

**POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON**

PIERCE COUNTY; SNOHOMISH COUNTY, a political subdivision of the State of Washington; CLARK COUNTY, WASHINGTON; KING COUNTY, a political subdivision of the State of Washington; and BUILDING INDUSTRY ASSOCIATION OF CLARK COUNTY,

Appellants,

and

CITY OF SEATTLE, a municipal corporation; and CITY OF TACOMA, a municipal corporation,

Intervenors,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Respondent,

and

PUGET SOUNDKEEPER ALLIANCE, WASHINGTON ENVIRONMENTAL COUNCIL, and ROSEMERE NEIGHBORHOOD ASSOCIATION,

Respondent Intervenors.

and

PCHB No. 12-093c
(Phase I)

PCHB No. 12-097c
(Phase II Consolidated Issues)

**FINDINGS OF FACT, CONCLUSIONS OF
LAW, AND ORDER**

FINDINGS OF FACT, CONCLUSIONS OF LAW,
AND ORDER
PCHB No. 12-093c
PCHB No. 12-097c

1 COALITION OF GOVERNMENT
2 ENTITIES: CITY OF AUBURN, CITY OF
3 BAINBRIDGE ISLAND, CITY OF
4 BELLEVUE, CITY OF BURLINGTON,
5 CITY OF DES MOINES, CITY OF
6 EVERETT, CITY OF KENT, CITY OF
7 ISSAQUAH, CITY OF MOUNT VERNON,
8 CITY OF RENTON, CITY OF SEATAC,
9 CITY OF SNOQUALMIE, CITY OF
10 SUMNER, all municipal corporations of the
11 State of Washington; COWLITZ COUNTY;
12 and KING COUNTY, political subdivisions
13 of the State of Washington,

14 Appellants,

15 and

16 CITIES OF KIRKLAND, KELSO,
17 SAMMAMISH, CAMAS, LONGVIEW,
18 LYNNWOOD, POULSBO, BREMERTON,
19 BOTHELL and FERNDAL; and STATE
20 OF WASHINGTON, DEPARTMENT OF
21 TRANSPORTATION

Appellant Intervenors,

v.

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Respondent.

and

PUGET SOUNDKEEPER ALLIANCE,
ROSEMERE NEIGHBORHOOD
ASSOCIATION,

Respondent Intervenors.

FINDINGS OF FACT, CONCLUSIONS OF LAW,
AND ORDER

PCHB No. 12-093c

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1 **I.**

2 **SUMMARY OF DECISION**

3 In these consolidated appeals, the Board is asked to consider whether several conditions
4 and terms of the Phase I Municipal Stormwater National Pollution Discharge Elimination System
5 (NPDES) Permit (Phase I Permit) and the Western Washington Phase II Municipal Stormwater
6 Permit (Phase II Permit) (Collectively the “Phase I and II Permits” or the “2013 Permits”) are
7 lawful. The 2013 Permits were effective August 1, 2013, with an expiration date of July 1, 2018.

8 After a hearing was conducted on the remaining issues in these appeals, the Board
9 concludes that the Washington Department of Ecology (Ecology) properly issued the 2013
10 Permits with conditions that require the implementation of low impact development (“LID”),
11 including the use of bioretention facilities and permeable pavement and application of the
12 infeasibility criteria, and the development of watershed scale planning. The Board concludes
13 that the Permits correctly implement the prior decision of the Board on the previous iteration of
14 the Permits, while giving the permittees considerable flexibility in implementation of many
15 provisions. However, the Board further concludes that the Appellants met their burden to show
16 that certain limited aspects of the Permits should be modified. These specific elements include
17 problems with the use of permeable pavement on roads with heavy traffic, the uncertainty
18 concerning a permittee’s ability to designate a geographic area as infeasible for the application of
19 permeable pavement due to limitations on infiltration, and the difficulty of developing
20 watershed-scale planning in basins with cross-jurisdictional boundaries. The Board remands
21 limited aspects of both the Phase I Permit and the Phase II Permit as follows:

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- 1 1. The Board directs Ecology to implement the Permits and, to the extent Ecology
2 deems necessary, amend the 2012 Stormwater Management Manual for Western
3 Washington as follows:
 - 4 a. Limit the application of permeable pavement to those roadways that receive
5 very low-traffic volumes and areas of very low truck traffic.
 - 6 b. Delete the second sentence of the infeasibility criterion addressing road
7 sanding for snow and ice in the 2012 Manual, Vol. V at 5-19.
 - 8 c. Clarify the process a local jurisdiction is to follow to designate a geographic
9 area as infeasible for permeable pavement and identify the data required to
10 support such a determination.
- 11 2. The Board directs Ecology to amend the Phase I Permit and Phase II Permit as
12 necessary to address cross-jurisdictional coordination and insure that the scope of
13 work for the designated watershed plan includes the full participation of both
14 Phase I and Phase II permittees, and to the extent possible other entities and
15 governmental jurisdictions to which Ecology issues stormwater permits within
16 the designated watershed.
- 17 3. The Board directs Ecology to republish for comment the Phase I and Phase II
18 Permits as amended by this Order, and with the incorporation of all such
19 Guidance documents that have now been finalized and available for review and
20 comment.

PROCEDURAL BACKGROUND

21 Pierce County, Snohomish County, Clark County, King County and the Building Industry
Association of Clark County (BIA) timely appealed the Phase I Permit. The City of Seattle, the
City of Tacoma and the State of Washington, Department of Transportation (WSDOT) were
granted intervention and aligned with Appellants. The Puget Soundkeeper Alliance, Washington
Environmental Council, and Rosemere Neighborhood Association (collectively PSA) were
granted intervention as Respondent-Intervenors.

Several local governments, identified as the Coalition of Government Entities, appealed
the Phase II Permit. The Coalition is comprised of the City of Auburn, the City of Bainbridge

1 Island, the City of Bellevue, the City of Burlington, the City of Des Moines, the City of Everett,
2 the City of Kent, the City of Issaquah, the City of Mount Vernon, the City of Renton , the City of
3 Seatac, the City of Snoqualmie, the City of Sumner, and Cowlitz County (collectively Coalition).
4 King County also filed an appeal of the Phase II Permit. The Cities of Kirkland, Kelso,
5 Sammamish, Camas, Longview, Lynnwood, Poulsbo, Bremerton, Bothell, Ferndale, and
6 WSDOT were granted intervention as Appellant-Intervenors. King County and WSDOT¹ also
7 appealed the Phase II Permit. PSA was granted intervention as Respondent-Intervenors.

8 The Board conducted pre-hearing conferences on both the Phase I Permit and Phase II
9 Permit appeals, and entered separate pre-hearing orders for each of the appeals. Although the
10 appeals of the Phase I Permit and the Phase II Permit proceeded as two separate cases, with the
11 agreement of the parties, the Board ordered several specific issues from the Phase II Permit
12 appeal be consolidated with the proceedings in the appeal of the Phase I Permit, as these issues
13 have common questions of fact or law (Joint Order of Consolidation of Issues, January 16,
14 2013).²

15 The Board addressed and resolved many of the consolidated issues in separate summary
16 judgment orders³ and by stipulations of the Parties.⁴ This decision resolves the remaining issues,
17 which are as follows:

18 _____
19 ¹ WSDOT withdrew from the appeal of the Phase 1 Permit but remained a party to the appeal of the Phase II Permit
and therefore was a party to the Phase II consolidated issues.

20 ² After the hearing in this appeal of the consolidated issue, the parties filed a stipulation requesting dismissal of the
remaining issues in the Appeal of the Phase II Permit, PCHB No. 12-097c.

21 ³ See Order on Summary Judgment Phase 1 Issues Nos. 2, 4, 5, 6, 7, 17(d) and (e), and 18, and Phase II Issues Nos.
2(b) and (c), 3(b)-(e), 5, 9, and 17 (September 26, 2013); Order on Summary Judgment Phase 1 Issues Nos. 3,
17(a) and 20; and Phase II Issues Nos. 2(a) and 3(a) (October 2, 2013); Order on Summary Judgment Phase 1 Issues
Nos. 11, 14, 15, 16, 22, and 23 (October 8, 2013). Based on the Order on Summary Judgment Phase 1 Issues Nos.

1 Phase I Issues:

2 4. Whether provisions of Special Condition S5.C.5.a.i of the Permit are
3 unlawful, unreasonable, impracticable, vague and/or ambiguous because they
4 purport to provide Permittees with regulatory options and alternatives that are
5 illusory, unattainable and/or nonexistent;

6 5. Whether Special Condition S5.C.5.b and Minimum Requirement (MR) 5 set
7 forth in Appendix 1 of the Permit are unlawful, unjust, unreasonable,
8 impracticable, vague, ambiguous, economically infeasible and/or set forth
9 mandates of unknown effectiveness in ameliorating, treating and/or controlling
10 municipal stormwater;

11 6. Whether Special Condition S5.C.5.c. of the Permit contains requirements that
12 are unlawful, unjust, unreasonable and/or inequitable because they require Phase I
13 counties to take on all the responsibility for watershed-scale stormwater planning
14 for a basin, including areas that are (a) within the jurisdiction of Phase II
15 permittees when such Phase II permittees are not required by their NPDES
16 permits to actively and fully participate in, and share the costs of, such basin
17 planning on an equitable pro-rata basis, (b) federally owned and thus regulated by
18 EPA when such federal land owners are not required to actively and fully
19 participate in, and share the costs of, such basin planning on an equitable pro-rata
20 basis, and/or (c) within Indian Reservations and thus regulated by EPA when the
21 Indian Tribes are not required to actively and fully participate in , and share the
22 costs of, such basin planning on an equitable pro-rata basis;

23 7. Whether Special Condition S5.C.5.c of the Permit contains requirements that
24 are unlawful, unjust, unreasonable, impracticable, beyond the authority of
25 Ecology to impose, contrary to the Washington State constitution, contrary to the
26 United States constitution and/or contrary to other terms of the Permit because
27 they require Phase I counties to perform activities and/or plan stormwater
28 strategies in areas where their MS4s do not exist, and/or that are outside of their
29 jurisdictional boundaries, and/or in locations over which they have no control or
30 authority to access.

2, 4, 5, 6, 7, 17(d) and (e), and 18, and Phase II Issue Nos. 2(b) and (c), 3(b)-(e), 5, 9, and 17 (September 26, 2013), the Board found that Phase I Issues Nos. 4, 5, 6, and 7, and Phase II Issue Nos. 2(b) and (c) and 3(b)-(e) are limited to challenging the Permits regarding permeable pavement criteria, bioretention criteria, infeasibility criteria for permeable pavement and bioretention, LID feasibility assessment process, the LID best management practice list, and the LID performance standard.

⁴ See Order Dismissing Phase I Issues No. 1, No. 2, and No. 12 (September 30, 2013).

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1 8. Whether Special Condition S5.C.5.c of the Permit contains requirements that
2 are unlawful, unreasonable, unjust, unduly burdensome, arbitrary and/or
3 capricious because they are overly prescriptive and/or do not take into account the
4 timing needs, actual needs and/or unique characteristics of the selected basin.

5 9. Whether Special Condition S5.C.5.c of the Permit grants authority to Ecology
6 that is unlawful, unjust, unreasonable, arbitrary and/or capricious because
7 Ecology will review and approve Permittees' submitted scope of work and
8 schedule for the mandated watershed planning process without adequate criteria
9 or standards, without prior notice of such provision, and/or without adequate
10 appeal rights.

11 10. Whether Special Condition S5.C.5.c is unlawful, unjust, unreasonable and/or
12 impracticable due to the following reasons:

- 13 a. Said requirements deprive the Permittee of the ability to select a
14 watershed of its own choosing;
- 15 b. No notice of the final watershed options was provided by the draft
16 Permit;
- 17 c. Said requirements will not provide data that is useful, cost-effective, or
18 an effective means of improving water quality;
- 19 d. Said requirements compel Pierce County to conduct monitoring and
20 modeling in the Clover Basin, with no options to choose another basin;
- 21 e. Said requirements require Ecology's approval of basin plans for
implementation that Permittees have already completed and which have
already been adopted by Permittees by legislation at local expense;
- f. Said requirements impact land use planning in local jurisdictions;
- g. Said requirements require the use of tools and modeling that are not
sufficiently reliable and/or unfairly impose burdensome requirement on
Permittees; and/or
- h. The purported purposes of these requirements can be achieved by
other more efficient and effective means outside of the Permit.

13. Whether Special Condition S5.C.9.d of the Permit contains requirements that
are unlawful, unreasonable, unjust, unduly burdensome, arbitrary and/or
capricious because the trigger and requirements are ambiguous and appear to
burden Permittees with an inspection and cleaning cycle and frequency that is
overly expensive, unwarranted, and/or for which notice was not provided;

17. Whether certain Low Impact Development ("LID") provisions contained in
the Permit, Appendix 1, the Manual, and/or documents that are referenced by or

1 incorporated into the Permit, Appendix 1 and/or the Manual, are unlawful, unjust,
2 unreasonable, impracticable, vague and/or ambiguous for the following reasons:

3 b. No meaningful opportunity for review and comment was afforded
4 Permittees because the draft Permit and draft Manual were issued at the
5 same time;

6 c. Permittees were provided no meaningful opportunity to review and
7 comment on some of the documents incorporated by reference into the
8 Permit, Appendix 1 and/or the Manual because said documents did not
9 exist, were not in final form, or were not otherwise made available for
10 review during the public comment period;

11 d. Permittees are required to adopt LID development standards that are at
12 least as stringent as those found in the Manual, including infeasibility
13 criteria, which are not included in the Permit; and/or

14 e. The Permit does not include criteria to determine LID feasibility, but
15 instead relies on “infeasibility” criteria included in the Manual;

16 18. Whether the provisions in the Permit, Appendix 1, and corresponding
17 references to the Manual are unreasonable, unjust, unlawful, burdensome,
18 expensive, cost prohibitive, impracticable, insufficiently tested and/or not legally
19 required with regard to provisions that apply to roadway projects, porous
20 pavement, and full dispersion.

21 19. Whether MR 5, set forth in Appendix 1 of the Permit is contrary to the
22 constitutions of the United States and/or Washington State and/or violates RCW
23 82.02.020 because it requires the owners or developers of private land to mitigate
24 for stormwater impacts that were not caused by the owners or developers of the
25 land, and to mitigate to an extent that is not roughly proportional to the impacts of
26 the present or proposed development of the land.

27 21. Whether Special Condition S5.C.5.b.ii of the Permit and Special Condition
28 S8.A of the Permit that require Permittees to deliver or report certain data or
29 information to Ecology are unlawful, unjust, unreasonable, impracticable, vague,
30 ambiguous and/or beyond the authority of Ecology to impose.

31 Phase II Consolidated Issues:

2. Whether Special Condition S5.C.4 of the 2013-18 Phase II NPDES Municipal
Stormwater Permit for Western Washington (the “Permit”), and references in
those conditions to Appendix 1 and the 2012 Stormwater Management Manual
for Western Washington (“the Manual”) contain requirements that are unlawful,

1 unjust, unreasonable, and/or impracticable for one or more of the following
2 reasons:

3 b. Said provisions impose burdensome and unreasonable new
4 requirements; and/or

5 c. Said provisions impose economic burdens on Coalition members to an
6 extent that renders the provisions impracticable and unreasonable.

7 3. Whether Low Impact Development (“LID”) provisions contained in
8 Conditions S5, S5.C.1, S5.C.2, S5.C.3, S5.C.4, and/or S5.C.5 of the Permit,
9 Appendix 1, the Manual, and/or documents referenced by or incorporated into the
10 Permit, Appendix 1 and/or the Manual, are unlawful, unjust, unreasonable, and/or
11 impracticable for one or more of the following reasons:

12 b. Said provisions impose burdensome and unreasonable new
13 requirements;

14 c. Said provisions rely on unproven technologies with potentially
15 unintended consequences;

16 d. Said provisions adversely affect the economic health of Coalition
17 members and their communities; and/or

18 e. Said provisions impose economic burdens on Coalition members to an
19 extent that renders the provisions impracticable and unreasonable.

20 5. Whether provisions in the Permit, Appendix 1, and corresponding references
21 to the Manual are unreasonable, unjust, unlawful, and/or impracticable with
regard to provisions that apply to the use of porous pavement for roadway
projects.

9. Whether the provisions in Permit Condition S5.C.4.g, which require
participation in watershed-scale stormwater planning led by a Phase I County
under the Phase I Municipal Stormwater Permit, are unreasonable, unjust,
unlawful, and/or impracticable.

16. Whether provisions in the Permit and Appendix 1 that reference the Manual
are unreasonable, unjust, unlawful, and/or impracticable because there was no
opportunity for meaningful review and comment afforded Coalition members
because the draft Permit and draft Manual were issued at the same time and, in
certain instances, referenced future guidance that was not drafted or available for
review.

17. Whether provisions in the Permit that require the use of Ecology documents
and a Manual, which Ecology characterizes as guidance, are unreasonable, unjust,
unlawful, and/or impracticable when those documents and Manual are used in the

1 Permit as regulatory requirements with no reasonable, feasible, or practicable
2 alternatives available to permittees, the community, or businesses that are also
regulated or affected by the Permit's requirements.

3 18. Whether Special Condition S5.C.4.g of the Permit is unreasonable, unlawful,
4 inequitable, and inconsistent with the responsibilities placed on Phase I county
5 permittees by the Phase I Permit, because it does not require Phase II permittees
6 to equitably and on a pro-rata basis share in the Phase I county jurisdictions' costs
of, and efforts in, developing watershed-scale stormwater plans that are required
of the Phase I county permittees.

7 The Pollution Control Hearings Board (Board) held a hearing over 11 days between
8 October 7 and 24, 2013. Pierce County was represented by Attorneys Lori Terry Gregory and
9 John Ray Nelson, Foster Pepper PLLC; Snohomish County was represented by Deputy
10 Prosecuting Attorney Bree Urban; Clark County was represented by Deputy Prosecuting
11 Attorney Christine M. Cook; King County was represented by Deputy Prosecuting Attorney
12 Joseph B. Rochelle; BIAW of Clark County was represented by Attorney James D. Howsley,
13 Jordan Ramis PC; Intervenor City of Tacoma was represented by Deputy City Attorney Doug
14 Mosich; Intervenor Seattle was represented by Senior Assistant City Attorney Theresa R.
15 Wagner; Intervenor WSDOT did not appear; Respondent Ecology was represented by Senior
16 Counsel Ronald Lavigne and Assistant Attorney General Phyllis Barney; and Respondent-
17 Intervenor PSA was represented by Attorney Janette Brimmer, Earthjustice.

18 Board Chair, Tom McDonald, and Members Kathleen D. Mix and Joan M. Marchioro
19 comprised the Board. Pennington Court Reporting, Renton, Washington provided court
20 reporting services. Based on pre-filed testimony, multiple days of sworn testimony of witnesses,
21 extensive exhibits submitted into the record, and argument from counsel representing the

1 numerous parties that participated in these consolidated appeals, and having fully considered the
2 record, the Board enters the following Findings of Fact, Conclusions of Law and Order.

3 **II.**

4 **FINDINGS OF FACT**

5 [1]

6 The evidence and testimony presented at hearing fell into the following three general
7 categories of legal issues:

- 8 1. LID. Whether elements of the LID requirements in the 2013 Permits were unlawful,
9 unjust, unreasonable, or impracticable.⁵ These are specific to the minimum
10 performance requirements in Special Condition S5 of the Permits: implementation
11 of the MRs 5 and 7, and in particular the implementation of the bioretention and
12 permeable pavement as LID BMPs. Phase I Issues No. 5, No 18 and Phase II Issues
13 No. 2, No. 3, and No. 5.
- 14 2. Watershed-Scale Planning. Whether elements of the minimum performance
15 measures requirements for watershed-scale planning are unlawful, unjust,
16 unreasonable, or impracticable. Phase I Issues No. 6, No. 7, No. 8, No 9, and No.
17 10, and Phase II Issues No. 9 and No. 18.
- 18 3. Opportunity for Meaningful Review. Whether there was a lack of an opportunity for
19 meaningful review of the Permits and those documents that are referenced and
20 incorporated into the terms of the Permits. Phase I Issue No. 17 b. and c., and Phase
21 II Issue No. 16.

16 These categories of issues present mixed questions of fact and law, and accordingly, the
17 Board has written this decision with findings of fact sometimes encompassed in the legal
18 analysis and conclusions. The Board has done this primarily for the purpose of readability and
19 avoidance of repetition, to the extent possible. Any Conclusion of Law deemed to properly be
20 considered a Finding of Fact is hereby adopted as such, and any Finding of Fact deemed to

21 ⁵ The terms in the specific issues vary and also include the question of whether the conditions of the Permits are burdensome, cost prohibitive, expensive, or beyond Ecology's authority.

1 properly be considered a Conclusion of Law is hereby adopted as such.

2 [2]

3 The Phase I Permit covers discharges from large and medium Municipal Separate Storm
4 Sewer Systems (MS4s). The Phase II Permit applies to owners and operators of regulated small
5 MS4s in western Washington. Special Condition S1.A. The 2013 Permits were issued
6 pursuant to the Federal Water Pollution Control Act, commonly known as the “Clean Water
7 Act” (CWA), 33 U.S.C. §§ 1251-1387 and the state Water Pollution Control Act, (WPCA),
8 chapter 90.48 RCW.

9 **A. History of the 2013 Permits**

10 [3]

11 The Phase I and Phase II Permits represent the third iteration of such permits to be issued
12 in Washington. The first municipal stormwater permits went into effect in 1995 and expired in
13 July of 2000. The second permits were issued in 2007 and effective until 2012 (2007 Permit).⁶
14 To address and analyze the issues in the current appeal, it is helpful to review the Board’s
15 decisions in the appeals of the 2007 Permits and the subsequent development of the 2013
16 Permits.

17 **1. The 2007 Permit Appeals**

18 [4]

19 The 2007 Permits were appealed by PSA and several of the Phase I and Phase II
20 permittees. In Orders on Summary Judgment and in Final Orders for Phase I and Phase II

21 ⁶ Consistent with legislative direction, the 2007 Permit was reissued without modification for one year in 2012, remaining in effect until Ecology issued and made effective the 2013 Permit. *See* RCW 90.48.260(3)(a).

1 Permits, the Board remanded the Permits back to Ecology and made several findings and
2 conclusions that are relevant to the current appeals. The Board found that unlike other NPDES
3 Permits, the 2007 Permits are a “programmatic permit” that requires implementation of area-
4 wide stormwater management programs rather than establishing benchmarks or numeric and
5 narrative effluent limitations for point source discharges. *Puget Soundkeeper Alliance v.*
6 *Ecology*, PCHB Nos. 07-021, 026-030, 037 Findings of Fact, Conclusions of Law, and Final
7 Order (Phase I) August 7, 2008, at 9-10 (2008 Phase I Order); *Puget Soundkeeper Alliance v.*
8 *Ecology*, PCHB Nos. 07-022, 023, Findings of Fact, Conclusions of Law, and Order (Phase II
9 Municipal Stormwater Permit) February 2, 2009, at 8 (2009 Phase II Order). The primary
10 regulatory element of these Permits is the Stormwater Management Program (SWMP). *Id.*
11 However, the Board held that the Permits’ reliance on a flow control standard as the primary
12 method to control stormwater runoff from MS4s failed to reduce pollutants to the federal
13 “maximum extent practicable” (MEP) standard, and without greater reliance on LID, did not
14 represent all known, available and reasonable methods of treatment (AKART) to protect water
15 quality under state law. 2008 Phase I Order at 57-58. To reduce pollution to the maximum
16 extent possible and to apply AKART, it is necessary to “aggressively employ LID practices *in*
17 *combination with* conventional stormwater management methods.” *Id.* at 58 (emphasis
18 supplied). The Permits must require LID be employed where feasible, which recognizes that
19 “like all stormwater management tools, [LID] too is subject to limitations in its practical
20 application by site or other constraints.” *Id.* The Board rejected Ecology’s reasoning to not
21 require greater use of LID because of concerns with intruding into local government land use

1 planning efforts under the Growth Management Act and because they could not define a
2 performance standard for LID. *Id.* at 65; 2009 Phase II Order at 13.

3 [5]

4 In review of the 2007 Phase II Permit's SWMP requirements, the Board recognized there
5 were "sufficient distinctions" between Phase I and Phase II permittees in regard to available
6 resources and experience in administering a municipal SWMP, such that different requirements
7 and different time schedules for Phase II jurisdictions to address certain stormwater management
8 requirements were justified in that Permit. 2009 Phase II Order at 46. Similar to the 2008 Phase
9 I Order, the Board concluded that in the 2007 Permit cycle, the Phase II permittees should be
10 required to take steps to identify LID techniques, and barriers to their use, establish goals and
11 metrics to identify, promote and measure LID, including flexible schedules by which Phase II
12 jurisdictions would begin to require and implement LID techniques on a broader scale. *Id.* at 47.
13 The Board held that it is reasonable to allow a lag time between the Phase I and Phase II
14 jurisdictions for implementation of LID and gave Ecology a level of discretion to determine the
15 timing to move the Phase II permittees forward to broader implementation of LID. *Id.* at 47-48.

16 [6]

17 With regard to implementation of LID on a "watershed-scale," the Board found that
18 based on several factors, including the lack of evidence as to the elements and cost of watershed
19 planning necessary to implement LID at the watershed level, a permit condition requiring
20 watershed-scale planning was not at that time reasonable or practical. 2008 Phase I Order at 59.

21 The Board concluded that Phase I permittees should identify such areas where potential basin

1 planning would assist in reducing stormwater impacts, which would assist Ecology for the “next
2 round of permits” when watershed-scale planning may be a requirement that is necessary to meet
3 MEP and AKART.⁷ *Id.*

4 [7]

5 The Board remanded the 2007 Permits to Ecology to be modified consistent with its
6 respective findings and conclusions.

7 **2. Development of the 2013 Permits**

8 [8]

9 In the decision on the 2007 Phase II Permit, the Board stated:

10 The Board recognizes that Ecology’s development of technical guidance and
11 eventual adoption of a performance standard is a critical step necessary for the
12 fullest and most successful implementation of LID practices in both Phase I and
13 Phase II jurisdictions. . . .

14 The Board concluded in the Phase I Permit decision, based on the great weight
15 of testimony, reference documents, and technical manuals, that low impact
16 development represents AKART and is necessary to reduce pollutants in our
17 state’s waters to the maximum extent practicable, the federal standard, and we
18 have reiterated that in this decision. Having so concluded, we believe it is
19 within Ecology’s technical expertise to determine how to best implement the
20 decision within this permit cycle, whether it be through permit modification
21 and/or the development of technical guidance documents or an LID performance
standard.

⁷ The federal Clean Water Act (CWA) requires that municipal stormwater permits reduce the discharge of pollutants “to the maximum extent practicable” (the federal “MEP” standard). 33 U.S.C. §1342 (p)(3)(B)(iii). The State’s Water Pollution Control Act (WPCA) requires that all state and federal discharge permits incorporate permit conditions requiring “all known, available, and reasonable methods to control toxicants in the applicant’s wastewater” (the state “AKART” standard). RCW 90.48.520; 90.58.010; *see also* RCW 90.52.040 and RCW 90.54.020(3)(b).

1 Phase II Order at 47-48. Ecology did not amend and reissue the 2007 Permits as directed by the
2 Board's Orders. Rather, Ecology began a process to develop technical guidance and a
3 performance standard for LID for both the Phase I and Western Washington Phase II Permits.
4 Moore Testimony; Ex. J-3 at 34.

5 [9]

6 With grant funding obtained from the Environmental Protection Agency (EPA), Ecology
7 hired a consultant and formed two advisory groups: LID Technical Advisory Committee and
8 LID Implementation Advisory Committee (collectively the LID Committees). Moore
9 Testimony; Ex. ECY-15. Ecology requested nominations for each committee, specifically
10 seeking individuals with expertise in various aspects of LID as local government staff or as a
11 consultant. Moore Testimony. Ecology subsequently selected approximately a dozen
12 individuals for each committee, representing a variety of stakeholders. *Id.*; Exs. BIA-9 and 10.
13 Using the LID Committees, Ecology engaged in a facilitated process from October 2009 through
14 August 2010 to develop three interrelated permit requirements to address stormwater: (1) site
15 and subdivision-scale requirements; (2) local updates of codes, rules, and standards to address
16 new and redevelopment and to implement LID; and (3) a watershed-scale stormwater planning
17 approach. Ex. J-3 at 34. Ecology had concluded that use of each of these three tools or
18 approaches by municipalities was necessary to address the growing problem of stormwater-based
19 water pollution. O'Brien Testimony. Concurrently, Ecology held a number of listening sessions
20 with permittees in order to receive information to aid in the development of the new permits.
21 Moore Testimony.

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[10]

In April 2011, the State legislature passed legislation that amended RCW 90.48.260 and required Ecology to reissue the 2007 Permits without modification for one year, effective August 1, 2012 to July 31, 2013 and issue updated Permits effective August 1, 2013, to July 31, 2018. Chapter 353 § 12, 2011 Laws Regular Session (ESHB 1478). Thereafter, in May 2011 Ecology issued a proposed public review schedule and process for issuing the 2013 Permits and the 2012 Stormwater Management Manual for Western Washington (2012 Manual), which contains many of the technical and science-based requirements for permit implementation. Moore Testimony; Ex. COA-11.

[11]

On May 16, 2011, Ecology released for informal public comment a preliminary draft of proposed LID and monitoring requirements for the Phase I Permit. Moore Testimony; Exs. J-3 at 34, J-7, J-8. The comment period on the informal draft was for 30 days, to June 17, 2011, and Ecology received comments from permittees, including requests to extend the comment period, which were denied. *Id.* Ecology reconvened the LID Committees in May 2011 to address the public comments. Moore Testimony.

[12]

The May 2011 draft Permits referenced and incorporated several documents that included the LID Guidelines for Code/Ordinance Review, the Low Impact Development Technical Guidance Manual for Puget Sound, the Rain Garden Handbook for Homeowners, and the Western Washington Hydrologic Model (WWHM) (Guidance Documents).

1 [13]

2 In May, 2011, the Guidance documents were in draft form and had not been released or
3 published for review and comment. Ecology's schedule anticipated issuance of the draft
4 documents in June 2011. However, in June 2011 Ecology stated that all the Guidance
5 Documents would not be available until the formal comment period for the draft Permits. *Id.*

6 [14]

7 The final Draft 2013 Permits and 2012 Manual were published for comments for more
8 than the required 30 days. The Permits and Manual were published on October 16, 2011, and
9 Ecology gave a deadline for submission of public comment of February 3, 2012. Exs. J-5, J-16;
10 Moore testimony.

11 [15]

12 After the comment period began, Ecology held several workshops and hearings to review
13 the Draft 2013 Permits and the Manual. *Id.*

14 [16]

15 In April 2012, the legislature again amended RCW 90.48.260 and specifically recognized
16 the requirements and timelines for implementation of LID in the 2013 Permits:

17 Provisions of the updated permit issued under (b) of this subsection relating to
18 new requirements for low-impact development and review and revision of local
19 development codes, rules, standards, or other enforceable documents to
20 incorporate low-impact development principles must be implemented
simultaneously. These requirements may go into effect no earlier than December
31, 2016, or the time of the scheduled update under RCW 36.70A.130(5), as
existing on the effective date of this section, whichever is later.

21 Chapter 1 §313, 2012 Laws 1st Special Session PV (2ESSB 6406); RCW 90.48.260.

1 [17]

2 The Guidance Documents were not available during the Permit public comment periods
3 as intended by Ecology. Moore Testimony. This was caused in part by the work load required
4 to issue the Permits by August 1, 2012, as required in the 2011 legislation, and the lack of staff
5 hours, including the reductions due to temporary salary reductions. *Id.*

6 [18]

7 On August 1, 2012 Ecology issued both the one year extension of the 2007 Permits, and
8 the 2013 Phase I Permit and Phase II Permit, with effective dates of August 1, 2013, to July 31,
9 2018.

10 **B. Terms and Conditions of the 2013 Permits and Associated Guidance Documents**

11 [19]

12 The 2013 Permits authorize the discharge of stormwater to surface and ground waters of
13 the state from MS4s owned and operated by each Permittee, subject to compliance with the
14 Permits' terms and conditions. Conditions S2, S3. The heart of the Permits' regulation of
15 stormwater discharges, and the central focus in the various appeals, is Condition S5.C. Because
16 the essential requirements of Condition S5.C in each permit are the same, with the exception of
17 the provisions regarding watershed planning, the Board references the Phase I Permit as the basis
18 for explaining the requirements of Condition S5.C challenged in these appeals. Where
19 necessary, the Board will describe differences between the Permits. The Board's analysis of the
20 requirements of these elements of Condition S5.C applies equally to both the Phase I and Phase

1 II Permits. The watershed planning requirements of each Permit will be separately described and
2 analyzed.

3 **1. Condition S5 - Stormwater Management Program**

4 [20]

5 Permit Condition S5 requires a permittee to prepare and implement a Stormwater
6 Management Program (SWMP). Condition S5.A. The SWMP is required to be “designed to
7 reduce the discharge of pollutants from MS4s to the MEP, meet state AKART requirements, and
8 protect water quality.” Condition S5.B. The Permits require that the SWMP contain specified
9 components. Of concern in this case are various provisions of Condition S5.C.5 requiring that
10 the SWMP include a program with specific elements to prevent and control stormwater runoff
11 from new development, redevelopment, and construction sites.⁸

12 a. **Condition S5.C.5.a and b – Minimum performance measures: site and**
13 **subdivision scale requirements and low impact development code-related**
14 **requirements**

14 [21]

15 Among the minimum performance measures applicable to the site and subdivision scale
16 development, which are required to be included in ordinances or other enforceable documents
17 adopted by the local government, are the Minimum Requirements, thresholds, and definitions set
18 forth in Appendix 1 of the Permit.⁹ Condition S5.C.5.a.i. In the alternative, a Permittee can

19 _____
20 ⁸ These requirements are set forth in Condition S5.C.4 of the Phase II Permit.

21 ⁹ The Phase I Permit requires that each Permittee shall adopt a local program implementing the requirements of Condition S5.C.5.a.i through ii by June 30, 2015. Condition S5.C.5.a.iii. Under Condition S5.C.4.a, Permittees covered by the Phase II Permit are given additional time to adopt ordinances or other enforceable mechanisms to implement these requirements.

1 include Minimum Requirements, thresholds, and definitions determined by Ecology to be
2 equivalent to those contained in Appendix 1. *Id.* The adjustment and variance criteria in
3 Appendix 1 must be included. *Id.* Through the use of Ecology-approved basin plans or other
4 similar water quality planning efforts, more stringent requirements may be used and/or certain
5 requirements may be tailored to address local circumstances. *Id.* If local alternatives are
6 proposed, they are required to provide equal or similar protection of receiving waters and equal
7 or similar levels of pollutant control as provided by the provisions of Appendix 1. *Id.*

8 [22]

9 Under Condition S5.C.5.b, Permittees are required to “review, revise, and make effective
10 their local development-related codes, rules, standards, or other enforceable documents to
11 incorporate and require Low Impact Development (LID) Principles and LID Best Management
12 Practices (BMPs).” LID and LID BMPs are defined in the Permit as:

13 ***Low Impact Development (LID):*** A stormwater and land use management
14 strategy that strives to mimic pre-disturbance hydrologic processes of
15 infiltration, filtration, storage, evaporation and transpiration by emphasizing
conservation, use of on-site natural features, site planning, and distributed
stormwater management practices that are integrated into a project design.

16 ***LID Best Management Practices:*** Distributed stormwater management
17 practices, integrated into a project design, that emphasize pre-disturbance
18 hydrologic processes of infiltration, filtration, storage, evaporation, and
transpiration. LID BMPs include, but are not limited to , bioretention/rain
gardens, permeable pavements, roof downspout controls, dispersion, soil quality
and depth, minimal excavation foundations, vegetated roofs, and water re-use.

19 Phase I Permit Appendix 1, Section 2 at 4.
20
21

1 [23]

2 Permittees must accomplish the review and revision process by July 1, 2015, or an
3 alternative date established under Condition S5.C.5.a.ii.¹⁰ Condition S5.C.5.b. The goal of the
4 review and revisions is to make LID the “preferred and commonly-used approach to site
5 development,” with the revisions designed to minimize impervious surfaces, native vegetation
6 loss, and stormwater runoff in all types of development situations.” *Id.*

7 **b. Appendix 1 – Minimum Technical Requirements for New Development and**
8 **Redevelopment**

9 [24]

10 Detailed provisions governing the implementation of LID Principles and LID BMPs are
11 contained in the Permits’ Appendix 1 – Minimum Technical Requirements for New
12 Development and Redevelopment (Appendix 1).¹¹ Appendix 1 establishes Minimum
13 Requirements (MR) for stormwater management applicable to new development and
14 redevelopment. Not all MRs apply to every development or redevelopment project. Appendix
15 1, Section 3. The extent to which the MRs are implemented for a particular project site will be
16 determined by the specific thresholds that the project has met at the time of the application for a
17 subdivision, plat, short plat, building or construction permit. *Id.* Generally, those projects that
18 result in 2,000 to 5,000 square feet of new plus replaced hard surface area must meet MRs 1
19 through 5. *Id.* Larger projects that result in 5,000 or greater square feet of new plus replaced

20 ¹⁰ Phase II Permittees are given a longer time period to finalize the review and revision process. Phase II Permit
21 Condition S5.C.4.f.i.

¹¹ Because Appendix 1 to the Phase I and Phase II Permits are identical, citations to the applicable provisions will be
stated as “Appendix 1, ____.”

1 hard surface area, or convert at least 0.75 of an acre of vegetation to lawn or landscaped areas, or
2 convert at least 2.5 acres of native vegetation to pasture, must meet MRs 1 through 9. *Id.*

3 [25]

4 The MRs relevant to the issues presented in the hearing are MR 5- *On-site Stormwater*
5 *Management*, and MR 7 - *Flow Control*. The Appellants’ challenges to these requirements are
6 based to a large extent on the use and application of the specific LID techniques required in the
7 Permits to meet the MRs.

8 (i) **MR 5 On-site Stormwater Management**

9 [26]

10 Under MR 5, Permittees are to require the use of On-site Stormwater Management BMPs
11 (On-site BMPs) consistent with specified “project thresholds, standards and lists to infiltrate,
12 disperse, and retain stormwater runoff on-site to the extent feasible without causing flooding or
13 erosion impacts.” Appendix 1, Section 4.5. The primary purpose of the On-site BMPs is to
14 “reduce the disruption of the natural site hydrology.” 2012 Manual, Vol. V, Section 5.3.1, at 5-2.

15 [27]

16 Projects triggering MRs 1 through 5 are required to use On-site BMPs from a specific
17 list, referred to as List #1, or demonstrate compliance with the LID Performance Standard.
18 Appendix 1, Section 4.5 (1). For projects triggering MRs 1 through 9, MR 5 requires
19
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21

1 compliance with either the LID Performance Standard and BMP T5.13¹² or use of On-site BMPs
2 from a list identified as List #2.¹³ Appendix 1, Section 4.5 (2)

3 [28]

4 The LID Performance Standard provides that stormwater discharges from the project site
5 “shall match developed discharge durations to pre-developed durations for the range of pre-
6 developed discharge rates from 8 percent of the 2-year peak flow to 50 percent of the two-year
7 peak flow.” However, if the project triggers MR 7, the project site must “match flow durations
8 between 8 percent of the two-year flow through the full 50-year flow.”

9 [29]

10 As stated above, List #1 and List #2 may be used in place of meeting the LID
11 Performance Standard. Lists #1 and #2 identify On-site BMPs that are required to be used for
12 three specific types of surfaces: (1) lawn and landscaped areas; (2) roofs; and (3) other hard
13 surfaces. Appendix 1, Section 4.5 at 22-23. Under both lists, the identified On-site BMPs are
14 required to be considered in the order listed for the surface type, with the first BMP considered
15 “feasible” used. *Id.* at 21-22. As discussed more fully below, feasibility is evaluated against (1)
16 the design criteria, limitations, and infeasibility criteria identified for each BMP in the 2012
17 Manual, and (2) the Competing Needs Criteria in Chapter 5 of Volume V of the 2012 Manual.
18 *Id.* at 21.

20 ¹² BMP T5.13 is not at issue in these appeals.

21 ¹³ New development and redevelopment outside of the Urban Growth Area as designated under the Growth
Management Act, ch. 36.70A RCW, and on a parcel of five or more acres cannot use List #2, but are required to
meet the LID Performance Standard and BMP T5.13. Appendix 1, Section 4.5 (Table 4.1).

1 [30]

2 Appellants challenge the On-site BMPs applicable to other hard surfaces, which include
3 roads, sidewalks, and driveways. Under List #1, the On-site BMPs for other hard surfaces are
4 used in the following order: (1) full dispersion; (2) choice of permeable pavement, rain
5 gardens,¹⁴ or bioretention; (3) sheet flow dispersion or concentrated flow dispersion. *Id.* at 22.
6 On-site BMPs for projects required to use List #2 for other hard surfaces are more prescriptive.
7 Under List #2, BMPs for other hard surfaces must be used in the following order: (1) full
8 dispersion; (2) permeable pavement (3) bioretention; (4) sheet flow dispersion or concentrated
9 flow dispersion. *Id.* at 23. If all On-site BMPs on the respective list are infeasible, the project is
10 not required to take any further action with regard to on-site stormwater management. *Id.* at 21-
11 22; Moore Testimony.

12 [31]

13 Appellants primarily challenge permeable pavement and bioretention as On-site BMPs.¹⁵
14 Permeable pavement is an integrated management practice that is designed for pedestrian,
15 bicycle and vehicular traffic while allowing infiltration, treatment and storage of stormwater.
16 2012 Manual Vol. V, BMP T5.15 at 5-13. Permeable pavement is defined as porous hot or
17 warm-mix asphalt pavement and porous Portland cement concrete. *Id.* at 5-15. Bioretention
18 areas are shallow landscaped depressions, with a designed “imported” soil mix and plants that
19

20 ¹⁴ Rain gardens are allowed in accordance with the Rain Garden Handbook for Western Washington.

21 ¹⁵ While not challenging the requirement to use rain gardens as On-site BMPs, Appellants do challenge aspects of the infeasibility criteria applicable to rain gardens. Because bioretention facilities and rain gardens are subject to the same infeasibility criteria, this decision will only discuss those criteria in relation to bioretention and the analysis will apply to both LID BMPs. Where necessary, rain gardens will be specifically referenced.

1 receive water from a specified “contributing area.” *Id.*, BMP T5.14B at 5-12, BMP T7.30 at 7-3.
2 Bioretention facilities help achieve compliance with on-site treatment under MR 5 and serve a
3 flow control function under MR 7.

4 [32]

5 The Permit recognizes that, under specific circumstances, permeable pavement and
6 bioretention are not available as On-site BMPs for stormwater management. The Permit lists
7 specific exemptions and alternatives for these BMPs and provides criteria for determining
8 whether On-site BMPs are infeasible. The relevant exemptions and available alternatives are
9 summarized as follows:

10 (a) The Permit exempts certain pavement maintenance practices from the minimum
11 technical requirements related to permeable pavement: pothole and square cut patching,
12 overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the
13 area of coverage, shoulder grading, reshaping/regrading drainage systems, crack sealing,
14 resurfacing with in-kind material without expanding the road prism, pavement preservation
15 activities that do not expand the road prism, and vegetation maintenance. Appendix 1, Section 1
16 at 1.

17 (b) Underground utility projects that replace the ground surface with in-kind material or
18 materials with similar runoff characteristics are also exempt from the minimum requirements
19 with the exception of MR 2, Construction Stormwater Pollution Prevention Plan (SWPPP). *Id.*
20 at 2.

1 (c) Known as the “stop loss provision,” a Permittee may exempt a project from MRs 5
2 through 8 for replaced hard surfaces in redevelopment sites if the Permittee has adopted a plan
3 and a schedule that fulfills these requirements through regional facilities. Appendix 1, Section
4 3.4 at 12.

5 (d) Basin planning may be used to tailor MRs 5 through 8 and to demonstrate an
6 equivalent level of treatment. Appendix 1, Section 3.5 at 12, Section 7 at 32. The Permit does
7 not identify this basin planning option as the watershed-scale basin planning required in the
8 Permit, although the basin plan must be adopted by all jurisdictions in the basin and approved by
9 Ecology.

10 (e) On-site BMPs can be superseded and reduced if in conflict with “competing needs.”
11 These competing needs are both specific and general in nature. The 2012 Manual provides a
12 specified list of other federal and state laws that are deemed competing needs, including the
13 Americans with Disabilities Act, the Federal Aviation Administration requirements for airports,
14 and federal Superfund or the state Model Toxics Control Act. Competing needs are also
15 expressed more generally as “public health and safety standards.” 2012 Manual, Vol. V at 5-2.

16 (f) A Permittee may grant adjustments and exceptions or variances to the Minimum
17 Requirements themselves and to project specific designs based on site specific conditions,
18 including “severe and unexpected economic hardships” after consideration of specific criteria set
19 forth in the Permits. Appendix 1, Section 6 at 31-32. A permittee’s consideration of these
20 criteria must be documented with written findings. *Id.*

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[33]

To the extent a project is not otherwise exempted from the On-site BMPs or an alternative is employed, permeable pavement and bioretention facilities are only used if considered “feasible.” The determination of whether these On-site BMPs are feasible is based on infeasibility criteria in the 2012 Manual. The infeasibility criteria describe conditions that do not allow for the use of permeable pavement and bioretention; however, a project proponent may still use these BMPs based on a functional equivalent design provided to the local government. 2012 Manual, Vol. V at 5-16, 7-7.

[34]

While containing factors germane to the type of On-site BMP, the infeasibility criteria for permeable pavement and bioretention facilities have the same structure. 2012 Manual, Vol. V at 5-16 (permeable pavement) and 7-7 (bioretention). The infeasibility criteria provide two lists of conditions that make permeable pavement or bioretention not required. *Id.* Citation to any of the infeasibility criteria in the first list “must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g. engineer, geologist, hydrogeologist).” *Id.* The criteria in the second list can be cited as reasons for a finding of infeasibility without further justification. *Id.*

1 [35]

2 Relevant to the testimony and arguments in these appeals are specific conditions that are
3 considered infeasible for permeable pavement and bioretention.¹⁶ These include conditions
4 where it is determined by a licensed professional that: infiltrating water would threaten below-
5 grade basements (*i.e.*, flooding); infiltrating and ponding of water below permeable pavement
6 would compromise adjacent impervious pavements; there are reasonable concerns that erosion,
7 slope failure or down-gradient flooding will occur; the development is within an area designated
8 as an erosion or landslide hazard for permeable pavement;¹⁷ and the pavement would threaten the
9 safety or reliability of pre-existing utilities, underground storage tanks and road subgrades. 2012
10 Manual, Vol. V at 5-16, 5-17, 7-7, 7-8, 7-9. Also at issue are conditions where a written
11 recommendation from a licensed professional is not required: for an area that has known soil or
12 groundwater contamination; certain conditions related to the soil types including a measured
13 native soil saturated hydraulic conductivity less than 0.3 inches/hour; and specifically for
14 permeable pavement, for “arterial” and “collector” roads, sites defined as “high use sites” in the
15 2012 Manual; and where routine and heavy application of sand occurs in snow zones to maintain
16 traction. *Id.* at 5-18, 7-9.

17 **(ii) MR 7 Flow Control**

18 [36]

19 MR 7 provides that the Permittee must require all projects required to comply with this

20 _____
¹⁶ The infeasibility criteria for bioretention also apply to rain gardens. 2012 Manual, Vol. V at 5-11.

21 ¹⁷ For permeable pavement, a licensed professional is not required to make written recommendations that this condition exists, although it would be expected to have professional services to make the observation.

1 minimum requirement to provide flow control to reduce the impacts of runoff from hard surfaces
2 and land cover conversions. As described above, compliance with MR 7 is required for those
3 projects triggering MR 1 through 9, which are generally described as the larger project sites
4 (5,000 square feet or greater of new plus replaced hard surfaces). Appendix 1, Section 3.2 and
5 3.3 at 11.

6 [37]

7 MR 7 applies only to projects that discharge stormwater directly or indirectly through a
8 conveyance system, into fresh water. Projects that discharge directly or through an MS4 into
9 Puget Sound are not required to comply with MR 7. Appendix 1, Section 4.7 at 27; 2012
10 Manual, Appendix I-E, Vol. 1 at E-1. In addition, the 2012 Manual lists surface waters that are
11 exempt from MR 7. *Id.* These waters include Consolidated Diking and Irrigation District #1,
12 which is the area that affects parts of Cowlitz County. 2012 Manual, Vol. I at E-2.
13 Notwithstanding this list of exempt water bodies, if a discharge is to a stream that leads to a
14 wetland both MR 7 and MR 8 apply. Appendix 1, Section 4.7 at 28.

15 [38]

16 MR 7 provides that if specified thresholds are met, the project must comply with the
17 standard flow control requirement. The thresholds include those projects in a threshold
18 discharge area that (a) have total impervious surfaces of 10,000 square feet or more; (b) that
19 convert more than 0.75 acre of vegetation to lawn or landscape or convert 2.5 acres or more of
20 native vegetation to pasture; or (c) would cause a 0.10 cubic feet per second increase in the 100
21 year flow frequency. *Id.* at 29.

1 [39]

2 The standard flow control requirement generally requires that discharge durations from a
3 project match pre-development forest land conditions. Specifically, discharges from a project
4 must match pre-developed durations for the range of pre-developed discharge rates from 50
5 percent of the two-year peak flow up to the full 50-year peak flow. The Permit provides
6 exceptions to the use of forested land cover as the pre-developed condition, which include
7 allowing the existing land cover to be considered the pre-developed condition if the drainage
8 area of the immediate stream and subsequent downstream basins have had at least 40 percent
9 total impervious surface area since 1985, as depicted in the 2012 Manual, Appendix I-G. *Id.*
10 The standard flow control requirement is waived for sites that “will reliably infiltrate all the
11 runoff from hard surfaces and converted vegetation areas.” *Id.* Finally, the Permit provides that
12 an alternative requirement may be established for Western Washington “through application of
13 watershed-scale hydrological modeling and supporting field observations.” *Id.*

14 **c. The Development of the LID Requirements**

15 [40]

16 In the 2007 Phase I Permit, stormwater discharges from new development and
17 redevelopment were largely regulated through a flow control standard. 2008 Phase I Order at
18 28. The 2007 Phase I Permit incorporated the use of LID techniques in various ways but largely
19 encouraged or promoted it. LID was not required as a primary tool to manage stormwater. *Id.*
20 at 35-39. Similarly, the 2007 Phase II Permit took only initial steps to require Phase II
21 jurisdictions to “allow non-structural preventative actions and source reduction approaches such

1 as [LID] Techniques.” 2009 Phase II Order at 46-47. As noted above, both of the 2007 Permits
2 were separately appealed to the Board. In its appeals, PSA challenged the 2007 Permits’ lack of
3 LID requirements.

4 [41]

5 Addressing the 2007 Phase I Permit appeal first, the Board found that LID methods are
6 “a known available method to address stormwater runoff” which “are technologically and
7 economically feasible and capable of application at the site, parcel, and subdivision level.”
8 2008 Phase I Order at 46. The Board remanded the Phase I Permit to Ecology to require greater
9 application of LID at the parcel and subdivision level, where feasible, to meet the AKART and
10 MEP standards. *Id.* at 57-58. The Board did not specify the approach necessary to accomplish
11 this—*i.e.* the methods, criteria and/or standards by which Ecology must “more extensively”
12 require LID, or even what “feasibility” meant. The Board instead recognized that, “like all
13 stormwater management tools, [LID] too is subject to limitations in its practical application by
14 site or other constraints,” and left the specific implementation of LID requirements up to
15 Ecology. *Id.* at 58.

16 [42]

17 The Board also remanded the 2007 Phase II Permit to Ecology, ordering that the revised
18 permit require Phase II permittees to similarly take prescribed steps to facilitate an eventual
19 broader application of LID. 2009 Phase II Order at 23-25, 46-48. Unlike the Phase I Permit, the
20 Board did not order that the Phase II Permit require that LID be applied where feasible. *Id.*
21 Indeed, the Board recognized that “Ecology’s development of technical guidance and eventual

1 adoption of a performance standard is a critical step necessary for the fullest and most successful
2 implementation of LID practices in both Phase I and Phase II jurisdictions.” *Id.* at 47.

3 [43]

4 Rather than issuing modified permits implementing the Board’s decisions, Ecology
5 subsequently developed a new, overarching approach to require LID at the parcel and
6 subdivision level for both the 2013 Phase I and Phase II Permits. An initial assignment of the
7 LID Committees, discussed above, was to develop an LID performance standard with a
8 scientific basis, which protected beneficial uses, and was simple for the permittees to use when
9 evaluating project proposals. O’Brien Testimony. Following the evaluation of various options,
10 a flow-duration standard was selected as the LID performance standard due to its ease of
11 implementation, and because several local governments were already using a flow control
12 standard and were familiar with its application. *Id.* Additionally, the hydrology models being
13 used could readily be adjusted to model the performance standard, which meant that projects
14 required to comply with MR 7 Flow Control would only have to perform one hydrologic
15 analysis. *Id.* Outputs from King County’s Juanita Creek Study confirmed Ecology’s conclusion
16 that the LID performance standard would advance the protection of instream beneficial uses and
17 compliance with water quality standards. *Id.*; Ex. ECY-10.

18 [44]

19 Concerned that projects would attempt to meet the LID performance standard in
20 locations that would be inappropriate due to site constraints, Ecology discussed with the LID
21 Committees alternative approaches to protect beneficial uses and meet water quality standards.

1 O'Brien Testimony. Ecology, with the assistance of the LID Committees, evaluated various site
2 conditions and LID BMPs with the goal of establishing a system that derived the most benefit
3 from an LID BMP that was considered AKART. *Id.* Focusing on the site and subdivision level,
4 Ecology prepared a list of LID BMPs and sought input from the LID Committees on the
5 question of which of the listed BMPs were AKART. O'Brien Testimony.

6 [45]

7 Describing the exercise as a "process of elimination," Mr. Moore testified that Ecology
8 and the LID Committees considered a variety of LID BMPs, including retention of native
9 vegetation, green roofs, rain water harvesting, and pin foundations. Moore Testimony. With
10 the assistance of a consultant, Ecology then modeled different development scenarios applying
11 the LID BMPs considered AKART to evaluate the BMPs ability to infiltrate stormwater.
12 O'Brien Testimony; Ex. ECY-14. The evaluation resulted in the selection of permeable
13 pavement and bioretention as LID BMPs for inclusion in the Permits. Moore Testimony. Mr.
14 Moore testified that those LID techniques were selected as they have been available for many
15 years, are well-understood and currently being used to control stormwater, and are effective
16 BMPs. *Id.*

17 [46]

18 Ecology developed List #1 and List #2, which identify on-site stormwater BMPs that
19 apply to a project based on various factors, including parcel size and quantity of hard surface
20
21

1 area created.¹⁸ Appendix 1, Section 4.5 at.21-23. If a project proponent elects to use the
2 applicable LID BMP list instead of the LID performance standard, it must use the first BMP
3 listed that is considered feasible. *Id.*; O'Brien Testimony. Ecology chose this hierarchical
4 approach because it wanted to ensure, in situations where the LID performance standard was not
5 used, that the proposed project achieved as much flow reduction as reasonably possible at the
6 site. O'Brien Testimony.

7 [47]

8 Feasibility is measured against, among other things, the infeasibility criteria for the
9 particular LID BMP set forth in the 2012 Manual. 2012 Manual, Vol. V at 5-16, 7-7. Ecology
10 created the infeasibility criteria with input from the LID Committees, the public, and
11 geotechnical experts. O'Brien Testimony. In discussing the criteria with the LID Committees,
12 Ecology initially drew upon work performed by a consultant for the Puget Sound Partnership
13 and a review of the feasibility of various techniques prepared for some local governments. *Id.*
14 The infeasibility criteria can be expanded. If a Phase I permittee finds the infeasibility criteria
15 does not address a particular limitation to employing LID in its jurisdiction, the permittee can
16 develop infeasibility criteria for inclusion in its stormwater manual or SWMP and submit the
17 criteria to Ecology for review and approval. Moore Testimony.

18 [48]

19 The Board finds that Ecology engaged in a comprehensive process to identify LID
20 techniques that constitute AKART and MEP. As the above Findings demonstrate, the Permits

21 ¹⁸ The LID lists identify other LID BMPs, such as full dispersion, downspout diversion systems and sheet flow dispersion. Appendix 1, Section 4.5 at 22-23. Appellants did not challenge those LID techniques.

1 provide significant flexibility to the permittees in the application of LID at the parcel and
2 subdivision level, offering a complex array of alternative methods of compliance, exceptions,
3 criteria for application of an infeasibility standard or consideration of other competing needs,
4 among other items. While the Permits allow such flexibility, the overall approach of the
5 Permits is to move the municipalities further toward compliance with water quality standards.
6 As a result, the Board finds that the 2013 Permits satisfy the directives in the remand of the
7 2007 Permits and advance Ecology's stated goal of making LID the preferred and commonly-
8 used approach to site development.

9 **d. Pilot projects employing LID techniques**

10 [49]

11 Evidence was presented describing pilot projects by the City of Seattle's natural
12 drainage system program using various bioretention techniques. Dr. Horner described the 2nd
13 Avenue Northwest Street Alternative Edge (SEA Streets) project, which employed a flat-street
14 cellular installation technique. Horner Testimony. The project involved the redesign of the
15 street to reduce impervious cover and traffic speeds, and conversion of the asphalt and gravel
16 roadway to vegetated swales and detention areas. *Id.* Through the use of amended compost
17 soils, the project was designed to reduce peak runoff rates and volumes conveyed to Pipers
18 Creek. *Id.* The monitoring data showed a marked reduction in discharge of water following
19 significant rain events. *Id.*; Ex. RI- 27.

1 [50]

2 Dr. Horner also described a bioretention project installed at Northwest 110th Street
3 using a cascade of vegetated stepped pools created by weirs along sloping streets. *Id.*; Ex. RI-
4 27. Similar to the SEA Street project, the purpose of 110th Street bioretention system was to
5 reduce the runoff peak flow rate and volume. *Id.* The monitoring program for the project
6 evaluated the effectiveness of the system to reduce flows and pollutant mass discharge.
7 Monitoring results showed that approximately 74 percent of the water entering the system was
8 retained and the cascade system attenuated the majority of pollutant mass for most pollutants.
9 *Id.*; Ex. RI-27.

10 [51]

11 In June 2010, Seattle Public Utilities began construction of roadside rain gardens along
12 eight blocks in the Ballard neighborhood (Ballard rain gardens) for combined sewer overflow
13 control. Ex. RI-30. The bioretention cells were designed to infiltrate 95 percent of the
14 stormwater from the area draining to the cell. *Id.* Approximately one-third of the rain gardens
15 performed as designed and one-third failed to drain at a sufficient rate. Horner Testimony. The
16 remaining one-third were renovated to enable them to drain at the desired rate. *Id.* The pre-
17 construction infiltration rates measured for rain gardens that failed were between 0.2 to 0.3
18 inches per hour. O'Brien Testimony. The infiltration tests were conducted in the summer
19 months, whereas Ecology's guidance recommends that when determining site feasibility such
20 tests be conducted in the winter. *Id.* According to Ecology, had the tests been conducted in the

1 appropriate season, it is likely that the infiltration rate would have been lower and the site not
2 selected. *Id.*

3 [52]

4 Evidence was also presented describing varying success with permeable pavement in
5 parking lots. Mr. Strecker testified regarding the results of a pilot project which evaluated the
6 effectiveness of permeable interlocking pavers to manage stormwater runoff. Strecker
7 Testimony; Ex. CC-30. The project was designed to infiltrate the 100-year storm event, with no
8 runoff from the permeable pavement. *Id.* The site experienced one run-off event during the
9 two-year monitoring period, which occurred after a 1.75-inch storm. *Id.* Mr. Strecker opined
10 that the runoff may have been caused by moss growth in the joints between the permeable
11 pavers. Strecker Testimony.

12 [53]

13 Dr. Booth provided testimony concerning a pilot project he participated in which
14 evaluated the capability of permeable pavement to infiltrate stormwater, attenuate pollution, and
15 the ability to continue to perform over a period of time. Booth Testimony. The project,
16 constructed in 1996 at a King County roads facility in Renton, involved the installation of four
17 different types of permeable pavement as well as an asphalt surface for comparison purposes.
18 *Id.* An underdrain was installed to capture and test the stormwater infiltrating through the
19 drainage layer. *Id.* After issuing a report detailing its installation, Dr. Booth re-examined the
20 project five or six years later and found that it continued to infiltrate stormwater and provide
21 significant attenuation of contaminants. *Id.*

1 scores, and documentation of distribution of salmonid uses. The permittees can use existing data
2 if it is available and sufficient for the necessary purposes of the calibrated model. *Id.*

3 [58]

4 In using the calibrated model, the permittee must estimate hydrologic changes from the
5 historic condition and predict the future hydrologic, biological, and water quality conditions at
6 full build-out under existing or proposed land use management plans. *Id.* Future biological
7 conditions must be estimated by using a correlation of hydrologic metrics with B-IBI scores for
8 Puget Sound Lowland Streams. If the estimation of concentrations of specific water quality
9 parameters²⁰ are predicted to not meet water quality standards, the permittee must use the
10 calibrated model to evaluate stormwater management strategies to meet the standards. These
11 management strategies are to be evaluated for all jurisdictions in the watershed. The strategies
12 must include changes to the respective permittee’s development-related codes, rules, standards,
13 and plans and the potential structural stormwater control projects.

14 [59]

15 By April 1, 2014, the Phase I permittees must submit to Ecology for approval the scope
16 of work and schedule for the “complete watershed planning process.” Ecology must respond to
17 the permittee’s proposed scope of work and schedule within 90 days. *Id.* at 20.

18 [60]

19 By October 1, 2014, the permittee must file with Ecology the final watershed-scale
20 stormwater plan. However, this deadline will be extended for the number of days, if any,

21 _____
²⁰ The Permits specifically list dissolved oxygen, dissolved zinc, temperature, and fecal coliform.

1 Ecology had exceeded in its 90-day period for reviewing and responding to the permittee's initial
2 scope of work. There is no extension specifically provided if Ecology has rejected the
3 permittee's scope of work and schedule.

4 [61]

5 The final watershed-scale plan must summarize the results of the modeling and planning
6 process, describe results of the evaluation strategies, and include an implementation plan and
7 schedule that includes potential future actions to implement the identified strategies, responsible
8 parties, estimated costs and potential funding mechanisms. *Id.* at 22.

9 **b. Selection of Watersheds**

10 [62]

11 The Phase I Permit designates a watershed for each County Phase I permittee to conduct
12 the watershed-scale planning. Pierce County was assigned the Clover Creek basin. King County
13 was provided a choice of Bear, May, or Soos Creek watersheds. Clark County was assigned
14 Whipple or Salmon Creek watersheds. Snohomish County was assigned Swamp or North Creek
15 watersheds. The permittee may propose to Ecology an alternative watershed. Snohomish
16 County proposed Bear Creek as an alternative basin, which Ecology has approved.²¹

17 [63]

18 Ecology selected the watersheds for each permittee based on specific criteria that support
19 the purpose and objective of the watershed-scale planning. These criteria state that the drainage
20 must be at least ten square miles, be located partially or wholly within the permittees MS4

21 ²¹ In closing arguments, King County informed the Board that Ecology had approved a proposal for an alternative basin for King County's watershed-scale stormwater planning.

1 service area with discharges to the identified stream, the stream system has been impacted by
2 development but retains anadromous fisheries, and the area is expected to experience significant
3 population growth and development. Phase I Permit S5.C.5.c.i, p.19. Ecology uses these same
4 criteria when it evaluates the permittees petition for alternative watersheds

5 [64]

6 For many years the Phase I Counties have been involved in watershed basin planning.
7 See Exs. A-PC-8, 12, 13, 15, 16; Crawford Testimony; Milne Testimony; Wrye Testimony;
8 Kantz Testimony. These plans have been developed for the purpose of gaining knowledge of the
9 environmental elements of the watershed, including the surface water flows, the available water
10 supplies, the stream water quality and health of the basin, the status of the fishery resources, and
11 existing and future land uses. *Id.* The plans are intended to address surface water management
12 including stormwater drainage, with the intended goals of reducing flooding hazards and
13 improving habitat and water quality in the future. See Exs. A-PC-8 (at 1.1-1.5), 12, 13, 15 (at 1-
14 1), 16; Crawford Testimony; Milne Testimony; Wrye Testimony; Kantz Testimony.

15 [65]

16 The existing Phase I County basin plans were not, however, considered by Ecology as
17 meeting the requirements of the watershed-scale planning for the 2013 Permits. O'Brien
18 Testimony. The County basin plans lack the water quality sampling parameters, standards for
19 estimating future biological conditions, and the modeling necessary to evaluate stormwater
20 management strategies to meet water quality standards in the future. *Id.*

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[66]

The data collected in the existing County basin plans may, if applicable, be used for the assessment of the existing conditions in the selected watershed for the watershed-scale planning process in the Phase I Permit. SC 5.C.5.c.ii(1); O’Brien Testimony. Further, Phase I permittees may petition for Ecology approval of an alternative correlation of hydrologic metrics with B-IBI scores to estimate future biological conditions. SC 5.C.5.c.ii(4).

[67]

Ecology did not study and take into consideration the Counties’ existing watershed studies and reports in selecting the watersheds for the Phase I Permits. O’Brien Testimony. In developing the Phase I Permit, from preliminary draft to the draft released for public comment and then the final 2013 Permit, Ecology changed the designated watersheds without formal consultation with the permittees. *Id.* Ecology did not conduct a cost analysis regarding the watershed planning requirements for the Phase I permittees. *Id.*

c. Phase II Permittees Watershed Involvement

[68]

The Phase II permittees are not required to conduct watershed-scale planning under the Phase II Permit. However, if a Phase II permittee is in a basin where a Phase I permittee is developing a watershed-scale plan, the Phase II permittee is required to provide limited assistance. 2013 Phase II Permit SC S5.C.4.g. The Permit provides that “as needed and as appropriate,” the Phase II permittees must:

- 1 1. Provide to the Phase I permittee existing data that is available including water
2 quality and flow records; monitoring locations, and existing and future zoning
3 maps; and
- 4 2. Participate in the development of strategies to prevent future and address
5 existing impacts, which may include possible changes in codes and standards,
6 and changes in land use management plans.

7 *Id.*

8 [69]

9 The Phase II Permit does not require the permittees to collect the new water quality and
10 stream flow data that is required for the calibrated model, or to contribute financially to the costs
11 associated with the collection of this data and development of the watershed-scale stormwater
12 plan. *Id.*

13 **III.**

14 **CONCLUSIONS OF LAW**

15 [1]

16 The Board has jurisdiction over the subject matter and the parties pursuant to RCW
17 43.21B.110(1)(d). The burden of proof is on the appealing party as to the legal issues in the
18 case. WAC 371-08-485(3). The Board considers the matter *de novo*, giving deference to
19 Ecology’s expertise in administering water quality laws and on technical judgments, especially
20 where they involve complex scientific issues. *Port of Seattle v. Pollution Control Hearings*
21 *Board*, 151 Wn.2d 568, 593-94, 90 P.3d 659 (2004). Pursuant to WAC 371-08-540(2), “In those
cases where the board determines that the department issued a permit that is invalid in any

1 respect, the board shall order the department to reissue the permit as directed by the board and
2 consistent with all applicable statutes and guidelines of the state and federal governments.”

3 [2]

4 Municipal stormwater discharges require an NPDES Permit under the CWA , 33 U.S.C.
5 §§ 1251-1387, and a State Waste Discharge General Permit under the state WPCA, chapter
6 90.48 RCW. The CWA’s purpose is “to restore and maintain the chemical, physical, and
7 biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). To serve those ends, the CWA
8 prohibits the discharge of any pollutant by any person unless done in compliance with some
9 provision of the Act and/or in compliance with an NPDES permit. 33 U.S.C. §§ 1311(a) and
10 1342. Under the CWA, MS4s fall under the definition of “point sources” and as such must
11 obtain an NPDES permit which will place limits on the type and quantity of pollutants that can
12 be released into the Nations’ waters. 33 U.S.C. §1362(14); *South Florida Water Management*
13 *Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 102, 124 S.Ct. 1537 (2004); *Puget*
14 *Soundkeeper Alliance v. Ecology*, 102 Wn. App. 783, 788, 9 P.3d 892 (2000).

15 [3]

16 Ecology is given complete authority to establish and administer a comprehensive permit
17 program in order to allow Washington to participate in the federal NPDES program. RCW
18 90.48.260(1)(a). The EPA delegated authority to Ecology to administer the NPDES permit
19 program in Washington. Ecology’s authority under the NPDES program extends to issuing
20 municipal stormwater permits. RCW 90.48.260(3).

1 [4]

2 Among other requirements, the CWA requires that municipal stormwater permits reduce
3 the discharge of pollutants “to the maximum extent practicable” or MEP. 33 U.S.C. § 1342
4 (p)(3)(B)(iii). Like the broad goals of the CWA, the State’s WPCA declares the public policy of
5 the State is “to maintain the highest possible standards to insure the purity of all waters of the
6 state consistent with public health and public enjoyment thereof. . . .” RCW 90.48.010. The
7 WPCA requires that all state and federal discharge permits incorporate permit conditions
8 requiring “all known, available, and reasonable methods to control toxicants in the applicant’s
9 wastewater” or AKART. RCW 90.48.520; 90.58.010; *see also* RCW 90.52.040 and RCW
10 90.54.020(3)(b). The WPCA states the AKART standard:

11 In order to improve water quality by controlling toxicants in wastewater, the
12 department of ecology shall in issuing and renewing state and federal
13 wastewater discharge permits review the applicant's operations and *incorporate*
14 *permit conditions which require all known, available, and reasonable methods*
15 *to control toxicants in the applicant's wastewater. . . In no event shall the*
16 *discharge of toxicants be allowed that would violate any water quality standard,*
17 *including toxicant standards, sediment criteria, and dilution zone criteria.*

18 RCW 90.48.520 (emphasis added).

19 [5]

20 Different stormwater discharge permits are issued for different categories of municipal
21 permittees. The Phase I Permit regulates discharges from MS4s as established at Title 40 CFR
122.26, except for WSDOT’s MS4s. It also allows coverage of several “secondary permittees”
for discharges from other publicly owned or operated MS4s located within the primary permittee

1 cities and counties. Two additional permits, Phase II Permits, regulate discharges from small
2 MS4s in Eastern and Western Washington, respectively.

3 [6]

4 As programmatic permits, the 2013 Phase I and Phase II Permits require the municipal
5 permittees to implement area-wide stormwater management programs (SWMP) in order to meet
6 state and federal standards. Required components of the SWMP are outlined in the permits.
7 Unlike general permits that regulate other sectors (*e.g.* industrial), the municipal permits do not
8 establish benchmarks or numeric or narrative effluent limits for stormwater discharges from
9 individual outfalls. One component that must be addressed in the permittees' SWMPs is the
10 control of runoff from new development, redevelopment, and construction. Minimum
11 requirements for accomplishing this are provided in the permits.

12 [7]

13 State law also makes it unlawful for any person to discharge into the waters of the state,
14 or to permit or allow the discharge of any organic or inorganic matter that shall cause or tend to
15 cause pollution of such waters. RCW 90.48.080. The Board has previously held that MS4s, like
16 other waste dischargers, must comply with water quality standards adopted by Ecology. *Puget*
17 *Soundkeeper Alliance v. Wash. Dep't of Ecology*, PCHB Phase I Nos. 07-021, 07-026 through -
18 030, and 07-039, and Phase II Nos. 07-022, -023, Findings of Fact, Conclusions of Law, and
19 Order Condition S4 (August 7, 2008) (2008 Consolidated Issue S4 Decision).

1 [8]

2 In order for Phase I and Phase II Permittees to reduce pollution to the MEP and to apply
3 AKART, it is necessary to “aggressively employ LID practices *in combination with* conventional
4 stormwater management methods.” *Id.* at 58 (emphasis supplied). The Phase I SWMP cannot
5 rely primarily on a flow control standard to regulate stormwater from new development and
6 redevelopment. A flow control standard alone is not AKART or MEP. 2008 Phase I Order at
7 57-58.

8 [9]

9 The Phase I and Phase II Permits must require that LID be employed where feasible,
10 which recognizes that “like all stormwater management tools, [LID] too is subject to limitations
11 in its practical application by site or other constraints.” *Id.*

12 **A. Appellants’ Challenges To LID Provisions (Phase I Issues 4, 5, 17(d) and (e), 18;**
13 **Phase II Issues 2(b) and (c), 3(b)-(e), 5, 17)**

14 [10]

15 As described in their legal issues, Appellants assert that the LID requirements of the
16 Phase I and Phase II Permits are unlawful, unjust, unreasonable, impracticable, vague and/or
17 ambiguous as they fail to provide meaningful regulatory options, are economically infeasible,
18 impose burdensome new requirements, and rely on unproven technologies that may cause
19 unintended consequences. Prior to the hearing, Appellants identified the following elements of
20 the Phase I and Phase II Permits’ LID requirements being challenged: permeable pavement
21 criteria, bioretention criteria, infeasibility criteria for permeable pavement and bioretention, LID

1 feasibility assessment process, LID BMP lists, and LID performance standard. These permit
2 requirements can readily be broken into two groups: (1) implementation provisions (LID
3 performance standard, LID BMP lists, LID feasibility assessment process) and (2) LID
4 techniques and their application (permeable pavement criteria, bioretention criteria, infeasibility
5 criteria for permeable pavement and bioretention). As explained below, the Board concludes
6 that the Permits' LID provisions, with limited modifications, are consistent with our prior
7 rulings, constitute AKART and MEP, and advance the protection of beneficial uses and
8 compliance with water quality standards.

9 **1. Permits' LID implementation provisions are consistent with Board's prior**
10 **rulings and are not contrary to law**

11 **a. LID performance standard**

12 [11]

13 Although identified as a subject in dispute, with the exception of a few passing
14 references in prefiled testimony (see Strecker at ¶ 18; Golemo at 7), Appellants presented no
15 evidence concerning the LID performance standard in their case in chief. While King County
16 cross-examined Mr. O'Brien regarding the performance standard in Ecology's responsive case,
17 that inquiry did not elicit any defects in the LID performance standard or illuminate the
18 Appellants' unstated concerns with the standard. O'Brien Testimony. The Board concludes
19 that the Appellants failed to meet their burden of proof on this matter.
20
21

1 bioretention has a smaller surface area for infiltration, thus reducing its infiltration capacity as
2 compared to permeable pavement. *Id.*

3 [14]

4 The Appellants did not present sufficient evidence to establish that the LID BMP lists
5 were unlawful or invalid in any respect. The system preferred by King County is, in fact,
6 provided for under the Permits' existing terms. And while Mr. Golemo may prefer bioretention
7 over permeable pavement, that preference does not negate Ecology's rational reasons for
8 placing permeable pavement above bioretention in List #2. The Board concludes that the
9 evidence presented established that the LID BMP lists in the Phase I and Phase II Permit are
10 appropriate permit requirements.

11 **c. LID Feasibility assessment process**

12 [15]

13 As noted above, in the 2007 Permit appeals the Board ordered Ecology to require the use
14 of LID techniques where feasible, leaving implementation of that directive to Ecology's
15 discretion. Ecology incorporated the feasibility concept into List #1 and List #2, requiring the
16 use of the first BMP on the list that is considered feasible. Appendix 1, Section 4.5 at 21-23.
17 Feasibility is to be judged against, among other things, the infeasibility criteria in the 2012
18 Manual. *Id.*; 2012 Manual, Vol. 5 at 5-16, 7-7. The infeasibility criteria were developed with
19 the assistance of the LID Committees, public input, and geotechnical experts. O'Brien
20 Testimony. When asked why Ecology changed the criteria from feasible to infeasible, Mr.
21 Moore testified that it was in response to public comments received on the draft Permits. Moore

1 Testimony. He further testified that there are many different perspectives on what constitutes
2 “feasible,” and it is easier to define those situations where the use of LID BMPs would be
3 infeasible. *Id.*

4 [16]

5 Appellants provided no evidence that the use of infeasibility criteria to evaluate the
6 application of a particular LID BMP is contrary to law or technically deficient. The issue is
7 essentially one of semantics. The Board concludes that Appellants failed to meet their burden
8 on this issue. Ecology’s use of infeasibility criteria to carry out the Board’s prior orders is an
9 appropriate use of the agency’s discretion and is supported by the evidence.

10 **2. Permeable pavement, bioretention and infeasibility criteria**

11 [17]

12 While accepting the concept of LID, Appellants challenge the specific LID techniques
13 required under the 2013 Permits. Appellants assert, among other things, that permeable
14 pavement and bioretention are unproven, and are technically and economically infeasible.
15 Appellants also challenge specific elements of the infeasibility criteria against which the
16 application of permeable pavement and bioretention are to be judged. As detailed below, the
17 Board concludes that permeable pavement and bioretention constitute AKART and MEP. The
18 flexibility created by the infeasibility criteria and other permit provisions limiting the extent of
19 the application of these LID techniques address most of the concerns expressed by Appellants.
20 Finally, as described below, the Board concludes that the provisions regarding where the

1 application of permeable pavement is appropriate and specific infeasibility criteria need further
2 refinement.

3 **a. Permeable pavement is an appropriate LID BMP**

4 [18]

5 Appellants' concerns regarding the use of permeable pavement primarily center on the
6 application of permeable pavement in driving lanes.²² According to Appellants, as there are no
7 design standards for permeable pavement from national organizations such as the Federal
8 Highway Administration or American Association of State Highway and Transportation
9 Officials, the application of permeable pavement is not AKART.²³ Rickman Testimony. As
10 performance data on permeable pavement lacks sufficient detail, its use in driving lanes raises
11 safety concerns. Reynolds-Jones Testimony; Ex. AKC-5. Appellants also expressed concerns
12 regarding the life-cycle and operation and maintenance costs of permeable pavement, which
13 they believe will be higher than conventional pavement. Rickman Testimony; Golemo
14 Testimony; Reynolds-Jones Testimony. Large vehicles, such as garbage trucks, can damage
15 permeable pavement and also present a risk of hazardous materials spills. Rickman Testimony.

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18 ²² The 2012 Manual states that "typical applications for permeable paving include parking lots, sidewalks, pedestrian
and bike trails, driveways, residential access roads, and emergency and facility maintenance roads." 2012 Manual,
Vol. V at 5-16.

19 ²³ Several witnesses testified that the infeasibility criteria should include an economic component. Martin
20 Testimony, Busich Testimony, Bond Testimony, Golemo Testimony, Tuck Testimony. It was not entirely clear
21 from the testimony whether the witnesses were attacking Ecology's AKART determination on the LID BMPs or
seeking an entirely new criterion to evaluate the application of LID BMPs for a particular project. Regardless,
Appellants failed to present any evidence on how an economic infeasibility component would be constructed or
what factors to consider. Absent substantive evidence regarding an economic infeasibility criterion, the Board will
not address Appellants' request. The Board addresses whether the LID BMPs constitute AKART below.

1 [19]

2 A second concern with permeable pavement raised by Appellants was moss growth on
3 sidewalks and in parking lots. Moss presents safety concerns on sidewalks by creating a
4 slippery surface. DeWald Testimony. In addition, moss growth in the joints between pavers
5 can reduce the ability of permeable pavement to infiltrate stormwater. Golemo Testimony;
6 Strecker Testimony; Ex. CC-30. Cleaning moss from permeable pavement is difficult and
7 costly, as it requires removal efforts more frequently than conventional pavement. DeWald
8 Testimony; Golemo Testimony; Robinette Testimony.

9 [20]

10 In response, Ecology described its process for selecting the required LID BMPs.
11 Through its work with the LID Committees, as well as the comments received during the public
12 review of the preliminary draft and formal draft permits, Ecology evaluated a variety of BMPs
13 to determine which met the requirements of AKART and MEP. Moore Testimony; Exs. ECY-
14 15; J-5, J-7, J-8, J-16, J-17. The information gathered was then used to prepare the permit
15 conditions included in the final permits. Mr. Moore explained that while Ecology did not
16 prepare a specific document detailing its AKART/MEP analysis, the fact sheet provides the
17 technical and legal basis for the particular permit. *Id.*; Exs. J-3, J-14. Ecology did not prepare a
18 cost-benefit analysis of the LID requirements because one was not required and, given the
19 flexibility provided under the Permits, it would have been very difficult to prepare such an
20 analysis. Moore Testimony.

1 [21]

2 Mr. O'Brien testified that permeable pavement was included as an LID BMP because it
3 is a well-known BMP that is available and reasonable to use. O'Brien Testimony. Permeable
4 pavement is currently being used in the Puget Sound basin and Ecology has funded several
5 permeable pavement projects through its grant programs. *Id.*; Moore Testimony. Mr. Moore
6 testified that permeable pavement has been in use for some time, and between 750,000 and one
7 million square feet of pervious concrete is installed in western Washington each year. Moore
8 Testimony. PSA's witnesses also testified that permeable pavement is not an experimental,
9 untested BMP. Booth Testimony; Horner Testimony. Rather, it has been well studied and there
10 is a great deal of information available regarding its performance, its life cycle costs, and where
11 it should be applied. *Id.*; Ex. RI-15.

12 [22]

13 Ecology also cited a report prepared by WSDOT for the state legislature that, in part,
14 evaluated the use of permeable pavement. Ex. ECY-21. According to the report, permeable
15 pavement works best on pedestrian areas, parking areas, very low-volume roads (e.g.,
16 residential streets), very low truck traffic areas, new construction, flat areas, and the west side of
17 the state (where infiltration and stormwater are most important). *Id.* at 68. While permeable
18 pavement may work in those areas, the infeasibility criteria still apply and may result in
19 permeable pavement not being used in a particular location. O'Brien Testimony. The WSDOT
20 report also identifies locations where permeable pavement is impracticable, which included
21 higher traffic volume roads, higher truck traffic areas, and slopes. *Id.* at 69. According to

1 Ecology, the Permits' infeasibility criteria does not require the application of permeable
2 pavement in those locations where WSDOT stated that it is impractical. O'Brien Testimony.
3 Addressing the concern raised by Appellants regarding the application of permeable pavement
4 in driving lanes, Ecology pointed to the infeasibility criteria which exempted the use of
5 permeable pavement on high traffic roads, such as arterials and collectors, and "high-use sites."
6 2012 Manual, Vol. 5 at 5-18. PSA's witnesses agreed that permeable pavement was not
7 appropriate for high traffic roads, rather its use should be limited to low volume areas such as
8 parking lots, sidewalks, road shoulders, and paths. Booth Testimony; Horner Testimony.

9 [23]

10 Addressing Appellants concerns regarding moss growth, Ecology responded that proper
11 installation, placement and maintenance of permeable pavement are necessary to its successful
12 operation. Mr. O'Brien testified that Ecology published guidance with recommended
13 maintenance for permeable pavement. O'Brien Testimony. The guidance recommends
14 cleaning twice per year with either vacuum or regenerative air sweepers in order to remove
15 sediment and moss growth. *Id.* Mr. O'Brien also testified that Ecology has grant programs
16 through which local governments can obtain funds to purchase those types of cleaning
17 equipment. *Id.*

18 [24]

19 The Board finds that the evidence presented supports the conclusion that permeable
20 pavement meets the requirements of AKART and MEP. The focus of Ecology's work with the
21 LID Committees, which included representatives of the permittees as well as industry, was to

1 select LID techniques that constituted AKART and MEP. There is no evidence in the record
2 demonstrating that the LID Committees recommended different LID techniques or objected to
3 the use of permeable pavement because it did not constitute AKART or MEP. The evidence
4 demonstrated that permeable pavement is not a new technology. Rather, it is widely used in the
5 region. Moore Testimony; Horner Testimony. See also Ex. RI-15. While the life-cycle and
6 maintenance costs for permeable pavement may be more than that of conventional pavement,
7 there was no evidence that those costs rise to the level of being unreasonable.

8 [25]

9 The evidence also established that permeable pavement is not currently ready for use in
10 higher traffic volume roads. This conclusion is supported by testimony from witnesses for
11 Appellants and for PSA. The WSDOT report to the legislature relied upon by Ecology states
12 that permeable pavement works best on very low-volume roads and very low truck traffic areas.
13 Ex. ECY-21 at 69. The 2012 Manual does not incorporate WSDOT's specific finding,
14 providing instead a list of typical applications for permeable pavement, which includes
15 residential access roads. 2012 Manual, Vol. 5 at 5-16. While the infeasibility criteria provides
16 that permeable pavement is not required for arterials or collectors, the Manual does not limit its
17 application to very low-volume roads and very low truck traffic areas. *Id.* at 5-18. The Board
18 directs Ecology to clarify the Permits and, to the extent Ecology deems necessary, the 2012
19 Manual to limit the application of permeable pavement to those roadways that receive very low-
20 traffic volumes and areas of very low truck traffic.

1 witness, Dr. Richard Horner, testified that bioretention is an effective LID BMP. Horner
2 Testimony. He described the SEA Streets project, which successfully employed bioretention to
3 address both flow control and treatment of stormwater. Horner Testimony; Ex. RI-9. Mr.
4 Golemo, appearing on behalf of Appellant Building Industry Association of Clark County,
5 testified that bioretention facilities are very effective and easy to maintain. Golemo Testimony.

6 [28]

7 Ecology acknowledged that the results of the Redmond bioretention study showed that
8 the prescribed soil mix was exporting pollutants. O'Brien Testimony. Mr. O'Brien testified
9 that Ecology is actively working on the issue. The agency is engaged with staff at the Redmond
10 facility to determine the source and cause of the elevated levels of pollutants. *Id.* Ecology also
11 gathered available monitoring data from other bioretention facilities using the soil media
12 specifications in the 2012 Manual and convened a meeting of individuals involved in
13 bioretention and compost research in the area to discuss what should be done to address this
14 issue. *Id.* The consensus of the participants was that Ecology should continue to evaluate the
15 matter in order to improve the performance of the soil mixture. O'Brien Testimony. Ecology is
16 currently engaged in meetings on this topic. *Id.*

17 [29]

18 Responding to Appellants concerns regarding potential ground water contamination, Mr.
19 Moore testified that the applicable ground water quality standards are much higher than the
20 levels of pollutants being detected in the discharge from the bottom of the bioretention facility.
21 Moore Testimony. Because the water will continue to pass through the soil rather than being

1 discharged to surface water, any pollutants will be further attenuated. *Id.* With respect to
2 phosphorus, the 2012 Manual provides that an underdrain should not be used if the bioretention
3 facility will discharge to a phosphorus limited waterbody. 2012 Manual, Vol. V at 7-6.

4 [30]

5 Finally, Ecology stated that bioretention is not an appropriate candidate for the TAP-E
6 process. Moore Testimony. The purpose of the TAP-E process is to evaluate proprietary BMPs
7 proposed by the private sector. A bioretention facility is a public-domain BMP and, as such,
8 does not have a sponsor to run it through the TAP-E process. *Id.*

9 [31]

10 The Board concludes that bioretention constitutes AKART and MEP for stormwater
11 management. Ecology's judgment as to the efficacy of bioretention is science-based and
12 informed by real world applications of an established BMP. The evidence demonstrated that
13 bioretention is a well-known BMP that is effective for both flow control and treatment. The
14 Board further concludes that Ecology is appropriately addressing Appellants concerns regarding
15 the prescribed soil mixture's export of pollutant through its recommendation regarding
16 discharging to phosphorus-limited waterbodies and continued efforts to refine the soil mix to
17 improve its performance. Other than expressing concerns that groundwater may become
18 contaminated, Appellants provided no evidence to support that claim.

19 [32]

20 Under the Phase I Permit, Permittees are required to adopt and make effective a local
21 program that incorporates LID, including bioretention, by June 30, 2015. Changes to

1 development-related codes, ordinances, etc., implementing LID shall be completed by July 1,
2 2015. The deadline for Phase II jurisdictions to accomplish those tasks is December 31, 2016.²⁴
3 Ecology has sufficient time to gather more sampling data and, if necessary, refine the prescribed
4 soil mix before its usage is required under the Permits. Finally, the Board concludes that the
5 TAP-E process is not an appropriate vehicle for evaluating the soil mix. The efforts outlined by
6 Ecology, in particular the reliance on a wide array of experts in the field to evaluate the soil mix
7 issue, are an appropriate means to evaluate this issue and recommend any necessary changes.

8 **c. Infeasibility criteria for permeable pavement and bioretention**

9 [33]

10 Appellants challenged various elements of the infeasibility criteria for permeable
11 pavement and bioretention, several of which can be readily addressed. King County's witness,
12 Ms. Reynolds-Jones, questioned the geographic reference in the infeasibility criterion for
13 permeable pavement directed to snow zones, which provides permeable pavement is not
14 required: "Where routine, heavy applications of sand occur in frequent snow zones to maintain
15 traction during weeks of snow and ice accumulation. Most lowland western Washington areas
16 do not fit this criterion." 2012 Manual, Vol. 5 at 5-19. Ms. Reynolds-Jones testified that,
17 contrary to the statement in the infeasibility criterion, lowland areas in Western Washington do
18 receive heavy applications of sand to maintain tractions when snow and ice accumulate and
19 requested that the final sentence be stricken. Reynolds-Jones Testimony. Ecology provided no
20 response to this testimony. The Board agrees with King County and directs Ecology on remand

21 ²⁴ The deadline for Phase II Permittees in Lewis and Cowlitz Counties is June 30, 2017. The City of Aberdeen is required to comply by June 30, 2018.

1 to delete the second sentence of the infeasibility criterion addressing road sanding for snow and
2 ice.

3 [34]

4 A second change sought by Appellants was the addition of a provision allowing for a
5 determination of infeasibility for a specified geographic area. Several witnesses testified that
6 the ability to infiltrate stormwater in certain areas within their jurisdictions was limited due to
7 ground water levels and/or soil characteristics. Robinette Testimony, Harbinson Testimony,
8 Bond Testimony. Ecology responded that the agency addressed this issue in its response to
9 comments on the Permits by adding language to the 2012 Manual that allows local governments
10 to designate areas as infeasible for permeable pavement. O'Brien Testimony; Moore
11 Testimony.; Exs. J-6, Part V at 121; J-20, Vol. III at 3-109. The 2012 Manual provides:

12 Local jurisdictions may identify regional areas as infeasible for permeable
13 pavement for pollution generating hard surfaces based upon knowledge of the
region's soil characteristics in regard to the criteria listed above.

14 Ex. J-20, Vol. III at 3-109. Ecology testified that it was not opposed to further clarifying the
15 language in the 2012 Manual to address Appellants' request. The Board finds that the language
16 in the 2012 Manual could be further clarified to describe the process a local jurisdiction is to
17 follow to designate a geographic area as infeasible for permeable pavement and identify the data
18 required to support such a determination. On remand, the Board directs Ecology to revise the
19 Permits or, as Ecology deems necessary, the 2012 Manual to include those clarifications.

1 [35]

2 Finally, Appellants challenge infeasibility criterion establishing an infiltration threshold
3 for permeable pavement and bioretention, which provide that a finding of infeasibility can be
4 made where appropriate field testing indicates that the soils “have a measured (a.k.a. initial)
5 native soil saturated hydraulic conductivity of less than 0.3 inches per hour.” 2012 Manual,
6 Vol. V at 5-18, 7-9. Appellants introduced emails from among Ecology staff noting concerns
7 for potential flooding caused by infiltration. Ex. COA-39. Mr. Tuck testified that an infiltration
8 rate of 0.3 inches per hour was difficult to measure and that it should be left to the professional
9 judgment of the design engineer whether to use an LID BMP. Tuck Testimony; Tuck Prefiled
10 Testimony at 4. He also concurred with the concerns expressed regarding the potential for
11 flooding. Tuck Testimony. Mr. Busich testified that the standard infiltration design rate is one
12 to two inches per hour. Busich Testimony. According to Mr. Busich, applying the correction
13 factors to the 2013 Permits’ 0.3 inches per hour infiltration rate causes the design rate to
14 effectively be 0.09 inches per hour, requiring the size of a stormwater facility to grow and
15 increasing the risk that the facility will fail. *Id.*

16 [36]

17 In response, Mr. O’Brien addressed the potential for flooding, as had been discussed in
18 Ecology’s emails. He testified that the issue was dealt with through the infeasibility criteria,
19 which makes application of LID techniques infeasible if their use will result in flooding.
20 O’Brien Testimony. With respect to the correction factor, Mr. O’Brien stated that the use of a
21 correction factor is a matter of professional judgment and is dependent upon the variability of

1 soils at the project site, as well as the number of infiltration tests taken. *Id.* The 2012 Manual
2 contains guidance on the use of correction factors for bioretention and permeable pavement.
3 Ex. J-20, Vol. III at 3-103 – 3-110.

4 [37]

5 Mr. O’Brien explained the genesis of the 0.3 inch per hour infiltration rate. Ecology
6 received input from various sources, including public comments on the preliminary draft permit,
7 information gathered by the City of Seattle on the Ballard rain garden project, discussions with
8 geotechnical experts, and information included in the 2012 Manual. O’Brien Testimony. Mr.
9 O’Brien testified that the preliminary draft permit included an infiltration rate of 0.15 inches per
10 hour. According to Mr. O’Brien, the input from the geotechnical experts assembled by Ecology
11 to review the draft was that, while the computer models indicate that the LID BMPs would meet
12 the infiltration rate, the lower the rate the more chance that application of those BMPs in the
13 field may lead to unintended consequences. *Id.* The recommendation was that the infiltration
14 rate should be higher than 0.15 inches per hour. *Id.*

15 [38]

16 Mr. O’Brien considered comments from the City of Seattle indicating that failures
17 occurred at the Ballard rain gardens project where the initial infiltration rates were recorded
18 between 0.2 and 0.3 inches per hour. *Id.* Mr. O’Brien also considered data in the 2012 Manual
19 from the U.S. Natural Resources Conservation Service (NRCS) which identifies runoff
20 coefficients for different soil types in Washington state. 2012 Manual, Vol. III at 2-10 – 2-12.
21 The NRCS data provided that outwash soils should infiltrate at a rate of 0.3 inches per hour and

1 greater. O'Brien Testimony; 2012 Manual, Vol. III at 2-12. Mr. O'Brien testified that he used
2 the results of the Ballard rain garden project and the NRCS data to increase the infiltration rate
3 in the 2012 Permits infeasibility criteria to 0.3 inches per hour. O'Brien Testimony.

4 [39]

5 The Board concludes that the infiltration rate selected by Ecology is supported by
6 substantial evidence and represents the exercise of the agency's technical expertise. As noted
7 above, the Board gives deference to Ecology's expertise on technical judgments involving
8 complex scientific issues. *Port of Seattle*, 151 Wn.2d at 593. The Board concludes that
9 Ecology's selection of the 0.3 inches per hour infiltration rate for the LID infeasibility criteria
10 was not arbitrary, capricious or contrary to law, and is a valid term of the Permit.

11 **3. Phase I vs. Phase II**

12 [40]

13 The Coalition further argues that by imposing the same requirements on all permittees,
14 Ecology did not recognize the differences between Phase I and Phase II jurisdictions in their
15 ability to implement LID. Ecology explained that the requirements of the 2007 Phase I and
16 Phase II Permits were identical except for a "one-acre regulatory filter" for the Phase II
17 permittees. Moore Testimony. In developing the 2013 Permits, Ecology determined that there
18 could not be two different standards for the protection of water quality, but that only one
19 standard can and should be set forth in the Phase I and II Permits. *Id.* In developing Permit
20 requirements, Ecology considered testimony to the Puget Sound Regional Council which
21 expressed concerns that lower standards in Phase II communities were negatively impacting the

1 ability of other communities to protect water quality. Ecology also interpreted the Board's 2008
2 Orders as requiring the imposition of LID BMPs at the site and subdivision scale where feasible
3 in future municipal stormwater permits, including the Phase II Permit. *Id.* The 2012 Legislature
4 gave funding to Ecology for purposes consistent with Ecology's interpretation of the Board's
5 2008 Orders. *Id.* This legislation required that new LID requirements for general permits
6 applicable to western Washington municipalities be implemented simultaneously, and go into
7 effect no earlier than December 16, 2016, or the time of the scheduled update under RCW
8 36.70A.130(5), whichever is later. The Phase II permittees are provided until December 31,
9 2016 to revise and make effective LID requirements in their local development codes, rules,
10 standards or other enforceable documents. Phase II Permit, Condition S5.C.4.f. Whereas, Phase
11 I permittees must make these LID requirements effective 18 months earlier, on July 1, 2015.
12 Phase I Permit, Condition S5.C.5.a.iii.

13 [41]

14 The Board concludes that the additional time given to the Phase II permittees for the
15 implementation of LID requirements is consistent with the Board's 2007 Phase II Permit
16 decision, which recognized that Phase II jurisdictions are less financially capable of
17 implementing LID on the same schedule as Phase I jurisdictions.

18 **B. Appellants Challenge To Watershed-Scale Planning (Phase I Issues 6, 7, 8, 9 and 10;
19 Phase II Issues 9 and 18)**

20 [42]

21 In the 2008 Phase I Final Order, this Board concluded that incorporating available LID

1 techniques on a basin or watershed-scale should be considered for the next cycle of the general
2 municipal stormwater permits. 2008 Phase I Order at 59. The Board found that the CWA and
3 the state water quality laws anticipate increasingly more stringent requirements on those entities
4 that discharge stormwater, and that efforts to address stormwater on a scale broader than the
5 parcel and subdivision scale may be a necessary element to meet the state AKART standard and
6 the federal requirement to reduce pollutants in stormwater to MEP. *Id.* Ecology's incorporation
7 of a watershed-scale planning strategy in this iteration of the Phase I and II Permits is in
8 compliance with this ruling. The watershed planning requirements are set forth in 2013 Phase I
9 Permit S5.C.5.c, and 2013 Phase II Permit S5.C.4.g. However, as described above, the primary
10 responsibilities for basin-wide watershed planning fall on the jurisdictions covered under the
11 Phase I Permit.

12 [43]

13 The Phase I Appellants allege that several components of the watershed planning
14 requirements are unlawful, unreasonable, and inequitable. Special Condition S5.C.5.c. As set
15 forth below, the Board concludes that except in limited circumstances, the Permits reasonably
16 and properly commence the phasing-in of watershed-scale basin planning as a tool and strategy
17 to control stormwater for the purposes of meeting the AKART and MEP standards.

18 **1. Jurisdictional scope of watershed planning (Phase I Issues No. 6 and No. 2,
19 Phase II Issues No. 9 and 18.)**

20 [44]

21 The Phase I Appellants argue that the watershed planning conditions unlawfully and

1 unreasonably require the permittees to implement the Phase I Permit outside of their respective
2 jurisdictions and in jurisdictions that are not required to participate and share the costs of the
3 basin planning. Snohomish County argues that the Permits can legally require a permittee to
4 comply with the terms of the Permit only within a permittee’s jurisdiction. Lief Testimony;
5 Kerwin Testimony. The Phase I Permit specifically requires permittees to comply with the terms
6 of the Permit “for the MS4s that they own and operate.” *Id.*; Special Condition S3.A. Based on
7 this language, Snohomish County takes exception to Ecology’s letter dated July 30, 2013, in
8 which Ecology disagrees with Snohomish County’s decision to limit watershed planning within
9 the Little Bear Creek watershed to the boundaries of Snohomish County. Ex. A-SNO-14.
10 Ecology states that Snohomish County must conduct the watershed planning throughout the
11 watershed, including any area that is outside the County’s jurisdiction. Ecology explains that if a
12 County limited its watershed planning to the county line, “it would not be possible to determine
13 whether or not the selected stormwater management strategies would support existing and
14 designated uses in the lowest reach of Little Bear Creek.” *Id.*

15 [45]

16 There is no dispute that if a complete and relevant watershed analysis is to be done as
17 currently contemplated under the Phase I Permit, the entire watershed should be studied and be
18 considered in the basin planning process and modeling. Therefore all jurisdictions in the
19 watershed should participate. However, the Permits do not require local jurisdictions to
20 participate, and Phase II Permittees have very limited responsibilities, as described below. When
21 invited by the Phase I permittee to participate, the other jurisdictions may decline, and a lack of

1 participation by the local jurisdictions is not considered a violation of the Permit. Condition
2 S5.C.5.c.ii.; Exs. SNO-13, 14.

3 [46]

4 Appellants argue that the limited nature of the involvement and the lack of a requirement
5 for cost share from other jurisdictions in the watershed are not reasonable. Kerwin Testimony.
6 The Phase II permittees are not required to collect new data, model the results or draft a report,
7 develop the stormwater management strategies, or fund any portion of the watershed planning.
8 *Id.* These necessary requirements for the watershed planning within a Phase II permittee's
9 jurisdiction would be the responsibility of the Phase I permittee. *Id.*

10 [47]

11 Ms. Kerwin, Public Works Manager for Snohomish County, testified that a watershed
12 study by Snohomish County will be ineffective and therefore not considered reasonable under
13 the AKART or MEP standards if the other local jurisdictions fail to fully participate in an inter-
14 local cost share agreement. *Id.* The Counties state that they cannot legally be expected to use
15 their respective county revenue to pay for the costs associated with planning outside their
16 jurisdiction. *Id.* Again, they cite to the language of the Permit itself that provides that the Phase
17 I permittees' obligations under the Permits are for stormwater discharges from their respective
18 MS4s. *Id.*; Phase I Permit, SC S3.A. Ms. Kerwin also testified that Snohomish County will
19 make the effort to comply with these terms of the Phase I Permit. However, to resolve the
20 County's objections and concerns, the jurisdictions must enter into an inter-local agreement that
21

1 is approved by the County and that defines the specific responsibilities and cost share among the
2 affected jurisdictions. *Id.*

3 [48]

4 Pierce County objected to the Phase I Permit's requirement that it conduct the required
5 watershed planning in the Clover Creek Basin. Wrye Testimony. Dan Wrye, Water Quality and
6 Watersheds Manager for Pierce County, testified that Pierce County has similar challenges
7 regarding participation and coordination with jurisdictions such as the federal government and
8 Indian Tribes who own property in a selected watershed. Wrye Testimony. The Permit does not
9 require these jurisdictions to participate even though they contribute a large amount of
10 stormwater flow into the watershed, especially in the Clover Creek Basin of Pierce County. *Id.*
11 The jurisdictions are not regulated by the same standards set forth in the Phase I Permit. *Id.*
12 Based upon these limitations, Pierce County argues the Clover Creek Basin is not a reasonable or
13 practicable selection for the watershed-scale stormwater planning effort. *Id.*

14 [49]

15 The Board finds that Phase I permittees have valid concerns with their ability to fully
16 comply with the watershed-scale requirements of the 2013 Phase I Permit outside of their
17 respective jurisdictions. The Phase I permittees' compliance with the watershed planning scope
18 of work and schedule, the continuous runoff modeling, and the final watershed-scale stormwater
19 plan is inherently compromised by the voluntary participation of the other jurisdictions and in
20 particular, the limited requirements on the Phase II permittees. Under the current watershed
21 planning process, the Phase I permittees cannot be held solely responsible to collect new data on

1 water quality conditions within other jurisdictions and evaluate stormwater management
2 strategies within those jurisdictions.

3 [50]

4 Despite these concerns, the Board concludes that the answer is not to limit the watershed
5 planning requirements of the permit, or invalidate them altogether. To avoid the potential lack of
6 data and incomplete watershed modeling and basin-wide stormwater management strategies in
7 designated watershed planning basins, the municipal stormwater permits issued by Ecology,
8 including the Phase II Permits, must obligate permittees to participate in the watershed-scale
9 stormwater planning process, provide the data necessary for that planning process, and develop
10 and evaluate stormwater management strategies to meet water quality standards in the portion of
11 the watershed that is within their respective jurisdictions.

12 [51]

13 It is incumbent on Ecology and the stormwater permittees to work cooperatively, and as
14 necessary, seek to execute inter-local agreements that will provide for the modeling and
15 development of a full watershed-scale analysis.²⁵ In this regard, the Permits must be amended as
16 necessary to address cross-jurisdictional coordination and insure that the scope of work for the
17 designated watershed plan includes the full participation of both Phase I and Phase II permittees,
18 and to the extent possible any other entities and governmental jurisdictions to which Ecology
19 issues stormwater permits within the designated watershed.

20
21 _____
²⁵ See the Interlocal Cooperation Act, chapter 39.34 RCW

1 King County, Mr. Milne testified that there are uncertainties inherently associated with
2 attempting to predict the future based on the many assumptions in the model, which he describes
3 as an HSP-F²⁷ “lump” model. King County asserts that such models are not appropriate to
4 predict the future when there is such a large variation of the inputs throughout the basin. By way
5 of example, the relationship of the land use patterns, rate of development, and relationship of
6 pollutant loads with land use development and B-IBI scores can vary considerably. *Id.* Local
7 and site specific development patterns, such as armoring the stream bank and applying fertilizer
8 to landscaping near the riparian area, can have impacts on the benthic community but are
9 difficult to simulate through the model, according to King County. *Id.*

10 [54]

11 A primary concern of the Counties is that the Permit’s objective to identify stormwater
12 management strategies that will result in conditions that fully support “existing uses” and
13 designated uses” is not achievable because of the variety of sources of pollution that the Counties
14 cannot control. In Pierce County, for example, the County asserts that there is little pre-
15 developed, forested land not otherwise altered by human activity. Ojala Testimony; Wrye
16 Testimony. The Counties conclude that based on the unreliability of the results of the model to
17 define management strategies to meet water quality standards, the goal of the watershed-scale
18 planning process is neither practical or reasonable. *Id.*

19
20
21

²⁷ HSP-F stands for hydrologic simulation program dash 25 Fortran. O’Brien Testimony.

1 [55]

2 Ecology testified that the calibrated continuous runoff model is the best tool available to
3 understand how stream flows will change with land cover conditions. O'Brien Testimony. It
4 provides the necessary data to do the statistical analysis of the water quality metrics and the
5 correlation with the B-IBI scores. *Id.* EPA recommends use of a calibrated continuous runoff
6 model, and in particular HSP-F, for predicting pollutant loading and concentrations in the surface
7 water (TMDLs). *Id.* While the Counties have actually used the HSP-F models in several of their
8 basins, they did not use the model to compare changes in hydrology to growth or to make a
9 quantitative assessment of pollutants on the quality of the stream. These are important
10 components for the development of management strategies for watershed-scale stormwater
11 plans. *Id.*

12 [56]

13 The Board defers to Ecology on technical and scientific matters that are within Ecology's
14 expertise. *Port of Seattle*, 151 Wn.2d at 595. Here, Ecology has determined that a continuous
15 calibrated runoff model is necessary to achieve a statistically valid analysis, to accurately assess
16 B-IBI scores, and to ultimately address water quality standards. A determination as to the type
17 of modeling necessary for the purposes of the watershed-scale planning is within Ecology's
18 expertise and, in giving due deference to Ecology, the Board finds the calibrated continuous
19 runoff model elements in the Phase I Permit are reasonable and practical. While the Counties
20 have shown that there may be some flaws with the model, the Board concludes the model is the

1 most comprehensive model available that will provide the necessary data to begin development
2 of management strategies to address stormwater discharges on a watershed-scale basis.

3 [57]

4 The Appellants, and in particular King and Pierce Counties, also argue that the
5 continuous runoff model required by the Phase I Permit is not necessary because other effective
6 modeling and management strategies are already being used in watersheds by the Phase I
7 Counties. They want the Permit to be modified to allow use of these alternative models and
8 strategies. King County challenges the need for a calibrated model based primarily on the results
9 of its successful use of the ECY08 management strategy used for the Juanita Creek Basin
10 Retrofit Analysis project (Juanita Study). *Id.* The purpose of the Juanita Study was to identify
11 the extent and cost of stormwater retrofitting that would be necessary to restore flow and water
12 quality conditions supportive of aquatic beneficial uses within Juanita Creek. *Id.* Mr. Crawford
13 testified that because the results from the ECY08 management strategy are so close to matching
14 the simulated biological and water quality performance of fully forested conditions, there will be
15 little improvement by use of a different management strategy, such as the continuous runoff
16 model. *Id.* Therefore, King County argues that the ECY08 management strategy is sufficient to
17 meet Ecology's objectives for watershed-scale planning without the calibrated continuous runoff
18 model prescribed in the Permit. *Id.* King County would prefer spending the money that would
19 be necessary for the calibrated continuous runoff model, estimated at \$500,000, on water quality
20 improvement projects. *Id.*

1 [58]

2 Ecology disagrees with King County. The ECY08 strategy does not get beyond a “fair”
3 range for the B-IBI score associated with having viable fish populations, and Ecology testified as
4 to the need to have a higher B-IBI score, reflective of a healthy watershed. O’Brien Testimony.
5 Further, the ECY08 relies only on engineering techniques and does not consider other potential
6 strategies, such as retention of native vegetation, that would provide greater assurance of
7 protecting water quality. *Id.* The ECY08 strategy also made assumptions regarding the use of
8 specific LID BMPs, such as the use of permeable pavement; but these BMPs are likely to be
9 infeasible in the urbanizing areas. *Id.*

10 [59]

11 Like King County, Pierce County desires to use its existing watershed planning process
12 to meet Ecology’s objectives for watershed-scale stormwater planning. Milne Testimony; Wrye
13 Testimony. Pierce County testified that its current watershed planning efforts have and are
14 continuing to accomplish significant water quality improvements, and the Permit should allow
15 these watershed basin planning efforts to be an alternative to the Permit’s watershed planning
16 requirements. Kantz Testimony; Wrye Testimony. Pierce County testified that the new
17 watershed process and modeling required in the Permit will take funding and staff from these
18 ongoing, successful watershed efforts. *Id.*

19 [60]

20 Ecology testified that the Counties’ basin plans did not conduct the quantitative analysis
21 on the pollutants that Ecology has determined critical for development of management strategies

1 to control stormwater on a watershed scale. O'Brien Testimony. Ecology testified that the
2 alternative ECY08 and other current watershed plans have not included sufficient data collection
3 and analysis and do not consider the full water quality parameters necessary to address
4 stormwater impacts, including impacts to salmonid survival. *Id.* While Pierce County has done
5 a lot of work and the watershed plan for Clover Creek identifies many issues that need to be
6 addressed, it does not address all of the issues that the watershed-scale stormwater planning
7 requires. *Id.* For example, it does not consider copper, zinc, and other toxic pollutants. The
8 strategies evaluated from the modeling to meet water quality standards in these watershed plans
9 will not be anywhere near as effective as their models predict. *Id.*

10 [61]

11 The Board concludes that the ECY08 strategy and the modeling and strategies used by
12 King and Pierce Counties, while positive efforts, do not meet the rigor and comprehensive flow
13 monitoring, water quality data collection and analysis necessary to estimate future biological
14 conditions by using a correlation of hydrologic metrics with B-IBI scores for the purpose of
15 watershed-scale stormwater management. This does not preclude the Phase I permittees from
16 using much of the data already collected through their basin strategies and plans. See Phase I
17 Permit S5.C.5.c.ii(1). Nor does it preclude the permittees from submitting for Ecology's
18 approval an alternative strategy and plan to meet the standards and goals of the Permit, which
19 Ecology acknowledges can be based on updating and improving the permittees' current basin
20 strategies and plans. O'Brien Testimony. Specifically, when filing with Ecology a scope of
21 work and schedule, the permittee may propose an alternative plan for the correlation of the

1 hydrologic metrics with the B-IBI Scores. Phase I Permit, Condition S5.C.5.c.ii(4). Ecology
2 must consider options presented by the permittees including enhanced water basin planning
3 efforts now employed by the permittees. The scope of work for each permittee will be reviewed
4 by Ecology on a case by case basis, and the Board should not in this appeal define or limit
5 Ecology's discretion and professional judgment in reviewing and responding to any alternative
6 process and strategies for watershed-scale stormwater planning that the permittees may submit to
7 Ecology.

8 [62]

9 The Permit requirement to use the calibrated continuous runoff model is comprehensive
10 and captures the intent of the Board's 2007 Order to incorporate watershed planning as a tool for
11 stormwater management. While the Phase I Appellants offer good arguments regarding the cost
12 of the calibrated modeling effort and the advantages of using existing, alternative management
13 tools such as ECY08 and current watershed plans, the scope and level of detail of the those plans
14 are not adequate to address all the water quality parameters that Ecology has determined
15 necessary to protect water quality. The scope of the watershed planning and the scope of the
16 calibrated model are within the special expertise of Ecology.

17 **3. The time deadlines for developing the watershed plan (Phase I Issue No. 8 and**
18 **No. 9)**

19 [63]

20 The Appellants argue that the schedule in the Phase I Permit to submit the scope of work
21 by April 1, 2014, and the final watershed plan by October 1, 2016, is not reasonable. Ojala

1 testimony; Kerwin testimony. Mr. Ojala detailed the process required to complete the
2 requirements for the final basin plan, and in particular to develop the calibrated model. *Id.* To
3 develop a sufficient calibrated model, the Counties assert they must collect a minimum of two
4 years of data. Before data can be collected across jurisdictional boundaries, it is expected an
5 inter-local agreement must be approved by the local jurisdictions. After the data is collected, the
6 model must be calibrated to reflect the current biological conditions. Full build-out of the
7 watershed will need to be estimated, considering the flows and the B-IBI scores. Because it is
8 understood that the model will predict that water quality standards will not be met in the future,
9 significant time will be needed to identify the BMPs, as well as sites in the watershed where
10 these BMPs are feasible and will address the stormwater control and treatment in the future. The
11 report must be written and available for public review. Based on a schedule projected by the
12 permittees, and the required modeling, the Counties assert that the watershed-scale basin plan
13 could not be finalized for likely one year beyond the current deadline of October 1, 2016. This
14 schedule also assumes the current ongoing data collection is under a scope of work that Ecology
15 will approve within its 90-day period in 2014; otherwise, the permittees would not commence
16 collecting the data until after Ecology approves the scope of work between April 1 and June 20,
17 2014. *Id.* This is the earliest date that Ecology will approve the scope of work.

18 [64]

19 While the Board agrees that the timelines and deadlines for the watershed-scale
20 stormwater planning are aggressive, we conclude that the answer to this issue rests on the
21 manner in which Ecology implements the Permit and an iterative process with the permittees, not

1 with the Board requiring further modifications of the Permit. Ecology has acknowledged that if
2 a permittee files a scope of work that requires the schedule to go beyond the deadlines set forth
3 in the Permit, Ecology will work with the permittee to modify the scope of work if possible, and
4 as necessary revise the deadlines through the issuance of a modified permit. Moore Testimony.
5 If there was a dispute about approval of a scope of work and schedule, Ecology would engage in
6 an iterative process with the permittee to resolve the dispute. *Id.* The Board finds that this is a
7 reasonable and sound approach to address what the Board finds is a real and practical concern of
8 the permittees. The Board expects that the parties will move forward in good faith and due
9 diligence. However, the Board declines to make findings that could limit Ecology's discretion
10 and professional judgment as the agency reviews and responds to a permittee's submittal of any
11 alternative schedule for development and completion of a watershed-scale stormwater plan.
12 Further, the Board declines King County's request to require Ecology to include a dispute
13 resolution mechanism in the Permit. The Board is confident that the current framework for
14 review and approval of the watershed plans will allow the permittees and Ecology to resolve any
15 disagreements that may arise.

16 **4. The selection of the watershed (Phase I Issue No. 10)**

17 [65]

18 As stated above, Ecology selected a watershed for each of the Phase I permittees based
19 on the following four criteria:

- 20 1. The drainage area is at least ten square miles;
21 2. It is wholly or partially in the permittees' MS4 service area and discharges to
a stream;

- 1 3. The stream system has been impacted by development but retains some
2 anadromous fish resources;
- 3 4. It is targeted to accept significant population growth and associated
4 development, and is partially or fully within an urban growth area (UGA)
5 under ch. 36.70A RCW, or potential future expansion of the UGA.

6 [66]

7 The permittees may propose an alternative watershed for Ecology's approval. Phase I
8 Permit Condition S5.C.5.c.i. Snohomish County has already petitioned Ecology to approve
9 Little Bear Creek an alternative watershed, which Ecology approved. However, as discussed
10 above, the County objects to Ecology's requirement that Snohomish County include all other
11 jurisdictions within the watershed in the scope of work for the final watershed plan. King
12 County indicated in closing argument that it was also finalizing an agreement with Ecology for
13 an alternative watershed selection. In light of these facts, the Board will not address the issues
14 and arguments of Snohomish and King County regarding the limited issue of the whether
15 Ecology improperly designated basins in those counties.

16 [67]

17 Ecology selected the Clover Creek Basin for Pierce County to develop its watershed plan
18 under the Permit. Pierce County challenges this decision, arguing that this basin is not
19 appropriate for several reasons. First, Pierce County argues that it does not meet Ecology's
20 criteria because the Clover Creek basin will likely not see significant population growth and
21 development. Milne Testimony. The basin has already seen 150 years of human activity,
including straightening of channels, extensive culvert installation, and land development
activities that have left extensive impervious land surfaces that will be cost prohibitive to retrofit.

1 *Id.*; Wrye Testimony. The Creek is itself in poor condition, with some of the lowest B-IBI and
2 water quality index scores in the County. *Id.* Because of the significant impact from
3 development, the full restoration of this creek is unlikely. *Id.* Upon hearing the testimony,
4 Ecology recognized Pierce County's concerns and objections, and Ecology testified that it also
5 was not necessarily convinced that Clover Creek is an appropriate watershed because of the poor
6 status of the salmon resources. O'Brien Testimony. Ecology did not conduct any analysis of
7 Pierce County's existing basin plan before selecting Clover Creek basin. *Id.*

8 [68]

9 However, Ecology did not intend the watershed planning to include such a large area as
10 the entire Clover Creek basin, which covers approximately 149 square miles. Ecology stated that
11 it was difficult to find a basin in Pierce County that meets the criteria. Clarks Creek is a possible
12 watershed, but there is an ongoing TMDL process with EPA that may complicate or be in
13 conflict with the Permit's watershed-scale stormwater requirements. O'Brien Testimony.
14 Ecology testified that it expected to discuss alternative basins with Pierce County, including a
15 subset of Clover Creek, such as the North Fork which has healthier salmon populations. *Id.*
16 Ecology would also consider Clarks Creek if Pierce County wished to submit a proposal and all
17 the parties could meet and agree to a coordinated approach to their respective studies of the
18 basin. *Id.*

19 [69]

20 Based upon the evidence submitted, the Board finds that the selection of Clover Creek
21 basin for a watershed-scale stormwater plan requires additional review and analysis, including

1 the consideration of other potential basins or subbasins. The Permit terms state that a proposal
2 for an alternative basin must be submitted to Ecology by October 31, 2013. Therefore to
3 consider any alternative basin, the Permit must be modified to grant Pierce County additional
4 time to submit a proposal for an alternative basin.

5 [70]

6 Although using the entire Clover Creek basin for a watershed study and analysis may not
7 be practical, the Board concludes that the process available to Pierce County to petition for an
8 alternate basin or subbasin, and for Ecology to conduct further review of the Clover Creek basin
9 as the designated watershed, is a reasonable and a valid approach to initiating stormwater
10 management on a watershed scale. Again, we leave it to the iterative process envisioned by the
11 Permit for Ecology and the permittee(s) to implement these requirements. It is within the
12 purview of Ecology under the terms of the Permit to consider the proposals for a new basin, and
13 the Board will not step into that role by determining the proper basin. It remains incumbent on
14 Pierce County to submit watershed planning alternatives, including sub-basins of Clover Creek,
15 to Ecology for consideration. The Board's findings and conclusions do not preclude Ecology
16 from resolving the issues presented with Clover Creek basin through the approval of the scope of
17 work that may be submitted by Pierce County.

18 **C. Appellants' Challenges to the Opportunity for Meaningful Review (Phase I Issues 17**
19 **b. and c.; Phase II Issues 16.)**

20 [71]

21 The Appellants raised two primary issues regarding their ability to have a meaningful

1 opportunity to comment on the 2013 Permits. First, Appellants argued that they were not
2 allowed sufficient time to reasonably review the draft 2013 Permit and draft 2012 Manual,
3 which were issued for public comment at the same time. Phase I Issue No. 17. B.; Phase II
4 Issue No. 16. In addition, this review period coincided with the Appellants' preparation of their
5 respective reports required under the 2007 Permits, limiting ability to review the drafts. Barner
6 Testimony. Ecology disagrees that there was insufficient time for meaningful review.
7 Specifically, Ecology did not limit the review to the legally required 30 days, and rather offered
8 a 90-day review and comment period, from October 16, 2011, to February 3, 2012. Ecology
9 also argues that there is no basis for the permittees' position because the permittees participated
10 in the development of the Permit and Manual. Beginning in 2009, Ecology created the LID
11 Committees which provided permittees an opportunity to provide input and advise Ecology on
12 the performance standards of the 2013 Permits, such as LID BMPs and watershed-scale
13 planning requirements. See Manual at ES-ii; Moore Testimony. A preliminary draft permit
14 was issued in May 2011 that also allowed the permittees to address areas of concern and prepare
15 comments regarding these elements of the Permit. In addition, during the comment period,
16 Ecology provided additional assistance by scheduling several meetings and hearings to allow
17 the permittees to discuss and ask questions regarding the draft Permit and draft Manual.
18 O'Brien Testimony.

19 [72]

20 The Board recognizes that the permittees had to commit a significant amount of time and
21 resources of their staff to review the draft Permits and Manual. However, the permittees also had

1 several opportunities, both before the issuance of the draft Permit and after it was formally sent
2 out for comment, to analyze the Permit and the Manual and make necessary comments.

3 [73]

4 Undoubtedly, the draft Permits were revised from the preliminary draft based on
5 comments. However, this is the normal and expected process, and to further assist the
6 permittees, Ecology issued the Draft permits with “red-lines” to clearly show where changes
7 were made from the preliminary drafts. Moore Testimony; O’Brien Testimony.

8 [74]

9 The Board concludes that the Ecology’s process was not only in compliance with the
10 requirements for public notice, but it took into consideration the complexity of the 2013 Permit
11 and the 2013 Manual through involvement of the regulated community in the development of
12 those documents prior to issuance of the draft Permit and Manual, and through engagement of
13 the regulated community in other hearings and workshops. The Board further concludes that the
14 Appellants had a reasonable and meaningful opportunity to review and comment on the draft
15 Permits, notwithstanding the number and length of other related guidance documents that had to
16 be reviewed at or near the same comment period for the Permits, and the permittees other
17 reporting obligations. The appeal and de novo review by the Board, approximately two years
18 after the draft Permits were issued, has also cured any prejudice to the permittees resulting from
19 the permittees lack of opportunity to fully comment on the elements and conditions of the draft
20 Permits. The Board sees no basis to reverse or remand the Permits for these reasons.

1 [75]

2 As a second and independent challenge, Appellants argue there was not an opportunity
3 for meaningful review of the Permits because several of the Guidance Documents referenced
4 and incorporated into the Permits and the Manual were under revision and otherwise not
5 available for review during the formal comment period of the Permit. Phase I Issue No. 17.c.;
6 Phase II Issue No. 16. The Permit was therefore incomplete and the terms and conditions could
7 not be reasonably reviewed, according to this argument. As described above, these documents
8 include: the LID Guidelines for Code/Ordinance Review; the Low Impact Development
9 Technical Guidance Manual for Puget Sound; the Rain Garden Handbook for Homeowners; and
10 the Western Washington Hydrologic Model (WWHM).²⁸ Barner Testimony.

11 [76]

12 This issue was raised in Appellants' Motion for Summary Judgment on Phase I Issue
13 No. 23.²⁹ Ecology acknowledged that, at a minimum, the permittees are not required to follow
14

15 ²⁸ Appellants' testimony specifically identified the relevant guidance documents as: *Integrating LID into Local*
16 *Codes; a Guidebook for Local Governments; Rain Garden Handbook for Western Washington as revised in 2012,*
17 *published in 2013; Western Washington Hydrology Model; LID Technical Guidance for Puget Sound as revised in*
18 *2012; and, the LID Operation and Maintenance. See 2012 Manual.*

19 ²⁹Phase I Issue No. 23 states:

20 Whether provisions contained in (i) Special Condition S5.C.5.a of the Permit, (ii) Special Condition S5.C.7
21 of the Permit, (iii) Special Condition S5.C.9 of the Permit, (iv) Special Condition S7 of the Permit, (v)
Special Condition S8.B.1.b of the Permit, (vi) Section 2 of Appendix 1 to the Permit, (vii) Section 4 of
Appendix 1 to the Permit, (viii) the Executive Summary of the Manual, (ix) Volume I, Chapter 2 of the
Manual, (x) Volume I, Glossary of the Manual, (xi) Volume II, Chapter 3 of the Manual, (xii) Volume III,
Chapter 2 of the Manual, (xiii) Volume III, Chapter 3 of the Manual, (xiv) Volume III, Appendix III-B of the
Manual, (xv) Volume III, Appendix III-C of the Manual, (xvi) Volume IV, Chapter 2 of the Manual, (xvii)
Volume IV, Appendix IV-D of the Manual, (xviii) Volume V, Chapter 3 of the Manual, (xix) Volume V,
Chapter 4 of the Manual, (xx) Volume V, Chapter 5 of the Manual, and/or (xxi) Volume V, Chapter 7 of the
Manual, are unlawful, unjust, unreasonable, impracticable, vague, ambiguous and/or beyond the authority of
Ecology to impose for one or more of the following reasons:

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1 any of the guidance documents that were unavailable and not subject to the minimum 30 day
2 review period. *Id.* The Board issued an Order on Summary Judgment regarding the
3 applicability of the Guidance Documents that were incorporated by reference into the 2013
4 Phase I Permit and the 2012 Manual but were not completed and available for review and
5 comment for the requisite 30-day comment period. *See Pierce County v. Ecology*, PCHB No.
6 12-093c and 12-097c *Order on Summary Judgment, Phase I Issues No. 11, 14, 15, 16, 22 and*
7 *23* (2013). The Board remanded the Phase I Permit to Ecology to take the following specific
8 action:

- 9 1. To clearly specify the version or edition of the Rain Garden Handbook,
10 and the LID Manual that are incorporated by reference into and made a
11 part of the Phase I Permit, consistent with his opinion. Any such permit
12 modification may allow the permittees the option to use future or updated
13 versions or editions of these documents, even though they are not
14 incorporated by reference into the Permit;
- 15 2. To provide the requisite 30-day public notice and comment period on
16 those portions of the SWMMWW that did not receive adequate notice and
17 comment, and to accurately reference and incorporate appropriate

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- 18 a. Said provisions incorporate by reference and/or instruct the reader to consult or comply with
19 outdated and/or inapplicable life/safety codes in contravention of the State Building Code Act,
20 chapter 19.27 RCW, and/or its implementing regulations;
 - 21 b. Said provisions incorporate by reference and/or instruct the reader to consult or comply with
documents that were not made available for adequate public review and comment;
 - c. Said provisions incorporate by reference and/or instruct the reader to consult or comply with
documents that do not exist, or that did not exist as of the date on which the permit was issued;
 - d. Said provisions incorporate by reference and/or instruct the reader to consult or comply with
documents that exist in multiple versions without consistently specifying which version of said
document must be used;
 - e. Said provisions purport to incorporate by reference and/or instruct the reader to consult or comply
with future, revised versions of documents that may potentially become available at some point in
the future; and/or
 - f. Said provisions state or imply that Ecology will or intends to make future changes, revisions and/or
technical updates to portions of the Manual or to documents incorporated into or referenced by the
Manual without following public notice and comment or other required procedures.

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1 maintenance requirements for bioretention facilities and permeable
2 pavement, as included in the 2012 SWMMWW.

3 [77]

4 Ecology agrees that the Board's Order is applicable to the Phase II permittees. Moore
5 Testimony. These Guidance Documents and the current requirements in the Permits to use and
6 comply with these documents are not mandatory conditions of the Permits until the Permits are
7 amended and a 30-day comment period is provided with all applicable guidance documents that
8 are completed and available for review.

9 **D. Stipulated Dismissal of Issues (Phase I Issues 1 and 12)**

10 [78]

11 The Parties stipulated to the dismissal of Phase I Issues No. 1 and No. 12. The
12 stipulations requested the Board to remand the Phase I Permit to allow Ecology to make
13 necessary modifications. Having considered the motions and concurring with the bases for
14 modification of the Permit, the Board issued an Order on September 30, 2013, dismissing these
15 issues and holding that the Board will remand the Permit to Ecology consistent with the
16 stipulation of the parties when the Board issues its Final Order. Pursuant to this previous order,
17 the Board now finds and concludes that the Permit shall be remanded to Ecology to take the
18 following action:

19 In resolving Issue No. 1, Ecology will modify Special Condition S5.C.1.b.iv of the 2013
20 Phase I Permit to read as follows:

- 21 iv. Control through interagency agreements among co-applicants, the contribution of
pollutants from one portion of the MS4 to another portion of the MS4.

1 In resolving Issue No. 12,³⁰ Ecology will modify Special Condition S.5.C.8.c.i.(1) to read
2 as follows:

- 3 (1) Each Permittee shall implement an ongoing field screening program of, on
4 average, 12% of the Permittee’s known conveyance systems each calendar year.

5 Further, the following definition will be added to the “Definitions and Acronyms” section
6 of the 2013 Phase I Permit:

7 “Conveyance system” means that portion of the municipal separate storm sewer
8 system designed or used for conveying stormwater.

9 **IV.**

10 **ORDER**

11 The 2013 Phase I and Phase II Permits are affirmed except as follows.

12 The Board remands the Permits to Ecology to be modified and re-issued consistent with
13 this Order; specifically:

14 1. The Board directs Ecology to modify the Permits and, to the extent Ecology deems it
15 necessary, amend the 2012 Stormwater Management Manual for Western Washington as
16 follows:³¹

- 17 a. Limit the application of permeable pavement to those roadways that receive very
18 low-traffic volumes and areas of very low truck traffic;

19 ³⁰ The parties have agreed that Ecology will initiate these modifications within 30 days of expiration of all appeals,
including any appellate review, of the 2013 Phase I Permit.

20 ³¹ The Appellants appealed the Phase I and Phase II Permits and not any of the Guidance Documents including the
21 2012 Manual. However, the Permits incorporate and require the permittees to adhere to the Guidance Documents.
Therefore, to modify the Permit in compliance with this Order, Ecology may need to also modify the Guidance
Documents and specifically the 2012 Manual. *See* Phase I Permit Conditions S3.C. and S5.C.; Appendices 1 through
12; Phase II Permit Conditions S3.A, S5; Appendices 1 through 9.

- 1 b. Delete the second sentence of the infeasibility criterion addressing road sanding for
2 snow and ice in the 2012 Manual, Vol. V at 5-19 (or amend the Permits to achieve
3 the same);
- 3 c. Clarify the process a local jurisdiction is to follow to designate a geographic area as
4 infeasible for permeable pavement and identify the data required to support such a
5 determination.

5 2. The Board directs Ecology to amend the Phase I Permit and Phase II Permit as
6 necessary to address cross-jurisdictional coordination and insure that the scope of work for the
7 designated watershed plan includes the full participation of both Phase I and Phase II permittees,
8 and to the extent possible other entities and governmental jurisdictions which Ecology issues
9 stormwater permits within the designated watershed.

10 3. The Board directs Ecology to republish for comment the Phase I and Phase II Permits
11 as amended by this Order, and with the incorporation of all such Guidance documents that have
12 now been finalized and available for review and comment.

13 4. Based on the stipulation of the parties, the Board directs Ecology to make the
14 following amendments:

- 15 a. Ecology will modify Special Condition S5.C.1.b.iv of the 2013 Phase I Permit to
16 read as follows:

17 vi. Control through interagency agreements among co-applicants, the
18 contribution of pollutants from one portion of the MS4 to another portion of
19 the MS4.

- 19 b. Ecology will modify Special Condition S.5.C.8.c.i.(1) to read as follows:

20 (1) Each Permittee shall implement an ongoing field screening program of,
21 on average, 12% of the Permittee's known conveyance systems each
 calendar year.

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c. Ecology will insert the following definition to the “Definitions and Acronyms” section of the 2013 Phase I Permit:

“Conveyance system” means that portion of the municipal separate storm sewer system designed or used for conveying stormwater

SO ORDERED this 21st day of March, 2014.

POLLUTION CONTROL HEARINGS BOARD

TOM MCDONALD, Presiding, PCHB No. 12-093c

JOAN M. MARCHIORO, Presiding, PCHB No. 12-097c

KATHLEEN D. MIX, Member