in assessing whether aquatic resources are truly being
14 replaced, although they are only one tool because the acreage numbers utilized do not speak to
15 replacement of wetland functions.
16

17 246. For purposes of the NRMP, the Vacca farm mitigation has been designated
18 “restoration” and given a 2 to 1 credit. (Azous, Tr. at 2-0142, lines 21-24.) The Port claims it is
19 restoring 6.6 acres of Vacca Farm in Table 4.1-3 (12.3 acres is reported in Table 4.1-2) of the
20 NRMP (Ex. 2014). Without Vacca Farm, the Port is only proposing 3.3 acres of in-watershed
21 replacement of wetlands. (Azous Prefiled Testimony at ¶ 23.)
22

23 247. The characterization of Vacca Farm mitigation (and mitigation credit given) has
24 shifted over time. For example, although now given 2:1 mitigation credit as restoration,
25 Ecology’s Mr. Stockdale admitted that he had previously taken the position that Vacca farm was

1 only entitled to a more modest 4:1 enhancement credit. (Stockdale, Tr. at 6-0199, line 4 through
2 page 6-0200, line 17.) Mr. Stockdale acknowledged a February 2000 memorandum he drafted
3 (Ex. 173) where he stated that Vacca Farm would “need to be included in the enhancement
4 category for ratio calculation.” (See also Stockdale, Tr.at 6-0199, lines 4-14.)

5 248. Vacca farm cannot be given restoration credit because it is already a jurisdictional
6 wetland under the Department of Ecology’s guidelines. (Stockdale, Tr.at 6-0199, lines 4-14;
7 Azous, Tr. at 2-0143, lines 2-6.) Further, the characterization of Vacca farm mitigation as
8 restoration is inconsistent with the prior sworn testimony offered in King County Superior Court
9 (*Port of Seattle v. RST Enterprises*, Cause No. 99-2-26788-5) by the Port’s wetlands consultant,
10 Dr. James Kelly, in which he stated that Vacca farm was (already) a functioning wetland.
11 (Sheldon, Tr.at 10-0077, line 25 through page 10-79, line 17; *see also* Sheldon Prefiled
12 Testimony, Attachment D.)
13

14 249. The NRMP would also give the Port 3.3 acres of mitigation credit for the entirety
15 of Lora Lake. Yet, no mitigation activity is planned within the lake itself. (Sheldon, Tr. at 2-
16 0233, line 23 through 2-234, line 5.) The mitigation credit is apparently based on removal of
17 bulkheads and old structures or lawn from the lake’s perimeter. (Ex. 2014, at 5.1.3.7 (page 5-
18 50); Sheldon, Tr. at 2-0199, line 25 through 2-0200, line 21.)
19

20 250. Even assuming the mitigation proposed otherwise appeared sufficient from an
21 arithmetic replacement ratio context, the Port failed to prepare a proper functional assessment
22 necessary to determine whether existing functions can be maintained. A functional assessment is
23 a method used to evaluate and quantify the functions that wetlands afford. (Azous, Tr. at 2-0133,
24 lines 16-18.) It is axiomatic that, to determine whether a wetland mitigation plan is consistent
25

1 with water quality standards, it is first necessary to know what functions will be lost so as to then
2 accurately assess whether those functions, which support beneficial uses will be effectively
3 replaced. (*Id.*; see also Ex. 1266, at p. D-13.) The Port's wetland functional assessment falls
4 short in this regard as well. Although there are peer-reviewed methods available for performing
5 functional assessments, the Port admittedly did not use one of these methods. (Azous, Tr. at 2-
6 0134, lines 16-23.)

7
8 251. During the hearing, Ecology's wetlands consultant Katie Walter acknowledged
9 that leading treatises in the field of such as "Compensating for Wetland Losses Under the Clean
10 Water Act" from the National Research Council cautioned against the use of subjective best
11 professional judgment in assessing wetland functions and instead advocated for science-based
12 rapid assessment procedures. (Walter, Tr. at 6-0117, line 1, to 6-0120, line 4.) Yet, as Ms.
13 Walter acknowledged, the wetland functional assessment by the Port's consultant was largely
14 based on best professional judgment and not upon a replicable functional assessment method.
15 (Walter, Tr. at 6-0121, lines 4-11.) ACC's Ms. Sheldon also confirmed that the Port's failure to
16 utilize an established or replicable functional assessment method was, based on her twenty years
17 of experience in regulating and working with wetlands in Western Washington, a significant
18 flaw. (Sheldon Prefiled Testimony, ¶ 52.)

19
20 252. Among others, the Port did not use the Washington Functional Assessment
21 Method or WFAM method (Sheldon, Tr. at 10-0068, lines 19 though 10-0069, line 25), which it
22 suggests was not available when the Port was preparing its functional assessment. However, as
23 Ms. Sheldon (who was involved in preparation of WFAM) noted, the draft document describing
24 the WFAM method was generally available for use in 1998. (Sheldon, Tr. at 10-0069, lines 6-8.)
25

1 The Port's Dr. Kelley acknowledged (prefiled testimony at ¶ 2) that he was trained in the
2 development of the WFAM method in 1997 . Finally, Dr. Kelley (prefiled testimony at ¶ 21)
3 indicates that at least one of the assessment methods which he did refer to was not available until
4 2000. (Sheldon, Tr.at 10-0069, lines 19-25.)

5 253. The other excuse offered by the Port for not using an established functional
6 assessment was that many of the wetlands are sloped wetlands. Even if this were an obstacle to
7 use of a replicable method, 40% of the wetlands involved are depressional wetlands for which
8 Ecology has recognized that the WFAM method is an acceptable method. (Azous Prefiled
9 Testimony, Ex. G.) Yet this method was not used.

11 254. Because the Port did not use a peer-reviewed published methodology for its
12 functional assessment, it is not possible for other wetland scientists to replicate and confirm the
13 Port's assessment. (Azous, Tr. at 2-0140, lines 24 through 2-0135, line 7.) Nor has the Port
14 allowed access to the site necessary for an independent assessment of the large number of
15 affected wetlands. The completed functional assessment forms for all of the affected wetlands
16 are not part of the NRMP or its appendices. (Sheldon, Tr. at 10-0067, lines 3-10.) In fact,
17 Ecology reviewer Katie Walter admitted that she did not have or review any supporting
18 documentation or data sheets to support the Port's functional assessment. (Walter, Tr at 6-0121,
19 line 12 through page 6-0123, line 19.)

21 255. Dyanne Sheldon testified concerning her review of some completed Port
22 functional assessment forms which had been obtained from the Army Corps of Engineers.
23 Sheldon, Tr. at 10-0067, lines 16-24; *see also* Ex. 805.) Rather than assessing individual wetland
24 functions, as is the norm, the forms Ms. Sheldon reviewed each lumped together review of three
25

1 distinct wetlands. Ms. Sheldon explained that a proper functional assessment could not be
2 performed – or reviewed – on that basis . (Sheldon, Tr. at 10-67, lines 18-24.)

3 256. The Port also failed to provide sufficient baseline information about wetland
4 hydrology (the hydroperiod) to determine whether existing beneficial uses could be maintained.
5 The hydroperiod is the water depth over time in an area and is used to understand the
6 relationship between water in a wetland and the biological communities that result from it.
7 (Ex. 1266, p. D-13; Azous, Tr. at 2-0144, lines 18-21.) Hydroperiods, even for sloped wetlands,
8 can be measured over time and be used to determine the depth to saturation seasonally and
9 monthly. Knowing the hydroperiod is important because the variations in the hydroperiod
10 determine the range of species that can tolerate the conditions. (*Id.* at 2-146, lines 1-3.) Without
11 hydroperiod data to understand baseline conditions, it would be impossible to determine whether
12 or not the mitigation measures proposed in the NRMP are truly mitigating the impacts of the
13 proposal.
14

15
16 257. At the hearing, it was suggested that it was not possible to more fully assess
17 wetland hydrology and that such an assessment is typically not done. However, the National
18 Academy of Sciences’ treatise “Compensating Wetland Losses Under the Clean Water Act”
19 (Ex. 2178) and the Department of Ecology itself in its August 2001 Stormwater Management
20 Manual (Ex. 1266) both support Appellants’ contentions. The Academy of Science states that:

21
22 Basic to all wetland restoration and creation projects is the need to set goals for each site’s
23 hydrological conditions. Hydrology is most often cited as the primary driving force
24 influencing wetland development, structure, function, and persistence. (citations omitted)
25 Consequently, establishment of the appropriate hydrology is fundamental to wetland
mitigation whether through restoration or creation.”

1 (Ex. 2178 at p. 104.) Further the August 2001 Stormwater manual specifically calls for
2 documentation of the existing hydroperiod as a means of providing protection from “adverse
3 impacts of Modified Runoff Quality Discharge to Wetlands.” (Ex. 1266, p. D-13.) According to
4 the Ecology manual, “protection of wetland plant and animal communities depends on
5 controlling the wetland’s hydroperiod.” (*Id.*)
6

7 258. In addition to filling wetlands, construction of the third Runway would require the
8 relocation of approximately 1,000 feet of Miller Creek. It is unlikely that this relocation can be
9 completed in a manner that would preserve all existing beneficial uses. (Sheldon Prefiled
10 Testimony at ¶ 42 and Attachment M.)

11 259. As Ms. Sheldon testified, the gradient of a stream has a strong influence on the
12 habitat that the stream can provide as the gradient is the dominant factor in oxygenating of
13 streams. The oxygenation of the water has an influence on the functional value for aquatic
14 species and vertebrates and fish in particular. (Sheldon, Tr. at 2-0211, lines 3-9.) Over the
15 thousand feet of proposed relocation of Miller Creek, there is less than two feet of elevation
16 drop. (Sheldon transcript 2-210, lines 3-5.)
17

18 260. Ms. Sheldon’s testimony regarding the unlikely success of the relocation of Miller
19 Creek was also based upon a memorandum from one of the Port’s own consultants, Paul Tappel.
20 (Sheldon Prefiled Testimony, Attachment M.) Ms. Sheldon quoted from that memo the
21 following:
22

23 The very low stream channel gradient means there won’t be any pools really, and silt and
24 sand deposition are inevitable...The generic text implies that the stream will be converted
25 into substantially higher quality trout habitat; I don’t know how you can do that (given site
constraints)...

1 (Id. at p. 2.)

2 261. The proposed relocation of Miller Creek would be so extraordinarily flat that it
3 would not provide functional value for aquatic creatures in the streams and thus the proposed
4 relocation of Miller Creek and the NRMP do not provide reasonable assurance of compliance
5 with water quality standards.

6 **6. MONITORING FINDINGS OF FACT**

7
8 262. The 401 Certification relies on future (post-construction) monitoring as a basis for
9 its claim of reasonable assurance that water quality standards will not be violated. However,
10 such reliance is misplaced. In significant respects, the monitoring conditions fail to address
11 fundamental prospective uncertainties and offer no specific enforceable requirements in the
12 event that monitoring data indicate that water quality standards are being violated.

13 263. For example, Condition E of the 401 Certification (at p. 19) includes only
14 permission rather than a requirement to take undefined actions based on post-construction
15 monitoring :

17 Groundwater down gradient from the fill shall be monitored for compliance with
18 applicable groundwater criteria . . . In the event monitoring detects exceedences of the
19 water quality criteria in either surface or groundwater; Ecology **may** revise the fill
criteria and/or require corrective action. (emphasis added).

20 264. Further, the 401 Certification only requires this monitoring to be performed for a
21 period of eight years. (401 Certification Condition B, p. 4.) As ACC expert Dr. Lucia pointed
22 out, it could be years following construction of the embankment -- which itself will take years to
23 construct -- before water begins infiltrating through it. Lucia Prefiled testimony at ¶¶ 19 and 22.)
24 Thus, as the Certification is currently written, monitoring of the embankment seepage could be
25

1 discontinued before the embankment has even reached equilibrium and begun discharging water
2 in a steady state. (*Id.*)

3 265. There is a similar requirement in 401 Certification Condition F(1) (pp. 19-20) to
4 monitor the potential fate and transport of known contaminants beneath the AOMA that could
5 migrate to other parts of the Airport via subsurface utility lines or other preferred pathways. At
6 the hearing, Ching-Pi Wang, an engineer in Ecology's Toxics Clean-Up Program, testified that
7 he was primarily responsible for drafting that monitoring plan. (Wang, Tr. at 6-0102, lines 15-
8 17.) On cross-examination, Mr. Wang admitted that his draft of Condition F(1) did not include
9 any durational limit. (Wang, Tr. at 6-0103, lines 8-10.) In fact, Mr. Wang expressed his opinion
10 that "the duration should be indefinite; as long as the contaminants are there monitoring should
11 continue." (Wang, Tr. at 6-0105, line 24, to 6-0106, line 3.) Condition F(1) does not specify
12 what corrective action can or even could occur to address the transport of these contaminants
13 when they are detected by the monitoring that is required.
14

15 266. The 401 Certification is also deficient in that it failed to require pre-construction
16 baseline data and hydrologic monitoring (Condition D(1)(g) at p. 7) necessary to determine
17 whether all existing beneficial uses will be maintained, as is required under the state water
18 quality standards. WAC 173-201A-070(1). The August 401 Certification required "hydrologic
19 monitoring during the wet season, November through May, before construction and for at least 3
20 years after completion." Ex. 2, p. 7 (emphasis added). By comparison, the September 401
21 Certification (Ex. 1 at p. 7) states that "the Port shall immediately begin conducting twice
22 monthly hydrologic monitoring during the wet season, November through May, and shall
23 continue such monitoring for at least three (3) years following construction." Thus, the 401
24
25

1 Certification was amended to delete the reference to hydrologic monitoring “before
2 construction.” (*See* Stockdale Deposition, page 185, lines 19 -24.)

3 267. This change was likely made because, as the Port has already commenced placing
4 embankment fill materials in the upland watershed above groundwater fed wetlands, it was
5 deemed too burdensome to require the Port to stop and take the time to properly identify (as best
6 as could now be done) pre-construction conditions. (Sheldon Prefiled Testimony at ¶ 7.)

7
8 268. Without this pre-construction hydrology data, there is no reasonable assurance
9 that water quality and beneficial uses will be maintained. (*Id.*) Data regarding the pre-
10 construction hydroperiod (the frequency, depth and duration of water’s influence on a wetland) is
11 necessary to determine wetland function. (*Id.* at ¶ 5.) Hydroperiod data is necessary to
12 understand the relationship between water and a wetland and the biological communities that
13 result from it. (Azous, Tr. at 2-0144, lines 18-21.) Without hydroperiod data to establish
14 baseline wetland conditions, it is impossible to determine whether or not mitigation measures
15 proposed are effective and whether existing beneficial uses are being maintained. (Azous, Tr. at
16 2-0146, lines 1-3.)

17
18 269. Similarly, the 401’s hydrologic monitoring is not capable of ensuring that
19 hydrologic function will be maintained. The 401 Certification (Condition D(1)(k), page 8) only
20 requires as a performance standard that groundwater within wetlands be “within 10 inches of the
21 surface” between March and mid-April. The adoption of a “one size fits all” hydrology
22 performance standard is not appropriate because existing wetlands on the site have different
23 hydrology: for example, some have surface water two to three inches deep that flows all
24 through the winter. (Sheldon, Tr. at 2-0193, lines 20-23.) Thus, setting a performance standard
25

1 that only requires water to be present in wetlands at one point to a **subsurface** depth of ten
2 inches will not prevent a change in wetland hydrology, the driver of all wetland functions. (*Id.* at
3 2-0194, lines 2-7; at 2-0191, lines 5-9.)

4 270. Finally, the 401 Certification fails to require adequate baseline data regarding
5 project-area streams necessary to determine whether water quality standards will be met. As
6 ACC fisheries biologist Dr. John Strand explained in his prefiled testimony:
7

8 The Port's analyses of impacts for the proposed Master Plan update improvements are
9 inadequate because the Port has yet to undertake a quantitative survey of the fish and
10 other aquatic organisms found in the project's streams. In other words, the Port has
11 not established a baseline condition. In my opinion this is a critical deficiency
because the appropriateness of regulatory approval and mitigation must be assessed,
using this baseline, before approval of the proposed project can be granted.

12 (Strand Prefiled Testimony at ¶5.) The importance of such baseline information is affirmed by
13 the available data which suggest that there are fish and aquatic organisms to be protected in
14 project area streams, including coho and chum salmon which spawn and rear in Miller Creek,
15 Walker Creek, and Des Moines Creek; cutthroat trout; warm water fish species including yellow
16 perch, black crappie, largemouth bass, and pumpkinseed sunfish; Prickly sculpin; three-spined
17 stickleback; and crayfish. (Strand Prefiled Testimony at ¶ 4.) These represent beneficial uses
18 requiring protection under the antidegradation water quality standard which requires existing
19 uses to be maintained. WAC 173-201A-070(1).
20

21 7. PUBLIC PROCESS--NOTICE FINDINGS OF FACT

22 271. On October 25, 2000, the Port filed with the Department of Ecology and Army
23 Corps of Engineers the Joint Aquatic Resource Permit Application (JARPA) leading to this
24 appeal. (Ex. 1207.) Ecology and the Corps jointly published notice of the application on
25

1 December 27, 2000. The agencies jointly held a public hearing on January 26-27, 2001, and
2 public comments were accepted until February 15, 2001. (Ex. 2132.)

3 272. Ecology issued a 401 Certification and CZMA Concurrence Statement on August
4 10, 2001. (Ex. 2.) Airport Communities Coalition (ACC) filed its notice of appeal on August
5 23, 2001. ACC filed a motion for stay of the permit on September 12, 2001.

6 273. The Port of Seattle also filed a notice of appeal of the August 10 Certification on
7 September 10, 2001. As described above, the Port's appeal was resolved by Ecology's
8 withdrawal of the August 2001 certification and issuance on September 21, 2001, of a new
9 modified 401 Certification and CZMA Concurrence Statement. (Ex. 1.) As a result, there was a
10 brief period when no certification existed. (Hellwig Dep. at 245.) Ecology believed it had
11 issued a sound 401 Certification on August 10. (Fitzsimmons Dep. at 102-03, 106; Hellwig Dep.
12 at 197; Ex. 98; Kenny, Tr. at 1-0114.) Nonetheless, between August 10 and September 21, when
13 Ecology rescinded the August certification and issued a new one, Ecology and the Port engaged
14 in private negotiations to arrive at the modified 401 Certification conditions. (Kenny, Tr. at 1-
15 0115 to 1-0126; Hellwig Dep. at 215-16, 232-; Ex. 99; White Dep. at 122, line 16 to p. 123, line
16 11; Fitzsimmons Dep. at 109-10, 112-13.) Neither party, however, disclosed to the Board or
17 ACC that such negotiations were taking place. (Hellwig Dep. at 217-18; Ex. 99.) Neither before
18 or after Ecology rescinded the August 10 Certification and issued the new one (with modified
19 conditions as requested by the Port) did Ecology publish notice of or solicit public comment on
20 the proposed amendments, nor did the agency advise the public that it was engaged in a new
21 application review process with the Port. At the same time, although it is not regular practice for
22 the Governor's Office to contact Ecology concerning the timeframe for a Section 401 or 402
23
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25

1 action (Fitzsimmons Dep. at p. 28, lines 13-17), Ecology Director Fitzsimmons was contacted by
2 the Governor's staff between five and seven times during August and September 2001 regarding
3 the Port's 401. (Fitzsimmons Dep. at p. 108 (line 11) - p. 109 (line 14).)

4 274. Over the years, the U.S. Environmental Protection Agency has taken a specific
5 interest in the Third Runway Project and submitted comment letters on the environmental impact
6 statements and to the Army Corps of Engineers in response to the revised project JARPAs. (Exs.
7 766, 618, 510.) However, no approval was obtained for the 401 modifications from the
8 Environmental Protection Agency's Regional Administrator. (Hellwig Dep. at 75-76.)

9 275. Notwithstanding the lack of public process, significant changes were made to the
10 Certification between August 10 and September 21. For example, the September Certification
11 reduces the duration and scope of its application to the Third Runway Project, and alters
12 standards for receipt and use of contaminated fill materials. (Exs. 1, 2; Kenny, Tr. at 1-0127 to
13 1-0134, Kenny Dep. at 148-150.) It exempts aspects of the proposal that had previously been
14 identified, in the October 2000 JARPA, as parts of the project regulated by the 401 (Hellwig
15 Dep. at 238-39, 248-50), but does so in terms so broad that, even months later, Ecology still was
16 unable to determine which projects were covered and which were not. (Hellwig Dep. at 239-40;
17 Kenny; Tr. at 1-0160 to 1-0161.) Further, it alters conditions for maintaining wetland hydrology,
18 eliminating a requirement for "preconstruction" monitoring that the Port had found troublesome.
19 (Compare Condition D(1)(g) in August 401 Certification (Ex. 2, p. 7) with same condition in
20 September 401 Certification (Ex. 1, p. 7).)

21 276. The September 2001 certification was the first 401 certification issued by Ecology
22 for the Third Runway Project without submission of a new JARPA and an opportunity for public
23
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1 comment. The Port's original application was filed in 1996, underwent public hearing in April
2 1998, and was circulated for public review and comment. (Ex. 2132.) Ecology issued a 401
3 Certification in 1998; however, the Port appealed that decision and it was eventually withdrawn.
4 *See Port of Seattle v. Ecology*, PCHB Nos. 98-105, 98-150. The Port re-applied for a 401
5 Certification in September 1999. A public hearing was held in November 1999 and public
6 comment was received. (Ex. 2132.) In September 2000, facing denial of Certification by
7 Ecology, the Port withdrew the application. (Hellwig Dep. at 102; White Dep. at 53-60; Kenny,
8 Tr. at 1-0104 to -0105; Exs. 121, 122.) The JARPA leading to the August 2001 certification was
9 filed in October 2000, following the Port's withdrawal of its 1999 application, and as noted
10 above, underwent public notice, review and comment. (Exs. 1207, 2132).

11
12 277. Ecology officials were fully aware that they were by-passing public process in
13 rescinding the August 401 and then issuing a new, modified one without a new application,
14 public notice, or opportunity for comment on the Port's proposals for modification. (Hellwig
15 Dep. at 249-50; Fitzsimmons Dep. at 113-14.) In fact, it was the original intent of the agency to
16 replace the August 10 Certification with a negotiated settlement agreement and entirely avoid
17 issuance of a new certification. (Hellwig Dep. at 244.) Ecology believed the "continuance of the
18 appeal" afforded the public whatever process it needed. (Hellwig Dep. at 247.) The Port did not
19 submit a new JARPA, even though it had previously been required to do so when prior 401
20 applications failed or prior certifications were withdrawn. (Hellwig Dep. at 244-46.)

21
22 278. Ecology in effect accepted a new application, provided no notice for it, and issued
23 a 401 decision based on private discussions with the Port without giving the public (including the
24 appellants) opportunity to be heard before a new decision was made. (Fitzsimmons Dep. at 115.)
25

1 The only avenue open to the public was to appeal the revised 401 decision.

2 **8. COASTAL ZONE MANAGEMENT CONSISTENCY FINDINGS OF**
3 **FACT**

4 279. When it issued the amended 401 Certification on September 21, 2001, Ecology
5 also concurred with the Port's self-certification that the proposed MPU Projects are consistent
6 with Washington's approved Coastal Zone Management Program (CZMP). (Ex. 1 at 1.) The
7 CZMP is set forth in Managing Washington's Coast - Washington's Coastal Zone Management
8 Program, Department of Ecology Publication Number 00-06-029 (February 2001) (the CZMP).²¹
9 Ecology conducted no independent review to determine whether the Port's project is in fact
10 consistent with the enforceable policies of the Coastal Zone Management Act (CZMA), 16
11 U.S.C. §§ 1451-1464.²² Gordon White, Ecology's Shorelands and Environmental Assistance
12 Program Manager, who signed the 401 certification for Ecology, described the Department's
13 process for determining CZMP consistency as assuring that any necessary water quality,
14 shoreline management, and Clean Air Act authorizations have been obtained (White Prefiled
15 Testimony at 8 (¶ 22)), and reviewing "any SEPA documents submitted for the project to
16 determine whether SEPA has been completed[.]" (*Id.*) Ecology's CZMA consistency reviewer,
17 Ann Kenny, verified that the Port had: completed its SEPA review; obtained a shoreline
18 exemption for the Auburn mitigation site; obtained NPDES permits to cover stormwater
19 discharges at the Auburn and STIA sites; and had a discharge permit under the Clean Air Act.
20
21

22 ²¹ A copy of the CZMP is available on-line at: <http://www.ecy.wa.gov/biblio/0006029.html>.

23 ²² The enforceable policies of the Coastal Zone Management Act (CZMA), 16 U.S.C. §§ 1451-1464, include
24 the Shoreline Management Act, Ch. 90.58 RCW (SMA); the Clean Water Act, 33 U.S.C. §§1251 to 1387 (CWA)
25 and its State counterpart, Ch. 90.48 RCW; the Clean Air Act (CAA) and its State counterpart, Ch. 70.94 RCW; and
the State Environmental Policy Act, Ch. 43.21C RCW (SEPA). *See*, CZMP at 97, 100-01.

1 (Kenny Prefiled at 22-23 (¶ 46.)) Ms. Kenny also stated that compliance with the Clean Water
2 Act was determined when Ecology issued the 401. (*Id.*)

3 280. Ms. Kenny testified that Ecology's September 21, 2001, concurrency
4 determination was "a one-time decision" and that "there was no further work necessary on
5 Coastal Zone Management" after that date. (Kenny Dep. at 250.) Ms. Kenny specified that
6 Ecology did not make any determination of CZMA consistency with respect to any revised
7 design submitted to Ecology after September 21, 2001, including designs for structures in the
8 November, 2001 NRMP and the December, 2001 Low Flow Plan. (Kenny Dep. at 253.)

9 281. With respect to the Clean Water Act, the CZMA Certification relies on the Port's
10 application for water quality certification, but provides no additional information or data needed
11 to demonstrate satisfaction of the Clean Water Act's substantive requirements. (*See*, Ex. 2062.)
12 As a result, if the proposal is denied Section 401 certification for failure to provide reasonable
13 assurance of compliance with state water quality standards, then the Port's CZMA certification
14 must also fail.
15

16 282. The CZMA, in 15 U.S.C. § 1456(c)(3)(A), and its implementing regulations, in 15
17 CFR § 930.61, requires that public notice be given for consistency certifications for licensing or
18 permitting activities. (CZMP at 117.) In this case, Ecology's required CZMA Notice was issued
19 before the Port submitted its CZMA Certification. (Ex. 2132.) The Notice did not "announc[e]
20 the availability for inspection of the consistency certification" as required by 15 C.F.R. §
21 930.61(b). (Ex. 2132.) It could not have done so, as the Port did not submit its CZMA
22 Consistency Certification until January 11, 2001 -- two weeks after the public notice issued. (Ex.
23 2062.)
24
25

1 283. In addition, the Certification did not provide the necessary data and information to
2 Ecology. (Ex. 2062.) Ecology's explanation that it had this information "on file" (Kenny Dep. at
3 239) would be of little assistance to an individual reviewing the Port's CZMA submittal. As the
4 course of this case has demonstrated, in many instances Ecology did not have necessary
5 supporting information "on file" even nine months later, when the September 401 Certification
6 was issued.
7

8 284. The Port did not submit a new CZMA application after August 10, 2001, and
9 Ecology did not issue a new public notice relating to the CZMA concurrency process.

10 285. In sum, Ecology issued a Public Notice for the CZMA determination before it had
11 even received the Certification from the Port. Ecology further failed to require the Port to submit
12 information adequate to demonstrate its compliance with the enforceable policies of the CZMA.
13

14 **VI. CONCLUSIONS OF LAW**

15 **A. STANDARD OF REVIEW**

16 286. Pursuant to WAC 371-08-485, this Board's "standard of review shall be *de novo*
17 unless otherwise provided by law." The Board has previously relied upon this *de novo* review
18 authority for purposes of reviewing a 401 certification and determining whether a project
19 complies with Washington water quality standards. *Barrish & Sorrenson Hydroelectric v. Dep't.*
20 *of Ecology*, PCHB No. 94-193 (1995), Conclusion 4 ("The Board must make a decision based on
21 the proposed project as it is presented to the Board at this hearing"). However, in *Barrish &*
22 *Sorrenson Hydroelectric*, which involved a project far smaller in scope and complexity than the
23 proposal here, the parties did not address, nor did the Board consider or analyze, how the
24
25

1 Board's *de novo* review of 401 certifications is limited as "otherwise provided by law." WAC
2 371-08-485.

3 287. In *Okanogan Highlands Alliance, et al. v. Department of Ecology*, PCHB Nos.
4 97-146, 97-182, 97-183, 97-186, and 99-019 (hereinafter "*OHA*"), the Board noted the late
5 submission of information by respondents as confirming the uncertainty precluding upholding
6 the 401 there. However, *OHA* did not directly address how the Clean Water Act's requirement
7 that the State must have reasonable assurance before it can issue a 401 certification defines the
8 scope of the Board's *de novo* review for an even more complex project such as the Third
9 Runway, where there are material variations between the record before Ecology at the time of
10 certification and what respondents have subsequently presented to the Board. The question this
11 Board must now answer is whether, consistent with the mandate for 401 certification in the
12 Clean Water Act, it reviews *de novo* Ecology's Third Runway Certification based upon the
13 record at the time Ecology issued the Certification, or whether its review can be based upon that
14 record **plus** post-certification data, plans and reports. We conclude that, because the Clean
15 Water Act and applicable federal regulations require Ecology to have reasonable assurance in
16 order to issue a legally defensible water quality certification, this Board's *de novo* review of 401
17 certifications must be based upon "as otherwise provided by law" the record before Ecology at
18 the time the Certification is issued. To hold otherwise would blur the distinction between
19 Ecology and the Board's statutory roles, ignore the requirements of the Clean Water Act, and
20 foster issuance of speculative and incomplete permits.
21
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23

24 288. The Washington Legislature designated the Department of Ecology (not the
25 Board) as the state water pollution control **agency** for purposes of the federal Clean Water Act .

1 RCW 90.48.260. In so doing, it mandated Ecology to take all action necessary for Washington
2 “to meet the requirements” of the CWA. *Id.*; *Dept. of Ecology v. Public Utility Dist. No. 1 of*
3 *Jefferson County*, 121 Wn.2d 179, 187, 849 P.2d 646 (1993) (“[S]ection 401 required Ecology to
4 certify that the Elkhorn project would not degrade fish habitat and spawning in the
5 Dosewallips.”) (emphasis added). Ecology’s role under Section 401 is to assure and certify
6 “compliance with state water quality standards.” *Dept. of Ecology*, 121 Wn.2d at 187.
7

8 289. In contrast, this Board was not established by the Legislature to do the work of
9 Ecology but rather was to provide “uniform, independent review” of Ecology actions. *Martin*
10 *Marietta Aluminum v. Woodward*, 84 Wn.2d 329, 332-33, 525 P.2d 247 (1974) (emphasis
11 added). As this Board has previously recognized, the Board “is wholly a creature of statute and
12 thus the scope of our reviewing authority is statutorily established.” *Tulalip Tribes of*
13 *Washington v. State of Washington*, PCHB No. 87-64 (1988), Order Granting Motion to Dismiss
14 Issues Concerning Tribal Treaty Rights at 2, *citing Human Rights Commission v Cheney School*
15 *District*, 97 Wn. 2d 118, 641 P.2d 143 (1982). The Board has also recognized that “the reach of
16 our reviewing authority is governed by the substantive requirements of the acts under which
17 permits, certificates or licenses are issued. No further power is expressed nor implied in our
18 jurisdictional grant.” *Id.*
19

20 290. In the context of the Clean Water Act and 401 certifications, the relevant
21 information upon which the Board must base its independent *de novo* review of Ecology’s action
22 is the record relied upon by Ecology to either grant or deny the Certification, including
23 explanations of that record as may be offered as evidence to this Board. This is so because, as
24 explained more fully below, the Clean Water Act and applicable federal regulations require that
25

1 Ecology must have reasonable assurance that the project will not result in a violation of state
2 water quality standards when Ecology certifies the project pursuant to Section 401 of the Act.
3 The very essence of a certification is that at the time of issuance “the state has reasonable
4 assurance that there will be compliance with water quality laws.” *OHA, supra*, Conclusion 63
5 (emphasis added), *citing Friends of the Earth v. Ecology*, PCHB No. 87-64 (1988).²³ As a result,
6 the Board’s *de novo* review is necessarily bounded by the CWA as “otherwise provided by law.”
7 WAC 371-08-485.

9 291. Of course, because it does have independent *de novo* review authority, the Board
10 is not bound by Ecology’s determination of reasonable assurance. *See, e.g., C.R. Johnson, Inc. v.*
11 *Dept. of Ecology*, PCHB 00-0121, Conclusion VIII (2000) (Board not bound, on *de novo* review,
12 by Ecology’s enforcement guidelines and gravity matrix for assessment of civil penalty for
13 discharge of pollutant into waters of the state).

15 292. While respondents Ecology and the Port acknowledge the *de novo* standard of
16 review, both argue that Ecology’s Certification is entitled to “great deference” by the Board,
17 citing, among other authorities, *Hillis v. Department of Ecology*, 131 Wn.2d 373, 396, 932 P.2d
18 139 (1997), *Federated American Ins. Co. v. Marquardt*, 108 Wn.2d 651, 656, 741 P.2d 18 (1987)
19 and *Kaiser Aluminum v. Dept. of Ecology*, 32 Wn. App. 399, 404, 647 P.2d 551 (Div. 2 1982).
20 None of these cases support the proposition. Neither *Hillis* nor *Federated* involved Board
21 review at all, and in *Kaiser*, the court did not address Board deference to Ecology, but stated that
22 an interpretation “by the agency which promulgated the regulation initially and concurred in by
23

24 ²³ *See* Order Granting Stay at 4; 40 CFR §121.2(a)(3); *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. 700,
25 712 (1994); *See* 33 U.S.C. §1341(a)(1), (d); *OHA, supra*, Final Findings of Fact, Conclusions of Law and Order
(January 19, 2000), Conclusion Nos. 62-65.

1 the Board, is entitled to great weight.” *Kaiser, supra*, at 404 (emphasis added). The deference
2 that the respondents now demand would be inconsistent with the Board’s independent role of
3 reviewing the evidence presented to Ecology to support the application. In any event, even if
4 deference applied, it would have its limits, since:

5 an agency’s view of the statute will not be accorded deference if it conflicts with the
6 statute . . . Ultimately it is for the court [or, in this case the Board] to determine the meaning
7 and purpose of a statute.

8 *Postema* 142 Wn.2d at 77.

9 293. Further, even if otherwise appropriate, deference is not called for here where the
10 record reflects a lack of constancy on Ecology’s part in reviewing the Port proposal, culminating
11 in the abrupt withdrawal of the August 2001 Certification and substitution of the September
12 version.

13 294. *De novo* means anew; afresh; a second time. *Black’s Law Dictionary*, 392 (5th ed.
14 1979). To maintain our independence and the integrity of our role as a quasi-judicial body
15 charged with the obligation to adjudicate actions of the Department of Ecology, this Board will
16 make its own independent assessment of the relevant information relied upon by Ecology in
17 granting or denying 401 certifications.

18 295. It must be clear to Ecology and future applicants that the Clean Water Act and
19 federal regulations require reasonable assurance before Ecology can certify that a proposed
20 project will comply with applicable water quality standards. As this Board has previously held,
21 significant uncertainty about project impacts and speculative mitigation plans cannot form the
22 basis of reasonable assurance. *OHA, supra*, at Conclusion 64. The Board is not the appropriate
23 place for applicants and Ecology to address significant uncertainties, incomplete assessments of
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1 impacts, and speculative mitigation plans for complex projects. If the Board were to assume
2 such a role, it would promote an environment in which Ecology would suspend disbelief,
3 deferring to the Board issues that must be resolved **prior** to issuance of a 401 certification.

4 296. Ecology and proponents of singularly complex projects should be aware that the
5 Board will not do their work or function as a repair shop for incomplete proposals or inadequate
6 certifications. The Clean Water Act and our legislative mandate require more.
7

8 **B. BURDEN OF PROOF**

9 297. In order to overturn a Section 401 certification, the Appellant "must establish by a
10 preponderance of the evidence that Ecology did not have 'reasonable assurance' the applicable
11 provisions [of the Clean Water Act and state water quality standards] would be complied with."
12 *Friends of the Earth v. Department of Ecology*, PCHB 87-64, Conclusion IV (1988); WAC 371-
13 08-485(2). "The applicable provisions include Sections 301, 302, 303, 306 and 307 of the Clean
14 Water Act, which deal with both effluent standards for discrete discharges and state-created
15 water quality standards for receiving waters." *Id.*
16

17 298. "Preponderance of the evidence means evidence that is more probably true than
18 not true." *In re Sego*, 82 Wn.2d 736, 746, 513 P.2d 831 (1973). "'Reasonable assurance' means
19 something is reasonably **certain** to occur. Something more than a probability; mere speculation
20 is not sufficient." *Airport Communities Coalition v. Dept. of Ecology*, PCHB No. 01-0160,
21 Order Granting Motion to Stay at 6 (emphasis added). Thus, in the context of this appeal, this
22 Board must be persuaded that it is more probably true than not true that Ecology did not have
23 reasonable certainty when it issued the 401 Certification that the proposed project would comply
24 with applicable provisions of the Clean Water Act and the state water quality standards. A bare
25

1 hope or expectation by Ecology that the applicant would do better in the future than it had in the
2 past, or that everything would work out in the end, is not sufficient to salvage a 401 certification:
3 it must have been based on a reasonable certainty born of more than a suspension of disbelief.

4 **C. 401 CERTIFICATION AND REASONABLE ASSURANCE**

5 299. The Port's proposed project to construct a third runway at Sea-Tac Airport will
6 result in substantial earth movement and discharges of pollutants into waters of the United
7 States. Pursuant to Section 404 of the federal Clean Water Act, the Port must obtain a Section
8 404 Permit from the Army Corps of Engineers before it can proceed with construction that will
9 result in discharges to the nearby streams and wetlands. 33 U.S.C. §1344. Before it can obtain a
10 Section 404 Permit from the Corps, however, Section 401 of the federal Act requires that the
11 Port obtain a water quality certification from the State that certifies that the proposed project will
12 comply with applicable state water quality laws. 33 U.S.C. §1341(a); *Dept. of Ecology v. Public*
13 *Utility Dist. No. 1 of Jefferson County*, 121 Wn.2d 179, 185, 849 P.2d 646 (1993).

14 300. Pursuant to RCW 43.21B.110, this Board has jurisdiction to decide appeals of
15 § 401 certifications issued by the Department of Ecology. "This appeal process is an integral
16 part of the State of Washington water pollution control laws." *Friends of the Earth*, PCHB No.
17 87-64, Dissent at IX. The Board conducts its review of Ecology's 401 certifications with an eye
18 toward furthering the stated objectives of the Clean Water Act, 33 U.S.C. § 1251, *et. seq.*, and
19 the State of Washington Water Pollution Control Act, RCW 90.48.010 *et. seq.*

20 301. The objective of the Clean Water Act is "to restore and maintain the chemical,
21 physical, and biological integrity of the Nation's waters." 33 U.S.C. §1251(a). Consistent with
22 the objectives of the CWA, Washington State's legislative enacted policy is:
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1 to maintain the highest possible standards to insure the purity of all waters of the state
2 consistent with public health and public enjoyment thereof, the propagation and protection of
3 wild life, birds, game, fish and other aquatic life, and the industrial development of the state,
4 and to that end require the use of all known available and reasonable methods by industries
5 and others to prevent and control the pollution of the waters of the state of Washington.
6 Consistent with this policy, the state of Washington will exercise its powers, as fully and as
7 effectively as possible, to retain and secure high quality for all waters of the state.

8 RCW 90.48.010.

9 302. In keeping with the legislative intent of both the CWA and the State Water
10 Pollution Control Act, this Board will aggressively enforce the State's anti-degradation policy:

11 Waters of the state shall be of high quality. Regardless of the quality of the waters of the
12 state, all wastes and other materials and substances proposed for entry into said waters shall
13 be provided with all known, available, and reasonable methods of treatment prior to entry.
14 Notwithstanding that standards of quality established for the waters of the state would not be
15 violated, wastes and other materials in the substances shall not be allowed to enter such
16 waters which will reduce the existing quality thereof, except in those situations where it is
17 clear that overriding considerations of the public interest will be served.

18 RCW 90.54.020(3)(b). The Board will invoke and enforce the state's anti-degradation policy "to
19 prevent a decline in existing water quality and to insure the application of 'all know available
20 and reasonable methods' to the treatment of discharges." *Friends of the Earth*, PCHB No. 87-
21 64, Conclusion IX.

22 303. In the context of section 401 certifications, the State's anti-degradation policy
23 dictates "reasonable assurance that any impacts to aquatic resources will be fully mitigated."
24 *Airport Communities Coalition v. Dept. of Ecology*, PCHB No. 01-0160, Order Granting Motion
25 to Stay at 4, *citing OHA, supra*.

304. Section 401 certifications must be based on a valid finding that "there is a
reasonable assurance that the activity will be conducted in a manner which will not violate
applicable water quality standards." 40 CFR §121.2(a)(3); *PUD No. 1 v. Washington Dept. of*

1 Ecology, 511 U.S. 700, 712 (1994). A section 401 certification means the state has reasonable
2 assurance there will be compliance with water quality laws. *Friends of the Earth*, PCHB No. 87-
3 64 (1988). As previously stated: "'Reasonable assurance' means something is reasonably
4 certain to occur. Something more than a probability; mere speculation is not sufficient." *Airport*
5 *Communities Coalition v. Dept. of Ecology*, PCHB No. 01-0160, Order Granting Motion to Stay
6 at 6. Reasonable assurance requires "specific knowledge of the potential impacts from the
7 development and meaningful means of preventing and protecting against the adverse
8 consequences of the development." *OHA*, at Conclusion 59.

10 D. SCOPE AND TIMING OF A § 401 CERTIFICATION

11 305. Section 401 of the Clean Water Act requires an applicant for a federal permit for
12 construction that will result in a discharge into navigable waters and wetlands to obtain from the
13 state where the discharge will occur a certification that the discharge will comply with applicable
14 water quality standards. 33 U.S.C. §1341(a). Under Section 401, Ecology has broad authority to
15 impose geographic, operational, and temporal limitations "on the project in general to assure
16 compliance with various provisions of the Clean Water Act and with 'any other appropriate
17 requirement of State law.'" *PUD No. 1*, 511 U.S. at 711-12. Section 401(d) of the Act also
18 authorizes the State to impose "additional conditions and limitations on the activity as a whole
19 once the threshold condition, the existence of a discharge, is satisfied." *Id.* at 712 (emphasis
20 added). This broad scope of Ecology's authority comports with EPA regulations expressly
21 interpreting Section 401 as requiring the State to find that "there is a reasonable assurance that
22 the activity will be conducted in a manner which will not violate applicable water quality
23 standards." *Id.*, citing 40 CFR §121.2(a)(3) (1993) (emphasis added).
24
25

1 306. Ecology itself has consistently and broadly defined the scope of its 401
2 certifications. In its brief to the United States Supreme Court in *PUD No. 1 v. Washington Dept.*
3 *of Ecology*, 511 U.S. 700, Ecology states: “[A]ll of the potential effects of a proposed activity on
4 water quality -- direct and indirect, short and long term, upstream and down-stream, construction
5 and operation -- should be part of a State's certification review.” *Id.*, Brief of Respondents at 16.

6 307. Ecology has previously taken this same expansive view of the scope of its 401
7 review jurisdiction in the context of the third runway project:
8

9 There are several reasons why Ecology believes it should and must condition the 401 to
10 ensure that the stormwater discharges from the entire airport meet the water quality
11 standards. The bottom line is that Sea-Tac Airport should not and cannot be operated in
12 violation of the water quality laws. With the redevelopment of the airport under the Master
Plan update, which includes construction of the third runway, Ecology believes that there is
not only a factual but a legal basis for considering the entire operation of the airport.

13 * * *

14 Ecology's position is that it has the authority to consider the applicability of the water quality
15 standards to the entire airport. The operation of the third runway is tied directly to and will
16 effect the use of the existing facility. The 401 application was for the Sea-Tac master plan,
which includes operation of the entire facility.

17 * * *

18 There is no question that the existing facility as well as the expansion and redevelopment
19 must meet water quality standards. If the existing facility is not retrofitted and the RDF is
20 not constructed, Ecology's position is that the airport can simply not meet water quality
standards, and the 401 could not be issued.

21 (Ex. 803 at 1-2 and 6 (September 10, 1998, Letter from Asst. Attorney General Tom McDonald
22 to Port attorney J. Tayloe Washburn).)

23 308. Moreover, Section 401 of the CWA explicitly provides that the scope of a 401
24 certification covers both construction activity and long-term operations of the facility. 33 U.S.C.
25

1 §1341(a). Thus, any consideration of whether the project will comply with applicable water
2 quality standards must consider not only short-term construction impacts, but also the potential
3 long-term impacts of operating the facility in the long-term.

4 309. The scope of a 401 certification is based upon both federal and state water quality
5 laws. Under Section 401 of the CWA, “[t]he applicable provisions include Sections 301, 302,
6 303, 306 and 307 of the Clean Water Act, which deal with both effluent standards for discrete
7 discharges and state-created water quality standards for receiving waters.” *Friends of the Earth*,
8 PCHB No. 87-64, Conclusion IV. State “water quality standards are composed of three
9 elements: numeric criteria for conventional pollutants and toxic substances, WAC 173-201A-
10 030(1)(c) and WAC 173-201A-040; narrative criteria protecting beneficial uses of state waters,
11 WAC 173-201A-030(1)(a) and (b); and an antidegradation standard. RCW 90.54.020(3) and
12 WAC 173-201A-070. Washington’s water quality standards include procedural and substantive
13 requirements for determining compliance.” *Airport Communities Coalition v. Dept. of Ecology*,
14 PCHB No. 01-0160, Order Granting Motion to Stay at 5.

15 310. The State’s scope of authority under Section 401 also encompasses “other
16 appropriate requirements of State law” to ensure that water quality standards are met. *PUD No.*
17 *1*, 511 U.S. at 711, *quoting* 33 U.S.C. §1341(d). In that regard, the State’s ground water quality
18 standards (WAC 173-200, *et. seq.*) and sediment management standards (WAC 173-204, *et. seq.*)
19 are critical adjuncts to the State’s water quality standards. (Kenny, Tr. at 1-0147 and 1-0157.)
20 Contaminant fate and transport via groundwater can be a serious threat to any wetlands or
21 streams dependent upon ground water for recharge. (Strand, Tr. at 4-0200 and 0201.) The goal
22 of the ground water standards “is to maintain the highest quality of the state’s ground waters and
23
24
25

1 protect existing and future beneficial uses of the ground water through the reduction or
2 elimination of the discharge of contaminants to the state's ground waters." WAC 173-200-
3 010(4).

4 311. Similarly, sediments in streams and other surface water bodies can be a sensitive
5 environmental receptor for pollutants that can have acute and chronic impact on water quality
6 and aquatic biota. *See, Allied Aquatics v. Dept. of Ecology*, PCHB No. 99-112, Conclusion VI.
7 The purpose of Washington's sediment quality standards "is to reduce and ultimately eliminate
8 adverse effects on biological resources and significant health threats to humans from surface
9 sediment contamination ..." WAC 173-204-100(2). The sediment quality standards require
10 that: (a) existing beneficial uses be maintained and protected from further degradation,
11 interference or injury; (b) existing sediment quality in ecologically significant waters be
12 preserved, and (c) to the degree that existing surface sediments are of a higher quality than
13 assigned by regulation, that quality should be preserved. WAC 173-204-120.

14
15
16 312. Given the inextricable link between ground water, sediments and water quality,
17 Ecology must consider within the scope of its 401 review and as part of any meaningful
18 reasonable assurance analysis the proposed project's potential impacts to groundwater and
19 sediments. Ecology's own Desk Manual for the 401 Federal Permit Team instructs that the
20 state's sediment standards "must be considered as part of 401 certification review" (Ex. 207, p.
21 45.), Ecology performed no such review for this proposed project. Ecology's investigation here
22 of potential impacts to ground water and sediments fell far short as demonstrated by the total
23 absence from the September 401 Certification of any reference to compliance with the state's
24 ground water quality standards or the sediment management standards
25

1 313. With respect to timing of a 401 certification, Section 401 of the CWA provides
2 that if the state “fails or refuses to act on a request for certification within a reasonable period of
3 time (which shall not exceed one year) after receipt of such request,” the State waives its
4 authority under Section 401. 33 U.S.C. § 1341(A). Here the Port filed its third request for
5 certification on October 25, 2000, after withdrawing its second request on September 28, 2000.
6 (Ex. 1207 (October 25, 2000 JARPA).) Ecology acted within the one-year statutory period by
7 re-issuing the 401 Certification on September 21, 2001, after rescinding the 401 Certification
8 issued on August 10, 2001. (Ex. 1.) Thus, the State of Washington has not waived any rights it
9 has under Section 401 of the CWA to determine whether the proposed third runway project will
10 comply with water quality standards.
11

12 **E. ISSUES PRESENTED TO THE BOARD**

13 **1. WATER QUALITY AND STORMWATER CONCLUSIONS OF LAW**

14 **a. Do the stated limitations on the temporal, operational, and geographic**
15 **scope of the Certification, including its limitation to “Port 404 projects,”**
16 **violate the requirements of Section 401 of the Clean Water Act and**
17 **applicable state water quality law? (Issue No. 3)**

18 314. The August 401 Certification explicitly included a condition that the certification
19 “shall be valid during construction and long-term operation and maintenance of the project.”
20 (Ex. 2, Condition B.1 at 3.) This condition was dictated by Section 401(a)(1) of the CWA itself
21 which defines the activity for which state certification is required to include “construction or
22 operation of the facilities.” 33 U.S.C. 1341(a)(1). (Luster, Tr. at 2-0068 - 69.) At the insistence
23 of the Port, which found certain conditions in the August certification to be “operationally
24 difficult,” Ecology revised the temporal and operational scope of the 401 Certification when it
25

1 rescinded the August Certification and issued a new one on September 21, 2001. (Kenny, Tr. at
2 1-0115.) The August Certification required that all of its conditions “shall be valid during
3 construction and long-term operation and maintenance of the project;” however, the September
4 version substantially cuts back the minimum duration of conditions relating to monitoring of
5 surface and ground water and contaminant transport to “in no event for a duration of less than
6 eight (8) years.” (Ex. 1, Condition B.1.c and B.1.d at 4.)
7

8 315. At the hearing, Ann Kenny admitted that the Port, under this revised language,
9 could stop monitoring for contamination in surface and groundwater after eight years. (Kenny,
10 Tr. at 1-0129 - 31.) She also admitted that these changes from the August to September
11 Certification result in a “lesser standard.” (Kenny, Tr. at 1-130 and 131.)
12

13 316. The presence of known and existing contaminants at the Airport and within the
14 embankment fill make indefinite monitoring of surface and groundwater an imperative for
15 reasonable assurance. Ecology’s own toxics cleanup coordinator testified that “the duration
16 **should** be indefinite; as long as the contaminants are there, monitoring should continue.”
17 (Wang, Tr. at 6-0105 - 106.) Where the condition began running in September and construction
18 of the proposed project is expected to last four years, a monitoring plan that allows the Port to
19 cease monitoring for contaminants whose presence is acknowledged is insufficient to provide
20 reasonable certainty that water quality standards will not be violated.
21

22 317. The August 401 conditions concerning contaminated fill applied to fill placed at
23 the site in connection with the “construction of a third runway and related projects.” In contrast,
24 the September 401 limits the applicability of such conditions to “Port 404 projects.” (Ex. 1 at 18,
25 Condition E.1, E.1(a), and E.1(b).) This is the first time in recent memory that Ecology has

1 limited the scope of conditions in a 401 certification to “404 projects.” (Luster, Tr. at 2-0070 -
2 71.) In his deposition, Ray Hellwig, Ecology’s Director of the Northwest Regional Office,
3 confirmed that the September 401’s change in wording was intended to -- and did -- exempt Port
4 projects previously covered under the JARPA from the fill criteria. (Hellwig Dep. at 248-50.)
5 However, neither Mr. Hellwig nor other Ecology staff responsible for the September 401
6 decision can explain what this limitation means for the extent and applicability of the conditions
7 addressing acceptance of contaminated fill. They acknowledged that, even as of the hearing
8 before the Board, Ecology had not made a final determination of what components of the project
9 were subject to the contaminated fill acceptance conditions, and that Ecology was still in
10 discussions with the Port over what criteria might be used to determine whether the conditions
11 would apply to particular MPU projects. (Kenny, Tr. at 1-0160 - 161.)

12
13 318. Rather than include conditions that address the uncertainty created by the
14 existence of contaminants in fill, Ecology has substituted an approach in which Ecology will
15 someday make an “internal” decision with the Port -- “after PCHB review” has concluded -- as
16 to what Port projects are subject to the fill criteria. (Hellwig Dep. at 251.) Ecology’s failure to
17 provide meaningful conditions governing the importation of fill to the project (particularly in
18 light of the massive quantities involved here), and its failure to articulate the criteria for
19 determining whether the conditions it has proposed will be applicable to different project
20 components, leaves substantial uncertainty where reasonable assurance is required.

21
22 319. By restricting the clean fill criteria to “Port 404 projects,” Ecology also failed to
23 follow its own past practice and interpretation of the scope of section 401 review. Ecology’s
24 longstanding (now former) 401 expert testified that its practice had been to look at the facility in
25

1 its entirety. (Luster, Tr. at 2-0069.) “If there are parts of the facility that are integrated with the
2 areas being directly affected by wetland fill, those elements of the project are incorporated into
3 the 401 review.” *Id.*

4 **b. Is there reasonable assurance that the Third Runway and related projects,**
5 **for which a Clean Water Act Section 401 (“§ 401”) certification is required (“Third**
6 **Runway Project”), will not violate § 401 and applicable water quality law? (Issue**
7 **No. 4)**

8 320. This is the overarching issue presented by this appeal. For the reasons set forth in
9 this decision, the Board concludes that Ecology lacked reasonable assurance at the time it issued
10 the 401 certification in violation of Section 401 of the Clean Water Act.

11 **c. Must there be reasonable assurance that a proposed project will not violate §**
12 **401 and applicable water quality law when a § 401 Certification is issued? (Issue No.**
13 **5)**

14 321. Appellants argue that Ecology violated the Clean Water Act by not having
15 reasonable assurance when it issued the 401 certification on August 10, 2001, or when it re-
16 issued the certification on September 21, 2001. Respondents contend that any uncertainty
17 regarding the project’s ability to comply with water quality standards is sufficiently diminished
18 by the certification requiring the Port to submit post-certification data, plans and reports even
19 though Ecology has not had an opportunity to review and approve the post-certification
20 information.

21 322. The Clean Water Act and the Board’s previous decisions regarding what is
22 required of Ecology before it can issue a certification pursuant to Section 401 are unequivocal:
23 Ecology must have reasonable assurance that the project will not result in a violation of state
24 water quality standards at the time Ecology certifies the project pursuant to Section 401 of the
25

1 Clean Water Act. The very essence of a certification is that at the time of issuance “the state has
2 reasonable assurance that there will be compliance with water quality laws.” *OHA, supra*,
3 Conclusion 63 (emphasis added) *citing Friends of the Earth v. Ecology*, PCHB No. 87-64
4 (1988).²⁴ By issuing a 401 Certification the state is not representing that it “will have” or “hopes
5 to have” reasonable assurance in the future based upon studies or reports not yet completed.
6 Rather, federal regulations governing 401 certifications require that the state’s certification must
7 contain an affirmative “statement that there is reasonable assurance that the activity will be
8 conducted in a manner which will not violate applicable water quality standards.” 40 CFR §
9 121.2(a)(3) (emphasis added); *Friends of the Earth*, PCHB 87-64 at Conclusion II..

11 323. As this Board has previously held:

12 We conclude that when a state certifies compliance, pursuant to Section 401 of the Federal
13 Clean Water Act, with various provisions of the Act which also incorporate state water
14 quality law and water quality standards, the state is actually certifying that it has ‘reasonable
assurance that there will be compliance with the applicable provisions’ of the Act.

15 *Friends of the Earth*, No. 87-64 (1988), Conclusion II (Board assessed “whether Ecology had
16 reasonable assurance that the water quality standards would not be violated” (Conclusion VIII)).

17 324. In order to overturn the certification, appellants need only show “by a
18 preponderance of the evidence that Ecology did not have ‘reasonable assurance’ that the
19 applicable provisions would be complied with.” *Id.*, Conclusion IV (emphasis added). The
20 soundness of a proposal is to be determined before approval of the permit, not afterwards.²⁵

22
23 ²⁴ See Order Granting Stay at 4; 40 CFR §121.2(a)(3); *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. 700,
712 (1994); See 33 U.S.C. §1341(a)(1), (d); *Okanogan Highlands Alliance et al. v Department of Ecology and
Battle Mountain Gold Company*, PCHB Nos. 97-146, 97-182, 97-183, 97-186, and 99-019, Final Findings of Fact,
24 Conclusions of Law and Order (January 19, 2000), Conclusion Nos. 62-65 (“OHA”).

25 ²⁵ *Ecology v. Barden*, SHB No. 83-42 (1985), Conclusion X; *Luce v. Snoqualmie*, SHB No. 00-034 (2001),
Conclusion V(2).

1 Such is the case with the Third Runway 401 Certification. As a matter of law, respondents
2 cannot prevail by establishing that Ecology “will have” reasonable assurance in the future based
3 upon post-certification data, plans and reports for which Ecology has yet to assess whether the
4 data, plans and reports are satisfactory to ensure compliance with water quality standards. As
5 Ecology admitted at the hearing, Ecology must have reasonable assurance when it issues the 401
6 certification. (Kenny, Tr. at 1-0103.) The question this Board must answer is whether Ecology
7 had before it at the time of certification information sufficient to provide reasonable assurance
8 that the project would not violate water quality standards. We hold that Ecology did not.
9

10 **d. Is there reasonable assurance that § 401 and applicable water quality law**
11 **will not be violated if the Certification relies on data, reports, and plans that were**
12 **not in being at the time of issuance of the Certification? (Issue No. 6)**

13 **325.** As set forth above and pursuant to the requirements of the Clean Water Act, the
14 Board’s independent *de novo* review of Ecology’s 401 Certification is based upon the record
15 relied upon by Ecology to conclude that it had reasonable assurance the proposed project would
16 comply with applicable water quality laws. Respondents argue that Ecology’s reasonable
17 assurance is based, in part, upon conditions in the 401 Certification which allow the Port to
18 submit additional data, plans and reports on the assumption that they will satisfactorily resolve
19 outstanding uncertainties. Consistent with our *de novo* review as defined by the Clean Water Act
20 and as a matter of simple logic, we conclude that post-certification data, reports and plans that
21 were not in being at the time of issuance of the Certification and which at the time of
22 certification had yet to be reviewed, considered and approved by Ecology cannot *ex post facto*
23 form the basis of Ecology’s determination of reasonable assurance. To conclude otherwise
24
25

1 would leave 401 certifications as moving targets and make Board review of such moving targets
2 unmanageable.

3 326. Ecology's reliance upon post-certification data, plans and reports is highly
4 speculative, and does not meet the need for reasonable assurance to be based on information
5 available at the time of certification. Reliance on after-the-fact information is even more
6 problematic, given that the Port submittals since the Certification was issued still do not provide
7 the necessary level of information needed for reasonable assurance.
8

9 327. The requisite certainty can only come from information available at the time of
10 the review and the decision, not on speculation over what some future source of information
11 might suggest. Ecology issued the Certification with requirements for a significant number of
12 future submittals to address various impacts, mitigation measures, and monitoring requirements
13 associated with the proposed project. While Ecology has sometimes stated that these future
14 submittals are needed only for clarification, it is clear from the hearing and deposition testimony
15 provided by Ecology's witnesses that significant doubt remains as to how various impacts will be
16 adequately identified, mitigated, and monitored to ensures water quality standards will be met.
17

18 328. Repeatedly Ecology's Federal Permit Coordinator for the STIA project, Ann
19 Kenny, confirmed that the future information and reports are needed for Ecology to have
20 reasonable assurance. While in some cases, these future submittals may turn out to be adequate
21 to ensure water quality standards are met, in other cases, they clearly will not unless both
22 Ecology and the applicant go far beyond the stated requirements in the certification. Ecology's
23 claim of having reasonable assurance when it issued the 401 Certification is based largely on
24 hope and speculation that future submittals might somehow be adequate to ensure water quality
25

standards are met. That standard of hope does not satisfy the requirements of the Clean Water Act.

329. This Board has previously held that Ecology cannot have reasonable assurance for 401 certifications where it “defers the entire analysis to the NPDES permit application process”:

That would be tantamount to writing a blank check for extensive construction related to the mine without ever knowing whether it is feasible to comply with water quality laws in its operation. It would be in derogation of section 401 and defy common sense to proceed without reasonable assurance that discharges can be regulated under an NPDES permit.

OHA, Order Denying Summary Judgment on Waste Rock Discharges at 2, 1999 WL 825751.

By deferring the issue of appropriate effluent limitations until the Port completes a site-specific study -- which may or may not be found adequate -- instead of resolving the issue **prior** to issuance of the 401 with the assistance of public review and comment, Ecology has written a “blank check for extensive construction” without knowing whether the Port will ever submit a proposal which would comply with water quality standards.

330. The 401 process provides a one-time opportunity for the State, acting through the Department of Ecology, to ensure that projects with components subject to the federal Clean water Act are not approved by the federal permitting agency unless the applicant has first demonstrated that the overall project will meet Washington’s water quality standards. (Luster, Tr. at 2-0115 - 116.) Ecology’s issuance of certification before all necessary data, plans and reports have been submitted -- let alone reviewed -- frustrates the purpose of the 401 Certification and abdicates the State’s controlling role in the Clean Water Act section 401/404 process. (Luster, Tr. at 2-0115 - 116.) For the State to have meaningful, effective and timely input on projects requiring a Clean Water Act Section 404 permit, Ecology must have reasonable assurance when it issues a 401

1 certification.

2 331. The ongoing barrage of new data, plans and reports, and Ecology's continual
3 requests for corrections and validations on key issues provides overwhelming proof here that
4 Ecology's review is a "work in progress," remarkably similar to that which this Board struck
5 down in Battle Mountain Gold. *OHA*, Conclusions 44 and 51. We hold that, on the facts of this
6 case and in light of the scope and complexity of the proposal presented here, Ecology cannot
7 rely upon conditions that seek new information through post-certification data, plans and reports
8 to support a conclusion of reasonable assurance.
9

10 **e. Did Ecology have reasonable assurance that § 401 and applicable**
11 **water quality laws would not be violated when it relied on a stormwater**
12 **detention system that may require future compliance with dam safety**
13 **regulations (chapter 173-175 WAC) and may require a dam safety permit**
14 **prior to commencing construction? (Issue No. 22)**

15 332. Clean Water Act § 401(d) describes the scope of a 401 certification:

16 Any certification provided under this section shall set forth any effluent limitations and other
17 limitations, and monitoring requirements necessary to assure that any applicant for a Federal
18 license or permit will comply with any applicable effluent limitations and other limitations,
19 under section 1311 or 1312 of this title, standard of performance under section 1316 of this
20 title, or prohibition, effluent standard, or pretreatment standard under section 1317 of this
21 title, and with any other appropriate requirement of State law set forth in such certification,
22 and shall become a condition on any Federal license or permit subject to the provisions of
23 this section. [emphasis added]

24 333. In light of the obvious water quality implications of a failure of stormwater
25 detention facilities (as the Certification acknowledges), dam safety regulations, Ch. 173-175
RCW, are clearly an "other appropriate requirement of state law" which must be addressed in
401 review.

334. The purpose of the dam safety regulations is to "provide for the design,

1 construction, operation, maintenance, and supervision of dams in a manner consistent with
2 accepted engineering practice.” WAC 173-175-010. The term “dam” is broadly defined under
3 the regulations and includes “any artificial barrier and/or any controlling works, together with
4 appurtenant works that can or does impound or divert water.” WAC 173-175-030. As the
5 regulations reflect, they are specifically concerned with storage of water in impoundments which
6 could result in failure and release:
7

8 Dams which can impound a volume of 10 acre feet or more of water as measured at
9 the dam crest elevation. The 10-acre-feet threshold applies to dams which can
10 impound water on either an intermittent or permanent basis. Only water that can be
11 stored above natural ground level and which could be released by a failure of the dam
12 is considered in assessing the storage volume. The 10-acre-feet threshold applies to
any dam which can impound water of any quality, or which contains any substance in
combination with sufficient water to exist in a liquid or slurry state at the time of
initial containment.

13 WAC 173-175-020(1).

14 335. Many of the proposed stormwater management facilities exceed the 10-acre-feet
15 threshold -- some by several multiples -- and will be in proximity to project-area streams. Yet,
16 the 401 defers the question of compliance with the regulations until after certification and review
17 by this Board.

18 336. Such deferral has been addressed in an analogous context by the Shorelines
19 Hearings Board. *Ecology v. Barden*, SHB No. 83-42 (1985), at Conclusion of Law 10; *Luce v.*
20 *Snoqualmie*, SHB No. 00-034 (2001), at Conclusion 5(2). In those cases, the Shorelines Board
21 adopted the rule that the soundness of a proposal must be determined before approval of the
22 permit, not afterwards. *Id.* This same principle applies in the context of the 401 Certification
23 and with regard to demonstration of whether the Port’s massive stormwater facilities comply
24
25

1 with dam safety regulations.

2 337. Because the 401 Certification fails to require the Port to identify the stormwater
3 management facilities which are subject to dam safety regulations, and was issued without an
4 evaluation based on actual engineering design reports, plans and specifications required under
5 WAC 173-175-050, there is and was no reasonable assurance as to whether these facilities can be
6 constructed and maintained consistent with applicable water quality standards.
7

8 **f. Is there reasonable assurance that § 401 and applicable water quality law**
9 **will not be violated as a result of the stormwater impacts (with the identified**
10 **mitigation) or the Third Runway Project? (Issue No. 10)**

11 Key Conclusions:

12 338. The 401 Certification is legally deficient because it does not contain effluent
13 limitations necessary to assure that the Port will comply with state water quality standards.

14 339. Ecology cannot base certification of reasonable assurance on a proposal to apply
15 BMPs that Ecology knows will be inadequate.

16 340. Ecology cannot base certification of reasonable assurance on an unenforceable
17 retrofitting requirement.

18 341. CWA § 401(d) requires that all certifications include measures necessary to
19 ensure that water quality standards are met -- along with the monitoring necessary to determine
20 that the standards are in fact met. *See*, 33 U.S.C. § 1341(d); *and see*, 40 C.F.R. § 121.2; RCW
21 90.48.080; *and* WAC 173-201A. The stormwater provisions of the 401 do not satisfy these
22 standards.
23

24 342. CWA § 401(d) provides:

25 Any certification provided under this section shall set forth any effluent

1 limitations and other limitations, and monitoring requirements necessary to assure
2 that any applicant for a Federal license or permit will comply . . . with any other
appropriate requirement of State law set forth in such certification . . .

3 33 U.S.C. § 1341(d). Here, the 401 Certification sets forth the "appropriate requirement" of
4 complying with state water quality standards in Condition A.1, which provides, in pertinent part:

5 Certification of this proposal does not authorize the Port to exceed applicable state
6 water quality standards (173-201A WAC) or sediment quality standards (173-204
7 WAC). Water quality criteria contained in WACs 173-201A-030(1) and 173-201A-
040 shall apply to this project, unless otherwise authorized by Ecology.

8 (Exh. 1 at 2 (Cond. A.1).)²⁶

9 343. Further, with respect to the discharge of operational stormwater to state receiving
10 waters, the 401 provides:

11 All stormwater discharges from the project shall be in compliance with state of
12 Washington surface water quality standards (Chapter 173-201A WAC), sediment
13 management standards (Chapter 173-204 WAC) and ground water quality
14 standards (Chapter 173-200 WAC).

15 (Exh. 1. at 27, (Cond. J.2.(b)).) Thus, Washington state's water quality criteria are set forth as
16 "appropriate requirements of State law" in the 401 Certification. 33 U.S.C. § 1341(d).

17 344. However, the 401 does not set forth effluent limitations and monitoring
18 requirements necessary to assure that the Port -- here, the applicant for a federal license or permit
19 -- will comply with the state water quality standards, particularly including the turbidity standard
20 of WAC 173-201A-030(1)(c)(vi); the toxic substances criteria for dissolved copper and zinc in
21 WAC 173-201A-040(3); and the mixing zone requirements of 173-201A-100.

22 345. The Clean Water Act defines "effluent limitation" to mean:

23
24
25 ²⁶ With respect to instream and shoreline work, the 401 further provides that all monitoring "will be reviewed for compliance with WAC 173-201A."

1 Any restriction established by a State . . . on quantities, rates, and concentrations of
2 chemical, physical, biological, and other constituents which are discharged from point
sources into navigable waters . . . including schedules of compliance.

3 CWA § 502(11), 33 U.S.C. § 1362(11). With respect to its provisions governing stormwater
4 discharges and in-stream/shoreline work, the 401 contains no restrictions on the quantities, rates,
5 or concentrations of pollutants which the Port may discharge. Apart from stating, in effect, "thou
6 shalt not exceed water quality standards," the 401 contains no enforceable standards -- and thus
7 contains no effluent limitations.²⁷ Where, as here, the facility has a history of "exceedances" of
8 water quality standards, such an exhortation provides no assurance.

10 346. Under the facts presented here, effluent limitations stringent enough to protect
11 water quality, as authorized by section 401(d), would be one means of ensuring that water
12 quality standards are met. If Ecology determines not to impose them, then it must provide some
13 other credible means of providing the requisite certainty that water quality standards will not be
14 violated. The means chosen to date, however, are not an option on the record before this Board.

16 347. The BMP-based approach to controlling the water quality of the stormwater
17 discharges from STIA has been found to be inadequate to prevent exceedances of water quality
18 standards. Ecology has provided no basis upon which the Board can conclude that the proposed
19 application of water quality treatment BMP's which to date have been applied without success, to
20 new but similar airfield discharges resulting from similar industrial activities, will henceforth
21 prove adequate to ensure the water quality criteria will not be exceeded.

23 348. Nor can the 401 Certification defer to what Ecology refers to as the iterative

24 ²⁷ As Tom Luster testified, "There are no effluent limitations in the 401 other than a general statement that water
25 quality standards will be complied with, and dependence on an NPDES permit that does not include specific
criteria." (Luster, Tr. at 2-0072.)

1 compliance schedule-based process that has been followed under the Port's NPDES permit.
2 Section 401's requirements are different and take a different approach. Even if this were not the
3 case, the absence of stormwater effluent limitations in the STIA NPDES leaves no basis for
4 compliance with CWA section 401 (d). Thus, the 401 Certificate's invocation of the STIA
5 NPDES Permit in Condition B.1(f) cannot cure its shortcomings.

6
7 349. The failure of the 401 (and the Port's current NPDES permit) to include
8 monitoring and sampling requirements for the very kinds of data which Ecology says it needs to
9 determine violations of water quality standards in stormwater discharges (e.g.,
10 upstream/downstream receiving water monitoring, samples sufficient to provide one-hour and
11 four-day average concentrations, or, for that matter, sampling for dissolved fractions of metals or
12 hardness in the receiving waters) saps any pretense of reasonable assurance that the proposed
13 discharges will comply with water quality standards. (*See* Ex. 1 at 27-28 (Cond. J.2).)

14
15 350. The Board further concludes that the 401's retrofitting requirement does not
16 provide a basis for reasonable assurance. (Exh. 1 at 26, (Cond. J.1(c)).) The retrofit
17 requirement is irretrievably vague and likely unenforceable. For example, it provides no
18 standard against which Port claims of in-"feasibility" may be judged, yet such claims provide a
19 basis for not carrying through with retrofitting. If retrofitting is truly infeasible, that can and
20 should be determined before issuance of a 401. If infeasibility refers to financial issues or
21 convenience, then the fact that such matters can be raised as an excuse for inaction renders the
22 condition a pretense rather than a promise of compliance.

23
24 **g. Is there reasonable assurance that § 401 and applicable water quality**
25 **law will not be violated if discharges from the airport have violated water**
quality standards or the Port's NPDES (§ 402) permit? (Issue No. 11)

1
2 Key Conclusions

- 3 1. Under a 401 Certification, the proposed new stormwater discharges must comply with
4 Washington state water quality standards whether or not the Port's NPDES permit contains
5 numeric effluent limitations on stormwater discharges.
- 6 2. Ecology cannot excuse the Port from complying with water quality standards under the
7 401 Certification or the 402 Permit.
- 8 3. In order to defeat Ecology's certification of reasonable assurance, it is not necessary that
9 appellants prove beyond a reasonable doubt that the applicant has violated or will violate water
10 quality standards.
- 11 4. Where no mixing zone has been authorized, discharges must comply with water quality
12 standards at the point of discharge.

13 351. "The CWA generally prohibits the 'discharge of any pollutant,' 33 U.S.C. §
14 1311(a), from a 'point source' into the navigable waters of the United States. See 33 U.S.C. §
15 1362(12)(A). An entity can, however, obtain an NPDES permit that allows for the discharge of
16 some pollutants. See 33 U.S.C. § 1342(a)(1)." Defenders of Wildlife v. Browner, 191 F.3d
17 1159, 1163 (9th Cir. 1999). Under the CWA and Washington's water quality law, any NPDES
18 permit that Ecology issues "shall apply and insure compliance with . . . (b) [a]ny more stringent
19 limitation, including those necessary to: (i) meet water quality standards[.]" WAC 173-220-
20 130(1)(b)(i). Neither the Clean Water Act nor Washington state water quality laws exempt
21 storm water discharges from this requirement.²⁸

22 352. Washington's water quality standards expressly provide that "Activities which
23 cause pollution of storm water shall be conducted so as to comply with the water quality

24 ²⁸ Under Washington law, stormwater associated with industrial activity is considered
25 industrial wastewater. WAC 173-216-030(8). See generally, Pedersen V. Washington State
Dept. of Transp., 25 Wn.App. 781, 783-86, 611 P.2d 1293 (1980) (NPDES permit coverage
required to operate stormwater runoff system).

1 standards." WAC 173-201A-160(d) (emphasis added). Best management practices are
2 identified as "the primary means to be used for requiring compliance with the standards[.]" *Id.*
3 (emphasis added). And the regulations further require that BMPs "shall be applied" so that when
4 all appropriate combinations of individual BMPs are utilized, "violation of water quality criteria
5 shall be prevented." WAC 173-201A-160(b) (emphasis added).
6

7 353. The Port's NPDES permit provides no basis for reasonable assurance in the 401
8 context. Most obviously, the 402 permit is not designed to -- and does not -- assure compliance
9 with water quality standards. Further, the available evidence for several pollutants including the
10 toxic pollutant -- copper -- indicates that the Port's BMPs are not working.

11 354. Under CWA sec. 401(d), Ecology must certify that the discharges from the
12 proposed facility will comply with water quality standards. This requirement under Section 401
13 -- and the requirement that the discharges in fact comply with water quality standards -- is
14 neither waivable, deferrable, nor negotiable.
15

16 355. Speculative reliance on mixing zones, future special studies, and other devices
17 cannot, particularly on the record before us, substitute for the Section 401 requirement for
18 reasonable assurance at the time of certification.

19 **h. May a certification of reasonable assurance that § 401 and applicable**
20 **water quality law will not be violated be based upon current and future**
21 **NPDES (§ 402) permits? (Issue No. 12)**

22 356. *See* Conclusions of Law for Issue No. 21, which are combined with Conclusions
23 of Law for Issue No. 12.

24 **i. Is there reasonable assurance that § 401 and applicable water quality**
25 **law will not be violated if the certification authorizes a mixing zone without**

1 **compliance with applicable procedural and substantive requirements for**
2 **authorization of such a zone? (Issue No. 13)**

3 357. Under Washington's water quality standards, "Water quality criteria may be
4 exceeded in a mixing zone as conditioned and provided for in WAC 173-201A-100." WAC 173-
5 201A-020. WAC 173-201A-100 includes restrictions designed to assure that such mixing zones
6 are not authorized where harm to the environment could result:

7 (4) No mixing zone shall be granted unless the supporting information clearly indicates the
8 mixing zone would not have a reasonable potential to cause a loss of sensitive or important
9 habitat, substantially interfere with the existing or characteristic uses of the water body, result
10 in damage to the ecosystem, or adversely affect public health as determined by the
11 department.

12 * * *

13 (6) The size of a mixing zone and the concentrations of pollutants present shall be
14 minimized.

15 WAC 173-201A-100(4), (6).

16 358. Another key provision of the water quality standards -- WAC 173-201A-110(3) --
17 applies directly to temporary turbidity mixing zones. Section 110(3) explicitly limits the
18 Department's authority to authorize such mixing zones:

19 The turbidity criteria established under WAC 173-201A-030 shall be modified to
20 allow a temporary mixing zone during and immediately after necessary in-water or
21 shoreline construction activities that result in the disturbance of in-place sediments.
22 A temporary turbidity mixing zone is subject to the constraints of WAC 173-201A-
23 100 (4) and (6) and is authorized only after the activity has received all other
24 necessary local and state permits and approvals, and after the implementation of
25 appropriate best management practices to avoid or minimize disturbance of in-place
sediments and exceedances of the turbidity criteria.

359. WAC 173-201A-110(3) (emphasis added). Thus, temporary turbidity mixing
zones may be authorized under some circumstances, but, in recognition of their potential for

1 harm, only after stringent procedural and substantive requirements have been met.

2 360. The 401 leapfrogs these detailed requirements. Ecology did not address or meet
3 the regulatory requirements before including blanket pre-authorization for mixing zones in the
4 401. Nevertheless, it pre-authorized mixing zones for instream and shoreline work now, while
5 deferring until later the satisfaction of the procedural and substantive requirements intended to
6 protect water quality.
7

8 361. The 401 Certification's authorization of mixing zones violates applicable water
9 quality regulations and does not fully protect the receiving waters as prescribed under WAC 173-
10 201A-100. The 401 does not require the implementation of best management practices to avoid
11 or minimize exceedances of the turbidity criteria. In addition, Ecology did not require the Port to
12 provide supporting information clearly indicating that the mixing zone would not have a
13 reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with
14 the existing or characteristic uses of the water body, or result in damage to the ecosystem, as
15 required by WAC 173-201A-100(4). Ecology's failure to satisfy the legal requirements for
16 mixing zones constitute a per se violation of water quality standards.
17

18 362. The 401's general admonition that the pre-approved mixing zones be minimized
19 provides no assurance that the water quality standards will be met at the edge of the mixing zone.
20 Further, it ignores an important restriction in WAC 173-201A-110(3)(a) establishing the
21 **maximum** allowable mixing zone in waters flowing at or below 10 cfs (cubic feet per second) at
22 100 feet. Ecology identified no basis for reasonable assurance that the Port's proposed instream
23 work -- including relocating the stream itself -- can be undertaken without exceeding the 100-
24 foot turbidity mixing zone.
25

1 363. As the Board recognized in OHA, *supra*, however, it is not sufficient to defer
2 such analysis. "That would be tantamount to writing a blank check for extensive construction . .
3 . without ever knowing whether it is feasible to comply with water quality laws[.]" Okanogan
4 Highlands Alliance v. State of Washington, Department of Ecology , PCHB Nos. 97-146, 97-
5 182, 97-186 and 99-019, 1999 WL 825751 at *2.

6
7 **j. Is there reasonable assurance that § 401 and applicable water quality**
8 **law will not be violated if the Certification does not address water quality**
9 **impacts to Gilliam Creek? (Issue No. 20)**

10 364. This issue was withdrawn by Appellants.

11 **k. Is there reasonable assurance that § 401 and applicable water quality**
12 **law will not be violated where the Certification allows future amendment of**
13 **its terms “by any future Ecology-approved NPDES (§ 402) permit for the**
14 **Seattle-Tacoma International Airport (STIA)...as determined in that**
15 **permit?” (See, e.g., amended Certification at p. 4, § 1.f.) (Issue No. 21)**

16 **[Conclusions combined with Issue No. 12: May a certification of reasonable**
17 **assurance that § 401 and applicable water quality law will not be violated be**
18 **based upon current and future NPDES (§ 402) permits?]**

19 Key Conclusions

20 1. Ecology has improperly relied on the Port's current and future NPDES Permits in
21 asserting it has reasonable assurance that the proposed project will not violate water quality
22 standards.

23 2. Ecology may not rely on the 402 permitting scheme to authorize a compliance schedule
24 for new discharges under an amended 401 certificate.

25 3. There is no reasonable assurance that water quality standards will not be violated where
the Certification allows future amendment of its terms by any future Ecology-approved
NPDES permit.

 365. Ecology has improperly relied on the Port's current and future NPDES permits in
asserting it has reasonable assurance that the proposed project will not violate water quality

1 standards. As discussed in a previous conclusion [#10], CWA § 401(d) requires that all
2 certifications include provisions such as effluent standards necessary to ensure that water quality
3 standards are met -- along with the monitoring necessary to determine that the standards are in
4 fact met. *See*, 33 U.S.C. § 1341(d); *and see*, 40 C.F.R. § 121.2; RCW 90.48.080; *and* WAC 173-
5 201A. This requirement cannot be satisfied by reliance on a current NPDES permit that does not
6 itself satisfy such requirements, much less by reliance on an NPDES permit not yet in existence.
7

8 366. The Board has found that the Port's NPDES permit contains no "effluent
9 limitations" on stormwater discharges.

10 367. In this context, it bears emphasis that the Port's stormwater discharges are
11 regulated as industrial rather than municipal stormwater discharges.²⁹ With respect to "industrial
12 discharges," the Ninth Circuit has held that:

13 Congress expressly required industrial storm-water discharges to comply with the
14 requirements of 33 U.S.C. § 1311. See 33 U.S.C. § 1342(p)(3)(A) ("Permits for
15 discharges associated with industrial activity shall meet all applicable provisions of
16 this section and section 1311 of this title.") (emphasis added). By incorporation,
17 then, industrial storm-water discharges "shall ... achiev[e] ... any more stringent
18 limitation, including those necessary to meet water quality standards, treatment
19 standards or schedules of compliance, established pursuant to any State law or
20 regulation (under authority preserved by section 1370 of this title)." 33 U.S.C. §
21 1311(b)(1)(C) (emphasis added); *see also* Sally A. Longroy, *The Regulation of Storm*
22 *Water Runoff and its Impact on Aviation*, 58 J. Air. L. & Com. 555, 565-66 (1993)
23 ("Congress further singled out industrial storm water dischargers, all of which are on
24 the high-priority schedule, and requires them to satisfy all provisions of section 301
25 of the CWA [33 U.S.C. § 1311].... Section 301 further mandates that NPDES permits
include requirements that receiving waters meet water quality based standards.")
(emphasis added). In other words, industrial discharges must comply strictly with
state water-quality standards.

²⁹ Under Washington law, stormwater associated with industrial activity is considered industrial wastewater. WAC 173-216-030(8). *See generally*, Pedersen V. Washington State Dept. of Transp., 25 Wn. App. 781, 783-86, 611 P.2d 1293 (1980) (NPDES permit coverage required to operate stormwater runoff system).

1 Defenders of Wildlife v. Browner, 191 F.3d 1159, 1164-65 (9th Cir. 1999) (emphasis in
2 original). Defenders confirms that the mere application of BMPs does not satisfy the
3 requirement that industrial discharges "strictly comply" with water quality standards.
4 Accordingly, Ecology's reliance on a "BMP-based" 401, which in turn relies on a BMP-based
5 NPDES permit, does not satisfy the CWA § 401(d) requirement where, as here, there is no
6 reasonable assurance that water quality standards will not be violated.
7

8 368. Under Washington law, BMPs are not a substitute for strict compliance with
9 water quality standards, but rather must be applied so as *to assure compliance* with water quality
10 standards. Under Washington's water quality standards, activities which cause pollution of storm
11 water "shall be conducted so as to comply with the water quality standards." WAC 173-201A-
12 160(3)(d). This is particularly so in the context of a 401 Certification.

13 369. While BMPs are the "primary means" to be used for requiring compliance with
14 the standards (*id.*), the standards further require that the "consideration and control procedures"
15 in WAC 173-201A-160(3)(b) and (c) "apply to the control of pollutants in storm water." Subpart
16 160(3)(b) further requires that:
17

18 Best management practices shall be applied so that when all appropriate
19 combinations of individual best management practices are utilized, violation of
20 water quality criteria shall be prevented. * * * Best management practices
21 established in permits, orders, rules, or directives of the department shall be
22 reviewed and modified, as appropriate, so as to achieve compliance with water
23 quality criteria.

24 WAC 173-201A-160(3)(b) (emphasis added). On the basis of these clear provisions of the water
25 quality standards, we conclude that where BMPs are known to be inadequate to assure
compliance with water quality standards, reliance on a BMP-based permit cannot satisfy the

1 requirements of CWA § 401(d).

2 370. We further conclude that Ecology may not rely on the 402 permitting scheme to
3 authorize a compliance schedule for new discharges under an amended 401 certificate. At a
4 minimum, compliance with state water quality standards must be contemporaneous with the
5 commencement of permitted discharges. Although a compliance schedule might otherwise be
6 available for discharges under a NPDES permit, Washington state water quality law
7 unequivocally states that "Schedules of compliance may not be issued for new discharges."
8 WAC 173-201A-160(4)(b).

10 371. As a result, Ecology cannot have reasonable assurance that discharges will
11 comply with water quality standards when the 401 may be amended under any future NPDES
12 permit. The expectation or "theory" that conditions could be modified to a lesser standard is
13 antithetical standard of reasonable assurance required under CWA § 401. "In short, section 401
14 requires states to certify compliance with state water quality standards." State, Dept. of Ecology
15 v. Public Util. Dist. No. 1 of Jefferson County, 121 Wn.2d 179, 187, 849 P.2d 646 (1993), *aff'd*,
16 511 U.S. 700, 114 S.Ct 1900 (1994). Here, "certified compliance" cannot be reasonably assured
17 by means of provision for a future negotiated escape hatch.

19 **2. LOW FLOW CONCLUSIONS OF LAW**

20 **a. Is there reasonable assurance that § 401 and applicable water quality**
21 **law will not be violated as a result of low flow impacts (with the identified**
22 **mitigation) of the Third Runway Project? (Issue No. 8)**

23 372. In Washington, projects that impact stream flows and instream uses are subject to
24 special scrutiny in the permitting process. Class AA streams, such as Des Moines, Miller and
25 Walker Creeks, "shall markedly and uniformly exceed the requirements" for designated

1 characteristic uses, including fish migration, spawning and rearing, recreational use, including
2 primary human contact, and aesthetic use. WAC 173-201A-030(1).

3 373. To obtain § 401 certification, the Port must demonstrate that legal and practical
4 means were (and are) in place to permanently mitigate low flow impacts. *Ecology v. PUD No. 1*
5 *of Jefferson County*, 121 Wn.2d 179, 185-192, 849 P.2d 656 (1993), *aff'd*, 511 U.S. 700 (1994).
6 Where, as here, mitigation is speculative, it is not legally adequate for providing reasonable
7 assurance for issuance of a § 401 Certification. *Okanogan Highlands Alliance v. Ecology*,
8 PCHB No. 97-146, et seq., Conclusion No. 58. (2000); see *Hayes v. Yount*, 87 Wn.2d 280, 293,
9 552 P.2d 1038 (1976). Inherent uncertainties and technical problems with the Port's Low Flow
10 Plan render it legally inadequate to meet the standards for § 401 certification.

11
12 374. As an initial matter, the Port's Low Flow Plan is incomplete. While it was
13 assumed that the surface and ground water modeling to determine impacts of the Third Runway
14 on local stream was complete in August 2001, that modeling was subsequently amended has not
15 been approved. Model validation reports and other deliverables are required of the Port. The
16 Low Flow technical assessment, which determines how much water should be used to augment
17 flows in Des Moines, Miller and Walker Creek, is simply not in complete enough form for a
18 decision maker to say, with reasonable assurance, that the permanent reductions in flow caused
19 by the Third Runway are accurately assessed and will be adequately compensated. An
20 incomplete low flow augmentation plan does not meet the requirements of 33 U.S.C. § 1341.
21 See *Ecology v. Barden*, SHB No. 83-42, Conclusion X (1985); *Luce v. Snoqualmie*, SHB No. 00-
22 034, Conclusion V(2) (2001).

23
24 375. The Port's Low Flow Plan is inadequate also because it contains numerous
25

1 inaccuracies and assumptions about the hydrology of the airport. The Third Runway Project will
2 work a major re-plumbing on the streams surrounding the airport. Modeling assumptions
3 regarding rainfall infiltration rates, soil characteristics, groundwater movement and other key
4 parameters are subject to serious scientific dispute. Calibration of the low flow modeling,
5 particularly in Des Moines Creek, is inadequate. Cumulative error in the modeling exercises
6 undermines the credibility of the results. Physical knowledge of the affected streams is
7 insufficient. One cannot say with reasonable assurance that the impacts of the Third Runway
8 have been fully and accurately assessed. Inaccurate and questionable technical analysis does not
9 fulfill the requirements of 33 U.S.C. § 1341. *Okanogan Highlands Alliance v. Ecology*, PCHB
10 No. 97-146, et seq., Final Order (2000).

12 376. The Port's Low Flow Plan involves new and untested technology, i.e., the
13 utilization of detained stormwater as a source of augmentation water. The receiving waters are
14 small streams that flow at very low rates during the summer season mitigation period. The
15 Port's mitigation reservoirs will collect water that is likely to contain dissolved metals and other
16 pollutants. The Low Flow Plan does not require the use of treatment technology that will control
17 for these expected water quality problems. It is axiomatic that the Port's project must comply
18 with state water quality standards. 33 U.S.C. § 1341(a). The direct introduction of untreated
19 water containing toxics and other pollutants into small, local streams, which will degrade
20 characteristic uses and possibly directly violate numeric criteria, violates Washington's anti-
21 degradation standard. WAC 173-201A-070(1). The speculative nature of the mitigation plan,
22 combined with the lack of appropriate technology to ensure against degradation, does not support
23 a finding of reasonable assurance. *Okanogan Highlands Alliance v. Ecology*, PCHB No. 97-146,
24
25

1 et seq., Final Order (2000).

2 377. Biological impacts may occur outside the mitigation window selected by the Port.
3 There is a marked lack of baseline information, such as biological assessments and flow studies,
4 to be able to determine when and to what extent such impacts will occur. Even assuming
5 biological impacts can be assessed, those impacts would have to occur before they are
6 acknowledged, addressed or mitigated. This potential degradation of characteristic uses would
7 violate the state's anti-degradation standard. WAC 173-201A-070.

8
9 378. In Washington, Ecology must consider the direct, indirect and cumulative impacts
10 of the proposed project when processing a Section 401 application.³⁰ Ecology did not consider
11 certain clearly related impacts of the Third Runway Project, including IWS lagoon lining and
12 removal of large quantities of fill materials from borrow areas in the Des Moines Creek basin.
13 This truncated scope of review violated basic tenets of Washington water quality law.

14
15 **3. WATER RIGHTS CONCLUSIONS OF LAW**

- 16 **a. Must the Port obtain a water right to implement the low**
17 **stream flow conditions in the certification and if so:**
18 **Is there reasonable assurance that § 401 and applicable water quality**
19 **law will not be violated in the absence of such a water right; and**
20 **Is there reasonable assurance that § 401 and applicable water**
21 **quality law will not be violated in the absence of review of a water**
22 **right application under the State Environmental Policy Act**
23 **("SEPA")? (Issue No. 9)**

24 **Water Right Requirement**

25 379. All waters of the state are public waters and subject to appropriation for beneficial

³⁰ In its brief to the United States Supreme Court in *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. 700, Ecology states: "[A]ll of the potential effects of a proposed activity on water quality -- direct and indirect, short and long term, upstream and down-stream, construction and operation -- should be part of a State's certification review." *Id.*, Brief of Respondents at 16.

1 use under the processes set forth in the state Water Code. RCW 90.03.010; RCW 90.03.250. All
2 uses of state waters require a permit. RCW 90.03.010, .250. Two exceptions to the water code
3 permitting requirements do exist, but neither apply here. RCW 90.44.050 (small domestic wells
4 exempt);RCW 90.03.252; 90.46.150(reclaimed wastewater exempt).

5 380. Stormwater is a public water resource and therefore constitutes waters of the state.
6 The capture of stormwater absent beneficial use does not require a water right. However, the
7 capture of stormwater for a beneficial use, as defined by the water code, does require a water
8 right.
9

10 381. Beneficial use is a term of art under the water code and encompasses two
11 principle elements of a water right: purpose and quantity. *Grimes v. Ecology*, 121 Wn.2d 459,
12 468, 852 P.2d 1044 (1993). When referring to purpose, beneficial use is defined to mean
13 productive, 'end use' of water. The legislature has defined beneficial uses of water to include
14 "fish and wildlife maintenance and enhancement . . . and preservation of environmental and
15 aesthetic values, and all other uses compatible with the enjoyment of the public waters of the
16 state[.]" RCW 90.54.020(1); see also RCW 90.14.031(2).
17

18 382. Flow augmentation and the use of water for stream flow mitigation are beneficial
19 uses of water for which a water right is required. See, *Conifer Ridge Enterprises v. Ecology*,
20 PCHB No. 96-11 (1998); *Okanogan Highlands Alliance v. Ecology*, PCHB No. 97-146, *et seq.*,
21 Summary Judgment on Stipulated Issues Nos. 20, 21 and 22 (10/23/98); *see also Bevan v.*
22 *Ecology*, PCHB No. 48 (1972).
23

24 383. The facts presented here are unlike familiar instances in which stormwater is not
25 purposefully captured to be put to a beneficial use. Several of the Respondents' experts

1 acknowledged this distinction, conceding that they had never seen a plan like that proposed by
2 the Port included in a stormwater management plan. Further, low flow augmentation as
3 proposed by the Port contains all the classic elements of a water right, including instantaneous
4 and annual quantities and season of use. RCW 90.03.260, .290; see *Ecology v. Theodoratus*, 135
5 Wn.2d 582, 957 P.2d 1241 (1998).

6
7 384. Here, where the capture is for a specific beneficial purpose, and a purpose that
8 must be maintained in perpetuity, the basic principles of water law enumerated above govern.
9 Capture of stormwater for use as low flow augmentation requires a water right because it is
10 materially different under the law from familiar stormwater management activities. Stormwater
11 infiltration facilities *per se* do not fall within this rule. Although such facilities may as an
12 incident of their function enhance base flows, they are not purposefully designed – and required
13 – to create an instream flow right in perpetuity.

14
15 385. The diversion and impoundment system combined with the subsequent
16 application of water to a beneficial use takes the Port’s plan beyond simple “management” of
17 stormwater to an appropriation triggering water code requirements. In doing so, no conflict
18 arises between stormwater management goals, e.g., RCW 90.54.020(11) and the permitting
19 requirements of the state Water Code, Chapter 90.03 RCW. It is possible to manage and use
20 water at the same time; stormwater management and water code requirements are not mutually
21 exclusive.

22
23 386. The Water Code is intended to be a complete system for the distribution and
24 regulation of the waters of the state. Neither the Board nor Ecology can create an exemption in
25 the water code that is not expressly set forth by the legislature. See *Kim v. Ecology*, PCHB No.

1 98-213, Order on Summary Judgment (1999).

2 387. That a water right is required should be no surprise to the respondents. The Port
3 has previously applied for a water right for low flow augmentation. Similarly, the Department of
4 Ecology has issued water rights for low flow augmentation and mitigation purposes. The failure
5 of the Port to obtain a water right for its mitigation plan makes it impossible to rely on the plan
6 as a basis for the reasonable assurance necessary for a 401 certification because it relies on a plan
7 which is in conflict with state law.
8

9 **SEPA**

10 388. Water right applications, with some exceptions, are subject to review under
11 SEPA, Chapter 43.21C RCW. Ecology also requires low flow mitigation plans to undergo
12 SEPA review, depending upon complexity. See *OHA v. Ecology, supra*, Supplemental Order on
13 Petition for Reconsideration (2/14/00). The Port's low flow mitigation plan is a highly complex
14 project and likely would be subject to some level of environmental analysis, had SEPA been
15 applied. Absent a water right application, it is not possible to predict whether any SEPA
16 exemption might apply. By failing to require a water right, Ecology enabled the Port to bypass
17 SEPA requirements, in violation of law.
18

19 **Reasonable Assurance**

20 389. Ecology's "reasonable assurance" determination is fatally undermined by its
21 failure to require the Port to tender a water right as a component of the 401 Certification process.
22 The reasonable assurance standard requires that Ecology have reasonable certainty that impacts
23 to aquatic resources project that will degrade their characteristic uses will be fully mitigated. 40
24 CFR § 121.2(a)(3). Protection of stream flow is a critical component of the 401 certification
25

1 process. Projects that impact stream flow and designated instream uses are subject to special
2 scrutiny in the permitting process. *Dep't of Ecology v. PUD No. 1 of Jefferson County*, 121
3 Wn.2d 179, 187, 849 P.2d 646 (1993), *aff'd*, 511 U.S. 700 (1994). To obtain 401 certification,
4 the Port is therefore required to demonstrate that legal and practical means are in place to
5 permanently mitigate low flow impacts. *Id.*, 121 Wn.2d at 185-192.

6
7 390. The purpose of a water right in this instance is to protect from impairment by
8 others the instream flows in Des Moines and Walker Creeks that the Port is required to create as
9 a part of its mitigation obligation. Lack of a water right leaves considerable uncertainty whether
10 the Port's mitigation proposal will permanently protect the affected streams throughout their
11 reach. The low flow impacts of the project will be permanent and will extend throughout the
12 streams, from above the low flow "points of compliance" to their points of discharge into Puget
13 Sound. The Port's mitigation must therefore compensate, temporally and geographically, for all
14 of the impacts. *OHA v. Ecology, supra*, Conclusion No. 65 (2000) (*citing* Washington's anti-
15 degradation laws, RCW 90.54.030(3), WAC 173-201A-070(1)).

16
17 391. Several water rights applications are pending in the Des Moines and Miller Creek
18 basins. Although they are groundwater applications, if granted, they hold potential to reduce
19 flows in Des Moines, Miller and Walker Creeks. Ecology manages ground and surface waters as
20 an integrated resource, RCW 90.54.020(9), and considers the surface water impacts of pumping
21 from groundwater when the aquifer is hydraulically connected to a stream or river. *Postema v.*
22 *Ecology*, 142 Wn.2d 68, 95-97, 11 P.3d 726 (2000); *Hubbard v. Ecology*, 86 Wn. App. 119, 125-
23 26, 936 P.2d 27 (1997). The present closure of the Miller and Des Moines Creek basins
24 encompasses groundwater in hydraulically connected aquifers. WAC 173-509-050; *Postema*,

1 *supra.*

2 392. The Miller and Walker Creek closures are subject to future amendment.
3 Watershed planning under Chapter 90.82 RCW contemplates that existing minimum flow rules,
4 including closures, may be re-visited and amended. RCW 90.82.085. Recent watershed
5 planning guidance issued by Ecology advises local watershed planning groups how to set and
6 amend regulatory minimum flows, including for “out-of-stream” emphasis, i.e., issuance of new
7 water rights. Several such efforts are underway around the state.
8

9 393. It is not reasonable for Ecology to rely upon the Des Moines and Miller Creek
10 stream closures as a basis for permanent protection of the Port’s augmentation water. While
11 regulations may always be amended, the possibility of amendments to Chapter 173-509 WAC is
12 enhanced by the watershed planning process set forth in Chapter 90.82 RCW. If the Miller and
13 Des Moines Creek stream closures are lifted, Ecology will be required to process the water right
14 applications pending in those basins. Absent a water right, the Port’s low flow augmentation
15 water may in the future be subject to appropriation by others. In such a circumstance, the
16 impacts of the project would not be fully mitigated, and the requirements of water quality law
17 would be violated. *OHA v. Ecology, supra* (Conclusion No. 65).
18

19 394. The federal Water Pollution Control Act requires the use of all appropriate
20 requirements of state law. 33 U.S.C. § 1341(d); *Ecology v. PUD No. 1*, 121 Wn.2d at 192.
21 Moreover, the opportunity to condition the project with appropriate state requirements is now, in
22 the 401 certification process. *PUD No. 1 of Jefferson County v. Ecology*, 511 U.S. 700, 713-721,
23 114 S.Ct. 1900 (1994). Water rights, particularly those involving instream flow protection,
24 include a public interest component that encompasses consideration of water quality factors.
25

1 RCW 90.03.290; 90.54.020(3). The requirement of a water right is therefore an appropriate
2 requirement of state law.

3 395. By failing to require a water right for the Port's low flow mitigation plan, Ecology
4 has failed to fulfill the requirements of federal law that require it to fully implement its own,
5 mandatory authorities. State courts have found agency action to be arbitrary and capricious
6 when Ecology refuses to fulfill its duties with respect to federal consistency determinations.
7 *Skokomish Indian Tribe v. Fitzsimmons*, 97 Wn. App. 84, 95, 982 P.2d 1189 (1999). The water
8 code clearly requires that "all waters within the state belong to the public, and any right thereto,
9 or to the use thereof, shall be hereafter acquired only by appropriation for a beneficial use and in
10 the manner provided and not otherwise." RCW 90.03.010/ RCW 90.03.250.

11
12 396. Appellants have shown, absent a water right, the Port cannot demonstrate that
13 legal means are in place to permanently mitigate the low flow impacts of the Third Runway
14 Project. Without such means, Ecology does not have reasonable assurance that water quality
15 standards will not be violated.
16

17 **4. FILL CRITERIA, EMBANKMENT AND MSE WALL**
18 **CONCLUSIONS OF LAW**

19 **a. Is there reasonable assurance that § 401 and applicable water**
20 **quality law will not be violated as a result of the embankment and fill**
21 **criteria, including:**

- 22 **(a) the method of determining compliance with the fill criteria;**
23 **(b) embankment and wall construction specifications; and**
24 **(c) groundwater discharges from the embankment and**
25 **Mechanically Stabilized Earth ("MSE") wall. (Issue No. 15)**

23 397. For there to be reasonable assurance that the third runway project will comply
24 with applicable water quality standards, there must be reasonable assurance that surface water
25

1 run-off from the embankment and water flowing through and out of the drainage layer will not
2 degrade the Class AA ratings of Des Moines, Miller, and Walker Creeks and will not result in
3 violation of Washington’s toxic substance water quality standard. For Class AA waters, “water
4 quality of this class shall markedly and uniformly exceed the requirements for all or substantially
5 all uses.” WAC 173-201A-030(1)(a). Washington’s toxic substances water quality standard
6 states: Toxic substances shall not be introduced above natural background levels in waters of the
7 state³¹ which have the potential either singularly or cumulatively to adversely affect
8 characteristic water uses, cause acute or chronic toxicity to the most sensitive aquatic biota
9 dependent upon those waters, or adversely affect public health, as determined by the Department.
10 WAC 173-201A-040(1); *see also* WAC 173-201A-030(1)(c)(vii).
11

12 398. It is undisputed that without appropriate conditions there is a risk that
13 contaminants in the fill could cause violations of ground water or surface water standards.
14 Appellants have demonstrated fundamental flaws and significant uncertainties in how the 401
15 Certification proposes to address this risk. Meanwhile, Ecology and the Port have offered
16 interpretations of 401 Condition E so disparate as to leave unresolved, for example, whether
17 petroleum-contaminated soils may be used or how the SPLP tests may be employed – and to
18 what effect.
19

20 399. The use of MTCA-based standards is inconsistent with Washington’s toxic
21 substances water quality criterion, which states:
22

23 Toxic substances *shall not be introduced above natural background levels* in waters of the

24 ³¹ “Surface waters of the state” includes “lakes, rivers, ponds, streams, inland waters, salt waters, wetlands and all
25 other surface waters and water courses within the jurisdiction of the State of Washington.” WAC 173-201A-020
(emphasis added).

1 state which have the potential either singularly or cumulatively to adversely affect
2 characteristic water uses, cause acute or chronic toxicity to the most sensitive biota
3 dependent upon those waters, or adversely affect public health, as determined by the
Department.

4 WAC 173-201A-040(1) (emphasis added). MTCA-based standards for clean-up of contaminated
5 sites are not appropriate benchmarks for determining how much contamination may be
6 introduced on sites which are currently unpolluted. To hold otherwise would be to set a
7 precedent not for protection – but for pollution to a lower common denominator – of our state’s
8 aquatic resources.

9 400. Even assuming that the standards in the 401 were appropriate, the sampling and
10 testing protocol provided under the 401 Certification cannot provide reasonable assurance that
11 there will not be toxic hot spots throughout the embankment and thus cannot provide reasonable
12 assurance that water quality standards will not be violated.

13 401. On a project of this scope and significance, and particularly in light of the amount
14 of fill involved and the current uncertainty as to where the vast majority of it will be obtained,
15 reasonable assurance of compliance with water quality standards requires more.
16

17 **b. Is there reasonable assurance that § 401 and applicable water quality**
18 **law will not be violated as a result of the possibility of MSE wall and**
19 **embankment failure? (Issue No. 16)**

20 402. Ecology has, to date, not been presented with a sufficiently complete MSE wall
21 design to assess short and long term impacts in light of the post-certification changes to
22 “excavate and replace.” (Kavazanjian Prefiled at 3.) Any assessment of reasonable assurance
23 must be based upon completed design analyses for the West MSE wall and an analysis that
24 identifies, proposes and evaluates appropriate mitigation measures for water quality impacts that
25

1 may arise as a result of subgrade improvements and construction site dewatering.

2 403. In addition, given the scope and size of the MSE wall the Port proposes to build
3 adjacent to Miller Creek and associated wetlands, any uncertainty regarding the impact of
4 seismic shaking on the structure must be resolved before Ecology can have reasonable assurance.

5 404. The Tacoma Narrows Bridge and Alaskan Way viaduct in Seattle, proposed
6 regional structures of similar scope and significance, have been designed to a higher seismic
7 standard than the MSE Wall for the Third Runway. The Port's selection of a design earthquake
8 that equates to an average magnitude similar to the recent Nisqually quake raises sufficient
9 uncertainty whether the Port selected an appropriate seismic design event for a structure of this
10 magnitude and importance. The Port's failure to select an appropriate seismic design event
11 creates substantial uncertainty over whether the West MSE wall will fail in whole or in part and
12 thereby subject the nearby wetlands and Miller Creek to further damage and degradation.

13 (Kavazanjian Prefiled at 12.)

14
15
16 405. Ecology must require further analysis of wall and embankment performance
17 during an earthquake using a design event comparable to that of public infrastructure projects
18 such as the Tacoma Narrows Bridge and Alaskan Way viaduct before it can assess whether water
19 quality standards will be violated as the result of a seismic event. Ecology's reasonable
20 assurance analysis must also include an assessment of the impacts to Miller Creek and nearby
21 wetlands together with an appropriate contingency plan to mitigate water quality impacts in the
22 event of a failure or partial failure of the embankment or MSE wall due to an earthquake.

23
24 **5. GROUNDWATER AND WETLANDS CONCLUSIONS OF LAW**

1 **a. Is there reasonable assurance that potential migration and**
2 **discharge of existing groundwater pollutants originating from the**
3 **airport (with the identified mitigation) will not violate § 401 and**
 applicable water quality law? (Issue No. 17)

4 406. There is no dispute that the soil and groundwater underneath the airport is
5 contaminated. Rather than require the Port to complete a numeric, real-world and data-based
6 fate and transport model of known and existing contamination within the regional aquifer,
7 Ecology accepted a conclusory Preferential Pathway Analysis for reasonable assurance. This
8 PPA is inadequate in scope and in any event is incomplete. As previously noted, the PPA fails to
9 consider the impacts to contaminant fate and transport from embankment and wall subgrade
10 improvements, dewatering and borrow site excavation. The PPA is based upon MTCA cleanup
11 standards rather than groundwater and surface water quality standards. The PPA fails to address
12 whole categories of pollutants, particularly organic solvents, metals and glycols that are
13 suspected to lie beneath the Airport.
14

15 407. Based upon this limited PPA, the Port consultants say “[d]evelopment of the
16 Third Runway is not likely to significantly impact or increase the migration of AOMA Qva
17 groundwater contamination.” (Strunk Prefiled at 6.) These are carefully chosen words. The
18 standard is violation of water quality standards, not increase in migration. For example, if the
19 Third Runway will facilitate continuance of current levels of migration or provide alternatives
20 for its occurrence, then reasonable assurance could not be found.
21

22 408. In *OHA*, the Board held “Ecology has not obtained sufficient information to
23 provide reasonable assurance that water quality standards will be protected from leachate
24 discharging from the waste rock facilities.” *OHA*, Conclusion 51. The Governor certified years
25

1 ago that the Agreed Order study requiring the Port to determine based on actual modeling the
2 groundwater flow characteristics and fate and transport of pollutants, and potential risks to
3 adjacent surface water bodies, was absolutely necessary to determine levels of risk and whether
4 Ecology could vouch for compliance with water quality standards. The 401's retreat from this
5 standard is inconsistent with reasonable assurance.
6

7 **b. Is there reasonable assurance that § 401 and applicable water quality**
8 **law will not be violated if the Port is in violation of the terms of the MTCA**
9 **Agreed Order for SeaTac International Airport (Ecology Order No. 97TC-**
10 **N122, dated 5/15/99)? (Issue No. 18)**

11 409. When Governor Locke certified to the U.S. Secretary of Transportation in 1997
12 that the State "has reasonable assurance that the airport development project involving the Sea-
13 Tac third runway will be located, designed, constructed and operated so as to comply with
14 applicable air and water quality standards," he did so based on the requirement that the Port "will
15 complete a ground water evaluation at the airport as defined in the MTCA Agreed Order." (Ex.
16 1085.) The Agreed Order requires the Port to conduct a contaminant fate and transport model of
17 known and existing contamination underneath the Airport. (Ex. 72.)

18 410. The 401 Certification ignores the requirements of the Governor's certification and
19 the Agreed Order and, instead, relies upon future monitoring. As the Governor recognized in his
20 certification, reasonable assurance that contaminants in the AOMA will not result in a violation
21 of state groundwater and surface water quality criteria requires more than the superficial
22 Preferred Pathways Analysis relied upon by Ecology in the rush to issue the 401 Certification.
23 The Port must complete the numeric fate and transport model required by the Governor's
24 certificate and the Agreed Order in order for Ecology to assess whether it has reasonable
25

1 assurance. Reliance upon future modeling without a present assessment of risk cannot equate to
2 reasonable assurance.

3 **b. Is there reasonable assurance that § 401 and applicable water quality**
4 **law will not be violated as a result of wetland fill, stream alteration and**
5 **identified mitigation activities? (Issue No. 19)**

6 411. The purpose of water quality standards is to prevent water quality from falling
7 below acceptable levels. *PUD No. 1, et al., v. Washington Department of Ecology, et al.*, 511
8 U.S. 700, 704 (1994). Waters of the state include “lakes, rivers, ponds, streams, inland waters,
9 salt waters, *wetlands* and all other surface waters of the state and water courses within the
10 jurisdiction of the State of Washington.” WAC 173-201A-020 (emphasis added). Thus,
11 wetlands are waters of the state protected by the state’s water quality standards. For there to be
12 reasonable assurance that the Port’s third runway proposal complies with water quality
13 standards, there must be reasonable assurance that impacts to wetlands will be mitigated in a
14 manner consistent with Washington State’s anti-degradation policy:

15
16 Existing beneficial uses shall be maintained and protected and no further degradation
17 which would interfere with or become injurious to existing beneficial uses shall be
18 allowed.

19 WAC 173-201A-070(1). The anti-degradation policy as applied to wetlands mandates that
20 impacts be avoided, minimized and compensated. *Okanogan Highlands Alliance, et al. v. Dept.*
21 *of Ecology*, PCHB No. 97-146, 97-182, 97-183, 97-186, 99-014 (2000) (“OHA”) at Conclusion
22 of Law 67. Ecology’s own guidelines under these standards provide that:

23 the primary means for protecting water quality in wetlands is to implementing the
24 anti-degradation section of the water quality standards. The anti-degradation policy
25 in the water quality standards establishes the bottom line for water quality protection
in Washington’s waters: ‘existing beneficial uses shall be maintained and protected

1 and no further degradation which would interfere with or become injurious to
2 beneficial uses shall be allowed.'

3 Water Quality Guidelines for Wetlands, Dept. of Ecology Publication No. 96-06 (April 6, 1996),
4 p. 3, Exhibit 2024. In applying the anti-degradation policy to wetlands, the Board has explained
5 that:

6 the anti-degradation policy is expressed in terms of a goal that there be no net loss of
7 wetlands. In regulating activities impacting wetlands the Department requires a
8 staged analysis and mitigation ratio.

9 *OHA, supra*, at Conclusion 66 (citing *O'Hagen v. DOE*, PCHB No. 95-25 (1995)). The Board
10 has rejected "off-site and out-of-kind mitigation as insufficient because it did not focus on actual
11 compensation for or replacement of lost resources." *Id.* at Findings 53-54. Finally, the Board
12 has rejected mitigation proposals that are focused on protecting or enhancing existing resources
13 that are "already in existence and already protected by existing environmental laws." *Id.* at
14 Finding 54.

15 412. Here, the Port's proposal does not comply with the anti-degradation standard
16 because it does not appropriately compensate for or replace lost resources. Opportunities for in-
17 basin mitigation were available and overlooked. The mitigation proposed will not replace the
18 wetland functions that would be lost through construction of the proposal.

19 413. The NRMP's wetland mitigation proposal does not provide appropriate ratios for
20 mitigating impacts and is dominated by enhancement of upland habitat that cannot mitigate for
21 wetlands lost and is already protected by wetland or sensitive area regulations.

22 414. The Port failed to perform a proper wetland functional assessment. This
23 precludes any finding of reasonable assurance because it is not known what wetland functions
24
25

1 need to be replaced. In addition to not performing an appropriate wetland functional assessment,
2 the Port has failed to establish a baseline for wetland hydrology because the Port has failed to
3 properly measure and document the hydroperiod and adopted a “one size fits all” hydrology
4 performance standard.

5 415. The NRMP does not provide reasonable assurance that compliance with water
6 quality standards because there is no reasonable assurance that the proposed relocation of Miller
7 Creek can be accomplished as proposed and still maintain existing beneficial uses.
8

9 **6. MONITORING CONCLUSIONS OF LAW**

10 **a. Is there reasonable assurance that § 401 and applicable water quality**
11 **law will not be violated if (1) the Certification relies on future monitoring; or**
12 **(2) if the Certification fails to require adequate pre-construction monitoring?**
(Issue No. 7)

13 416. The antidegradation policy (WAC 173-201A-070) mandates that existing
14 beneficial uses be maintained. It is obvious that such a goal can only be achieved if we have
15 complete and accurate data describing what is to be preserved **before** the threatening activities
16 proceed. It is equally obvious that, even in the presence of such baseline data, post-construction
17 monitoring conditions can offer no reasonable certainty that water quality violations will not
18 occur in the first place. Such conditions can identify a problem after the fact, but do nothing to
19 prevent one from occurring. And once identified, depending on how the conditions are written,
20 they may offer no reasonable certainty of reversal of violations.
21

22 417. There may be some instances involving proposals of far lesser scope and
23 complexity where reliance on properly worded post-construction monitoring conditions would be
24 acceptable, because violations could be **immediately** detected and corrective actions could be
25

1 **immediately** implemented.

2 418. Such reliance is not appropriate here where the proposal entails massive and
3 irretrievable commitments of resources and manipulation of entire watersheds. It is not disputed
4 that the importation of millions of cubic yards of potentially contaminated soils onto the third
5 runway site poses a risk to surface and/or groundwater. It would be too late to protect project
6 area wetlands and streams from contaminated embankment seepage after the Port has filled
7 substantial portions of the Miller, Walker and Des Moines Creek watersheds with 20 million
8 cubic yards of contaminated fill in a more than one mile embankment.

9
10 419. Similarly, there can be no reasonable assurance that wetland hydrology and
11 associated beneficial uses will be protected where the necessary comprehensive baseline studies
12 and pre-construction monitoring have not occurred. For example, pre and post-construction
13 monitoring data which takes a one size and sample fits all approach to wetland hydrology is not
14 consistent with current knowledge or the obvious diversity and complexity of the various
15 wetlands systems potentially affected by the project. There are important existing beneficial uses
16 of the project area streams, including numerous fish species that have not been identified in any
17 baseline study. At this juncture, therefore, there is no assurance that the project will not proceed
18 at the expense of beneficial uses by lowering the bar against which protection is measured.
19

20 **7. PUBLIC PROCESS -- NOTICE CONCLUSIONS OF LAW**

21
22 **a. Did Ecology violate applicable law pertaining to public and agency**
23 **notice, hearing, comment and modification regarding the original 401/404**
24 **application and Amended Certification? (Issue No. 1)**

25 420. The mechanisms for public input into the 401 Certification process are found in a
combination of state and federal authorities addressing both Sections 401 and 404 of the Clean

1 Water Act. 33 U.S.C. § 1341; 33 C.F.R., Parts 325, 327; Ch. 173-225 WAC. An applicant for a
2 federal permit to fill wetlands must file a “joint aquatic resource permit application” or JARPA,
3 which is directed both to the Corps of Engineers and Ecology. Ecology has one year to issue or
4 deny certification that the proposed action meets state water quality standards. 33 U.S.C. §
5 1341(a)(1).
6

7 421. The federal Environmental Protection Agency (EPA) also has a role to play from
8 the start of the 401 Certification process. Publication of public notice by the Corps pursuant to
9 33 C.F.R. § 325.2(b)(i) commences a period during which EPA may comment on and
10 recommend denial of 404 permits based on Corps-EPA guidelines. EPA utilized this provision
11 and provided comments on the Third Runway Project. EPA has a further role to play in that
12 federal regulations governing state 401 certification **require** EPA approval of modifications to a
13 state 401 Certification. 40 C.F.R. § 121.2(5)(b). In this case, however, Ecology’s rescission
14 process denied to EPA the authority to approve the modifications made between August 10 and
15 September 21, in violation of the federal regulation.
16

17 422. Ecology’s rescission and re-issuance of a revised certification on September 21
18 violated laws and regulations applicable to the 401 certification process, circumventing the
19 public notice and hearings requirements for 404/401 applicants. *See* WAC 173-225-030. The
20 process utilized by Ecology eliminated the ability of interested members of the public to review
21 or comment on what were essentially new aspects of the project.
22

23 423. Once the August 401 Certification was issued and then withdrawn, Ecology
24 should have, as it had in the past, required the Port to submit a JARPA describing the altered
25 scope of the project, particularly in light of the Port’s proposal ultimately adopted by Ecology in

1 the September 401 to change the scope of coverage of the certification from what had been
2 described in the earlier JARPA and public notice. This would in turn have re-triggered public
3 notice and comment processes. Leaving the public to “participate” only through an appeal to this
4 Board is neither consistent with the law nor an appropriate public policy.

5 424. Public notice is not an insignificant aspect of the process. As the Corps of
6 Engineers regulations make clear:
7

8 The public notice is the primary method of advising all interested parties of the
9 proposed activity for which a permit is sought and of soliciting comments and
10 information necessary to evaluate the probable impact on the public interest.

11 33 CFR § 325.3(a). *See* 33 CFR § 327.4(c) (presumption in favor of public hearings).

12 425. By failing to require a new public notice, Ecology also circumvented further EPA
13 review of the project. 33 CFR § 325.2(b)(i). Even assuming that the “no notice modification
14 process “ followed by Ecology was otherwise valid, the applicable Clean Water Act regulations
15 are unequivocal that no modification could occur without being presented to EPA for approval.
16 40 C.F.R. § 121.2(5)(b). The failure to do so here once again renders the September 401
17 certification invalid.

18 **8. COASTAL ZONE MANAGEMENT CONSISTENCY CONCLUSIONS OF**
19 **LAW**

20 **a. Does Ecology’s concurrence with the Port’s consistency certification,**
21 **issued pursuant to the Coastal Zone Management Act (“CZMA”), fail to**
22 **comply with the requirements of the CZMA and Washington’s approved**
23 **Coastal Zone Management Plan? (Issue No. 2)**

24 426. The CZMA was enacted to encourage wise use of coastal resources through state
25 adoption and implementation of management programs for the coastal zone. 16 U.S.C. § 1452.
Washington's Coastal Zone Management Program, the core of which is the SMA, was adopted

1 pursuant to the CZMA. When the proposal falls within the state's coastal zone management area,
2 Ecology must ensure compliance with state and federal coastal and shoreline laws. 16 U.S.C. §
3 1456(c)(3)(A); RCW 90.58.260.

4 427. Under the CZMA, the applicant for a covered federal permit:

5 shall provide in the application to the licensing or permitting agency a certification
6 that the proposed activity complies with the enforceable policies of the state's
7 approved program and that such activity will be conducted in a manner consistent
8 with the program. At the same time, the applicant shall furnish to the state or its
designated agency a copy of the certification, with all necessary information and data.

9 CZMA § 307(c)(3)(A), 16 U.S.C. § 1456(c)(3)(A) (emphasis added). The law further requires
10 the state to "establish procedures for public notice in the case of all such certifications" *Id.*
11 Upon receipt of the certification and necessary information and data, the state then conducts a
12 review and either certifies or objects to the applicant's consistency certification. *Id.*³²

13 428. Under the federal and state regulatory schemes implementing the CZMA,
14 Ecology does not have the authority to choose not to follow the procedures prescribed by law to
15 ensure that projects reviewed for CZMA consistency comply with state law. *See, Skokomish*
16 *Indian Tribe v. Fitzsimmons*, 97 Wn. App. 84, 95, 982 P.2d 1179 (1999). The regulations
17 implementing the CZMA require an applicant to submit with its certification, among other
18 things, necessary data and information that is adequate to permit an assessment of a project's
19 probable coastal zone effects; a brief assessment relating those effects to the relevant elements of
20 the CZMP; and a set of findings, derived from the assessment, indicating that the proposed
21 project is consistent with the enforceable provisions of the CZMP. 15 C.F.R. § 930.58(4);
22
23

24 ³² Generally, the federal permit may not issue unless the state grants concurrence, the state waives
25 concurrence, or the Secretary of Commerce finds the activity consistent with the CZMA. *Id.*

1 CZMP at 116.

2 429. The regulations also require that, *following* receipt of the necessary data and
3 information, the State agency shall ensure timely public notice of the proposed activity. 15
4 C.F.R. § 930.61(a); CZMP at 116-18. Under the regulations, the public notice must provide a
5 summary of the proposed activity, announce the availability for inspection of the consistency
6 certification and accompanying public information and data, and request that comments be
7 submitted to the State agency. 15 C.F.R. § 930.61(a); CZMP at 118.

8
9 430. In this case, the Port, as the appropriate local government, issued a statement that
10 its proposal is consistent with the state's CZMP. Ecology was then required to concur in or
11 object to the consistency statement. 16 U.S.C. § 1456(c)(3)(A); 33 CFR § 325.2(b)(2)(ii);
12 *Skokomish Indian Tribe v. Fitzsimmons*, 97 Wn. App. 84, 982 P.2d 1189 (1999). Because this
13 statement requires a determination of consistency with the federal Clean Water Act and state
14 water quality standards, Ecology's concurrence is dependent upon the issuance of a valid 401
15 Certification.

16
17 431. Ecology's CZMA concurrence failed to comply with the procedural and
18 substantive requirements of the CZMA and Washington's CZMP. Satisfaction of the CZMA's
19 requirements involves more than determining whether paperwork is "on file." It is clear that the
20 Port's certification was not in hand at the time of the public notice, and that numerous significant
21 project documents were not "on file" even at the time of Ecology's concurrence. Therefore,
22 under the regulations, both the issuance of the public notice and the determination of
23 concurrency were premature. CZMA § 307(c)(3)(A), 16 U.S.C. § 1456(c)(3)(A).

24
25 432. In addition, Ecology's CZM concurrence statement for the Third Runway Project

1 became invalid when the State rescinded the August 10 Certification. Ecology's issuance of a
2 new CZM concurrence statement without a new application and public notice violated the
3 procedural requirements of the CZMA. 16 U.S.C. § 1456(c)(3)(A). See 15 C.F.R. § 930.61(a);
4 15 C.F.R. § 930.61(a).
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2 **VII. CONCLUSIONS AND ORDER**

3 Based on the foregoing findings of fact and conclusions of law the Board concludes that
4 the 401 Certification and CZMA consistency determination are not in compliance with
5 applicable law and therefore:
6

7 IT IS HEREBY ORDERED that the Airport Communities Coalition's and Citizens
8 Against Airport Expansion's appeal of the water quality 401 Certification issued by the
9 Department of Ecology on September 21, 2001 is hereby GRANTED;

10 IT IS FURTHER ORDERED that the 401 Certification issued by the Department of
11 Ecology on September 21, 2001 is hereby vacated and of no force or effect;

12 IT IS FURTHER ORDERED that the Department of Ecology is to commence a new
13 Section 401 and CZMA process upon proper application by respondent Port of Seattle that
14 ensures the public the opportunity to submit informed comments in the event the Port seeks re-
15 issuance of a Section 401 certification;
16

17 IT IS FURTHER ORDERED that all subsequent consideration by Ecology shall be
18 consistent with this decision.

19 SO ORDERED this _____ day of _____, 2002.

20 POLLUTION CONTROL HEARINGS BOARD

21 KALEEN COTTINGHAM, Presiding

22
23 ROBERT V. JENSEN, Member

24
25 BILL LYNCH, Member