ORIGINAL

NO. 41833-9-II

IN THE COURT OF APPEALS OF THE STATE OF WASHINGTON
DIVISION II

CLARK COUNTY and BUILDING INDUSTRY ASSOCIATION OF WASHINGTON, Petitioners v. ROSEMERE NEIGHBORHOOD ASSOCIATION, COLUMBIA RIVERKEEPER, and NORTHWEST ENVIRONMENTAL DEFENSE CENTER, Respondents.
PETITIONER CLARK COUNTY'S OPENING BRIEF

ANTHONY F. GOLIK
Prosecuting Attorney
Clark County, Washington

CHRISTINE M. COOK, WSBA #15250
Deputy Prosecuting Attorney
Of Attorneys for Petitioner Clark County

Clark County Prosecutor's Office
Civil Division
PO Box 5000
Vancouver, WA 98666-5000
Telephone: (360) 397-2478
Facsimile: (360) 397-2184

FILED
COURT OF APPEALS
DIVISION II
11 JUL 22 AM 10: 12
STATE OF WASHINGTON
BY
DEPUTY

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page

Cases:

Statutes:

Rules:

I. INTRODUCTION

This proceeding is an appeal by Clark County of a decision of the Pollution Control Hearings Board (PCHB) dated January 5, 2011 titled "Findings of Fact, Conclusions of Law, and Order" (the Decision) in the appeal Rosemere Neighborhood Association v. Department of Ecology, PCHB 10-013.[1] The Decision resolved the appeal by Rosemere Neighborhood Association, et al. (Rosemere) of Agreed Order No. 7273 entered into January 6, 2010, between the Washington Department of Ecology (Ecology) and Clark County (County).[2]

The purpose of the Agreed Order was to resolve the Notice of Violation of the Phase I Permit issued to Clark County by Ecology on March 17, 2009.[3] The Notice of Violation set forth the particular aspects of Clark County's stormwater management ordinances that Ecology deemed noncompliant and, in the Agreed Order, the County agreed with Ecology to adopt specific new legislation responsive to each of the two noted instances of noncompliance. No other aspect of the Phase I Permit (Permit) was properly before the PCHB in the appeal.

---

[1] App. 1.
[2] CP; App. 4.
[3] CP; App. 5.

II. ASSIGNMENTS OF ERROR

First Assignment of Error:

The PCHB made a decision that was outside its authority or jurisdiction in ruling on Rosemere's collateral attacks on the Phase I Permit, which was not before it in this appeal. These rulings on low impact development, vesting, and the structural retrofit program are also erroneous because these rulings misinterpreted and misapplied the law.

Second Assignment of Error:

PCHB made a decision that was outside its statutory authority or jurisdiction, misinterpreted and misapplied the law, and made findings that were not supported by evidence in the record in ruling that the flow control requirements of the Agreed Order should have been applied to development applications that vested prior to April 13, 2009.

Third Assignment of Error:

The PCHB erroneously applied the law to the facts, made findings that were unsupported by substantial evidence, exceeded its jurisdiction, and acted in a manner that was arbitrary and capricious by ruling that the Agreed Order allowed an impermissible reduction in Clark County's efforts under Condition S5.C.6.

Fourth Assignment of Error:

The PCHB misinterpreted and misapplied the law in failing to defer to Ecology in the exercise of its discretion in compliance proceedings, and in ruling that the flow control requirements set forth in the Agreed Order do not provide equivalent or similar protection to receiving waters as the Phase I Permit, that they do not meet the standards of AKART and MEP, that they harm beneficial uses of the receiving waters, and that they constitute impermissible self-regulation.

//////////

III. STATEMENT OF THE CASE

A. The Department of Ecology's 2007 Phase I Municipal Stormwater Permit Under the National Pollutant Discharge Elimination System.

Clark County has implemented a stormwater management program (SWMP) pursuant to state and federal law since 1999.[4] These laws regulate the discharge of pollutants into federal and state waters, and together prohibit any person from discharging pollutants into waters of the United States, with an explicit exception for discharges authorized by a permit issued pursuant to the National Pollutant Discharge Elimination System (NPDES). NPDES is administered, implemented and enforced in the State of Washington by the Washington Department of Ecology (Ecology). *RCW 90.48.260; App.11.*

Ecology issues programmatic municipal stormwater NPDES permits, applicable to municipalities that discharge stormwater pollutants from their storm sewer systems. *App. 1 at 2.* The terms of these permits must be adopted and implemented by the jurisdictions required to have permit coverage.

Clark County manages stormwater discharge pursuant to its NPDES permit. Stormwater flow controls that manage runoff rates from

new development projects are required of developers as part of the development review and building review processes, in order to mitigate for the adverse impacts of development upon the waters of the state, pursuant to the Clark County Unified Development Code, Clark County Code (CCC) Chapter 40.385.[5] Clark County has adopted a Stormwater Control Manual[6] that includes standards to control flows to predevelopment rates and a program for planning and building capital projects to control stormwater flows to restore them to pre-development, historical, forested rates through its Stormwater Capital Improvements Program (SCIP) and its Stormwater Needs Assessment Program (SNAP).[7] Water quality controls are set forth in CCC Chapter 40.385 for development and CCC Chapter 13.26A for existing development. All stormwater control facilities in the county must be inspected and maintained in order to ensure that they are functioning as designed, pursuant to conditions of development approval and a county requirement to protect health and the environment under CCC Chapter 13.26A. Since 2002, the county has built and retrofitted a number of structural

---

[4] Federal Clean Water Act, 33 U.S.C. § 1251, *et seq.*; Washington Water Pollution Control Act, Chapter 90.48 RCW.
[5] CP; App. 10.
[6] CP, R-30.
[7] CP. J-3; CP, R-24.

stormwater controls, spending an average of approximately $800,000 yearly on structural controls through 2009.[8]

In February 2007, Ecology reissued its NPDES Phase I Municipal Stormwater Permit (Phase I Permit)[9] for discharge of pollutants from municipal separate storm sewer systems (MS4's) owned by large municipalities (Phase I Permittees), such as Clark County. The Phase I Permit requires that regulate development and redevelopment projects to control discharges of stormwater in order to meet specified levels of flow rate and limit the duration of flows that could cause erosion, as well as incorporating other requirements to control water pollution.[10] Each development and redevelopment project meeting thresholds of applicability must control stormwater runoff from its site so that the duration of peak flows over a specified range of higher flow events does not exceed the duration of flow that would have run off the same property if it were forested.[11] The purpose of this requirement is to begin, on an incremental basis, to reverse damage to streams caused by higher, erosive flows that occur due to the removal of historic forest over time. [12]

---

[8] CP, R-39.
[9] CP, App. 8.
[10] Phase I Permit as modified September 1, 2010, CP; App. 9.
[11] Appendix 1 to Phase I Permit at MR 7, CP; App. 10.
[12] Testimony of Ed O'Brien, CP; App. 6.

According to the permit terms, each Phase I Permittee was to adopt implementation measures by August 17, 2008.

B. Clark County's Response to the Phase I Permit.

Because the permit must be implemented by the county, and because its terms provide some flexibility in precisely how to implement permit requirements, the county conducted an extensive public involvement program to advise citizens regarding the new permit and obtain their input concerning its requirements.

One of the county's considerations was the distinction between the frequently forested pre-development land cover of the Puget Sound area, where the other Phase I Permittees are located, and the longer period of time since forest clearing for agriculture by non-Native settlement in Clark County [13] The non-Native settlement of the Pacific Northwest began in the early 1800's at Fort Vancouver in what is now Clark County. Much of the county was cleared of forest by 1920. Development in the sense of creating built and paved surfaces has historically radiated outward from Vancouver and the other urbanized areas. This fact is reflected in the County's planning documents under the Washington Growth Management Act. The areas within County jurisdiction that can be reasonably expected

to urbanize in the permit term, triggering flow control requirements are those designated for urban growth by the Clark County Comprehensive Growth Management Plan, 2004-2024, within the Vancouver urban growth area. They had been largely cleared of forest by the early 1900's.[14]

If the county had adopted a "default" ordinance, based directly on the permit terms, each development would have been responsible to build facilities to control flows to a historic forested condition as a restorative action, even if the development site had been deforested and farmed for 100 years, or paved over for 30 years. This requirement troubled the Clark County Board of County Commissioners (BOCC), which correctly concluded that today's developers had not caused the majority of adverse impacts from deforestation and development that the permit would require them to mitigate. The BOCC determined that there were legitimate concerns about threats of liability under RCW 82.02.020 if it were to require developers to mitigate for more than their share of impacts attributable to each property.

In response to the permit requirements and its policy concerns, the BOCC adopted a new set of stormwater ordinances in January 2009, with

---

[13] Technical Memo # 19 from Tim Kraft to Robin Krause re Historical Land Cover, CP; App. 13; Direct Written Testimony of Tim Kraft to PCHB, CP.
[14] *Id.*

an effective date of April 13, 2009.[15] Although the new ordinances required that development in the county comply with the other Phase I Permit requirements for controlling stormwater runoff, including the new standards limiting duration of flows, the county required that development control flow to meet the condition on-site immediately prior to development (the existing condition), rather than the forested, historic condition.

On March 17, 2009, Ecology initiated compliance proceedings against Clark County by issuing a Notice of Violation, stating that the county had failed to comply with the permit by:

1. Adopting a flow control policy that Ecology has determined does not provide equal or similar protection of receiving waters and equal or similar levels of pollutant control as compared to Appendix 1 (CCC 40.385.020.C.2.a.); and

2. Adopting an exemption for infill and redevelopment projects from the one-tenth (0.1) cubic feet per second flow increase threshold identified on Minimum Requirement # 7 of Appendix 1 (CCC 40.385.020. C.2.a.).[16]

Ensuing negotiations between the County and Ecology resulted in the Agreed Order, which was issued by Ecology on January 6, 2010, with a retroactive effective date of April 13, 2009.

---

[15] CP, R-19.

C. Clark County's Flow Control Program Under the Agreed Order.

Under the Agreed Order, developments must comply with the requirement in CCC Chapter 40.385 to control the duration of stormwater runoff rates to the existing condition onsite before development. Clark County is responsible for controlling stormwater runoff from existing development sites with inadequate flow control, to the extent that the runoff from a development site exceeds that which would result from the historic (generally, forested) condition; this is the restorative part of the permit flow control standard.

When a development breaks ground, the county incurs a flow control obligation, based upon the acreage of land the project covers.[17] This obligation tracks the area of land cover measured as impervious area, landscaped area, and pasture that were not controlled to forested flows by the project. Forested areas are not tracked, because the developer would fully control these areas to predevelopment forested runoff rates at the development site. The county must tabulate and report the flow control obligation to Ecology in its annual report for that year.[18] By December 31, two calendar years later, the county must have completed flow control

---

[16] CP; App. 5.
[17] Agreed Order, 3-5; App. 4.

capital improvement projects that restore flow to the forested condition for the number of acres equal to each year's flow control obligation as impervious surface, lawn and pasture.[19]

The county and Ecology agreed that the county's flow restoration efforts would be strategically located, targeting areas where restorative flow control projects would provide benefits to stream habitat. Under the default standard of the permit, the restorative flow control to the historic condition is located onsite at development projects, akin to "performing random acts of incremental kindness,"[20] at locations chosen by developers for their own reasons, regardless of the impact on streams of increased flow control at those places. Instead, the Agreed Order requires the county to place mitigation according to selection criteria and the information developed through its SNAP and SCIP.[21]

The Agreed Order states as follows:

> **Mitigation Project Development and Prioritization.**
>
> Clark County will use its current SNAP and SCIP to scope, prioritize and plan flow control mitigation projects. The SNAP identifies potential detention and retention facility projects – projects to reconfigure existing facilities to increase flow control characteristics – and structural

---

[18] Id.
[19] Id.
[20] J-21 at 13, CP.
[21] CP, Partial SNAP assessments: R-27; R-40 through R-71.

> stormwater LID BMP's such as rain gardens. The needs assessments may also identify properties where forest conversion is a viable plan.
>
> ***
>
> Specific mitigation sites will be determined by priorities for flow control mitigation established under a project selection process that considers existing information describing channel conditions, channel hydrology and subwatershed hydrology.
>
> Within the group of projects deemed most suitable to watershed conditions, highest priority may be given to projects having the best cost/benefit ratios in terms of cost per unit of land cover mitigated.[22]

As of September 2010, the County has produced SNAP assessments and reports addressing 46 subwatersheds in technical reports.[23]

Potential projects are logged in a GIS database, reviewed by engineers and scientists, and then prioritized for further design and eventual construction through the county's capital budgeting process. The SCIP list of stormwater control projects evolves until projects are finally designed, funded and constructed. Through the scoping phase, County staff re-analyze and re-evaluate prospective projects at particular locations; they may be moved up in priority for construction or re-designated to meet

---

[22] Agreed Order at 8, App. 4.
[23] CP, R-40-71.

goals for which the location is better suited.[24] When projects are funded, finally designed and built, they can be finally classified as meeting the flow control requirements under the Agreed Order or as a Structural Stormwater Control under Special Condition S5.C.6. As required by the Agreed Order, Clark County reports to Ecology on an annual basis those projects that have been constructed pursuant to the permit. A review of the County's reports since 2000 demonstrates ongoing efforts since 2002 to plan and build stormwater facilities.[25]

Under the SWMP, and pursuant to Phase I Permit condition S5.C.6, the county plans, funds and builds Structural Stormwater Controls as well as Flow Control Restoration Projects. Clark County has spent an average of approximately $800,000 a year on structural controls from 2003-2010.[26] The extent of the requirement under S5.C.6 (structural controls) is unquantified in the Phase I Permit,[27] but the evidence demonstrates that the County has established a robust program of structural controls, which it continues with significant expenditures. Comparing these expenditures to those of other Phase I Permittees, Clark

[24] CP, J-3; R-24.
[25] CP, Annual reports to Ecology from 2000,J-3 through J-13; J-20.
[26] CP, R-104; CP, R-113.
[27] CP, App.8.

County is properly seen as a leader in implementing a program of structural stormwater controls in Washington.[28]

Funding for the SWMP is through the County's Clean Water Fund, which generates annual revenue of approximately $4.5M, general fund, grants, the road fund, parks funds, and the Conservation Futures Fund. Through this budget cycle, and projecting through the Permit term, the SWMP will be fully funded.[29]

D. Appeal Proceedings.

Rosemere appealed the Agreed Order, and filed a motion for partial summary judgment declaring that the Agreed Order was invalid in that its requirements and those other relevant requirements of the Phase I Permit had not been imposed upon applications for land development that had vested under state law prior to April 13, 2009, the effective date of the Agreed Order. The county filed a cross-motion for a summary judgment ruling that Washington's vested rights doctrine precluded application of the county's stormwater ordinances to developments that had vested to

[28] Documentation of spending by Phase I Permittees to address condition S5.C.6; CP, R-39; R-79; R-80; R-81; R-82; R-83; R-84; R-85.
[29] Testimony of Ron Wierenga, CP.

previous ordinances. The PCHB denied both motions, and ruled that the state's vested rights doctrine did not apply to stormwater ordinances.[30]

In the meantime, Ecology worked to incorporate the terms of the Agreed Order into a formal modification of the Phase I Permit, which was issued on September 1, 2010. Rosemere appealed the permit modification, as well.

Following a four-day hearing, a majority of the PCHB issued its final decision reversing and remanding the Agreed Order, attached as Appendix 1 Presiding member Andrea McNamara Doyle issued a Concurrence and Dissent, attached as Appendix 2. Shortly after, the PCHB adopted a stipulated order reversing and remanding the September 1 permit modification for the reasons set forth in its January 5, 2011 Decision. The county appealed both decisions of the PCHB, joined by the Building Industry Association of Clark County. The appeals have been consolidated for direct review by this Court.

IV. ARGUMENT

A. Standard of Review.

Judicial review of the PCHB's decision is governed by the Washington Administrative Procedure Act.[31] The burden of demonstrating

---

[30] App 3.

the invalidity of the agency's action is on the person asserting invalidity, just as it was before the PCHB. RCW 34.05.570.(1)(a).

The Court may grant relief from the PCHB's decision if it determines that the decision is outside the statutory authority or jurisdiction of the PCHB; that the PCHB erroneously interpreted or applied the law; that the decision was not supported by evidence that is substantial when viewed in light of the whole record before the court; and if the decision is arbitrary and capricious.[32]

Statutes are interpreted *de novo.*[33] The Court gives great weight to an agency's interpretation of statutes which are within its area of expertise.[34] "Because Ecology is the agency designated by the legislature to regulated the State's water resources, ... *[the Washington Supreme]* Court has held that it is Ecology's interpretation of relevant statutes and regulations that is entitled to great weight."[35] Under the substantial evidence standard, the PCHB's factual findings are overturned only if they are clearly erroneous,[36] but within that framework, the Court gives due

---

[31] *Pub. Util. Dist. No. 1 of Pend Oreille County v. Dep't of Ecology,* 146 Wn.2d 778, 789-90, 51 P.3d 744 (2002).
[32] RCW 34.05.570(3)(b), (d), (e), (i).
[33] *Port of Seattle v. PCHB, 151 Wn.2d 568, 587, 90 P.3d 659 (2004).*
[34] Id.
[35] Id. at 593-94. *(Citations omitted.)*
[36] Id.

deference to Ecology on factual and technical issues within Ecology's specialized expertise.[37]

B. Assignments of Error.

First Assignment of Error:

> **PCHB made a decision that was outside its authority or jurisdiction in ruling on Rosemere's collateral attacks on the Phase I Permit, which was not before it in this appeal. These rulings on low impact development, vesting, and the structural retrofit program are also erroneous because these rulings misinterpreted and misapplied the law.**

The agency decision appealed in this case was Ecology's Agreed Order No. 7273, issued to Clark County in resolution of the Notice of Violation issued to the county on March 17, 2009. The purpose of the Agreed Order was to bring Clark County into compliance with the NPDES permit, in the areas where Ecology had found violation.[38] Those were two: the flow control standard adopted by the county in January 2009, and the exemption from the 0.1 cfs standard for small infill and redevelopment projects. The Agreed Order set forth requirements for Clark County to comply with the two standards that had been violated under Special Condition S5.C.5. The Agreed Order established an effective date, and

---

[37] Id., *quoting, Department of Ecology v. Public Utility District No. 1 of Jefferson County,* 121 Wn.2d 179, 201, 849 P.2d646 (1993), aff'd 511 U.S. 700, 114 S.Ct. 1900, 128 L.Ed.2d 716 (1994).

[38] Agreed Order at 1, CP; App. 4.

mandated reporting requirements and consequences for failure to comply with its terms. No other terms of the Phase I Permit (the general Phase I Permit) were changed, and the Agreed Order requires Clark County to comply with the other provisions of the general Phase I Permit.[39]

Because the Agreed Order did not change any other terms of the general Permit, the appeal of the Agreed Order could not extend to the terms of the general Permit; that Permit was thoroughly litigated previously.[40] If Rosemere had wanted to challenge the workings of the default Permit, it should have done so in 2007, in that appeal.

The PCHB is authorized to hear appeals of orders issued by Ecology[41] pursuant to RCW 90.48.120, which empowers Ecology to enforce water pollution control requirements through compliance proceedings. That was the nature of the appeal before the PCHB in this case.

The Agreed Order did not address any terms of the general Permit with regard to low impact development, vesting or structural stormwater controls, except to require that the county comply with all permit

---

[39] Agreed Order,CP; App. 4.
[40] See *Puget Soundkeeper Alliance v. Ecology,* 2008 WL 5510413 (Wash PCHB Aug. 7, 2008).
[41] RCW 43.21B.110(1)(b).

requirements. Therefore Rosemere could not – and did not – meet its burden of proof to demonstrate that the Agreed Order was invalid based on those issues. The PCHB misinterpreted the Agreed Order by reading it to extend to these issues, and ruling on them.

The PCHB ruled, for example, that the Agreed Order was invalid because it did not require low impact development where feasible. But the terms of the default Phase I Permit concerning low impact development were not at issue in the development of the Agreed Order, and little about low impact development appears in the PCHB record of this appeal. In fact, the PCHB had already ruled that the default Permit was invalid because of its failure to require low impact development,[42] and the Agreed Order did not change that. When Ecology re-issues a permit with requirements for low impact development, Clark County will be in a position to comply with them.

As to vesting, Rosemere made a belated attempt in the initial litigation concerning the 2007 Phase I Permit to appeal Ecology's interpretation that the permit requirements were subject to vesting, and

[42] *Puget Soundkeeper Alliance, supra.*

was not permitted to do so. [43] It should not have been permitted to raise that issue in the appeal of the Agreed Order.

Regarding the structural controls requirement S5.C.6, the Agreed Order does not address this provision at all. That requirement, unchanged from the default Phase I Permit applies to Clark County. If S5.C.6 offends Rosemere because it does not quantify a municipality's obligations, Rosemere should have raised the issue in the litigation on the Phase I Permit. It did not belong in an appeal of the Agreed Order. The PCHB conflated its disapproval of the Agreed Order's flow control regime with the county's efforts under S5.C.6. If Clark County is not in compliance with S5.C.6, that is an enforcement matter for Ecology. The PCHB did not have jurisdiction to address it in an appeal of the Agreed Order.

The substance of Rosemere's appeal and the ruling of the PCHB with regard to low impact development, vesting, and structural stormwater controls was to challenge the terms of the general Phase I Permit, not the Agreed Order. The PCHB lacks jurisdiction to consider a complaint about compliance with an existing permit; compliance authority rests with Ecology. The PCHB also may not address, years after the deadline to

[43] See, *Rosemere v. Ecology*, PCHB No. 10-013, Clark County's Response to Appellants' Motion for Partial Summary Judgment and Clark County's Cross-Motion for Summary Judgment at 5, CP.

appeal its adoption, the terms of a permit that has already been fully litigated. The PCHB's rulings on these issues erroneously fault Clark County because of problems the PCHB perceives with the general permit. The Court should reverse the PCHB's Order with respect to these issues.

Second Assignment of Error:

> **PCHB made a decision that was outside its statutory authority or jurisdiction, misinterpreted and misapplied the law, and made findings that were not supported by evidence in the record in ruling that the flow control requirements of the Agreed Order should have been applied to development applications that vested prior to April 13, 2009.**

The PCHB ruled that the stormwater flow controls required by the Phase I Permit and the Agreed Order are applicable to development projects that vested prior to the effective date of the Agreed Order, and more generally that stormwater controls are not subject to vested rights doctrine under state law.[44] This ruling was erroneous as a matter of law, because the flow control requirements certainly do exert a restraining or directing influence over land use.[45] Stormwater flow controls are triggered by land use development applications, are grounds for decisions on land use development applications, and are implemented by construction of

[44] Order Denying Summary Judgment, App. 3.
[45] *Westside Business Park v. Pierce County*, 100 Wn. App. 599, 5 P.3d 713 (2000).

stormwater control facilities on development sites as components of developments.[46]

Further, the PCHB erroneously held that stormwater flow control requirements are not subject to the vested rights doctrine because they are not land use controls. The flow control requirements dictate, in part, what may be built on land being developed for other purposes. Flow control requirements mandate that control facilities be built for and with developments; the more restrictive the controls, the more extensive the facilities must be. Private property that must be occupied by flow control facilities cannot be used for the residential, commercial or industrial aspects of the developments in which the flow control facilities are located. The result, necessarily, is to change the number or size of lots or structures that can otherwise be developed on a particular property. Lance Killian, a land developer, and Eric Golemo, an engineer who designs stormwater facilities, gave unrebutted testimony before the PCHB of the resources required to incorporate stormwater flow control facilities within a development, and the impracticability of revising facility designs after decisions had been made on the design and financing of a development. [47]

---

[46] Testimony of Clark County Department of Community Development Director Marty Snell, CP.
[47] Testimony of Lance Killian, CP; Testimony of Eric Golemo, CP.

The PCHB's decision on vesting was not supported by substantial evidence, and was contrary to the unrebutted evidence provided by Mssrs. Killian and Golemo, and misinterpreted the controlling precedent. In Westside Business Park, the Court stated:

> Storm water drainage ordinances are land use control ordinances . . . . *[T]*he Supreme court has indicated that storm water drainage ordinance are subject to the vesting rule. In *Phillips v. King County,* 136 Wn.2d 946, 963, 968 P.2d 871 (1998), the Supreme Court held that the vested rights doctrine required the county to apply the surface water drainage regulations in effect at the time of the developer's application for preliminary plat approval.[48]

In addition, the PCHB has mandated that "low impact development" features, such as rain gardens, green roofs, and pervious pavement, be incorporated into developments, unless it is not feasible to do so. The effect of these requirements is both to use developable land, and to specify what the features of the development must be.

For these reasons, stormwater flow control requirements are fundamentally unlike the examples cited by the PCHB as regulations that are not land use controls. Impact fees, for example, do not control the use of land, although they do add to the cost of development.[49]

---

[48] *Westside Business Park v Pierce County, supra,* 100 Wn App at 607.

[49] *See, Newcastle Investments v. City of La Center,* 98 Wn. App. 224, 989 P.2d. 569 (1999) (holding that traffic impact fees do not limit the use of land and are not the type of regulation subject to vested rights).

The PCHB emphasized that "the purpose of the Permits is to control discharge of pollutants, not to control land use." That is so in a general sense, and is certainly true for certain permit requirements, for example, the mandates to maintain stormwater facilities, to conduct public outreach, and to report illegal discharges to Ecology. As for the flow control requirements, however, the discharge of pollutants is controlled by means of controlling land use. Approval to develop land with a stormwater facility is obtained through proposing development of the facility in an application to divide land or for a building permit. This fact subjects flow control requirements to vesting under state law. *RCW 58.17.033; RCW 19.27.095(1).*

A variety of public or private facilities must be built by private developers to serve their developments. The requirements to build stormwater flow control facilities are very much akin to requirements to develop other facilities along with development. For example, streets and street frontage improvements, such as curbs, gutters, and sidewalks, are commonly required as part of developing residential subdivisions in urban areas. These facilities occupy land that would otherwise be devoted to private lots, must be built to prescribed standards, and can be the basis approving or denying land use applications. Applicants vest to the

requirements to develop streets when subdividing land, just as with the other requirements for subdividing. *RCW 58.17.033.* Those requirements are land use controls, just as are stormwater flow control requirements.

The concept of vested rights derives from the idea that every new regulation must have a date on which it becomes effective. It is reasonable and practicable to require that effective regulations – not future regulations – apply to the regulated activity. Otherwise, the public cannot plan its affairs, and economic activity in particular is discouraged, when a regulatory change might occur. An applicant for a land division under RCW Chapter 58.17 or for a building permit under RCW Chapter 19.27 is subject to the land use controls that are effective when a complete application is submitted. The evidence before the PCHB, as well as long-established legal precedent, demonstrate that applicants for development should be able to plan their development activity with full knowledge of the flow control regulations to which they are subject.

Finally, naming an effective date for the county's obligations pursuant to the Agreed Order, as with other permittees' stormwater ordinances, is a function well within the discretion of Ecology. Ecology is authorized by law to implement the Clean Water Act in Washington by issuing and administering permits and by enforcing compliance with

permits. In compliance actions, Ecology may issue orders with terms that are appropriate to bring the permittee into compliance. *RCW 90.48.120.* Ecology concluded that it would not be practicable or reasonable to require permittees to comply with permit requirements by imposing them upon land use applicants until the permittees had adopted the requirements as ordinances.

In this case, Ecology and Clark County worked together for several months following the Notice of Violation in order to resolve that compliance action. The resolution was issuance of the Agreed Order, which named April 13, 2009 as its effective date (although the Agreed Order was entered into on January 6, 2010). This was also the effective date of Clark County's first attempt to adopt a flow control ordinance under the Phase I Permit, and was reasonable, because that date was well-known as the date of the other changes in the county stormwater code.

Ecology's determination of the effective date of the Agreed Order was both practicable, in the sense that it did not change the rules on land development after development design and financing were already in place, and reasonable. This reasonable and practicable decision was made in the context of resolving a compliance proceeding as NPDES administrator and permitting agency in Washington. PCHB erred by

failing to defer to Ecology's reasonable exercise of discretion in performing its compliance functions. PCHB's determination that Ecology's choice of effective date was not AKART and did not meet the standards of MEP was erroneous.

In ruling that the Agreed Order should have had an effective date no later than November 16, 2008, and that the flow control requirements set forth in the Agreed Order and the Permits in general were not subject to vesting, the PCHB exceeded its statutory authority, made findings not supported by substantial evidence, and misconstrued and misapplied the governing law. The PCHB's Order Denying Summary Judgment, and its final Order should be reversed as to these issues.

Third Assignment of Error:

> **The PCHB erroneously applied the law to the facts, made findings that were unsupported by substantial evidence, exceeded its jurisdiction, and acted in a manner that was arbitrary and capricious by ruling that the Agreed Order allowed an impermissible reduction in Clark County's efforts under Condition S5.C.6.**

The Agreed Order explicitly required the county to comply with every provision of the default Phase I Permit that was not modified by the Agreed Order. Among those unmodified provisions is S5.C.6, which requires the county to have a program to construct stormwater structural controls to prevent or reduce impacts to waters of the state caused by

discharges from the municipal storm system. The performance measure in the permit is to 1) describe the program goals, planning process and prioritization process and 2) report each year on the projects, including pollutant load reduction, flow control outcome, and other environmental benefits. Notwithstanding that the county's obligations under that provision were not changed by the Agreed Order, Rosemere's appeal of the Agreed Order included a challenge to the county's program under S5.C.6.

Unrebutted evidence before the PCHB demonstrated that Clark County has maintained a robust program of structural controls, spending an average of approximately $800,000 each year from 2003 through 2009 on capital projects to retrofit and improve stormwater control facilities. Because S5.C.6. does not mandate any particular level of expenditure, the county could have done substantially less, yet still complied with that condition.

Kevin Gray, Director of Clark County's Department of Environmental Services, and Ron Wierenga, Clark County's Clean Water Program Manager testified that the county continued its sustained effort in the area of structural controls, while it also opened the flow control restoration program to build capital projects for flow control under permit

requirement S5.C.5 and the Agreed Order.[50] They anticipated that in 2010 approximately $2 million would be spent on both these programs, and that the county would have accrued flow control mitigation credits in excess of its obligations. Because the county prioritizes and plans for capital spending through the capital budget process, both sorts of projects, those responding to condition S5.C.5 (flow control) and those responding to condition S5.C6 (structural retrofits), were included together, without differentiation in the county's capital budgeting documents. No project was double counted, as part of both the flow control and for structural retrofit programs. The county had sufficient funding sources to continue both programs.[51]

PCHB found that the county's ability to plan and budget for both programs without prior oversight by Ecology allowed the county to recharacterize retrofit programs as flow control programs, and therefore to reduce its overall effort to control water pollution. PCHB therefore concluded that the Agreed Order did not control water pollution to the maximum extent practicable. The PCHB, however, ignored the terms of the default Phase I Permit, and of the Agreed Order, as well as the evidence before it.

---

[50] Testimony of Kevin Gray, CP; Testimony of Ron Wierenga, CP.

No municipality – even Clark County – is required by the terms of Permit Special Condition S5.C.6 to spend a particular amount on structural retrofits in any year, or to maintain from year to year the precise amount that has been previously spent. Ecology's Ed O'Brien testified that although he had not anticipated that Clark County would reduce its expenditures for structural control compliance, he assumed that all municipal permittees had reduced their expenditures on structural retrofits to some degree because of the poor economy.[52]

The Agreed Order must provide protection to receiving waters that is equivalent or similar to that provided by the default Phase I Permit. The default Phase I Permit has been fully litigated, and except for the failure to require low impact development, meets the standards of MEP and AKART. Clark County must meet exactly the same S5.C.6 requirements as other permittees, and all of the evidence before the PCHB showed that it does meet that vague standard. It was error for the PCHB to rule that Clark County's compliance with S5.C6 fails to reach the required standards because of the Agreed Order. The Court should reverse the Order in that respect.

---

[51] Id.

Fourth Assignment of Error:

> **The PCHB misinterpreted and misapplied the law in failing to defer to Ecology in the exercise of its discretion in compliance proceedings, and in ruling that the flow control requirements set forth in the Agreed Order do not provide equivalent or similar protection to receiving waters as the Phase I Permit, that they do not meet the standards of AKART and MEP, that they harm beneficial uses of the receiving waters, and that they constitute impermissible self-regulation.**

Ecology issued the Agreed Order as the resolution of the compliance proceedings against Clark County, following issuance of the Notice of Violation and negotiations with the county. Ecology is the agency within the State of Washington that is authorized to administer, implement and enforce the NPDES permitting system. *RCW 90.48.260.* As such, Ecology has broad statutory authority in proceedings to compel compliance with the NPDES permit. [quote 90.48.120]. Given the permissive language of the statute to authorizing Ecology to issue an appropriate order, it is clear that Ecology is afforded discretion in determining the substance of an order. Finally, because Ecology issued the permit and is charged with the permit's administration and enforcement, its professional and technical judgments concerning the permit's requirements are due deference by the PCHB and the courts. Port of

---

[52] Testimony of Ed O'Brien, CP; App.__.

Seattle v. Pollution Control Hearings Board, 151 Wn.2d 568, 593-96, 99 P.3d 659 (2004)(in context of federal Clean Water Act water quality certification).

Andrea McNamara Doyle, the presiding member of the PCHB, issued a concurrence and dissent in the present case. She explained that she disagreed with certain conclusions of the majority Opinion, which followed in large part, from the majority's failure to accord proper weight to Ecology's interpretation of the permit. The dissent stated as follows:

> "I depart from my colleagues where they conclude the Agreed Order is inadequate because it does not utilize basin planning or require additional site-specific analysis in the selection and evaluation of individual flow control projects. I further disagree with their conclusions that the acreage metric is inadequate to serve the intended purposes of the program and that Clark County's program gives inadequate attention to beneficial uses of receiving waters. Finally, I disagree that the Agreed Order's approach to selecting mitigation sites amounts to impermissible self regulation.
>
> When evaluating the equivalency question at issue in this appeal, the majority has elected not to afford what I believer is proper deference to Ecology's technical expertise and professional judgments regarding the purpose and intent behind the default flow control requirement embodied in the Phase I Permit. In exercising its *de novo* review of an ambiguous permit condition, as the Board has previously found Condition S5.C.5.b to be, the agency charged with the administration and enforcement of that permit should be accorded great weight in determining the intent and meaning of the underlying permit condition. *Puget Soundkeeper Alliance et al. v. Ecology, et al.,* PCHB Nos. 07-021, 02-026 through 030, 07-037 (Phase I Municipal Stormwater Permit Order on Dispositive Motions, April 8, 2008)(where a permit condition is not specifically governed by statute or regulation, but instead

> represents an exercise of the agency's discretion based on professional judgment, the Board gives due deference to the specialized knowledge and expertise of Ecology, while acknowledging that such deference does not extend to action that is 'manifestly unreasonable or exercised on untenable grounds' or that is 'willful and unreasoning actions in disregard of facts and circumstances.' Citations omitted." See also, F*ulton v. Ecology,* PCHB No. 06-081 (2008)(giving deference to Ecology's interpretation of specific terms and meanings of an adjudicated water right certificate, citing *Port of Seattle v. Pollution Control Hearings Board,* 151 Wn.2d 568, 593, 99 P.3d 659 (2004)). This is particularly true where the questions involve complex scientific issues and areas within Ecology's specialized knowledge and expertise. *Puget Soundkeeper Alliance, et al. v. Ecology, & City of Seattle, et al,* PCHB Nos. 07-021, -026 through -030, & -037 (2008) ..., at 51; *Hubbard v. Ecology,* PCHB No. 93-73 & 03-103 (1995)(The Board, in its *de novo* review, gives due deference to Ecology's specialized knowledge and expertise regarding hydrology)."

Rosemere Neighborhood Association v. Department of Ecology, PCHB 10-013, Concurrence and Dissent, at 2-3 (2011).[53]

The majority's failure to defer to Ecology is not an oversight; the majority states:

> [T]he board concludes that Ecology is not entitled to deference in its characterization and agreement to Clark County's alternative flow control model as equivalent under the Phase I Permit because Ecology failed to follow the clear and unambiguous terms of the permit, and because Ecology's approval of the alternative program is unsupported by, and contrary to its own technical or science-based discussions and assessments of the flow control standard.

[53] App. 2.

Rosemere Neighborhood Association v. Department of Ecology, PCHB 10-013, at 52 (2011).[54] But the majority Opinion showed how the Agreed Order was contrary to the opinions of Rosemere's experts, not to Ecology's science-based discussions and decisions.

The dissent's discussion of deference is the correct analysis of the flaws in the reasoning of the majority, which manifest in the Opinion's factual findings. Findings of Fact 7, 12, 13, 21, 25, 26, 27, 28, 30, 32-35, 38-41, 50, 53, and 54 all address the technical aspects of the flow control program. None of these findings gives appropriate deference to Ecology's construction of the Phase I Permit's terms or the Agreed Order's terms. None gives appropriate deference to the judgment of the scientists and administrators at Ecology as to the effects of the default flow control program or of the Agreed Order's flow control program. Consequently, none of these findings is supported by substantial evidence in light of the whole record, and none of them should be the basis for the PCHB's conclusions of law.

Ecology witnesses Ed O'Brien, Environmental Engineer, Garin Shrieve, Southwest Region Water Quality Section Manager ,and Bill Moore, Program Development Services Section Manager in charge of developing all

[54] App. 1.

stormwatergeeral permits, each testified before the PCHB[55] that in his opinion, one or more of the following aspects of the Agreed Order provided equal or similar protection to receiving waters as compared to the flow control standards of the default permit:

> 1. The timing of the county's obligation to restore flow to the forested condition in response to a development from which stormwater runoff was controlled to the rate immediately prior to the development;

EOB testified that in light of (a) the many decades of damage to Clark County streams from deforestation and development of watersheds; (b) the minimal improvements over the existing conditions in receiving waters that could be expected from restoring flow to the forested condition on one development; and (c) the need to obtain permits and funding to authorize flow restoration projects, a potential delay of two years between breaking ground on a development and the completion of a county flow restoration project was reasonable, practicable, and not harmful to streams.

Derek Booth and Jonathan Rhodes testified that any gap in time between initial ground disturbance in a development and completed construction of facilities that control stormwater flow to the forested condition could allow serious damage to occur in a stream from

---

[55] Testimony of Ed O'Brien, CP, App. 6. Testimony of Garin Shrieve, CP, Testimony of Bill Moore, CP.

stormwater runoff, and therefore the Agreed Order would harm beneficial uses of receiving waters. Dr. Booth had testified before the PCHB in Puget Soundkeeper Alliance v. Ecology, *supra,* that the flow control requirements of the Phase I Permit would allow the continuation of harm to beneficial uses of receiving waters. App. 7 at 10. He did not explain in this case, the extent to which he believed that harm with implementation of the Agreed Order would exceed harm that continued with the Phase I permit.

Kevin Gray testified that in fact there is no gap in time between the triggering of a flow control obligation, and the county's development of a flow control restoration project, because the county had already begun to build flow restoration projects, thereby accruing flow control credits, before incurring a like amount of flow control obligation.

The PCHB majority chose the Booth/Rhodes testimonies as evidentiary support for their decision that timing of flow control restoration by the county did not provide equal or similar protection to receiving waters as that required in the Phase I Permit. This was clearly erroneous because it failed to take into account the judgment and expertise of the Ecology witnesses.

2. The measurement of the county's obligation to restore flows to the forested condition after a development restores flow to the existing condition;

The PCHB majority states that the metric for determining the extent of the county's offsite flow control restoration obligation is "not based on any science." The Ecology witnesses testified that the way in which the obligation is measured under the Agreed Order is exactly how a stormwater flow control facility would be measured onsite. The same science-based hydrology modeling is used. The majority should have deferred to the technical expertise of the professionals from Ecology in this regard. The failure to do so was clearly erroneous.

3. The location of the stormwater flow control and restoration projects built by the county to satisfy its obligations to restore flows to the forested condition;

The Ecology witnesses testified that the outcome of locating flow restoration projects off the sites of development would, on a landscape scale, be roughly equivalent or similar to locating them on the development sites. An offsite restoration project could even be located where it would offer more protection to receiving waters than a flow control facility on a site chosen for a private developer's convenience. Although no flow control project required by the Phase I Permit must have its environmental impacts quantified, the majority faulted the Agreed

Order for the same lack of required measurement. Although Ecology does not check the location and design of flow control facilities under the terms of the default permit, the PCHB majority faulted the Agreed Order for the ability of the county to choose where to locate projects, using its Stormwater Needs Assessment Program (SNAP) and Stormwater Capital Improvement Projects (SCIP) tools, and how to design the projects. The PCHB majority simply chose to ignore the terms of the permits at issue, and to ignore Ecology's testimony that the county's project locations would be equally protective of the county's waters.

4. The harm to the receiving waters and their beneficial uses;

As noted above, Rosemere's expert Derek Booth had previously testified to the PCHB of the harm to receiving waters that would continue notwithstanding regulation by the Phase I Permit flow control program. Ecology witnesses testified that restoring flow pursuant to the Agreed Order would provide a result not much different from that provided by the Phase I Permit.[56] The majority Opinion ignored that testimony, again concluding that it could not be right. Remarkably, although Rosemere had the burden of proof before PCHB, and Ecology's testimony was to be given great weight, the majority again jumped to the conclusion offered by

Rosemere, without regard to the agency's witnesses. Failure to defer to Ecology's expertise in reaching its findings was error.

5. That the Agreed Order reduced pollution from the county's MS4 to the maximum extent practicable (MEP standard) required by the Federal Clean Water Act and employed all known and reasonable methods of prevention, control and abatement of water pollution from the MS4 as required by state law (AKART standard).

In contrast to the testimony from Ecology's technical experts and permit compliance staff, that the Agreed Order was imposed upon the county in the course of compliance proceedings, the majority Opinion concluded that the Agreed Order was a failed attempt to justify an alternate flow control standard by means of basin planning. Therefore, the majority Opinion concluded that no deference was owed to Ecology on the core question of the appeal. Given the indisputable fact that the Agreed Order was the resolution of a compliance proceeding, the majority's conclusion is erroneous.

The PCHB is required to defer to Ecology, as the agency with NPDES authority and technical expertise, in the permissible exercise of its discretion and its interpretation of the permits that it issues. Port of Seattle v. PCHB, *supra.* PCHB explicitly refused to defer to Ecology's

---

[56] App. 6.

determinations that requirements of the Agreed Order would offer equivalent or similar protection to receiving waters as the default Permit.

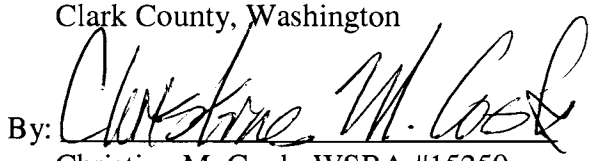
The majority substituted its own judgment for that of the expert agency as to the effects of the county's method of compliance with the flow control standard. In this, the PCHB erred, and its Order should be reversed.

V. CONCLUSION

For the above reasons, Clark County requests that the Court reverse and remand the decision of the PCHB.

Respectfully submitted this 19th day of July, 2011.

ANTHONY F. GOLIK
Prosecuting Attorney
Clark County, Washington

By: 

Christine M. Cook, WSBA #15250
E. Bronson Potter, WSBA #9102
Clark County Prosecutor's Office
Civil Division
P.O. Box 5000
Vancouver, WA 98666-5000
Phone: (360) 397-2478
Fax: (360) 397-2184
Email: christine.cook@clark.wa.gov
bronson.potter@clark.wa.gov
Of Attorneys for Petitioner Clark County

FILED
COURT OF APPEALS
DIVISION II
11 JUL 22 AM 10: 12
STATE OF WASHINGTON
BY
DEPUTY

NO. 41833-9-II

IN THE COURT OF APPEALS OF THE STATE OF WASHINGTON
DIVISION II

CLARK COUNTY and BUILDING INDUSTRY ASSOCIATION OF WASHINGTON,

Petitioners

v.

ROSEMERE NEIGHBORHOOD ASSOCIATION, COLUMBIA RIVERKEEPER, and NORTHWEST ENVIRONMENTAL DEFENSE CENTER,

Respondents.

CERTIFICATE OF SERVICE

Attorneys for Respondent:

ANTHONY F. GOLIK
Prosecuting Attorney
Clark County, Washington

E. BRONSON POTTER, WSBA #9102
CHRISTINE M. COOK, WSBA #15250
Deputy Prosecuting Attorneys
Of Attorneys for Petitioner Clark County

Clark County Prosecutor's Office
Civil Division
PO Box 5000
Vancouver, WA 98666-5000
Telephone: (360) 397-2478

I, Thelma Kremer, hereby certify and state the following: I am a citizen of the United States of America and a resident of the State of Washington; I am over the age of eighteen years; I am not a party to this action; and I am competent to be a witness herein.

On this 19th day of July, 2011, I mailed the original and true and correct copies of *Petitioner Clark County's Opening Brief* and *Certificate of Service* to the court as follows:

David C. Ponzoha
Court Clerk
WA State Court of Appeals II
950 Broadway #300
Tacoma WA 98402-4454

On this 19th day of July, 2011, I caused true and correct copies of *Petitioner Clark County's Opening Brief* and *Certificate of Service* to be served on the parties below by mailing and email as specified below:

Jan Hasselman
Janette Brimmer
Earthjustice
705 Second Avenue #203
Seattle WA 98104

☐ U.S. Mail
☐ Facsimile
☐ Federal Express
☐ Hand Delivered
☒ Email: jhasselman@earthjustice.org; jbrimmer@earthjustice.org and chamborg@earthjustice.org

//////////

Ronald Lavigne
Sr. Counsel
Attorney General of WA
State of WA-Ecology Division
PO Box 40117
Olympia WA 98504-0117

☐ U.S. Mail
☐ Facsimile
☐ Federal Express
☐ Hand Delivered

☒ Email: ronaldl@atg.wa.gov; ecyolyef@atg.wa.gov and

James D. Howsley
Jeffrey C. Miller
Miller Nash LLP
PO Box 694
500 E. Broadway #400
Vancouver WA 98666-0694

☐ U.S. Mail
☐ Facsimile
☐ Federal Express
☐ Hand Delivered

☒ Email: james.howsley@millernash.com and jeff.miller@millernash.com

Marc Worthy
Leah Harris
Asst. Atty Generals
Licensing & Admin Law Div
800 Fifth Avenue #2000
Seattle WA 98104-3188

☐ U.S. Mail
☐ Facsimile
☐ Federal Express
☐ Hand Delivered

☒ Email: LALseaEF@atg.wa.gov and marcw@atg.wa.gov shirlel@atg.wa.gov

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

DATED this 19th day of July, 2011.

Thelma Kremer

APPENDIX 1

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ROSEMERE NEIGHBORHOOD ASSOCIATION; COLUMBIA RIVERKEEPER; and NORTHWEST ENVIRONMENTAL DEFENSE CENTER, Appellants, v. WASHINGTON STATE DEPARTMENT OF ECOLOGY, and CLARK COUNTY, Respondents, BUILDING INDUSTRY ASSOCIATION OF CLARK COUNTY, Intervenor-Respondent.	**PCHB NO. 10-013** **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER**

Appellants Rosemere Neighborhood Association, Columbia Riverkeeper, and Northwest Environmental Defense Center ("Appellants" or "Rosemere") challenge Agreed Order No. 7273, entered into by the Respondents Washington State Department of Ecology (Ecology) and Clark County, related to achieving compliance with the National Pollution Discharge Elimination System Phase I Municipal Stormwater General Permit (Phase I Permit).

The Pollution Control Hearings Board (PCHB or Board) conducted a hearing in this matter on September 28 – October 1, 2010, at the Board's offices in Tumwater. Attorneys Jan Hasselman and Janette K. Brimmer, Earthjustice, represented Appellants. Assistant Attorney General Ronald L. Lavigne, Senior Counsel, represented Respondent Department of Ecology ("Ecology"). Chief Civil Deputy E. Bronson Potter, and Christine M. Cook, Deputy Prosecuting

Attorney, represented Clark County. Intervenor-Respondent Building Industry Association of Clark County (BIA Clark Co.) was represented by James D. Howsley, of Miller Nash LLP.

The Board hearing the case was comprised of Andrea McNamara Doyle, Presiding, and Kathleen D. Mix and William H. Lynch, Members. Court reporting services were provided by Kim Otis and Randi Hamilton of Olympia Court Reporters.

FINDINGS OF FACT

1.

This appeal challenges Agreed Order No. 7273, entered into by Ecology and Clark County, related to achieving compliance with one aspect of the National Pollution Discharge Elimination System (NPDES) Phase I Municipal Stormwater General Permit (Phase I Permit). The history and scope of the Phase I Permit are discussed at length in this Board's decision on review of that permit. *See Puget Soundkeeper Alliance v. Ecology*, PCHB Nos. 07-021, -026, -027, -028, -029, -030, -037 (2008) (hereinafter "Phase I Decision"). Ecology developed the Phase I Permit through an eight year long process. *Id.* at FOF 1. Several events delayed the issuance of the Phase I Permit, including the federal listing of Puget Sound Chinook Salmon in 1999, and Ecology's decision to revise the states' Stormwater Management Manuals. *Id.* at FOF 3. The Phase I Permit, a "programmatic permit," requires municipal permittees to implement area-wide stormwater management programs, rather than regulating discharges from individual outfalls. *Id.* at FOF 6. The heart of the Phase I Permit requires that permittees implement a Stormwater Management Program (SWMP), which has ten component parts,[1] including

[1] Listed in Condition S5.

requirements to map municipal systems, detect and eliminate illicit discharges, engage in structural retrofits, and require source controls at existing development. *Id.* at FOF 9. Of particular relevance to this case is the SWMP component that requires permittees, including Clark County, to implement a program to prevent and control the impacts of runoff from new development, redevelopment, and construction sites. The Phase I Permit anticipates that the permittees will adopt ordinances that require implementation of many aspects of the SWMP, either by the municipality or by the regulated community which discharges to the municipal storm sewer system.

2.

In the Phase I Permit, Ecology chose to regulate stormwater discharges from new development and redevelopment primarily through the imposition of a new flow control standard. Permit Condition S5.C.5.b.i. *Phase I Decision* at FOF 38. The flow control standard is set out in Ecology's 2005 Stormwater Management Manual (2005 Manual), and required for development projects over certain size thresholds. *Ex. J-16 (Phase I Permit)* at Condition S5.C.5.b.i.[2] Under this updated flow control requirement, Phase I permittees must require new development and redevelopment projects to control the rate at which stormwater is released from the site to match historical pre-developed (typically forested) conditions, rather than existing site

[2] Ex. J-16 is the version of the Phase I Permit issued on January 17, 2007, and modified on June 17, 2009. The most recent version of the Phase I Permit, Ex. J-23, was modified on September 1, 2010, to incorporate, among other things, the Agreed Order that is the subject of this appeal.

condition runoff.[3] The flow control standard, which is contained in the 2005 Manual, represents a "default" standard under the Phase I Permit. If certain criteria are met (discussed further in this opinion), a permittee can implement an alternative program to the flow control standard. Under the same section of the Phase I Permit addressing controlling runoff from new development, redevelopment, and construction sites, the permittee must also require use of non-structural preventive actions and source reduction approaches, including Low Impact Development (LID), to minimize the creation of impervious surfaces and the disturbance of soils and vegetation where feasible. *Ex. J-16* at Condition S5.C.5.b.iii. The Phase I Permit required the ordinances necessary to implement this section of the permit to be adopted no later than 18 months from the effective date of the permit, by August 16, 2008. *Id.* at Condition S.5.C.b.iv.

3.

On January 13, 2009, Clark County adopted Ordinance No. 2009-01-01, with an effective date of 90 days later, or April 13, 2009. Among other things, the ordinance requires the flow duration standard for high flows to be engineered to match the *existing* conditions on the site rather than historic, pre-development conditions, as required by the Phase I Permit. Clark Co. Code 40.385.020.C.2.a. Clark County did not offer their adopted ordinance to Ecology as an equivalent alternative program under the provision of the Phase I Permit that allows a variance from the default flow control standard. Instead, in adopting the January 2009 Ordinance, Clark County rejected the regulatory approach Ecology had implemented with the Phase I Permit, and

[3] The standard flow control requirement is to "match development discharge durations to pre-developed durations for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow." *Id.* at Appendix 1, p. 24.

determined it would impose a less stringent standard for stormwater control at new development and redevelopment sites.

4.

On March 17, 2009, Ecology issued a Notice of Violation to Clark County alleging that the county violated the terms of the permit by "[a]dopting a flow control policy that Ecology determined does not provide equal or similar protection of receiving waters and equal or similar levels of pollutant control, as compared to Appendix 1 [the 2005 Stormwater Management Manual]. (CCC § 40.385.020.C.2.a)." *Ex. J-2* at 1. In addition to being late, Ecology also determined that Clark County's ordinances and manual adopted an exemption for infill and redevelopment projects from the 0.1 cubic feet per second flow increase threshold, also set out at Appendix 1 of the Phase I Permit. *Id.* In the Notice of Violation, Ecology stated that the purpose of the flow control requirement is to "reduce harmful impacts on fish, other aquatic life and streams caused by runoff from development." *Id.* Ecology concluded that Clark County's lesser standards and thresholds for control of runoff from new development and redevelopment would not provide an equivalent amount of protection to receiving waters and pollutant control, as required by the Phase I Permit. The Notice of Violation gave the County thirty (30) days to inform Ecology what steps it had or would take to control pollution and comply with the Order. *Id.* at 2.

5.

On January 6, 2010, Clark County and Ecology entered into Agreed Order No. 7273, the purpose of which was to "establish the actions necessary to bring the County into compliance

with Special Condition S5" of the Phase I Permit. *Ex. J-1* at 1. The Order requires Clark County to implement a flow control program for new development and redevelopment that Ecology concluded will result in an equivalent level of protection as the flow control requirement for new development and redevelopment in the Phase I Permit. Ecology stated that the Agreed Order "will provide an equivalent level of flow control" to that required under the Phase I Permit. Ecology also noted that "[t]his approach is consistent with the Permit wherein Permittees are allowed the option of proposing alternative methods of achieving flow control standards." *Ex. J-1* at 3. Rosemere timely filed this appeal challenging the Agreed Order.[4]

6.

Concept of Agreed Order: Under the Agreed Order, Ecology approved Clark County's alternative flow control program on the condition that Clark County mitigate runoff from new development and redevelopment to the historic, pre-development condition through a capital flow control mitigation program undertaken at alternative sites selected by the County, and at County expense. *Ex. J-1* at 3-4. In other words, the Agreed Order allows Clark County to apply the lesser flow control standard to new and redevelopment projects in its jurisdiction, utilizing *existing* rather than pre-development conditions as the basis for application of the flow control standard, provided that Clark County "mitigates," or makes up the difference, at another site in

[4]The parties filed cross motions for summary judgment on several of the legal issues in this appeal, all of which the Board denied. In denying summary judgment, the Board determined that it needed a better record in order to reach a decision about whether the Agreed Order provides equal or similar protection of receiving waters as the Phase I Permit. The Board concluded that Rosemere, as the appealing party, would continue to bear the burden of proof in challenging the Agreed Order but that Ecology also bore the burden of establishing the baseline against which it determined the equivalency of Clark County's alternative. *Order Denying Summary Judgment*, at 16-18.

the County. The Agreed Order allows the County to mitigate by building several types of flow control facilities as capital improvement projects. These include stormwater retention, infiltration and detention facilities, existing facility retrofits or reconstruction, including LID retrofits, and conversion of land cover to historical forest. *Ex. J-1* at Attachment A, pp. 4-7.

7.

Authority for Agreed Order: The Agreed Order entered into between Ecology and Clark County relies on that term of the Phase I Permit that allows there to be adjustment or variance of the flow control requirements, by use of "more stringent requirements," and/or requirements that may be "tailored to local circumstances through the use of basin plans or other similar water quality and quantity planning efforts." *Id.* at Condition S.5.C.5.b.i. The permit requires that any such local alternative standards "shall provide equal or similar protection of receiving waters and equal or similar levels of pollutant control" relative to the default standard. *Id.* Because this is the standard the Board must apply to evaluate the Agreed Order under appeal in this case, we first make findings related to whether the prerequisites under the Phase I Permit for allowing an adjustment or variance to the flow control standard have been met, then make findings related to the scope of the Agreed Order, followed by findings related to the requirements of the Phase I Permit, and the manner in which the County will implement the Agreed Order. These form the basis of our analysis and conclusions as to why the mitigation program of the Agreed Order fails to provide equal or similar protection to receiving waters and equal or similar levels of pollutant control to that required by the Phase I Permit.

retention and detention facilities, which involve using the Western Washington Hydrology Model (WWHM) or the Clark County version of the WWHM. *Ex. J-1* at Attachment A, p. 5. Additional details regarding Clark County's tracking and accounting system for the mitigation requirement are specified in Attachment A of the Agreed Order. County's Development and Redevelopment Flow Control Mitigation Program ("Mitigation Program"). *Ex. J-1* at 4 & Attachment A.

10.

Location of Mitigation Projects: Mitigation projects to address the County's mitigation obligation must be built within the same Water Resource Inventory Area (WRIA), of which there are two in Clark County.[5] The Agreed Order states that "[T]o the *extent feasible*, the locations of Mitigation Projects *should* support identified needs and recommendation in existing resource management plans, and *should* also align with the County's policies on environmental mitigation. Projects s*hould* be prioritized by watershed and then WRIA, in consideration of the distribution of the County's Mitigation Obligation." (emphasis added.) *Ex. J-1* at Attachment A, p. 8. Clark County will use its current Stormwater Needs Assessment Program (SNAP) and Stormwater Capital Improvement Program (SCIP) to scope, prioritize, and plan flow control mitigation projects. *Id.* The Agreed Order gives the County considerable leeway in how it ultimately selects mitigation projects, stating as follows with respect to development and prioritization of mitigation projects: "Within the group of projects deemed most suitable to

[5] WRIA 27, which drains the northern portion of the County to the Lewis River and its tributaries, and WRIA 28, which drains the southern portion of the County to the Columbia River and its tributaries. *Beyerlein Testimony.*

watershed conditions, highest priority may be given to projects having the best cost/benefit ratios in terms of cost per unit of land cover, mitigated." *Id.* Ecology does not have a role in the review or approval of the prioritization process or the mitigation projects selected under the Agreed Order.

11.

Timing of mitigation: The County must meet its flow control mitigation obligation within two calendar years from the calendar year the development project being mitigated starts construction or land disturbing activity. *Ex. J-1* at Attachment A, p. 9. For example, a development project requiring mitigation that began construction anytime during calendar year 2009 must be mitigated by the end of calendar year 2011. *Id.* Since various types of subdivision and other construction approvals are valid for periods of two to seven years, and possibly longer with extensions, this will result in mitigation obligations extending well beyond the term of the current permit and into the future several years. *See e.g.,* RCW 58.17.170 and CCC 14.06.105.5.

12.

Use of Vesting, and Relevant Effective dates: Under the Agreed Order, the County incurs a potential mitigation obligation for any new or redevelopment project that meets threshold requirements for flow control facilities under the Phase I Permit and that "vested" under state vesting laws [6] on or after April 13, 2009. *Ex. J-1* at Attachment A. Stated another way, the Agreed Order does not require mitigation for all projects as of August 16, 2008, the Phase I Permit's deadline for adoption of ordinances, but rather provides the County an additional eight

[6] RCW 58.17.033 (subdivision code) and RCW 19.27.095 (building permits).

month delay before applying the flow control standard to new applications for development or redevelopment. The Agreed Order also allows the County to receive mitigation credits for any qualifying flow control mitigation projects completed after April 13, 2009, irrespective of when they were designed, approved, or started construction. *Ex. J-1* at Attachment A. In practice, this has allowed the County to receive a large amount of mitigation credit for a project that was well underway before the Agreed Order was executed or before the County incurred any mitigation obligations.[7] Numerous commercial and multifamily building permit applications, as well as numerous subdivision permit applications, vested for land use purposes between August 16, 2008, and April 13, 2009.[8] *Exs. A-58, A-59.* One of these subdivisions is approved for 103 single-family lots. *Snell Testimony, Ex. A-67.* EPA expressed concern that the delayed effective date under the Agreed Order provides less cumulative flow control over its term than the Phase I Permit. *Shrieve Testimony, Ex. A-22.* NMFS likewise expressed concerns over the lag time between August 2008 and April 2009, and stated that there is "no scientific justification" for this delay. *Shrieve Testimony, Ex. A-23.* Costs can be significant, however, if a project needs to be re-designed. *Killian Testimony.*

[7] The County has reported mitigation credit for 11 acres of Effective Impervious Area, 15 acres of Lawn/Landscape, and 2 acres of Pasture in connection with its completion in 2009 and 2010 of the 152nd St. project (aka "Encore North Phase I"), a project that has been on the County's capital projects list for several years. *Ex. J-20.*

[8] A subdivision will discharge into a municipal separate storm sewer system (MS4) approximately 80 to 90 percent of the time. *Gray Testimony.*

13.

Monitoring/Maintenance of mitigation projects: The Agreed Order does not include any requirements for the County to monitor or maintain the mitigation projects it constructs under the Mitigation Program. Clark County's Stormwater Facility Maintenance Manual, and its Stormwater Manual, set forth the requirements for monitoring, inspecting, and maintaining stormwater mitigation facilities. *Exs. R-29 & R-30.*

14.

Funding of Mitigation Program: The Agreed Order requires the County to maintain funding sources adequate to comply with the Agreed Order. *Ex. J-1* at p. 4. Parties to the Agreed Order anticipated that the County's Clean Water Fund would be used to plan and construct mitigation projects, although the Agreed Order provides that the County may use any allowable funds to pay for mitigation projects. *Ex. J-1* at Attachment A, p. 11.

15.

Reports to Ecology: Clark County will report to Ecology annually on the status of its Flow Control Mitigation Program, as an attachment to the annual report required by the General Permit. The Agreed Order sets out the elements of the annual report, and also requires the County to include a narrative describing the funding status of the mitigation program, identifying any anticipated shortfalls. Beyond this reporting requirement, Ecology has no role in selection of mitigation projects, and no responsibility for review or approval in project selection or prioritization. There is no requirement in the narrative reporting for the County to compare results achieved through the mitigation program against any criteria related to stream or basin

health or recovery, or to identify whether significant areas of salmon habitat are being mitigated to compensate for similar significant areas of salmon habitat where historic pre-development conditions are not being mitigated at the site of the new development or redevelopment. *Ex. J-1*, at Attachment A, p. 10.

16.

On September 1, 2010, Ecology modified the Phase I Permit to incorporate the substantive provisions of the Agreed Order into the permit. *Ex. J-23*. Rosemere timely filed an appeal of the Permit Modification.

17.

In coming to agreement with Clark County, Ecology evaluated the Agreed Order to determine if it was equivalent to Phase I Permit requirements under the terms of Condition S5.C.5.b. *O'Brien Testimony*. Ecology now contends that the Agreed Order does not change the default flow control standard, but rather provides a different administrative way to meet it, simply allowing it to be applied at a different site. *O'Brien Testimony*. The County and Ecology also attempt to recast the Agreed Order as something other than a "mitigation" program, by stating the County is meeting its obligation to match the Phase I Permit flow control standard, just at an alternative location. *Gray Testimony*. If Ecology (and the County) is correct in this latter interpretation, then Clark County was not required to conduct basin planning or a similar water quality and quantity planning effort prior to Ecology's approval of the alternative flow control program under Condition S5.C.5.b. The Board will first consider the purpose of basin

planning and the purpose of the flow control standard, in developing its conclusions of law on this issue.

18.

Appendix 1 to the Phase I Permit and the Stormwater Management Manual for Western Washington provide further specificity on how basin plans, referenced in Condition S5.C. of the Phase I Permit as an alternative planning effort, are to be developed. Appendix 1 states that an alternative requirement for Western Washington may be established through application of *watershed-scale* hydrological modeling and supporting field observations. *Ex. J-17 at* Appendix 1 (Minimum Technical Requirements for New Development and Redevelopment), pp. 25 & 28.[9] Appendix 1 also requires that before a basin plan can modify the minimum requirements of the Phase I Permit: it must be formally adopted by all jurisdictions with responsibilities under the plan, all ordinances and regulations called for by the plan must be in effect, and the basin plan must be reviewed and approved by Ecology. *Id.* at p. 29.

19.

It is unrebutted that Clark County did not prepare a basin plan using watershed-scale hydrological modeling and supporting field observations, it did not adopt a basin plan, and Ecology did not review and approve a basin plan for Clark County as an underlying basis for the alternative program set out in the Agreed Order. Instead, Clark County will use its Stormwater Needs Assessment Program (SNAP) and Stormwater Capital Improvement Program (SCIP) to

[9]This is the same requirement as set forth as a minimum requirement for flow control in the Stormwater Management Manual for Western Washington. *Ex. J-19* at Vol. 1, §2.5.7, p. 2-33.

scope, prioritize, and plan flow control mitigation projects. *Ex. J-1* at Attachment A, p. 8. These planning documents relied upon by Clark County to justify its alternative flow regime, fall far short of what is contained in a basin plan. A basin plan includes several key components, including a discussion of zoning, projected build-out, an evaluation of every stream channel (each which has been walked), a hydrologic model, and water quality data that includes new sampling. Essential information such as hydrologic modeling is missing in many of the SNAP manuals. *Booth Testimony.* Rod Swanson, the NPDES Coordinator for Clark County, acknowledged the SNAP manuals are not basin plans. *Swanson Testimony.* Similarly, SCIP is a process whereby the County uses objective criteria to evaluate and prioritize the many possible stormwater capital improvement projects, allowing public input on the allocation of resources. *Ex. J-3.* It is not a basin plan in any sense of the word.

20.

The Phase I Permit requires that municipalities' Stormwater Management Programs (SWMP) must prevent and control the impacts of runoff from new and redevelopment activities. *Ex. J-16* at Condition S.5.C.5.a-b.ii. In order to do so, the Phase I Permit required implementation of a new, more stringent default flow control standard, with the attendant thresholds and definitions contained in Ecology's 2005 Stormwater Management Manual. This new standard was developed over a long period of time, and replaced the previous "peak" flow standard. *Ex. J-16* at Condition S.5.C.5. Under the Phase I Permit, municipal permittees are required to control stormwater flows from certain new and redevelopment projects to levels that match historical pre-developed (typically forested) conditions, under certain peak flow

conditions.[10] In other words, it requires facilities be engineered so that discharges are not predicted to exceed the predevelopment flow duration for a range of storm events. *O'Brien Testimony, Booth Testimony.* The Independent Science Panel, which reviewed Ecology's Stormwater Management Manual for Western Washington, determined the flow control standard and the requirement to match flows estimated for an historic land cover condition, was appropriate to use in all watersheds, regardless of a watershed's current level of development.[11] *Ex. R-77* at p. 11.

21.

A primary goal of the new flow control standard of the Phase I permit is to make progress in reducing high flows of stormwater from all new development, redevelopment, and construction sites that contribute to accelerated erosion of stream channels. *O'Brien Testimony, Booth Testimony.* Ecology identified the purpose of the flow control requirement (Condition S.5.C.5.b.ii) as being "to reduce negative impacts on water quality, fish, other aquatic life, and streams caused by increased runoff from new development and redevelopment and to reduce impacts from existing development." *Ex. J-1.* Stated another way, the Phase I permit's flow control standard is intended to ensure flows from new and redevelopment do not make existing conditions worse and, where existing conditions/flows are different from historic flows, require

---

[10] The standard flow control requirement is to "match development discharge durations to pre-developed durations for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow." It applies to projects of a specified size or generating a specified amount of stormwater discharge. *Id.* at Appendix 1, p. 24.

[11] The Independent Science Panel was created by the Legislature in 1998 to provide scientific oversight and review of the State's salmon recovery efforts. *Ex. R-77, p. 1.*

that post-development flows restore flows to more natural conditions. While the flow control standard was not expected to restore aquatic habitat, or eliminate all erosion from a development site, it represented a substantial advancement in the effort to reduce adverse impacts to stream hydrology and water quality associated with stormwater runoff, and associated high flows, from ongoing urbanization, offering significant protections for streams from erosion and other adverse consequences. *Booth Testimony, O'Brien Testimony.* In discussing the objective of the flow control requirement and flow control BMPs, the Stormwater Management Manual for Western Washington states that "[m]aintaining the naturally occurring erosion rates within streams is vital, though by itself insufficient, to protect fish habitat and production." *Ex. J-19* at Vol. 1, §2.5.7, pp. 2-34.

22.

In the Phase I Decision, this Board discussed the need for the NPDES Phase I Permit to comply with the Clean Water Act requirement to reduce pollution to the maximum extent practicable (the "MEP" standard). The Board also concluded that state law had a similar requirement, wherein all waste discharge permits must incorporate permit conditions that require all known, available and reasonable methods of treatment to control discharges and protect water quality (the "AKART" standard) *Phase I Decision* at COL 12. The Board also found as follows with respect to the conditions of the Phase I Permit: "Ecology views these SWMP requirements, in the aggregate, to represent MEP standard; that is, permittees who implement all of the program requirements in combination with one another are considered by Ecology to be reducing pollutants to the maximum extent practicable...." *Phase I Decision* at FOF 8. Ultimately, the

Board concluded that the permit's reliance on a flow control standard as the primary method to control stormwater runoff from MS4s failed to reduce pollutants to the federal MEP standard, and did not represent application of all known, available and reasonable methods of treatment under state law because it placed insufficient reliance on the application of low impact development (LID) techniques in combination with the flow control standard. These findings and conclusion are discussed further below. *Phase I Decision.*

23.

Ecology determined that in order to satisfy MEP and AKART, permittees must adopt their updated flow control requirements no later than 18 months after the effective date of the permit (August 16, 2008), and begin applying those requirements within a reasonable period of time after adoption (30-90 days). The Phase I Permit's Appendix 1 does not specify a precise date by which the post-construction stormwater control facilities need to be operational relative to the start of construction or land-disturbing activity at development sites. As a practical matter, they are typically constructed as part of the site-development process, when the developer installs the infrastructure for the new or redevelopment. In a subdivision, for example, this means they are constructed when the roads and utilities are installed, prior to the construction of the individual residences within the subdivision. *O'Brien Testimony.*

24.

The Phase I Permit does not require either municipal permittees or developers to monitor the effectiveness of the stormwater control facilities constructed in compliance with the permit's default flow control standard in Condition S.5.C.b.ii. The permit requires that municipal

permittees' stormwater management programs must use qualified personnel to perform post-construction inspections of all development sites that meet the thresholds of the default flow control standard, provide for the development of maintenance plans for permanent stormwater facilities, and assign responsibility for such maintenance. *Ex. J-16* at Condition S.5.C.b.vi.

25.

The Board finds that the Agreed Order rests on no science as to the comparability of its mitigation metric in relation to the Phase I Permit's flow control approach, and has no requirement on a going forward basis that calls for a comparison of the benefits gained at a mitigation site, compared to the detrimental effects at a new development site where a lesser control standard is utilized. As discussed earlier, the Agreed Order allows the County considerable leeway in how it ultimately selects and sites flow control mitigation projects. The only restriction is that mitigation projects to address the County's flow control mitigation obligation must be built within the same WRIA. While the mitigation obligation is measured and tracked by acres for each of three land-cover types, it does not require the County to track or account for either the soil type or the slope of the new or redevelopment project site triggering the mitigation obligation, and it does not require the mitigation sites to have the same soil type or slope as the site of the new or development project. As discussed below, the acreage metric set forth in the Agreed Order, and the siting of flow control mitigation projects without any requirement for Clark County to address equivalent impacts to the environment and beneficial uses, lack a scientific basis and is inconsistent with directives to protect beneficial uses.

26.

The majority of the Board finds that the acreage metric is fundamentally flawed. Ecology believes this acreage metric is useful because it is straight-forward and is less likely for a permittee to be able to "play games with." *O'Brien Testimony.* While the acreage metric may be simpler and easier to implement, the majority finds it is critically flawed because it is based entirely upon a mathematical perspective and there are *no* data, studies, or scientific support to support its underlying assumption that harm caused to one stream can be mitigated through a project in a different subwatershed. Under this acreage metric, it is highly unlikely there will be any relationship between the harm and the benefit. *Winters Testimony.*

27.

The acreage metric also completely ignores the purpose of the flow control requirement in the first instance, which is to "reduce harmful impacts on fish, other aquatic life and streams caused by runoff from development." *Ex. J-2* at p. 1. Multiple witnesses stressed how the acreage metric fails to consider and mitigate for actual impacts on the environment, for example eroded stream banks and scoured substrates. *Booth Pre-Filed Testimony* at ¶33. Salmon and steelhead populations are influenced by the importance of the habitat affected, and the areas to be used for mitigation do not need to account for any of these attributes. *Rhodes Pre-Filed Testimony* at ¶36.

28.

The weight of expert testimony recognizes that streams, once degraded, can continue to degrade. "[T]he high flow durations from even a partially developed site will be highly disruptive to streams." *Booth Pre-Filed Testimony* at ¶24. "[D]amage to receiving waters from stormwater flow from developed areas is cumulative. Damage to a stream builds on itself each time it rains as the water flows faster, cuts stream banks and scours stream beds further, and the hydrograph becomes more extreme. In other words, a flow duration standard based on meeting only existing conditions (like Clark County's) [at new development sites] does not freeze the environmental conditions in place, but allows for ongoing cumulative degradation of the stream. Moreover, the status quo in Western Washington, including Clark County, is currently degraded ... with many streams unable to support beneficial uses and even basic ecological function due in large part to stormwater runoff from developed areas." *Booth Pre-Filed Testimony* at ¶26. Doug Beyerlein, Clark County's expert witness on hydrology, did not disagree with Dr. Booth's research and agreed that Clark County streams are not stabilized. *Beyerlein Testimony.* Ecology's expert, Ed O'Brien, also acknowledged that streams are still degrading, that there is nothing unique about Clark County that precludes use of Ecology's default flow control standard, and that no part of Clark County qualifies as a highly urbanized area for purposes of applying a lesser standard. *O'Brien Testimony.* The Board finds that the streams in Clark County are subject to further degradation.

29.

Ecology recognizes that the flow control standard is a water-quality based standard and not just a technical standard. The flow control standard, therefore, goes beyond the state's requirement to implement AKART. Ecology also states that the flow control standard tries to address past harms to streams, but was not intended to address all biological factors. *O'Brien Testimony.* Simply because all biological factors are not meant to be addressed by the flow control standard, however, does not mean all biological factors on the ground can be ignored, especially given the purpose of the flow control standard to protect beneficial uses in the stream. Ecology has, in connection with this case, recognized the importance of preserving beneficial uses when evaluating flow control regimes. The Department stated that "[to] relieve any developed area of a retrofit obligation for flow control, the County has to prove that a stretch of stream channel has not been altered by flows from existing development; *or that the altered stream channel is still compatible with preserving the necessary beneficial uses.*" *Ex. A-50* (emphasis added.)

30.

The experts all agree that factors such as soil type, slope, and other conditions are highly variable from site to site, and those variables have consequences for how alteration to the site impacts the stream. "[V]ariables such as stream size, soils in stream beds and banks, slope and characteristics of stream banks, grade, vegetation in-stream and near-stream as well as previous damage can all result in different reactions by a stream to stormwater and attempts to address it. An amount or type of development that causes minimal damage in one stream may dramatically

alter the morphology of another. *Booth Pre-Filed Testimony* at ¶18. "Development on a highly infiltrative soil will likely result in particularly large increases in runoff. . . . Mitigation on a less-infiltrative soil somewhere else can never recover the loss of recharge or commensurately reduce the increase in stream discharge." *Booth Pre-Filed Testimony* at ¶34.

31.

In the Lower Columbia basin, several salmon and steelhead populations are listed as threatened or endangered under the federal Endangered Species Act. *Rhodes Pre-Filed Testimony* at ¶8. Clark County is one of the fastest growing counties within the state. *Ex. A-49* at p. 1. The evidence indicates that potential impacts to fish and other aquatic organisms from stormwater can be significant, and is essentially unrebutted. In 1999, the state of Washington identified stormwater runoff as a major factor in the degradation of salmon streams in developed areas in the" Statewide Strategy to Recover Salmon: Extinction is Not an Option" (Statewide Strategy). The Statewide Strategy recommended that Ecology update the 1992 Stormwater Management Manual to provide guidance for applying the most recent stormwater management science and technology to new development and redevelopment to comply with water quality standards and contribute to the protection of beneficial uses of the receiving waters. *Ex. R-77* at p. 1. The testimony of the experts echoes the relationship between stormwater and negative impacts to fish. "[C]ombined effects significantly reduce the survival and production of salmon and steelhead and can cause long-term degradation of what was once good spawning and rearing habitat to a degree that renders it unusable or unproductive." *Rhodes Pre-Filed Testimony* at ¶16.

32.

The majority of the Board finds that the terms of the Agreed Order are insufficient to protect beneficial uses. Under the terms of the Agreed Order, Clark County can allow an important spawning reach to be impacted by application of the old flow control standard, and then, a few years later, mitigate the same number of acres in a watershed area that may not be occupied by fish or that does not have as important spawning or rearing habitat. *Rhodes Pre-filed Testimony* at ¶32. The evidence before the Board supports this conclusion by stating as follows: "The Clark County standard is plainly insufficient to protect beneficial uses like salmon and other aquatic life, and healthy aquatic conditions generally." *Booth Pre-Filed Testimony* at ¶25. Clark County contends that its approach of targeting streams and watersheds for improvements where the greatest problems exist is the best approach for successful mitigation rather than mitigating all development at the development site. *Gray Testimony*. While the Board does not disagree with this statement, the majority finds that the Agreed Order does not require such targeting.

33.

Ecology acknowledges that the location of where flow enters a stream can impact the system. If the flow enters a higher portion of a stream, then generally there is a greater impact on the stream channel because there is an impact throughout the system. *O'Brien Testimony*. As noted by one of the Petitioners' experts, "There is nothing in the Agreed Order approach that would prevent the harm from occurring in the most ecologically valuable subwatersheds (for example, headwaters, riparian buffers, salmon habitat, etc.) in exchange for mitigation that is in

the least ecologically important areas (degraded, highly developed, far downstream, etc.), but that happens to meet the acreage requirement in the same WRIA." *Booth Pre-Filed Testimony* at ¶36. Viewed in a different context, if development occurred near a stream that ultimately discharged to an area of shellfish production that was in danger of being closed because of stormwater contaminants, allowing the mitigation of the historical damage to occur in an entirely different stream that discharged near an industrial area would easily be recognized as not being equivalent in its impact on beneficial uses.

34.

The United States Environmental Protection Agency (EPA) expressed multiple concerns over Clark County's proposed flow control program in a letter to Ecology. EPA emphasized that stormwater impacts to salmon bearing streams constitutes a significant limiting factor to the recovery of ESA listed salmon in Western Washington. EPA stated its belief that mitigating urban and urbanizing stormwater impacts will require a three prong approach: 1) state of the art methods to minimize the impacts from new development, 2) enhanced gradual improvement of baseline conditions as redevelopment occurs, and 3) enhanced investment in retrofit projects to reduce stormwater impact from developed land. *Ex. A-22.* The Agreed Order does not necessarily allow for gradual improvement of baseline conditions in areas that are significant to salmon. Furthermore, by subsidizing mitigation, Clark County's is not making the enhanced investment in retrofit projects called for by EPA (discussed further in this opinion).

35.

The National Marine Fisheries Service (NMFS) also sent a letter to Ecology expressing concerns over Clark County's proposed flow control program. NMFS emphasized the science that went into the development of the default flow control standard: "In Ecology's 2002 review material provided to the Independent Science Panel, Ecology stated that the use of the pre-developed, forested conditions standard was '... the most appropriate assumption necessary to help achieve the federal and state water pollution statutory and regulatory requirements to maintain beneficial uses." NMFS also noted that in the Notice of Violation Ecology issued to Clark County, Ecology stated that "*a flow control target is not defensible unless analyses of basin flows and stream geomorphology indicate it will produce a flow regime compatible with sustaining and restoring beneficial uses.*" *Ex. A-23* at p. 2. NMFS also commented that while the Clark County program appeared to be aiming to provide equivalent effects to receiving water bodies, effects on specific river systems may not be equivalent, and expressed concern about the lack of guidelines in the mitigation program to address effects to listed salmon and steelhead as important factors to be considered in selecting mitigation sites. *Ex. J-18.* NMFS also described the adverse effects certain pollutants in stormwater discharge have upon salmon, and that reducing the volume of stormwater can help salmon avoid these detrimental effects. NMFS further concluded that "The expectation that mitigation based solely on acreage and land use type will be effective to adequately reduce flow control effects is not supported by best available science." *Ex. A-23* at p. 3.

36.

The Fact Sheet for the Phase I Permit discusses the wide range of impacts stormwater can have upon fish, invertebrates, and water quality. The Fact Sheet also recognizes that impacts from stormwater are highly site-specific and vary geographically due to differences in local land use conditions, hydrologic conditions, and the type of receiving water. *Ex. J-15* at p. 8. In addition, the Fact Sheet recognizes the link between permit requirements and the protection of beneficial uses by citing to RCW 90.48.010. This statute declares as the public policy of the state to maintain the highest possible standards to insure, among other ends, the propagation and protection of wild life, birds, game, fish, and other aquatic life. *Ex. J-15* at p. 16.

37.

Ecology's uncertainty regarding whether Clark County will undertake mitigation in areas that are ecologically valuable to salmon and other aquatic life, or which is otherwise important to water quality, is evident in Ecology's response to interrogatories. When asked whether the habitat/stream classification or status of water quality had any bearing in the mitigation provisions of the Agreed Order, Ecology responded: "The Agreed Order does not require habitat/stream classification or status of water quality, but Ecology *expects* the County will *consider* these factors in prioritizing mitigation projects." (emphasis added.) *Ex. A-4* at p. 16 (Interrogatory No. 21).

38.

In contrast to the lack of evaluation required in the Agreed Order for mitigation to be based on environmental impact, the Department of Ecology devotes five pages in its guidance on

wetland mitigation to the types of analyses that must be conducted to justify mitigation in that context. *Booth Pre-Filed Testimony* at ¶36. (citing Wetland Mitigation in Washington State – Part I: Agency Policies and Guidance (Version 1), 2006, pp. 55-59).

39.

In December 2008, Ecology issued "Making Mitigation Work"[12] as a shared vision by the Mitigation That Works Forum (Forum) for successful mitigation and to identify practical actions that could be taken to make all aspects of environmental mitigation work better and to improve outcomes. *Ex. A-25* at p. 2. The Forum found that many mitigation projects continue to be poorly sited, poorly designed and implemented, and poorly maintained, without sufficient attention being devoted to monitoring and adaptive management. Therefore, ecological values and functions continue to be lost, watershed conditions increasingly degrade, especially in developing areas. *Id.* at p. 3. One of the Forum's recommendations was the use of a compliance monitoring and inspection checklist for mitigation projects. The Forum recommends that when compliance monitoring shows that a mitigation project is not working, prompt efforts should be undertaken to correct the problems so that the mitigation project can provide environmental functions and values. *Id.* at p. 24. As discussed earlier, the Agreed Order fails to include any monitoring for its flow control mitigation projects. Monitoring of Clark County's mitigation projects under the Agreed Order has been described as "vital" by a hydrologist. *Rhodes Testimony.*

[12]Although Respondent Clark County tried to establish that this document was limited to wetland mitigation, a review of the document clearly shows this is not the case. See for example, Section 2.4, where mitigation for wetland, stream, shoreline and nearshore impacts is discussed. *Ex. A-25, p. 13-14.*

40.

In addition to establishing the new flow control standard, the same section of the Phase I Permit applicable to new development, redevelopment, and construction sites also requires that the permittees' stormwater management program "must require non-structural preventive actions and source reduction approaches including Low Impact Development techniques (LID) to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation where feasible." *Ex. J-16* at Condition S5.C.5.b.iii. The Phase I Permit's modified conditions related to LID were the result of this Board's decision in the Phase I case. In that decision the Board made lengthy and specific findings that LID was a well-established concept, and the basic BMPs that constituted LID well-defined. The Board found that utilization of LID techniques "may be useful (or even in some cases necessary) to meet the flow control standard on a particular site." *Phase I Decision* at FOF 38. The Board's extensive, and unchallenged, findings of fact related to LID stated, among other findings that "[r]equiring municipalities to impose parcel and subdivision-level LID best management practices represents a cost effective, practical advancement in stormwater management." *Id.* at FOF 60. The Board concluded that LID methods are known and available method to address stormwater runoff at the site, parcel, and subdivision level, and ordered the Phase I permit modified to required LID, where feasible, in the SWMP of each municipal permittee. *Phase I Decision* at FOF 66.

41.

Ecology's Notice of Violation to Clark County originally identified a second problem with the County's compliance with the Phase I Permit's condition S5.C.5 requirements, in

addition to the "existing" versus "pre-development" conditions problem. Specifically, Ecology cited the County for adopting an exemption for certain development projects from one of the thresholds that triggers the duty to control high flow durations. *Ex. J-2.* The new stormwater ordinances adopted by the County in response to the Phase I Permit on January 13, 2009, included an exemption for infill and redevelopment projects from the one tenth (0.1) cubic feet per second (cfs) flow increase threshold identified in Minimum Requirement No. 7 of Appendix 1. As part of the Agreed Order, the County agreed to change its codes and manual during the County's fall 2009 Biannual Code Review to remove the exemption of infill and redevelopment projects from the 0.1 cfs flow increase threshold contained in Minimum Requirement 7, which would become effective no later than December 8, 2009. *Ex. J-1* at 4. However, during the window between the adoption of the non-compliant code and the subsequent removal of the exemption, many commercial projects and subdivisions vested under Clark County's land use regulations. *Exs. A-58, A-59.*

42.

In addition to establishing a flow control standard at new development sites and requiring implementation of LID where feasible, the Phase I Permit also required local governments to include a structural stormwater control program in their stormwater management program to prevent or reduce impacts to waters caused by discharges from the MS4. *Ex. J-16* at Condition S5.C.6. Sometimes referred to as the "structural retrofit" program, this permit term required Phase I municipalities to consider impacts of stormwater discharges from existing development, and areas of new development. The program was to address impacts "not adequately controlled

by the other required actions of the SWMP," and required proposed projects and an implementation schedule. The permit offered a number of examples of programs that could meet this requirement, such as regional flow control facilities, water quality treatment facilities, retrofits of existing facilities, and property acquisitions, among others. *Id.*

43.

As part of the minimum performance measures for the structural stormwater control program, each permittee must include the goals that are intended to be achieved; the planning process used to develop the program, including, among other factors, the type of characterization information considered and the amount budgeted for implementation; and a description of the prioritization process, procedures, and criteria used to select the structural stormwater control projects. For planned individual projects, and programs of small projects, the following detailed information must be provided: the estimated pollutant load reduction that will result from each project designed to provide stormwater treatment; the expected outcome of each project designed to provide flow control; any other expected environmental benefits; and if planned, the monitoring or evaluation of the project and the monitoring or evaluation results. *Ex. J-16* at Condition S5.C.6. Recognizing that mitigation projects under the Agreed Order are not structural control projects responsive to this Phase I Permit requirement, but to depict the contrast, Clark County is not required to even state what the expected outcomes will be for its flow mitigation projects under the Agreed Order.

44.

The Fact Sheet for the Phase I Permit states that the permit language pertaining to structural stormwater controls is drawn directly from EPA rules.[13] Although Ecology recognizes that it is not feasible to provide structural controls to mitigate for the impacts of all existing development, *"[p]ermittees will set priorities and address the highest-ranked problems subject to the limitations of available resources."* (emphasis added.) *Ex. J-15* at p. 35.

45.

In recommending the Agreed Order, Ecology expected that Clark County would commit extra funding to the mitigation program of the Agreed Order, above and beyond that already dedicated to the structural stormwater control "retrofit" program as required by the Phase I permit. Ecology further understood from Clark County that the County would maintain at least the same level of effort for its existing structural retrofit program. Ecology expected that implementation of the Agreed Order would necessitate new projects, not simply a shifting or "counting" of projects that had already been planned by the County under existing capital plans. In short, Ecology expected that with the implementation of the mitigation program, Clark County would have an increased level of effort, above and beyond that already in place under the structural stormwater control program. *Moore Testimony, O'Brien Testimony.* Nevertheless, the Agreed Order contains no term that requires the County to provide additional funding above that historically spent and dedicated to the structural stormwater control program, nor does it limit the County's ability to reduce its level of effort on structural stormwater control. *Moore Testimony.*

[13] Citing 40 C.F.R. § 122.26(b)(2).

The County is merely required to "maintain funding sources adequate to comply" with the requirements of the Agreed Order. Ecology concedes that redirection of funds from the already required structural program to the mitigation obligation of the Administrative Order could result in an overall reduced level of effort in addressing urban stormwater management, as required by the Phase I Permit. *O'Brien Testimony, Exs. A-48 & A-55.*

46.

Both EPA and the National Marine Fisheries Service commented on this aspect of the proposed modification to the Phase I permit to incorporate Clark County's Agreed Order terms, in addition to their comments related to science-based concerns. NMFS stated its main concern with the structural stormwater control program to be a "possible reduction in projects, potentially providing less mitigation to listed salmon designated as primary populations in the LCR (Lower Columbia River) Recovery Plan." *Ex. J-18* at 2. Among other concerns, NMFS commented that "[I]f Clark County moves projects from the structural control program to the flow control mitigation program such that structural control projects are substantially reduced, it could result in a net reduction in mitigation overall." Thus, NMFS concludes that there is a need for careful implementation of both programs. *Ex. J-18.*

47.

EPA expressed similar concerns to those of NMFS in its comments on the amended Permit, but chose not to file a formal objection to the Phase I permit modification. EPA was concerned that without additional conditions, Clark County's flow control mitigation program would result in less overall stormwater flow control. EPA noted that Clark County had a well-

established stormwater capital improvement program to meet the Phase I structural stormwater control/retrofit program requirement of the permit, and went on to express concern that Clark County would reduce the level of investment directed to that program in order fund mitigation projects. Noting that the Phase I permit did not mandate a minimum investment level or amount of retrofits for the structural stormwater control program, EPA stated that "the lack of such specificity should not be used to significantly reduce long standing investment toward the structural stormwater control requirement in order to establish a mitigation program" to meet other permit requirements applicable to new development. *Ex. A-22* at pp. 1-2. Ecology responded to EPA comments by stating that the comments went to issues that were not the subject of the permit modification (i.e. the structural stormwater requirements), and that Ecology was only looking to determine if Clark County was providing an equivalent program of flow control for new development and redevelopment. *Ex. J-21, Moore Testimony.* Thus, Ecology viewed the alternative flow control program in isolation from other permit requirements.

48.

The parties provided much evidence in an attempt to explain the County's planned funding of mitigation projects and structural stormwater improvement projects. The County's Stormwater Capital Improvement Program (SCIP) and Stormwater Needs Assessment Programs (SNAP) set out the County's budget and expenditure planning on stormwater projects. However, it is challenging, if not impossible, to make direct comparisons between the County's budget and expenditures on stormwater retrofit projects, and Agreed Order mitigation obligations, due to the variety of ways in which the information is tracked and reported, and because the County's

efforts are in a continuing state of flux. Differing amounts of money, and different prioritization of projects appears throughout the County's capital budget planning documents. This makes comparisons difficult both in terms of the County's historic budgets and expenditures toward either or both types of infrastructure over time and its relative budgets and expenditures between the two different of kinds of projects. *Gray Testimony, Swanson Testimony, Exs. A-43, A-74, A-75,*

49.

The County has only one budget for the combined structural stormwater/retrofit program and the flow control mitigation program, the Stormwater Capital Improvement Budget.[14] *Ex. A-43(Clark County's Supplemental Responses to Interrogatories).* Although County witnesses initially stated that they received "supplemental appropriations" from the Board of County Commissioners for the Phase I permit requirements related to implementing the structural stormwater control program and the Agreed Order mitigation obligation, testimony clarified that there were not additional funds dedicated to the Agreed Order's flow mitigation program. Stormwater managers within the County received an increase in budget authority, or permission

[14] Clark County's Stormwater Management Program is funded primarily through its local Clean Water Fee, which raises about $4.5 million per year. Of that amount, approximately $1.5 million is budgeted for capital programs, including the structural stormwater retrofit program required by the Phase I Permit, while the remainder of the budget supports other stormwater-related activities. The fee is paid by residential, commercial, industrial, and governmental property owners in the County according to a tiered rate structure. Clark County's fee is approximately $30 per parcel, and the fees have not changed since 2000, although the County is proposing a cost of service study to evaluate the need for a fee increase. Other sources of funding are also used to support the County's Stormwater Management Program, but to a lesser degree. *Gray Testimony, Swanson Testimony, Ex. A-82.*

to spend more money from the fund balance in the Clean Water fund. New monies were not made available to fund an increased level of effort for mitigation projects. *Wierenga Testimony.*

50.

The County's current Clean Water Fund balance is approximately $7-8 million. That fund balance is available for the total of all stormwater management in the County, not just capital programs. The balance has accumulated over the past decade as a result of spending less on the County's overall Clean Water Programs than the County has collected in fees. Historically, the County has spent on average approximately $800,000 per year on structural retrofit programs. *Gray Testimony, Wierenga Testimony.* The County has projected that it will cost approximately $360,000 during the remainder of this permit term to pay for the mitigation obligations incurred under the Agreed Order. *Gray Testimony, Swanson Testimony.* For this reason, the County projects that ongoing funding for the mitigation obligations taken on by the County under the Agreed Order is adequate. *Gray Testimony.* However, the Board finds that this projection is based on several assumptions: (1) that projects vested before August 2009 are not subject to the mitigation requirement, (2) that the County does not look beyond the terms of this permit, even though its mitigation obligation extends well into the future, and (3) that the projected rate of recessionary development which has resulted in a significant downturn in development in Clark County, continues. For example, Clark County issued approximately 550 single-family building permits in 2009, down from approximately 4,000 in 2007. *Snell Testimony.*

51.

The County will undertake more flow control mitigation projects relative to structural stormwater control projects under the Agreed Order, conceding that some existing "retrofit" projects will be shifted from the structural stormwater control program to the mitigation obligation. *Wierenga Testimony.* Three projects that had been on the structural stormwater control/retrofit program for some time were shifted to the mitigation obligation, including the 152nd Street/20th Avenue retrofit, the Teal Point retrofit, and the New Valley retrofit. *Wierenga Testimony, Gray Testimony.* It appears Clark County has identified only one structural stormwater control project for 2012.[15] *Ex. A-74*, p. 2.

52.

In meetings between Ecology and the County leading up to the Agreed Order, the parties discussed the question of whether the County could sustain the both the structural stormwater retrofit program and the mitigation obligation within existing funding. Ecology maintained that in order to meet the concept of "equivalency," Clark County should continue its current program. The County's position was that the current structural control program was "designed to spend down the capital reserve" and "was not sustainable under current funding and does not account for the flow control debt." At that point the County indicated that some part of a deficit, apparently referring to the flow control mitigation obligation, could be made up from projects in the structural control program *Ex. A-33.*

[15] Capital budgets fluctuate more than operating budgets. *Gray Testimony.*

53.

The Board finds that the Agreed Order allows a reduced level of effort in meeting the stormwater management goals of the Phase I Permit. The lack of any requirement to maintain a level of effort in the structural retrofit efforts, the ability to shift retrofit projects to the mitigation obligation, and the total discretion afforded the County in the implementation of the Agreed Order allow such an outcome.

54.

Implementation of LID under Agreed Order: It is unclear whether the Agreed Order is a substitute or alternative to all the requirements contained in Condition S5.C.5. of the Phase I permit, or only the flow control requirement contained in S5.C.5.b.i. Whether the LID requirements of that permit condition related to new development and redevelopment, are affected by the terms of the Agreed Order is unclear. County witnesses suggest LID requirements of the permit are met by possible implementation of LID at the mitigation sites. *Wierenga Testimony.* The Agreed Order mentions use of LID in relation to retrofit projects that will be undertaken as mitigation under the Order, describing how LID facilities may be used, and that LID best management practices may be used to achieve the flow control requirement of the permit, or to reduce the size of downstream flow control facilities. *Ex. J-1* at Attachment A, pp. 5 & 7. The Agreed Order does not clarify the extent to which LID will be required at new development or redevelopment sites. The record before the Board is simply unclear how, where, and to what extend LID will be implemented, prioritized, or required by the County in relation to the Agreed Order and how the Agreed Order changes the requirements of the Phase I Permit as it

applies to new development sites. In the Response to Comments on the Phase I Permit Modification for Clark County, Ecology addressed concerns that Clark County was no longer under a requirement to include LID practices. Ecology responded to comments by stating that the Board found the flow control standard to be adequate so long as low impact development was required where feasible. Ecology had concluded, however, that the County's alternative flow control method was equivalent, and the Board's ruling did not prohibit the use of equivalent flow control approaches. It becomes clear in Ecology's response to comments, that Ecology does not find it necessary for Clark County to use LID techniques under the terms of the Agreed Order. *Ex. J-21* at p. 8.

55.

Despite having concerns about whether the Agreed Order might result in less overall improvement in pollution control than if the default standard were met at development sites, and whether there would be a continued level of effort in the structural retrofit program, Ecology ultimately determined that the Agreed Order offered a local alternative that provides equivalent protection to receiving waters, as required by the Phase I Permit. *Schrieve Testimony, O'Brien Testimony, Moore Testimony, Exs. A-48, A-55.* Ecology approved the Agreed Order, allowing Clark County to exclude projects that had "vested" prior to April 13, 2009, from the mitigation obligation, and did not require the County to establish a new funding mechanism to raise new sources of revenue for mitigation projects or to maintain its previous level of effort for the structural retrofit program. *Moore Testimony.*

Any conclusion of law deemed to be a finding of fact is hereby adopted as such.

CONCLUSIONS OF LAW

1.

The Board has jurisdiction over the parties and the subject matter of this case pursuant to RCW 43.21B.300. The Board reviews the matter *de novo*, giving deference to Ecology's expertise in administering water quality laws and on technical judgments involving complex scientific issues. WAC 371-08-485(1), *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568, 593, 90 P.3d 659 (2004).

2.

As we have said in other decisions, the Clean Water Act requires Ecology to impose increasingly stringent requirements on the Phase I and Phase II jurisdictions under the NPDES general permit process. *Puget Soundkeeper Alliance v. Ecology*, PCHB Nos. 07-022, 07-023 (2009) (Phase II Decision) at FOF 29; *Cox v. Ecology*, PCHB No. 08-077 (Order Granting Summary Judgment, February 26, 2009). In the municipal stormwater context, stormwater discharges from municipal systems must reduce pollution to the maximum extent practicable (the MEP standard). *Phase I Decision* at COL 12-13. In prior decisions, this Board has recognized the uniqueness of this standard, and that it reflects both the difficulty of addressing stormwater on a system wide basis and the focus of regulation on prevention and control of municipal stormwater discharges. *Phase I Decision* at COL 13, citing *Save Lake Sammamish v. Ecology*, PCHB Nos. 95-78 & 121 (Order Granting Summary Judgment, December 12, 1995). The Board has noted that the MEP approach, by its nature, requires extensive planning and prioritization to

achieve the underlying goal of meeting water quality standards. *Id.* Similarly, the Board has held that the AKART standard of state law is, as defined by rule, "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge," and involves both technological and economic feasibility. WAC 173-201A-020. *Phase I Decision* at COL 14.

3.

The Phase I Permit represents a suite of requirements for municipalities that are practicable, feasible, available, and reasonable to prevent and control pollution from stormwater runoff in municipal stormwater systems. Ecology defines these requirements, including the flow control standard, as those necessary to meet the federal MEP standard, and the state AKART standard. *See Phase I Decision* at p. 10; *Puget Soundkeeper Alliance v. Ecology*, PCHB Nos. 07-022 & -023 (*Order on Summary Judgment, Phase II Municipal Stormwater General Permit, September 29, 2008)* at p. 12. In order to provide equal or similar protection of receiving waters and pollutant control, as set out in the Phase I Permit Condition S5.C.5., the Clark County Agreed Order must meet the federal MEP standard and apply AKART. The question before us is whether Clark County's alternative flow control mitigation program meets those legal standards by providing an equal or similar level of protection to receiving waters and equal or similar levels of pollution control, as required by the Phase I Permit.

4.

The Board concludes that the Agreed Order, as currently stated, does not provide equal or similar protection of receiving waters or equal or similar levels of pollutant control. Because it

does not do so, it also fails to meet the requirement for a municipality to ensure that the MS4 reduces pollutants to the federal MEP standard, and does not represent AKART under state law. A majority of the Board concludes it fails to do so for the following reasons. First, Ecology authorized an alternative to the flow control standard without following the requirements of the Phase I Permit. Section S5.C.5.b.i. requires a rigorous basin planning process, or similar planning effort, that combines the use of computer models and field work to support the models *before* Ecology can approve an alternative flow control standard or other program tailored to local circumstances. It is unrebutted that the required basin planning process or similar planning effort is absent in this case. Second, not only is the acreage metric used in the Agreed Order without a scientific basis, but the Agreed Order also fails to recognize potential impacts to beneficial uses, which is the stated purpose of the flow control standard. Third, by relying on the doctrine of vesting, and using a later date than specified in the Phase I Permit, the Agreed Order arbitrarily excludes a large number of projects from the mitigation requirement, and does not result in reduction of pollutants to the MEP standard, nor require application of AKART to many projects, in derogation of the terms of the permit. Fourth, as structured in the Agreed Order, the County can and has engaged in an impermissible reduction in the level of effort required under the structural retrofit program, by splitting and shifting available funds to the new mitigation requirements of the Order. Even if we could conclude that there was not reduction in the level of effort resulting from implementation of the Agreed Order, we conclude it suffers from another flaw, in that it gives Clark County sole discretion over how and where to apply the mitigation effort, and is consequently, impermissible self-regulation. Finally, by not clearly requiring LID

at either areas of new development, redevelopment, or construction sites, nor specifying that LID will be required or the manner in which it will be implemented at mitigation sites, the Order falls short of the requirements set out in this Board's Phase I decision and necessary to meet the MEP standard and apply AKART.

5.

Clark County, and to a lesser extent, Ecology would have the Board review the flow control obligations of the Agreed Order in the narrowest possible mathematical fashion in relation to the Phase I Permit, looking only to the technological aspects of flow control, and comparing flow control as set out in the Agreed Order to flow control set out in the Phase I Permit. These parties would have the Board exclude the relationship of the Agreed Order requirements to other aspects of the Phase I Permit, and from the very purpose of the flow control standard. The Board cannot read the alternative program of the Agreed Order in such isolation for several reasons. First, while the Phase I Permit clearly allows for alternative local programs if certain standards are met, the terms of the Agreed Order disconnect the flow control standard from the purposes which are implicit in its application to new development and redevelopment—to protect streams from degradation in an effort to protect beneficial uses. Second, the Agreed Order directly implicates the County's obligations under other terms or the Phase I Permit, particularly the structural stormwater retrofit program, and the County's obligations to implement Low Impact Development at new development sites. Additionally, the Board notes that the ramifications of the Clark County program go well beyond the borders of Clark County, and establish precedent for other municipal permittees. *See Ex. A-55.* Ecology

has amended the Phase I Permit to add the Clark County Agreed Order as "functionally equivalent" to Appendix I of the Permit, thereby determining not only that Clark County's program is equivalent to the Phase I Permit, but also making the program available to other NPDES permittees as an equivalent level of pollution prevention for runoff from new development or redevelopment in other settings.[16] *See Appendix 10 to Phase I Permit.* Thus, the Board will examine the Agreed Order in relation to other permit terms implicated by the Clark County program, and understanding that the terms of the Phase I Permit, as amended with the Clark County program, also become the baseline for the next iteration or round of municipal permits.

6.

The Phase I Permit allows municipalities to develop different performance measures and programs to control stormwater runoff from new development, redevelopment and construction sites. If they do so, the alternative program must meet the standard set forth in that section of the permit, as follows:

> More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances *through the use of basin plans or other similar water quality and quantity planning efforts.* Such local requirements and thresholds shall provide *equal or similar protection of receiving waters and equal or similar levels of pollutant control* as compared to Appendix 1. (the SWMM) (emphasis added).

[16] We note that Condition S3.A.3. (p. 13) of the recently reissued Industrial Stormwater General Permit (effective through January 2015) allows permittees covered by that permit to select best management practices (BMPs) consistent with documents listed in Appendix 10 of the Phase I Municipal Stormwater Permit, and those documents are incorporated into the Industrial Permit.

Ex. J-16 at Condition S5.C.5.b.i. Thus, an alternative program, such as is embodied in the Agreed Order between Ecology and Clark County, is authorized by the Phase I Permit, provided that it meets the criteria set out for such a variance from the Permit's flow control standard. The Board must first determine whether Clark County was an alternative program, such that is was required to complete a basin planning process, or similar planning effort, prior to Ecology's approval of its alternative flow control program, and if so, whether the County engaged in such an effort as part of the alternative program approved in the Agreed Order.

7.

In analyzing whether the Agreed Order is properly authorized as an adjustment or variance to the flow control standard under Condition S.5.C.5.b.i. the Phase I Permit, it is important to understand the flow control standard in the context of how Ecology developed the Stormwater Management Program (SWMP) of the Phase I Permit for permittees. Ecology decided not to follow EPA's permitting strategy where each permittee proposes a SWMP for the permit term, but instead, prescribed the SWMP requirements in the Phase I Permit. Ecology determined that the development, implementation, and enforcement of SWMPs pursuant to the permit terms constituted what was necessary to reduce pollutant discharges to the maximum extent practicable (MEP), meet AKART, and protect water quality. *Ex. J-17* at Condition S5.B., *Ex. J-15* at p. 28.

8.

Ecology determined that the Phase I Permit was an effective way to be consistent with federal rule requirements to minimize the impacts of stormwater discharges from areas of new development and redevelopment by "using techniques that:

1) minimize the generation of stormwater runoff (low impact development);
2) reduce exposure of pollutants to precipitation and stormwater runoff (source control BMPS's);
3) remove pollutants in stormwater runoff (treatment BMP's); and
4) control either the volumetric flow rate of stormwater discharged (for discharges to streams), or control the volume of water discharged (if discharging to a wetland)."

Ex. J-15 at p. 32. Thus, implementation of the flow control standard at new development and redevelopment sites was integral to the suite of requirements that constituted MEP under the Phase I Permit.

9.

The Fact Sheet for the Phase I Permit also states that the Eastern and Western Stormwater Manuals are the latest technical guidance from Ecology for controlling the quantity and quality of stormwater runoff from new development and redevelopment, and that these manuals create a generic presumptive approach to meeting federal and state water quality requirements. *Ex. J-15* at p. 33. Although a permittee may adopt alternative minimum requirements if they have been approved by Ecology as equivalent, the "*permittee is obligated to demonstrate* to Ecology's satisfaction that their alternative approaches will protect water quality, meet the "maximum

extent practicable" requirement of federal statutes, and meet the all known, available and reasonable methods of prevention, control, and treatment requirements of the state's Water Pollution Control Act." (emphasis added.) *Ex. J-15* at pp. 33-34, *Ex. J-17* at Condition S.5.C.5.b.ii.

10.

Although the Ecology and County witnesses may have attempted to characterize Clark County's alternative flow control standard as the same as the default standard, only administered differently, we conclude that the language in the Agreed Order, the fact that Ecology reviewed it for needed equivalency from the outset, as well as the rest of the record, demonstrate that it is a different, and alternative standard, requiring a showing of equivalency, and consideration of impacts on beneficial uses. Because the Phase I Permit requires a permittee to demonstrate that using an alternative standard to the generic presumptive approach established in the Phase I Permit will meet federal and state water quality requirements, the permittee may only meet this requirement through a rigorous process. Condition S.5.C.5.b.i. requires the use of basin plans or other similar water quality and quantity planning efforts in order to use an alternative standard. The Board concludes that the plain language of the Phase I Permit condition that requires use of the flow control standard at new development or redevelopment sites, and the reasons behind that term, require any alternative program to be based on basin planning or a similar rigorous, science-based planning effort. Based on our Findings of Fact, above, we conclude that Clark County's budget planning and capital planning documents (SNAP and SCIP), do not meet the

Phase I Permit's required basin planning or other similar planning effort. The Agreed Order does not rest on such a planning effort, and therefore violates the terms of the Phase I Permit.

11.

The second question before the Board becomes whether the County's implementation of the flow control standard at alternative sites, not connected to new development or redevelopment in the County, is equivalent to the requirements of the Phase I Permit in any event. Again, the Board concludes that the failure of the Agreed Order to consider the underlying purposes of the flow control standard, and the failure to consider the connection between the updated flow control standard and beneficial uses, results in the invalidity of the Order. The history of the development of the flow control standard and a review of other documents leaves no doubt that the flow control standard was developed and reviewed through rigorous science, and that it may only be altered through a rigorous scientific process that focuses on the potential impact to beneficial uses. The Stormwater Management Manual for Western Washington states the primary objectives for basin/watershed planning are "to reduce pollutant loads and hydrologic impacts to surface and ground waters *to protect beneficial uses.*" (emphasis added.) Vol. 1, §2.5.9, pp. 2-38. This section further states that "[b]asin planning provides a mechanism by which the minimum requirements and implementing BMPs can be evaluated and refined *based on an analysis of an entire watershed.* (emphasis added.) *Id.* The Independent Science Panel discussed the flow control standard in its review of the Stormwater Manual, and noted that the Stormwater Manual recognizes the need to control flows from many small sites because the cumulative effect of uncontrolled flows from many small sites can be as damaging

as those from a single large site. The Independent Science Panel then concluded that "[*w*]*atershed-scale* assessment and planning allows planners to identify where this may not be the case, by considering the size and location of proposed developments throughout a watershed and fully evaluating potential impacts." (emphasis added.) *Ex. R-77* at p. 7.

12.

Thus, implicit in the flow control standard is the concept that it will be applied at the site of new development or redevelopment where high flows of stormwater can be controlled, avoiding accelerated stream channel erosion, and resulting harm to beneficial uses. *Booth Testimony, O"Brien Testimony.* However, with approval of the Agreed Order, Ecology allowed the new flow duration standard to be applied at any site the County chooses, without consideration of the impact on such beneficial uses, and with the likelihood that the intended outcome will be different than if the new flow control standard were applied at a sites called for in the Phase I Permit.

13.

Ecology stated in the Agreed Order that it "will provide an equivalent level of flow control" to that required under the Phase I Permit, and that "[t]his approach is consistent with the Permit wherein Permittees are allowed the option of proposing alternative methods of achieving flow control standards." *Ex. J-1* at 3. However, in the Notice of Violation issued by Ecology to Clark County, Ecology clearly states that the purpose of the flow control requirement is to "reduce harmful impacts on fish, other aquatic life and streams caused by runoff from development." *Ex. J-2* at 1. A majority of the Board concludes that Ecology's approval of the

Agreed Order not only ignores the clear terms of Condition S5.C.5.b. which allows such an alternative only when tailored to local circumstances through the use of basin planning, or a similar planning effort, but also fails to consider the underlying purposes of the flow control standard in the first instance—to protect beneficial uses through the rigor of the flow control requirement, or through use of an equally rigorous alternative.

14.

Clark County would have the Board conclude that they are, in fact, implementing the same flow control standard in a fashion equivalent to the Phase I Permit, simply at another location selected through the County's capital budget planning efforts. They argue that their strategic choice of a location to implement flow control is superior to the Phase I method of requiring it at all new development, which is a more random placement of flow control. Thus the County concludes their alternative program represents AKART and MEP. The problem with this is that there are neither criteria applied at the front end, nor evaluation and monitoring results that can be reviewed at the back end, that require, or will demonstrate that the flow control implemented by the county will achieve the same level of protection of beneficial uses that flow control at new development or redevelopment sites will achieve. A flow control project implemented by the County at a retrofit project low in a watershed will not have the same effect as flow control placed in a sensitive, salmon-bearing stream higher in the watershed where there has been relatively little development.

15.

The Board concludes that the alternative approach of the Agreed Order will not provide similar or equal protection to receiving waters. Significant amounts of unrebutted expert testimony are in the record that the ecological impacts of Clark County's alternative flow control mitigation program are not only ignored, but that the potential impacts can be substantial. Clark County's fisheries expert opined that targeted mitigation actions in areas that can provide the most environmental benefit is the best method for undertaking mitigation. Unfortunately, there is no requirement in the Agreed Order that Clark County do so. The Agreed Order does not require Clark County to detail the expected outcome of its proposed flow control mitigation projects or to monitor to see if these results are being achieved. An expert referred to monitoring of these projects as "vital." Under the acreage metric, Clark County is not even required to identify and track significant areas of salmon habitat for potential mitigation. The Phase I Permit clearly required basin planning as a basis for and alternative program such as Clark County's, because as stated by the Independent Science Panel, a watershed scale assessment and planning allows planners to identify and fully evaluate potential impacts. While Ecology may be concerned that developing a proper tracking metric may prove difficult, Condition S.5.C.5.b.ii. makes it the obligation of the permittee to demonstrate to Ecology's satisfaction that their alternative approaches will protect water quality, meet the maximum extent practicable requirement of federal statutes, and meet the all known, available and reasonable methods of prevention, control, and treatment requirements of the state's Water Pollution Control Act. Ecology did not require Clark County to do so before approving the Agreed Order in this case.

16.

The Board understands that it must give deference to the technical expertise of Ecology. *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568, 90 P.3d 659 (2004). However, the Board concludes that Ecology is not entitled to deference in its characterization and agreement to Clark County's alternative flow control model as equivalent under the Phase I Permit because Ecology failed to follow the clear and unambiguous terms of the permit, and because Ecology's approval of the alternative program is unsupported by, and contrary to its own technical or science-based discussions and assessments of the flow control standard. *See Postema v. Pollution Control Hearings Board*, 142 Wn.2d 68, 77, 11 P.3d 726 (2000) (stating the principle that an agency's interpretation is accorded great weight only if there is ambiguity). Unambiguous terms of the Phase I Permit were violated when Clark County did not undergo the prerequisite basin planning or similar planning necessary to develop an alternative flow control requirement. Then, by simply allowing the flow control standard to be implemented at alternative sites, Clark County's acreage-based mitigation divorces the flow control standard from its impact upon beneficial uses, in contravention to Ecology's stated purpose for the flow control standard in the first instance. We recognize that the mitigation projects selected by Clark County could potentially adequately mitigate for historic flow control impacts and provide equal or better environmental protection for beneficial uses than the default standard in some instances. There is, however, neither a requirement in the Agreed Order, nor a guarantee this will occur, and Ecology does not have the information that this will occur. The flow control standard and other permit terms were developed after many years of scientific effort. The majority of the

Board's focus on the absence of information regarding habitat values at the points of development and mitigation, and the absence of information regarding what the mitigation projects are expected to achieve, is not holding Clark County's program to a higher standard. Instead, it is to determine whether the alternative approach under the Agreed Order is equivalent to the Phase I Permit. In *Friends of Grays Harbor v. City of Westport*, after first recognizing the Board provides deference to Ecology' technical expertise, the Environmental and Land Use Hearings Board refused to find that Ecology had reasonable assurance that water quality standards would be met under the proposed project because it lacked critical information regarding groundwater levels. Without this information, the Board concluded Ecology had insufficient data to make a reasoned decision. *Friends of Grays Harbor v. City of Westport,* ELUHB No. 03-001 *(De Novo) (Findings of Fact, Conclusions of Law and Order)(2005)* at pp. 34-35, 40. The Board concludes that the alternative flow control standard in the Agreed Order does not provide an equal or other similar protection of receiving waters and equal or similar levels of pollutant control as compared to the default standard. The alternative flow control standard and the mitigation program also significantly impact Clark County's efforts under the structural control program. Ecology is not entitled to any deference regarding this aspect of the Agreed Order because Ecology's own witnesses did not forsee a reduced level of effort in the structural control program. The Board also concludes that the alternative flow control standard in the Agreed Order does not constitute MEP, since it constitutes a lesser standard than what other permittees are expected to achieve.

17.

As stated in the Board's Order Denying Summary Judgment in this case, the Board never addressed the vesting issue in the Phase I case, and the Phase I Permit itself is silent as to vested rights. PCHB No. 10-013 (Order Denying Summary Judgment, August 26, 2010) p. 10. Ecology relied on the concept of "vesting" as a cut-off point for application of the new flow control standard on a going-forward basis.[17] The Board rejected Clark County's argument that the vested rights doctrine precluded the application of the new flow control standard to projects that vested for land use purposes prior to April 13, 2009. The Board stated that: For purposes of review of whether the Agreed Order is equivalent to the Phase I Permit, the Board must determine what constitutes MEP and AKART under the Phase I Permit. The Board reserved for hearing how and why Ecology selected the August 17, 2008 effective date for the new flow control standard, and the feasibility of using the new flow control standard at the sites exempted from providing mitigation under the Agreed Order. *Id.* at pp. 10, 16. We therefore analyze the Agreed Order in relation to that baseline of August 17, 2008.

18.

As we have found, Ecology established August 16, 2008, 18 months after the effective date of the permit, as the date by which permittees must adopt their updated flow control requirements. By that date, or within a reasonable period of time thereafter (30-90 days), Ecology expected municipalities to begin applying the flow control standard at new

[17] *Ex. J-15, p. 27; Ex. A-39, p. 143.* The Board also relies on the testimony of Bill Moore, who has stated that Ecology relied on vesting as a "cut-off" point, and informed regulated municipalities that vesting would be the trigger for obligations going forward under this part of the permit.

development, redevelopment, and construction sites. The Agreed Order allows Clark County to wait to apply the flow control standard, including the mitigation at alternative sites, until a date approximately eight months later than that defined in the Phase I Permit (April 13, 2009). Similarly, the Agreed Order also allows Clark County to wait to begin applying the "0.1 cfs increase" threshold until several months after it was supposed to have implemented the new threshold, after it revised its ordinances to remove the unlawful exemption. A substantial number of proposed development projects were exempted from the mitigation requirement under the Agreed Order. There is no scientific basis to justify the delayed effective date for Clark County for either the flow control standard or the 0.1 cfs increase threshold, nor was there any evidence introduced to establish that either of these requirements could not be met at particular sites. On this basis, we conclude that the Agreed Order, on its face, fails to reduce the discharge of pollutants to the maximum extent practicable as represented by the Phase I Permit's default flow control standard because it fails to begin applying the more stringent flow control requirements until much later than demanded by the Phase I Permit. To satisfy the equivalency requirement, Clark County's mitigation obligation must begin no later than 30-90 days after the County was required to adopt its updated flow control requirements (*i.e.*, November 16, 2008).[18] The County's several month gap during which time it unlawfully exempted infill and redevelopment projects that increase flow beyond the 0.1 cfs threshold from applying the

[18] We do not find it relevant to consider that other municipalities may have had delays or negotiated other deadlines with Ecology for implementing flow control ordinances. To measure equivalency, we must look to the plain terms of the Phase I permit.

updated flow control requirements (or its mitigation obligations) is an additional basis for concluding that the Agreed Order is not equivalent to the Phase I Permit.

19.

Rosemere maintains that in addition to the project applications filed between August 16, 2008, and April 13, 2009 that were improperly excluded from meeting the mitigation requirement under the Agreed Order, other uncompleted projects should be reviewed on a case by case basis to determine whether any of these projects should meet the new flow control standard. The Board declines to extend the application of the new flow control standard beyond what Ecology established in the Phase I Permit. Although Ecology improperly used vesting as part of the basis for establishing what was required for permittees under the Phase I Permit, the Phase I Permit also represented Ecology's best judgment regarding what was reasonable for a group of permittees with differing problems and resources to accomplish. Ecology considered the expected implementation date of the Phase I Permit to be MEP and AKART, and the Board defers to Ecology's expertise on what permittees could reasonably accomplish within their resources. The Board concludes that using the expected implementation date of the Phase I Permit for the baseline to apply to projects is MEP and AKART.

20.

The lack of any term in the Agreed Order to require a sustained level of effort in the structural retrofit program as the County implements the Agreed Order, leads the Board to conclude that the Agreed Order fails to require an ongoing effort by the County to meet the MEP standard set out in the Phase I Permit. In discussing Condition S5.B. of the Phase I Permit, the

Fact Sheet provides that state and federal law requires a SWMP reduce the discharge of pollutants to the MEP and meet state AKART requirements. It also states: "Where appropriate, Permittees should continue implementation of existing stormwater management program components *that go beyond what is required in this permit* where they are necessary to reduce the discharge of pollutants to the MEP." *Ex. J-15* at p. 29. The Fact Sheet, therefore, recognizes that although a permit term may not specify a particular level of effort, Permittees should continue their activity under that permit term in a meaningful and sustained manner where necessary to meet MEP requirements. Clark County's ability to shift funds to the mitigation program, without maintaining continuing effort in the structural retrofit program, is a serious flaw in the County's required Stormwater Management Program, and results in an impermissible reduction in the level of effort to control runoff in urban and urbanizing areas of Clark County, as required by the Phase I Permit. This reduction in the level of effort results in a failure to meet the MEP standard, and thus the Agreed Order is invalid in this respect. *See* WAC 371-08-540(2) (Board will review terms of a General Permit to determine if it is "invalid in any respect.") To the extent the County defends the entire mitigation program as financially feasible based on the current level of recessionary development, it is difficult, if not impossible, to see how the mitigation program is sustainable as a going forward standard for the Phase I Permit program, other than at the complete expense of the existing level of effort for structural stormwater retrofits required under the Permit's other terms. EPA and the NMFS correctly assessed this deficiency in their comments on the amendments to the Phase I Permit.

21.

Clark County argues that the Board need only look to the remainder of the current permit term to determine whether there is adequate funding, sufficient to implement a program that is equivalent to the Phase I Permit. We disagree, for several reasons. First, the mitigation obligations of the Agreed Order do not end in February 2012, with the expiration date of this iteration of the Phase I Permit. Rather, the mitigation obligations incurred by Clark County during this term of the municipal permit, will stretch well into the next permit cycle. We have also found that the assumptions Clark County relies on to argue it has more than adequate funding for the Agreed Order are not well-founded, and based on either changeable conditions, or terms the Board has invalidated in this Order (reliance on a later effective date). Moreover, having been incorporated into the Phase I Permit as a functionally equivalent program for runoff control at new or redevelopment and construction site, the terms of the Agreed Order will become the baseline for the next round or iteration of general permit renewals, not just for Clark County, but for other municipal permittees. For these reasons, the Board concludes that the Agreed Order allows for an impermissible, overall reduction in the level of effort in those requirements that Ecology has said constitute MEP under the Phase I Permit.

22.

On several occasions this Board has concluded that a particular term or approach of a General Permit amounted to impermissible self-regulation, essentially leaving the choice of the pollution control program entirely to the discretion of the regulated entity, with no regulatory oversight to ensure the permittee in fact reduces pollutants as required by law, and acts

reasonably and in good faith. *Phase I Decision* at COL 29, *PSA v. Ecology*, PCHB Nos. 02-162 through 164, *(Industrial Stormwater General Permit, Order Granting Partial Summary Judgment, June 6, 2003)* at XVI. In reaching these decisions the Board has relied on at least one relevant decision in the municipal stormwater context. In review of the Phase II municipal stormwater rules, the Ninth Circuit Court of Appeals concluded that while it is laudable to involve regulated parties in the development of individualized stormwater pollution control programs, regulators are still required to ensure that, in every instance, the program is subject to meaningful review to ensure that the program reduces the discharge of pollutants to the maximum extent practicable. *Environmental Defense Center, Inc. v. U.S. E.P.A.*, 344 F.3d 832, 856 (9th Cir. 2003) In another context, the rules governing concentrated animal feeding operations (CAFOs), also to be implemented through a general permit, the Second Circuit Court of Appeals held that the failure of the rule to require regulatory oversight to ensure that each large CAFO, in fact, developed a nutrient management plan, was arbitrary and capricious. *Waterkeeper Alliance v. E.P.A.*, 399 F.3d 486 (2d. Circuit 2005).

23.

In its Phase I decision, this Board criticized the structural stormwater control program requirements of the Permit as impermissible self-regulation, stating that the "program is left entirely to the discretion of the municipalities, not only with respect to which projects they initially select, but also in the timing and manner in which they implement the selected projects." *Phase I, COL 29.* The Board concluded that the permit failed "to require a minimum level of effort for the permittees in the selection and prioritization of structural stormwater projects, and

provides no review and approval role for Ecology." *Id.* While neither the Permit, nor this Board, demanded a particular level of funding for the program, in order to ensure that MEP and AKART standards were met, the Board required a minimum level of effort in the selection and prioritization of the planned projects, a schedule for implementation, a role for Ecology in determining if the pollution reduction goals of the Phase I Permit were met by the efforts of a particular Phase I permittee and documented progress in meeting the goals of the program. These steps were necessary to ensure that the federal MEP standard was met by each municipality. *Phase I Decision.* Furthermore, in implementing structural stormwater controls, the Fact Sheet for the Phase I Permit directs Permittees to "set priorities and address the highest-ranked problems subject to the limitations of available resources." (emphasis added.) *Ex. J-15* at p. 35.

24.

The mitigation program of the Agreed Order suffers from the same problems the Board recognized in the Phase I decision related to the structural stormwater control condition of the that permit. The Clark County programs leaves it to Clark County to decide which mitigation projects will suffice to meet the demands of the Agreed Order, and complete discretion in deciding whether to move projects from the required structural retrofit program into the mitigation program. In implementing the structural control program, Permittees set priorities and address the highest-ranked problems subject to the limitations of available resources. There is no similar requirement for mitigation projects under the Agreed Order. The Agreed Order allows Clark County to provide highest priority to projects that provide the best cost/benefit ratio in

terms of cost per unit of land cover mitigated, within the entire group of projects deemed most suitable for mitigation. If Clark County develops a list of 50 proposed projects, nothing prevents Clark County from funding projects listed 45 through 50 in terms of suitability for mitigation because those projects are less expensive. Ecology plays no role in ensuring that mitigation projects actually achieve the goal of the Phase I flow control standard, and no role in ensuring that mitigation sites are selected in a reasoned manner, free of political or bad faith influences. There is no oversight to ensure that the County sustains an overall level of effort as between the structural retrofit program and the mitigation program.

25.

We disagree with the County and Ecology to the extent they argue that the flow control standard, as required by the Phase I permit, also requires no level of oversight by Ecology, and has not been found to suffer from the self-regulatory problems discussed above. By its terms, the Agreed Order sets out a "mitigation" or alternative program, untested and with significant questions as to whether or not the selected mitigation sites will actually offset the environmental harm allowed at the site of new development. In the context of another type of mitigation, wetland mitigation, Ecology has concluded that there is a need to closely monitor mitigation sites, as many fail to achieve the intended goals because of lack of understanding of ecosystem processes and watershed processes. *Ex. A-25.* Given these considerations, and the lack of criteria to guide how mitigation projects will be selected, there is no effective review to determine if the goals of the Phase I Permit are met, and progress in protection of streams against

the detrimental effects of increased urbanization accomplished. The Agreed Order fails as an impermissible self-regulatory program.

26.

Furthermore, the Agreed Order raises concerns whether historic impacts will ever be addressed in a meaningful way in Clark County. The Agreed Order negatively impacts two of the three prongs EPA stated as necessary to mitigate for historic urban and urbanizing stormwater impacts: enhanced gradual improvement of baseline conditions as redevelopment occurs, and enhanced investment in retrofit projects to reduce stormwater impact from developed land. *Ex. A-22.* In considering whether MEP has been met, the Board considers the programmatic nature of the Phase I Permit and how the SWMP provisions are intended to operate as an aggregate level of effort. The Agreed Order's failure to address historic impacts in a meaningful and sustained manner for multiple components that are key to the programmatic Phase I Permit requires the Board to remand the Agreed Order. The Board recognizes that municipalities should have some flexibility in meeting the terms of the permit, and that more flexibility should be provided in an urbanized setting because there are more constraints. Alternative mechanisms, however, must be based in science and have some assurances that beneficial uses will have at least the same level of protection as provided by the permit terms.

27.

In the Phase I decision, this Board held that the permit's reliance on a flow control standard as the primary method to control stormwater runoff from MS4s fails to reduce pollutants to the federal MEP standard, and without greater reliance on LID, does not represent

AKART under state law. The Board concluded that indisputable evidence lead to the conclusion that application of LID techniques, at the parcel and subdivision level, is a currently known and existing methodology that is reasonable both technologically and economically to control discharges entering into MS4s covered by the Phase I Permit. The Board held that the Phase I permit "must require greater application of LID techniques, where feasible, in combination with the flow control standard, to meet the AKART standard." *Phase I Decision*, at COL 16. Underlying the Board's legal conclusion were factual findings, referenced above, to the effect that LID was a well-defined concept, and that the basic BMPs that constitute LID well-defined. The Board noted that utilization of LID techniques may be useful, or even in some cases necessary, to meet the flow control standard on a particular site. *Phase I Decision* at FOFs 38, 42.

28.

As we have found, the LID requirements of the Phase I Permit are found in the section of the permit applicable to "Controlling Runoff from New Development, Redevelopment and Construction Sites," Section S5.C.5.—the same section that contains the flow control standard. That section of the Phase I Permit is the section that takes municipal permittees to a new standard for prevention and control of stormwater runoff from new development, redevelopment, or construction sites. Meeting the advanced flow control standard *and* implementing LID at the time of new development, redevelopment, or at construction sites are both necessary to meet the MEP and AKART standards. *See Phase I Decision*. The Agreed Order fails to meet the MEP and AKART standards, or establish an equivalent program for new development, redevelopment,

or construction sites because it fails to adequately address compliance with the LID provisions of Phase I Permit. First, the Agreed Order it is silent on the County's obligation to require implementation LID at the site of the new development, even if the Permit's flow control standard is not met at those sites, but at alternative mitigation sites. Second, while the Agreed Order speaks to LID in relation to the flow control mitigation projects that the County will undertake, it does so only in the most permissive terms. Thus, it fails to impose a requirement comparable or equivalent to the Phase I Permit when it comes to LID. We also note that to the extent the Agreed Order allows new development to meet a more relaxed flow control standard, it fails to place an incentive on development to use LID, and therefore fails to require AKART and MEP.

29.

Any finding of fact deemed to be a conclusion of law is hereby adopted as such.

ORDER

The Agreed Order is reversed and remanded to Ecology for further actions consistent with this opinion.

SO ORDERED this 5th day of January, 2011.

POLLUTION CONTROL HEARINGS BOARD

see concurrence and dissent
ANDREA MCNAMARA DOYLE, Presiding

WILLIAM H. LYNCH, Member

KATHLEEN D. MIX, Member

APPENDIX 2

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ROSEMERE NEIGHBORHOOD ASSOCIATION; COLUMBIA RIVERKEEPER; and NORTHWEST ENVIRONMENTAL DEFENSE CENTER, Appellants, v. WASHINGTON STATE DEPARTMENT OF ECOLOGY, and CLARK COUNTY, Respondents, BUILDING INDUSTRY ASSOCIATION OF CLARK COUNTY, Intervenor-Respondent.	**PCHB NO. 10-013** **CONCURRENCE AND DISSENT**

I write separately because, while agreeing with my colleagues on many aspects of the majority decision, I respectfully disagree with certain other of its fundamental conclusions. I concur with the majority to the extent it finds flaws with the Agreed Order in the following respects: the delayed effective date of Clark County's mitigation program relative to the Phase I Permit's deadline to begin implementing the more stringent flow control standard; inadequate protection in the Agreed Order against the shifting of existing projects and funding from the structural retrofit program into projects counted toward the County's mitigation obligation; and the failure of the Agreed Order to clearly require the County to comply with the Phase I Permit's Low Impact Development (LID) requirements imposed as a result of this Board's prior decision.

I depart from my colleagues where they conclude the Agreed Order is inadequate because it does not utilize basin planning or require additional site-specific analysis in the selection and evaluation of individual flow control projects. I further disagree with their conclusions that the acreage metric is inadequate to serve the intended purposes of the program and that Clark County's program gives inadequate attention to beneficial uses of receiving waters. Finally, I disagree that the Agreed Order's approach to selecting mitigation sites amounts to impermissible self regulation.

When evaluating the equivalency question at issue in this appeal, the majority has elected not to afford what I believe is proper deference to Ecology's technical expertise and professional judgments regarding the purpose and intent behind the default flow control requirement embodied in the Phase I Permit. In exercising its *de novo* review of an ambiguous permit condition, as this Board has previously found Condition S5.C.5.b to be, the agency charged with the administration and enforcement of that permit should be accorded great weight in determining the intent and meaning of the underlying permit condition. *Puget Soundkeeper Alliance et al. v. Ecology, et al.*, PCHB Nos. 07-021, 07-026 through 030, 07-037 (Phase I Municipal Stormwater Permit Order on Dispositive Motions, April 8, 2008) (where a permit condition is not specifically governed by statute or regulation, but instead represents an exercise of the agency's discretion based on professional judgment, the Board gives due deference to the specialized knowledge and expertise of Ecology, while acknowledging that such deference does not extend to action that is "manifestly unreasonable or exercised on untenable grounds" or that is "willful and unreasoning actions in disregard of facts and circumstances." citations omitted.)

See also, *Fulton v. Ecology*, PCHB No. 06-081 (2008) (giving deference to Ecology's interpretation of specific terms and meanings of an adjudicated water right certificate, citing *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568, 593, 90 P.3d 659 (2004)). This is particularly true where the questions involve complex scientific issues and areas within Ecology's specialized knowledge and expertise. *Puget Soundkeeper Alliance, et al. v. Ecology, & City of Seattle, et al,* PCHB Nos. 07-021, -026 through -030, & -037 (2008) *("Phase I Decision")*, at 51; *Hubbard v. Ecology*, PCHB Nos. 93-73 & 93-103 (1995) (The Board, in its *de novo* review, gives due deference to Ecology's specialized knowledge and expertise regarding hydrology).

The Phase I Permit and Default Flow Control Standard

The Board has previously found that, unlike traditional NPDES permits, the Phase I Permit is a "programmatic permit," meaning it requires municipal permittees to implement area-wide stormwater management programs rather than establishing benchmarks or other numeric or narrative effluent limits for stormwater discharges from individual outfalls. *Phase I Decision* at FOF 6. The Board further found that the programmatic approach provides the flexibility to address water quality issues within the context of a general permit and accounts for the numerous differing conditions faced by the many different Phase I permittees. *Puget Soundkeeper Alliance, et al. v. Ecology, & City of Seattle, et al.*, PCHB Nos. 07-021, -026 through -030, & -037 (Phase I) and PCHB Nos. 07-022, -023 (Phase II) (2008) (*"Condition S4 Decision")* at FOF 5. Ultimately, the Board concluded that Ecology's Phase I Permit, as a programmatic permit with multiple elements to be implemented throughout the permit cycle, collectively represented

the MEP and AKART standards. Despite finding and addressing particular deficiencies in certain aspects of the permit, the Board affirmed Ecology's programmatic approach, recognizing that it was all of the stormwater management program elements, in the aggregate, that represent MEP and AKART, even though it might be possible for a permittee to do more in a specific program element or at a specific outfall if the individual permit requirements were evaluated in isolation from the rest of the program requirements.

In developing the Phase I Permit, including the flow control requirements in Condition S5.C.5.b.ii, Ecology recognized that these efforts alone could not prevent all stormwater impacts or preserve natural resources and their associated beneficial uses. *Ex. J-15* at 31-32. This is due, in part, to the fact that the flow control standard is a blunt instrument designed to mitigate for only the worst of the high flows, not to solve all the stream hydrology, habitat, or other biological problems in a watershed. *O'Brien Testimony.*

In the Phase I Permit decision, the Board found that Ecology's Stormwater Management Manual (SWMM) itself recognizes the shortcomings of even the newer, more stringent flow control standards, wherein it states:

> [These techniques, of engineered stormwater conveyance, treatment and detention] can reduce the impacts of development to water quality and hydrology. But they cannot replicate the natural hydrologic functions of the natural watershed that existed before development, nor can they remove sufficient pollutants to replicate the water quality of pre-development conditions.

The Board further found that the primary focus of detention standards is on mitigating the worst impacts of large storm events, which occur only a small percentage of the time (1%), and

that they provide only residual control to runoff the remainder of the time. *Phase I Merits Decision* at FOF 39.

Despite its limitations, the default flow control standard in the Phase I Permit encompasses multiple distinct components within the one standard: first and foremost, the transition from the previous "peak flow" to a "flow duration" approach; second, the thresholds that trigger the flow control requirement in the first instance; third, the application of flow control to address runoff caused by new and redevelopment relative to existing land cover conditions; and finally, the application of flow control to address runoff attributable to existing land cover conditions relative to historic land cover conditions. *O'Brien Testimony.*

During the Phase I Permit development process, Ecology considered a publicly funded approach to mitigating for this last component (historic impacts) as an alternative to requiring municipalities to impose the obligation only on those developers applying for new or redevelopment projects. *Schrieve Testimony, O'Brien Testimony.* Ecology considered this to be a reasonable approach as a matter of public policy since the harms being addressed were caused by historic development patterns and practices rather than the actions of the current developers.[1]

In previous decisions related to the Phase I and Phase II Permits, the Board has analyzed various aspects of the default flow control standard, including the permits' requirement to

[1] In Clark County, for example, much of the currently developed and developing areas were deforested and put into agriculture by the late 1800's and early 1900's, which is much earlier than many other areas in Puget Sound. More recently, large areas within unincorporated Clark County converted from agricultural or pasture land cover to more urban development during the 1980's and 1990's. This was during a time period when the detention systems were designed to earlier standards that have been shown to be ineffective in controlling streambank erosion due to the increased duration of peak discharges. *Kraft Testimony.* As a result, the increase in erosive flows from existing land cover conditions relative to historic land cover conditions in Clark County occurred in many, if not most, cases ten to one hundred years ago. *Beyerlein Testimony.*

mitigate for pre-existing impacts that are not a direct result of the proposed new or redevelopment project. The Board rejected summary judgment claims that such a requirement was unlawful or unreasonable as a matter of law for several reasons. Notable in this context was the reasoning that the permits "' authorize' local governments to require developers to construct the necessary stormwater controls to meet the flow control requirements but do not 'require' local governments to impose such requirements. Local governments have options and choices to meet the permit's flow control requirements." *Puget Soundkeeper Alliance, et al, v. Ecology, & Washington Department of Transportation*, PCHB Nos. 07-022, -023, Order on Summary Judgment (Phase II Municipal Stormwater Permit), September 28, 2008 ("*Phase II SJ Order*") at 10.

The Western Washington Stormwater Management Manual contemplates that treatment and flow control requirements may be achieved through the construction of regional facilities. *Ex. J-19* at 2-11 through 2-13. Regarding the flow control standard, the Board also found that municipal permittees have "considerable flexibility as to how they will regulate the development or use of private property in order to comply with the federally required MEP and state-driven AKART standards for controlling the discharge of pollutants to the waters of the state." *Phase II SJ Order* at 11. The Board accepted Ecology's arguments that this flexibility included, for example, that municipalities may choose to construct necessary regional stormwater control facilities and allow developers to use those facilities to ensure discharges meet the flow control requirements. *Phase II SJ Order* at 9.

Within this larger context, which is embodied in the programmatic nature of the permits and which will involve tens of billions of dollars in various types of stormwater control investments over many years, Ecology has determined that the specific location of the "historic land conversion mitigation" is not the critical issue associated with the Phase I Permit's flow control requirements. *O'Brien Testimony.* Ecology was applying this fundamental assumption when it later determined that the relative benefits of Clark County's approach to implementing flow control are sufficiently comparable to the Phase I Permit in moving toward the overall goal of municipal stormwater control, particularly the landscape-scale goal of restoring from "existing" conditions to the more natural flows associated with "historic, pre-developed" conditions.

The Agreed Order

In the Agreed Order, Ecology identified the purpose of Condition S5.C.5.b.ii as being "to reduce negative impacts on water quality, fish, other aquatic life, and streams caused by increased runoff from new development and redevelopment and to reduce impacts from existing development." *Ex. J-1.* For the reasons stated above, Ecology never expected this permit condition, or the Agreed Order, to restore aquatic habitat or eliminate all harm from erosion at the specific development location. The goal was to make progress toward lessening the negative impacts of high flows. *O'Brien Testimony.* Because Ecology views a publicly funded approach to addressing stormwater impacts caused by historic land conversion activities as an equivalent way of achieving the same goals as the default flow control standard, it did not view Clark County's program as either a "pilot project" or an "exception/variance" from the standard, but

rather as an alternative means of achieving the same ends. *Schrieve Testimony, O'Brien Testimony.*

Appellants have identified nothing in the Phase I Permit, or the Clean Water Act, that requires this final "improvement" or "restoration" aspect of the flow control standard to be achieved at the same location as where the new or redevelopment is occurring. Clark County's flow control program meets the Permit's objectives because developers will be required to match post-development flows with pre-development flows at the development site. Where existing land cover at a site is the same as historic land cover, there is no absolutely difference between Clark County's flow control program and the flow control requirement in the Phase I Permit. Where the existing land cover is not the same as historic land cover, the developer will be required to match post-development flows with pre-development flows at the site, and Clark County will be required to implement additional flow control projects sufficient to control the difference between post-development flows and historic flows. These projects need not be located at the development site but must be located within the same Water Resource Inventory Area (WRIA). *Ex. J-1,* Attachment A, at p. 8.

Under either of these scenarios, the exact same thresholds apply in determining which

projects trigger flow control requirements,[2] and the exact same flow duration standard applies in determining how much flow control must be provided.[3] In this regard, Clark County has not altered the default flow control standard in the Phase I Permit. What Clark County has done is elected to implement the same standard in a manner that is different from how other Phase I Permittees have chosen to implement it, in order to achieve the same goals.

Clark County's flow control program requires all project-related stormwater impacts to be addressed on-site, thus accomplishing the flow control standard's site-level objectives. Additionally, legacy stormwater impacts related to historic land conversions (but unrelated to a particular new or redevelopment project) are addressed at a WRIA level, thus accomplishing the flow control standard's landscape-level objectives. In the end, project-related impacts are addressed in Clark County the same way as in other Phase I jurisdictions, and the same amount of developed land area within a WRIA will be provided with flow control to the historic conditions as would occur under the default approach to flow control contained in the Phase I Permit.

---

[2] Under both scenarios, flow control facilities are required for projects in which the total of effective impervious surfaces is 10,000 square feet or more in a threshold discharge area; projects that convert ¾ acres or more of native vegetation to lawn or landscape, or convert 2.5 acres or more of native vegetation to pasture in a threshold discharge area, and from which there is a surface discharge in a natural or man-made conveyance system from the site; and projects that through a combination of effective impervious surfaces and converted pervious surfaces case a 0.1 cubic feet per second increase in the 100-year flow frequency from a threshold discharge area as estimated using the Western Washington Hydrology Model or other approved model.

[3] Discharges must match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year flow.

Clark County has not proposed to change the flow control standard. It is still obligated to control flows to same standard as the Phase I Permit requires. The County's program is not implementing the standard in ways that were not previously contemplated by Ecology during the development and adoption of the flow control standard in the SWMM and the Phase I Permit. As a result, I am persuaded that Clark County's approach accomplishes Ecology's identified objectives for the flow control standard: ensuring that new or redevelopment does not make matters worse, and restoring flows to more natural conditions.

The majority holds Clark County's program to higher standard than the Phase I Permit's flow control standard itself. The Phase I Permit's default flow control standard requires no analysis of existing beneficial uses or conditions at the location of the development; no statement of expected outcomes of the flow control facilities employed at the development site; and no monitoring of the flow control facilities implemented to meet the permit requirement.[4]

To the extent the Appellants, their experts, and the majority are demanding more from Clark County's program, their concerns can be traced back to the limitations of the default flow control standard itself. This was apparent in the testimony of Dr. Booth, who in the previous appeal of the Phase I Permit specifically criticized the new flow control standard for its inability to meet the ultimate goals of protecting water quality, beneficial uses, and the streams and rivers of western Washington. *Ex. R-94 (Booth Pre-Filed Direct Testimony in Phase I appeal*: "The flow duration standard, which is the chief performance standard of the Permit related to

[4] Interestingly though, part of Clark County's rationale for the alternative approach in the Agreed Order was its experience with the better success rate of public mitigation projects versus private mitigation projects. In Clark County, public sector projects tend to have better long-term success than private ones because of the typically better design, construction, and maintenance. *Gray Testimony.*

hydrology, does not sufficiently replicate natural hydrology and allows significant damage to the physical, chemical and biological health of rivers and streams.")

This was also true of Mr. Rhodes' testimony, who conceded that in urbanized areas such as much of Clark County, it is too late to avoid impacts from existing land cover conditions. As such, even the default flow control standard in the Phase I Permit will not prevent harm to fish or result in marked improvements in fish conditions within Clark County. Mr. Rhodes also acknowledged that requiring new or redevelopment projects to control stormwater relative to existing conditions will prevent any new or additional degradation attributable to the new or redevelopment. *Rhodes Testimony.*

The inherent limitations of the flow control standard were also highlighted in the conclusions and recommendations of the Independent Science Panel after its review of the flow control standard contained in the Stormwater Management Manual for Western Washington. The panel wrote:

> We identified areas for improvement, especially where stormwater issues intersect with other mandates for beneficial uses of water and streams. For example: The project area approach [to flow control] presented in the manual is a necessary first step in dealing with potential downstream channel stability and water quality problems at the source. Ultimately, however, a larger watershed-scale perspective is also needed to assure that desired goals are met in concert with all of the other land uses and downstream water issues, including salmon. *Ex. R-77.*

In short, it is a verity that the salmonid populations in the Lower Columbia basin will continue to be in great peril whether or not *any* new or redevelopment takes place in Clark County under *any* regulatory scheme. And they will continue to be in great peril under either the Phase I Permit's or the Agreed Order's approach to flow control. Neither regulates the

considerable amount of stormwater discharges that enter directly into receiving waters without flowing through Clark County's municipal storm sewer system (MS4). Neither directly regulates stormwater runoff from new or redevelopment projects that are below the thresholds in the Phase I Permit, even if they discharge through the County's MS4 system (although other parts of the Phase I Permit address these discharges). Neither addresses the myriad other contributing factors that also bear on the ultimate survival and recovery of Lower Columbia salmonids. Both the Phase I Permit and the Agreed Order will allow conditions to continue that can scour redds within stream channels, cause severe siltation of redds, increase temperature that stresses and kills fish and their offspring, elevate sediment supply and suspended sediment, degrade natal habitat by changing stream channels, and deplete the food web upon which salmonids depend.

However, granting even minimal deference to Ecology's expertise in this area, I would hold that the Agreed Order's approach to separately addressing project-related impacts versus non-project, historic watershed impacts provides, on a programmatic basis, equal or similar protection to receiving waters as the Phase I Permit does. The Agreed Order reflects a reasonable exercise of Ecology's discretion, and there is no legal or factual basis upon which to conclude this approach is invalid. Accordingly, I respectfully dissent from those portions of the majority that substitute Ecology's technical determinations and professional judgments regarding the intent and goals of the flow control standard with the opinions of experts who, while certainly well qualified in their fields, offer limited value in determining the goals and intent of

the Phase I Permit's flow control requirement within the context of municipal stormwater management programs.

The Acreage Metric

Like its concern about the lack of basin planning, the majority's criticism of the acreage metric for tracking the County's mitigation obligation again reflects primarily a concern with the limitations of the flow control standard itself.

In developing the Agreed Order, Ecology considered an approach similar to that advanced by Appellants, where the County would be required to "match" a development site and the mitigation site based on multiple factors such as soil conditions and slope, in addition to acreage of certain types of land cover. Ecology rejected such an approach based on a technical assessment of its usefulness, the economic burden it would place on developers and the County, and the complexity of such a regime. Ecology ultimately concluded that it would be too complex an undertaking for the limited additional potential benefits. *O'Brien Testimony.*

Douglas Beyerlein, the engineer and hydrologist who developed the Western Washington Hydrology Manual for Ecology, testified that the metric by which Clark County's mitigation obligation and mitigation credits are measured under the Agreed Order is scientifically and technically sound.[5] This is because the single most significant factor in determining the impacts

[5]Douglas Beyerlein is a registered professional engineer and a certified professional hydroglogist who led the contracting team that developed the Western Washington Hydrology Model (WWHM) for Ecology to accurately measure land development impacts and size stormwater facilities. More recently, he created a calibrated version of the Ecology WWHM for stormwater facility design in Clark County that Ecology has approved for use. The WWMM models hydrology that is site-specific in terms of calculating the amount of runoff generated by a particular property, but it does not dictate where or how that runoff must be controlled. *Beyerlein Pre-Filed Testimony* at Attachment 1.

caused by historic development patterns is the nature of the historic land cover in relation to existing land cover conditions. Land cover is also the single most important factor in controlling erosive flows at both development project sites and at flow control mitigation project sites. While it is true that both soil type and slope bear some relationship to the nature and extent of stormwater impacts experienced at a particular location, they are not a significant factor in quantifying the overall impact caused by historic land conversion activities on a broader scale. *Beyerlein Pre-Filed Testimony* at Attachment 4.

Mr. Beyerlein's opinion is supported by the following information, which was not disputed by Appellants. Soil groups can be divided into two major categories: well draining soils where full infiltration of stormwater runoff is usually required and poor draining soils where surface discharges must be managed based on matching flow durations. *Beyerlein Testimony.* Most of Clark County contains soils that either do not infiltrate or where infiltration is very slow. *Golemo Testimony.* For purposes of Clark County's calibrated WWHM, which is used to calculate the quantity of stormwater runoff from a particular site, all poor draining soils are modeled with the same soil characteristics and runoff producing potential, which means it would make little if any difference to analyze the soil type of sites subject to the provisions of the Agreed Order. *Beyerlein Testimony.* For this reason, Ecology determined that while it would be possible to add soil condition as another metric for calculating and tracking Clark County's mitigation obligations, it would make the program more difficult to administer without providing any meaningful amount of additional environmental benefit. *O'Brien Testimony.*

Land slope, or topography, also influences the amount and timing of stormwater runoff, where steeper slopes produce more runoff faster than flatters slopes. Generally speaking, steeper slopes have less area available for flow control facilities than flatter slope areas. WWHM simulations have confirmed that, for poor-draining soils, steep slope sites can use smaller stormwater flow control mitigation facilities than flat slope sites, and can release more stormwater from the pond before erosive flows occur. This is because a steep slope site has higher pre-development peak flows than a flat slope site. Mr. Beyerlein assumes that, while private development projects will likely be built on a range of land slopes from flat to steep, the County will likely prefer to select its flow control mitigation projects on sites with relatively flatter areas, where the largest amount of stormwater storage is available. This flatter slope preference for flow control mitigation projects will result in more storage availability than the on-site flow control storage on moderate or steep slope sites. The result is that the County will end up with at least equal, if not greater, stormwater flow control storage under the Agreed Order's approach to mitigation than it would if the County had to try and match mitigation sites based on finding a mitigation site with a slope similar to the original private development site. *Beyerlein Pre-Filed Testimony* at Attachment 4, pp. 7-8.

The end result of using WWHM's flow duration matching methodology is that all stormwater flow control mitigation facilities designed using WWHM over-mitigate for erosive flows. This means that, under the Agreed Order, where the new or redevelopment site is not allowed to increase the occurrence of erosive flows above existing site runoff levels, the on-site

stormwater flow control facilities sized using WWHM will actually decrease erosive flows relative to existing land cover conditions. *Beyerlein Pre-Filed Testimony* at Attachment 4.

Self Regulation

Appellants' challenge, and the majority opinion, appears to be based largely on mistrust of the County's intentions or abilities to remain vigilant in meeting its on-going permit obligations. While this suspicion may not be entirely misplaced, given some of the unfortunate statements made by individual County representatives (*Ex. R-1*), I do not find it a compelling basis for invalidating the Agreed Order. To the extent this mistrust underlies the majority's "self regulation" analysis, I do not agree that the facts support a conclusion that the Agreed Order results in impermissible self regulation.

Appellants are concerned that nothing in the Agreed Order prevents harm from occurring in the most ecologically valuable subwatersheds in exchange for cheaper/easier mitigation that is located in the least ecologically important areas. The possibility of this happening, they suggest, equates to an impermissible self regulatory scheme. What this argument overlooks, however, is that nothing in the Agreed Order prevents Clark County from maximizing mitigation benefits in the most ecologically valuable subwatersheds, even when the new or redevelopment is occurring in the least ecologically important areas (*i.e.*, infill in the most degraded, highly developed, far downstream areas, etc). In fact, this is a primary advantage of this alternative approach—it allows for targeted improvements to the landscape-level impacts caused by historic land conversions rather than being limited to the more "random" site locations associated with new or redevelopment projects. It allows the County to combine and leverage its flow control projects,

and place them higher or lower in a stream or watershed, where greater environmental benefits can be achieved than if all the permit's required flow control were implemented at the site of the new or redevelopment. *Gray Testimony; Wierenga Testimony; Kraft Testimony; O'Brien Testimony.*

The Appellants' criticism of the Agreed Order also undervalues both the County's Stormwater Needs Assessment Program (SNAP) and its Stormwater Capital Improvement Project (SCIP) prioritization and selection process. Contrary to the assumption suggested by the majority that Clark County will select only the cheapest options for mitigation, without regard for beneficial uses or the environmental consequences of its choices, the Agreed Order requires the county to place mitigation according to selection criteria and the information developed through its SNAP. *Ex. J-1* at 8. The Agreed Order recognizes that past and current work by SNAP includes: "hydrologic and hydraulic modeling of streams within urban growth area watersheds, assessing stream geomorphology and describing riparian conditions." *Id.; See Exs. R-27; R-40 through R-71.* The goals of the SNAP assessments, in turn, are to:

> • Analyze and recommend the best and most cost effective mix of improvement actions *to protect existing beneficial uses*, and *to improve or allow for the improvement of lost or impaired beneficial uses* consistent with NPDES objectives and improvement goals identified by the state GMA, ESA recovery plan implementation, TMDLs, WRIA planning, flood plain management, and other local or regional planning efforts. *Ex. R-27*, at 1-3m (emphasis added).

While these assessment reports do not purport to be basin plans, they are focused on beneficial uses of the receiving waters, and the information contained within them will provide the basis for selecting the most suitable areas for flow control mitigation projects. The Agreed Order directs that "Specific mitigation sites will be determined by priorities for flow control mitigation

established under a project selection process that considers existing information describing channel conditions, channel hydrology and subwatershed hydrology." *Ex. J-1* at 8. It is from this universe of suitable and targeted projects that the cost/benefit ratios, in terms of cost per unit of land cover mitigated, may be considered in prioritizing projects. *Id.*

The County will do this by utilizing its SCIP prioritization and selection process, which will then be incorporated into the County's Stormwater Management Plan (SWMP). *Ex. A-72, Wierenga Testimony.* This SCIP process contains a detailed list of criteria, in addition to the potential amount of flow control, relating to such things as hydrological need, water quality, fish importance, and habitat enhancement, and will provide the weighting to be given to each, in objectively evaluating potential projects. *Id.* While the Board of County Commissioners (BOCC) provides overall budget authority for the County's stormwater program, and approves individual contracts, the BOCC does not make the selection of the projects in the SWMP. *Id.* No evidence was provided that the County's use of these processes will allow it to ignore these other considerations; rather the testimony was that this process, unlike the default in the Phase I Permit, allows the County to consider these other benefits in selecting where to locate the flow control relative to a development or redevelopment project that triggers the flow control requirement.

Taking these processes together with the Agreed Order's required annual reporting requirements to Ecology (*Ex. J-1* at Attachment A, p. 10), I would conclude that both Ecology and the public will have the information necessary to review Clark County's implementation of the Agreed Order's mitigation program and determine compliance with its requirements.

In sum, I concur with the majority that the Agreed Order is flawed with respect to its effective date, and its inability to ensure an adequate maintenance of efforts and compliance with the Phase I Permit's LID requirements. I also dissent, however, and would sustain Ecology's decision to approve the Agreed Order's fundamental approach to implementing flow control mitigation for impacts associated with historic land conversions. I do not find the approach manifestly unreasonable and cannot conclude that Ecology approved it in willful or unreasoning disregard for the facts and circumstances attendant to this case.

DATED this 5th day of January, 2011.

POLLUTION CONTROL HEARINGS BOARD
ANDREA MCNAMARA DOYLE, Presiding

Washington. The flow duration standard, which is the chief performance standard of the Permit related to hydrology, does not sufficiently replicate natural hydrology and allows significant damage to the physical, chemical and biological health of rivers and streams. It is my opinion that there are alternative stormwater management approaches that are known and available that are much more effective at protecting streams and water quality. In other words, there are more protective performance standards than the flow duration standard, and they are achievable using known and available alternative approaches to managing stormwater. These alternative approaches—which seek to mimic natural hydrology and minimize generation of surface runoff rather than storing or treating it in engineered facilities—fall under the broad rubric of "low impact development" ("LID"). In contrast to the flow duration standard and other Manual prescriptions, LID offers the possibility of allowing additional new development and redevelopment without additional degradation of water quality and resources. Using the principles and approaches of LID is, in my opinion, absolutely necessary if the goals of protecting Puget Sound's rivers and streams are to be satisfied at the same time as we accommodate additional growth in the years ahead.

22. LID encompasses a dispersed suite of site-appropriate BMPs that collectively store, infiltrate, detain, and evaporate stormwater at or very near where it falls, rather than collect and convey it to surface waters offsite. At the site scale, LID BMPs include techniques like maintaining a substantial portion of a site in natural vegetation; design features to reduce impervious surfaces; protection of natural drainage features; use of vegetated swales to capture and retain runoff; green roofs; storage and reuse of runoff; and permeable pavements. At a watershed or landscape scale, LID BMPs can include watershed-wide limits on imperviousness and protection of sensitive areas like riparian zones, wetlands and steep slopes. Both approaches

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

are necessary if the goal is protection of streams and their uses: while site-level LID BMPs can be highly effective at reducing stormwater runoff from a site, land use-level protections are also important to ensure that the overall watershed receives adequate protection, and that critical or particularly responsive areas of a watershed (or, conversely, areas where LID is likely to be less effective) can be recognized and managed appropriately. Unlike traditional stormwater management, this perspective recognizes that not all patches of land are identical, and that no one BMP is appropriate for every site or project.

23. While attention must always be paid to a site's soil profile, it is incorrect that LID techniques cannot work on the till soils that are common in western Washington. To say so reflects a fundamental misunderstanding of the way LID works. While till soils tend to infiltrate more slowly than soils developed on a sandy substrate, and unweathered till even more so, this just means that stormwater BMPs must be chosen appropriately for a particular site. It also means that stormwater management begins before the site is cleared, not just after the landscape has been fully denuded of all vegetation and topsoil. The natural hydrologic profile pre-development discussed above is true of both till- and outwash-derived topsoils: if the presence of till soils does not prevent the natural processes of infiltration, soil storage and evapotranspiration on an undeveloped site (which was once the case over most of undeveloped western Washington), it should not prevent it at a properly designed LID site. First, by retaining evapotranspiration capacity and soil storage (largely by retaining a high level of native vegetation and the original topsoil), much of the stormwater that falls on a site does not need to infiltrate deeply to groundwater at all. Second, as alluded to above, soils are very heterogeneous: many LID projects built on what was thought to be till turn out to infiltrate very fast because there are cracks in the till or other areas of higher permeability; alternatively, only part of a site

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

may have low permeability and water can be directed to areas of greater permeability. Third, till soils are adequately deep and permeable in their undisturbed condition, as the lack of surface runoff from mature forested hillslopes amply demonstrates. Where damage to this stormwater management "facility" (i.e., the topsoil) has already been permitted to occur, examples exist throughout the region where regraded till has been amended with compost and replaced to form a highly infiltrative layer with a large volume of storage. Finally, a LID approach does not preclude use of engineered backup facilities to accommodate any remaining runoff from large storm events that might exceed the natural water management capacity of a site. Such backup facilities are appropriate to consider for any stormwater management design, not just LID. In summary, the complaint that "LID doesn't work on till" reflects a poor understanding of both LID and soils. If developers simply try to paste LID techniques onto traditional development—having stripped a site of vegetation and topsoil down to the unweathered till layer—then it *is* very likely to fail. In my opinion, and based on multiple observations, till soils do not preclude use of LID—but they do require its intelligent application.

24. LID techniques are commonly used in western Washington and around the nation. They have repeatedly demonstrated that they are capable of significant reduction in total runoff, including in many cases elimination of runoff that would otherwise be significant. I have contributed one such study to the published literature, where I and graduate student colleagues compared the relative performance of traditional asphalt paving to parking lot stalls using pervious pavers of various designs that infiltrated runoff. PSA-105, 106. We measured significant runoff from the traditional design, while the LID alternatives all produced essentially no runoff over two separate winters of testing, five years apart. In the best-documented case of which I am aware, that of SEA Street in a developed area of Seattle, LID design achieved

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

essentially zero runoff to surface streams. Even where zero discharge cannot be achieved, LID techniques can be used to more closely mimic predevelopment hydrology than engineered techniques by retaining evapotranspiration capacity, detaining stormwater in soil, and increasing groundwater recharge. It is my opinion that LID approaches can more closely match predevelopment hydrology and hence hold a far higher likelihood of protecting rivers and streams and their uses than the standards authorized and emphasized in the 2005 Manual.

25. In my view, LID has been studied well enough to require much broader application in western Washington. Today, we have at least as much experience, and a much higher level of confidence in the performance of, these measures than we did when we began requiring the use of detention ponds. Moreover, we certainly know that primary reliance on the flow duration standard/detention pond approach will not protect beneficial uses. While some have claimed LID is inadequately studied, it is worth noting that the engineered approaches authorized under the manual are very well studied, and that study shows them to be quite *in*effective at meeting their intended goal of protecting water quality and beneficial uses. Under these circumstances, there is little case to be made that they should remain the preferred approach, and a very strong case that they should be replaced to the greatest extent possible.

26. LID as a stormwater management concept was developed in the late 1980s, and today we have countless projects using LID techniques in western Washington and around the nation. This is not an "experimental" approach. Several of these have been well studied, sufficient to show that LID is a more effective set of techniques for managing stormwater and protecting water quality than the engineered approaches authorized under the Manual. Certainly, enough is now known about LID to require much broader use of it. To the concern that introducing a large volume of water into the ground through the application of LID might

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

produce slope instability or other unnamed woes, I note only that our landscape has been receiving this water as rain for, literally, millennia. Much of the landscape has handled this well; in some places even in an undeveloped state, it caused problems. We will still need to respect these natural features of the landscape. It is only in the last few decades that we began to think of surface runoff as the norm, but our thinking it does not make it so. To protect our landscape, we need to appreciate, employ, and mimic its native capacities. Our natural waterbodies, and the biota that live there, have suffered for our shortsightedness in failing to do this.

27. Finally, the accusation that LID is insufficiently well studied represents in my view a misunderstanding of how it works. For example, one of the core principles of LID is to leave as much native vegetation in place as possible. An undeveloped site has enormous capacity to store, detain, evapotranspirate and infiltrate stormwater. We know that removing soil and vegetation reduces the capacity of the site to perform these functions, and that not doing so protects that capacity. This is not a question that needs a lot of study. As a scientist I will always support the value of "more study," but I believe that LID techniques are already well understood today and that we should now begin implementing them in a serious way in western Washington. Further delay for the purpose of additional study is not warranted. This view is reflected in a memo that I signed, along with Department of Ecology policy lead Bill Moore and several other stormwater experts. PSA-12. If the same standard for certainty now advocated by some for LID had been applied to the flow duration/detention facility approach when it first was considered for adoption in a stormwater permit, we would still be studying that model, too. It was adopted for the same reasons I am presently advocating a next step forward—the prior standard clearly did not work and the proposed replacement was a demonstrable improvement. Moving to a flow-duration standard required that the stormwater design community learn an

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

entirely new approach—that of continuous flow modeling—but that proved to be no serious impediment, either. If we apply the same standard of abandoning a failed approach and embracing a new and sufficiently developed alternative, now, to our current and proposed stormwater management approaches, the requirement for LID wins hands down, since (a) we now know that the engineered approaches are demonstrably not effective and (b) we know LID properly applied is significantly more effective. In my opinion, opponents of LID advocate a higher standard than has ever been imposed on any prior stormwater BMP, and certainly a higher standard than was ever imposed on the performance of detention ponds. In fact, too little is known about the long-term effectiveness of many engineered BMPs that are recommended in the Manual and I believe there is little information on the real-world effectiveness of these BMPs. I believe it entirely unlikely that Ecology had this kind of comprehensive data on the flow duration standard when it first adopted that standard.

28. By seeking to protect natural hydrologic function, LID BMPs are likely to offer benefits on virtually any potential site or project, even where conditions are unusually challenging. LID is not an "all or nothing" approach but a set of tools that can be applied in different combinations in a site or watershed appropriate context to more closely mimic pre-development hydrology. I cannot think of a situation in which application of LID techniques would not offer some hydrologic benefits over a purely engineered approach designed to meet the flow duration standard. Even in places where steep slopes or high groundwater would make close replication of predevelopment hydrology difficult for some projects, at least some LID techniques certainly would be available for use on such a site that would reduce impacts. For example, retaining 65% of native vegetation is workable on such sites, as would efforts to increase on-site detention. Moreover, the argument that LID has to be fully effective for every

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

possible site or project in order to be required is arbitrary: no stormwater BMP is appropriate for every site or project. It may be the case that "backup" engineering designs need to be in place in some places to avoid flooding by addressing very high flow events that might exceed the capacity of LID designs on some sites, but that is a problem to address in any site design.

29. While it is true that there is no consensus "performance standard" for utilizing LID, I am unable to determine why the lack of such a performance standard is relevant. There is no "consensus" performance standard for engineered detention ponds, or for that matter, any other stormwater BMP. I am quite familiar with the development of the flow duration standard, being one of the central members of the King County team that created it, and I am well aware of both its advantages over the prior standard and its limitations. It is not in common use elsewhere. Other jurisdictions use different performance standards (such as the simple peak flow-based approach discussed above). In my opinion, the lack of a universally agreed performance standard is not a reason to avoid requiring the use of LID techniques, especially where these techniques are quite well studied and understood and there is actually a high degree of consensus around how to design and implement various LID BMPs.

30. Although LID techniques are well known and understood, the 2005 Manual does not require them. The hydrologic performance standard of the Manual is the flow duration standard described above and LID measures, where they are employed on an optional basis, simply provide a limited offset against constructed facilities under the flow duration standard. Nothing in the Manual or Permit prevents a developer from turning a native vegetated site, or even an entire watershed, into 100% impervious surface. It is not in my opinion possible to mitigate the adverse impacts to water quality of such a transformation through any known or available engineering technique.

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

31. I am not aware of any concerns about implementing LID at a programmatic level outside of those addressed above. If LID is implemented programmatically with a reasonable level of care, it should provide abundant benefits to jurisdictions and watersheds. Like any stormwater BMP, if implemented carelessly, system failures could result in unexpected consequences. I do not believe that LID presents any greater risk of flooding than any other stormwater management technique: there is a risk of flooding from any poorly implemented BMP, whether engineered approaches or LID. It betrays a fundamental misunderstanding of LID to equate LID only with "infiltration" or infiltration ponds. As noted above, "infiltration" is generally considered an engineering BMP under which stormwater is collected in a centralized pond or other structure and allowed to slowly penetrate to groundwater. LID is not simply "infiltration" but rather an effort to preserve natural hydrology to the maximum extent possible for any given site, including evapotranspiration, soil storage, infiltration to groundwater, and subsurface flows.

32. While I am not an economist, I am familiar with some of the literature demonstrating that LID is cheaper than, or comparable to, engineered BMPs when considering not only initial installation cost but also avoided stormwater facility cost. On the other side of the same coin, many studies show that the historic failures to adequately manage stormwater—reduced drinking water quality, loss of fish habitat, closure of shellfish growing areas, and reduced recreational opportunities—are enormously costly, even in Puget Sound. In 2006, I undertook one such study evaluating the costs of stormwater runoff in Puget Sound. PSA-87. The study concluded that the economically quantifiable costs of stormwater in the Puget Sound region were on the order of $100 per person per year across the region as a whole. We also concluded that the non-quantifiable costs, in terms of lost resources and reduced quality of life,

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

were also substantial. Because the flow duration standard inadequately protects beneficial uses and stream health, continued reliance on such a standard will continue to impose these costs and harm these economic values.

33. In summary, it is my professional opinion that the Permit, which adopts a performance standard (the flow duration standard) embodied in the 2005 Manual, does not protect rivers and streams, beneficial uses, or aquatic life. Continued reliance on such a standard for new development in western Washington will not prevent serious and significant additional degradation to these resources. Continued reliance on such a standard for redevelopment presents a lost opportunity to begin restoring rivers and streams that are currently highly degraded by stormwater runoff. This is not a point that I believe is in any serious dispute. Moreover, it is my professional opinion that a more protective performance standard that more closely matches natural hydrology is readily achievable without sacrificing opportunities for future development. Achieving a more protective standard would rely on site- and basin-level LID BMPs that are in my opinion, sufficiently well known, understood, available and economically and technologically feasible that they can be implemented throughout western Washington. This is true even if the specific combination of BMPs necessary to meet these standards may vary site by site, and even if engineered BMPs like detention/retention ponds may sometimes be necessary to some degree.

34. All of the documents cited above were either authored, in whole or part, by me or are the kind of documents on which I, as a reasonably prudent stormwater scientist and academic, typically rely on to conduct my affairs. I can attest that they are scientifically rigorous and reliable.

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed this 19 day of March, 2008.

DEREK BOOTH, Ph.D.

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 (FAX)

APPENDIX 3

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ROSEMERE NEIGHBORHOOD ASSOCIATION; COLUMBIA RIVERKEEPER; and NORTHWEST ENVIRONMENTAL DEFENSE CENTER, Appellants, v. WASHINGTON STATE DEPARTMENT OF ECOLOGY, and CLARK COUNTY, Respondents, BUILDING INDUSTRY ASSOCIATION OF CLARK COUNTY, Intervenor-Respondent.	**PCHB NO. 10-013** **ORDER DENYING SUMMARY JUDGMENT**

This matter comes before the Pollution Control Hearings Board (Board) on cross motions for partial summary judgment filed by Appellants Rosemere Neighborhood Association, *et al.* ("Appellants" or "Rosemere") and Respondent Clark County. Attorneys Jan Hasselman and Janette K. Brimmer, Earthjustice, represented Appellants. Assistant Attorney General Ronald L. Lavigne, Senior Counsel, represented Respondent Department of Ecology ("Ecology"). Chief Civil Deputy E. Bronson Potter, represented Respondent Clark County on the briefs, and Christine M. Cook, Deputy Prosecuting Attorney, presented oral argument on behalf of Clark County. Intervenor-Respondent Building Industry Association of Clark County did not participate in the motions.

levels that match historical pre-developed (forested) conditions.[1] The purpose of the flow control standard is to reduce negative impacts on water quality, fish, other aquatic life, and streams caused by increased runoff from new development and redevelopment and to reduce impacts from existing development. The Phase I Permit required these ordinances be adopted by August 19, 2008. *Shrieve Decl.* at ¶3.

The flow control standard and other elements of the 2005 Manual represent a "default" standard under the Phase I Permit. The permit allows these requirements to be "tailored to local circumstances through the use of basin plans or other similar water quality and quantity planning efforts." *Phase I Permit* at 11 (Condition S.5.C.5.b.i). The permit requires that any such local alternative standards "shall provide equal or similar protection of receiving waters" relative to the default standard. *Id.*

As a result of challenges to the Phase I Permit, this Board concluded that Ecology's default flow control standard failed to comply with the requirements of the federal Clean Water Act and state law and directed Ecology to revise the Phase I Permit to require permittees to aggressively employ low impact development ("LID") techniques where feasible, in combination with the flow control standard, in order to meet the federal and state standards to reduce stormwater runoff to the maximum extent practicable ("MEP") and to apply all known, available and reasonable methods to control runoff and protect water quality (AKART). The process of revising the permit to comply with the Board's ruling is ongoing.

[1] The standard flow control requirement is to "match development discharge durations to pre-developed durations for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow." *Id.* at Appendix 1, p. 24.

Under the Agreed Order, Ecology approved Clark County's alternative flow control program on the condition that Clark County mitigate runoff from new development and redevelopment to the historic, pre-development condition through a capital flow control mitigation program undertaken at County expense. *Agreed Order* at 3-4. In other words, the Agreed Order would allow Clark County to apply the lesser flow control standard to new and re-development projects in its jurisdiction, utilizing existing rather than pre-development conditions as the standard, provided that Clark County makes up the difference in flow control protection that individual developments will not be required to achieve. The Agreed Order establishes an accounting system for the mitigation requirement and incorporates a 14-page attachment more specifically describing the County's Development and Redevelopment Flow Control Mitigation Program ("Mitigation Program"). The attachment details various aspects of the Mitigation Program such as its purpose, projects triggering the mitigation obligation, allowable capital mitigation projects, calculating area mitigated by capital projects, prioritization of projects, geographic location of mitigation projects, mitigation project timing and tracking, reporting, funding, and limitations. *Agreed Order, Attachment A.*

Clark County's Mitigation Program applies to development and redevelopment projects that vested on or after April 13, 2009. *Id.* at 2. The Agreed Order similarly requires Clark County to account for its stormwater mitigation obligation based on acreage impacted by new development or redevelopment projects that start construction and are vested after April 13, 2009. *Agreed Order* at 4.

unlawfully degrade water quality and/or causes or contributes to a violation of water quality standards by: (a) Allowing Clark County to continue issuing development permits that vest prior to December 9, 2009, and/or (b) Not requiring any mitigation for permits issued after August 8, 2008 that were inconsistent with the permit?

ANALYSIS

Summary judgment is a procedure available to avoid unnecessary trials on formal issues that cannot be factually supported and could not lead to, or result in, a favorable outcome to the opposing party. *Jacobsen v. State*, 89 Wn.2d 104, 569 Wn.2d 1152 (1977). The summary judgment procedure is designed to eliminate trial if only questions of law remain for resolution. Summary judgment is appropriate when the only controversy involves the meaning of statutes, and neither party contests the facts relevant to a legal determination. *Rainier Nat'l Bank v. Security State Bank*, 59 Wn. App. 161, 164, 796 P.2d 443 (1990), review denied, 117 Wn.2d 1004 (1991).

The party moving for summary judgment must show there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. *Magula v. Benton Franklin Title Co., Inc.*, 131 Wn.2d 171, 182, 930 P.2d 307 (1997). A material fact in a summary judgment proceeding is one that will affect the outcome under the governing law. *Eriks v. Denver*, 118 Wn.2d 451, 456, 824 P.2d 1207 (1992). In a summary judgment, all facts and reasonable inferences must be construed in favor of the nonmoving party. *Jones v. Allstate Ins. Co.*, 146 Wn.2d 291, 300, 45 P.3d 1068 (2002).

Through its motion, Rosemere requests the Board to declare that municipal permittees are not simply exempt from the duty to meet MEP and AKART where project proponents submitted

Respondent Clark County contends that the imposition of the flow control standard is subject to Washington's vested rights doctrine and that Rosemere's motion is an untimely collateral attack on the Phase I Permit. Clark County asks the Board to conclude that the vested rights doctrine applies to stormwater regulations and to interpret the Phase I Permit as not requiring permittees to impose the new flow control standard on vested development. Clark County further seeks an order from the Board determining that Clark County's decision to exempt from its Mitigation Program development that vested before April 13, 2009, does not render the Agreed Order invalid as a matter of law.

Ecology agrees with Appellants that the state's vesting laws do not exempt municipal permittees from complying with MEP and AKART requirements. Ecology further agrees with Rosemere that the state can and should require municipal permittees to exercise their discretion to the fullest under vesting laws in order to meet the requirements of federal and state clean water laws. *Ecology's Response* at 3. However, Ecology parts company with Rosemere when it argues that although vesting laws do not require permittees to exempt vested new and re-development from the updated standard, Ecology's decision to allow Clark County to exempt projects vested after April 13, 2009, was a reasonable exercise of its enforcement discretion. Ecology further contends the same is true for the Phase I Permit generally: that while Ecology was not required by vesting laws to allow all municipalities to exempt all vested development from the permit's updated flow control requirements, Ecology was also not required by the MEP and AKART standards to include all such vested projects within the reach of Condition S5.C.5 of the Phase I Permit. Ecology argues that its interpretation of MEP and AKART, in which it

Rosemere's challenge to the equivalency of Clark County's Mitigation Program as approved in the Agreed Order.

This Board has previously ruled that the requirements imposed by state stormwater permits are not "land use control" ordinances, and we re-affirm those rulings here. In our Phase II summary judgment decision, we rejected the permittees' argument that a state land use control statute, RCW 82.02.020, applied to stormwater permits:

> [T]he purpose of the Permits is to ensure that the rate of stormwater discharge from property is maintained within a certain level, and this flow level has been determined by Ecology to be necessary to prevent harm to the environment. The flow control standard is aimed at achieving a particular environmental result, and the Permits provide considerable flexibility how this result is achieved. *The purpose of the Permits is to control discharge of pollutants and not to control land use. . . .* Ecology has determined that, collectively, these requirements, which include the flow control standard, are necessary to satisfy the federal MEP and state AKART standards. While developers ultimately may have to undertake actions consistent with the flow control standard of the Western Phase II Permit if they seek to discharge into an MS4, the requirements originate in state and federal law, and *the imposition of these requirements on municipalities derives from the delegated NPDES and state waste discharge programs, not local government-initiated regulation of development.*

Phase II Order on Summary Judgment (September 29, 2008) at 6-7 (emphasis added).[2]

Under Washington law, proposed land divisions and building permits are to be considered under the "zoning or other land use control ordinances" in effect at the time a "fully completed application" has been filed. RCW 58.17.033 (subdivision code); RCW 19.27.095

---

[2] In a decision involving applicability of the Construction Stormwater General Permit, we similarly held that the requirement to control stormwater imposed by state stormwater permits is not a land use control subject to vesting. *Cox v. Ecology*, PCHB No. 08-077 (Order Granting Summary Judgment, February 26, 2009).

because they simply add to the cost of the project but do not affect physical aspects of a development).

Clark County argues that, unlike impact fees, stormwater regulations are land use ordinances that are subject to the vested rights doctrine. The County relies on *Westside Business Park* in support of this position. *Westside Business Park, LLC v. Pierce County*, 100 Wn. App. 599, 607 (2000). But *Westside Business Park* is not a water pollution control permit case; it involved a local government's storm drainage ordinance and a dispute about the completeness of the developer's application. In *Westside Business Park*, the "only issue" for resolution by the court was whether the vesting statute vests a developer's right to have the county apply the stormwater drainage ordinance in effect at the time of the developer's bare bones application for short plat approval, where the application failed to disclose the proposed use of the site but the County actually knew of the intended use from the predevelopment conference and accepted the application as complete. *Westside Business Park*, 100 Wn. App. at 602. The decision essentially involved a factual inquiry into the adequacy of the application and surrounding information in light of the County's requirements for a fully completed application. *Id.*, at 605. The *Westside Business Park* court also specifically declined to review the issues raised by the interplay between the state vested rights doctrine and the requirements of the federal Clean Water Act. *Id.*, at 608-9. For these reasons, we do not find the Court's statements characterizing stormwater drainage ordinances as "land use controls" controlling in this context.

Rather, the better analysis for purposes of the vesting issue entails an examination of the source of authority for the requirement as well as its purpose, in addition to whether it may exert

Even if the permit's flow control standard is characterized as a land use control, the Washington courts have rejected arguments that the vested rights doctrine should be expanded to all types of land use applications in order to harmonize its use with the common law vesting doctrine and provide more certainty to developers. *Abbey Road Group*, 167 Wn.2d at 260-61 (rejecting expansion of the vested rights doctrine to a site plan application for a multifamily condominium development); *Deer Creek Developers, LLC, v. Spokane County, -- Wn. App. --*, 2010 WL 2882778 (May 27, 2010) (rejecting expansion of the vested rights doctrine to a subdivision application. The Deer Creek Developers Court, quoting *Abbey Road*, noted that "'such a rule would eviscerate the balance struck in the vesting statute. While some of Abbey Road's arguments could support a change in the law, instituting such broad reforms in land use law is a job better suited to the legislature,' not the judiciary." *Deer Creek Developers*, at ¶21 (quoting *Abbey Road*, 167 Wn.2d at 261). The Board finds no reason why the vested rights doctrine should be expanded to apply to an environmental regulation such as a pollution control permit that implements the federal Clean Water Act. The Board concludes that it is more appropriate for the legislature to enact any such expansion of the vested rights doctrine.[3]

[3] In an earlier decision reviewing the applicability of a critical area ordinance to a development project for which the developer had earlier submitted a master use permit application, the Washington Supreme Court rejected the call to "modernize" the vested rights doctrine in light of the substantial increase in land use regulations. Citing the legislative findings in both SEPA and the Growth Management Act, the Court stated that "these findings reflect a legislative awareness that land is scarce, land use decisions are largely permanent, and, particularly in urban areas, land use decisions affect not only the individual property owner or developer, but entire communities." *Erickson & Associates*, 123 Wn.2d at 875-76.

We also agree with Rosemere and Ecology that the Phase I Permit requires municipal permittees to exercise their discretionary authorities to the fullest under vesting laws (if and where they might be applicable), in order to meet the requirements of federal and state clean water laws. What remains unclear at this point, however, is how the exercise of that discretion impacts the level of protection afforded by Phase I Permit generally, and by Clark County's Agreed Order specifically. Without that information, it is premature for us to reach a judgment regarding the equivalency of Clark County's Mitigation Program.

In conclusion, in keeping with our previous decisions and the analysis above, we hold that the vested rights doctrine does not, as a matter of law, preclude municipal permittees from applying the Phase I Permit's flow control standard to new or redevelopment projects that vested prior to the effective date of their updated flow control requirements adopted to satisfy Condition S5.C5. To hold otherwise would contravene the purposes behind the NPDES and state waste discharge programs, which is not to control land use but to control the discharge of pollutants and to protect water quality. We also recognize that MEP and AKART do not foreclose Ecology's discretionary authority to allow municipal permittees to propose alternative flow control programs for new development and redevelopment that provide equal or similar protection of receiving waters. The Board agrees with Rosemere and Ecology that the state's vesting laws do not exempt municipal permittees from complying with MEP and AKART requirements. We leave open the factual question as to whether the Agreed Order properly allows Clark County to deny, condition, or mitigate otherwise vested projects based upon the baseline level of protection afforded by Phase I Permit.

APPENDIX 4

RECEIVED
DEC 3 1 2009
WA State Department
of Ecology (SWRO)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF	)	AGREED ORDER NO. 7273
COMPLIANCE BY	)	
Clark County	)	CL 09-122

To: Clark County Board of County Commissioners
1300 Franklin Street
Vancouver, WA 98666-5000

I. INTRODUCTION

This Agreed Order is entered into by the Washington State Department of Ecology (Ecology) and Clark County (County), hereinafter referred to collectively as "the Parties." The purpose of this Agreed Order is to establish the actions necessary to bring the County into compliance with Special Condition S5 of the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit (Permit). The Permit is issued under the Water Pollution Control Act, Chapter 90.48 Revised Code of Washington (RCW), and Chapters 173-221 and 173-220 Washington Administrative Code (WAC). By signing this Agreed Order, the County agrees to comply with the compliance actions and schedule contained herein and to waive any appeal rights it may have with regards to the issuance of this Agreed Order.

Nothing in this Agreed Order shall in any way relieve the County of its obligations under the Permit.

II. RECOGNITION OF ECOLOGY'S JURISDICTION

Ecology's authority to enter into this Agreed Order includes but is not limited to the following:

RCW 90.48.030 provides that Ecology shall have the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, water courses, other surface and underground waters of the state of Washington.

RCW 90.48.120 authorizes Ecology to issue Administrative Orders requiring compliance whenever it determines that a person has violated or has created a substantial potential to violate any provision of Chapter 90.48 RCW or has failed to control the polluting content of waste to be discharged to waters of the state.

RCW 90.48.260 designates Ecology as the State Water Pollution Control Agency for all purposes of the Federal Clean Water Act and grants Ecology complete authority to administer the NPDES Permit Program.

The County agrees to not contest Ecology's jurisdiction and authority to administer this Agreed Order.

III. BACKGROUND

Ecology's determination that a violation of the Permit has occurred is based on the following facts:

Clark County was issued coverage under the Permit on January 17, 2007. The Permit requires Clark County and other Phase I designated municipalities to initiate and implement a stormwater management program with specific milestones over the 5-year permit period.

Among these milestones is the requirement in permit condition S5.C.5.b.ii that Clark County adopt the Appendix I Minimum Requirements, Technical Thresholds, Definitions, and Adjustment and Variance Criteria for runoff controls from new development, redevelopment, and construction sites. The Permit includes both the Clean Water Act's requirement that municipal stormwater dischargers reduce pollutants to the maximum extent practicable and state requirements to prevent degradation of existing beneficial uses. One way the Permit meets state requirements to protect beneficial uses is by applying flow control BMPs to match duration of erosive flows caused by stormwater runoff from development and redevelopment. The purpose of this requirement is to reduce negative impacts on water quality, fish, other aquatic life, and streams caused by increased runoff from new development and redevelopment and to reduce impacts from existing development. These elements were to have been adopted by August 17, 2008.

On January 13, 2009, the Clark County Board of County Commissioners passed and adopted Ordinance No. 2009-01-01 repealing Clark County Code Chapter 40.380; adopting a new Chapter 40.385; amending Clark County Code section 40.450.040; and amending section 40.100.070. On January 26, 2009, Clark County submitted its adopted ordinances and manuals to Ecology.

Upon review, Ecology determined that in addition to being late, the County's ordinances and manual did not meet the criteria contained in Appendix I of the NPDES Phase I Municipal Stormwater Permit. Specifically, Clark County's adopted ordinance and manual did not comply with the standard flow control requirement, the 0.1 cubic foot per second flow threshold and other requirements in Appendix 1 of the Permit. Instead, Clark County adopted lesser standards and thresholds for control of runoff from new development and redevelopment which, unless otherwise mitigated, will not provide an equivalent amount of flow control as required by the Permit.

On March 17, 2009, Ecology issued Notice of Violation No. 6514 to the County describing the areas of non-compliance.

On April 8, 2009, the County responded to the Notice of Violation and proposed to enter into a compliance agreement with Ecology. The County proposes using a capital construction flow control mitigation program, in addition to other modifications to its codes and manual, to provide a level of flow control from new development and redevelopment projects equivalent to that required in S5.C.5 of the Permit. The County believes that the cumulative effects from existing development are much greater than incremental impacts attributable to new development as mitigated by the county code. The County believes that having the flexibility to select the most effective flow control locations to mitigate for existing development provides better protection of beneficial uses than applying the Ecology manual only to development project sites.

Ecology has reviewed the County's proposed flow control mitigation program, Ordinance No. 2009-01-01, and associated changes to the County's manual. Ecology believes that the County's proposed program for controlling runoff from new and redevelopment projects and construction sites will provide an equivalent level of flow control to that required in S5.C.5 of the Permit if implemented as described in this Agreed Order and attachment. This approach is consistent with the Permit wherein Permittees are allowed the option of proposing alternative methods of achieving the flow control standards. Alternative approaches are authorized through Ecology review and incorporation of alternative manuals into the Permit through a permit modification or reissuance.

The purpose of this Agreed Order is to identify the measures necessary to bring the County into compliance with the Permit and Appendix 1. The parties acknowledge that the County's stormwater program for controlling runoff from new and redevelopment projects and construction sites (manual, codes, and flow control mitigation program) must be incorporated into the Permit through a modification or reissuance. The Parties understand that any permit modification action is subject to public review, comment, and appeal. Based on Public comment on the proposed permit modifications, Ecology may make changes to the proposed permit conditions. Clark County reserves its right to appeal the permit modification if it does not agree with those changes. Once Clark County's program is incorporated as enforceable requirements under the Permit, this Agreed Order will be terminated.

IV. COMPLIANCE ACTIONS AND SCHEDULE

The County agrees to take the following actions to achieve compliance with the terms of the Permit:

1. Mitigate runoff from new development and redevelopment to the historic condition. To provide an equivalent level of flow control to that required in the Permit, the County will construct capital improvements that mitigate the impacts

of flow generated by new and redevelopment projects (mitigation obligation). The County will account for its stormwater mitigation obligation based on acreage impacted by new development and re-development projects that start construction and are vested after April 13, 2009.

An accounting system will be used to track development and re-development projects and the amount of acreage required for mitigation. The accounting system will identify each project and track the existing project land cover acreages that would be subject to the Permit-mandated standard flow control requirement. Three categories of existing land use cover (effective impervious area, pasture, and lawn/landscape) must be tracked at all new development and re-development sites. The County shall construct flow control facilities that, in total, serve an equal amount of these categories of existing land use cover. At mitigation sites, the historic condition to be matched shall be the duration of high flows as identified in Appendix 1 of the NPDES permit that are produced by an historic land cover as calculated by an approved continuous hydrologic model.

Clark County will not be permitted to accrue or share mitigation credits with other jurisdictions whose permits have not been modified for this approach.

The County will report the amount of the mitigation obligation incurred in each of the calendar years, beginning with 2009, as an attachment to the annual report required by the Permit. The County shall maintain funding sources adequate to comply with the requirements of this Agreed Order.

The County's flow control mitigation program is further described in Attachment A, *Clark County Development and Redevelopment Flow Control Mitigation Program.* Attachment A is incorporated herein and is a fully enforceable element of this Agreed Order. The County will implement the flow control mitigation program as described in Attachment A.

2. Changes to the County's codes and manual. The County will make the following changes to its codes and manual during the County's fall 2009 Biannual Code Review. These changes shall become effective no later than December 8, 2009.

   a. Chapter 40.385 Stormwater and Erosion Control Code, Section 010.C.1.b. Exemptions. Remove the reference to agricultural/habitat protection plans as evidence of no stormwater discharge to the County's system.

   b. Chapter 40.385 Stormwater and Erosion Control Code, Section 010.C2.f. Exemptions. Remove the exemption of infill and redevelopment projects from the 0.1 cfs flow increase threshold contained in Minimum Requirement 7.

   c. Chapter 40.385 Stormwater and Erosion Control Code, Section 020.A.6.b. General Standards. In this section on applicability of the minimum requirements, change the valuation language in the section to use 50% of the tax assessment valuation of existing site improvements, rather than using 50% of the site tax valuation. In the interim, Clark County will

utilize the correct interpretations in Figure 2-2 of the County's stormwater manual that reads "Tax assessment valuation of the existing site improvements."

d. Clark County Stormwater Manual, Section 3.3 Final Technical Information Report. Subsection E will be revised to require applicants to submit information explaining how the project will implement BMP T5.13, Soil Quality and depth.

3. Stipulated actions for failure to comply with Compliance Actions and Schedule. The County agrees that if it fails to timely meet any of the Compliance Actions and Schedule above it will, upon written notification from Ecology of non-compliance with this Agreed Order, immediately initiate amendment of its development regulations to require flow control equivalent to that required in S5.C.5 of the Permit and will thereafter not grant any approvals or permits for development or redevelopment projects which do not mitigate post-project runoff to the historical land cover in accordance with the Permit and which are submitted after April 13, 2009, until the County has brought itself into full compliance with the Compliance Actions and Schedule above. In the event of non-compliance with this Agreed Order, the County shall remain responsible for providing the entire mitigation obligation thus far incurred.

V. PROGRESS REPORTING

The County agrees to provide annual progress reports on implementation of the flow control mitigation program as an attachment to the Annual Report required by S9 of the Permit. These progress reports shall include the information identified in Attachment A.

In addition to the annual progress report above, the County will submit quarterly Tables 1, 2, and 3 from Attachment A for the first year (2010) of the Agreed Order. The tables will be submitted no later than 15 days following the end of the calendar quarter, starting April 2010.

In addition to the scheduled progress reporting above, the County agrees to immediately notify Ecology of any occurrence which is likely to result in noncompliance with the requirements of this Agreed Order. Such notification will state the nature of the potential noncompliance, the reason(s) for the occurrence, and the actions taken by the County to address the potential noncompliance.

VI. RECORD KEEPING

The County shall keep all records associated with this Agreed Order for at least five years and shall make records available to Ecology upon request.

VII. AMENDMENTS TO THE COMPLIANCE ACTIONS AND SCHEDULE

Amendments to the actions and schedule in Section IV may be requested for good cause. Extension of deadlines identified by this Agreed Order may be agreed to by the Parties only when requests for extensions are submitted in writing and in a timely fashion and where good cause exists for an extension. Good cause does not include the County's failure to plan, permit, or fund the actions identified in this order.

To be effective, all amendments must be signed by the person with signature authority for each Party and must be attached to this Agreed Order.

VIII. EFFECTIVE DATE

This Agreed Order is effective as of the date that it has been signed by both of the Parties.

IX. DISPUTE RESOLUTION

If a dispute arises between Ecology and the County regarding any term within this Agreed Order, the Parties shall attempt to resolve the dispute through informal resolution. A dispute shall be considered to have arisen when one Party notifies another, in writing, that there is a dispute. If the Parties cannot resolve the dispute informally within forty-five (45) days, the County shall serve on Ecology a written Statement of Position. Within thirty (30) days thereafter, Ecology shall provide the County with an administrative decision that may not be appealed. Violations of this Agreed Order may be addressed as provided in Section XI, Enforcement.

X. TERMINATION OF THE AGREED ORDER

This Agreed Order shall remain in effect until such time as the County's program for controlling runoff from new and redevelopment projects and construction sites, including the manual, codes, and flow control mitigation program, has been incorporated into the Permit through modification or reissuance. This Agreed Order will be terminated upon written notice from Ecology following the final termination of any appeal(s) of such Permit modification or reissuance.

XI. ENFORCEMENT

In addition to the stipulated actions for failure to comply with the compliance actions and schedule in paragraph IV.3 above, any failure to comply with this Agreed Order may result in the issuance of civil penalties of up to $10,000 per day per violation or other actions, whether administrative or judicial, to enforce the terms of this Agreed Order.

Nothing in this Agreed Order shall in any way limit Ecology's authority to enforce the provisions of the Permit. However, Ecology will not take further enforcement actions for the violations identified in Notice of Violation No. 6514 as long as the County remains in compliance with the terms of this Agreed Order.

Marc Boldt, Chair
Board of Clark County Commissioners

12-15-09
Date

Steve Stuart
Clark County Commissioner

Date

Tom Mielke
Clark County Commissioner

Date

Garin Schrieve, P.E.
Southwest Region Manager
Water Quality Program

1-6-10
Date

Attachment A

Clark County Development and Redevelopment Flow Control Mitigation Program

Table of Contents

Background

Under the 2007 Western Washington phase I NPDES municipal stormwater permit (Permit), permittees, including Clark County, are required to control stormwater flows from development and redevelopment projects to levels that match historical pre-developed conditions. The standard flow control requirement is described in Appendix 1 of the Permit, and indicates that the pre-developed condition is forested land cover unless certain specified conditions are met. The methods to conduct this analysis are described in the state's 2005 Stormwater Management Manual for Western Washington (SWMMWW). The approach typically followed by permittees to meet the flow control objective is to require developers of development and redevelopment projects that exceed certain thresholds to construct flow control facilities designed to comply with the standard flow control requirement. The Washington Department of Ecology (Ecology) has acknowledged that there are other approaches that can provide an equivalent level of flow control for the protection of aquatic resources and that the Permit allows alternative planning efforts.

Clark County has elected to use an alternative method to provide the level of flow control required by the permit. The County has opted to implement a capital flow control mitigation program which, taken together with development and redevelopment regulations, will meet the Permit's standard flow control requirement as described in Appendix 1 of the Permit.

Purpose

This document describes the framework and criteria for the County's flow control mitigation program. This document is incorporated into Agreed Order No. 7273, a compliance agreement between Ecology and the County, and is a fully enforceable element of the Agreed Order.

The County believes that this approach is the best mechanism for providing flow control benefits where they are most effective. By using this approach, the County believes it will be able to:

- Apply flow controls where they are most effective
- Spend scarce resources where they are most needed
- Provide the level of flow control required by the Permit
- Fix or reduce problems caused by incompletely controlled stormwater flows

Projects Triggering a Flow Control Mitigation Obligation

Development and redevelopment projects that vested on or after April 13, 2009, and trigger minimum requirement #7 Flow Control under Chapter 40.385 Clark County Code will be reviewed to determine if they fail to fully mitigate to historical land cover. These projects will be tracked, and once construction commences on a project, it will cause the County to incur a mitigation obligation (Mitigation Obligation).

A Mitigation Obligation is incurred only for project sites that meet threshold requirements for flow control facilities in Appendix 1 of the Permit. Only the parts of the project site draining to the county MS4 or that include county storm sewer, including road right-of-way, are subject to the Mitigation Obligation.

A project's flow control Mitigation Obligation is for the project site as defined in Appendix 1 of the Permit and not to the entire parcel in cases where a project only develops or redevelops part of a parcel.

Project sites or parts of project sites that meet minimum requirement #7 through full dispersion or on-site stormwater retention for flows up to the 50-year developed peak flow do not incur a Mitigation Obligation.

A Mitigation Obligation accrues to the County when construction or land disturbing activity begins on a project. It is at this point that the county assigns a Development Inspection Number (or DIN) to each project.

Tracking Mitigation Obligation

The County will track its Mitigation Obligation beginning when the stormwater code and manual became effective, April 13, 2009. Development and redevelopment projects vested after this date are subject to the flow control mitigation program if they proceed to construction.

The Mitigation Obligation of each development/redevelopment project is the difference between the flow control provided by the project to existing land cover and the amount of flow control required to meet minimum requirement #7 of Permit Appendix 1. The Mitigation Obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:

- effective impervious area
- lawn/landscape
- pasture

Conversion of forest land does not create a Mitigation Obligation because County Code requires development projects to fully mitigate for the project's cleared forest.

The area of converted pre-project land cover will be reported by the project applicant as they modeled the site in the Western Washington Hydrology Model (WWHM) and will be verified by Clark County staff. Mitigation Obligation areas will be tracked to the nearest one-tenth acre. For example, a 5-acre development project that mitigates to existing land cover of 1.2 acres of Effective Impervious Area (EIA), 3.3 acres of pasture, and 0.5 acres of forest, would oblige the County to mitigate equal totals of the land cover. The obligation accounted for would be 1.2 acre of EIA and 3.3 acres of pasture; runoff from the forested area would already be fully mitigated by the development project under current county code

Mitigation Obligation for Projects Exceeding County Standards

In cases where development and redevelopment projects provide flow control mitigation beyond that required by county code, the area mitigated to historic conditions would be determined by following methods described in the section on calculating mitigation project benefits. The result will be used to determine the County's Mitigation Obligation from the project.

Mitigation Obligation Table

A table will be maintained for tracking the Mitigation Obligation for each development project by land cover (Table 1). This table will include the following information:

- *Project ID* is a unique ID attached to the project site polygon
- *Project Development Inspection Number (DIN)* is assigned to development projects as they proceed to construction
- *Project Name* is assigned to development projects as their applications are accepted
- *Project Vesting Year* provides the date when county regulations apply. This information provides a leading indicator of potential Mitigation Obligation. It is not a good indicator of when a project is likely to be built. The land cover is noted but not included in the actual Mitigation Obligation, which is counted at the point construction begins
- *Construction Start Year* is the date of the preconstruction conference held before construction work is allowed. It is the year in which the Development Inspection Number is assigned.
- *Construction Completed Year* is specified by Development Engineering as a completion of construction notice
- *Historical Land Cover (forest or prairie)* is the principal predevelopment site land cover determined by best available information. Generally, it is forest but there are historical maps from the mid-19th Century that map prairies in the Vancouver area.
- *Landscaped Area Mitigation Obligation (acres)* is the amount of landscaped area in a development project that must be mitigated
- *Effective Impervious Area Mitigation Obligation (acres)* is the amount of effective impervious area in a development project that must be mitigated
- *Pasture Mitigation Obligation (acres)* is the amount of pasture in a development project that must be mitigated

Allowable Capital Mitigation Projects

In order to satisfy its Mitigation Obligation, the County may build several types of flow control facilities as capital improvement projects (Mitigation Projects).

Only Mitigation Projects that can be simulated in an approved model will be considered for meeting the Mitigation Obligation. The categories of acceptable flow control and reforestation projects under this agreement include:

- Detention
- Infiltration
- Detention with infiltration
- Full dispersion
- Existing facility retrofits or reconstruction
- Structural LID BMPs (Porous pavement and bio-retention basins)
- Reforestation of impervious area, lawn and pasture on land protected by covenant or easement.

Each of these categories except reforestation correlates to facilities with design criteria in Ecology's 2005 Stormwater Management Manual for Western Washington.

LID BMPs may be used to fully achieve the flow control requirement of the NPDES permit (as predicted by an approved continuous runoff model), or may be used to reduce the size of downstream flow control facilities.

Ecology may accept Mitigation Projects other than standard stormwater flow control practices and reforestation projects above if the County can demonstrate quantifiable runoff reduction or control that fully mitigates a defined amount of Mitigation Obligation. Such projects require approval from Ecology in writing before a credit is applied.

Calculating Area Mitigated by Capital Projects

Stormwater Retention and Detention Facilities

The Direct Method proposed by Ecology will be used to calculate the area mitigated by stormwater flow control capital improvement projects or Mitigation Projects. The Direct Method is an approach to estimate the area fully mitigated by a new pond or a retrofitted pond. It uses the WWHM to iteratively test the amount of impervious area, lawn or pasture that is fully mitigated to historical conditions by a specific proposed pond. Recognizing that a new facility may not fully mitigate the area draining to it, the area draining to a facility, as represented in the WWHM is gradually or iteratively reduced until the pond outflow meets the predeveloped duration standard in the WWHM. The method can also be used to aid design of a simple flow control structure. The step-by-step standard procedures are as follows:

A. Direct Pond Sizing Method for Determining Mitigation Credits in Cases Where There is Not a Pre-existing Pond

Step 1: Select pond dimensions based upon available space and available depth for water storage.

Step 2: Using WWHM, route the entire drainage basin into the pond. Use the appropriate historical land cover (forest or prairie) as the pre-developed condition for developing the target flow duration curve. Use the actual land cover and soils conditions for the post-developed condition of the drainage basin. Determine an appropriate discharge structure to meet the target flow duration curve.

Step 3: Case 1: If the pond is larger than what is necessary to meet the default flow duration standard, try reducing the pond size and adjusting orifices until just meeting the flow duration standard. The entire drainage area is the flow mitigation credit.

Case 2: If the pond cannot meet the flow duration curve, begin reducing the drainage area that was entered into the WWHM (preferably by first eliminating the lawn area, and then by reducing the impervious area). Continue reducing the drainage area until the available pond volume, in combination with specific orifice sizes that you have chosen, achieves full compliance. The preferred discharge structure design involves three orifices (or an orifice and a rectangular notch) in a standpipe which is open at the top to pass flows that overtop it. The identified drainage area is the first estimate of the mitigation credit.

Step 4: Assuming the pond design arrived at in Case 2 above, use the WWHM to route the entire actual drainage area into the pond. Determine whether the standpipe overflow can manage the most extreme flows so that the emergency overflow (i.e., the armored spillway in the dike) does not engage. If the standpipe is adequate, then no design changes are necessary, and the drainage area identified in Case 2 above is the mitigation credit. If the standpipe is not adequate, increase its diameter, while keeping the orifices at the same heights and circumferences, until the emergency spillway does not engage. Using the adjusted standpipe diameter, the same orifices, and the same pond dimensions, check to see whether the drainage from the area computed as the first estimate of the mitigation credit (in Case 2) can pass through the orifices and standpipe and still meet the flow duration standard. If not, reduce the drainage area until it does. This is the adjusted mitigation credit.

Note 1: In actual practice, all of the drainage area is routed into the pond

Note 2: Where the Clark County version of the WWHM is approved for use by Ecology, it substitutes for the WWHM in the above procedure.

B. Direct Pond Sizing Method for Determining Mitigation Credits in Cases Where There is a Pre-existing Pond that will be expanded.

Step 1: Determine a theoretical drainage basin which could be fully mitigated (i.e., meet the default flow control standard assuming the appropriate historical condition is forested) by the existing pond. The analysis involves changing the discharge structure design—orifice heights and diameters—but using the as-built pond dimensions.

Step 2: Determine a theoretical drainage basin which could be fully mitigated by the proposed, larger pond and a new discharge structure. Subtract the area for Step 1 from Step 2. This is the initial estimate of the mitigation credit represented by the expanded pond.

Step 3: Enter the characteristics (impervious areas, lawn/landscape areas) of the actual (entire) area draining to the expanded pond into the appropriate fields for the basin icon, and route the basin into the pond designed in Step 2. Note that the expanded pond is not mitigating for all of the area that is draining to it. Check to see if the discharge structure overflow (the top of the standpipe) is adequate to pass all of the predicted flows. If the discharge structure passes all flows without engaging the emergency overflow, it is finished. The initial estimate of credit in Step 2 is also the final estimate. If the discharge structure will not pass all flows, enlarge the overflow structure diameter, keeping the orifices at the same diameters and heights (or if using a vertical rectangular notch, the same width), until the discharge structure does pass all flows. Using that discharge structure, re-run the model to determine the acreage that can be fully mitigated by the expanded pond with the revised standpipe. Subtract the area for Step 3 (in the case where the standpipe was enlarged) from the area for Step 1. This is the final estimate of mitigation credit.

Low Impact Development (LID) Retrofit Projects

The LID projects must be structural BMPs (porous pavement or bio-retention basins) owned and maintained by the County. If the LID is a full infiltration BMP, the entire area draining to it is considered to be mitigated.

The facilities will be modeled following guidance the SWMMWW's Appendix C of Volume III.

There are three ways in which LID facilities may be used:

1. For situations in which solely using the LID facilities achieves compliance with the historical flow duration curve, the mitigation credit is the area draining to the LID facilities.
2. For a new retention or detention (R/D) pond where one does not currently exist, LID features may be used to help increase the mitigation credit acreage. By incorporating LID features into the drainage area served by the new R/D pond, more acreage can be completely mitigated by the R/D pond. Where the proposed pond cannot be built large enough to meet the flow duration standard for the entire drainage area, and a smaller, theoretical "credit" area is identified by the Clark County version of the WWHM, LID features in the actual drainage area must serve the same size and type of areas as represented in the theoretical credit area.
3. In existing facility retrofit projects, LID projects can assist in increasing the size of the estimated drainage area that would be fully mitigated by the expanded retention/detention facility. In all cases, the LID facilities must be represented in the model as serving the actual areas for which they are proposed.

Land Cover Conversion to Historical Forest

These are projects that directly convert effective impervious area, landscaped area or maintained pasture to native vegetation that will develop into a forest that is protected as a mitigation site with a conservation covenant or easement granted to the County in cases where the County does not own the land. In this case, the Mitigation Credit is the area of land cover converted to forest.

The mitigation site must meet the following criteria:

- Existing impervious, landscaped, and pasture areas that are intended for conversion back to native conditions must meet the soil quality and depth requirements of BMP T5.13 in Volume V of the Stormwater Management Manual for Western Washington. As allowed by that BMP, where the existing soils meet the ten percent organic quality and eight-inch depth requirements, the County may plant directly without amending and tilling the entire area.
- The new pervious area must be planted with native vegetation, including evergreen trees. For further guidelines, see the Washington State Department of Transportation (WSDOT) *Roadside Classification Plan* and the WSDOT *Roadside Manual.*
- The new pervious area must be designated as a stormwater management area in the Capital Planning database whether or not it receives runoff from adjacent areas.

- The new pervious area must be permanently protected from development. If the area is sited off County right-of-way, it must be protected with a conservation easement or some other legal covenant that allows it to remain in native vegetation.

Mitigation Project Development and Prioritization

Clark County will use its current Stormwater Needs Assessment Program and Stormwater Capital Improvement Program to scope, prioritize, and plan flow control mitigation projects. The Stormwater Needs Assessment Program identifies potential detention and retention facility projects—projects to reconfigure existing facilities to increase flow control characteristics—and structural stormwater LID BMPs, such as rain gardens. The needs assessments may also identify properties where forest conversion is a viable option.

The County believes that one of the key benefits gained from this approach is the ability to place flow control mitigation where it is most effective in preserving and restoring beneficial uses. Past and current work by Clark County's Stormwater Needs Assessment Program includes hydrologic and hydraulic modeling of streams within urban growth area subwatersheds, assessing stream geomorphology and describing riparian conditions. This information will provide the basis for selecting the most suitable areas for flow control mitigation projects.

Specific mitigation project sites will be determined by priorities for flow control mitigation established under a project selection process that considers existing information describing channel conditions, channel hydrology, and subwatershed hydrology.

Within the group of projects deemed most suitable to watershed conditions, highest priority may be given to projects having the best cost/benefit ratios in terms of cost per unit of land cover mitigated.

Geographic Location of Mitigation Projects

Mitigation Projects to address the Mitigation Obligation will be built within the same Water Resource Inventory Area, as mapped by the State of Washington, as the Mitigation Obligation incurred. Specific mitigation project sites will be determined by priorities for flow control mitigation established under a project selection process that considers existing information describing channel conditions, channel hydrology, and subwatershed hydrology.

To the extent feasible, the locations of Mitigation Projects should support identified needs and recommendations in existing resource management plans, and should also align with the County's policies on environmental mitigation. Projects should be prioritized by watershed and then Water Resource Inventory Area, in consideration of the distribution of the County's Mitigation Obligation.

Mitigation Project Timing

Mitigation Obligations will be triggered by the start of construction of a development project and accrue by calendar year regardless of the day of the year when the development project starts construction during a given year.

The Mitigation Obligation must be met within two calendar years from the year that the development project being mitigated began construction. For example, a development project requiring mitigation that began construction in July 2009 must be mitigated by the end of calendar year 2011 and its mitigation reported in the 2011 Permit annual report.

Mitigation Credits from flow control mitigation projects completed after April 13, 2009, will count toward meeting the Mitigation Obligation. Mitigation projects shall be complete and functioning before associated Mitigation Credits can be applied to the Mitigation Obligation. The County will report the mitigation projects completed and the amount of Mitigation Credits generated during the year in the annual report to Ecology. The report will include a statement of whether or not the project timing requirements were met for the reporting year.

Mitigation Project Tracking

Each acre of a specific land cover in the county's Mitigation Obligation database will be fully mitigated to historic land cover conditions. To account for the mitigation obligation met by specific stormwater projects, continuous runoff modeling will be used to define the amount of land cover controlled to the applicable historical conditions by each project.

As Mitigation Projects are built, acres of each land cover type mitigated to historical conditions will be subtracted from the Mitigation Obligation. The net Mitigation Obligation (positive or negative) will be carried over into the next year.

Clark County will track Mitigation Projects in a GIS database. Each Mitigation Project will have a point or polygon location for the project site.

The Capital Planning database will be used to create tables and reports. Clark County will create a table for tracking county Mitigation Projects. An example is included as Table 2 and will include the following information:

- *Project ID* is the county project identification number
- *Project Name* is the county project name
- *Project Status* is the status of the project as planned, designed, under construction or completed at the end of the reporting year
- *Estimated Project Cost* is the estimated cost for the county budget process
- *Actual Project Cost* is the final cost to plan, design and build the project
- *Soil Type* is the type at the Mitigation Project site based on the approved model
- *Historical Land Cover (Forest or Pasture)* is based on the predominant land cover in the area mitigated
- *EIA Mitigated to Historical land cover (acres)* is the amount of effective impervious area calculated to be fully mitigated to historical land cover by the project
- *Landscaped Mitigated to Historical land cover (acres)* is the amount of landscaped area calculated to be fully mitigated to historical land cover by the project
- *Pasture Mitigated to Historical land cover (acres)* is the amount of pasture calculated to be fully mitigated to historical land cover by the project

Yearly Reporting

Clark County will report annually on the status of its Flow Control Mitigation Program in an attachment to the annual report required by the Permit. The report will include a narrative summarizing the program and include information from Table 1 and Table 2 by calendar year and totals to date under the Agreed Order.

Yearly Mitigation Program and financial reporting will be included in the format provided in Table 3. The table will summarize the Mitigation Obligation and Mitigation Projects completed by calendar year for each land cover type. It will also keep a running tally of the Mitigation Obligation. Definitions for the elements included in Table 3 are the following:

- *Year* is the reporting year
- *Beginning Mitigation Obligation Balance* is the Mitigation Obligation by land cover type at the beginning of the reporting year. It is the previous year's Year-End Net Mitigation Obligation Balance.
- *Mitigation Obligation Accrued From Two Years Prior* is the mitigation accrued by development projects that reported start of construction in the annual report two years earlier (taken from Table 1). For example, if the 2009 annual report stated that 35 acres of EIA Mitigation Obligation was incurred, that amount would become Mitigation Obligation Accrued in 2011.
- *Net Mitigation Obligation* is the amount of Mitigation Obligation required to be mitigated that year. It is the sum of Beginning Mitigation Obligation Balance and the Mitigation Obligation Accrued from Two Years Prior. For example if the Beginning Mitigation Obligation Balance is 2 acres and the Mitigation Obligation Accrued from Two Years prior is 12 acres, then the Net Mitigation Obligation is 14 acres.
- *Area Mitigated by Mitigation Projects* is the amount of land cover mitigated in the reporting year by county flow control mitigation projects. It includes only projects that have been completed and are operational. It is the annual total taken from Table 2.
- *Year-End Net Mitigation Obligation Balance* is the difference between the Net Mitigation Obligation land cover and the land cover mitigated by Mitigation Projects. If area mitigated by Mitigation Projects is greater than Net Mitigation Obligation, the Year-End Mitigation Balance is negative.

Financial Reporting

Financial reporting for the program will be included in the annual report to Ecology. The report will also include a narrative describing the funding status of the Flow Control Mitigation Program. The report will clearly identify any anticipated shortfalls in funding that might jeopardize compliance with the terms of the Agreed Order or NPDES permit.

Table 4 provides an annual summary of program expenditures and capital fund balance.

- *Annual Program Cost* is the total capital expenditures for Mitigation Projects during the calendar year
- *Year End Capital Fund Balance* is the stormwater capital fund amount not expended for projects during the current year

Funding

It is anticipated that the County's Clean Water Fund will be used to plan and construct mitigation projects. However, the County may use any allowable funds to pay for Mitigation Projects.

Limitations on WSDOT Projects

Clark County will not incur a Mitigation Obligation for projects proposed by WSDOT, which is covered under its own NPDES Phase I Municipal Stormwater Permit.

Definitions

Fully–mitigated means the land cover areas where a Mitigation Project has matched the flow duration curve of historical land cover for discharges of one-half of the 2-year peak flow to the 50-year peak flow.

Effective impervious area is defined in Volume I of the 2005 SWMMWW as impervious surfaces connected via sheet flow or discrete conveyance to a drainage system.

For the purpose of this agreement, existing impervious surfaces are considered *ineffective* if runoff from them is fully dispersed in accordance with the "full dispersion" guidance in the 2005 SWMMWW. If impervious area is ineffective due to full dispersion through native vegetation, it is defined as fully mitigated.

Table 1. Table for tracking Mitigation Obligation areas by development project

Project ID	Project Number (DIN)	Project Name	Project Vesting Year	Project Start Year	Project Completed Year	Historical Land Cover	EIA Mitigation Obligation (acres)	Lawn/landscape Mitigation Obligation (acres)	Pasture mitigation Obligation (acres)
2009 Totals							0	0	0
Total after April 13, 2009							0	0	

Area measured to nearest 1/10 of an acre (4,356 square feet) as done in WSDOT Manual.

Table 2. Table for tracking areas mitigated to historic land cover by county projects

Project ID	Project Name	Project Status	Estimated Project Cost	Actual Project Cost	Soil Type	Historical Land Cover	EIA Mitigated to Historic (acres)	Lawn/Landscaped Mitigated to Historic (acres)	Pasture Mitigated to Historic (acres)
2009 Totals									
2010 Totals									
To Date Totals									

Table 3. Annual Mitigation Program summary

Effective Impervious Area Mitigation Summary					
Year	Beginning Mitigation Obligation Balance	Mitigation Obligation Accrued 2-Yr Prior	Net Mitigation Obligation	Area Mitigated by County Projects	Year-End Mitigation Obligation Balance
2009	0	0	0		
2010					
2011					
2012					
Totals					
Lawn/Landscaped Area Mitigation Summary					
Year	Beginning Mitigation Obligation Balance	Mitigation Obligation Accrued 2-Yr Prior	Net Mitigation Obligation	Area Mitigated by County Projects	Year-End Mitigation Obligation Balance
2009	0	0	0		
2010					
2011					
2012					
Totals					
Pasture Mitigation Summary					
Year	Beginning Mitigation Obligation Balance	Mitigation Obligation Accrued 2-Yr Prior	Net Mitigation Obligation	Area Mitigated by County Projects	Year-End Mitigation Obligation Balance
2009	0	0	0	0	0
2010					
2011					
2012					

Totals					

Table 4. Financial summary

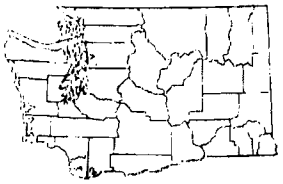
Reporting Year	Annual Program Expenses	Year-End Capital Fund Balance
2009		
2010		
2011		
2012		

APPENDIX 5

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

March 17, 2009

REGISTERED MAIL RE 130 215 847 US



Commissioner Marc Boldt, Chairman
Board of Clark County Commissioners
1300 Franklin Street
Vancouver, WA 98666-5000

Re: Notice of Violation—Clark County Stormwater Ordinances and Manual

Dear Commissioner Boldt:

The Department of Ecology (Ecology) has completed its review of Clark County's adopted stormwater ordinances and manual. These documents were provided to Ecology for review on January 26, 2009, pursuant to the requirements of Clark County's coverage under the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit.

Ecology would like to recognize Clark County's effort to update its stormwater management program. In many ways, the County's adopted ordinances and manual represent significant improvements over the previous program. The County's staff is to be commended for assembling a stormwater program that is well-coordinated and easy to understand.

However, upon review Ecology has determined that the County's adopted stormwater program falls short of the requirements of the Permit in two (2) important areas. Enclosed is a Notice of Violation (NOV) issued under the authority of Chapter 90.48.120(1) of the Revised Code of Washington identifying the areas of the County's stormwater program which do not comply with the terms of its coverage under the NPDES Permit. The NOV requires the County to respond within thirty (30) days describing the steps that have been and will be taken to come into compliance with the terms of the Permit.

All correspondence relating to this document should be directed to Greg Winters at Ecology's Vancouver Field Office, 2108 Grand Boulevard, Vancouver, Washington 98661-4622. If you have any questions concerning the content of the document please call Greg at 360-690-7120.

Sincerely,

Garin Schrieve, P.E.
Southwest Region Manager
Water Quality Program

GS:cc(6514)
Enclosure

cc: Kevin Gray, Clark County Department of Public Works

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF THE COMPLIANCE BY Clark County with Chapter 90.48 RCW and the Rules and Regulations of the Department of Ecology	)))))	NOTICE OF VIOLATION NO. 6514

To: Commissioner Marc Boldt, Chairman
Board of Clark County Commissioners
1300 Franklin Street
Vancouver, WA 98666-5000

Chapter 90.48.120 of the Revised Code of Washington (RCW) reads in part: "Whenever, in the opinion of the Department, any person shall violate or create a substantial potential to violate the provisions of this chapter, or fails to control the polluting content of waste discharged, or to be discharged into any waters of the state, the Department shall notify such person of its determination by registered mail . . ." Notice is hereby given in accordance with chapter 90.48.120(1) RCW, as follows for the location known as Clark County, Washington:

Clark County was issued coverage under the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit on January 17, 2007. This Permit requires Clark County and other Phase I designated municipalities to initiate and implement a stormwater management program with specific milestones over the five (5)-year permit period.

Among these milestones is the requirement in permit condition S5.C.5.b to adopt the Appendix I Minimum Requirements, Technical Thresholds, Definitions and Adjustment and Variance Criteria for runoff controls from new development, redevelopment and construction sites. The purpose of this requirement is to reduce harmful impacts on fish, other aquatic life and streams caused by runoff from development.

On January 13, 2009, the Clark County Board of County Commissioners passed and adopted Ordinance No. 2009-01-01 repealing Clark County Code Chapter 40.380; adopting a new Chapter 40.385; amending Clark County Code section 40.450.040; and amending section 40.100.070. On January 26, 2009, Clark County submitted their adopted ordinances and manuals to the Department of Ecology (Ecology).

Upon review, Ecology has determined that these documents do not meet the criteria contained in the Permit. Specifically, Clark County has violated the terms of the Permit by:

1. Adopting a flow control policy that Ecology has determined does not provide equal or similar protection of receiving waters and equal or similar levels of pollutant control as compared to Appendix I (CCC Section 40.385.020.C.2.a); and

2. Adopting an exemption for infill and re-development projects from the one tenth (0.1) cubic feet per second flow increase threshold identified in Minimum Requirement #7 of Appendix 1 (CCC Section 40.385.020.C.2.a).

This determination does not constitute an order or directive under RCW 43.21B.310.

RCW 90.48.120(1) requires that within thirty (30) days from the receipt of this Notice of Violation Clark County shall file with Ecology a full report stating:

1. What steps HAVE BEEN taken to control such waste or pollution to otherwise comply with this determination of Ecology;

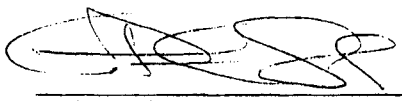
2. What steps ARE BEING taken to control such waste or pollution to otherwise comply with this determination of Ecology; and

3. Send the report to:

    Greg Winters
    Department of Ecology
    Vancouver Field Office
    2108 Grand Boulevard
    Vancouver, Washington 98661-4622

Upon receipt of this report, Ecology shall issue such order or directive as it deems appropriate under the circumstances, and shall notify Clark County by certified mail.

DATED this 17th day of March 2009, at Olympia, Washington.



Garin Schrieve, P.E.
Southwest Region Manager
Water Quality Program

APPENDIX 6

MS. BRIMMER: No.

MR. LAVIGNE: I have no objection.

MS. DOYLE: Okay. Then we will admit R-12 at this time.

MS. COOK: Thank you.

MS. DOYLE: Go ahead. Who is calling the next witness?

MR. LAVIGNE: Ecology calls Ed O'Brien.

EDWARD O'BRIEN, being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. LAVIGNE:

Q Good morning, Mr. O'Brien. Could you please state your name and spell your last name for the record.

A Edward O'Brien. Last name O-apostrophe-capital B-R-I-E-N.

Q And, Mr. O'Brien, where are you employed currently?

A Washington Department of Ecology.

Q And how long have you been employed by Ecology?

A Thirty-one years.

Q And could you tell us what your current position is with Ecology.

A I'm an environmental engineer in the water quality program and more specifically in the municipal stormwater unit of the water quality program.

Q And could you give us a very brief summary of your responsibilities.

A I have been responsible for development of technical standards in regards to managing stormwater. That's primarily my job. I do a few other things, review scopes of work for different types of projects. I provide technical assistance to permit managers in regard to compliance in terms of permit technical issues.

In the past I've been a permit manager for the municipal stormwater permits. I'm not currently a permit manager.

Q For approximately how many years have your responsibilities been focused on the regulation of stormwater?

A Since 1991. So it's going on 20 years.

Q I take it you are familiar with the flow control requirement in the Phase I municipal stormwater permit?

A Yes, I'm familiar with it.

Q We're going to talk about Clark County's program, but I want to get a good understanding of the Phase I permit flow control requirement.

Could you explain to us what is required by the flow control requirement in the Phase I permit.

A I'll give it a shot.

The flow control requirement that we call the default flow control requirement applies to new development and redevelopment projects that exceed a certain size threshold, and it asks or requires that projects that exceed the threshold are supposed to match the high flows that are produced by a site in a natural condition, a historically natural condition.

They're supposed to match the high flows that that piece of property theoretically would have produced in the past, the total of surface water and interflow. They're supposed to match those flows with the flows from their development site.

So they have to take flows from the development site and control them such that, put another way, they don't exceed the total duration of time that those high flows would have occurred from the site in a natural condition.

Sorry it took me awhile to come around to say that.

And the range of flows that we are trying to manage are flows that would have occurred in a historic condition from half of a 2-year flow through a 50-year flow.

Q And one thing I want to clarify, does the flow control requirement in the permit require that the flow coming off a development site match in all respects the flows that would have come off a forested site?

A No, it doesn't. We're not matching all the flows from the forested site. We're just matching the extremely high flows that we think in most cases would be contributing to erosion of a stream channel.

Streams are just an expression, an erosion expression, of runoff coming together at one location, and we're trying to achieve a standard that will not accelerate the natural rate of stream channel erosion. So we're only concerned with the flows that cause stream channel erosion.

And, in general, for most streams in Western Washington that are gravel embedded, those flows are flows that occur on a frequency of half -- well, flows that occur on a frequency basis ranging from half of a 2-year through a 50-year flow. And those are flows that actually occur one percent of the time or that are exceeded one percent of the time or less. So we're actually controlling flows, asking sites to control high flows, that would have occurred naturally one percent of the time or less.

Q You participated in the development of that flow control requirement, didn't you?

A **Yes. I was the principal author of it for the state.**

Q And when that flow control requirement was placed into the Phase I permit, was it Ecology's belief that that requirement would eliminate all harm to the aquatic species in waters that receive municipal stormwater?

A **No.**

Q Was it Ecology's belief that the flow control requirement would restore aquatic habitat in waters that had already been harmed by stormwater discharges?

A **No. Just implementing that requirement would not restore aquatic habitat in a watershed that had been impacted.**

Q What did Ecology hope to accomplish with the flow control requirement in the Phase I permit?

A **Well, in summary, we were hoping to make progress in rectifying or pulling back some of the high flows that were occurring from pieces of property that had some land cover change in the past and that are probably contributing to accelerated stream channel erosion. So we're trying to make up for past sins of land conversion, if you will, with the opportunity of more development on a piece of property.**

And as has been testified by other parties, I think

Q There should be a black notebook up near you, and could you turn to Exhibit A-25.

A **(Witness complies.)**

Q This is a document entitled Making Mitigation Work. Did you rely on this document as part of your review of the Clark County flow control program?

A **No, I did not.**

Q Why not?

A **Well, first of all, when we were reviewing the program, I wasn't aware that this document existed, so I couldn't have even considered whether it would have been applicable or not.**

And, you know, Ecology is an agency with different departments, and this document, I'm sure, was spearheaded or this document was spearheaded by the shorelines and environmental assistance program. The water quality program, as I read the form, participants that participated in it --

Q And that's in the document on the page just before the table of contents, right?

A **Right. It's the fourth page back, third page back, from the cover. There isn't anyone on here from the water quality program. And so maybe that explains why I didn't know about it.**

Q Have you had an occasion to peruse the document since

both Dr. Booth and I believe the county, the process of trying to restore or even rehabilitate, because I think the term restoration is a misconception, if you're trying to rehabilitate a stream channel to a higher environmental condition than it's at now, you have to do more than just control high flows. You're going to have to address all the flows that have been changed, and you're going to have to address the changes that have occurred in the stream channel itself. And it's a difficult proposition.

Well, one of the things, the thing most people agree on, is you're going to have to at least get some of the highest flows that are caused by urbanization brought down a bit so that that's undoubtedly part of the strategy to try to improve habitat.

So we were trying to make some incremental progress in doing this through the opportunity of these new development and redevelopment projects.

Q Did you participate in Ecology's review of Clark County's flow control program?

A **Yes, I did.**

Q What was your role, briefly?

A **I guess my primary role was to evaluate whether on a technical basis the concept that the county put forward would be equivalent to the default standard.**

the issuance of the agreed order?

A **Yes, I have.**

Q Now that you've looked at it, do you think this would be an appropriate document to use to evaluate -- would have been an appropriate document to use to evaluate the county's flow control program?

A **No, I don't believe so.**

Q Why not?

A **Well, there's a number of reasons, and I'll try to be somewhat brief.**

The first issue is I'm sure that when the folks who put this together were putting this document together, they're looking at it primarily from the aspect of wetlands. The document doesn't say this concept of alternative mitigation is restricted as to wetlands, but the experience of the people, the broad experience of the people who are involved, the technical people, is in wetlands mitigation.

And so when they're talking about making mitigation work, first of all, their focus is on mitigation for project impacts, the impacts of just a proposed project.

For instance, in looking at this, they would say, if they were to apply this document to a development that was discharging to a stream, they would be

saying, what do we need to do or what might the alternative mitigation options be instead of providing flow control mitigation to control runoff over and above the existing conditions on the project site. That's how they would use this document.

And the whole scope of this discussion is not that. It's criticism of something over and above that, which is, should we allow Clark County to provide the additional mitigation. And I don't like using that term, because I agree that we're not mitigating for the project with this requirement completely. We're not only mitigating for the immediate impacts of the project, but we're telling the project they have to provide flow control for land cover conversions that happened sometime previous to their project.

And this document doesn't address that. It only addresses -- it's intended to address impacts, immediate impacts of a project. So this document, in my opinion, wouldn't even come into play in this assessment. So that's the first issue.

The second issue -- let me collect my thoughts here for a moment. The second issue is that not all of the concepts that are in this document -- if we were to apply this document, even just to the project impacts, not all of the concepts that are in this document are

legal under the Clean Water Act or under the state Water Pollution Control Act in regard to how you regulate discharges that are covered by the National Pollutant Discharge Elimination System program, the NPDES permit program. Not all the concepts are transferable. They're not allowed. They're illegal.

And I'll try to give you two quick examples. This document talks in part, not a lot but some, about out-of-kind mitigation, and really they're focused on, if you're going to have a project and the trajectory of that project takes you through an existing wetland, and all things being equal this is a better environmental issue to take out this one wetland and than relocate this project someplace else, what do we do about relocating that wetland.

It really doesn't speak to or it could speak to, if we were to have this project and we had to put stormwater into a wetland, what should we do or what are our obligations in regard to managing that stormwater going into that wetland.

And what this document could talk about is someone proposing that instead of providing treatment or flow control for discharge going into that wetland, they're going to do something someplace else. They're going to provide flow control for the project impacts that

would happen to that wetland; they're going to do that someplace else. And instead of providing treatment for stormwater prior to going into that wetland, they're going to provide treatment someplace else.

And not all of those concepts are transferable. Some of them, frankly, are illegal in the wetlands, but they're definitely illegal into creeks, too.

So in regard to treatment, for instance, an NPDES permit discharge cannot cause or contribute significantly to causing a water quality standards violation at the discharge point, and that impact, you can't get rid of the responsibility to mitigate that impact because of cost considerations. You cannot cause a water quality violation.

So you could not provide treatment prior to discharge into a wetland and instead provide treatment into some other wetland or some other creek, because if you were going to cause a standards violation in that wetland, you have to take care of that. You can't transfer that out.

So if somebody had a discharge into a creek and they said, "I don't want to do treatment here, I want to do it someplace else," we would say, "No. If you're going to cause a standards violation here, you've got to do treatment here."

By the same token, if they were to do an analysis and say, "We're not going to cause -- this discharge, if untreated, wouldn't cause a water quality standards violation here, and because of site constraints, to provide the normal or AKART level of treatment is going to cost us," you know, "a bajillion dollars," it would seem to be very unreasonable.

The Clean Water Act and the state Water Pollution Control Act says: Well, then, you can provide less treatment. You only have to provide treatment that's reasonable as long as you're not causing a water quality standards violation.

The concept that's in here is that: No, instead of meeting the basic treatment that might otherwise be required, you could do treatment someplace else. You'll have an obligation to do the treatment different someplace else.

And, frankly, there's no legal justification under the Clean Water Act for us to enforce that. We can't make someone provide more treatment someplace else because it was too expensive to provide it here. We'd have to just say: Okay, you can provide less treatment.

Just one more point I would like to make. On flow control, there's a little bit of a difference. Now,

we have had extensive discussions with our management and with the FC program on how much or the extent the concepts of alternative mitigation were implementable under the NPDES permit program, and it's more narrow than what the wetlands people are used to allowing.

In regard to flow control, even in regard to treatment, we allow some transmitting of alternative mitigation someplace else, but it usually has to be into the same receiving water because, remember, we're mitigating for direct impacts of a project, and so we generally want the direct impacts, increased impacts, of a project to be -- it has to be managed within that same creek system.

But the part of the flow control requirement we've been arguing about here is we're arguing about what do we do with the improvement piece. Where we're actually making the improvement in the high flows not caused by the immediate project, but in a historic condition, do we allow the correction for that to go someplace else.

So that's something we can transfer out. It's not disallowed by the Clean Water Act and certainly would be allowed under this thing.

Q Does the Clark County ordinance require that the flow impacts from a development project be addressed at the

site?

A Yes, they do.

Q And it allows the improvement piece of the flow control requirement, as you've described it, to be applied elsewhere, correct?

A Yes, it allows it to be applied elsewhere.

The other thing I would -- one more item I forgot to mention about this document, and we don't have to get into this if my attorney doesn't think it's worthwhile, but there's been some argument about the wetland mitigation concept of providing over-mitigation someplace else.

Now, we did consider that when we looked at the Clark County proposal. We talked about it. Although we were unaware of this document, we were aware of the wetland general process of providing increased or over-mitigation someplace else when you're going to take out a wetland in a project, and you're going to re-create it someplace else. We talked about that it doesn't make sense to over-mitigate someplace else.

And the decision was that the reasons for doing over-mitigation in the wetlands project and the wetland program here don't apply to this situation, and it would not be appropriate or defendable to over-mitigate for flow control someplace else. So we

made a conscious decision not to do that.

Q Mr. O'Brien, do you happen to have a copy of Mr. Booth's testimony with you?

A I don't have it on me.

Q Let me give you, if I may approach, my copy.

A Thank you.

Q And, Mr. O'Brien, I'd like to direct your attention, if I could, to paragraph 35 at pages 18 and 19 of Mr. Booth's testimony. In that portion of his prefiled testimony, Mr. Booth identifies factors from the Making Mitigation Work documents that he contends Ecology should have recognized as relevant in the agreed order.

Do you agree that the items Mr. Booth identifies would have been factors Ecology should have considered in developing the order?

A Well, we considered them, but we decided they were not applicable.

Q Could you briefly walk through them and explain why they're not applicable in your view.

A Okay. So looking, I think, in the document, Derek's reasons or Dr. Booth's reasons are listed starting at the top of page 19, and they're bulleted.

Q There's actually one at the bottom of page 18, the 1-to-1 ratio issue.

A (READING) Mitigation is generally no longer considered sufficient due to the risk of failure and temporal loss.

Well, that's covered in the bullets on the next page.

Q Okay.

A The first bullet is risk of failure.

Q Okay.

A There isn't any more risk of failure that flow control isn't going to be successful or work at some alternative site than at the project site. It's the same technology. It's just as likely to be successful someplace else as at the original site. So I don't think that's applicable.

The risk of failure for wetlands is that they're actually trying to create a wetland system someplace else and trying to have it be as high quality as what they lost at a project site. And we're not doing that here. You know, we don't have a risk of not having something come back. So I don't think that's applicable.

Temporal loss. It may take many years for a compensation site to achieve. So this is a new wetland reaching ecological maturity so it provides the same benefit. So there's no maturity process in

providing an equivalent amount of land area with -- well, there is one. I take that back.

For most projects, there is a 1-to-1 right away. You know, a pond in one location is the same as a pond in another location, roughly. We're saying it's about the same.

There is a little bit of temporal loss if the county were to use re-creating of forest on a site. There is some temporal loss there because we're assuming, in allowing them to do that option, we're assuming more hydrologic benefits will be accrued by the more mature forest than the seedings they will be planting. So there is some there, but because we've protected the site, required the site be protected, we're saying in the long run, it's not a big deal.

Some types of compensation result in a net loss. Again, we're not doing a loss of a stream, a net loss of a stream channel, one place or another. So I don't think that's applicable.

Type of wetlands and their functions. I don't think that's applicable either. We're trying to protect all streams somewhat equally. Regardless of the quality of the habitat they might have, the default standard is protecting all streams.

Now, through this process, as you've heard the

county attest to, they're trying to put mitigation or this compensation for not doing a benefit at the project site but doing it someplace else. These "someplace else"s that we're trying to identify are based at least in part on where we think we're going to get more environmental benefit.

So, if anything, you know, you would argue here, the county might argue that we should have less than a 1-to-1 ratio because we're doing more benefit, we think, over on this site than what we might have gotten over on this project site, which maybe might have been in the stream, but we don't have high quality resources to protect, even though the default says you've got to do it every place. So I don't think this applies either.

And then location and kind of compensation. I've already blasted the kind of compensation. We don't allow out-of-kind mitigation. So, in other words, if the county were to come to us and say, "Instead of doing flow control to the historic condition at the project site, we're going to put in treatment over at this other site or we're going to put in a fish ladder on a stream that has restricted access," the answer is no. It's got to be in-kind mitigation. So that's out the window.

Location. Well, there's lots of issues around location that I'm sure will come up again, but there's trade-offs, and you'll hear more probably from me in cross examination about the criticisms of where you locate this additional mitigation for not doing back to the historic condition at the project side.

There are trade-offs, but we don't think them to -- in the big picture, we don't think them to be critical on the concept of this proposal and the effectiveness of the proposal.

So I don't think any of these factors apply.

Q Why don't you think the location is critical, Mr. O'Brien?

A Location is somewhat critical. I mean, we're trying to say we've restricted where the county can put these alternative sites to, you know, it's got to be within the WRIA. And that's in part because a lot of -- we've faced this issue before, you know, with DOT proposing off-site mitigation, and the decision was made we would generally try to do mitigation within the WRIA because there's a lot of focus on improving water quality within a WRIA area.

So we thought we would be consistent with past practices in trying to focus improvements at least within the WRIA. That's, I think, mainly for being

able to sell this approach to the public. For instance, you know, someone who lives within Salmon Creek, for instance, where the benefit might not be happening from a proposed development project might not really appreciate that that benefit is going to go into another creek. And if we at least keep it within the same WRIA and the same tax base, the county's tax base, we think that makes it defendable.

But there are other factors that can come into play in whether acreage that you're providing mitigation for someplace else is equivalent and would perform the same at the project site. There's multiple factors.

The appellants have focused on slope and soil type and mostly where you are at in the watershed. And it is somewhat true -- it's actually true that in some locations, you're more likely to have more of your flow get into the stream than other locations in the watershed. And generally the farther away you are from the stream, the less likely that your flow is actually going to get to that stream.

In the default standard we say, you know, we can't put a factor for that in the model, so we're going to assume all sites contribute the same. And the practical application is that as long as that happens helter-skelter around the watershed, you're roughly

meeting the needs of the watershed with flow control. So we didn't want to revisit that issue.

It is true that the higher you are in the watershed near the headwaters, you know, two sites being equidistant from a stream, your mitigation in the headwaters potentially protects more or provides a benefit to more of the length of the stream than a benefit that you might put in, a flow control put in lower in the watershed, because there's less stream channel left to protect. So there's a difference in benefit that way.

Q Will that always be the case, that it's always going to be more beneficial to have the project higher in the watershed than lower?

A Well, streams being equal in regard to their beneficial uses, yes. But all streams aren't created equal, and all streams aren't in the same existing condition. And that's part of this trade-off with the county, and we support it, trying to put their benefit into streams that they've rated as being a higher priority, at least in part if not a majority situation, on streams where they think they can make a bigger environmental difference in regard to, for instance, protecting salmon habitat.

So you may have development, for instance,

s that true?

A That's true.

Q Could you explain that for us, your prior consideration.

A Well, back in 1999 and 2000, when we were updating the stormwater manual for Western Washington, we were considering options to use, and we decided to go with this default option of having new development mitigate or provide flow control back to the historic condition because there's an opportunity there to make an incremental improvement.

And then when we went out in 2001 with workshops, we were explaining the standard to a lot of local governments, and I believe in at least two of the workshops, I can recall getting some resistance from the audience on making development projects not only mitigate for the impacts of the development but for past land conversion at the site and also some resistance from municipalities that also came up again -- maybe I'll come back to that -- during the Phase II permit issuance about their ability to enforce that standard.

And what I told the workshop participants and some of these Phase II people four or five years later was: Look, if you don't like this, give me an option that

occurring in a stream where there isn't any real viable salmon habitat, and you could be putting it at the headwaters, but if you were to put your alternative mitigation for the benefit part lower in the watershed but on a stream that is more valuable from the uses that we're trying to protect, such as salmon, then I would consider that to be a more important project to do.

Now, it could happen the other way potentially, too. But generally the concept that was put forth to us is making the benefit occur in the streams that we think have more environmental value.

So, you know, there's a trade-off there, but I think it's a worthwhile trade-off.

Q Based on your review of the county's flow control program, did you ultimately conclude that the county's program provided an equal or similar level of protection as compared to the flow control requirement that you wrote for the Phase I permit?

A Well, once we worked out the details through the agreed order, I think it provides at least equivalent protection as what the default is in the permit.

Q Yesterday Mr. Schreve suggested during his testimony that you had previously considered a flow control approach similar to the one that the county is using.

provides a benefit of at least as much as what we would get from the new and redevelopment sites. If you propose an option that at least provides me the benefit that we would get doing that, we can approve that as an alternative.

Now, those workshops were in 2001, and I was surprised that no one picked up on that, but no one did until Clark County made this proposal.

In regard to the Phase II permit discussions, we had some of the Phase II permittees come in because of the draft permit language that had this within it, and they were expressing whether they thought they could be sued for a take by trying to enforce this provision.

And we gave them our legal arguments for why we didn't think it was a take, and we were very comfortable with it, and they shouldn't be uncomfortable with it. And I said, "If you are uncomfortable, here are your option." And there were a few Phase II representatives in the room, and I think they didn't want to go there because none of them --

MR. POTTER: Object to speculation.

MR. LAVIGNE: I'll move on.

Q (Continuing by Mr. Lavigne) The agreed order uses

acreage as the metric to track the county's restoration obligation under the Agreed Order, or improvement obligation.

Why did you conclude that acreage was the appropriate metric?

A So, first of all, I want to make sure to reiterate that it's acreage of different types of land covering: impervious, grass or landscape and pasture. And we thought acreage was the best tool to use to make the crosswalk or to identify the obligation somewhere else because we think it best represented our original intent with the original standard, and it would be the easiest and most straightforward to track and to not play any games with or to not have vagueness about how much alternative off-site work you had to do, would be the most straightforward.

Q The county's program allows the county two years after the start of a construction project to implement its flow improvement projects.

Do you believe that two-year delay will result in harm to the receiving waters?

A I think that it is true that theoretically -- and it probably is true in most cases -- ongoing accelerated erosion that a stream is experiencing as a result of urbanization will continue, and the incremental

portion that we're not providing for flow control at a project site will continue to, you know, be part of that in that stream water body.

But in the big picture, you have to step back and remember what's going on here. We have existing urbanization across the landscape of Western Washington. Even in Clark County, to fully get flows under control from existing urbanization so that they're not causing habitat impacts, probably even just within Clark County, is in the billions of dollars. We're talking about probably tens of billions of dollars across Western Washington.

With that scale of a project in front of us, you have to think about, does it make sense to argue about some of the details of how such a project would work. And although there is a time delay for where this alternative mitigation would happen someplace else rather than at the project site, in the big picture a bit of a delay in implementing that is not going to make that much of a difference in how fast we get to the overall goal.

We don't think it's worth a knock-down drag-out argument with anybody about it. We're going to get an equivalent amount of improvement. It's going to be a couple years down the road, maybe, but I just don't

see that as being a big issue.

I mean, whether or not we're successful in rehabilitating a lot of these urban streams is not going to depend on this two-year delay. It's a small part of the overall picture. The future of salmon in Clark County is not contingent upon whether or not we got this two-year delay.

Q Mr. O'Brien, if Clark County implements its flow control program and discharges from its MS4 are shown to cause or contribute to violations of water quality standards -- do you have the scenario?

A Run through that for me again.

Q Okay. So let's assume Clark County goes forward, they implement their flow control program, and at some point in the future, it's demonstrated that discharges from the county's MS4 are causing or contributing to violations of water quality standards.

Is the county off the hook for those violations under the permit?

A No, the county is not off the hook.

Q Why not? And if it helps, there's an exhibit, J-16, in the joint exhibit book, the permit itself. And to help speed things along, I call your attention to condition S4.

A Right. Condition S4 generally -- there's a provision

in there that lays out, makes clear, that they're still responsible for those, and if some specific issue comes directly to our attention, the county has to come up with a plan for how that's going to be managed.

But in any case, the county remains responsible for the impacts of their MS4. We're talking about development projects that discharge into their MS4 and that then come out of a county MS4 system. The county is responsible. There's no getting past that.

So these projects, where the project is only providing flow control to the existing land cover condition, if those areas -- and, admittedly, they probably, although I don't have site-specific information, but in most cases they probably are contributing to an existing accelerated erosion in a stream channel, which can mean habitat damage and loss of beneficial uses, and the county remains on the hook to fix that problem.

This is not a problem that we're allowing to be walked away from and has no potential future solution. The county is still on the hook.

Q Mr. O'Brien, during your review of the county's flow control program, were you concerned that that county might reduce the resources it has historically used

for retrofit projects in order to fund the flow control program?

A Yes.

Q Could you explain the basis of your concern and how you resolve that.

A So the concern was that, on a separate provision of the permit, the county has to have a program to start to make progress towards correcting the existing problems. This is the structural retrofit part of the permit requirement.

But as has been testified to, there's no objective performance standard, no minimum level of effort for that requirement. So the concern was that the county would simply take dollars, a level of effort that they were currently putting into doing that, a separate permit requirement, which is addressing the very same concern, you know, trying to make progress towards reducing ongoing impacts, they would just transfer money from doing that and use it to meet their alternative obligation.

So to resolve that, in one of the meetings we had, I asked the county a question that I thought resolved the issue in my mind, and I was incorrect in the question that I asked, and I was incorrect in assuming the response that I got.

I essentially thought I was asking: Will you maintain your existing designated structural retrofit program, continue that into the future, and meet your alternative mitigation obligation. And the answer was: Yes, we're committed to our structural retrofit program. We're not going to back off of that one bit, and we're going to then also meet this obligation.

I said: Great. We're going to get the same level of effort there. We're going to get additional attention. They're just assuming a new obligation. This is good. Let's go.

That was the basis.

Q It has been suggested that Ecology should require the county to monitor its flow control projects, the improvement projects it does, to ensure that they are delivering the expected benefits to the receiving water.

Why didn't Ecology require the county to monitor its flow control improvement projects?

A Because we don't do performance monitoring for any of these flow control devices. We're not asking for the project sites anyplace to do performance monitoring on whether the amount of flow control they're achieving is what was intended.

Since we're not doing it at those sites, we're not going to do it at those county alternative mitigation sites either. It doesn't make sense to do that. To monitor each site for whether or not it's meeting its performances would be cost prohibitive.

We don't do it for treatment systems either. We've made an assumption that they've been designed properly, that they're achieving what they're intended to achieve, and the only real feedback you can establish is you continue to monitor the creeks and see if over the long term they're getting better or worse.

If they're getting worse, then the assumptions we've made in regard to treatment of flow control aren't working in that watershed, and we're going to have to do something else. But that's a long-term monitoring program that's covered under another part of the permit.

Q In your opinion, Mr. O'Brien, would it even be possible to develop a monitoring program in the receiving environment to see if a particular flow improvement project was having a negative or beneficial impact in the receiving water?

A No.

Q Why not?

A You've got too much noise in the system. There's too many variables to try to detect how much improvement you might be getting just due to one project in a huge watershed. The variability in the rainfall/runoff relationships, the variability in how channels respond and why, you couldn't figure it out. You just can't do it.

Q Mr O'Brien, during your review of the county's flow control program, did anyone within Ecology's management structure ever attempt to influence your analysis about whether the county's program was the same or similar to what's required in the permit?

A No one in management tried to influence the decision that I made.

Q Jay Manning never told you you had to make it work out?

A Jay Manning never told me that.

Q Did Bill Moore ever tell you you had to make it work out no matter what?

A No.

Q Did any of your colleagues who are not managers at Ecology attempt to influence your analysis of the county's flow control program?

A Yes.

Q How so?

A Well, I guess on two levels. I have a colleague at

Ecology, Foroozan Labib. First name is F-O-R-O-O-Z-A-N. Labib is L-A-B-I-B. Foroozan is an engineer also, and Foroozan is our lead person on the care and feeding of the hydrology model, and he's much more familiar with it and quick on it than I am.

So when we were looking at the county's proposal, you know, we were trying to say, okay, how would we do this or how would the county do this if we were to track different ways of what mitigation might look like. You know, should we track acreage; should we track detention volume; you know, how would we implement this.

So we played with how it would work and what would be the best way to do it, and we had ideas back and forth. And so I was influenced by Foroozan in what would be the best way to do this.

And then the permit managers as a whole get together and talk about things. You've heard about, I think Garin testified to permit managers meetings, and the other permit managers were concerned about how this would potentially play out in their permits, so they wanted some assurance and to be involved in the discussion of whether this was a good idea or not, so, you know, they had ideas about why it might be a good or a bad idea, and we had discussions with them.

Q Thank you, Mr. O'Brien.

MR. LAVIGNE: I have no further questions.

MS. DOYLE: Other questions from respondents for this witness?

MR. POTTER: Yes.

MR. HASSELMAN: I have an objection on the clock. They were given an hour and a half this morning. They've used almost an hour on the first of four witnesses. I mean, we're going to wind up with not enough time, and I think Clark County has to lose its turn on this.

MS. DOYLE: Are you suggesting, then, that you would do your questions next, and we'll see how they want to spend the rest of their time?

MR. HASSELMAN: Well, they've got another three witnesses. The Board has put the burden of proof on Ecology on one issue. That means, you know, there's got to be some time for Bill Moore to be up there. So, you know, I just don't see how Mr. Potter can have 20 minutes here, because then that's all they've got.

MR. POTTER: Well, I'm not going to need 20 minutes.

MS. DOYLE: Why don't we do this. Why don't we have the appellants get their questions of Mr. O'Brien done now, and then I'll leave it to the respondents to figure out how much more of their time they would like to use with him.

MR. HASSELMAN: Okay.

CROSS EXAMINATION

BY MR. HASSELMAN:

Q I want to go back to the default flow control standard that you were talking about. Is it fair to say that a fair amount of analysis and discussion went into the adoption of that standard?

A Yes.

Q And when was that default standard first articulated by Ecology?

A It was proposed in 1999, I believe.

Q And then it was first included in the 2001 Ecology manual; is that correct?

A That's correct.

Q So this is not anything new or novel, right?

A Yes, I guess you could characterize it that way.

Q And why is it important to control the duration of high flows compared to, for example, only controlling peak flows, as was the case in the prior manual?

A You can get accelerated stream channel erosion with high flows that occur more frequently and for a longer duration of time. So flows above a certain threshold will cause erosion, and the longer those flows occur, the longer length of time those flows occur, the more erosion you're going to get.

So it's important to control the duration, not just the peaks.

Q So Ecology made a determination that controlling flow durations was important to protect water quality and also made a determination that it is reasonable and practicable to control flow durations; is that right?

A Yes.

Q When Dr. Booth was in here, he made a statement about how movement of gravel in streams is a useful metric, but that high flows have other ecological consequences besides moving gravel.

Were you here for that testimony?

A Yes, I think I was.

Q Does that sound right to you? Do high flows matter besides just to the extent they move gravel?

A Yes.

Q You were also talking with Mr. Lavigne about the limits of the default standard. Would it be fair to characterize that standard as a necessary but not sufficient condition to prevent additional harm to streams and begin to restore them?

A To prevent additional harm to streams from

urbanization?

Q From urbanization, yeah.

A **Yeah, I think there's more necessary.**

Q There's more that's necessary, but you've got to have control of high flow durations in there?

A **Yes.**

Q Can you briefly -- you don't need to get into the numbers, but can you just briefly identify what the sort of threshold triggers in the permit are for requiring control of high flows. I'm talking about the size of the project.

A **Sure. If a project adds -- this gets complicated, but I'll try to be brief.**

At 10,000 square feet impervious surface, that's a threshold at which we ask flow control to be addressed through a standard or conversion of three-quarter acres of forest to grass, lawn and landscape or conversion of two-and-a-half acres of pasture to grass. Those are the thresholds. Or if the project has a .1 cfs increase over the existing runoff from the site.

Q And we'll come back to that one in a minute, but let's just talk about the size triggers. Where did you come up with those size thresholds?

A **Those size thresholds go back to originally proposed**

size would trigger flow control; isn't that right?

A **Yes.**

Q So can we make an assumption that without control of flows from those kinds of projects -- subdivisions, commercial projects and parking lots -- those projects would have an adverse environmental impact; is that a safe assumption?

A **Well, that would be the general assumption, that they would -- you might not be able to see it in the water body from a single project, but you add enough of those up. And you will see impacts in the local creek. And how many of those projects it takes to show an impact can vary depending on the watershed. But it's generally -- well, I'll just leave it at that.**

Q But you're not saying that a single project would never have a direct impact to a creek if it was discharging, are you?

A **You know, that can be the case. I mean, a single project in a watershed that isn't controlled, if you didn't control it but you managed everything else, you probably wouldn't see an impact to the local creek. You wouldn't have a discernible impact, either biology-wise or geomorphology-wise. You wouldn't see it.**

by King County in their 19 -- I think it's their 1997 King County surface water design manual.

Q And what is it supposed to represent? I mean, why does a project over 10,000 feet need flow control and not a smaller project?

A **On the most common soils in the Puget Sound basin, on till soils, they represent an increase of .1 cfs in the prediction for the hundred-year return flow. I think that's what it is.**

Q Can you put that into English a little bit.

A **In practical terms, it represents an increase that we think we can control and is reasonable to control and manage with a detention facility. We can size orifices, release structures, to keep that flow rate down. You get much below that and it starts to be difficult to engineer solutions that will work.**

Q So give us a sense of the kinds of projects that in your experience trigger flow control. We're not talking about single-family houses. We're talking about larger projects. Can you give an example.

A **10,000 square feet impervious will be usually two or three houses or a small commercial project. That's what triggers it.**

Q So almost any subdivision and just about any commercial project with a parking lot that's of any

Q You don't think that putting an Applebee's restaurant with a parking lot in the headwaters of a watershed on a small stream, discharging into that stream, that wouldn't have an impact from the runoff off that project?

A **It depends completely, Mr. Hasselman, on the size of the watershed for that creek. I'll give you maybe what you're looking for.**

If the size of the watershed feeding that first part of just that 50 feet of creek before maybe it joins with another creek that has a larger area, if the Applebee's -- excuse me, Applebee Corporation -- took up half of the watershed, you'll see that impact. Half of that watershed for that little creek, you'll see it.

Q It's also true that under the Phase I permit, the default flow control standard is not required for every development project that meets the size thresholds; isn't that true?

A **It's not required for every project because some areas are exempt from the flow control standard.**

Q So, for example, just to keep this moving along, a direct discharge to a large water body does not need flow control; is that right?

A **Correct, generally.**

Q And there is flexibility within the standard. When an area was not historically forested, the developer doesn't need to meet forested condition for a piece of land that wasn't historically forested; is that right?

A That's correct. The only other option that we've conceived of is prairie condition.

Q And then there is the flow control standard for heavily urbanized areas. Could you very briefly describe how that urban flow control standard is different from the default flow control standard.

A Yes. In basins that are over 40 percent impervious area, as of 1985, we said that the requirement is to match flow durations generated by the existing project site rather than the historic condition of the project site.

Q And why did you adopt that variation from the default standard?

A Well, I'm glad to answer this question again, but we covered this in the hearing we had two years ago and in the Phase I and I think in the Phase II, too.

But the reason we did that is that in these highly urbanized basins that have been highly urbanized for a long time, the streams universally are in very sad shape. There's multiple things that would have to be done in order to have a habitat condition that would

provide or restore the beneficial -- not restore. We're never going to restore those beneficial uses. But that would rehabilitate the system enough that we would have resources that we think the goal of the Clean Water Act is intended for us to have and tells us we should have.

There's lots of effort that has to go into that, lots of very difficult and expensive projects. And so we said it doesn't make a lot of sense to require individual projects just to restore an historic condition in those for these individual small projects, an historic flow condition, when there's so much more that has to be done. It just doesn't pass the silly-grin test to meet that requirement and what else has to be done to make that happen, and there aren't, in almost all these areas, any plans to make all those other things happen, so why are you making us do this.

Q But isn't there a presumption or a qualifier on the exception, if you will, that if site-specific information shows the stream is not actually stable, then that relaxed urban standard doesn't apply in that stream; is that correct?

A That is correct, and the basis for that -- there's work done by Dr. Booth and others that shows that if

you have a watershed where the land cover hasn't changed much over an extended period of time, many channels restabilize, you know, because they have a dynamic equilibrium with that changed condition. It's not a good habitat condition. It's a terrible habitat condition. But it's restabilized. And in those cases, going back to an historic condition isn't going to help you, so we say: As long as you don't have evidence that a channel is not continuing to downgrade, we're going to allow this alternative standard.

Q Leave aside the mitigation element of Clark County's flow control program. Let's just focus on their development standard.

The Clark County standard is essentially the same as the urban standard under the permit, isn't that right? In both cases you match to the existing rather than the predeveloped condition?

A Yes.

Q But it's also true that none of Clark County actually qualifies for inclusion in that standard?

A To my knowledge, our information indicates that none of Clark County qualifies.

Q In your opinion, is there anything unique about the geology or the soils of Clark County that entitles

them to utilize a different standard than the rest of the state?

A I don't think there's anything that entitles them to a different default standard. There certainly can be different thresholds of bedload movement due to the geology of a setting of Clark County, but until they present us with that type of information, we stick with the default.

Q And you mentioned that the model that Ecology uses -- we've been calling it the WWHM -- the WWHM in Clark County is actually calibrated to specific soil conditions in Clark County; do I understand that correctly?

A We've recently accepted and approved a recalibration of the model more specific to Clark County. They went through a calibration process. So we use the same model, but the prediction for the amount of runoff we get from the rainfall in Clark County is a little bit different than in other areas. But we've allowed that in other areas of Puget Sound as well. Some local governments have done the rainfall/runoff relationship.

Q Can you find a black binder. There's two. I'm going to ask you to turn to A-50.

A I'm there.

Q Do you recognize this document?
A I don't recognize it offhand. I would have to read it to see if I remember it.
Q But it looks like an e-mail from you to Garin Schrieve and Bill Moore?
A The bottom part is an e-mail from me to Garin, and then there's a response back from Garin at the top of that, yes.
Q I want to turn your attention -- well, let me see. The date on this is April 2009. At this time were you in a dialogue with the county over adoption of their -- or their permit compliance?
A Yes, I think we were.
Q Can you read out loud paragraph No. 2.
A The one that's numbered 2, Mr. Hasselman?
Q Yes.
A (READING) Unless there is conclusive evidence otherwise, we assume that any development with a discharge to a local stream contributes to the destabilization of that stream. To relieve any developed area of a retrofit obligation for flow control, the county has to prove that a stretch of stream channel has not been altered by flows from existing development or that the altered stream channel is still compatible with preserving the

keeping things the same, that existing flow conditions still result in ongoing and cumulative harm.
Would you agree with that?
A Yeah. In most of the cases we're talking about, and in Clark County specifically, I would say yes.
Q And one of the ways it's been characterized in this case is that there is a rate of degradation, the streams are declining, and that using the existing flow standard will not accelerate the rate of decline.
Is that a fair way of describing it?
A I think so.
Q But it leaves the rate of decline, the downward slope of stream health, as it is, in other words, downward?
A Because we're not making an incremental improvement at the project site, it continues to provide its share of an incremental increase in the flows to that stream channel that are causing accelerated channel erosion.
Q And, in fact, isn't that the very reason that Ecology adopted a default standard that seeks to turn that rate of degradation around?
A Yes.
Q Can I get you to flip back one to Exhibit A-49.
A (Witness complies.)
Q Do you recognize this document?
A No.

necessary beneficial uses, in the latter case, more robust hydrologic and stream channel analyses that involve multiple flow regimes, not just high flows but low and seasonal flows.
Q So it sounds like, at least at this stage of the discussion, your view was that to be relieved of the obligation to meet a default historic condition, there needed to be site-specific information that that condition or that requirement wouldn't be appropriate?
A Yes.
MR. HASSELMAN: I want to move to admit A-50.
MS. DOYLE: Any objection to A-50?
MR. LAVIGNE: No objection.
MR. POTTER: No.
MS. DOYLE: A-50 is admitted.
Q (Continuing by Mr. Hasselman) You said that you have reviewed the testimony of Dr. Booth. Have you also looked at the prefiled written direct testimony of Rosemere's fisheries expert, John Rhodes?
A No, I have not read it.
Q Well, then, just turning to Booth's testimony, Dr. Booth explains in his testimony and I think in his testimony before the Board that matching the existing condition in terms of flow control is not the same as preserving the environmental status quo or, you know,

Q And I'm not going to try to move this document into evidence. I just want to ask you if you agree with something that appears in this document, the second bullet under Flow Control. I'm just going to read this to spare you.
(READING) The adopted flow control standard basically freezes the status quo level of protection. This seems shortsighted because following the status quo will continue to cause water quality problems, erode stream banks, scour and damage stream channels -- we'll probably have a problem there -- threaten homes, property and habitat.
Do you agree or disagree with that statement?
A Well, I agree with it to the extent within the context that this was written in January of '09, when the county's only proposal at that time was to use the existing land cover condition for flow control, and they didn't have an alternative additional add-on. Just based on that, we said: Nope, this is not equivalent.
Q I understand. I'm still trying to just focus right now on the existing flow standard without the mitigation. We'll get to the mitigation in the permit.
So with that qualification, would you agree with

this statement?

A Yes.

Q So is it then fair to agree that, again without the mitigation, the Clark County standard is not equivalent to the permit?

A Yes.

Q And --

A Not equivalent to the default that applies.

Q Well, okay. Do you believe that the Clark County flow standard represents AKART?

A This will get confusing, but I don't think the flow control standard is AKART. It's not a technology-based standard. It's a water-quality-based standard. So, in other words, the reason for having this flow control standard is based on cumulative impacts of flows throughout a watershed to a stream, and because of that, it's always been my contention this is a water-quality-based standard, so that if someone were to tell me that, "Gee, we'd like to do it, but it's just too expensive," I would say, "Too bad."

Q So is it your opinion that the default flow control standard goes beyond what's required by AKART?

A Yes.

Q Does the Clark County standard ensure that new development projects won't cause harm to salmon and

s just the permit.

A I'm at J-16. What page?

Q Turn ahead to page 11. I'm sort of hoping that we all have the same pagination here.

A I'm at 11.

Q And, actually, you probably need to flip back to page 10 to start here. This is talking about the standards for new development, redevelopment and construction sites, and the permit requires use of Appendix I, which is the manual thresholds. And then I'm just going to flip ahead to the next page, and it says:

(READING) More stringent requirements may be used and/or certain requirements may be tailored to local circumstances through the use of basin plans and other similar water quality and quantity planning efforts.

Can you tell us why that standard is in there?

A I think so. So the manual approach is a default approach, and in regard to all of this default approach of how you might manage stormwater from new development and redevelopment, you might be able to change the strategy, the default, for a number of reasons.

You might be able to show that different treatment levels might be necessary in a specific watershed or

other beneficial uses?

A Are you talking about just what happens at the project site?

Q Yes, application of that standard to new development in the county.

A Well, it's been said before, but the application of that standard won't change the existing ongoing harm that is likely happening within that stream channel. And it won't change the incremental amount that that project site is currently having, but it won't add to the energy that is causing that accelerated erosion.

They're not going to add any -- under the default, under what Clark County is proposing, a project site will not add any additional energy that will accelerate stream channel erosion over what is happening now.

I'm not trying to play games. I'm trying to be clear on making sure the Board understands the situation.

Q Okay. There is another exception to the default flow control standard that I want to talk about, and that's the provision in the permit that alternative standards can be tailored through basin plans or other planning efforts.

Can you find J-16 in your binder, please. And this

that you might have a different threshold of bedload movement in a particular watershed so the range of flows to be controlled might be different, for instance. Or you might have a different -- well, those are two good examples that you can try to tailor the water-quality-based requirements to the watershed.

There's still in AKART level requirements that we're going to say: No, you've got to do those regardless. But there are some things you can tailor to the watershed, and flow control is certainly a big one.

Q And the basic principle here, if I can paraphrase, is that it may be appropriate to tailor the default condition to the specific environmental situation of a specific stream; is that the idea?

A That's correct.

Q The next sentence says that the local standards have to provide equal or similar protection as essentially the default standard, and I just wanted to ask you, why is "similar" in there? Is "similar" meant to mean something different than "equal"?

A Show me exactly what line you're on.

Q It's the last sentence in that sub (i) there:

(READING) Such local requirements and thresholds shall provide equal or similar protection.

A You know, it's a nuance that probably tries to give us a little wiggle room. "Equal" might be interpreted as, you know, it's got to be exactly the same. And in stormwater management, for various reasons, there's a lot of vagaries in, you know, what might be an equivalent way to do something. There's generalizations that get made, and we're trying to indicate that, you know, within some reasonable judgment, as long as we think we're achieving approximately the same amount of protection, that's going to be okay.

Q I think I understand. So this isn't a mathematical formula you're dealing with here?

A Right.

Q You're trying to get to the same level of environmental protection within the boundaries of what you can reasonably foresee, right?

A Another way to put it is, there isn't one right way and only way to do this. It potentially can be done other ways. And we're open to listening to people's other ways.

Q Okay. But I just wanted to -- it seems a little redundant, but to put a fine point on it, "similar" doesn't mean anything significantly different from "equal"; you're basically trying to get to the same

level of environmental protection that you can foresee?

A I would have said "equivalent," but I wasn't the permit writer.

Q Can you flip ahead to J-17, which is Appendix I to the permit, and turn to page 25 of that document.

A Okay.

Q Can you just review to yourself this Western Washington alternative requirement, and then in a couple sentences summarize that alternative.

A I've read it. You want me to summarize what's there?

Q This is basically what you were just talking about; this is a little bit more detail on the alternative you were just discussing, isn't it?

A Yes. These are examples of things that you -- to give people some examples of what we meant by what they might be able to do, we listed these.

Q And then if you could just flip ahead to page 28, would it be fair for me to characterize this as further direction or guidance on this concept of articulating alternative flow control standards that are specific to basin analysis?

A You're referring to section 7 on this page?

Q Yes.

A Yeah, trying to give them just a quick statement in

regard to basin planning.

Q And looking at all these provisions, it looks like the Department of Ecology set a fairly high bar in terms of the level of analysis and the level of science that would have to go into a stream-specific alternative to the default flow control standard; is that a fair characterization?

A Well, we try to identify information that we would need in order to change the default. We try to give people an indication so that they weren't shooting blind about, well, what do you mean? It's the old "show me your rock" thing. You've got to meet this or equivalent, and unless you give people some guidance on what it might be, what you need to go through to be equivalent, it's just really not fair.

Q Sure. And so your guidance indicates that you would need hydrologic modeling, field observations, on page 28?

A If they were to try to change the default for a particular water body, yes.

Q Right. Those are the kind of things they would need to bring to you; also that the basin plan would have to be reviewed and approved by Ecology, those kinds of things?

A Uh-huh.

Q And for the court reporter, could you just say yes, no or --

A Yes.

Q Now, the local alternative plan that you've approved for Clark County, is that based on this option under the permit?

A No, and I don't think it needs to be.

Q So your opinion is that this alternative approach is permissive. This is one option; it's not the only option to establish a default standard?

A We're not changing the default standard. The default standard as applied anyplace in Clark County, except for this one watershed we're engaged with Clark County on, is still half the 2-year to the 50-year. That's a default standard.

And if you want to add to that the default is usually a historic condition rather than the existing condition, what Clark County has proposed is an alternative administrative way to achieve that default standard. Now, admittedly, it's not happening at the project site. It's happening someplace else. But across Clark County we're getting the same benefit.

You know, bluntly, that's the issue we're arguing about. And I'm trying to be sensitive to your argument, Mr. Hasselman. I think it's a fine argument

to put before the Board, but we're not necessarily changing the default.

So, for instance, as I said before, in these watersheds or at these sites where they're not meeting the historic condition, Clark County remains on the hook. They've got to show that those sites aren't going to have to be retrofitted back to historic through some type of basin planning. Until they do that, the assumption is they're on the hook.

Q I understand what you're saying, but I just want to make it very clear. The default standard in the permit is for all new development and redevelopment to meet the historic flow conditions, and in Clark County new development and redevelopment can be designed to meet the existing flow condition.

That's true, right?

A Just at the project site.

Q Okay. Now, you also, in your discussion with Mr. Lavigne, referred to this alternative that you were talking about early on in the adoption of the permit process, you know, essentially moving the flow control benefits around.

Do you remember that discussion?

A Yes, I think so.

Q Is that alternative laid out anywhere in the permit

with the same level of guidance and detail with respect to the specifics that you have for the basin planning alternative?

A No. It's allowed by the permit, but there aren't specifics.

You want me to give you another example of that?

Q No, thanks.

A Oh, come on.

(LAUGHTER.)

Q So let me ask you a question about the peak flow discharge standard, which was Clark County's prior standard. Do you recall that discussion? We touched on the peak flow standard earlier.

A Yes.

Q In your opinion, if Clark County is permitting development to a peak flow standard, is that equivalent to the protections provided by the permit?

A No.

Q Does that provide a level of protection for beneficial uses like salmon?

A It doesn't provide the same level of protection as the duration standard. A peak flow standard is not as stringent as a duration standard.

Q It's significantly less stringent; isn't that true?

A It's less stringent, yes, significantly.

Q I want to try to walk you through a hypothetical. This relates to the issue of vesting.

If a subdivision was designed, let's just say a typical 20-lot subdivision, and that subdivision was designed to meet the old peak flow standard -- are you with me so far?

A Yes.

Q -- so presumably it has some side detention pond or alternative flow control BMPs.

A There isn't a question there. I didn't hear a question.

Q Okay. I'm trying to see if you're with me so far.

A Did I glaze over?

(LAUGHTER.)

MS. BRIMMER: It's easy to do.

Q So they design the subdivision and they build the roads and utilities and they dig the pond to match this peak flow standard, and then the law changes and you've got your flow duration standard.

My question for you is whether at the building permit stage later in time when they're actually building the houses that will go on those lots, are there things that can be done, stormwater control measures, that would allow achievement of a higher standard than the subdivision was designed for?

MR. POTTER: Object to the extent it calls for speculation.

MS. DOYLE: Mr. Hasselman?

MR. HASSELMAN: It's not speculation. It's an analysis of flow control.

MS. DOYLE: I'll overrule the objection. To the extent that this witness has information about things that could be done, I think we should hear from him.

A Well, I suppose there are things that theoretically could be done. The county has approved a plat in a general layout of the development, you know, as it's going to occur, and so there are limits to what you might be able to do within that approved layout.

And maybe you're trying to get at whether they could retrofit LID into that development. If that's what you're trying to get at, I mean, you could try to do some things to reduce runoff that still might not change the layout. You might try to squeeze in some, like, bioretention areas. You might try to get them to use permeable pavement, you know, so that if the amount of water that gets to that pond isn't adequately sized to control the high flows that will be coming off that site and will still be adding extra energy to the stream channel, you can try to reduce

the flows that the combination of the LID and the pond would do a better job of getting flows down.

Q (Continuing by Mr. Hasselman) So it sounds like the answer to my question is yes, you could do things at the individual house building stage that would address or get you closer to an updated stormwater standard than that subdivision was designed for?

A I think theoretically you could do it. I haven't thought about the legal hurdles to be able to do that.

Q Let's leave aside the legal hurdles. I'm just talking practicability. You mentioned permeable pavement. There's rain gardens; there's water harvest; there's green roofs. There's all these tools to keep water out of the detention pond that was not sized for the new standard?

A Yes.

Q I want to shift gears here for a minute and talk about the retrofit obligations in the permit. Are you familiar with that part of the permit?

A Yes.

Q And that's S5.C6 of the permit?

A Yes, I think it is. Somehow that always alludes my memory what the number is.

Do you know what page it's on, Mr. Hasselman? I just would like to be looking at it as you're asking

me questions.

MR. LAVIGNE: Page 13.

THE WITNESS: Thank you.

Q So you mentioned that you used to be a permit manager with Ecology, and is it safe, then, to assume that you reviewed compliance under the -- you know, you were in charge of looking at compliance under the previous stormwater permit?

A Yes.

Q And do you have any recollection of what under that previous permit the permittees were spending under their retrofit obligations?

A You know, I did at one time have that stuff on the top of my head, because when we were involved in reviewing the programs that were submitted to us under that previous permit, we were looking at the level of effort of various municipalities to meet this permit condition, and there was a wide range of levels of effort among the permittees, the Phase I permittees.

Q Do you remember any specific dollar figures?

A I've got a couple lodged in my head. I can't say whether I've got a good impression or not; it's just what's there. And what's there is, you know, in the millions of dollars -- for some permittees like King County and Seattle, probably in the, you know,

significant millions of dollars, maybe even approaching $10 million a year for King County -- down to $50,000 per year for Snohomish County.

Q When you were discussing this agreed order with Clark County, was it your impression that the mitigation projects that they would be using to compensate for their flow control program would be additional or supplemental to what they would be doing under their S5.C6 program?

A Yes.

Q And if I told you that some of the projects that were already started or were even already built prior to the adoption of the agreed order count towards the mitigation credit, was that what you had in mind when you were working on this?

A When I was working on this, I didn't think that projects that they had built or were actively working on would count towards the alternative mitigation credit.

Q Let me get you to go back to the black binder and open up A-48.

MS. DOYLE: Mr. Hasselman, could I just do a quick time check with you as far as whether we should finish up this line of questioning or take a break first.

MR. HASSELMAN: I'd say five to ten minutes, maybe a tiny bit more. But I'm happy to take a break.

MS. DOYLE: Why don't we come back at quarter after, then. We'll take a real short break. Thanks.

(RECESS TAKEN.)

MS. DOYLE: We'll be back on the record. After some discussion during the break, it sounds like we have a new plan of action. We'll finish the examination by Rosemere, have short redirect from Ecology, move to Board questions of this witness, and then we'll be having testimony by Mr. Moore in the same manner. We'll reserve questions from the county for these witness until later in the day.

Okay. Go ahead.

Q (Continuing by Mr. Hasselman) Mr. O'Brien, when we took a break, you were about to look at A-48. Have you got that in front of you?

A Okay, I'm there.

Q Can you take a moment to review this document. Do you remember this e-mail?

A I don't remember it offhand, but let me scan it here.

Q Sure.

A I'm not going to read the whole thing because I know we're pressed for time. But it looks like it's my reactions to objections raised by somebody about the

county's proposed alternative.

Q And the "somebody" would be the Rosemere Neighborhood Association?

A Oh, is that -- okay.

Q Can you just read aloud No. 6 in your list of initial reactions to the objections raised.

A (READING) It is true that --

Do you want me to read this out loud?

Q Just go ahead and read it out loud, yeah.

A (READING) It is true that the county is adding a new burden on its CIP --

Q And, excuse me, CIP would be their capital improvement plan?

A Yeah, or program. I don't know which.

Q Or program, right. Go ahead.

A (READING) Since we do not have a separate minimum performance standard for the county CIP, we may end up getting less overall improvements than if the default standard was met at the development sites. As long as the county can show that they have a CIP over and above what they are doing for this alternative flow control program, they can claim compliance with their NPDES permit.

Q So leave aside the question of compliance with the permit. Is it your opinion that if the county were to

redirect resources from its capital plan to the retrofit or to the flow control mitigation projects, we could wind up with less than the default permit would require, the default flow control standard would require?

A I don't think so. Repeat that question. Would you give the question to me again, Mr. Hasselman.

Q Sure. If Clark County took the resources that it was intending to use for its S5.C6 obligation and moved those resources to pay for flow control mitigation projects, could we wind up with a lesser level of environmental protection than would be the case under the default permit standard?

A If you're just looking at what the county is doing to provide the additional mitigation that's not happening at the project sites, I don't think there is a difference. If you're looking at the county's overall level of effort to address the issue of what are they doing towards making progress to correct existing land covers, you know, adding this extra energy into the stream channel, then there could be a reduced level of effort. You know, they're combining meeting both their C5 responsibilities and their C6 responsibilities.

Q Okay. I'll leave it there.

A Okay.

Q Is it true that when you were discussing this plan, there was some discussion about a metric that included soil conditions; instead of pure acreage, there would be a variable for different soil conditions?

A Yes, there was some discussion. So, for instance, right now we're tracking impervious, pasture and grass. And instead of just doing that, we would be potentially tracking grass with, like, till soils and grass with outwash soils and pasture with till soils, pasture with outwash soils. That's an example.

Q And is it fair to say that you did not adopt that approach because it made this difficult to implement and reduce the flexibility; is that why you didn't include that variable?

A That's one major reason. It wasn't the only reason.

Q Is it your testimony that the flow control mitigation projects are intended to match up to the environmental impact of the development projects in every case?

In other words, will the environmental benefit provided by the flow control mitigation always be equal to the environmental degradation that is authorized by the development project?

A You know, I didn't look at it that way. I don't know how I -- the way we would respond to the question is

to say that I think the amount of progress we're making in correcting existing problems is approximately equal through this proposal to the county's alternative mitigation proposal as compared to just applying the default. I think we're making roughly the same amount of progress towards solving that problem.

Q But there's nothing in the agreed order that requires the county to look at the specifics of the development projects, assess the environmental harm and match up that environmental impact to mitigation, is there?

MR. LAVIGNE: I'm going to object to the question on relevancy grounds. The flow control standard doesn't address all the environmental harm of the project, and the question is whether the alternative program is the same or equivalent of a specific permit condition.

So Mr. Hasselman's question is irrelevant to the issues before the Board.

MS. DOYLE: Mr. Hasselman?

MR. HASSELMAN: The lack of a relationship between the environmental harm at the development site and the environmental benefit at the mitigation site is one of the core issues in this case. And it's our view that those don't bear a relationship to each

ther because of the metric they've chosen.

So all I'm trying to get out on this examination is testimony on that, that there could be an environmental harm at the development site, and that environmental harm is not related in a rational way to the benefit of the mitigation site.

MS. DOYLE: I'm going to overrule the objection and allow the question and answer. I think that will be essentially what the Board is needing to determine in ruling on this case.

To the extent that his answer is probative of that, I think we should hear it.

A I think the proposal provides at least equivalent environmental protection.

Q (Continuing by Mr. Hasselman) Okay. And I understand that to be your general view, but I'm going to try to get to the specifics, and maybe it helps with an example.

If the county allowed a whole bunch of new development high up in a sensitive watershed using an existing flow condition standard and then matched the acreage of that development with a mitigation project, a big flow control pond, in a different watershed, far down in the watershed, is it your testimony that those two equal one another in terms of environmental impact

on the streams?

A It could be --

Q But it's not necessarily --

A -- in terms of environmental benefit. You changed it from environmental benefit to environmental impact on the stream.

So this gets at the issue of the quality of the habitat in the areas where development may be occurring versus the quality of habitat in areas where the county is doing its alternative mitigation. And all things being equal, if you have streams of equal value habitat-wise, and all the development occurred high in the watershed, one watershed that was of equal value to this other watershed, and all of the county's mitigation projects, or this alternative benefit, as I call it, in a watershed of similar value, the fact that there are more stream miles impacted, continuing to be impacted, by the project site, by the past land coverage, would make it not an equivalent trade-off.

But I think that's a theoretical example that isn't going to happen.

Q But nothing in the agreed order requires them -- leave aside the mitigation projects for a moment. We know that they come through the SNAP.

With respect to the location of development,

there's nothing in the agreed order that requires them to assess the quality of the streams or the impacts at the development site. For example, is this a reach that's identified as very sensitive habitat or salmon spawning streams or anything like that?

A I don't think there is, but I don't think we need to do that to make this a similar proposal. I mean, given the county's objectives and the criteria they said they will use, if they think the project sites are high-value watersheds, they could provide this alternative mitigation at the same watershed and even at the same site. They can pay to make the pond a little bit bigger: Hey, we want to make this pond bigger right at this site, we can make it bigger right here, because this is an important watershed for us.

As long as they can work that out with the developer, they can do that.

Q But by the same token, nothing prevents them from putting in a different sub-watershed altogether from that high-value site?

A That's correct. But, again, keep in mind the goals that they've laid out in their rating system for the alternative sites is, they're trying to find good sites to do this in. But with the criteria, you're correct in saying we didn't make this distinction of

high/low in the watershed.

MR. HASSELMAN: And I neglected to move for admission of A-48 when we were talking about it.

MS. DOYLE: Any objection to A-48?

MR. POTTER: No.

MR. LAVIGNE: No objection.

MS. DOYLE: A-48 is admitted.

Q (Continuing by Mr. Hasselman) Now, isn't it also true that there is nothing in this agreed order that requires Ecology and Clark County to go back over time and ask some of the these questions -- where are the mitigation projects going; where are the development projects going -- so we can assess whether the trade-offs in the assumptions that are being made here are valid or not?

A I don't think your order says anything about whether we will revisit a lot of the terms of the agreed order and they become then terms of the permit as we've incorporated into the permit.

But the permit gets reissued every five years, and if we think something is not working or we missed something the first time around, we can make changes when this permit gets reissued.

Q And how is it that you will be able to have the information to make that assessment? Is there a

person at Ecology that will be looking at maps, you know, where are the mitigation projects; are they new; are they additional; are they actually matched up to the environmental harm of the development?

A I think what we would do is we would look at the yearly reports that tell us -- that really describe the project that they're using and what they're based on. I don't think we asked them to give us a map that shows where the development sites were and try to make any type of a crosswalk here where development occurred in watersheds where mitigation is occurring. So we don't have that full picture.

Q Do you think in your experience at Ecology that it's likely that that kind of assessment will be undertaken prior to issuance of the new permit?

A I wasn't planning on doing that assessment. We were only planning on looking at whether the projects that the county proposed were meeting their obligation and whether their obligations under that agreed order and then under the permit, whether they were meeting those. It's hard to look ahead and know whether or not we think something is not working well enough and we want to change the agreement or the order based on that right now. We're just starting that process.

Q Sure. In the reporting obligations, as you understand them, do you think there's sufficient information in order to make the kind of assessment we've been talking about of matching up environmental harms and benefits?

A Well, I don't think we intended to match up, to look at where the development projects were going in across the landscape in relation to where the alternative projects were going to go in. We had not anticipated that. And so I can't say that we would go back and be looking for that. We hadn't planned to do that.

Q In your testimony, you talked about the potential or the allowable delay under the agreed order between the development that incurs the obligation and the mitigation to offset it.

Do you remember that testimony?

A Say it again just real quick. I'm sorry.

Q Sure. There was discussion of the delay time in between putting in mitigation to compensate for the obligation that's allowed. Do you remember that?

A Yes.

Q And if I understood it correctly, you said it's not exactly equal, but it's really not very significant in the big picture; is that right?

A That's what I said, I think.

Q And is it fair to say that the reason that this delay is included in the agreed order is that Ecology assumed that Clark County would plan and execute new flow control mitigation projects to compensate for the development? Is that why that delay is in there?

A That's one of the reasons for the delay, yeah. That's probably -- yes, that's the reason for the delay. One, identify their obligation first or get a feel for how big their obligation is going to be and then get the right combination of projects, you know, out to bid and built.

Q And what I'm just trying to do is reinforce that this reflects your sense that the projects would be new projects intended to be implemented for the purpose of making up that flow control debt?

A Yes.

Q Let's briefly turn to the .1 cfs threshold. Can you explain what it is. This is the alternative trigger for projects to come under the flow control obligation. You know, briefly, what is it, and why is it important?

A Well, we covered this in the Phase I appeal earlier too. I'm sure the Board remembers it distinctly.

(LAUGHTER.)

But I'll go over it again.

So we have these size thresholds for projects where we think it's reasonable to trigger flow control, and they're based on -- the ultimate basis for those size triggers, 10,000 square feet impervious surface or a conversion of forest to pasture or lawn and landscape, they're based on having a certain increase in runoff from the site that we think we can manage with the facility.

Now, having those individual size thresholds, though, you could have a project that's just under the threshold for impervious surface that triggers the flow control requirement and just under the threshold for pervious conversion forest to lawn and not trigger those individual thresholds, but together, when they both occur in a project site, you're over an increase of .1 cfs that we would like to see managed.

So as the fallback, we have that number as a threshold in the requirements, too. But this is based on the existing land cover. So given the existing land cover, are you going to make enough changes at this site that you will cause a .1 cfs increase from the existing condition at the site. And that triggers the flow control requirement also.

Does that do it?

Q Okay. Fair enough.

Do you have a sense of how often it is that this threshold would bring in a project that would not be picked up by the other thresholds? Is this sort of a one-in-a-thousand kind of situation, or is this relatively common?

A I can't say. I mean, it depends on the typical development that occurs in any particular area and how frequently the sizes of projects that might happen. And I can't say. I don't know.

Q So you couldn't say whether it was, you know, one in a hundred or 90 in a hundred?

A I don't think it's 90 in a hundred. I think it's a much smaller number than that, but I don't have a good basis to give you a guesstimate.

Q Last question. You talked about S4 of the permit, the provision on water quality standard violations. Can you tell me how many notices have been filed with Ecology under S4 to date?

A I don't know. And I don't know because I'm not the permit manager, and I know that's a lightning rod issue, and so I try to close my ears and run away from it, because I don't want to have to be involved in a discussion of how we manage that.

Q Okay. Fair enough.

In your opinion, if a permittee or a group of

permittees has never sent an S4 notice to Ecology, can one reasonably conclude from that that stormwater from MS4s is not contributing or causing water quality standard violations?

A I don't have the details of S4 at my fingertips, so it's hard for me to respond to that. But I wouldn't think that just because someone has not reported doesn't mean there isn't an ongoing issue.

Q And, in fact -- and I think this gets back to the Phase I testimony -- it's pretty typical that discharges from MS4s are contributing to or causing violations of water quality standards; is that not right?

A I think in general across the landscape, I mean, if you just look at the 303(d) list, the reasons why a lot of those waters are on the list is because of urban stormwater. And so it's fairly common, when you have any significant level of urbanization, you've got all kinds of -- you've got issues with various pollutants as well as with hydrology.

MR. HASSELMAN: I don't have any other questions.

MS. DOYLE: Mr. Lavigne?

MR. LAVIGNE: Yes. Thank you.

REDIRECT EXAMINATION

BY MR. LAVIGNE:

Q Mr. O'Brien, Mr. Hasselman asked you a number of questions about the exemption from the flow control requirement for highly urbanized areas. Do you remember that line of questions?

A Yes.

Q Does the Clark County flow control program give Clark County the same flow control exemption as applicable to highly urbanized areas?

A No.

Q Why not?

A Well, they don't qualify for it. No areas are over 40 percent, so the default -- wherever they haven't done basin planning to change this range of flows we're trying to control, where they haven't done that, they have to go with the default.

Q And in your opinion, has Ecology allowed Clark County to change the default with the flow control program?

A Not with this program. They haven't been allowed to change the default. They're still responsible to meet it. They're meeting it in an alternative way, but I think they're meeting it.

Q So, in your opinion, a suggestion that they're not being required to meet the default standard isn't

accurate?

A I don't think it's accurate, because it just takes a myopic view that's not accurate of what's going on in Clark County.

Q Mr. Hasselman also asked you a number of questions which he premised by asking you to ignore the portion of the county's flow control program where the county provides the incremental benefit you testified to.

In your opinion, is that a proper way to analyze the impact of Clark County's flow control program?

A No.

Q Why not?

A Because it doesn't take the entire scope of their flow control program into consideration, which is what I think we did and what you fairly have to do to entertain proposals that we think could be equivalent.

Q And I don't know that you need to go to the exhibit, but you were asked to look at Exhibit 48, which was an e-mail that you wrote to Mr. Schrieve responding to comments from the Rosemere Neighborhood Association, and you were specifically asked about the county taking retrofit money and using it for the flow control program.

Do you remember that line of questions?

A I remember those questions.

Q So my question to you is, Mr. O'Brien, is there anything in the permit that would prevent Clark County from taking money it had historically used for retrofit programs and spending it for something completely outside the stormwater permit altogether?

A They could do that to some extent. They still have to provide some level of a CIP program. They can't zero it out, because that would obviously be a permit violation.

But since there's no minimum performance standard, it's hard for us to critique the level of effort that they're making in total.

Q So, for example, if they decided to take some of their CIP money they'd historically spent and spend it on schools or parks or low-income housing, there's nothing in the permit that would prohibit that, is there?

A Or painting all their county vehicles pink. I don't think there's anything that prohibits them from doing that other than they still have to have some money in that fund.

Q And this question about a metric for the retrofit program, is that something Ecology is considering re-evaluating for the next issuance of the permit; do you know?

A We have not discussed whether the metric should be changed or not. You know, the whole permit comes up for reissuance. As we become aware of issues, we have to decide which issues we think are worthwhile and worth our time to try to tackle to refine. And we have not had an explicit discussion of whether we would revisit that in the permit reissuance.

I don't think we've had those discussions, but I'm not the permit manager, and I'm not at all the meetings for permit management.

Q You were asked a number of questions about matching environmental harm from development with the flow control improvements that the county will be implementing under their program.

In particular, I think Mr. Hasselman used an example of a lot of development occurs higher in the watershed over some other high-value site and the improvement project happens elsewhere.

Do you remember that line of questioning?

A To the extent that I understood it, I remember it.

Q Well, my question relates back to, I think, something you testified to in direct. Was it the intent of the default flow control program in the permit to ensure that there would be no adverse environmental impacts from development?

A No. Flow control standard is intended to prevent both increased harm due to high flows in the receiving water body, and then that portion that goes to the historic condition over and above the project site is intended to make progress towards solving the high flows that could be contributing to ongoing impacts in that receiving water body, make progress in bringing those down.

Q So if the county allowed a lot of development to happen high up in a watershed or some other high-value site, and they complied 100 percent with the default requirement in the permit, did all the flow control at the site, would you expect there might still be some harm to the receiving water, notwithstanding the fact that they implement the default standard at the site?

A Well, let me broaden your question for you a little bit, Mr. Lavigne.

If they followed the prescriptions in their permit about providing all the default flow control at the site and treatment at the project site and construction site erosion control at the project site and all the other minimum requirements, there would still be -- if that's all they did, there would still be cumulative impacts to the receiving water body that aren't addressed by meeting their NPDES permit

obligation as it exists now.

Q Thank you, Mr. O'Brien.

MR. LAVIGNE: I have nothing further.

MS. DOYLE: Okay. I think it's time for Board questions of this witness. Who's going to start? Mr. Lynch doesn't have any. So go ahead.

EXAMINATION

BY MS. MIX:

Q Thanks, Mr. O'Brien, for your reiteration of your previous testimony before the Board and reminding us of prior under-oath statements in your testimony today.

I guess I still have a question about at the time the agreed order was executed and looking at it now, you had testified and I think had concerns leading up to this that there be a certainty of implementation and that funding be assured for the mitigation program. And I'm just still not real comfortable understanding how this agreed order answers that question for Ecology.

How does it commit to a funding level and a sustainability of both the retrofit program and the mitigation program?

A Well, the agreed order and then the subsequent permit

modification just focus on, are they going to be able to meet this alternative obligation. It doesn't speak, I don't think, a lot to what the county is doing for another permit requirement, which is C-whatever-it-is, C6 or whatever, the CIP program. It's a separate permit requirement that they have to have a CIP program and that they can't just zero it out; they've got to keep it going.

When I was involved in trying to decide what to do, I had a concern about the county's overall level of effort and making sure they weren't going to pull back, and so I assumed that like most other municipalities in the state, stormwater utilities, they had a certain amount of CIP that they got funding for, and they only got a certain amount, and they pretty much spent it.

Not very many communities that I know of have a surplus that's been left over, a cushion, so I didn't know they had that cushion. They're usually just trying to keep up with the CIP they're obligated to and they have revenue for.

And that's what I thought was the case with Clark County, and the question I asked of Clark County was: Is your identification of your level of effort on your CIP program going to continue? The answer I got was

yes.

And I think the county has tried to provide you testimony that they think that they're continuing that obligation, and they're also going to have ample money for some number of years to meet this new obligation. And the reason for that, in part at least, is that they have this reserve pot of money.

It's also true, I think, that they're pulling in money and getting credit for programs that were outside of the NPDES permit scope, such as the legacy program, where they're trying to protect areas and might even be planting trees.

I think it's a problem for Ecology to ride herd on any of these permittees on where they get the money to meet their permit obligations. I don't think we can make a fix. I mean, there's potentially an issue here with levels of effort and transferring money. We can make potentially in the next permit round something that identifies the minimum level of effort on CIP, so we make sure they're not robbing Peter to pay Paul too much.

I'm not saying that's what the county is doing here, but if other people wanted to do this, we would want to have some minimum level of effort identified for both of those parts, for their CIP obligation and

an alternative approach to, you know, getting at the same issue of correcting existing problems.

But if they wanted to take money from some program outside of the permit, the permit obligation, and stop doing that, those programs, and to meet this obligation, I don't think the state has any business telling them where to get their money.

Let me give you an example that you raise your eyes at maybe, but I don't think there's anything that says it's illegal. They could have a program to restore fish habitat in lots of streams, okay. That's not an NPDES permit obligation because it's not a stormwater discharge, doing some riparian, you know, changing stream channels. They can be doing that. It's outside of the permit, and that's why we don't give them credit for that in their CIP requirement of the permit.

If they wanted to stop doing that and put all their money into meeting their alternative mitigation obligation, what's the net benefit overall to the Clark County environment? I don't think that's overall a wonderful thing to do. But all we can focus on in the permit is what we have a legal right to do, and we can't stop them through the permit from doing that.

Q Let me ask another question that came up with Mr. Schrieve yesterday about low impact development and understanding that I understand the department is still working to implement the Board's Phase I decision on LID.

Are you of the same opinion as what I thought Mr. Schrieve said yesterday, that this alternative program for flow control does not change at the subdivision and parcel level the requirements to move forward with low impact development, or how do you see those married or divorced?

A I've got two reactions to that.

Q Okay.

A So what we've been trying to do over the last year is to figure out how to implement the Board's previous ruling in regard to LID. All of our work to date has been kind of focused on developing a new minimum requirement for LID that we would require local governments to impose on all new development and redevelopment in their jurisdiction. And so all projects are going to have to do that.

And I don't see LID as being something that is going to be as easily transferable off the project site. That's going to probably have to stay at the project site.

Q Exactly.

A So I think the concern about not doing LID at project sites in the long run, if we get this in place, if we're successful, then we're going to be getting LID at a lot of project sites. That's going to be happening. That will help those project sites reduce the sizes of the detention facility they need. So that's a long-range answer.

But there's a short-range issue too. Until we get that requirement in place, does what the county is asking at the development sites now, is that a disincentive. And it could be perceived as a disincentive because the pond that the developer has to put on the site is smaller than the pond to mitigate back to historic. And because it's smaller, they lose less buildable lots, and so maybe a project might pencil out easier than otherwise.

And I don't think that's a significant issue, and that is based upon the experience we've had for over ten years in King County where they've had this default flow control standard. Admittedly, their old standard was -- I don't want to confuse you too much, but they used the 1979 land cover condition as what applied to the site.

So if they had a forested undeveloped site in 1979

correctly, you didn't expect Clark County to reduce its current level of effort on the retrofit program --

A Yes.

Q -- when it moved to the agreed order.

And my question for you is, when you consider level of effort, are you thinking of it in terms of dollars only, particular projects or numbers or types of projects? What do you mean when you talk about level of effort, and how do you evaluate a similar level of effort?

A It guess I was always thinking in dollar terms, how many dollars are they spending on a program.

Q So your expectation was that they would continue to spend at least as much as they have been on the retrofit program?

A Yes.

Q My other question is, and I guess I'm not that embarrassed to reveal my ignorance here, but step back for me a little bit to the basics of the MS4 systems that are involved in these permits and explain -- I'm getting at the issue of the location of the mitigation projects in relation to the development sites, and I want to understand the flow that's coming off of a development site into the MS4 system. Is that always going to be discharging in the same sub-watershed as

and it's been cleared in 1980, they still have to provide mitigation back to forested, and if it's forested now, they've got to do it. They've had lot of sites that have to meet forested historic land cover condition with the duration standard almost 15 years ago.

No one was stepping forward -- there aren't lots of people stepping forward when we're volunteering to do LID because of this egregious flow control standard. And there weren't any less, any difference, at sites that only had to meet the prairie standard.

I don't think there's -- my conversations with the King County folks is there won't be enough of a driver there to make LID happen or not. We needed another driver. And, boy, you've given us one.

Q I don't think I'll ask any questions about your position on vesting with respect to low impact development going forward.

MS. MIX: Those are the only questions I had.

MS. DOYLE: I do have a couple of questions.

EXAMINATION

BY MS. DOYLE:

Q Back on the issue of the level of effort on the retrofit program, if I'm understanding your testimony

the development site?

A In general, yes. I mean, you don't want to be pumping stormwater very often, so it's going to probably generally drain the same direction and to the same creek. In fact, we've got a minimum requirement that says wherever practicable you want to keep the water that was coming off the site prior to development going into the same water body after development so we're not transferring flows around.

Q That's kind of what I just wanted to understand on a basic level. Okay.

MS. MIX: Just one other thing.

MS. DOYLE: Go ahead.

FURTHER EXAMINATION

BY MS. MIX:

Q I just wanted to ask one other hopefully brief question on the question of the equivalency of the two programs, and I understand better now what Ecology is saying about flow control will occur; it will just occur at a different site.

But is another way to look at that equivalency -- I don't know if I can ask this. Let's say the county had an ordinance that required flow control to the forested condition that would ensure that all

developers did that, and it followed through from the ordinance down to the ground level. Now you have an agreed order where you have the acreage requirement, and that is equivalent in the sense that it ensures that there will be "X" amount of flow control, that the ordinance is equivalent to the agreed order.

Does that make sense to you?

A I'm not sure I got your question, but, I mean, if it's getting at the issue of how are we sure that we're getting the same amount of flow control --

Q Yeah.

A Well, I mean, truth be told, I've said this before to folks and said it to Mr. Hasselman, who got a good yuck out of it, you know, this isn't an exact science, this stormwater stuff. There's error in the model; they're error in various ways the model gets used; you know, there's some error in just tracking acreages, whether this acreage provides the same amount of flow to a stream over here as it did over here.

There are differences, but, I mean, the differences due to not taking into account soil and slope aren't big, and the differences in where you're at in the watershed can be an issue, but we think that the criteria that are set up in the agreed order in the big picture get at trying to make sure we're making

the progress that we hoped to make with the original default.

Under the original default, we're not controlling where development happens, so where you might get improvement from an environmental perspective is random. At least under the agreed order, the county is going to be trying to put the mitigation into watersheds where they think -- and we generally agree with criteria they've used to try to identify those environmental benefit areas -- where it's important to provide it.

And, yeah, we could put so many conditions on this to make it exactly as much as we could the same, and you're going to hamstring the program so much that it's not going to be implementable, and there's not going to be -- the gain from doing it, we don't think is worth arguing about.

And, you know, we tried to make the issue on the big -- we tried to cover the big picture issues we thought were important, and some of the things maybe we missed, well, let us know what it is and we'll see what we can do. But I think we've covered the big issues.

I don't agree with anyone's assessment so far on a technical basis that we aren't meeting the intent of

the original permit conditions. I've not heard anything from any witness or in conversations with people in-house that this is not environmentally at least an equivalent proposal.

Q Okay. That helps more. Thanks.

MS. DOYLE: Is there any follow-up to the Board's questions? I'll start with Mr. Hasselman.

MR. HASSELMAN: Just quickly.

EXAMINATION BASED UPON BOARD QUESTIONS

BY MR. HASSELMAN:

Q Ed, do you mind putting that map that's behind you up on the easel.

A (Witness complies.)

Q And since the legend is hard to read, can I just ask you to confirm that the red lines represent streams in which there are ESA-listed salmon? Or let's just say salmon. They're all ESA listed.

A The red line legend says salmonid species range.

Q Okay.

A So it's where all the salmonids occur apparently.

Q We referred to the municipal stormwater sewer system. In your experience, is a municipal stormwater sewer system like a sanitary sewer system in the sense that it collects stormwater all over, channels it into some

grand centralized point and does something with it there?

A Not exactly. I mean, the concept of collection and discharge at a specific point is the same, but, you know, for a huge area you might have one sanitary sewer system that has one discharge point, whereas for storm sewers, you've got a lot of discharge points throughout the watersheds.

Q On the order of dozens or --

A Yeah, probably.

Q -- thousands?

A For Clark County, it's hundreds if not thousands.

Q Of different discharge points?

A Stormwater discharge points, right.

Q And MS4 includes any county-owned gutter or curb or pipe; isn't that right?

A Roughly, yes.

Q And ditches as well?

A Ditches. Especially in the county areas, a lot of conveyance via ditches.

Q And is it typical that the point of discharge is frequently fairly close to the point where the runoff is generated? I mean, is it usually piped for some great distance at a time?

A Not as much as a sanitary sewer system, if you're

using that for comparison. It generally discharges into the same water body that that site might have contributed to via overland flow or through natural drainage channels that might be termed creeks. It will discharge to the same point.

Q Okay.

A Roughly, not too far away.

Q But it could be two feet away; there could be a collection point of -- what do you call it on the street?

A Catch basin.

Q A catch basin could be just discharging three feet away?

A That's a hyperbole. But, yes, roughly.

Q Does that never happen?

A Usually not three feet. Usually there's a bit of a setback. But it's not that far.

Q Okay. So is it fair to assume, looking at this map, that there are many, many discharge points discharging to streams within the range of salmonids in Clark County?

A Yes.

MR. HASSELMAN: That's all I have.

MS. DOYLE: Mr. Lavigne?

EXAMINATION BASED UPON BOARD QUESTIONS

BY MR. LAVIGNE:

Q Mr. O'Brien, you were asked questions about the county's level of effort under the retrofit program by Board Member Doyle. Do you remember that?

A Yes.

Q And I just wanted to clarify, when you said your expectation was that the county would continue with its same historic level of investment, that historic level, even before the order was put in place, it bounced around, didn't it?

A Well, having looked at information from the county, it appears to have bounced around.

Q And that's not atypical with other permittees, is it?

A Well, it's not atypical because you might have -- there are some projects that simply cost more than others, and when you get a big project completed, you know, it will show up in one year, and it will bump up that year over the others.

Q Thank you.

MR. LAVIGNE: That's all I have.

MS. DOYLE: Okay. Thank you, Mr. O'Brien. We're finished --

THE WITNESS: You're welcome.

MS. DOYLE: -- with your testimony for now. I won't excuse you since I understand you get to come back, if there's time, for the county to ask questions at a later point.

MR. LAVIGNE: At this point, we would call Mr. Bill Moore.

(WITNESS SWORN.)

MR. LAVIGNE: Ms. Doyle, before I begin my examination of Mr. Moore, I have a document I intend to ask Mr. Moore to refer to to refresh his recollection, and I also ultimately intend to move for its admission.

I've shared the document with Mr. Hasselman earlier in the proceeding, and I understand he may have objections to it. It's not a document we identified in our exhibit list, but I still believe it's appropriate for Mr. Moore to use it to refresh his recollection.

And at this point I'd like to hand copies up to the Board as well so they can follow while we're going through Mr. Moore's testimony, and you can decide, when I move to admit, whether it comes in or not.

MS. DOYLE: Okay. Shall we give this a number for identification purposes to start with?

MR LAVIGNE: Yes. And I would propose we add it at the end of the joint exhibits or identify it at

the end of the joint exhibits, whatever that is. J-24 perhaps?

MR. HASSELMAN: I don't think --

MS. DOYLE: Looks like it would be J-22. We'll mark it as that for identification.

MR. LAVIGNE: I think we have a 22 and 23 already. 22 is the Phase I permit modification from September, and 23 is the September 2010 modified permit.

MS. DOYLE: Well, the list that I'm working off of -- and I know the lists have change, but it does say Revised Final List of Joint Exhibit Showing Reserved Objections dated the 27th, the day before the hearing -- only goes up to 21. So let's choose a number for it, move on, and we'll address the housekeeping later.

MR. LAVIGNE: I will select J-24, then.

MS. DOYLE: Okay. We will call this one J-24. Please proceed.

MR. LAVIGNE: Thank you.

WILMOT "BILL" MOORE, being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

A That's correct.
Q Is there any reason that a well-intentioned, competent clean water program manager wouldn't implement it in that manner?
A I have no reason to suspect that they wouldn't.
Q Do you have any reason to suspect that the management staff of Clark County are not well intentioned or not competent?
A No.
MR. POTTER: I have nothing further.
MS. DOYLE: Okay.
MR. HASSELMAN: Can I have one question?
MS. DOYLE: Mr. Hasselman, I'll allow you some additional cross.

CROSS EXAMINATION

BY MR. HASSELMAN:
Q Back to A-55, if you don't mind, bottom of page 2, the section that Mr. Potter had you read. In the first sentence starting with, "In the appeal, the Neighborhood Association...," in that first sentence before the parentheses, that's characterizing the Neighborhood Association's argument; is that correct?
A That is correct.
Q And in the parentheses, it says "a decent argument,"

etcetera, etcetera.
Is that your characterization of our argument, or are you just saying that we think it's a decent argument?
A This was my opinion based upon looking at your argument and trying to convey to my director looking at it in, like I said, a very cursory -- and I could go back and look, but it looks like less than 24 hours since the appeal was filed that I wrote the e-mail. It was my assessment based upon that in a very quick kind of review and the merits, if you will, to my director.
Q Okay.
MR. HASSELMAN: That's all I have.
MS. DOYLE: Anything further?
MR. POTTER: No.
MS. DOYLE: Did the Board have any questions?
All right. Thank you, Mr. Moore. You are excused.
And let's go ahead and stop the clock for just a minute, and I believe we'll have Mr. O'Brien back on the stand next.

EDWARD O'BRIEN, being previously duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. POTTER:
Q Mr. O'Brien, you're still under oath.
I want to just ask you a question about the timing issue, a very simple question.
If the county does flow control projects in advance of new development occurring so that we have more mitigation credits, the more mitigation obligation, would you agree that there is no timing issue; there is no delay?
A Yes.
Q Second question on timing.
The permit does not have a similar "You must have your detention facilities complete within two years of the start of construction"; that standard in the agreed order does not appear in the permit, does it?
A I'm sorry. Could you repeat?
Q Sure. My question is, you understand that the agreed order says that the county mitigation project has to be completed within two years of the close of the year in which construction began on the development project?
A Yes.
Q Okay. So that's sort of what frames our two-year delay or three-year delay or whatever you want to call

the delay argument. And now I'm focusing on the permit with respect to flow control.
When are detention facilities required to be complete and operational under the permit?
A At project sites?
Q Yeah, project sites, new development project sites.
Is it at the time that the project is complete, the facilities have to be operational? And I'm talking about the facilities that pertain to the historic condition.
A I'm a little bit unclear about that. I don't think there's a provision in the permit that says when those facilities have to be operational.
Q Okay. Well, in this case, you know, we're comparing the protection in the agreed order to the protection in the permit, and on this timing issue, we're very clear on what the requirement is in the agreed order. No one has, to my knowledge -- well, someone just says you have to have those post-construction facilities -- they're called that, right, the detention at the development site?
A Yeah.
Q They're referred to as post-construction facilities. And that's because they're after construction, isn't it?

A Right. I can tell you my understanding of what happens in most cases is that during construction they have to have temporary erosion and sediment control, and if you have a site above I think it's one or two acres in total, you're required to have a sediment control pond on site so that your runoff during construction, any sediment goes into that pond, and you try to get some removal of sediment.

Because these project sites that drain to streams have to provide flow control for the developed condition, I think the usual operating procedure is that they build the pond that's intended for flow control early, the first step of construction, because they're going to use it to meet their erosion control requirement.

Now, there's a catch. In order for the sediment pond to work, you want water to build up in that pond. And so -- God, this gets confusing; I'm sorry -- if the pond is being used for treatment and flow control for that development, which, again, is the most likely case, you do have the lowest orifice that lets water out of that pond to meet the flow control requirement is elevated, and there's three feet of dead storage.

And what the contractors commonly do is they use that dead storage to meet their sediment erosion

control requirement. Sometimes that volume that they're using to do that isn't enough, and they have to plug up some of those orifices a bit to let water go deeper. So you might not have full flow control during construction that you're going to have post-construction, but you have some amount of flow control because you've still got those orifices that take water away.

Now, if you're just using the pond for flow control, those orifices are down at the bottom, and if we allow them to operate, we wouldn't get the sedimentation we would want during construction. So we have guidance that tells them to plug those up a bit, and the result is we only get effective flow control to, like, half the two-year storm through a two-year storm during construction because we plug those lower orifices.

Now, most construction projects only last a year or two, so the likelihood that we're going to get a big impact is less. Before the project is done, they have to unplug those orifices and clean out any sediment from the pond, so now the pond is going to operate as normal.

So this makes -- you know, trying to make this crosswalk on what's delay and how much delay is

confusing, and I'd hoped we weren't going to go there, but here we are.

(LAUGHTER.)

Q And my question really wasn't -- it's just focused on facilities that provide detention to the historic condition. And if you don't know when those facilities need to be on line operational under the permit, then I will --

A The permit didn't speak to it, but the assumption is they have to be on line when the project is finished, but the commonly --

Q Used for something else during construction?

A Yeah.

Q But I don't care about something else. I care about the historic condition. So they perform the historic condition function at the completion of construction.

Forget it.

A Well, it's fully there at completion of construction, yes. No doubt that would be latest.

Q No, that's all right. It was probably a bad question.

You've been present through much of this hearing?

A Yes.

Q Is there anything that you've heard during the testimony that makes you believe that the county is not going to continue its structural retrofit program

to a level that's going to be compliant with the permit and consistent with what our past practice has been?

A I don't think I've heard anything.

Q One question about project location.

If you have a development occurring at a location on a stream or leading into a stream -- say, this one flows here -- and you are going to look at where should we put a mitigation project, okay. This goes to the upstream/downstream issue.

If there's a project that's identified downstream that provides more environmental benefit than a project that may be located upstream, do you think it's more beneficial to do the downstream project or the upstream?

A Well, you loaded the question, so I think I can only answer yes.

(LAUGHTER.)

Q That's my job.

But seriously, I mean, if you're going to manage -- a responsible manager, is he going to be looking for where do we get the most for the investment, what provides the most environmental benefit? In your view is that the more appropriate criteria as opposed to upstream/downstream?

A Well, I think the upstream/downstream can come into play in deciding where the more environmental benefit is at.

Q No doubt.

A But like I said, it's somewhat dependent on the quality of the habitat in the two streams that you're talking about switching in addition to the location in the watershed.

Q The default standard is not specific to development site characteristics, is it; it's the same for every development site?

A Yes. It plays out different in maybe how much detention you might have to have at a site, but the standard is the same.

Q But the requirement is blind to site characteristics?

A Yes.

MR. POTTER: Nothing further.

MR. HASSELMAN: I don't think I have anything.

MS. DOYLE: Okay. Are there any Board questions? I actually have one.

EXAMINATION

BY MS. DOYLE:

Q This is related to the questions that Mr. Potter was asking you, but in some respects it's looking ahead

to, I think, the testimony that's going to be coming from the next witnesses.

Do you have an understanding of whether the flow control mitigation projects that Clark County is doing, would you characterize them as regional detention projects, or are they simply small scale projects that are in a different location from the development site? If you know, can you explain what your understanding is.

A Well, I don't know the background for why you're asking this question, but I can tell you from my look at the very brief description of the types of projects Clark County was proposing to meet their obligation, they're mostly projects that are serving subdivisions, individual subdivisions, and so I wouldn't call them regional detention facilities. They're facilities serving subdivisions.

Now, they could do a regional facility, one big facility at a location serving multiple subdivisions. That's certainly an option. In fact, that's an option for meeting the default flow control standard. The county could decide, rather than having developers build detention facilities for each subdivision, they could have regional facilities, fewer facilities, if you will, built but bigger to search all anticipated

development in an area.

And who pays for that, I don't care. But that's another way of meeting the default requirement for providing flow control.

And in regional facilities you can make them meet whatever standard you wanted to at that site, so you could have regional facilities that served all these project sites in one basin, and if they didn't match the -- weren't sized to match the historic condition, then the county would be obligated to make up for that difference by detention someplace else, either in that same basin or in another basin where they think it might be a higher environmental priority.

Q And so do you have an understanding of whether Clark County's proposed projects fall into that category or not?

A I think most of their projects are more of the same, like, size projects as you would normally get at a subdivision development type project.

Q Okay. Thank you.

A So, I mean -- apologies to all cat owners -- there's more than one way to skin this cat.

MS. DOYLE: Anything to follow up?

MR. POTTER: I would.

EXAMINATION BASED UPON BOARD QUESTIONS

BY MR. POTTER:

Q How certain are you of that, Mr. O'Brien, that those mitigation projects are -- well, are you saying that they just serve a single subdivision, or are you saying that --

A I thought that some of them did. I mean, just looking at the names of them and the sizes of them, I thought most of them were not what I would call big regional facilities. Now, if they are, then I --

Q Well, then I just think it's fair that you give an indication of your degree of certainty when you say that.

A Okay. Well, I --

MR. LAVIGNE: I will object to that question. That's argumentative.

MR. POTTER: I don't think it is.

MR. LAVIGNE: Ask him a question.

A Let me respond this way.

MS. DOYLE: Just a minute. Could you reask your question, Mr. Potter.

MR. POTTER: I'll ask it the same way.

Q (Continuing by Mr. Potter) How certain are you, when you testify that the mitigation projects are -- well, I'll break it in two pieces, because I think there's

APPENDIX 7

POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

PUGET SOUNDKEEPER ALLIANCE and PEOPLE FOR PUGET SOUND; PIERCE COUNTY PUBLIC WORKS AND UTILITIES DEPARTMENT; CITY OF TACOMA; THE PORT OF SEATTLE; SNOHOMISH COUNTY; CLARK COUNTY; and PACIFICORP and PUGET SOUND ENERGY, Appellants, vs. DEPARTMENT OF ECOLOGY, Respondent, and KING COUNTY; CITY OF SEATTLE; PORT OF TACOMA, and WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, Intervenors.	PCHB NOS. 07-021, 07-026, 07-027, 07-028, 07-029, 07-030, 07-037 DIRECT TESTIMONY OF DR. DEREK BOOTH (PHASE I)

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

I. INTRODUCTION AND QUALIFICATIONS

1. My name is Derek Booth. I am a geomorphologist by training and have a Ph.D. in geological sciences from the University of Washington (1984). I am also a licensed professional engineer (Washington) and professional geologist (Washington and California). Since 2006, I have worked for Stillwater Sciences, Inc., a scientific consulting firm, where I am currently president and senior geologist. Prior to 2006, I spent ten years in various research and teaching roles as a professor at the University of Washington. Between 1985 and 1996, I worked as a geologist for King County, primarily with its Surface Water Management Division. My research and publication work has focused on studying the response of natural systems—particularly rivers and streams—to human activities. I have authored scores of articles, book chapters, and conference proceedings related to the impacts of urbanization on streams and rivers. I have substantial expertise in studying the impacts of stormwater runoff from urban and urbanizing areas on rivers and streams, particularly in western Washington. I am currently a member of a panel of scientific experts convened by the National Academy of Sciences to address how best to reduce the water pollution impacts of urban stormwater.

2. I have read the Phase I Permit ("Permit") and associated fact sheet, as well as the 2005 Ecology stormwater manual and I am familiar with earlier iterations of that Manual. I am very familiar with most of the literature addressing the impacts of municipal stormwater and development on water quality, rivers and streams, and beneficial uses, and the literature addressing various stormwater management techniques and their comparative effectiveness at protecting rivers, streams, and water quality. My C.V. is attached as PSA-104.

II. STORMWATER IMPACTS TO RIVERS AND STREAMS

3. The hydrology of lowland western Washington is well studied and some general observations about the hydrology of a typical forested, undeveloped site in this region can be

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

made. Approximately half of the rain or snow that falls on a typical site is intercepted by trees and other vegetation and either evaporates back into the atmosphere or is absorbed by the vegetation from their surfaces and the soil; this is known as "evapotranspiration." The other half is absorbed by the soil itself and slowly infiltrates into groundwater over time or moves through subsurface flows of various depths downhill until it is discharged into a stream. Very little, and often no, runoff moves over the ground surface (known as "overland flow") before entering a stream channel or being otherwise expressed as a surface-water wetland or lake. In general, nearly all of the water in natural surface water bodies (i.e. streams, rivers, lakes) has originated from either shallow or deep groundwater discharge; commonly, the only direct surface-water inputs are direct precipitation on the water surface itself. These observations are confirmed by PSA-11 at Table 1. (Beyerlein, Why Standard Stormwater Mitigation Doesn't Work). The data presented in this document are consistent with my observations and the literature generally.

4. This hydrologic regime significantly attenuates the quantity and rate of movement of precipitation into surface waters. In undeveloped watersheds, stream flows often respond very little to rainfall during and at the end of the summer dry season, as the soil most often has the capacity to store the volumes of water generated by these events. I have not systematically reviewed all available data, but I would expect that rainfall totals of up to several tenths of an inch would produce little if any flow increases under such circumstances. As the wet season progresses and the soil's moisture holding capacity gradually fills, however, rivers and streams start to respond with higher discharges during storm events as water slowly works its way through shallow subsurface and groundwater flows to the stream. The inverse phenomena are observed on the tail end of storms and at the close of the rainy season: stream volumes drop gradually as the water moving through the subsurface tapers off. During the dry season,

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 FAX

instream flows are chiefly maintained by groundwater, as there are very few storm events.

5. The consequences of these natural patterns are fundamental to appreciating the impacts of modern urban stormwater on streams. The natural response of flow in surface streams to a precipitation event is a gradual increase followed by a gradual decline. In winter during large storms this increase can occur more rapidly, but the rate of increase is always slower than would result from the direct surface input of runoff, because most of the water is entering the stream via subsurface pathways. Rivers and streams in western Washington, and the aquatic life that inhabit them, evolved in response to these patterns, and are well adapted to them.

6. Many of the geologic maps of western Washington in common use by geologists were created by me and I have a detailed understanding of the nature and distribution of geologic materials in western Washington. In general, they are highly variable. Underneath a layer of topsoil of varying depth, commonly a few feet thick, two geologic materials predominate, "outwash" and "till." Outwash is generally sandy and gravelly, and it allows for the rapid infiltration of water. Till is a heterogeneous mixture of silt, sand, and gravel that was highly compressed by the glacier that deposited them. Although topsoils developed on top of both outwash and till can be quite permeable, fresh unweathered deposits of till that underlie the surface topsoil layer typically display variable but generally very slow infiltration rates of about an inch per month. Till is the more common of these geologic materials, with recent region-wide compilations across the Puget Lowland suggesting that it underlies about 2/3 of the land area.

7. The topsoils that have developed on top of the till and the outwash are much more similar to each other in their physical and hydrologic properties than their underlying "parent" deposit from which they have been derived. As long as the topsoil layer has not been compacted, stripped, or otherwise disturbed, both soil types have high infiltration capacities

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

relative to common rainfall intensities over the region (i.e., infiltration rates greater than a few inches per hour). They both have a high sand content and porosities (i.e., the fraction of their bulk volume that can be filled with either air or water) of about 50%. These topsoil deposits, and the underlying geologic substrate from which they are formed, are also quite heterogeneous over short distances. So digging one hole to assess the soil doesn't necessarily give you a complete picture of what might be present just ten feet away. In general, an accurate assessment of the infiltrative capacity of soils is best made on a site-specific basis with some degree of testing, but most sites with an undisturbed soil layer will have high infiltration rates at the surface and a capacity to store up to several feet of water in the shallow subsurface, depending on local groundwater conditions. Conversely, a site whose topsoil has already been stripped will display very poor infiltration capacity if underlain by till, unless mechanical tilling and mixing of the unweathered deposit is undertaken.

8. As an undeveloped site is developed, the hydrologic picture changes. First, some or all of the trees and other vegetation are removed from a site and, typically, the top layer of soil is removed. Before anything else happens, this substantially alters the hydrology of the site. Evapotranspiration is significantly reduced, such that the total volume of water that needs to leave the site (either infiltration to groundwater, movement in subsurface flows, or through overland surface runoff) is significantly increased. Next, compaction of any remaining soil, followed by construction of impervious surfaces (roads, rooftops, driveways) further disrupt the site's ability to store, retain, and infiltrate stormwater. One inch of rain falling on a 2,000 square foot roof generates 1,200 gallons of stormwater that cannot infiltrate or be eliminated through evapotranspiration and so will run off the impervious surface's edges. Even a lawn can act much like an impervious surface, since lawns are commonly laid out on top of highly compacted soils

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

that infiltrate and store water poorly. The volumes of water that cannot be infiltrated into deep or shallow groundwater become surface runoff that moves downhill rapidly. Thus, developing a site for a typical commercial or multifamily residential development results first in a dramatic increase in total volume of water that will not leave the site naturally (either via infiltration or evapotranspiration), a dramatic increase in the rate of surface runoff—as much as ten-fold above predevelopment peaks—and a decrease in groundwater recharge and subsurface flows.

9. I have spent much of my career studying the response of streams to these changes to the native hydrology of western Washington. Contrary to common belief, there is no meaningful "threshold" (typically measured as the proportion of impervious surface in the contributing watershed) below which impacts cannot be observed. Changes to a stream's ecological health become noticeable at very early stages of development, and become increasingly evident as watersheds develop further. The dramatic increase in total volumes of runoff as development increases has effects that include at least the following: increases in flooding, channel erosion, and bed and bank scour, leading in turn to higher levels of suspended sediment, greater potential for deposition of coarse sediment farther downstream, and declines in the populations of aquatic organisms. One of the key reasons for these escalating effects is that as development increases, the natural attenuation of storm flows through soil and subsurface flows is lost such that stream discharges both rise and fall suddenly and significantly during and after storm events. Conversely, the loss of infiltration to groundwater can result in substantially decreased post-storm and dry season flows, which further disrupt natural processes. The biological response to these changes is equally well studied. Although I am not a biologist, I am very familiar with the literature discussing the biological impacts of urbanization. Analysis has consistently shown that the biological health of streams (in western Washington, most commonly

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

measured through indexes based on populations of benthic macroinvertebrates) (i.e., "stream bugs") drops rapidly as watersheds are developed. Although there is no discrete threshold at which streams invariably stop supporting such beneficial uses as salmon spawning and rearing, benthic and fish populations become progressively more degraded, and commonly unsustained, as watershed development reaches typical suburban or urban densities.

III. STORMWATER FLOW CONTROL AND THE 2005 ECOLOGY MANUAL

10. The Ecology stormwater manuals, and other similar manuals in use in western Washington, represent an effort to reduce the adverse impacts to hydrology and water quality associated with stormwater runoff from urbanization as described above. I confine my discussion here mostly to these documents' prescriptions for flow control, not pollutant source reduction or treatment. I have read the declaration of Dr. Richard Horner, which addresses these matters in some detail, and concur with his conclusions.

11. Over the past several decades, as it became clear that the practice of allowing stormwater runoff to be discharged directly to surface waters without control was devastating stream systems, stormwater managers developed an approach that relied primarily on capturing and detaining runoff in centralized engineered facilities (chiefly detention ponds, but also underground vaults) so that it could be released slowly over time to reduce the impacts of high peak discharges, chiefly downstream flooding. Other centralized engineered facilities approaches, namely large-scale infiltration ponds, were also developed. Infiltration ponds are similar to detention ponds but are designed with the expectation that a significant fraction of the runoff will infiltrate into groundwater rather than be discharged directly to a surface water body.

12. Early stormwater manuals sought only to limit the *peak* flows associated with storm events, because these cause the most obvious damage to human infrastructure (via flooding) and physical structures in the stream. For example, if modeling showed that flows in a

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 (FAX)

particular stream above 100 cfs would create problems, an engineered structure would be designed to detain runoff to limit the peak discharge of a chosen "design storm" to less than this level. However, this "peak flow" standard proved inadequate to protect streams and the aquatic life in them, in part because it allowed extended periods of high—but not "peak"—flows that were still highly erosive to the channel banks and substrate, and were far above predevelopment rates. In addition, because the peak flow standard is not tied to the natural seasonality of flows, it could be satisfied despite allowing high summer flows—below the maximum that might cause damage to infrastructure, but still well above those that would ordinarily occur in a natural stream. Flow standards thus allowed unnatural flow patterns in size, duration, and timing, even though any given flow might not exceed a specific storm event threshold.

13. These problems led Ecology to refine the peak flow standard and adopt a "flow duration" standard that is included in the 2005 stormwater manual. This standard is based largely on work done in King County in the late 1980s and early 1990s, in which I was directly involved and about which I have published several journal articles. Under the flow duration standard, facilities must be engineered so that discharges are not predicted to exceed the predevelopment flow "durations" for a range of storm events. The common range over which this requirement is applied spans (on the low end) discharges of 50% of the two-year peak flow (presumed to mark the minimum flow necessary to initiate sediment transport in a stream) to (on the high end) a 50-year recurrence flow, judged on a policy basis to represent an "acceptable" trade-off between likelihood of occurrence and cost of stormwater-control facility. The goal of the flow duration standard is to maintain the frequency and intensity of movement of bedload gravel sediment in a stream, relative to pre-development conditions. In other words, because higher flows would move gravel even in pre-development conditions, the flow duration standard

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

seeks to not have that movement be any more intense or active in the post-development condition. Because the total volume of runoff is greater in the post-development condition, however, flows below the threshold of sediment transport must be allowed to discharge at extended durations.

14. Reliance on the flow duration standard solves one shortcoming of previous approaches, but it still leaves many others unsolved. The 2005 Manual does not require that new and re-development mimic "pre-development" hydrologic conditions, or anything close to them. For example, because the Manual sets no limit on land clearing or generation of impervious area, it does not prevent the significant increase in the total volume of flows that follow from most development practices. This water is no longer available to recharge groundwater or support base flows. There is no requirement to match predevelopment attributes of the timing, the rate of rise or fall in the hydrograph, or the season in which high flows are experienced. Indeed, most of these attributes cannot be achieved through detention ponds, because to achieve these attributes would require holding water for weeks or months before releasing it to the stream. This is one of the primary functions of the groundwater system in the natural hydrologic regime of western Washington. That regime cannot be achieved with a constructed pond of limited extent.

15. Additionally, the primary focus of all detention standards is on mitigating the worst impacts of large storm events; it often has little or no detention effect on small storm events. Thus, whereas a small rain event during a dry season might have virtually no discernable impact on stream flows pre-development (because the water would never reach the stream), the same rain event on a site developed to Ecology's 2005 manual standard could well trigger an unnatural, and potentially ecologically damaging, increase in summer stream flows. Detention ponds designed to control moderate and large flows may not exert any noticeable effect on

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 (FAX)

smaller flows that still have ecological significance.

16. The flow duration standard also does not fully correct the development-altered rate at which low flows ramp up to high levels and back down, both with respect to single storm events and by season. A pond could be built to comply with the flow duration standard but still yield flows coming in short, sharp spikes, separated by weeks of very low flows. From an ecological perspective, and quite possibly from a sediment-transport perspective as well, this regime is very different from the gradual rise and fall of a natural stream in a predevelopment watershed. Additionally, the flow duration standard does not address the seasonal hydrograph of predevelopment conditions: under the standard, it doesn't matter whether a high discharge event, even if controlled to established requirements, occurs in July or January. But the biota of a stream are adapted to accommodate those flows during some parts of the year, corresponding to particular life stages, and not during others.

17. Because many of these alterations of timing and sequence of flows have significant ecological and physical consequences but may not impose readily quantified impacts on sediment mobility, it is inappropriate to use sediment mobility as a surrogate for every other value in the stream, particularly protection of beneficial uses and water quality. Channel stability (i.e., eliminating hydrologic impacts that actually erode the stream and physically move bedload beyond what would be the case in a natural condition) is simply one measure of a stream's health. While it is probably a necessary condition for maintaining stream health, it is not a sufficient one. Indeed, some highly degraded stream channels are quite stable. In other words, even where compliance with the flow duration standard is achieved, and even where the goal of the flow duration standard has been attained, post-development hydrology is dramatically altered from its pre-developed state, and that alteration has been shown to have numerous adverse

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 (FAX)

impacts on the stream and its ability to sustain beneficial uses and aquatic life.

18. The shortcomings of engineered flow detention approaches to mitigating stormwater impacts based on approaches like the flow duration standard are very well documented. Several research papers have found marginal or no difference between the biological health of streams where treatment and detention is provided and those where discharges are unmitigated. Of course, there are no full-watershed field studies documenting the effects of the 2005 Manual requirements, because very few such projects have yet been built. The only available assessments must be based on modeling studies, and by analogy to observed conditions associated with the features common to *all* stormwater detention approaches under any standard (e.g., large open-air ponds, point-source discharges, detention periods of less than a week, limited infiltration). For these reasons, it is my professional opinion, and one that has been expressed in the peer-reviewed literature since 1997, that a developed watershed that was entirely built to meet the 2005 Ecology Manual standards would be very unlikely to support ecologically healthy streams.

19. Outside of the development industry itself, and in particular in the peer-reviewed published literature that stands as the primary test of "best available science," I find a broad scientific consensus that the engineering approaches emphasized in the 2005 Manual, and which are incorporated into the Permit, do not protect water quality and beneficial uses. I share this view. Underlying this "end-of-pipe" approach to stormwater management is the apparent belief that undeveloped watersheds can be converted to any kind of development—including 100% impervious surface—and the impacts to streams mitigated with engineering techniques, a belief that we know is not supportable. New development (or redevelopment) undertaken consistent with the prescriptions of the 2005 Manual can, and almost certainly will, allow changes to stream

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

hydrology that trigger additional degradation of water quality and beneficial uses. This is a view that Ecology has itself expressed in the stormwater manual. If western Washington seeks to accommodate several million additional residents in the decades ahead, but only requires new development to meet the flow duration standard, I offer no hope for recovering Puget Sound, its freshwaters and its iconic species. While I agree that adherence to the flow duration standard is better than doing nothing at all, if the goal to actually protect water quality and beneficial uses, then my scientific judgment leads me to the inescapable conclusion that sole adherence to the flow duration standard and the other elements of the 2005 Manual will be a failure.

20. While some people point out, correctly, that alternative approaches are less well studied than the engineered detention pond approach emphasized in the Manual and Phase I Permit, the research has shown unequivocally that detention ponds and other engineered "end-of-pipe" stormwater management have been and continue to be a failure at adequately protecting streams, wetlands, and Puget Sound. "Well-studied" is not synonymous with "well-regarded." It is my professional opinion that these engineered approaches have been sufficiently discredited as a fully protective strategy, and they should be replaced at every appropriate opportunity by the more effective measures discussed below. This does not mean that "end-of-pipe" approaches will never have a role in specific cases. Rather, in light of their documented ineffectiveness, they should be replaced as a default approach in favor of other known and available alternatives. Together with 13 other scientists and stormwater experts, I signed an open letter to the Puget Sound Partnership expressing these views, which is attached as PSA-10.

IV. ALTERNATIVE STORMWATER MANAGEMENT APPROACHES

21. As discussed above, it is my opinion that the stormwater management techniques authorized under the 2005 Manual and Permit have failed, and will continue to fail, to meet the goal of protecting water quality, beneficial uses, and the streams and rivers of western

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340
(206) 343-1526 [FAX]

APPENDIX 8

Issuance Date: January 17, 2007
Effective Date: February 16, 2007
Expiration Date: February 15, 2012
Modification Date: June 17, 2009

PHASE I MUNICIPAL STORMWATER PERMIT

National Pollutant Discharge Elimination System and
State Waste Discharge General Permit
for discharges from
Large and Medium Municipal Separate Storm Sewer Systems

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
OLYMPIA, WASHINGTON 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified, or revoked, Permittees that have properly obtained coverage under this permit are authorized to discharge to waters of the state in accordance with the special and general conditions which follow.

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Department of Ecology

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

SPECIAL AND GENERAL CONDITIONS

APPENDICES

SPECIAL CONDITIONS

Notice: If Legislation related to this permit is passed into law, Ecology will, as necessary, modify, revoke and re-issue, or terminate this permit to carry out Legislative requirements. Any such modification will be in accordance with General Condition G14 *General Permit Modification and Revocation*, and in accordance with the provisions of WAC 173-226-230.

S1. PERMIT COVERAGE AND PERMITTEES

A. Geographic Area of Permit Coverage

This permit covers *discharges* from Large and Medium *Municipal Separate Storm Sewer Systems* (MS4s) as established at Title *40 CFR* 122.26, except for *municipal separate storm sewers* (MS3s) owned or operated by the Washington State Department of Transportation. Large and medium MS4s include all MS3s located within cities or counties required to have permit coverage.

For S*econdary Permittees* required to obtain coverage under this permit, the minimum geographic area of coverage includes the portion of the MS4 which is located within the unincorporated areas of Clark, King, Snohomish, and Pierce Counties and the incorporated areas of the cities of Seattle and Tacoma. Ecology may establish additional geographic areas of coverage specific to an individual Secondary permittee.

B. The following Cities and Counties are covered under this permit as Permittees:

1. The City of Tacoma and the City of Seattle.
2. Clark, King, Pierce, and Snohomish Counties.

C. King County is covered as a *Co-Permittee* with the City of Seattle for discharges from outfalls King County owns or operates within the City of Seattle.

D. Upon application and coverage in accordance with Special Condition S1.F., the following entities are covered under this permit as *Secondary Permittees*:

1. Port of Seattle, excluding Seattle-Tacoma International Airport.
2. Port of Tacoma.
3. Active drainage, diking, flood control, or diking and drainage districts located in the Cities or unincorporated portions of the Counties listed in S1.B. above, which own or operate municipal separate storm sewers serving non-agricultural land uses.
4. Other owners or operators of municipal separate storm sewers located in the Cities or unincorporated portions of the Counties listed in S1.B above.

E. Unless otherwise noted, the term "Permittee" includes Permittee, Co-Permittee, and Secondary Permittee, as defined above in Special Conditions S1.B., S1.C. and S1.D.

F. Coverage for Secondary Permittees

1. To obtain coverage under this permit, each Secondary Permittee identified under Special Condition S1.D. shall either:

a. Submit a *Notice of Intent* (NOI) and provide public notice of the application for coverage in accordance with WAC 173-226-130. The NOI shall constitute the application for coverage. Ecology will notify applicants in writing of their status concerning coverage under this permit within 90 days of Ecology's receipt of a complete NOI.

b. Submit a co-application jointly with a permittee named in S1.B. and provide public notice of the application for coverage in accordance with WAC 173-226-130. The co-application shall consist of an amendment to the Phase I Part 1, and Part 2 permit applications. Ecology will notify applicants in writing of their status concerning their co-application.

2. Secondary Permittees required to get coverage under this permit, and the NPDES and State Waste Discharge Permit for discharges from Small Municipal Separate Storm Sewers in Western Washington and/or the NPDES and State Waste Discharge Permit for discharges from Small Municipal Separate Storm Sewers in Eastern Washington may obtain coverage by submitting a single NOI.

3. NOIs and co-applications shall be submitted to:

Department of Ecology
Water Quality Program
Municipal Stormwater Permit Program
P.O. Box 47696
Olympia, WA 98504-7696

G. All MS4s and MS3s owned or operated by Permittees named in S1.B. and located in another city or county area requiring coverage under this permit or either the *Western Washington Phase II Municipal Stormwater Permit* or the *Eastern Washington Phase II Municipal Stormwater Permit* are also covered under this permit.

S2. AUTHORIZED DISCHARGES

A. This permit authorizes the discharge of stormwater to surface waters and to ground *waters of* the *state* from municipal separate storm sewers owned or operated by each Permittee covered under this permit in the geographic area covered by this permit pursuant to S1.A. subject to the following limitations:

1. Discharges to ground waters of the state through facilities regulated under the Underground Injection Control (UIC) program, Chapter 173-218 WAC, are not covered under this permit.

2. Discharges to ground waters not subject to regulation under the federal *Clean Water Act* are covered in this permit only under state authorities, Chapter 90.48 *RCW*, the Water Pollution Control Act.

B. This permit authorizes discharges of non-stormwater flows to surface waters and ground waters of the state from municipal separate storm sewers owned or operated by

each Permittee covered under this permit, in the geographic area covered pursuant to S1.A, only under the following conditions:

1. The discharge is authorized by a separate individual or general National Pollutant Discharge Elimination System (NPDES) permit; or
2. The discharge is from emergency fire fighting activities; or
3. The discharge from another illicit or non-stormwater discharge that is managed by the Permittee as provided in Special Condition S5.C.8., S6.D.3., or S6.E.3.
4. These discharges are also subject to the limitations in S2.A.1. and S2.A.2. above.

C. This permit does not relieve entities that cause illicit discharges, including spills of oil or hazardous substances, from responsibilities and liabilities under state and federal laws and regulations pertaining to those discharges.

D. Discharges from municipal separate storm sewers constructed after the effective date of this permit shall receive all applicable state and local permits and use authorizations, including compliance with Chapter 43.21C RCW (the State Environmental Policy Act).

E. This permit does not authorize discharges of stormwater to waters within Indian Reservations except where authority has been specifically delegated to Ecology by the U.S. Environmental Protection Agency. The exclusion of such discharges from this permit does not waive any rights the State may have with respect to the regulation of the discharges.

S3. RESPONSIBILITIES OF PERMITTEES

A. Each Permittee, Co-Permittee and Secondary Permittee is responsible for complying with the terms of this permit for the municipal separate storm sewers it owns or operates.

1. Each Permittee, as listed in S1.B., is required to comply with all conditions of this permit, except for S6. *Stormwater Management Program for Co-Permittees and Secondary Permittees*.
2. King County, as a Co-Permittee, is required to comply with all conditions of this permit except for S6.D. and S6.E.
3. The Port of Tacoma and the Port of Seattle, are required to comply with all conditions of this permit except for S5. *Stormwater Management Program* and conditions S6.D. and S6.F.
4. All other Secondary Permittees, except for the Port of Tacoma and the Port of Seattle are required to comply with all conditions of this permit except for S5. *Stormwater Management Program* and conditions S6.E., S6.F., and S8.C. through S8.H.

B. Permittees may rely on another *entity* to satisfy one or more of the requirements of this permit. Permittees that are relying on another entity to satisfy one or more or their permit obligations remain responsible for permit compliance if the other entity fails to

implement the permit conditions. Where permit responsibilities are shared they shall be documented as follows:

1. Permittees and Co-Permittees that are continuing coverage under this permit shall submit a statement that describes the permit requirements that will be implemented by other entities. The statement must be signed by all participating entities. There is no deadline for submitting such a statement, provided that this does not alter implementation deadlines. Permittees and Co-Permittees may amend their statement during the term of the permit to establish, terminate, or amend their shared responsibilities statement, and submit the amended statements to Ecology.
2. Secondary Permittees shall submit an NOI that describes which requirements they will implement and identify the entities that will implement the other permit requirements in the area served by the Secondary Permittee's MS4. A statement confirming the shared responsibilities, signed by all participating entities, shall accompany the NOI. Secondary Permittees may amend their NOI, during the term of the permit, to establish, terminate, or amend shared responsibility arrangements, provided this does not alter implementation deadlines.

C. Unless otherwise noted, all appendices to this permit are incorporated by this reference as if set forth fully within this permit.

S4. COMPLIANCE WITH STANDARDS

A. In accordance with RCW 90.48.520, the discharge of toxicants to waters of the State of Washington which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria is prohibited. The required response to such discharges is defined in section S4.F., below.

B. This permit does not authorize a discharge which would be a violation of Washington State surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), or human health-based criteria in the national Toxics Rule (Federal Register, Vol. 57, NO. 246, Dec. 22, 1992, pages 60848-60923). The required response to such discharges is defined in section S4.F., below.

C. The Permittee shall reduce the discharge of pollutants to the *maximum extent practicable* (MEP).

D. The Permittee shall use all known, available, and reasonable methods of prevention, control and treatment (*AKART*) to prevent and control pollution of waters of the State of Washington.

E. In order to meet the goals of the Clean Water Act, and comply with S4.A., S4.B., S4.C., and S4.D., each Permittee shall comply with all of the applicable requirements of this permit as defined in S3. Responsibilities of Permittees.

F. A Permittee remains in compliance with S4. despite any discharges prohibited by S4.A. or S4.B., when the Permittee undertakes the following response toward long-term water quality improvement:

1. A Permittee shall notify Ecology in writing within 30 days of becoming aware, based on credible site-specific information, that a discharge from the municipal separate storm sewer owned or operated by the Permittee is causing or contributing to a known or likely violation of Water Quality Standards in the receiving water. Written notification provided under this subsection shall, at a minimum, identify the source of the site-specific information, describe the nature and extent of the known or likely violation in the receiving water, and explain the reasons why the MS4 discharge is believed to be causing or contributing to the problem. For ongoing or continuing violations, a single written notification to Ecology will fulfill this requirement.

2. In the event that Ecology determines, based on a notification provided under S4.F.1., or through any other means, that a discharge from a municipal separate storm sewer owned or operated by the Permittee is causing or contributing to a violation of Water Quality Standards in a receiving water, Ecology will notify the Permittee in writing that an adaptive management response outlined in S4.F.3. below is required unless Ecology also determines that:

   a. The violation of Water Quality Standards is already being addressed by a Total Maximum Daily Load or other enforceable water quality cleanup plan; or

   b. Ecology concludes the violation will be eliminated through implementation of other permit requirements.

3. Adaptive Management Response

   a. Within 60 days of receiving a notification under S4.F.2., or by an alternative date established by Ecology, the Permittee shall review its Stormwater Management Program and submit a report to Ecology. The report shall include:

      i. A description of the operational and/or structural BMPs that are currently being implemented to prevent or reduce any pollutants that are causing or contributing to the violation of Water Quality Standards, including a qualitative assessment of the effectiveness of each BMP.

      ii. A description of potential additional operational and/or structural BMPs that will or may be implemented in order to apply AKART on a site-specific basis to prevent or reduce any pollutants that are causing or contributing to the violation of Water Quality Standards.

      iii. A description of the potential monitoring or other assessment and evaluation efforts that will or may be implemented to monitor, assess, or evaluate the effectiveness of the additional BMPs.

iv. A schedule for implementing the additional BMPs including, as appropriate: funding, training, purchasing, construction, monitoring, and other assessment and evaluation components of implementation.

b. Ecology will, in writing, acknowledge receipt of the report within a reasonable time and notify the Permittee when it expects to complete its review of the report. Ecology will either approve the additional BMPs and implementation schedule or require the Permittee to modify the report as needed to meet AKART on a site-specific basis. If modifications are required, Ecology will specify a reasonable time frame in which the Permittee shall submit and Ecology will review the revised report.

c. The Permittee shall implement the additional BMPs, pursuant to the schedule approved by Ecology, beginning immediately upon receipt of written notification of approval.

d. The Permittee shall include with each subsequent annual report a summary of the status of implementation, and the results of any monitoring, assessment or evaluation efforts conducted during the reporting period. If, based on the information provided under this subsection, Ecology determines that modification of the BMPs or implementation schedule is necessary to meet AKART on a site-specific basis, the Permittee shall make such modifications as Ecology directs. In the event there are ongoing violations of water quality standards despite the implementation of the BMP approach of this section, the Permittee may be subject to compliance schedules to eliminate the violation under WAC 173-201A-510(4) and WAC 173-226-180 or other enforcement orders as Ecology deems appropriate during the term of this permit.

e. Provided the Permittee is implementing the approved adaptive management response under this section, the Permittee remains in compliance with Condition S4., despite any on-going violations of Water Quality Standards identified under S4.F.A or B above.

f. The adaptive management process provided under Section S.4.F is not intended to create a shield for the Permittee from any liability it may face under 42 U.S.C. 9601 *et seq.* or RCW 70.105D.

G. Ecology may modify or revoke and reissue this General Permit in accordance with G14 *General Permit Modification and Revocation* if Ecology becomes aware of additional control measures, management practices or other actions beyond what is required in this permit, that are necessary to:

1. Reduce the discharge of pollutants to the MEP;
2. Comply with the state AKART requirements; or
3. Control the discharge of toxicants to waters of the State of Washington.

S5. STORMWATER MANAGEMENT PROGRAM

A. Each Permittee listed in S1.B. shall implement a Stormwater Management Program (SWMP) during the term of this permit. For the purpose of this permit a stormwater management program is a set of actions comprising the *components* listed in S5.C., and additional actions and activities, where necessary, to meet the requirements of S7 *Compliance with Total Maximum Daily Load Requirements.*

1. In accordance with the requirements in S9 *Reporting Requirements,* each Permittee shall prepare written documentation of their SWMP and submit it to Ecology in written and electronic formats with the first year annual report. The documentation of the SWMP shall be organized according to the program components in S5.C., and shall be updated annually. The SWMP documentation shall include a description of each of the program components included in S5.C., and any additional actions necessary to meet the requirements of *applicable TMDLs.*
2. Each Permittee shall track the cost or estimated cost of development and implementation of each component of the SWMP. This information shall be provided to Ecology upon request.
3. Each Permittee shall track the number of inspections, official enforcement actions and types of public education activities as required by the respective program component. This information shall be included in the annual report.

B. The SWMP shall be designed to reduce the discharge of pollutants from MS4s to the maximum extent practicable, meet state AKART requirements, and protect water quality.

Permittees are to continue implementation of existing stormwater management programs until they begin implementation of the updated stormwater management program in accordance with the terms of this permit, including implementation schedules.

C. The SWMP shall include the components listed below. The requirements of the stormwater management program shall apply to municipal separate storm sewers, and areas served by municipal separate storm sewers owned or operated by the Permittee. To the extent allowable under state and federal law, all SWMP components are mandatory.

1. Legal Authority

a. No later than the effective date of this permit, each Permittee shall be able to demonstrate that they can operate pursuant to legal authority which authorizes or enables the Permittee to control discharges to and from municipal separate storm sewers owned or operated by the Permittee.

b. This legal authority, which may be a combination of statute, ordinance, permit, contracts, orders, interagency agreements, or similar means, shall authorize or enable the Permittee, at a minimum, to:

i. Control through ordinance, order, or similar means, the contribution of pollutants to municipal separate storm sewers owned or operated by the Permittee from stormwater discharges associated with industrial activity, and control the quality of stormwater discharged from sites of industrial activity;

ii. Prohibit through ordinance, order, or similar means, illicit discharges to the municipal separate storm sewer owned or operated by the Permittee;

iii. Control through ordinance, order, or similar means, the discharge of spills and disposal of materials other than stormwater into the municipal separate storm sewers owned or operated by the Permittee;

iv. Control through interagency agreements among co-applicants, the contribution of pollutants from one portion of the municipal separate storm sewer system to another portion of the municipal separate storm sewer system;

v. Require compliance with conditions in ordinances, permits, contracts, or orders; and,

vi. Within the limitations of state law, carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition on illicit discharges to the municipal separate storm sewer and compliance with local ordinances.

2. Municipal Separate Storm Sewer System Mapping and Documentation

a. The SWMP shall include an ongoing program for mapping and documenting the MS4.

b. Minimum performance measure information and its form of retention shall include:

i. No later than 2 years from the effective date of this permit each Permittee shall map all known municipal separate storm sewer *outfalls* and receiving waters, and structural stormwater treatment and flow control BMPs owned, operated, or maintained by the Permittee. Mapping of outfalls and structural BMPs shall continue on an on-going basis as additional outfalls are found, and as new BMPs are constructed or installed. No later than 2 years from the effective date of this permit each permittee shall initiate a program to map connection points between municipal separate storm sewers owned or operated by the Permittee and other municipalities or other public entities.

ii. No later than 4 years from the effective date of this permit each Permittee shall map the attributes listed below for all storm sewer outfalls with a 24 inches nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems. For Counties, the mapping shall be done within *urban/higher density rural sub-basins*. For Cities, the mapping shall be done

throughout the City. Attributes mapped shall include: Land use, Tributary conveyances (indicate type, material, and size where known); and associated drainage areas.

iii. Each Permittee shall initiate a program to develop and maintain a map of all connections to the municipal separate storm sewer authorized or allowed by the Permittee after the effective date of this permit.

iv. Each Permittee shall map existing, known connections over 8" to municipal separate storm sewers tributary to all storm sewer outfalls with a 24" inches nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems, according to the following schedule:

- City of Seattle and City of Tacoma: 2 years after the effective date of this permit.
- Clark, King Pierce and Snohomish Counties: one half the area of the County within urban/higher density rural sub-basins 4 years after the effective date of this permit.

v. No later than 4 years from the effective date of this permit each Permittee shall map geographic areas served by the Permittee's MS4 that do not discharge stormwater to surface water.

vi. To the extent consistent with national security laws and directives, each Permittee shall make available to Ecology, upon request, available maps depicting the information required in S5.C.2.b.i. through v., above. The preferred format of submission will be an electronic format with fully described mapping standards. An example description is available on Ecology's website. Notification of updated GIS data layers shall be included in annual reports.

vii. Upon request, and to the extent appropriate, Permittees shall provide mapping information to Co-Permittees and Secondary Permittees. This permit does not preclude Permittees from recovering reasonable costs associated with fulfilling mapping information requests by Co-Permittees and Secondary Permittees.

3. Coordination

a. The SWMP shall include coordination mechanisms among departments within each jurisdiction to eliminate barriers to compliance with the terms of this permit. The SWMP shall also include coordination mechanisms among entities covered under a municipal stormwater NPDES permit to encourage coordinated stormwater-related policies, programs and projects within a watershed.

b. Minimum Performance Measures:

i. No later than 1 year after the effective date of this permit, establish, in writing, and begin implementation of, intra-governmental (internal)

coordination agreement(s) or Executive Directive(s) to facilitate compliance with the terms of this permit.

ii. No later than 2 years after the effective date of this permit, or within 2 years following the addition of a new Secondary Permittee, establish:

- Coordination mechanisms clarifying roles and responsibilities for the control of pollutants between *physically interconnected* MS3s of the Permittee and any other Permittee covered by a municipal stormwater permit.
- Coordinating stormwater management activities for *shared waterbodies*, among Permittees and Secondary Permittees, to avoid conflicting plans, policies and regulations.

Permittees shall document their efforts to establish the required coordination mechanisms. Failure to effectively coordinate is not a permit violation provided other entities, whose actions the Permittee has no or limited control over, refuse to cooperate.

4. Public Involvement and Participation

a. The SWMP shall provide ongoing opportunities for public involvement in the Permittee's stormwater management program and implementation priorities.

b. Minimum performance measures:

i. No later than 6 months after the effective date of this permit, develop and begin implementing a process to create opportunities for the public to participate in processes involving the development, implementation and update of the Permittee's SWMP. Each Permittee shall develop and implement a process for consideration of public comments on their SWMP.

ii. Each Permittee shall make their SWMP, the SWMP documentation required under S5.A.1. and all submittals required by this permit, including annual reports, available to the public, starting with the first annual report, on the Permittee's website or submitted in electronic format to Ecology for posting on Ecology's website.

5. Controlling Runoff from New Development, Redevelopment and Construction Sites

a. The SWMP shall include a program to prevent and control the impacts of runoff from new development, redevelopment, and construction activities. The program shall apply to private and public development, including roads.

b. Minimum performance measures:

i. The Minimum Requirements, thresholds, and definitions in Appendix 1, or Minimum Requirements, thresholds, and definitions determined by Ecology to be equivalent to Appendix 1, for new development, redevelopment, and construction sites shall be included in ordinances or other enforceable documents adopted by the local government. Adjustment and variance

criteria equivalent to those in Appendix 1 shall be included. More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances through the use of basin plans or other similar water quality and quantity planning efforts. Such local requirements and thresholds shall provide equal or similar protection of receiving waters and equal or similar levels of pollutant control as compared to Appendix 1.

ii. The local requirements shall include a site planning process and BMP selection and design criteria that, when used to implement the minimum requirements in Appendix 1, will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state requirement under chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART) prior to discharge. Permittees shall document how the criteria and requirements will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state AKART requirements.

Permittees who choose to use the site planning process, and BMP selection and design criteria in the 2005 *Stormwater Management Manual for Western Washington*, or an equivalent manual approved by Ecology, may cite this choice as their sole documentation to meet this requirement.

iii. Low Impact Development

- The program must allow non-structural preventative actions and source reduction approaches such as Low Impact Development Techniques (LID), to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation.
- The program must require[1] non-structural preventive actions and source reduction approaches including *Low Impact Development* Techniques (LID), to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation where feasible.

iv. No later than 18 months from the effective date of this permit, each Permittee shall adopt a local program that meets the requirements in S5.C.5.b.i through iii(1)., above. Ecology review and approval of the local manual and ordinances is required. Approved manuals and ordinances are listed in Appendix 10. Permittees shall provide detailed, written justification of any of the requirements which differ from those contained in Appendix 1 of this permit.

---

[1] In order to implement the Pollution Control Hearings Board's language in S5.C.5.b.iii, Ecology will initiate a process to define the scope of LID techniques to be considered, criteria for determining the feasibility of LID techniques, and a LID performance standard. When the process is complete, Ecology will incorporate the results and a deadline for implementation of S5.C.5.b.iii(2) into the permit through a permit modification.

The Permittee shall submit draft enforceable requirements, technical standards and manual to Ecology no later than 12 months after the effective date of this permit. Ecology will review and provide written response to the Permittee. If Ecology takes longer than 60 days to provide a written response, the required deadline for adoption will be automatically extended by the number of calendar days that Ecology exceeds a 60 day period for written response.

In the case of circumstances beyond the Permittee's control, such as litigation or administrative appeals that may result in noncompliance with the requirements of this section, the Permittee shall promptly notify Ecology and submit a written request for an extension.

v. No later than 18 months after the effective date of this permit, the program shall establish legal authority to inspect private stormwater facilities and enforce maintenance standards for all new development and redevelopment approved under the provisions of this section.

vi. No later than 18 months after the effective date of this permit, the program shall include a process of permits, plan review, inspections, and enforcement capability to meet the following standards for both private and public projects, using *qualified personnel*:

- Review all stormwater site plans submitted to the Permittee for proposed development involving land disturbing activity that meet the thresholds in S5.C.5.b.i., above.
- Inspect prior to clearing and construction, all permitted development sites that meet the thresholds in S5.C.5.b.i., and that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7.
- Inspect all permitted development sites involving land disturbing activity that meet the thresholds in S5.C.5.b.i., above, during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.
- Inspect all development sites that meet the thresholds in S5.C.5.b.i., upon completion of construction and prior to final approval/occupancy to verify proper installation of permanent erosion controls and stormwater facilities/BMPs. Enforce as necessary based on the inspection. A maintenance plan shall be developed for permanent stormwater facilities/BMPs and responsibility for maintenance shall be assigned.
- Compliance with the above inspection requirements shall be determined by the presence of an established inspection program designed to inspect all sites involving land disturbing activity that meet the thresholds in S5.C.5.b.i. Compliance during this permit term shall be determined by achieving at least 80% of scheduled inspections. The inspections may be

combined with other inspections provided they are performed using qualified personnel.

- The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records. Records of maintenance inspections and maintenance activities shall be maintained.
- The program shall include an enforcement strategy to respond to issues of non-compliance.

vii. No later than the effective date of this permit, the Permittee shall make available the "*Notice of Intent for Construction Activity*" and/or copies of the "*Notice of Intent for Industrial Activity*" to representatives of proposed new development and redevelopment. Permittees will continue to enforce local ordinances controlling runoff from sites that are covered by other stormwater permits issued by Ecology.

viii. No later than 18 months after the effective date of this permit, each permittee shall ensure that all staff whose primary job duties are implementing the program to Control Stormwater Runoff from New Development, Redevelopment, and Construction Sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. As determined necessary by the Permittee, follow-up training shall be provided to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

6. Structural Stormwater Controls

a. The SWMP shall include a program to construct structural stormwater controls to prevent or reduce impacts to waters of the state caused by discharges from the MS4. Impacts that shall be addressed include disturbances to watershed hydrology and stormwater pollutant discharges. The program shall consider impacts caused by stormwater discharges from areas of existing development, including runoff from highways, streets and roads owned or operated by the Permittee, and areas of new development, where impacts are anticipated as development proceeds. The program shall address impacts that are not adequately controlled by the other required actions of the SWMP, and shall provide proposed projects and an implementation schedule.

The program shall consider the construction of projects such as: regional flow control facilities; water quality treatment facilities; facilities to trap and collect contaminated particulates; retrofitting of existing stormwater facilities; and rights-of-way, or other property acquisition to provide additional water quality and flow control benefits. Permittees should also consider other means to address impacts, such as reduction or prevention of hydrologic changes through the use of on-site (infiltration and dispersion) stormwater management BMPs

and site design techniques, riparian habitat acquisition, or restoration of forest cover and riparian buffers, for compliance with this requirement. Permittees may not use in-stream culvert replacement or channel restoration projects for compliance with this requirement.

b. Minimum Performance Measures:

i. No later than 1 year after the effective date of this permit, each Permittee shall develop a Structural Stormwater Control program designed to control stormwater impacts that are not adequately controlled by other required actions of the SWMP. Implementation of the program shall begin no later than 18 months after the effective date of this permit. Permittees shall provide a list of planned individual projects that are scheduled for implementation during the term of this permit and describe how the selected projects comply with AKART and MEP requirements. Updates and revisions to the list will be provided in the annual report and will address any concerns identified by Ecology during its review of the Structural Stormwater Control program.

The Structural Stormwater Control program may also include a program designed to implement small scale projects that are not planned in advance.

ii. Each Permittee shall include a description of the Structural Stormwater Control Program in the written documentation of their SWMP. The description of the Structural Stormwater Control Program shall include the following:

- The goals that the Structural Stormwater Control Program are intended to achieve.
- The planning process used to develop the Structural Stormwater Control Program, including: the geographic scale of the planning process, the issues and regulations addressed, the steps in the planning process, the types of characterization information considered, the amount budgeted for implementation, and the public involvement process.
- A description of the prioritization process, procedures and criteria used to select the Structural Stormwater Control projects

iii. For planned individual projects, and programs of small projects, provide the following information:

- The estimated pollutant load reduction that will result from each project designed to provide stormwater treatment.
- The expected outcome of each project designed to provide flow control.
- Any other expected environmental benefits.
- If planned, monitoring or evaluation of the project and monitoring/evaluation results.

iv. Information about the Structural Stormwater Control Program shall be updated with each annual report.

7. Source Control Program for Existing Development

a. The SWMP shall include a program to reduce pollutants in runoff from areas that discharge to municipal separate storm sewers owned or operated by the Permittee. The program shall include the following:

i. Application of operational and structural source control BMPs, and, if necessary, treatment BMPs to pollution generating sources associated with existing land uses and activities.

ii. Inspections of pollutant generating sources at commercial, industrial and multifamily properties to enforce implementation of required BMPs to control pollution discharging into municipal separate storm sewers owned or operated by the Permittee.

iii. Application and enforcement of local ordinances at applicable sites, including sites that are covered by other stormwater permits issued by Ecology. Permittees that are in compliance with the terms of this permit will not be held liable by Ecology for water quality standard violations or receiving water impacts caused by industries and other Permittees covered, or which should be covered under an NPDES permit issued by Ecology.

iv. Reduction of pollutants associated with the application of pesticides, herbicides, and fertilizer discharging into municipal separate storm sewers owned or operated by the Permittee.

b. Minimum Performance Measures for Source Control Program:

i. No later than 18 months after the effective date of this permit, adopt and begin enforcement of an ordinance, or other enforceable documents, requiring the application of source control BMPs for pollutant generating sources associated with existing land uses and activities (See Appendix 8 to identify pollutant generating sources).

The requirements of this subsection are met by using the source control BMPs in Volume IV of the 2005 *Stormwater Management Manual for Western Washington*, or a functionally equivalent manual approved by Ecology.

Ecology review and approval of the ordinance, or other enforceable documents, and source control program is required. Each Permittee shall submit the proposed source control program and all necessary documentation to Ecology for review, no later than 12 months after the effective date of this permit. If Ecology does not request changes within 60 days, the proposed source control BMPs are considered approved.

Operational source control BMPs shall be required for all pollutant generating sources. Structural source control BMPs shall be required for

pollutant generating sources if operational source control BMPs do not prevent illicit discharges or violations of surface water, ground water, or sediment management standards because of inadequate stormwater controls. Implementation of source control requirements may be done through education and technical assistance programs, provided that formal enforcement authority is available to the Permittee and is used as determined necessary by the Permittee, in accordance with S5.C.7.b.iv., below.

ii. No later than 18 months after the effective date of this permit, establish a program to identify sites which are potentially pollution generating. The program shall include:

- Inventory or listing of the land uses/businesses using the categories of land uses and businesses in Appendix 8. The Permittee shall periodically update the inventory as new businesses are identified and business ownership/management and responsibilities change.
- Complaint-based response to identify other pollutant generating sources, such as mobile or home-based businesses.

iii. Starting no later than 24 months after the effective date of this permit, implement an audit/inspection program for sites identified pursuant to S5.C.7.b.ii. above.

- All identified sites with a business address shall be provided, by mail, telephone, or in person, information about activities that may generate pollutants and the source control requirements applicable to those activities. This information may be provided all at one time or spread out over the last three years of the permit term to allow for some tailoring and distribution of the information during site inspections. Businesses may self-certify compliance with the source control requirements at the discretion of the Permittee. The Permittee shall inspect 20% of these sites annually to assure BMP effectiveness and compliance with source control requirements. The Permittee may select which sites to inspect each year and is not required to inspect 100% of sites over a 5-year period. Sites may be prioritized for inspection based on their land use category, potential for pollution generation, proximity to receiving waters, or to address an identified pollution problem within a specific geographic area or sub-basin. The Permittee may count follow up compliance inspections at the same site toward the 20% inspection rate.
- Each Permittee shall inspect 100% of sites identified through legitimate complaints.

iv. No later than 24 months after the effective date of this permit, each Permittee shall implement a progressive enforcement policy to require sites to come into compliance with stormwater requirements within a reasonable time period as specified below:

- If the Permittee determines, through inspections or otherwise, that a site has failed to adequately implement required BMPs, the Permittee shall take appropriate follow-up action(s) which may include: phone calls, reminder letters or follow-up inspections.
- When a Permittee determines that a facility has failed to adequately implement BMPs after a follow-up inspection, the Permittee shall take further enforcement action as established through authority in its municipal code and ordinances, or through the judicial system.
- Each Permittee shall maintain records, including documentation of each site visit, inspection reports, warning letters, notices of violations, and other enforcement records, demonstrating an effort to bring facilities into compliance. Each Permittee shall also maintain records of sites that are not inspected because the property owner denies entry.
- A Permittee shall contact Ecology immediately upon discovering a source control violation that presents a severe threat to human health or the environment. A Permittee may refer non-emergency violations of local ordinances to Ecology, provided, the Permittee also makes a documented effort of progressive enforcement. At a minimum, a Permittee's enforcement effort shall include documentation of inspections and warning letters or notices of violation.

v. No later than 24 months after the effective date of this permit, each Permittee shall ensure that all staff whose primary job duties are implementing the source control program are trained to conduct these activities. The training shall cover the legal authority for source control (adopted codes, ordinances, rules, etc.), source control BMPs and their proper application, inspection protocols, and enforcement procedures. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

8. *Illicit Connections* and Illicit Discharges Detection and Elimination

a. The SWMP shall include an ongoing program to detect, remove and prevent illicit connections and illicit discharges, including spills, into the municipal separate storm sewers owned or operated by the Permittee.

b. Minimum Performance Measures:

i. No later than the effective date of this permit, each Permittee shall continue implementing an on-going program to prevent, identify and respond to illicit connections and illicit discharges. The program shall include procedures for reporting and correcting or removing illicit connections, spills and other illicit discharges when they are suspected or identified. No later than 24 months after the effective date of this permit, each permittee shall develop

procedures for addressing pollutants entering the MS4 from an interconnected, adjoining MS4.

Illicit connections and illicit discharges shall be identified through field screening, inspections, complaints/reports, construction inspections, maintenance inspections, source control inspections, and/or monitoring information, as appropriate.

ii. No later than 18 months after the effective date of this permit, each Permittee shall evaluate, and if necessary update, existing ordinances or other regulatory mechanisms to effectively prohibit non-stormwater, illicit discharges, including spills, into the Permittee's municipal separate storm sewer system.

(1) The ordinance or other regulatory mechanism does not need to prohibit the following categories of non-stormwater discharges:

- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20));
- Uncontaminated pumped ground water;
- Foundation drains;
- Air conditioning condensation;
- Irrigation water from agricultural sources that is commingled with urban stormwater;
- Springs;
- Water from crawl space pumps;
- Footing drains; and
- Flows from riparian habitats and wetlands.

(2) The ordinance or other regulatory mechanism, shall prohibit the following categories of non-stormwater discharges unless the stated conditions are met:

- Discharges from potable water sources, including water line flushing, *hyperchlorinated* water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4;
- Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities (see S5.C.10) and water conservation efforts.
- Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenated if necessary, and volumetrically and velocity

controlled to prevent resuspension of sediments in the MS4. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.

- Street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents. The Permittee shall reduce these discharges through, at a minimum, public education activities (see S5.C.10.) and/or water conservation efforts. To avoid washing pollutants into the MS4, Permittees shall minimize the amount of street wash and dust control water used. At active construction sites, street sweeping shall be performed prior to washing the street.
- Other non-stormwater discharges. Other non-stormwater discharges shall be in compliance with the requirements of a stormwater pollution prevention plan reviewed by the Permittee which addresses such discharges.

(3) The Permittee's SWMP shall, at a minimum, address each category in (2) above in accordance with the conditions stated therein.

(4) The SWMP shall further address any category of discharges in (1) or (2) above if the discharges are identified as significant sources of pollutants to waters of the State.

(5) Non-stormwater discharges covered by another NPDES permit and discharges from emergency fire fighting activities are allowed in the MS4 in accordance with S2 *Authorized Discharges*.

iii. No later than 18 months after the effective date of this permit, each Permittee shall ensure that all municipal field staff who are responsible for identification, investigation, termination, cleanup, and reporting of *illicit discharges*, including spills, improper disposal and *illicit connections,* are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

iv. No later than 24 months after the effective date of this permit, develop and implement an ongoing training program for all municipal field staff, which, as part of their normal job responsibilities might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system, shall be trained on the identification of an illicit discharge or connection and on the proper procedures for reporting and responding to the illicit discharge or connection. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

v. Each Permittee shall provide a publicly-listed, water quality citizen complaints/reports telephone number. Except for Clark County, which shall meet this requirement no later than 6 months from the effective date of this permit, this citizen compliant/reports telephone number shall be in place no later than the effective date of this permit. Complaints shall be responded to in accordance with S5.C.8.b.vii. and viii., below.

vi. Each Permittee shall conduct on-going screening to detect illicit connections. The program shall include field screening and source tracing; and may also include source control inspections and complaint response. To comply with the requirement the Permittee may use the methods identified in Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004; or field screening methods approved by Ecology in a Stormwater Management Program under a prior Phase I municipal stormwater NPDES permit, provided the approved methods include field screening and source tracing.

(1) Each City covered under this permit shall prioritize conveyances and outfalls and complete field screening for at least 60% of the conveyance systems within the Permittee's incorporated area no later than 5 years from the effective date of the permit.

(2) Each County covered under this permit shall prioritize outfalls and conveyances in urban/higher density rural sub-basins for screening and shall complete field screening for at least half of the conveyance systems in these areas no later than 5 years from the effective date of this permit. In addition, Counties shall complete field screening in at least 1 rural sub-basin no later than 5 years from the effective date of this permit.

vii. Response to Illicit Connections

(1) Investigation: Upon discovery or upon receiving a report of a suspected illicit connection, Permittees shall initiate an investigation within 21 days, to determine the source and nature of the connection, and the responsible party for the connection

(2) Termination: Upon confirmation of the illicit nature of a storm drain connection, Permittees shall use their enforcement authority in a documented effort to eliminate the illicit connection within 6 months. All illicit connections to the MS4 shall be eliminated.

(3) Permittees shall contact Ecology immediately upon discovering an illicit connection that presents a severe threat to human health or the environment. Permittees may refer illicit connection violations to Ecology provided that the Permittee also makes a good faith effort of progressive enforcement. At a minimum, a Permittee's enforcement

effort shall include documentation of inspections and warning letters and/or notices of violation.

viii. No later than 6 months after the effective date of this permit, each Permittee shall either participate in a regional emergency response program, or develop and implement procedures to investigate and respond to spills and improper disposal into municipal separate storm sewers owned or operated by the Permittee. Permittees shall have a program to prioritize and investigate complaints/reports or monitoring information that indicates potential illicit discharges, including spills. Permittees shall immediately respond to problems/violations judged by the Permittee to be urgent, severe, or an emergency. Spills of oil or hazardous materials shall be reported to appropriate authorities.

ix. Each Permittee shall track and maintain records of the illicit discharge detection and elimination program, including documentation of inspections, complaint/spill response and other enforcement records.

9. Operation and Maintenance Program

a. The SWMP shall include a program to regulate maintenance activities and to conduct maintenance activities by the Permittee that prevent or reduce stormwater impacts. The program shall include:

i. Maintenance standards and programs for proper and timely maintenance of public and private stormwater facilities.

ii. Practices for operating and maintaining Permittee's streets, roads, and highways to reduce stormwater impacts.

iii. Policies and procedures to reduce pollutants associated with the application of pesticides, herbicides, and fertilizer by the Permittee's agencies or departments.

iv. Practices for reducing stormwater impacts from *heavy equipment maintenance or storage yards*, and from *material storage facilities* owned or operated by the Permittee.

v. A training component.

b. Minimum Performance Measures:

i. Maintenance Standards. No later than 18 months after the effective date of this permit, each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the 2005 *Stormwater Management Manual for Western Washington*. For existing facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

(1) The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's

required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation.

(2) Unless there are circumstances beyond the Permittee's control, when an inspection identifies an exceedence of the maintenance standard, maintenance shall be performed:

- Within 1 year for typical maintenance of facilities, except catch basins.
- Within 6 months for catch basins, and
- Within 2 years for maintenance that requires capital construction of less than $25,000.

Circumstances beyond the Permittee's control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required timeframe, the Permittee shall document the circumstances and how they were beyond the Permittee's control.

ii. Maintenance of *stormwater facilities regulated by the Permittee*

(1) No later than 18 months after the effective date of this permit, each Permittee shall evaluate and, if necessary, update existing ordinances or other enforceable documents requiring maintenance of all permanent stormwater treatment and flow control facilities regulated by the Permittee (including catch basins), in accordance with maintenance standards established under S5.C.9.b.i., above.

(2) No later than 18 months after the effective date of this permit, each Permittee shall develop and implement an initial inspection schedule for all known, permanent stormwater treatment and flow control facilities (other than catch basins) regulated by the Permittee to inspect each facility at least once during the term of this permit to enforce compliance with adopted maintenance standards as needed based on the inspection. The inspection program is limited to facilities to which the Permittee can legally gain access, provided the Permittee shall seek access to the types of stormwater treatment and flow control facilities listed in the 2005 *Stormwater Management Manual for Western Washington.*

(3) No later than 4 years after the effective date of this permit, each Permittee shall develop an on-going inspection schedule to annually inspect all stormwater treatment and flow control facilities (other than catch basins) regulated by the Permittee. The annual inspection requirement may be reduced based on maintenance records.

Reducing the inspection frequency to less frequently than annually shall be based on maintenance records of double the length of time of the

proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 *Certification and Signature.*

(4) No later than 2 years after the effective date of this permit each Permittee shall manage maintenance activities to inspect all new permanent stormwater treatment and flow control facilities, including catch basins, in new residential developments every 6 months during the period of heaviest construction to identify maintenance needs and enforce compliance with maintenance standards as needed.

(5) Compliance with the inspection requirements of S5.C.9.b.ii.(2), (3), and (4), above, shall be determined by the presence of an established inspection program designed to inspect all sites, and achieving inspection of 80% of all sites.

(6) The Permittee shall require cleaning of catch basins regulated by the Permittee if they are found to be out of compliance with established maintenance standards in the course of inspections conducted at facilities under the requirements of S5.C.7. (Source Control Program), and S5.C.8. (Illicit Connections and Illicit Discharges Detection and Elimination), or if the catch basins are part of the treatment or flow control systems inspected under the requirements of S5.C.9. (Operation and Maintenance Program)

iii. Maintenance of stormwater facilities owned or operated by the Permittee

(1) No later than 24 months after the effective date of this permit each Permittee shall begin implementing a program to annually inspect all permanent stormwater treatment and flow control facilities (other than catch basins) owned or operated by the Permittee, and implement appropriate maintenance action in accordance with adopted maintenance standards. The annual inspection requirement may be reduced based on inspection records.

Changing the inspection frequency to less frequently than annually shall be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 *Certification and Signature.*

(2) No later than 24 months after the effective date of this program each Permittee shall begin implementing a program to conduct spot checks of potentially damaged permanent treatment and flow control facilities

(other than catch basins) after major storm events (24 hour storm event with a 10 year recurrence interval). If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control facilities that may be affected. Conduct repairs or take appropriate maintenance action in accordance with maintenance standards established under S5.C.9.b.i., above, based on the results of the inspections.

(3) Compliance with the inspection requirements of S5.C.9.b.iii.(1), and (2) above, shall be determined by the presence of an established inspection program designed to inspect all sites. Compliance during this permit term shall be determined by achieving an annual rate of at least 95% of inspections no later than 180 days prior to the expiration date of this permit.

iv. Maintenance of Catch Basins Owned or Operated by the Permittee

(1) No later than 24 months after the effective date of this permit each Permittee shall begin implementing a program to annually inspect catch basins and inlets owned or operated by the Permittee.

- Inspections may be conducted on a "circuit basis" whereby a sampling of catch basins and inlets within each circuit is inspected to identify maintenance needs. Include in the sampling an inspection of the catch basin immediately upstream of any system outfall. Clean all catch basins within a given circuit for which the inspection indicates cleaning is needed to comply with maintenance standards established under S5.C.9.b.i., above.
- As an alternative to inspecting catch basins on a "circuit basis," the Permittee may inspect all catch basins, and clean only catch basins where cleaning is needed to comply with maintenance standards.

(2) The annual catch basin inspection schedule may be changed as appropriate to meet the maintenance standards based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records for catch basins, the Permittee may substitute written statements to document a specific, less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 *Certification and Signature.*

(3) The disposal of decant water shall be in accordance with the requirements in Appendix 6 – *Street Waste Disposal.*

v. Records of inspections and maintenance or repair activities conducted by the Permittee shall be maintained. Records of maintenance or repair requiring capital construction of $25,000 or more shall be maintained and provided in the annual report.

vi. Within 12 months of the effective date of this permit, establish practices to reduce stormwater impacts associated with runoff from parking lots, streets, roads, and highways owned or operated by the Permittee; and road maintenance activities conducted by the Permittee.

Implementation of practices shall begin no later than 18 months after the effective date of this permit, and continue on an ongoing basis throughout the term of the permit. The following activities shall be addressed:

(1) Pipe cleaning
(2) Cleaning of culverts that convey stormwater in ditch systems
(3) Ditch maintenance
(4) Street cleaning
(5) Road repair and resurfacing, including pavement grinding
(6) Snow and ice control
(7) Utility installation
(8) Maintaining roadside areas, including vegetation management.
(9) Dust control
(10) Pavement striping maintenance

vii. No later than 18 months after the effective date of this permit, each Permittee shall establish and implement policies and procedures to reduce pollutants in discharges from lands owned or maintained by the Permittee subject to this permit. Lands owned or maintained by the Permittee include but are not limited to: parks, open space, road right-of-ways, maintenance yards, and stormwater treatment and flow control facilities.

The policies and procedures shall address, but are not limited to:

(1) Application of fertilizer, pesticides, and herbicides, including the development of Nutrient management and *Integrated Pest Management* Plans;
(2) Sediment and erosion control;
(3) Landscape maintenance and vegetation disposal;
(4) Trash management; and
(5) Building exterior cleaning and maintenance.

viii. No later than 24 months after the effective date of this permit, develop and implement an ongoing training program for employees of the Permittee who have primary construction, operations or maintenance job functions that could impact stormwater quality. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

ix. Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this permit,

that are not required to have coverage under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or another NPDES permit that covers stormwater discharges associated with the activity. The Permittee shall identify facilities subject to this requirement. The SWPPPs shall be developed within 24 months of the effective date of this permit. Implementation of non-structural BMPs shall begin immediately after the pollution prevention plan is developed. A schedule for implementation of structural BMPs shall be included in the SWPPP. Generic SWPPPs that can be applied at multiple sites may be used to comply with this requirement. The SWPPP shall include periodic visual observation of discharges from the facility to evaluate the effectiveness of BMPs.

10. Education and Outreach Program

a. The SWMP shall include an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee. The goal of the education program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. An education program may be developed locally or regionally.

b. Minimum Performance Measures:

i. No later than 12 months after the effective date of this permit, each Permittee shall implement or participate in an education and outreach program that uses a variety of methods to target the audiences and topics listed below. The outreach program shall be designed to achieve measurable improvements in each target audience's understanding of the problem and what they can do to solve it.

(1) General Public

- General impacts of stormwater flows into surface waters.
- Impacts from impervious surfaces.
- Source control BMPs and environmental stewardship, actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping and buffers.

(2) General public and businesses, including home based and mobile businesses

- BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
- Impacts of illicit discharges and how to report them.

(3) Homeowners, landscapers and property managers

- Yard care techniques protective of water quality.
- BMPs for use and storage of pesticides and fertilizers.
- BMPs for carpet cleaning and auto repair and maintenance.

- Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
- Stormwater treatment and flow control BMPs.

(4) Engineers, contractors, developers, review staff and land use planners

- Technical standards for stormwater site and erosion control plans.
- Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
- Stormwater treatment and flow control BMPs.

ii. Each Permittee shall implement or participate in an effort to measure understanding and adoption of the targeted behaviors for at least one targeted audience in at least one subject area. The resulting measurements shall be used to direct education and outreach resources most effectively as well as to evaluate changes in adoption of the targeted behaviors.

iii. Each Permittee shall track and maintain records of public education activities.

S6. STORMWATER MANAGEMENT PROGRAM FOR CO-PERMITTEES AND SECONDARY PERMITTEES

A. This section applies to all Secondary Permittees, whether coverage under this Permit is obtained individually, or as a Co-Permittee with a City and/or Town and/or County and/or another Secondary Permittee.

1. To the extent allowable under state, federal and local law, all components are mandatory for each Secondary Permittee covered under this permit, whether covered as an individual Permittee or as a Co-Permittee.
2. Each Secondary Permittee shall develop and implement a stormwater management program (SWMP). The SWMP shall be designed to reduce the discharge of pollutants from regulated small MS4s to the maximum extent practicable and protect water quality.
3. Unless an alternate implementation schedule is established by Ecology as a condition of permit coverage, the SWMP shall be developed and implemented in accordance with the schedules contained in this section and shall be fully developed and implemented no later than180 days before the expiration date of this Permit. Notwithstanding the schedules in this Permit, Secondary Permittees that are already implementing some or all of the required SWMP components shall continue implementation of those components.
4. Secondary Permittees may implement parts of their SWMP in accordance with the schedule for cities, towns and counties in S5 *Stormwater Management Program*, provided they have signed a memorandum of understanding or other agreement to jointly implement the activity or activities with one or more jurisdictions listed in S1.B., and submitted a copy of the agreement to Ecology.

5. Secondary Permittees and Co-Permittees shall prepare written documentation of the SWMP. The SWMP documentation shall be organized according to the program components and shall be updated at least annually for submittal with the Permittee's annual reports to Ecology.

   a. For all Secondary Permittees except the Port of Seattle and the Port of Tacoma, The SWMP documentation shall include:

      i. A description of each of the program components included in S6.D.1. through S6.D.6., and

      ii. Any additional actions necessary to meet the requirements of applicable TMDLs pursuant to S7 *Compliance with Total Maximum Daily Load Requirements*.

   b. For the Port of Tacoma and the Port of Seattle the SWMP documentation shall include:

      i. A description of each of the program components included in S6.E.1. through S6.E.7., and

      ii. Any additional actions necessary to meet the requirements of applicable TMDLs pursuant to S7 *Compliance with Total Maximum Daily Load Requirements*.

6. Conditions S6.A., S6.B., and S6.C. are applicable to all Co-Permittees and Secondary Permittees covered under this permit. In addition:

   a. S6.D. is applicable to all Secondary Permittees except the Port of Seattle and the Port of Tacoma. S6.D. does not apply to Permittees listed in S1.B., or S1.C.

   b. S6.E. is applicable only to the Port of Seattle and the Port of Tacoma.

   c. S6.F. is applicable only to King County as a Co-Permittee with the City of Seattle for MS4s owned by King County but located within the City of Seattle.

B. Coordination

The SWMP shall include mechanisms to encourage coordinated stormwater-related policies, programs and projects within a watershed and interconnected MS4s. Where relevant and appropriate, the SWMP shall also include coordination among departments of the Secondary Permittee to ensure compliance with the terms of this permit.

C. Legal Authority

To the extent allowable under state law and federal law, each Secondary Permittee shall be able to demonstrate that it can operate pursuant to legal authority which authorizes or enables the Secondary Permittee to control discharges to and from municipal separate storm sewers owned or operated by the Secondary Permittee.

This legal authority may be a combination of statutes, ordinances, permits, contracts, orders, interagency agreements, or similar instruments.

D. Stormwater Management Program for Secondary Permittees

The term "Secondary Permittees" means drainage, diking, flood control, or diking and drainage districts, Ports (other than the Ports of Seattle and Tacoma, (see S6.E.)), public colleges and universities, and any other owners or operators of municipal separate storm sewers located within the municipalities that are listed as Permittees in S1.B. The Stormwater Management Program (SWMP) for Secondary Permittees shall include the following components:

1. Public Education and Outreach

Each Secondary Permittee shall implement the following stormwater education strategies:

a. Storm drain inlets owned and operated by the Secondary Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points shall be clearly and permanently labeled with the message "Dump no waste" and indicating the point of discharge as a river, lake, bay, or ground water.

   i. No later than three years from the date of permit coverage, at least 50 percent of these inlets shall be labeled.

   ii. No later than 180 days prior expiration date of this Permit, or as established as a condition of coverage by Ecology, all of these inlets shall be labeled.

   iii. As identified during visual inspection and regular maintenance of storm drain inlets per the requirements of S6.D.3.d. and S6.D.6.a.i. below, or as otherwise reported to the Secondary Permittee, any inlet having a label that is no longer clearly visible and/or easily readable shall be re-labeled within 90 days.

b. Each year, beginning no later than three years from the date of permit coverage, public ports, colleges and universities shall distribute educational information to tenants and residents on the impact of stormwater discharges on receiving waters, and steps that can be taken to reduce pollutants in stormwater runoff. Different combinations of topics shall be addressed each year, and, before the expiration date of this Permit. Where relevant, tenants and residents shall receive educational information about the following topics:

   i. How stormwater runoff affects local waterbodies,

   ii. Proper use and application of pesticides and fertilizers,

   iii. Benefits of using well-adapted vegetation,

   iv. Alternative equipment washing practices, including cars and trucks that minimize pollutants in stormwater,

v. Benefits of proper vehicle maintenance and alternative transportation choices; proper handling and disposal of wastes, including the location of hazardous waste collection facilities in the area,

vi. Hazards associated with illicit connections, and

vii. Benefits of litter control and proper disposal of pet waste.

Compliance with this requirement may be achieved through participation in the local jurisdiction's public education and outreach programs.

2. Public Involvement and Participation

No later than 180 days before the expiration date of this Permit, or as established as a condition of coverage by the Ecology, each Secondary Permittee shall:

a. Publish a public notice in the local newspaper or on the Permittee's website and solicit public review of its SWMP.

b. Make the latest updated version of the SWMP available to the public. If the Secondary Permittee maintains a website, the SWMP shall be posted on the Secondary Permittee's website.

3. Illicit Discharge Detection and Elimination

Each Secondary Permittee shall:

a. From the date of permit coverage, comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern non-stormwater discharges.

b. Develop and adopt appropriate policies prohibiting illicit discharges no later than one year from the date of permit coverage. Identify possible enforcement mechanisms no later than one year from the date of permit coverage; and, no later than eighteen months from the date of permit coverage, develop and implement an enforcement plan using these mechanisms to ensure compliance with illicit discharge policies. These policies shall address, at a minimum: illicit connections; non-stormwater discharges, including spills as defined below; or otherwise improperly disposing of hazardous materials, pet waste, and litter.

i. Non-stormwater discharges covered by another NPDES permit and discharges from emergency fire fighting activities are allowed in the MS4 in accordance with S2 *Authorized Discharges*.

ii. The policies do not need to prohibit the following categories of non-stormwater discharges:

- Diverted stream flows,
- Rising ground waters,
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)),
- Uncontaminated pumped ground water,

- Foundation drains,
- Air conditioning condensation,
- Irrigation water from agricultural sources that is commingled with urban stormwater,
- Springs,
- Water from crawl space pumps,
- Footing drains, and
- Flows from riparian habitats and wetlands.

iii. The policies shall prohibit the following categories of non-stormwater discharges, unless the stated conditions are met:

- Discharges from potable water sources, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4;
- Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities and water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction.
- Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.
- Street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents. The Secondary Permittee shall reduce these discharges through, at a minimum, public education activities and/or water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction. To avoid washing pollutants into the MS4, the Secondary Permittee shall minimize the amount of street wash and dust control water used. At active construction sites, street sweeping shall be performed prior to washing the street.
- Other non-stormwater discharges shall be in compliance with the requirements of a stormwater pollution prevention plan reviewed by the Permittee which addresses control of such discharges.

iv. The Secondary Permittee's SWMP shall, at a minimum, address each category in iii above in accordance with the conditions stated therein.

v. The SWMP shall further address any category of discharges in ii or iii above if the discharge is identified as a significant source of pollutants to waters of the State.

c. No later than 180 days before the expiration date of this Permit, or as established as a condition of coverage by Ecology, develop a storm sewer system map showing the locations of all known storm drain outfalls, labeling the receiving waters, and delineating the areas contributing runoff to each outfall. Make the map (or completed portions of the map) available on request to Ecology and/or to other Permittees or Secondary Permittees. The preferred, but not required, format of submission will be an electronic format with fully described mapping standards. An example description is provided on Ecology's website.

d. Conduct field inspections and visually inspect for illicit discharges at all known outfalls that discharge to surface waters. Visually inspect at least one third (on average) of all known outfalls each year beginning no later than two years from the date of permit coverage. Develop and implement procedures to identify and remove illicit discharges. Keep records of inspections and follow-up activities.

e. No later than 180 days before the expiration date of this Permit, or as established as a condition of coverage by the Ecology, develop and implement a spill response plan that includes coordination with a qualified spill responder.

f. No later than two years from permit coverage date, provide staff training or coordinate with existing training efforts to educate relevant staff on proper *best management practices* for preventing spills and illicit discharges. All relevant staff shall be trained.

4. Construction Site Stormwater Runoff Control

From the date of permit coverage, each Secondary Permittee shall:

a. Comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern construction phase stormwater pollution prevention.

b. For all construction projects under the control of the Secondary Permittee, which require a construction stormwater permit, Secondary Permittees shall obtain coverage under the NPDES General Permit for Stormwater Discharges Associated with *Construction Activities,* or an alternative individual NPDES permit prior to discharging construction related stormwater.

c. Coordinate with the local jurisdiction regarding projects owned and operated by other entities which discharge into the Secondary Permittee's MS4, to assist the local jurisdiction with achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).

d. Provide training or coordinate with existing training efforts to educate relevant staff in erosion and sediment control *BMP*s and requirements, or hire trained contractors to perform the work.

e. Coordinate as requested with Ecology or the local jurisdiction to provide access for inspection of construction sites or other land disturbances, which are under the control of the Secondary Permittee during the active grading and/or construction period.

5. Post-Construction Stormwater Management for New Development and Redevelopment

From the date of permit coverage, each Secondary Permittee shall:

a. Comply with all relevant ordinances, rules and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern post-construction stormwater pollution prevention measures.

b. Coordinate with the local jurisdiction regarding projects owned and operated by other entities which discharge into the Secondary Permittee's MS4, to assist the local jurisdiction with achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).

6. Pollution Prevention and Good Housekeeping for Municipal Operations

Each Secondary Permittee shall:

a. No later than three years from the date of permit coverage, develop and implement a municipal operation and maintenance (O&M) plan to minimize stormwater pollution from activities conducted by the Secondary Permittee. The O&M Plan shall include appropriate pollution prevention and good housekeeping procedures for all of the following operations, activities, and/or types of facilities that are present within the Secondary Permittee's boundaries.

i. Stormwater collection and conveyance system, including catch basins, stormwater sewer pipes, open channels, culverts, structural stormwater controls, and structural runoff treatment and/or flow control facilities. The O&M Plan shall address, but is not limited to: scheduled inspections and maintenance activities, including cleaning and proper disposal of waste removed from the system. Secondary Permittees shall properly maintain stormwater collection and conveyance systems owned or operated by the Secondary Permittee and regularly inspect and maintain all structural post-construction stormwater BMPs to ensure facility function.

For facilities located in Western Washington, Secondary Permittees shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 Volume V of the 2005 *Stormwater Management Manual for Western Washington.*

For facilities located in Eastern Washington, Secondary Permittees shall establish maintenance standards that are as protective or more protective of

facility function than those specified in Chapters 5, 6 and 8 of the 2004 *Stormwater Management Manual for Eastern Washington.*

Secondary Permittees shall conduct spot checks of stormwater treatment and flow control facilities following a 24 hour storm event with a 10-year or greater recurrence interval.

ii. Roads, highways, and parking lots. The O&M Plan shall address, but is not limited to: deicing, anti-icing, and snow removal practices; snow disposal areas; material (e.g. salt, sand, or other chemical) storage areas; all-season BMPs to reduce road and parking lot debris and other pollutants from entering the MS4.

iii. Vehicle fleets. The O&M Plan shall address, but is not limited to: storage, washing, and maintenance of Secondary Permittee vehicle fleets; and fueling facilities. Secondary Permittees shall conduct all vehicle and equipment washing and maintenance in a self-contained covered building or in designated wash and/or maintenance areas.

iv. External building maintenance. The O&M Plan shall address, building exterior cleaning and maintenance including cleaning, washing, painting and other maintenance activities.

v. Parks and open space. The O&M Plan shall address, but is not limited to: proper application of fertilizer, pesticides, and herbicides; sediment and erosion control; BMPs for landscape maintenance and vegetation disposal; and trash management.

vi. Material storage areas, heavy equipment storage areas, and maintenance areas. Secondary Permittees shall develop and implement a Stormwater Pollution Prevention Plan to protect water quality at each of these facilities owned or operated by the Secondary Permittee and not covered under the General NPDES Permit for Stormwater Discharges Associated with *Industrial Activities* or under another NPDES permit that covers stormwater discharges associated with the activity.

vii. Other facilities that would reasonably be expected to discharge contaminated runoff. The O&M Plan shall address proper stormwater pollution prevention practices for each facility.

b. From the date of coverage under this Permit, Secondary Permittees shall also have permit coverage for all facilities operated by the Secondary Permittee that are required to be covered under the General NPDES Permit for Stormwater Discharges Associated with Industrial Activities.

c. The O&M Plan shall include sufficient documentation and records as necessary to demonstrate compliance with the O&M Plan requirements in S6.D.6.a.i. through vii above.

d. Train all employees whose construction, operations, or maintenance job functions may impact stormwater quality. The training shall address:

   i. The importance of protecting water quality,

   ii. The requirements of this Permit,

   iii. Operation and maintenance requirements,

   iv. Inspection procedures,

   v. Ways to perform their job activities to prevent or minimize impacts to water quality, and

   vi. Procedures for reporting water quality concerns, including potential illicit discharges.

E. Stormwater Management Program for the Port of Seattle and Port of Tacoma

The Stormwater Management Program (SWMP) for the Port of Seattle and the Port of Tacoma shall be developed and implemented in accordance with the schedules contained in this section and shall be fully developed and implemented no later than three years from the effective date of coverage.

Notwithstanding the schedules for implementation of SWMP components contained in this permit, Permittees that are already implementing some or all of the SWMP components in this section shall continue implementation of those components of their SWMP.

The SWMP for the Port of Seattle and the Port of Tacoma of shall include the following components:

1. Education Program

The SWMP shall include an education program aimed at tenants and Port employees. The goal of the education program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.

Minimum Performance Measure

a. No later than 18 months after receiving coverage under this permit, the Permittee shall make educational materials available to tenants and Port employees whose job duties could impact stormwater.

2. Public Involvement and Participation

No later than 180 days before the expiration date of this Permit, each Port shall:

a. Publish a public notice in the local newspaper and solicit public review of its SWMP.

b. Make the latest updated version of the SWMP available to the public. The SWMP shall be posted on the Port's website.

3. Illicit Discharge Detection and Elimination

The SWMP shall include a program to detect, remove and prevent illicit connections and illicit discharges, including spills, into the municipal separate storm sewers owned or operated by the Port.

Minimum Performance Measures

a. From the date of permit coverage, comply with all ordinances, rules, and regulations of the local jurisdiction(s) in which the Port district's MS3 is located that govern non-stormwater discharges.

b. Develop and adopt appropriate policies prohibiting illicit discharges no later than one year from the date of permit coverage. Identify possible enforcement mechanisms no later than one year from the date of permit coverage and, no later than eighteen months from the date of permit coverage, develop and implement an enforcement plan using these mechanisms to ensure compliance with illicit discharge policies. These policies shall address, at a minimum: illicit connections; non-stormwater discharges, including spills as defined below; or otherwise improperly disposing of hazardous materials, pet waste, and litter.

   i. Non-stormwater discharges covered by another NPDES permit and discharges from emergency fire fighting activities are allowed in the MS4 in accordance with S2 *Authorized Discharges*.

   ii. The policies do not need to prohibit the following categories of non-stormwater discharges:

   - Diverted stream flows,
   - Rising ground waters,
   - Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)),
   - Uncontaminated pumped ground water,
   - Foundation drains,
   - Air conditioning condensation,
   - Irrigation water from agricultural sources that is commingled with urban stormwater,
   - Springs,
   - Water from crawl space pumps,
   - Footing drains, and
   - Flows from riparian habitats and wetlands.

   iii. The policies shall prohibit the following categories of non-stormwater discharges unless the stated conditions are met:

   - Discharges from potable water sources, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted if

necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4.

- Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities and water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction.
- Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.
- Street and sidewalk wash water, water used to control dust, and routine external building wash down that does not use detergents. The Ports of Seattle and Tacoma shall reduce these discharges through, at a minimum, public education activities and/or water conservation efforts conducted by the Port and/or the local jurisdiction. To avoid washing pollutants into the MS4, the amount of street wash and dust control water used shall be minimized. At active construction sites, street sweeping shall be performed prior to washing the street.
- Other non-stormwater discharges shall be in compliance with the requirements of a stormwater pollution prevention plan reviewed by the Permittee which addresses control of such discharges.

iv. The SWMP shall, at a minimum, address each category in iii above in accordance with the conditions stated therein.

v. The SWMP shall further address any category of discharges in ii or iii above if the discharge is identified as a significant source of pollutants to waters of the State.

c. The SWMP shall include an ongoing program for gathering, maintaining, and using adequate information to conduct planning, priority setting, and program evaluation activities for Port-owned properties. The following information will be gathered and retained:

i. Mapping of known municipal separate storm sewer outfalls, and maps depicting land use for property owned by the Port, and all other properties served by municipal separate storm sewers known to and owned or operated by the Port. The mapping shall be completed within 2 years of receiving coverage under this permit.

ii. Mapping of tributary conveyances, and the associated drainage areas of municipal separate storm sewer outfalls owned or operated by the Port, with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems. The mapping shall be completed within 2 years of receiving coverage under this permit.

iii. To the extent consistent with national security laws and directives, each Port shall make available to Ecology upon request, GIS data layers generated by the Port depicting outfall locations, land use, tributary conveyances and associated drainage areas of outfalls owned or operated by the Port. The preferred format of submission will be an electronic format with fully described mapping standards. An example description is provided at Ecology's website.

iv. No later than 24 months after receiving coverage under this permit, develop and implement a program to document operation and maintenance records for stormwater facilities covered under this permit. The information shall be available for inspection by Ecology.

v. Upon request, and to the extent consistent with national security laws and directives, mapping information and operation and maintenance records shall be provided to the City or County in which the Port is located.

d. Conduct field inspections and visually inspect for illicit discharges at all known outfalls that discharge to surface waters. Visually inspect at least one third (on average) of all known outfalls each year beginning no later than 3 years from the date of permit coverage. Develop and implement procedures to identify and remove any illicit discharges. Keep records of inspections and follow-up activities.

e. 180 days before the expiration date of this Permit, develop and implement a spill response plan that includes coordination with a qualified spill responder.

f. Provide staff training or coordinate with existing training efforts to educate relevant staff on proper best management practices for preventing spills and illicit discharges.

4. Construction Site Stormwater Runoff Control

The SWMP shall include a program to reduce pollutants in stormwater runoff from construction activities under the functional control of the Permittee.

Minimum performance measures:

a. Comply with all relevant, rules, and regulations of the local jurisdiction(s) in which the Port is located that govern construction phase stormwater pollution prevention measures. Within one year of the effective date of coverage, and to the extent allowed by local ordinances, rules, and regulations, comply with the applicable minimum technical requirements for new development and redevelopment contained in Appendix 1.

b. When applicable, seek and obtain coverage under the General NPDES Permit for Stormwater Discharges Associated with Construction Activities.

c. Coordinate with the local jurisdiction regarding projects owned and operated by other entities which discharge into interconnected MS3s, to assist the local

jurisdiction with achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).

d. Provide training or coordinate with existing training efforts to educate port staff responsible for implementing construction stormwater erosion and sediment control BMPs and requirements, or hire trained contractors to perform the work.

e. Coordinate as requested with Ecology or the local jurisdiction to provide access for inspection of construction sites or other land disturbances that are under the control of the Port during the active grading and/or construction period.

5. Post-Construction Stormwater Management for New Development and Redevelopment

The SWMP shall include a program to address post-construction stormwater runoff from new development and redevelopment projects. The program shall establish controls to prevent or minimize water quality impacts.

Minimum performance measures:

a. Comply with all relevant ordinances, rules and regulations of the local jurisdiction(s) in which the Port is located that govern post-construction stormwater pollution prevention measures, including proper operation and maintenance of the MS3. Within one year of the effective date of permit coverage, and to the extent allowed by local ordinances, rules, and regulations, comply with the applicable the minimum technical requirements for new development and redevelopment contained in Appendix 1.

b. Coordinate with the local jurisdiction regarding projects owned and operated by other entities which discharge into interconnected MS3s, to assist the local jurisdiction in achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).

6. Operation and Maintenance Program

The SWMP shall include an operation and maintenance program for all stormwater treatment and flow control facilities, and catch basins to ensure that BMPs continue to function properly.

Minimum Performance Measures:

a. Each Port shall prepare an operation and maintenance manual for all stormwater BMPs that are under the functional control of the Permittee and which discharge stormwater to its MS3, or to an interconnected MS3.

   i. The O&M manual shall be completed no later than 2 years after receiving coverage under this permit. A copy of the manual shall be retained in the appropriate Port department.

   ii. The operation and maintenance manual shall establish facility-specific maintenance standards that are as protective, or more protective than those specified in Chapter 4 of Volume V of the 2005 *Stormwater Management*

Manual for Western Washington. For existing stormwater facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

iii. The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's required condition at all times between inspections. Exceeding the maintenance standards between inspections and/or maintenance is not a permit violation. Maintenance actions shall be performed within the time frames specified in S6.E.6.b.ii.

b. The Port will manage maintenance activities to inspect all stormwater BMPs listed in the O&M manual annually, and take appropriate maintenance action in accordance with the O&M manual.

i. The Permittee may change the inspection frequency to less than annually, provided the maintenance standards are still met. Reducing the annual inspection frequency shall be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 *Certification and Signature*.

ii. Unless there are circumstances beyond the Permittees control, when an inspection identifies an exceedence of the maintenance standard, maintenance shall be performed:

- Within 1 year for wet pool facilities and retention/detention ponds.
- Within 1 year for typical maintenance of facilities, except catch basins.
- Within 6 months for catch basins, and
- Within 2 years for maintenance that requires capital construction of less than $25,000.

Circumstances beyond the Permittee's control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required timeframe, the Permittee shall document the circumstances and how they were beyond their control.

c. The Port shall provide appropriate training for Port maintenance staff.

d. The Port will maintain records of inspections and maintenance activities.

7. Source Control in existing Developed Areas

The SWMP shall include the development and implementation of one or more Stormwater Pollution Prevention Plans (SWPPPs). A SWPPP is a documented plan to identify and implement measures to prevent and control the contamination of discharges of stormwater to surface or ground water. SWPPP(s) shall be prepared

and implemented for all Port-owned lands, except environmental mitigation sites owned by the Port, that are not covered by a NPDES permit issued by Ecology that covers stormwater discharges.

Minimum Performance Measures

a. SWPPP(s) shall be developed within 24 months of receiving coverage under this permit.

b. The SWPPP(s) shall include a facility assessment including a site plan, identification of pollutant sources, and description of the drainage system.

c. The SWPPP(s) shall include a description of the BMPs used or proposed for use by the Permittee. Stormwater BMPs shall be selected from the 2005 *Stormwater Management Manual for Western Washington* (or an equivalent Manual approved by Ecology). Implementation of non-structural BMPs shall begin immediately after the pollution prevention plan is developed. A schedule for implementation of structural BMPs shall be included in the SWPPP(s).

d. The Port shall maintain a list of sites covered by the SWPPP(s) required under this permit. At least 15% of the listed sites shall be inspected annually, and 80% of the total number of listed properties shall be inspected by 180 days before the expiration date of the permit.

e. The SWPPP(s) shall include policies and procedures to reduce pollutants associated with the application of pesticides, herbicides and fertilizer.

f. The SWPPP(s) shall include measures to prevent, identify and respond to illicit discharges, including illicit connections, spills and improper disposal. Immediately upon becoming aware of a spill into the drainage system owned or operated by the Port, the Port shall notify the City or County it is located in, and notify Ecology.

g. The SWPPP(s) shall include a component related to inspection and maintenance of stormwater facilities and catch basins that is consistent with the Port's Operation and Maintenance Program, as specified in S6.E.6. above.

8. Monitoring Program. Monitoring requirements for the Port of Seattle and Port of Tacoma are included in Special Condition S8.

F. Stormwater Management Program for King County as a Co-Permittee

King County, as a Co-Permittee with the City of Seattle for the discharges from outfalls King County owns or operates in the City, shall participate in the City of Seattle's Stormwater Management Program in accordance with the Joint Stormwater Management Program element of the Memorandum of Agreement between the City and County dated September 25, 1995. The apportionment of responsibilities for stormwater management within the City shall be governed solely by the MOA or its amendment, provided the City's stormwater management program, including King County participation, shall fully comply with Section S5 of this permit. Any amendments to the MOA shall be approved by Ecology before becoming effective.

S7. COMPLIANCE WITH TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

The following requirements apply if an applicable Total Maximum Daily Load (TMDL) is approved for stormwater discharges from MS4s owned or operated by the Permittee. Applicable TMDLs are TMDLs which have been approved by EPA on or before the date permit coverage is granted.

A. For applicable TMDLs listed in Appendix 2, affected Permittees shall comply with the specific requirements identified in Appendix 2. Each Permittee shall keep records of all actions required by this permit that are relevant to applicable TMDLs within their jurisdiction. The status of the TMDL implementation shall be included as part of the annual report submitted to Ecology.

   Where monitoring is required in Appendix 2, the permittee shall conduct the monitoring according to a Quality Assurance Project Plan (QAPP) approved by Ecology.

B. For applicable TMDLs not listed in Appendix 2, compliance with this permit shall constitute compliance with those TMDLs.

C. For TMDLs that are approved by EPA after this permit is issued, Ecology may establish TMDL-related permit requirements through future permit modification if Ecology determines implementation of actions, monitoring or reporting necessary to demonstrate reasonable further progress toward achieving TMDL waste load allocations, and other targets, are not occurring and shall be implemented during the term of this permit or when this permit is reissued. Permittees are encouraged to participate in development of TMDLs within their jurisdiction and to begin implementation.

S8. MONITORING

A. Except for the Port of Seattle and the Port of Tacoma, Secondary Permittees are not required to conduct water sampling or other testing during the effective term of this permit, with the following exceptions:

   1. Any water quality monitoring required for compliance with TMDLs, pursuant to section S7 *Compliance with Total Maximum Daily Load Requirements* and Appendix 2 of this permit; and

   2. Any sampling or testing required for characterizing illicit discharges pursuant to section S6.D.3. of this permit.

B. Permittees shall provide the following information in each annual report:

   1. A description of any stormwater monitoring or studies conducted by the Permittee during the reporting period. If stormwater monitoring was conducted on behalf of the Permittee, or if studies or investigations conducted by other entities were reported to the Permittee, a brief description of the type of information gathered or

received shall be included in the annual report(s) covering the time period(s) during which the information was received.

2. An assessment of the appropriateness of the BMPs identified by the Permittee for each component of the SWMP; and any changes made, or anticipated to be made, to the BMPs that were previously selected to implement the SWMP, and why.
3. Information required pursuant to S8.C.2. below.

C. The Permittees listed in S1.B., and the Port of Seattle, and the Port of Tacoma shall develop and implement a long-term monitoring program.

1. The monitoring program shall include three components
   a. Stormwater monitoring which is intended to characterize stormwater runoff quantity and quality at a limited number of locations in a manner that allows analysis of loadings and changes in conditions over time and generalization across the Permittees' jurisdiction. Stormwater monitoring requirements are outlined in S8.D.
   b. Targeted stormwater management program effectiveness monitoring which is intended to improve stormwater management efforts by evaluating at least two stormwater management practices that significantly affect the success of or confidence in stormwater controls. Stormwater management program effectiveness monitoring requirements are outlined in S8.E.
   c. BMP evaluation monitoring is intended to evaluate the effectiveness and operation and maintenance requirements of stormwater treatment and hydrologic management BMPs. BMP evaluation monitoring requirements are outlined in S8.F.
2. Each of the components of the monitoring program shall include a Quality Assurance Project Plan (QAPP). QAPPs shall be prepared in accordance with Ecology's QAPP guidelines, available from Ecology's website. The monitoring program shall be developed by qualified staff or contractors with experience in applying Ecology's or EPA's QAPP Guidelines.

   All QAPPs shall be submitted to Ecology for review, in accordance with the deadlines in S8.G. below. QAPPs for Stormwater Monitoring (S8.D.), and Stormwater Treatment and Hydrologic Management BMP Evaluation Monitoring (S8.F.) shall be reviewed and approved by Ecology prior to monitoring.

D. Stormwater Monitoring

1. Stormwater monitoring site selection
   a. Stormwater monitoring sites shall have the tributary conveyance system and drainage area mapped, and be suitable for permanent installation and operation of flow-weighted composite sampling equipment. Permittees shall document how sites are selected and the basin size based on comparison of the times of concentration with rainfall durations for typical seasonal storms.

Each site must represent a discernible type of land use, but not a single industrial or commercial complex. Ideally, to represent a particular land use, no less than 80% of the area served by the outfall or conveyance will be classified as having that land use. Permittees may move upstream in the conveyance system to achieve the desired land use.

b. Counties shall monitor one outfall or conveyance representing each of the following land uses: Commercial, Low density residential, and High density residential.

c. Cities shall monitor one outfall or conveyance representing each of the following land uses: Commercial, High density residential, and Industrial.

d. The Ports of Seattle and Tacoma shall each monitor one outfall or conveyance.

2. Stormwater monitoring frequency and type of sampling

a. Each stormwater monitoring site shall be sampled according to the following frequency unless good faith efforts with good professional practice by the Permittee do not result in collecting a successful sample for the full number of storms:

Sixty-seven percent of the forecasted qualifying storms which result in actual qualifying storm events are required to be sampled, up to a maximum of eleven (11) storm events per water year. Qualifying storm events are defined in S8.D.2.a.i and ii, below. Qualifying storm event sampling must be distributed throughout the year, approximately reflecting the distribution of rainfall between the wet and dry seasons (with a goal of 60-80% of the samples collected during the wet season and a goal of 20-40% of the samples collected in the dry season).

Additionally, the Permittee shall analyze up to a maximum of three (3) samples that are collected as a result of attempts to sample the eleven (11) required storm events and do not meet the rainfall volume storm event criterion but do meet the other storm event and sample criteria. Not including the chemical sampling and analysis required by S8.D.2.d., the maximum number of sampled storm events to be analyzed is fourteen (14) per year.

i. The wet season is from October 1 through April 30. A qualifying wet season storm event is defined as follows:

- Rainfall volume: 0.20" minimum, no fixed maximum
- Rainfall duration: No fixed minimum or maximum
- Antecedent dry period: Less than or equal to 0.02" rain in the previous 24 hours
- Inter-event dry period: 6 hours

ii. The dry season is from May 1 through September 30. A qualifying dry season storm event is defined as follows:

- Rainfall volume: 0.20" minimum, no fixed maximum
- Rainfall duration: No fixed minimum or maximum
- Antecedent dry period: less than or equal to 0.02" rain in the previous 72 hours
- Inter-event dry period: 6 hours

b. Storm events shall be sampled using flow-weighted composite storm sampling. Automatic samplers shall be programmed to begin sampling as early in the runoff event as practical and to continue sampling past the longest estimated time of concentration for the tributary area.

For storm events lasting less than 24 hours, samples shall be collected for at least seventy-five percent (75%) of the storm event hydrograph. For storm events lasting longer than 24 hours, samples shall be collected for at least seventy-five percent 75% of the hydrograph of the first 24 hours of the storm.

Each composite sample must consist of at least 10 aliquots. Composite samples with 7 to 9 aliquots are acceptable if they meet the other sampling criteria and help achieve a representative balance of wet season/dry season events and storm sizes.

Continuous flow recording of all storm events (not just sampled storm events) is necessary for at least one year to establish a baseline rainfall/runoff relationship.

Precipitation and flow data shall be reported, and composite samples shall be analyzed and results reported for the constituents/parameters listed below. Chemicals below detection limits after two years of data analysis may be dropped from the analysis. Refer to Appendix 9 for a listing of acceptable laboratory analysis methods and target reporting limits.

i. Precipitation event data including antecedent dry period and rainfall distribution throughout the event, flow and hydrograph data including sampled and total runoff time periods and volumes

ii. Conventional Parameters Including: TSS, turbidity, Conductivity, Chloride, Biochemical oxygen demand (BOD_5), Hardness, and Methylene Blue Activating Substances (MBAS).

iii. Nutrients: Total phosphorus, Orthophosphate, Total kjeldahl nitrogen, and Nitrate – nitrite.

iv. Metals, including, at a minimum: total and dissolved copper, zinc, cadmium, and lead; and mercury sampling in commercial and industrial land use areas.

v. Organics: PAHs; phthalates.

vi. Pesticides including:

- Herbicides: 2,4-D, MCPP, Triclopyr,
- Insecticides: Diazinon, Malathion, Chlorpyrifos, Dichlobenil, Prometon
- Fungicides: Pentachlorophenol

c. If the volume of stormwater sample collected from a qualifying storm is insufficient to allow analysis for all parameters listed S8.D.2.b. above, the sample shall be analyzed for as many parameters as possible in the following priority order:

   i. All land use types: 1. TSS; 2. Conductivity; 3. MBAS; 4. Metals and hardness;

   ii. Industrial/Commercial: 5. PAH's and phthalates; 6. Pesticides; 7. Nutrients 8. BOD5; and 9. Chlorides

   iii. Residential: 5. Nutrients; 6. Pesticides; 7. PAH's and phthalates; 8. BOD_5; and 9. Chlorides

   If insufficient sample exists to run the next highest priority pollutant, that analysis should be bypassed and analyses run on lower priority pollutants in accordance with the remaining priority order to the extent possible.

d. The Permittee shall test the seasonal first-flush for toxicity in accordance with the criteria and procedures described in this section. This toxicity testing is for screening purposes only and is not effluent characterization or compliance monitoring under Chapter 173-205 WAC.

   Toxicity testing shall be completed once by each Permittee required to perform toxicity testing during this permit cycle. Toxicity testing shall be performed based on the schedule below:

   i. The following Permittees shall sample the seasonal first flush for toxicity beginning August 2010:

      - City of Seattle
      - Snohomish County
      - City of Tacoma
      - Clark County

   ii. The following Permittees shall sample the seasonal first flush for toxicity beginning August 2011:

      - Port of Tacoma
      - Port of Seattle
      - King County
      - Pierce County

   iii. Toxicity storm event criteria:

      - August or September, with at least a one-week antecedent dry period (or October, irrespective of antecedent dry period, if unsuccessful in August or September).

   iv. Toxicity Sample criteria:

- Adequate volume to perform toxicity testing, any associated egg (includes both yolk and embryo) analysis, and the chemical analyses as described below. The total volume required for toxicity testing and associated egg analysis is in the range of twenty-four (24) to forty-four (44) liters. The volume required for chemical analysis is approximately ten (10) liters.

v. The Permittee shall contact the toxicity laboratory prior to the forecasted storm event to inquire about gamete (test organism) availability. If the laboratory confirms that gametes of sufficient quantity and quality will not be available for toxicity testing, the Permittee shall not attempt to collect toxicity samples for that storm event.

If the Permittee is unsuccessful in completing a toxicity test despite good faith, documented efforts, or due to an invalid or anomalous test result, a second sampling attempt is required if sufficient time remains to meet the toxicity storm event criteria. If the second attempt is also unsuccessful, the Permittee shall document its efforts in its annual stormwater monitoring report and shall not be required to conduct further sampling and analysis efforts under S8.D.2.d for that water year.

e. Sampling and Reporting Requirements for seasonal first-flush toxicity tests

i. The Permittee shall submit all reports for toxicity testing in accordance with the most recent version of Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* Reports shall contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee shall send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

ii. The Permittee shall collect the sample for toxicity testing using flow-weighted or time-weighted composite samplers or sampling methods.

iii. The Permittee shall collect the sample for the associated chemical analysis at the same time and location as the toxicity testing sample. The associated chemical analysis shall be for the following parameters: TSS, chloride, hardness, methylene blue activated substances (MBAS), metals including total and dissolved copper, zinc, cadmium, and lead (mercury in commercial or industrial land use areas only), PAHs, phthalates, and pesticides including 2,4-D, MCPP, Triclopyr, Diazinon, Malathion, Chlorpyrifos, Dichlobenil, Prometon and Pentachlorophenol.

iv. Sample holding times, temperatures, and handling shall meet Ecology's guidance (WQ-R-95-80, or version current at the permit revision date). The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing as specified in the most recent

version of Department of Ecology publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.*

v. Testing procedures should follow: E-test (seven day), Environment Canada, Pacific Environmental Science Center, Environmental Toxicology Section, SOP ID: RBTELS11.SOP, 1999. The test procedure may take advantage of the smaller volume modification described in: Canaria, E.C., Elphick, J.R. and Bailey, H.C. 1999. A simplified procedure for conducting small scale short-term embryo toxicity tests with salmonids is found in Environ. Toxicol. 14:301-307.

vi. Toxicity tests must meet quality assurance criteria in the most recent versions of the Environment Canada manual EPS 1/RM/28 and the Department of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* If test results are determined to be invalid by the laboratory or Ecology determines the test results are anomalous, Ecology may require the Permittee to attempt to collect a second toxicity test sample if Ecology believes sufficient time remains to collect a sample meeting the toxicity storm event criteria. The Permittee will be notified in writing that it is required to attempt to collect an additional sample meeting the terms of S8.D.2.d. If the Permittee is unable to collect and test a second sample, it must document its efforts in the annual stormwater monitoring report. The Permittee shall not be required to make more than two sample attempts for toxicity testing described in S8.D.2.d.

- The Permittee may sample receiving water at the same time as the stormwater and instruct the lab to measure the hardness of both and increase the hardness of the stormwater sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the Permittee must conduct whole effluent toxicity tests on an unmodified sample of stormwater.
- Control water and dilution water must be a moderately hard reconstituted laboratory water or pristine natural water of sufficient quality for good control performance.
- The EC_{50} must be calculated by the trimmed Spearman-Karber procedure. Abbott's correction may be applied to the data before deriving this point estimate. A minimum of five (5) concentrations and a control must be used in the testing

vii. Follow up actions

If the EC_{50} from any valid and non-anomalous test is 100% stormwater or less, the Permittee must implement follow-up actions.

Terminated organisms must be preserved for up to six months. Within sixty (60) days after final validation of the data, the Permittee shall

compare the chemical analysis results for the same sample event to a library of toxicity test results compiled by Ecology and identified for this purpose, using good faith efforts to determine if the presence of an analyzed contaminant is within a range reported in the literature that may adversely affect fish embryos and if so to review the source literature.

If a possible chemical contaminant(s) of concern is determined by the library comparison and literature review, the Permittee must prepare and submit a report summarizing the toxicity and chemical analysis results, the library comparison, a review of relevant sources of literature from Ecology's library, the possible chemical contaminant(s) of concern, and an explanation of how the Permittee's stormwater management actions are expected to reduce stormwater toxicity. This report will be submitted to Ecology within one hundred twenty (120) days after final validation of the toxicity and chemistry data. In addition, the report will be attached as an appendix to the following year's annual stormwater monitoring report.

If a possible chemical contaminant(s) of concern is not determined by library comparison and literature review, a Gas Chromatograph/Mass Spectrometer (GC/MS) analysis of the eggs from the highest test concentrations must be performed. The GC/MS need not be quantitative but only capable of identifying stormwater contaminants present in the eggs. Within one hundred fifty (150) days after final validation of the toxicity and chemical analysis data, the Permittee must prepare and submit a report summarizing the toxicity and chemical analysis results, the library comparison, a review of relevant source literature from Ecology's library, the GC/MSs results, and an explanation of how the Permittee's stormwater management actions are expected to reduce stormwater toxicity. In addition, the report will be attached as an appendix to the following year's annual stormwater monitoring report.

f. Each storm event shall be sampled using grab samples for the following constituents/parameters:

   i. Total Petroleum Hydrocarbons (TPH) using NWTPH-Gx and NWTPH-Dx. (sample must be collected early in the storm event and skimmed from the surface), and

   ii. Fecal coliform bacteria.

g. Annual sediment monitoring. Sediments samples shall be collected at each stormwater monitoring site, or in the vicinity of each stormwater monitoring site. Use of in-line sediment traps or similar collection system is preferred. Sampling of receiving water sediment deposits is an alternative where approved by Ecology.

   i. Sediment samples shall be analyzed for: total solids, grain size, total organic carbon, copper, zinc, cadmium, lead, and mercury (mercury not necessary

for residential land use sites), PAHs, phthalates, phenolics, PCBs (not necessary for residential sites), and pesticides.

ii. Parameters that are below detection limits after two years of data may be dropped from the analysis. A minimum of one sample per year shall be collected.

iii. If the volume of sediment sample is insufficient to analyze for all of the parameters listed above, the sample shall be analyzed for as many parameters as possible in the following priority order:

- All land use types: 1) Grain size (if enough sample is available for all parameters, use grain size method in Appendix 9; otherwise characterize grain size qualitatively); 2) Total organic carbon; 3) Metals.
- Industrial/Commercial: 4) PAH's and Phthalates; 5) Phenolics; 6) PCB's; and 7) Pesticides.
- Residential: 4) Pesticides; 5) PAH's and Phthalates; and 6) Phenolics.

g. For each stormwater monitoring site calculate the Event Mean Concentrations (EMCs), total annual pollutant load, and the seasonal pollutant load for the wet and dry seasons based on the water year. The loadings shall be expressed as total pounds and as pounds per acre, and must take into account potential pollutant load from base flow. Reporting shall be in accordance with S8.H.

E. Targeted Stormwater Management Program Effectiveness Monitoring

1. Each Permittee shall conduct monitoring designed to determine the effectiveness of the Permittee's SWMP at controlling a stormwater related problem directly addressable by targeted actions in the SWMP. The stormwater management program effectiveness monitoring component shall be designed to answer one of each type of the following questions:

   a. The effectiveness of a targeted action (or narrow suite of actions), and

   b. The effectiveness of achieving a targeted environmental outcome.

2. The monitoring shall at a minimum include stormwater, sediment or receiving water monitoring of physical, chemical and/or biological characteristics. The monitoring may also include data collection and analysis of other programmatic measures of effectiveness such as surveys and polls. Monitoring to identify sub-basin-specific water quality problems and characterize discharges for planning purposes may also be included.

3. For each of the two questions selected for monitoring, Permittees shall develop a monitoring program containing the following elements:

   a. Description of the targeted action/targeted environmental outcome and a explanation of why it is significant to the Permittee, and if the problem is significant to other stormwater managers;

b. Specific hypotheses about the targeted action/targeted environmental outcome that will be tested by the monitoring problem;

c. Specific parameters of attributes to be measured; and

d. Expected modifications to management actions depending on the outcome of hypotheses testing.

F. Stormwater Treatment and Hydrologic Management Best Management Practice (BMP) Evaluation Monitoring

1. Each Permittee listed in S1.B. and the Ports of Seattle and Tacoma shall conduct full scale field monitoring to evaluate the effectiveness and operation and maintenance requirements of stormwater treatment and hydrologic management BMPs applied in their jurisdiction. A QAPP is required for each BMP and flow reduction strategy being monitored.

2. Each Permittee listed in S1.B. shall monitor at least two treatment BMPs, at no less than two sites per BMP. The Port of Seattle and the Port of Tacoma shall each monitor at least one treatment BMP, at no less than two sites.

   To ensure a range of BMP types are monitored, Ecology will restrict the total number of monitoring sites for a BMP category to no more than four. BMPs shall be selected from the following list:

   a. Basic Treatment Category: Biofiltration swale, Filter strip, Basic wetpond, Treatment wetland, and Sand filter.

   b. Metals/Phosphorus Treatment Category: Amended sand filter, Two facility treatment train, Compost amended filter strips, Bioretention, and Large wetpond.

   c. Oil Control Category: Linear sand filter, and Catch basin insert.

3. BMPs shall be designed in accordance with the 2005 *Stormwater Management Manual for Western Washington* unless Ecology approves of an alternate design in the QAPP review. Permittees may also petition Ecology to monitor a BMP that is not on the above list.

4. Permittees must use appropriate sections of Ecology's guidance for "Evaluation of Emerging Stormwater Treatment Technologies" (available on Ecology's website) for preparing, implementing, and reporting on the results of the BMP evaluation program.

   The statistical goal is to determine mean effluent concentrations and mean percent removals for each BMP type with 90 - 95% confidence and 75 - 80% power.

   Permittees must use USEPA publication number 821-B-02-001, "Urban Stormwater BMP Performance Monitoring," as additional guidance for preparing the BMP evaluation monitoring, and must collect information pertinent to fulfilling the "National Stormwater BMP Data Base Requirements" in section 3.4.3. of that document.

5. The parameters to be monitored in whole water at each test site include:

   a. For Basic, Enhanced, or Phosphorus treatment BMPs: Total suspended solids, Particle size distribution, pH, Total and ortho-phosphorus, Hardness, and Total and dissolved copper and zinc.

   b. For Oil Control BMPs: Total suspended solids, Particle size distribution, pH, NWTPH-Dx and –Gx, and Oil sheen

6. Parameters to be monitored in accumulated sediment at each test site for Basic, Enhanced, Phosphorus treatment, or Oil Control BMPs include: Percent total solids, Grain size, Total volatile solids, NWTPH-Dx, Total phosphorous, and Total cadmium, copper, lead, and zinc.

7. Each Permittee listed in S1.B. shall monitor the effectiveness of one flow reduction strategy that is in use or planned for installation in their jurisdiction.

   Monitoring of a flow reduction strategy shall include continuous rainfall and surface runoff monitoring. Flow reduction strategies shall be monitored through either a paired site study or against a predicted outcome.

G. Monitoring Program Development

Permittees may choose to develop one, two or all of the components of the monitoring program, conduct the monitoring, and report results through an integrated, long-term, water quality monitoring program in collaboration with other municipal stormwater Permittees; or they may independently develop one, two, or all of the components of the monitoring program, conduct the monitoring, and report results.

Collaborative monitoring programs may be developed by a third party (or parties) that are not a Permittee, provided that the Permittee complies with the provisions of Special Condition S3.B (relying on another entity to meet permit requirements).

The schedule for the development of monitoring programs is as follows:

1. Collaboratively developed monitoring programs.

   a. Permittees that intend to meet all or part of the monitoring requirements through a collaborative process shall submit a statement to Ecology explaining their commitment to the collaborative process no later than 6 months after the effective date of this permit

   b. The summary description of the monitoring program and QAPPs, as required, shall be submitted to Ecology no later than 1.5 years after the effective date of this permit. The monitoring program shall be submitted in both paper and electronic form.

   c. Approved or final QAPPs shall be completed no later than 2 years after the effective date of this permit, provided that this deadline will be extended by the number of days by which Ecology exceeds 90 days for QAPP review.

d. Full implementation of the monitoring program shall begin no later than 2.5 years after the effective date of this permit. The third party or parties selected to develop the monitoring plan may continue to be utilized to collect and analyze the data and to write the subsequent reports required under this permit.

e. Final reports, including data and analysis for S8.F. Stormwater Treatment and Hydrologic Management BMP Evaluation Monitoring Program that are completed during the permit term shall be submitted to Ecology no later than the fourth year annual report. The fourth year annual report shall also describe Stormwater Treatment and Hydrologic Management BMP Evaluation Monitoring programs that are still in progress at the end of the reporting period, and the expected date for submittal of the final reports.

2. Independently developed monitoring programs.

a. A summary description of the monitoring program and QAPPs, as required, shall be submitted to Ecology no later than 1 year after the effective date of this permit. The monitoring program shall be submitted in both paper and electronic form.

b. Approved or final QAPPs shall be completed no later than 1.5 years after the effective date of this permit, provided that this deadline shall be extended by the number of days by which Ecology exceeds 90 days for QAPP review.

c. Full implementation of the monitoring program shall begin no later than 2 years after the effective date of this permit.

d. Final reports, including data and analysis for S8.F. Stormwater Treatment and Hydrologic Management BMP Evaluation Monitoring Program completed during the permit term shall be submitted to Ecology no later than the fourth year annual report. The fourth year annual report shall also describe Stormwater Treatment and Hydrologic Management BMP Evaluation Monitoring programs that are still in progress at the end of the reporting period, and the expected date for submittal of the final reports.

H. Monitoring Program Reporting Requirements

1. The stormwater monitoring report shall be submitted with the annual report each year, beginning in 2009 for independent monitoring, and 2010 for collaborative monitoring. Each report shall include all monitoring data collected during the preceding water year (October 1 – September 30), provided the first annual monitoring report submitted will include data from a partial water year. Each report shall also integrate data from earlier years into the analysis of results, as appropriate. Permittees that choose to participate in an integrated water quality monitoring program shall submit a single integrated monitoring report. Reports shall be submitted in both paper and electronic form and shall include:

a. Stormwater Monitoring Reporting

i. A summary including the location, land use, drainage area size, and hydrology for each site,

ii. A comprehensive data and QA/QC report for each component of the monitoring program, with an explanation and discussion of the results of each monitoring project,

iii. The annual pollutant load based on water year for each site expressed in total pounds, and pounds/acre, and

iv. The wet and dry season pollutant loads based on water year, expressed in total pounds, and pounds/acre.

b. Stormwater Management Program Effectiveness Monitoring Reporting

i. A summary of the purpose, design, and methods of the monitoring program,

ii. The status of implementing the monitoring program,

iii. A comprehensive data and QA/QC report for each part of the monitoring program, with an explanation and discussion of the results of each monitoring project,

iv. An analysis of the results of each part of the monitoring program, including any identified water quality problems or improvements or other trends in stormwater or receiving water quality, and

v. Recommended future actions based on the findings.

c. Stormwater Treatment and Hydrologic Management Best Management Practice (BMP) Evaluation Monitoring Reporting

i. A summary including the BMP type location, land use, drainage area size, and hydrology for each site.

ii. The status of implementing the monitoring program,

iii. A comprehensive data and QA/QC report for each part of the monitoring program, with an explanation and discussion of the results of each monitoring project,

iv. Performance data or flow reduction performance. Performance data for treatment BMPs shall be reported consistent with:

- The guidelines in appropriate sections of Ecology's guidance for "Evaluation of Emerging Stormwater Treatment Technologies", and
- USEPA publication number 821-B-02-00, "Urban Stormwater BMP Performance Monitoring," including information pertinent to fulfilling the "National Stormwater BMP Data Base Requirements" in section 3.4.3. of that document.

2. If the Permittee monitors any pollutant more frequently at monitoring stations associated with the monitoring programs described in Section S8.D., S8.E., and

S8.F.during the proceeding water year, then the results of this monitoring shall be included in the annual monitoring report. If the Permittee conducts any other stormwater monitoring in addition to that required in the required monitoring program, then it must provide a description of the additional monitoring in its annual report.

S9. REPORTING REQUIREMENTS

A. No later than March 31, of each year beginning in 2008, each Permittee shall submit an annual report. The reporting period for the first annual report will be from the effective date of this permit through December 31, 2007. The reporting period for all subsequent annual reports shall be the previous calendar year.

B. Two printed copies and an electronic (PDF) copy of the annual report shall be submitted to Ecology. All submittals shall be delivered to:

Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

C. Each Permittee is required to keep all records related to this permit and the SWMP for at least five years. Except as required as a condition of the annual reports, records need to be submitted to Ecology only upon request.

D. Each Permittee shall make all records related to this permit and the Permittee's SWMP available to the public at reasonable times during business hours. The Permittee will provide a copy of the most recent annual report to any individual or entity, upon request.

1. A reasonable charge may be assessed by the Permittee for making photocopies of records.
2. The Permittee may require reasonable advance notice of intent to review records related to this permit.

E. The annual report for Permittees listed in S1.B. and S1.C.

Each annual report shall include the following:

1. A copy of the Permittee's current Stormwater Management Program as required by S5.A.1.
2. For each component of the SWMP the Permittee shall include the following:
   a. Describe the current implementation status including whether the Permittee has met the required implementation deadlines. If permit deadlines are not met, Permittees shall report the reasons why the requirement was not met and how the requirements will be met in the future.

b. Compare program implementation results to the performance standards established in the permit.

c. A summary of the number and nature of inspections performed by the Permittee as required by S5.C.5., S5.C.7., and S5.C9.

d. A summary of the nature and number of official enforcement actions taken to enforce provisions of this permit.

The above information shall be submitted in a format approved by Ecology.

3. A summary of any actions taken by the Permittee pursuant to S4.F.
4. A summary of the status of any TMDL implementation requirements and any associated monitoring as required by S7.A.
5. The Stormwater Monitoring Report required pursuant to S8.H.
6. Any reporting requirements associated with S8.B. not included elsewhere in the annual report.
7. If the Permittee is relying on another governmental entity to satisfy any of the obligations under this permit provide the name of the other entity and a description of the permit requirements preformed by the other entity.
8. Notification of any annexations, incorporations or jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP.
9. The annual report shall include certification and signature pursuant to G19.D, and notification of any changes to authorization pursuant to G19.C.
10. A summary of barriers to implementation of LID and actions taken to remove the barriers.
11. A summary of the extent to which basin or watershed planning is being conducted in the Permittee's jurisdiction, either voluntarily, or pursuant to the Growth Management Act (Chapter 36.70A RCW) or any other requirement.
12. In the annual report for calendar year 2010, the Permittee shall identify areas for potential basin or watershed planning that can incorporate development strategies as a water quality management tool to protect aquatic resources.

F. Annual Report for Secondary Permittees, except for the Port of Seattle and the Port of Tacoma

All Secondary Permittees (except the Port of Seattle and the Port of Tacoma) shall complete the *Annual Report Form for Secondary Permittees* (Appendix 4) and submit it along with any supporting documentation to Ecology.

1. The *Annual Report Form for Secondary Permittees* is intended to summarize the Permittees compliance with the conditions of this permit, including:

a. Status of implementation of each component of the SWMP in section S6 *Stormwater Management Program for Co-Permittees, and Secondary Permittees*, as applicable to the Permittee.

b. An assessment of the Permittee's progress in meeting the minimum performance standards established for each of the minimum control measures of the SWMP.

c. A summary of the Permittee's evaluation of their SWMP, according to section S8.B.2.

d. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.

e. Updated information from the prior annual report plus any new information received during the reporting period pursuant to S8.B.1 and S8.B.2.

f. Certification and signature pursuant to G19.D, and notification of any changes to authorization pursuant to G19.C.

2. Secondary Permittees shall include with the annual report a notification of any jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP.

G. Annual Report for the Port of Tacoma and the Port of Seattle

The annual report shall include the following:

1. A current copy of the Permittees Stormwater Management Plan as required by S6.A.5.

2. Appendix 3 – *Annual Report Form for the Port of Seattle and the Port of Tacoma*, which in intended to summarizes the Permittees compliance with the conditions of this permit including the status of implementation of each component of the SWMP required by S6 *Stormwater Management Program for Co-Permittees, and Secondary Permittees,* as applicable to the Permittee.

3. The Permittee's SWMP implementation schedule and plans for meeting permit deadlines, and a discussion of the status of SWMP implementation to date. If Permit deadlines are not met, or may not be met in the future, include reasons why, corrective steps taken, and proposed, and expected dates that the deadlines will be met.

4. The stormwater monitoring report required pursuant to S8.H.

5. Notification of any jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP.

6. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.

7. Updated information from the prior annual report plus any new information received during the reporting period, according to S8.B.
8. Certification and signature pursuant to G19.D. and notification of any changes to authorization pursuant to G19.C.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit.

G2. PROPER OPERATION AND MAINTENANCE

The Permittee shall at all times properly operate and maintain all facilities and systems of collection, treatment, and control (and related appurtenances) which are installed or used by the Permittee for pollution control to achieve compliance with the terms and conditions of this permit.

G3. NOTIFICATION OF DISCHARGE INCLUDING SPILLS

If a Permittee has knowledge of a discharge, including spill(s), into or from a municipal storm sewer, which could constitute a threat to human health, welfare, or the environment, the Permittee, shall:

A. Take appropriate action to correct or minimize the threat to human health, welfare and/or the environment, and

B. Notify the Ecology regional office and other appropriate spill response authorities immediately but in no case later than within 24 hours of obtaining that knowledge. The Department of Ecology's Regional Office 24-hr. number is 425-649-7000 for the Northwest Regional Office and 360-407-6300 for the Southwest Regional Office.

C. Immediately report spills or discharges which might cause bacterial contamination of shellfish, such as broken sewer lines and failing onsite septic systems, to the Ecology regional office and to the Department of Health, Shellfish Program. The Department of Health's Shellfish 24-hr. number is 360-236-3330.

D. Immediately report spills or discharges of oils or hazardous materials to the Ecology regional office and to the Washington Emergency Management Division, 1-800-258-5990.

G4. BYPASS PROHIBITED

The intentional *bypass* of stormwater from all or any portion of a stormwater treatment BMP whenever the design capacity of the treatment BMP is not exceeded, is prohibited unless the following conditions are met:

A. Bypass is: (1) unavoidable to prevent loss of life, personal injury, or severe property damage; or (2) necessary to perform construction or maintenance-related activities essential to meet the requirements of the Clean Water Act (*CWA*); and

B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated stormwater, or maintenance during normal dry periods.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and

permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss.

G5. RIGHT OF ENTRY

The Permittee shall allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law at reasonable times:

A. To enter upon the Permittee's premises where a discharge is located or where any records must be kept under the terms and conditions of this permit;

B. To have access to, and copy at reasonable cost and at reasonable times, any records that must be kept under the terms of the permit;

C. To inspect at reasonable times any monitoring equipment or method of monitoring required in the permit;

D. To inspect at reasonable times any collection, treatment, pollution management, or discharge facilities; and

E. To sample at reasonable times any discharge of pollutants.

G6. DUTY TO MITIGATE

The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment.

G7. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G8. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in the permit shall be construed as excusing the Permittee from compliance with any other applicable federal, state, or local statutes, ordinances, or regulations.

G9. MONITORING

A. Representative Sampling: Samples and measurements taken to meet the requirements of this permit shall be representative of the volume and nature of the monitored discharge, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

B. Records Retention: The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology. On request, monitoring data and analysis must be provided to Ecology.

C. Recording of Results: For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place and time of sampling; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Test Procedures: All sampling and analytical methods used to meet the monitoring requirements specified in the approved stormwater management program shall conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136, unless otherwise specified in this permit or approved in writing by Ecology.

E. Flow Measurement: Where flow measurements are required by other conditions of this Permit, appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with manufacturer's recommendations or at a minimum frequency of at least one calibration per year. Calibration records should be maintained for a minimum of three years.

F. Lab Accreditation: Where data collection is required by other conditions of this Permit, all monitoring data, except for flow, temperature, conductivity, pH, total residual chlorine, and other exceptions approved by Ecology, shall be prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC. Soils and hazardous waste data are exempted from this requirement pending accreditation of laboratories for analysis of these media by Ecology.

G. Additional Monitoring: Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G10. REMOVED SUBSTANCES

With the exception of decant from street waste vehicles, the Permittee must not allow collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to be resuspended or reintroduced to the storm sewer system or to waters of the state. Decant from street waste vehicles resulting from cleaning stormwater facilities may be reintroduced only when other practical means are not available and only in accordance with the Street Waste Disposal Guidelines in Appendix 6.

G11. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the

application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

G12. REVOCATION OF COVERAGE

The director may terminate coverage under this *General Permit* in accordance with Chapter 43.21B RCW and Chapter 173-226 WAC. Cases where coverage may be terminated include, but are not limited to the following:

A. Violation of any term or condition of this general permit;

B. Obtaining coverage under this general permit by misrepresentation or failure to disclose fully all relevant facts;

C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

D. A determination that the permitted activity endangers human health or the environment, or contributes significantly to water quality standards violations;

E. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090;

F. Nonpayment of permit fees assessed pursuant to RCW 90.48.465;

Revocation of coverage under this general permit may be initiated by Ecology or requested by any interested person.

G13. TRANSFER OF COVERAGE

The director may require any discharger authorized by this general permit to apply for and obtain an individual permit in accordance with Chapter 43.21B RCW and Chapter 173-226 WAC.

G14. GENERAL PERMIT MODIFICATION AND REVOCATION

This general permit may be modified, revoked and reissued, or terminated in accordance with the provisions of WAC 173-226-230. Grounds for modification, revocation and reissuance, or termination include, but are not limited to the following:

A. A change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this general permit;

B. Effluent limitation guidelines or standards are promulgated pursuant to the CWA or chapter 90.48RCW, for the category of dischargers covered under this general permit;

C. A water quality management plan containing requirements applicable to the category of dischargers covered under this general permit is approved;

D. Information is obtained which indicates that cumulative effects on the environment from dischargers covered under this general permit are unacceptable; or

E. Changes made to State law reference this permit.

G15. REPORTING A CAUSE FOR MODIFICATION OR REVOCATION

A Permittee who knows or has reason to believe that any activity has occurred or will occur which would constitute cause for modification or revocation and reissuance under Condition G12, G14, or 40 CFR 122.62 shall report such plans, or such information, to Ecology so that a decision can be made on whether action to modify, or revoke and reissue this permit will be required. Ecology may then require submission of a new or amended application. Submission of such application does not relieve the Permittee of the duty to comply with this permit until it is modified or reissued.

G16. APPEALS

A. The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal within thirty days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.

B. The terms and conditions of this general permit, as they apply to an individual discharger, can be appealed, in accordance with Chapter 43.21B RCW, within thirty days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.

C. The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

D. Modifications of this permit can be appealed in accordance with Chapter 43.21B RCW and Chapter 173-226 WAC.

G17. PENALTIES

40 CFR 122.41(a)(2) and (3), 40 CFR 122.41(j)(5), and 40 CFR 122.41(k)(2) are hereby incorporated into this permit by reference.

G18. DUTY TO REAPPLY

The Permittee shall apply for permit renewal at least 180 days prior to the specified expiration date of this permit.

G19. CERTIFICATION AND SIGNATURE

All applications, reports, or information submitted to Ecology shall be signed and certified.

A. All permit applications shall be signed by either a principal executive officer or ranking elected official.

B. All reports required by this permit and other information requested by Ecology shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to Ecology, and
2. The authorization specifies either an individual or a position having responsibility for the overall development and implementation of the stormwater management program. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

C. Changes to authorization. If an authorization under General Condition G19.B.2 is no longer accurate because a different individual or position has responsibility for the overall development and implementation of the stormwater management program, a new authorization satisfying the requirements of General Condition G19.B.2 must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a document under this permit must make the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations."

G20. NON-COMPLIANCE NOTIFICATION

In the event it is unable to comply with any of the terms and conditions of this permit, the Permittee must:

A. Notify Ecology of the failure to comply with the permit terms and conditions in writing within **30 days** of becoming aware that the non-compliance has occurred. The written notification to Ecology must include <u>all</u> of the following:

1. A description of the non-compliance, including the reference(s).
2. Beginning and ending dates of the non-compliance, or if the Permittee has not corrected the non-compliance, the anticipated date of correction.
3. Steps taken or planned to reduce, eliminate, or prevent reoccurrence of the non-compliance

B. Take appropriate action to stop or correct the condition of non-compliance.

G21. UPSETS

Permittees shall meet the conditions of 40 CFR 122.41(n) regarding "Upsets." The conditions are as follows:

A. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (C) of this condition are met. Any determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, will not constitute final administrative action subject to judicial review.

C. Conditions necessary for demonstration of upset. A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

   1. An upset occurred and that the Permittee can identify the cause(s) of the upset;
   2. The permitted facility was at the time being properly operated; and
   3. The Permittee submitted notice of the upset as required in 40 CFR 122.41(l)(6)(ii)(B) (24-hour notice of noncompliance).
   4. The Permittee complied with any remedial measures required under 40 CFR 122.41(d) (Duty to Mitigate).

D. Burden of proof. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

DEFINITIONS AND ACRONYMS

"40 CFR" means Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

"AKART" means All Known, Available and Reasonable methods of prevention, control and Treatment. See also State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520 RCW.

"All Known, Available and Reasonable methods of prevention, control and Treatment" refers to the State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520 RCW.

"Applicable TMDL" means a TMDL which has been approved by EPA on or before the date permit coverage is granted.

"Beneficial Uses" means uses of waters of the state, which include but are not limited to: use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.

"Best Management Practices" are the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.

"BMP" means Best Management Practice.

"Bypass" means the diversion of stormwater from any portion of a stormwater treatment facility.

"Certified Erosion and Sediment Control Lead" (CESCL) means an individual who is knowledgeable in the principles and practices of erosion and sediment control. The CESCL must have the skills to assess: the site conditions and construction activities that could impact the quality of stormwater; and the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. The CESCL must have current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology.

"CESCL" means Certified Erosion and Sediment Control Lead.

"Component" or "Program Component" means the elements of the stormwater management program listed in Special Condition S5 Stormwater Management Program for Permittees or S6 Stormwater Management Program for Co-Permittees and Secondary Permittees.

"Co-Permittee" means an owner or operator of a municipal separate storm sewer that has co-applied for permit coverage with another permittee, and that is only responsible for permit conditions relating to the discharge for which it is operator. See also 40 CFR 122.26(b)(1).

"CWA" means the federal Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.

"Detailed Implementation Plan" means the formal TMDL implementation plan, also known as a Water Quality Improvement Plan.

"DIP" means detailed implementation plan.

"Director" means the Director of the Washington State Department of Ecology, or an authorized representative.

"Discharge" for the purpose of this permit, unless indicated otherwise, refers to discharges from municipal separate storm sewers of the Permittees. See also 40 CFR 122.2.

"Entity" means a governmental body or a public or private organization.

"General Permit" means a permit which covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.

"Ground water" means water in a saturated zone or stratum beneath the surface of the land or below a surface water body.

"Heavy equipment maintenance or storage yard" means an uncovered area where any heavy equipment, such as mowing equipment, excavators, dump trucks, backhoes, or bulldozers are washed or maintained, or where at least five pieces of heavy equipment are stored on a long term basis.

"Hyperchlorinated" means water that contains more than 10 mg/Liter chlorine.

"Illicit connection" means any man-made conveyance that is connected to a municipal separate storm sewer without a permit, excluding roof drains and other similar type connections. Examples include sanitary sewer connections, floor drains, channels, pipelines, conduits, inlets, or outlets that are connected directly to the municipal separate storm sewer system.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

"Industrial or Construction Activity" means manufacturing, processing or raw materials storage areas at an industrial plant; or clearing, grading and/or excavation. These activities are required to NPDES permit coverage in accordance with 40 CFR 122.26.

"Integrated Pest Management (IPM)" means a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet agency programmatic pest management objectives. The elements of integrated pest management include:

(a) Preventing pest problems;
(b) Monitoring for the presence of pests and pest damage;
(c) Establishing the density of the pest population, that may be set at zero, that can be tolerated or correlated with a damage level sufficient to warrant treatment of the problem based on health, public safety, economic, or aesthetic thresholds;
(d) Treating pest problems to reduce populations below those levels established by damage thresholds using strategies that may include biological, cultural, mechanical, and chemical control methods and that must consider human health, ecological impact, feasibility, and cost-effectiveness; and
(e) Evaluating the effects and efficacy of pest treatments.

"Pest" means, but is not limited to, any insect, rodent, nematode, snail, slug, weed, and any form of plant or animal life or virus, except virus, bacteria, or other microorganisms on or in a living person or other animal or in or on processed food or beverages or pharmaceuticals, which is normally considered to be a pest, or which the director of the department of agriculture may declare to be a pest.

"Large Municipal Separate Storm Sewer System (Large MS4)" means all municipal Separate Storm Sewers located in an incorporated place with a population of 250,000 or more, a County with unincorporated urbanized areas with a population of 250,000 or more according to the 1990 decennial census by the Bureau of Census. See also 40 CFR 122.26(b)(4).

"Low Density Residential Land Use" means, for the purpose of permit section S8, one dwelling unit per 1-5 acres.

"Low Impact Development" (LID) means a stormwater management and land development strategy applied at the parcel and subdivision scale that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic pre-development hydrologic functions.

"Major Municipal Separate Storm Sewer Outfall" means a municipal separate storm sewer outfall from a single pipe with an inside diameter of 36 inches or more, or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12

inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 12 acres or more). See also 40 CFR 122.26(b)(5).

"Material Storage Facilities" means an uncovered area where bulk materials (liquid, solid, granular, etc.) are stored in piles, barrels, tanks, bins, crates, or other means.

"MBAS" means Methylene Blue Activated Substances.

"Methylene Blue Activated Substances" are anionic surfactants, including linear alkylate sulfonate and alkyl sulfate, which react with a chemical called methylene blue to form a blue-chloroform-soluble complex; the intensity of color is proportional to concentration

"Maximum Extent Practicable (MEP)" refers to paragraph 402(p)(3)(B)(iii) of the federal Clean Water Act which reads as follows: Permits for discharges from municipal storm sewers shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system, design, and engineering methods, and other such provisions as the Administrator or the State determines appropriate for the control of such pollutants.

"Medium Municipal Separate Storm Sewer System (Medium MS4)" means all Municipal Separate Storm Sewers (MS3s) located in an incorporated place with a population of more than 100,000 but less than 250,000, or a county with unincorporated urbanized areas of more than 100,000 but less than 250,000 according to the 1990 decennial census by the Bureau of Census. See also 40 CFR 122.26(b)(7).

"Municipal Separate Storm Sewer (MS3)" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

(a) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, storm water, or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
(b) designed or used for collecting or conveying stormwater;
(c) which is not a combined sewer; and
(d) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2

"Municipal separate storm sewer system (MS4)" means all separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems. See also 40 CFR 122.26(b)(18)

"National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits,

and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

"Notice of Intent" means the application for, or a request for coverage under a General NPDES Permit pursuant to WAC 173-226-200.

"NPDES" means National Pollutant Discharge Elimination System.

"Outfall" means point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the State and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.

"Permittee" means any Primary Permittee, Co-Permittee, or Secondary Permittee unless specifically stated otherwise for a particular section of this permit.

"Physically Interconnected" means that one municipal separate storm sewer is connected to a second municipal separate storm sewer in such a way that it allows for direct discharges to the second system. For example, the roads with drainage systems and municipal streets of one entity are physically connected directly to a municipal separate storm sewer belonging to another entity

"Qualified Personnel" means staff members or contractors who have had professional training in the aspects of stormwater management for which they are responsible and are under the functional control of the Permittee.

"RCW" means the Revised Code of Washington State.

"Runoff" means water that travels across the land surface, or laterally through the soil near the land surface, and discharges to water bodies either directly or through a collection and conveyance system. Runoff includes stormwater and water from other sources that travels across the land surface. See also "Stormwater."

"Secondary Permittee" is an operator of municipal separate storm sewer which is not a city, town or county. Secondary Permittees include special purpose districts and other public entities identified in S1.D which operate municipal separate storm sewers.

"Shared Waterbodies" means waterbodies, including downstream segments, lakes and estuaries, that receive discharges from more than one permittee.

"Significant contributor" means a discharge contributes a loading of pollutants considered to be sufficient to cause or exacerbate the deterioration of receiving water quality or instream habitat conditions.

"Stormwater" means runoff during and following precipitation and snowmelt events, including surface runoff, drainage, and interflow.

"Stormwater Associated with Industrial and Construction Activity" means the discharge from any conveyance which is used for collecting and conveying stormwater, which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant, or associated with clearing grading and/or excavation, and is required to have an NPDES permit in accordance with 40 CFR 122.26.

"Stormwater facilities regulated by the Permittee" means permanent stormwater treatment and flow control BMPs located in the geographic area covered by the permit and which are not owned by the Permittee, and are known by the permittee to discharge into municipal separate storm sewers owned or operated by the Permittee.

"Stormwater Management Manual for Western Washington" means the 5-volume technical manual (Publication Nos. 05-10-029 through 05-10-033) published by Ecology in February 2005.

"Stormwater Management Program (SWMP)" means a set of actions and activities designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable and to protect water quality, and comprising the components listed in S5 or S6 of this Permit and any additional actions necessary to meet the requirements of applicable TMDLs.

"Total Maximum Daily Load" (TMDL) means a water cleanup plan. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the state has designated. The calculation must also account for seasonable variation in water quality. Water quality standards are set by states, territories, and tribes. They identify the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. The Clean Water Act, section 303, establishes the water quality standards and TMDL programs.

"Urban/higher density rural sub-basins" means all areas within or proposed to be within the urban growth area (UGA), or any sub-basin outside the UGA with 50% or more area comprised of lots less than 5 acres.

"Vehicle Maintenance or Storage Facility" means an uncovered area where any vehicles are regularly washed or maintained, or where at least 10 vehicles are stored.

"Water Quality Standards" means Surface Water Quality Standards, Chapter 173-201A WAC, Ground Water Quality Standards, Chapter 173-200 WAC, and Sediment Management Standards, Chapter 173-204 WAC.

"Waters of the state" includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in Chapter 90.48 RCW which includes lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.

APPENDIX 9

APPENDIX 1 – Minimum Technical Requirements for New Development and Redevelopment

Section 1. Exemptions

Forest practices:

Forest practices regulated under Title 222 WAC, except for Class IV General forest practices that are conversions from timber land to other uses, are exempt from the provisions of the minimum requirements.

Commercial agriculture:

Commercial agriculture practices involving working the land for production are generally exempt. However, the conversion from timberland to agriculture, and the construction of impervious surfaces are not exempt.

Oil and Gas Field Activities or Operations:

Construction of drilling sites, waste management pits, and access roads, as well as construction of transportation and treatment infrastructure such as pipelines natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations are exempt. Operators are encouraged to implement and maintain Best Management Practices to minimize erosion and control sediment during and after construction activities to help ensure protection of surface water quality during storm events.

Road Maintenance:

The following road maintenance practices are exempt: pothole and square cut patching, overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage, shoulder grading, reshaping/regrading drainage systems, crack sealing, resurfacing with in-kind material without expanding the road prism, and vegetation maintenance.

The following road maintenance practices are considered redevelopment, and therefore are not categorically exempt. The extent to which this Appendix applies is explained for each circumstance.

- Removing and replacing a paved surface to base course or lower, or repairing the roadway base: If impervious surfaces are not expanded, Minimum Requirements #1 - #5 apply. However, in most cases, only Minimum Requirement #2, Construction Stormwater Pollution Prevention, will be germane. Where appropriate, project proponents are encouraged to look for opportunities to use permeable and porous pavements.

- Extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders: These are considered new impervious surfaces and are subject to the minimum requirements that are triggered when the thresholds identified for redevelopment projects are met.
- Resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt, or concrete; or upgrading from a bituminous surface treatment ("chip seal") to asphalt or concrete: These are considered new impervious surfaces and are subject to the minimum requirements that are triggered when the thresholds identified for redevelopment projects are met.

Underground utility projects:

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to Minimum Requirement #2, Construction Stormwater Pollution Prevention.

All other new development is subject to one or more of the Minimum Requirements (see Section 3 of this Appendix).

Section 2. Definitions Related to Minimum Requirements

Arterial - A road or street primarily for through traffic. A major arterial connects an Interstate Highway to cities and counties. A minor arterial connects major arterials to collectors. A collector connects an arterial to a neighborhood. A collector is not an arterial. A local access road connects individual homes to a collector.

Certified Erosion and Sediment Control Lead (CESCL) - means an individual who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by the Department (see BMP C160 in the *Stormwater Management Manual* for *Western Washington* (2005)). A CESCL is knowledgeable in the principles and practices of erosion and sediment control. The CESCL must have the skills to assess site conditions and construction activities that could impact the quality of stormwater and, the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. Certification is obtained through an Ecology approved erosion and sediment control course. Course listing are provided online at Ecology's web site.

Effective Impervious surface - Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces on residential development sites are considered ineffective if the runoff is dispersed through at least one hundred feet of native vegetation in accordance with BMP T5.30 – "Full Dispersion," as described in Chapter 5 of Volume V of the *Stormwater Management Manual for Western Washington* (2005).

Highway – A main public road connecting towns and cities

Impervious surface - A hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.

Land disturbing activity - Any activity that results in movement of earth, or a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling, and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices are not considered land-disturbing activity.

Maintenance - Repair and maintenance includes activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond that previously existing and results in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional facilities, including cases where environmental permits require replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed. One example is the replacement of a collapsed, fish blocking, round culvert with a new box culvert under the same span, or width, of roadway. See also Road Maintenance exemptions in Section 1 of this Appendix.

Native vegetation – Vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site. Examples include trees such as Douglas Fir, western hemlock, western red cedar, alder, big-leaf maple, and vine maple; shrubs such as willow, elderberry, salmonberry, and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.

New development - Land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

Pollution-generating impervious surface (PGIS) - Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use; industrial activities (as further defined in the glossary); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall. Erodible or leachable materials, wastes, or chemicals are those substances which, when exposed to rainfall, measurably alter the physical or chemical characteristics of the rainfall runoff. Examples include erodible soils that are stockpiled, uncovered process wastes, manure, fertilizers, oily substances, ashes, kiln dust, and garbage dumpster leakage. Metal roofs are also considered to be PGIS unless they are coated with an inert, non-leachable material (e.g., baked-on enamel coating).

A surface, whether paved or not, shall be considered subject to vehicular use if it is regularly used by motor vehicles. The following are considered regularly-used surfaces: roads, unvegetated road shoulders, bike lanes within the traveled lane of a roadway, driveways, parking lots, unfenced fire lanes, vehicular equipment storage yards, and airport runways.

The following are not considered regularly-used surfaces: paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, fenced fire lanes, and infrequently used maintenance access roads.

Pollution-generating pervious surfaces (PGPS) - Any non-impervious surface subject to use of pesticides and fertilizers or loss of soil. Typical PGPS include lawns, landscaped areas, golf courses, parks, cemeteries, and sports fields.

Pre-developed condition – The native vegetation and soils that existed at a site prior to the influence of Euro-American settlement. The pre-developed condition shall be assumed to be a forested land cover unless reasonable, historic information is provided that indicates the site was prairie prior to settlement.

Project site - That portion of a property, properties, or right of way subject to land disturbing activities, new impervious surfaces, or replaced impervious surfaces.

Receiving waters - Bodies of water or surface water systems to which surface runoff is discharged via a point source of stormwater or via sheet flow.

Redevelopment - On a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure;; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

Replaced impervious surface - For structures, the removal and replacement of any exterior impervious surfaces or foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.

Site – The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.

Source control BMP - A structure or operation that is intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. This manual separates source control BMPs into two types. *Structural Source Control BMPs* are physical, structural, or mechanical devices, or facilities that are intended to prevent pollutants from entering stormwater. *Operational BMPs* are non-structural practices that prevent or reduce pollutants from entering stormwater. See Volume IV of the *Stormwater Management Manual for Western Washington* (2005) for details.

Threshold Discharge Area - An onsite area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream (as determined by the shortest flowpath). The examples in Figure 2.1 below illustrate this definition. The purpose of this definition is to clarify how the thresholds of this manual are applied to project sites with multiple discharge points.

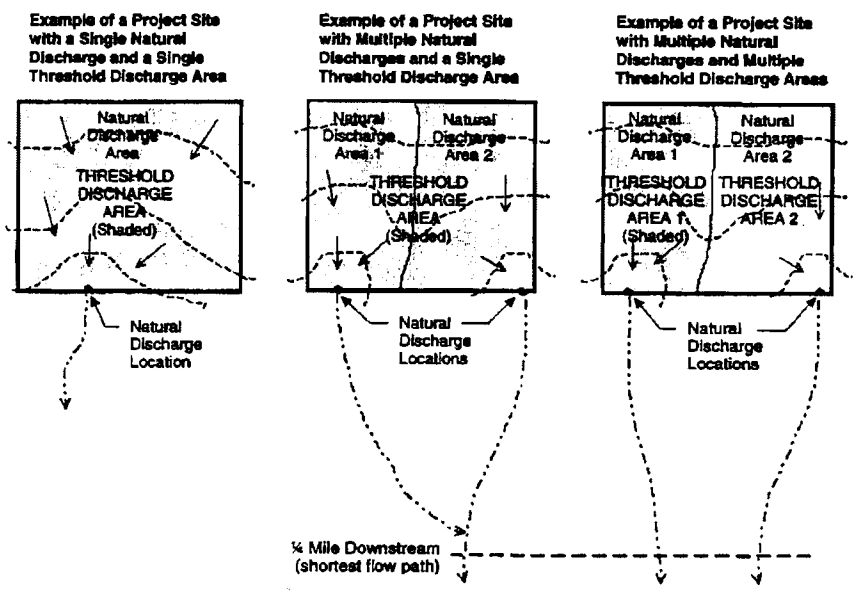


Figure 2.1 Threshold Discharge Areas

Wetland - Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage

ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

Section 3. Applicability of the Minimum Requirements

3.1 Thresholds

Not all of the Minimum Requirements apply to every development or redevelopment project. The applicability varies depending on the type and size of the project. This section identifies thresholds that determine the applicability of the Minimum Requirements to different projects. The flow charts in Figures 3.1, 3.2 and 3.3 must be used to determine which of the Minimum Requirements apply. The Minimum Requirements themselves are presented in Section 4 of this Appendix.

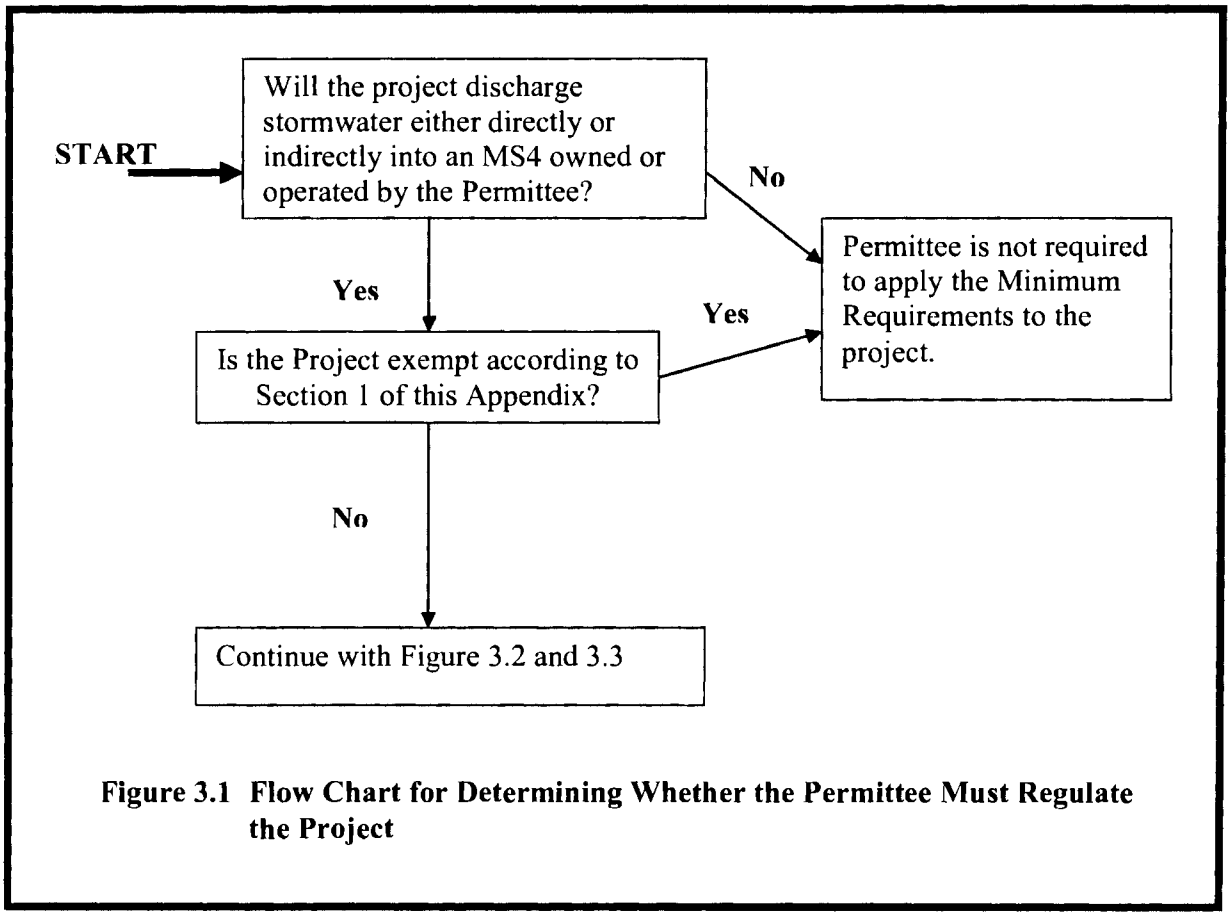


Figure 3.1 Flow Chart for Determining Whether the Permittee Must Regulate the Project

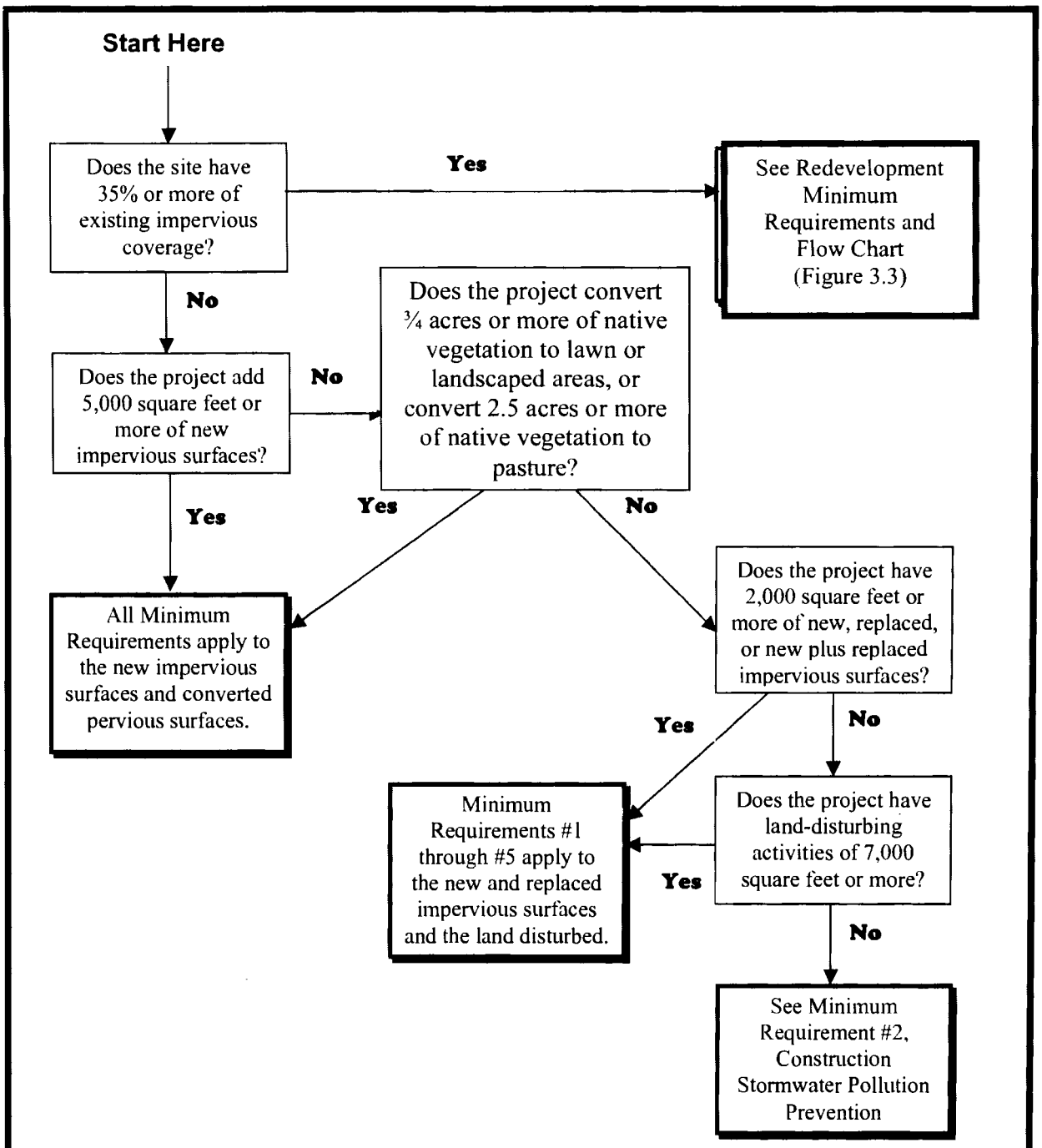


Figure 3.2 Flow Chart for Determining Requirements for New Development

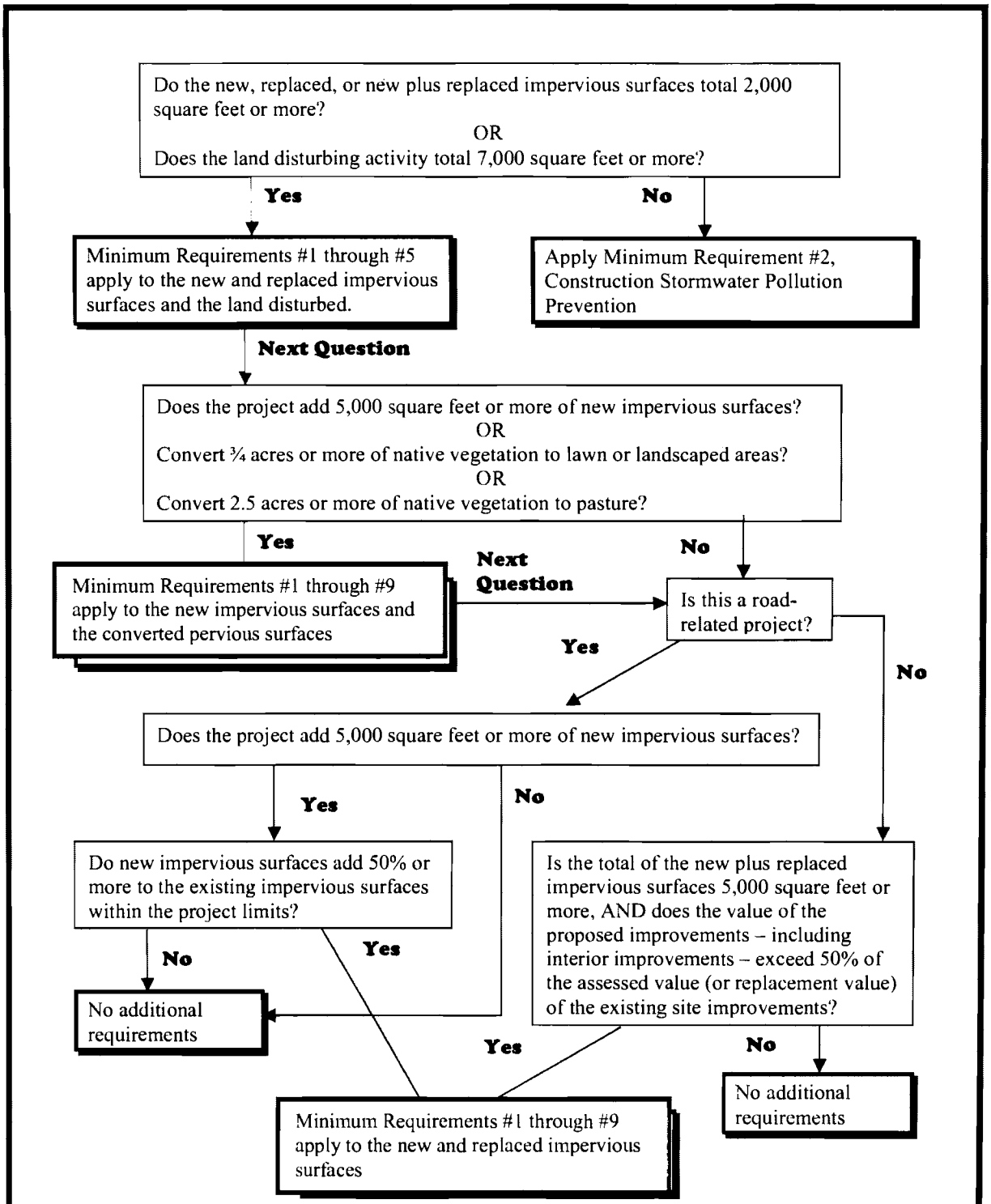


Figure 3.3 Flow Chart for Determining Requirements for Redevelopment

3.2 New Development

All new development shall be required to comply with Minimum Requirement #2.

The following new development shall comply with Minimum Requirements #1 through #5 for the new and replaced impervious surfaces and the land disturbed:

- Creates or adds 2,000 square feet, or greater, of new, replaced, or new plus replaced impervious surface area, or
- Has land disturbing activity of 7,000 square feet or greater,

The following new development shall comply with Minimum Requirements #1 through #10 for the new impervious surfaces and the converted pervious surfaces:

- Creates or adds 5,000 square feet, or more, of new impervious surface area, or
- Converts ¾ acres, or more, of native vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

3.3 Redevelopment

All redevelopment shall be required to comply with Minimum Requirement #2. In addition, all redevelopment that exceeds certain thresholds shall be required to comply with additional Minimum Requirements as follows.

The following redevelopment shall comply with Minimum Requirements #1 through #5 for the new and replaced impervious surfaces and the land disturbed:

- The new, replaced, or total of *new plus rep*laced impervious surfaces is 2,000 square feet or more, or
- 7,000 square feet or more of land disturbing activities.

The following redevelopment shall comply with Minimum Requirements #1 through #10 for the new impervious surfaces and converted pervious areas:

- Adds 5,000 square feet or more of *new* impervious surfaces or,
- Converts ¾ acres, or more, of native vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

If the runoff from the new impervious surfaces and converted pervious surfaces is not separated from runoff from other surfaces on the project site, the stormwater treatment facilities must be sized for the entire flow that is directed to them.

The local government may allow the Minimum Requirements to be met for an equivalent (flow and pollution characteristics) area within the same site. For public roads' projects, the equivalent area does not have to be within the project limits, but must drain to the same receiving water.

3.4 Additional Requirements for Re-development Project Sites

For road-related projects, runoff from the replaced and new impervious surfaces (including pavement, shoulders, curbs, and sidewalks) shall meet all the Minimum Requirements if the new impervious surfaces total 5,000 square feet or more and total 50% or more of the existing impervious surfaces within the project limits. The project limits shall be defined by the length of the project and the width of the right–of-way.

Other types of redevelopment projects shall comply with all the Minimum Requirements for the new and replaced impervious surfaces if the total of new plus replaced impervious surfaces is 5,000 square feet or more, and the valuation of proposed improvements – including interior improvements – exceeds 50% of the assessed value of the existing site improvements.

The Permittee may exempt or institute a stop-loss provision for redevelopment projects from compliance with Minimum Requirements for treatment, flow control, and wetlands protection as applied to the replaced impervious surfaces if the Permittee has adopted a plan and a schedule that fulfills those requirements in regional facilities. See also Sections 5, 6 and 7 of this Appendix.

The Permittee may grant a variance/exception to the application of the flow control requirements to replaced impervious surfaces if such application imposes a severe economic hardship. See Section 6 of this Appendix.

3.5 Modification of the Minimum Requirements

Basin Planning is encouraged and may be used to tailor Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may be used to support alternative treatment, flow control, and/or wetland protection requirements to those contained in Section 4 of this Appendix. Basin planning may also be used to demonstrate an equivalent level of treatment, flow control, and/or wetland protection through the construction and use of regional stormwater facilities. See Section 7 of this Appendix for details on Basin Planning and how basin planning may be used to modify the Minimum Requirements is Section 4.

Section 4. Minimum Requirements

This Section describes the Minimum Requirements for stormwater management at development and redevelopment sites. Section 3 of this Appendix should be consulted to determine which of the minimum requirements below apply to any given project. Figures 3.2 and 3.3 should be consulted to determine whether the minimum requirements apply to new surfaces, replaced surfaces or new and replaced surfaces.

4.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

The permittee shall require a Stormwater Site Plan from all projects meeting the thresholds in Section 3.1 of this Appendix. Stormwater Site Plans shall be prepared in accordance with Chapter 3 of Volume 1 of the *Stormwater Management Manual for Western Washington* (2005).

4.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP)

Permittees may choose to allow compliance with this Minimum Requirement to be achieved for an individual site if the site is covered under Ecology's *General NPDES Permit for Stormwater Discharges Associated with Construction Activities* and fully implementing the requirements of that permit.

The Permittee may develop an abbreviated SWPPP format to meet the SWPPP requirement under this permit for sites that are less than 1 acre.

General Requirements

All new development and redevelopment projects are responsible for preventing erosion and discharge of sediment and other pollutants into receiving waters. Permittees must require a Construction Stormwater Pollution Prevention Plan (SWPPP) as part of the Stormwater Site Plan (see Minimum Requirement #1 above) for all projects which meet the thresholds in Section 3 of this Appendix. The SWPPP shall be implemented beginning with initial soil disturbance and until final stabilization.

Sediment and Erosion control BMPs shall be consistent with the BMPs contained in chapters 3 and 4 of Volume II of the *Stormwater Management Manual for Western Washington* (2005), and/or other equivalent BMPs contained in technical stormwater manuals approved by the Department.

The SWPPP shall include a narrative and drawings. All BMPs shall be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative shall include documentation to explain and justify the pollution prevention decisions made for the project. Clearing and grading activities for developments shall be permitted only if conducted pursuant to an approved site development plan (e.g., subdivision approval) that establishes permitted areas of clearing, grading, cutting, and filling. When establishing these permitted clearing and grading areas, consideration should be given to minimizing removal of existing trees and minimizing disturbance/compaction of native soils except as needed for building purposes. These permitted clearing and grading areas and any

other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as may be required by local jurisdictions, shall be delineated on the site plans and the development site.

Seasonal Work Limitations - From October 1 through April 30, clearing, grading, and other soil disturbing activities may only be authorized by the Permittee if silt-laden runoff will be prevented from leaving the site through a combination of the following:

1. Site conditions including existing vegetative coverage, slope, soil type and proximity to receiving waters; and

2. Limitations on activities and the extent of disturbed areas; and

3. Proposed erosion and sediment control measures.

Based on the information provided and/or local weather conditions, the Permittee may expand or restrict the seasonal limitation on site disturbance. The following activities are exempt from the seasonal clearing and grading limitations:

1. Routine maintenance and necessary repair of erosion and sediment control BMPs,

2. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil, and

3. Activities where there is one hundred percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

Construction Stormwater Pollution Prevention Plan (SWPPP) Elements
The construction site operator shall include each of the twelve elements below in the SWPPP and ensure that they are implemented unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP. The SWPPP shall include both narrative and drawings. All BMPs shall be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative shall include documentation to explain and justify the pollution prevention decisions made for the project.

1. Preserve Vegetation/Mark Clearing Limits:

   a Prior to beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.

   b. The duff layer, native top soil, and natural vegetation shall be retained in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access:

a. Construction vehicle access and exit shall be limited to one route, if possible.

b. Access points shall be stabilized with quarry spalls, crushed rock or other equivalent BMP to minimize the tracking of sediment onto public roads.

c. Wheel wash or tire baths shall be located on site, if the stabilized constructions entrance is not effective in preventing sediment from being tracked onto public roads.

d. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or more frequently during wet weather. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area.

e. Street washing is allowed only after sediment is removed in accordance with 2.d, above. Street wash wastewater shall be controlled by pumping back on site or otherwise be prevented from discharging into systems tributary to waters of the state.

3. Control Flow Rates:

a. Properties and waterways downstream from development sites shall be protected from erosion due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site.

b. Where necessary to comply with 3.a, above, stormwater retention or detention facilities shall be constructed as one of the first steps in grading. Detention facilities shall be functional prior to construction of site improvements (e.g., impervious surfaces).

c. If permanent infiltration ponds are used for flow control during construction, these facilities should be protected from siltation during the construction phase.

4. Install Sediment Controls:

a. Stormwater runoff from disturbed areas shall pass through a sediment pond, or other appropriate sediment removal BMP, prior to leaving a construction site or prior to discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but shall meet the flow control performance standard of 3.a, above.

b. Sediment control BMPs (sediment ponds, traps, filters, etc.) shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.

c. BMPs intended to trap sediment on site shall be located in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.

5. Stabilize Soils:

   a. Exposed and unworked soils shall be stabilized by application of effective BMPs that prevent erosion.

   b. No soils should remain exposed and unworked for more than the time periods set forth below to prevent erosion:

      - During the dry season (May 1 – September 30): 7 days
      - During the wet season (October 1 – April 30): 2 days

   c. The time period may be adjusted by the Permittee, if the Permittee can show that local precipitation data justify a different standard.

   d. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

   e. Soil stockpiles must be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways and drainage channels.

6. Protect Slopes:

   a. Design and construct cut and fill slopes in a manner that will minimize erosion.

   b. Off-site stormwater (run-on) or groundwater shall be diverted away from slopes and undisturbed areas with interceptor dikes, pipes and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.

   c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains shall handle the expected peak 10-minute flow velocity from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis shall use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis shall use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model to predict flows, bare soil areas should be modeled as "landscaped area."

d. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.

e. Check dams shall be placed at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets:

a. Storm drain inlets made operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.

b. Inlet protection devices shall be cleaned or removed and replaced when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

8. Stabilize Channels and Outlets:

a. All temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the following expected peak flows. Channels shall handle the expected peak 10-minute flow velocity from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis shall use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis shall use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model to predict flows, bare soil areas should be modeled as "landscaped area."

b. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.

9. Control Pollutants:

a. All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater.

b. Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks shall include secondary containment.

c. Maintenance, fueling and repair of heavy equipment and vehicles shall be conducted using spill prevention and control measures. Contaminated surfaces shall be cleaned immediately following any spill incident.

d. Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer with local sewer district approval.

e. Application of fertilizers and pesticides shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' label requirements for application rates and procedures shall be followed.

f. BMPs shall be used to prevent or treat contamination of stormwater runoff by pH modifying sources. These sources include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. Permittees shall require construction site operators to adjust the pH of stormwater if necessary to prevent violations of water quality standards.

g. Permittees shall require construction site operators obtain written approval from the Department prior to using chemical treatment other than CO2 or dry ice to adjust pH.

10. Control De-Watering:

a. Foundation, vault, and trench de-watering water, which have similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or sediment pond.

b. Clean, non-turbid de-watering water, such as well-point ground water, can be discharged to systems tributary to, or directly into surface waters of the state, as specified in 8, above, provided the de-watering flow does not cause erosion or flooding of receiving waters. Clean de-watering water should not be routed through stormwater sediment ponds.

c. Other de-watering disposal options may include: (i) infiltration; (ii) transport offsite in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters; (iii) on-site chemical treatment or other suitable treatment technologies approved by the Permittee; (iv) sanitary sewer discharge with local sewer district approval, if there is no other option; or (v) use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized de-watering.

d. Highly turbid or contaminated dewatering water shall be handled separately from stormwater.

11. Maintain BMPs:

    a. All temporary and permanent erosion and sediment control BMPs shall be inspected, maintained and repaired as needed to assure continued performance of their intended function in accordance with BMP specifications.

    b. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

12. Manage the Project:

    a. Development projects shall be phased to the maximum degree practicable and shall take into account seasonal work limitations.

    b. The Permittee must require construction site operators to maintain, and repair as needed, all sediment and erosion control BMPs to assure continued performance of their intended function.

    c. The Permittee must require construction site operators to periodically inspect their sites. For projects that disturb one or more acres, site inspections shall be conducted by a Certified Erosion and Sediment Control Lead who shall be identified in the SWPPP and shall be present on-site or on-call at all times.

    d. Permittee must require construction site operators to maintain, update and implement their SWPPP. Permittees shall require construction site operators to modify their SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

4.3 Minimum Requirement #3: Source Control of Pollution

All known, available and reasonable source control BMPs must be required for to all projects approved by the Permittee. Source control BMPs must be selected, designed, and maintained in accordance with Volume IV of the *Stormwater Management Manual for Western Washington* (2005) or an approved equivalent manual approved by the Department.

4.4 Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls

Natural drainage patterns shall be maintained, and discharges from the project site shall occur at the natural location, to the maximum extent practicable. The manner by which runoff is discharged from the project site must not cause a significant adverse impact to downstream receiving waters and down gradient properties. All outfalls require energy dissipation.

4.5 Minimum Requirement #5: On-site Stormwater Management

The Permittee must require On-site Stormwater Management BMPs to infiltrate, disperse, and retain stormwater runoff onsite to the maximum extent feasible without causing flooding or erosion impacts. Roof Downspout Control BMPs, functionally equivalent to those described in Chapter 3 of Volume III of the *Stormwater Management Manual for Western Washington* (2005), and Dispersion and Soil Quality BMPs, functionally equivalent to those in Chapter 5 of Volume V, of the *Stormwater Management Manual for Western Washington* (2005) shall be required to reduce the hydrologic disruption of developed sites.

4.6 Minimum Requirement #6: Runoff Treatment

Project Thresholds

The following require construction of stormwater treatment facilities (see Table 4.1 below):

- Projects in which the total of effective, pollution-generating impervious surface (PGIS) is 5,000 square feet or more in a threshold discharge area of the project, or

- Projects in which the total of pollution-generating pervious surfaces (PGPS) is three-quarters (3/4) of an acre or more in a threshold discharge area, and from which there is a surface discharge in a natural or man-made conveyance system from the site.

Table 4.1 Treatment Requirements by Threshold Discharge Area

	< ¾ acres of PGPS	≥ ¾ acres PGPS	< 5,000 sf PGIS	≥ 5,000 sf PGIS
Treatment Facilities		✔		✔
Onsite Stormwater BMPs	✔	✔	✔	✔

PGPS = pollution-generating pervious surfaces
PGIS = pollution-generating impervious surfaces
sf = square feet

Treatment-Type Thresholds

1. Oil Control:

   Treatment to achieve Oil Control applies to projects that have "high-use sites." High-use sites are those that typically generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil. High-use sites include:

   a. An area of a commercial or industrial site subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area;

b. An area of a commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil;

c. An area of a commercial or industrial site subject to parking, storage or maintenance of 25 or more vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.);

d. A road intersection with a measured ADT count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.

2. Phosphorus Treatment:

The requirement to provide phosphorous control is determined by the local government with jurisdiction (e.g., through a lake management plan), or the Department of Ecology (e.g, through a waste load allocation). The local government may have developed a management plan and implementing ordinances or regulations for control of phosphorus from new/redevelopment for the receiving water(s) of the stormwater drainage. The local government can use the following sources of information for pursuing plans and implementing ordinances and/or regulations:

a. Those waterbodies reported under section 305(b) of the Clean Water Act, and designated as not supporting beneficial uses due to phosphorous;

b. Those listed in Washington State's Nonpoint Source Assessment required under section 319(a) of the Clean Water Act due to nutrients.

3. Enhanced Treatment:

Enhanced treatment for reduction in dissolved metals is required for the following project sites that discharge to fish-bearing streams, lakes, or to waters or conveyance systems tributary to fish-bearing streams or lakes:

Industrial project sites,
Commercial project sites,
Multi-family project sites, and
High AADT roads as follows:

Within Urban Growth Management Areas:

- Fully controlled and partially controlled limited access highways with Annual Average Daily Traffic (AADT) counts of 15,000 or more
- All other roads with an AADT of 7,500 or greater

Outside of Urban Growth Management Areas:

- Roads with an AADT of 15,000 or greater unless discharging to a 4th Strahler order stream or larger;
- Roads with an AADT of 30,000 or greater if discharging to a 4th Strahler order stream or larger (as determined using 1:24,000 scale maps to delineate stream order).

However, such sites listed above that discharge directly (or, indirectly through a municipal storm sewer system) to Basic Treatment Receiving Waters (Appendix I-C of the *Stormwater Management Manual for Western Washington* (2005)), and areas of the above-listed project sites that are identified as subject to Basic Treatment requirements, are also not subject to Enhanced Treatment requirements. For developments with a mix of land use types, the Enhanced Treatment requirement shall apply when the runoff from the areas subject to the Enhanced Treatment requirement comprise 50% or more of the total runoff within a threshold discharge area.

4. Basic Treatment:

Basic Treatment generally applies to:

- Project sites that discharge to the ground, UNLESS:
  1) The soil suitability criteria for infiltration treatment are met; (see Chapter 3 of Volume III of the *Stormwater Management Manual for Western Washington* (2005) for soil suitability criteria) or
  2) The project uses infiltration strictly for flow control – not treatment - and the discharge is within ¼-mile of a phosphorus sensitive lake (use a Phosphorus Treatment facility), or within ¼ mile of a fish-bearing stream, or a lake (use an Enhanced Treatment facility).

- Residential projects not otherwise needing phosphorus control as designated by USEPA, the Department of Ecology, or by the Permittee; and
- Project sites discharging directly to salt waters, river segments, and lakes listed in Appendix I-C of the *Stormwater Management Manual for Western Washington* (2005); and
- Project sites that drain to streams that are not fish-bearing, or to waters not tributary to fish-bearing streams;
- Landscaped areas of industrial, commercial, and multi-family project sites, and parking lots of industrial and commercial project sites that do not involve pollution-generating sources (e.g., industrial activities, customer parking, storage of erodible or leachable material, wastes or chemicals) other than parking of employees' private vehicles. For developments with a mix of land use types, the Basic Treatment requirement shall apply when the runoff from the areas subject to the Basic Treatment requirement comprise 50% or more of the total runoff within a threshold discharge area.

Treatment Facility Sizing

Water Quality Design Storm Volume: The volume of runoff predicted from a 24-hour storm with a 6-month return frequency (a.k.a., 6-month, 24-hour storm). Wetpool facilities are sized based upon the volume of runoff predicted through use of the Natural Resource Conservation Service curve number equations in Chapter 2 of Volume III of the *Stormwater Management Manual for Western Washington* (2005), for the 6-month, 24-hour storm. Alternatively, the 91st percentile, 24-hour runoff volume indicated by an approved continuous runoff model may be used.

Water Quality Design Flow Rate

1. Preceding Detention Facilities or when Detention Facilities are not required:

   The flow rate at or below which 91% of the runoff volume, as estimated by an approved continuous runoff model, will be treated. Design criteria for treatment facilities are assigned to achieve the applicable performance goal at the water quality design flow rate (e.g., 80% TSS removal).

2. Downstream of Detention Facilities:

   The water quality design flow rate must be the full 2-year release rate from the detention facility.

   Alternative methods may be used if they identify volumes and flow rates that are at least equivalent.

   That portion of any development project in which the above PGIS or PGPS thresholds are not exceeded in a threshold discharge area shall apply On-site Stormwater Management BMPs in accordance with Minimum Requirement #5.

Treatment Facility Selection, Design, and Maintenance

Stormwater treatment facilities shall be:

- Selected in accordance with the process identified in Chapter 4 of Volume I of the *Stormwater Management Manual for Western Washington* (2005),
- Designed in accordance with the design criteria in Volume V of the *Stormwater Management Manual for Western Washington* (2005), and
- Maintained in accordance with the maintenance schedule in Volume V of the *Stormwater Management Manual for Western Washington* (2005).

Additional Requirements

The discharge of untreated stormwater from pollution-generating impervious surfaces to ground water must not be authorized by the Permittee, except for the discharge achieved by infiltration or dispersion of runoff from residential sites through use of On-site Stormwater Management BMPs.

4.7 Minimum Requirement #7: Flow Control

Applicability

Except as provided below, the Permittee must require all projects provide flow control to reduce the impacts of stormwater runoff from impervious surfaces and land cover conversions. The requirement below applies to projects that discharge stormwater directly, or indirectly through a conveyance system, into a fresh water.

Flow control is not required for projects that discharge directly to, or indirectly through an MS4 to a water listed in Appendix I-E of the *Stormwater Management Manual for Western Washington* (2005) subject to the following restrictions:

- Direct discharge to the exempt receiving water does not result in the diversion of drainage from any perennial stream classified as Types 1, 2, 3, or 4 in the State of Washington Interim Water Typing System, or Types "S", "F", or "Np" in the Permanent Water Typing System, or from any category I, II, or III wetland; and
- Flow splitting devices or drainage BMP's are applied to route natural runoff volumes from the project site to any downstream Type 5 stream or category IV wetland:
    - Design of flow splitting devices or drainage BMP's will be based on continuous hydrologic modeling analysis. The design will assure that flows delivered to Type 5 stream reaches will approximate, but in no case exceed, durations ranging from 50% of the 2-year to the 50-year peak flow.
    - Flow splitting devices or drainage BMP's that deliver flow to category IV wetlands will also be designed using continuous hydrologic modeling to preserve pre-project wetland hydrologic conditions unless specifically waived or exempted by regulatory agencies with permitting jurisdiction; and
- The project site must be drained by a conveyance system that is comprised entirely of manmade conveyance elements (e.g., pipes, ditches, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and

- The conveyance system between the project site and the exempt receiving water shall have sufficient hydraulic capacity to convey discharges from future build-out conditions (under current zoning) of the site, and the existing condition from non-project areas from which runoff is or will be collected; and
- Any erodible elements of the manmade conveyance system must be adequately stabilized to prevent erosion under the conditions noted above.

If the discharge is to a stream that leads to a wetland, or to a wetland that has an outflow to a stream, both this minimum requirement (Minimum Requirement #7) and Minimum Requirement #8 apply.

Permittees may petition Ecology to exempt projects in additional areas. A petition must justify the proposed exemption based upon a hydrologic analysis that demonstrates that the potential stormwater runoff from the exempted area will not significantly increase the erosion forces on the stream channel nor have near-field impacts (see Section 7 of this Appendix).

Thresholds

The following require construction of flow control facilities and/or land use management BMPs that will achieve the standard flow control requirement for western Washington (see Table 4.2):

- Projects in which the total of effective impervious surfaces is 10,000 square feet or more in a threshold discharge area, or
- Projects that convert ¾ acres or more of native vegetation to lawn or landscape, or convert 2.5 acres or more of native vegetation to pasture in a threshold discharge area, and from which there is a surface discharge in a natural or man-made conveyance system from the site, or
- Projects that through a combination of effective impervious surfaces and converted pervious surfaces cause a 0.1 cubic feet per second increase in the 100-year flow frequency from a threshold discharge area as estimated using the Western Washington Hydrology Model or other approved model.

That portion of any development project in which the above thresholds are not exceeded in a threshold discharge area shall apply Onsite Stormwater Management BMPs in accordance with Minimum Requirement #5.

Table 4.2 Flow Control Requirements by Threshold Discharge Area		
	Flow Control Facilities	On-site Stormwater Management BMPs
< ¾ acres conversion to lawn/landscape, or < 2.5 acres to pasture		✔
≥ ¾ acres conversion to lawn/landscape, or ≥ 2.5 acres to pasture	✔	✔
< 10,000 square feet of effective impervious area		✔
≥ 10,000 square feet of effective impervious area	✔	✔
≥ 0.1 cubic feet per second increase in the 100-year flood frequency	✔	✔

Standard Flow Control Requirement

Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow. The pre-developed condition to be matched shall be a forested land cover unless:

- Reasonable, historic information is available that indicates the site was prairie prior to settlement (modeled as "pasture" in the Western Washington Hydrology Model); or
- The drainage area of the immediate stream and all subsequent downstream basins have had at least 40% total impervious area since 1985. In this case, the pre-developed condition to be matched shall be the existing land cover condition. Where basin-specific studies determine a stream channel to be unstable, even though the above criterion is met, the pre-developed condition assumption shall be the "historic" land cover condition, or a land cover condition commensurate with achieving a target flow regime identified by an approved basin study.

This standard requirement is waived for sites that will reliably infiltrate all the runoff from impervious surfaces and converted pervious surfaces.

Western Washington Alternative Requirement

An alternative requirement may be established through application of watershed-scale hydrological modeling and supporting field observations. Possible reasons for an alternative flow control requirement include:

- Establishment of a stream–specific threshold of significant bedload movement other than the assumed 50% of the 2-year peak flow;
- Zoning and Land Clearing Ordinance restrictions that, in combination with an alternative flow control standard, maintain or reduce the naturally occurring erosive forces on the stream channel; or
- A duration control standard is not necessary for protection, maintenance, or restoration of designated beneficial uses or Clean Water Act compliance.

See Section 7 Basin/Watershed Planning of this Appendix for details on how alternative flow control requirements may be established.

Additional Requirement

Flow Control BMPs shall be selected, designed, and maintained in accordance with Volume III of the *Stormwater Management Manual for Western Washington* (2005) or an approved equivalent.

4.8 Minimum Requirement #8: Wetlands Protection

Applicability

The requirements below apply only to projects whose stormwater discharges into a wetland, either directly or indirectly through a conveyance system. These requirements must be met in addition to meeting Minimum Requirement #6, Runoff Treatment.

Thresholds

The thresholds identified in Minimum Requirement #6 – Runoff Treatment, and Minimum Requirement #7 – Flow Control shall also be applied for discharges to wetlands.

Standard Requirement

Discharges to wetlands shall maintain the hydrologic conditions, hydrophytic vegetation, and substrate characteristics necessary to support existing and designated uses. The hydrologic analysis shall use the existing land cover condition to determine the existing hydrologic conditions unless directed otherwise by a regulatory agency with jurisdiction. A wetland can be considered for hydrologic modification and/or stormwater treatment in accordance with Guide Sheet 1B in Appendix I-D on the *Stormwater Management Manual for Western Washington* (2005).

Additional Requirements

Stormwater treatment and flow control facilities shall not be built within a natural vegetated buffer, except for:

- necessary conveyance systems as approved by the Permittee; or
- as allowed in wetlands approved for hydrologic modification and/or treatment in accordance with Guidesheet 1B in Appendix I-D of the *Stormwater Management Manual for Western Washington* (2005).

An adopted and implemented basin plan prepared in accordance with the provisions of Section 7 of this Appendix may be used to develop requirements for wetlands that are tailored to a specific basin.

4.9 Minimum Requirement #9: Operation and Maintenance

Permittees must require an operation and maintenance manual that is consistent with the provisions in Volume V of the *Stormwater Management Manual for Western Washington* (2005) for all proposed stormwater facilities and BMPs. The party (or parties) responsible for maintenance and operation shall be identified in the operation and maintenance manual. For private facilities approved by the Permittee, a copy of the manual shall be retained onsite or within reasonable access to the site, and shall be transferred with the property to the new owner. For public facilities, a copy of the manual shall be retained in the appropriate department. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection by the local government.

Section 5. Adjustments

Adjustments to the Minimum Requirements may be granted by the Permittee provided that a written finding of fact is prepared, that addresses the following:

- The adjustment provides substantially equivalent environmental protection.
- Based on sound Engineering practices, the objectives of safety, function, environmental protection and facility maintenance, are met.

Section 6. Exceptions/Variances

Exceptions/variances (exceptions) to the Minimum Requirements may be granted by the Permittee following legal public notice of an application for an exception or variance, legal public notice of the Permittee's decision on the application, and written findings of fact that documents the Permittees determination to grant an exception. Permittees shall keep records, including the written findings of fact, of all local exceptions to the Minimum Requirements.

Project-specific design exceptions based on site-specific conditions do not require prior approval of the Department. The Permittee must seek prior approval by the Department for any jurisdiction-wide exception.

The Permittee may grant an exception to the minimum requirements if such application imposes a severe and unexpected economic hardship. To determine whether the application imposes a severe and unexpected economic hardship on the project applicant, the Permittee must consider and document with written findings of fact the following:

- The current (pre-project) use of the site, and

- How the application of the minimum requirement(s) restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of the minimum requirements; and
- The possible remaining uses of the site if the exception were not granted; and
- The uses of the site that would have been allowed prior to the adoption of the minimum requirements; and
- A comparison of the estimated amount and percentage of value loss as a result of the minimum requirements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the minimum requirements; and
- The feasibility for the owner to alter the project to apply the minimum requirements.

In addition any exception must meet the following criteria:

- The exception will not increase risk to the public health and welfare, nor injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state; and
- The exception is the least possible exception that could be granted to comply with the intent of the Minimum Requirements.

Section 7. Basin/Watershed Planning

Basin/Watershed planning may be used by the Permittee to tailor Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may be used to support alternative treatment, flow control, and/or wetland protection requirements to those contained in Section 4 of this Appendix. Basin planning may also be used to demonstrate an equivalent level of treatment, flow control, and/or wetland protection through the construction and use of regional stormwater facilities.

Basin planning provides a mechanism by which the minimum requirements and implementing BMP's can be evaluated and refined based on an analysis of a basin or watershed. Basin plans are may be used to develop control strategies to address impacts from future development and to correct specific problems whose sources are known or suspected. Basin plans can be effective at addressing both long-term cumulative impacts of pollutant loads and short-term acute impacts of pollutant concentrations, as well as hydrologic impacts to streams, wetlands, and ground water resources.

Basin planning will require the use of computer models and field work to verify and support the models. The USGS has developed software called "GenScn" (Generation and Analysis of Model Simulation Scenarios) that can facilitate basin planning. The program is a Windows-based application of HSPF that predicts water quality and quantity changes for multiple scenarios of land use and water management within a basin. Permittees who are considering the use of

basin/watershed plans to modify or tailor one or more of the minimum requirements are encouraged to contact Ecology early in the planning stage.

Some examples of how Basin Planning can alter the minimum requirements are given in Appendix I-A from the *Stormwater Management Manual for Western Washington* (2005).

In order for a basin plan to serve as a means of modifying the minimum requirements the following conditions must be met:

- The plan must be formally adopted by all jurisdictions with responsibilities under the plan; and
- All ordinances or regulations called for by the plan must be in effect; and
- The basin plan must be reviewed and approved by Ecology.

APPENDIX 10

40.385 STORMWATER AND EROSION CONTROL

40.385.010 Introduction

A. Purpose. The purpose of this chapter is to safeguard public health, safety and welfare by protecting the quality of surface and groundwaters for drinking water supply, recreation, fishing and other beneficial uses through the application of best management practices (BMPs) for stormwater management and erosion control.

B. Applicability.
1. The provisions of this chapter shall apply to all new development, redevelopment, and drainage projects consistent with the Stormwater Management Manual for Western Washington (SMMWW) as modified by this chapter, and the county's Stormwater Manual.
2. Applicability of this chapter may be modified by Sections 40.385.020(A)(8) and (9).
3. Meeting the requirements of this chapter is the joint and severable responsibility of both the owner(s) of the site on which land-disturbing activity occurs and the person(s) undertaking such activity. In addition, if the land-disturbing activity involves a county-issued permit, the applicant is also responsible for meeting the requirements of this chapter.
4. The responsible official is authorized to enforce the provisions of this chapter using the remedies and procedures in Title 32.

C. Exemptions.
1. Exemptions to the minimum requirements (listed in Section 40.385.010(D)) shall be granted for the following activities:
   a. Forest practices regulated under Title 222 WAC, except Class IV general forest practices that are conversions from timber land to other uses.
   b. Construction of agricultural buildings or other impervious surfaces for carrying out agricultural activities; provided, that no stormwater is released from the site directly or indirectly to the county's stormwater conveyance system.
   c. Normal landscape maintenance activities and gardening.
   d. Oil and gas field activities or operations including construction of drilling sites, waste management pits, and access roads, as well as construction of transportation and treatment infrastructure such as pipelines, natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations. Operators are encouraged to implement BMPs to minimize erosion and to control sediment during and after construction activities to help ensure protection of surface water quality during storm events.
   e. The following road maintenance practices:
      (1) Pothole and square cut patching;
      (2) Overlaying existing asphalt or concrete pavement without expanding the area of coverage;
      (3) Shoulder grading;
      (4) Regrading/reshaping drainage systems;
      (5) Crack sealing;
      (6) Resurfacing with in-kind material without expanding the road prism; and
      (7) Vegetation management.

2. Exemptions to specific minimum requirements shall be granted for the following activities:
   a. The construction of single-family homes, duplexes, and their accessory structures may be exempt from minimum requirements No. 6 through No. 10; provided, that the project site is included in a stormwater plan previously approved by the county.
   b. Drainage projects that are not new development or redevelopment and do not create new underground injection control wells are exempt from minimum requirement No. 6, and the responsible official may waive all or parts of minimum requirement No. 1 if the project meets other applicable requirements of this chapter.
   c. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to minimum requirement No. 2.
   d. New development and redevelopment meeting the criteria in Appendix I-E of the SMMWW are exempt from minimum requirement No. 7; provided, that:
      (1) The discharge structure is designed to avoid erosion during all storms up to the one hundred (100) year storm; and
      (2) If an existing discharge structure is used:
         (a) The discharge structure must meet the requirements of Section 40.385.010(C)(2)(d)(1); and
         (b) The discharge structure and conveyance system leading to the discharge must have adequate capacity to meet the requirements of this chapter.
   e. In addition to the Columbia River, the Lewis River downstream of its confluence with Quartz Creek, and the East Fork of the Lewis River downstream of its confluence with Big Tree Creek, Appendix I-E of the SMMWW is appended to include Vancouver Lake and Lake River.
   f. New development and redevelopment are exempt from wetland protection (minimum requirement No. 8); provided, that:
      (1) The project does not change the rate, volume, duration, or location of discharges to and from the project site (e.g., where existing impervious surface is replaced with other impervious surface having similar runoff-generating characteristics, or where pipe/ditch modifications do not change existing discharge characteristics); or
      (2) The project discharges to a slope wetland or riverine wetland where no depressional characteristics exist; or
      (3) The project meets the land cover percentage requirements for full dispersion in accordance to SMMWW or the Stormwater Manual for flow control; or
      (4) The county determines based on information in the preliminary stormwater plan, or information submitted for wetland review per Chapter 40.450, that the proposed project will not degrade wetland function.
3. New development and drainage projects undertaken by governmental agencies are exempt from Section 40.385.020(E)(5).
4. A proposed project is exempt from performing an off-site analysis if any of the following conditions apply:
   a. The county determines based on the information in the final technical information report (TIR) that there is sufficient evidence to conclude that the

project will not have a significant adverse impact on the downstream and/or upstream drainage system; or

b. The project:
   (1) Adds less than two thousand (2,000) square feet of new impervious surface in the urban area or adds less than five percent (5%) of the site as new impervious surface in the rural area; and
   (2) Adds less than thirty-five thousand (35,000) square feet of new pervious surface; and
   (3) Does not construct or modify a drainage pipe/ditch that is twelve (12) inches or more in size/depth or that receives runoff from a drainage pipe/ditch that is twelve (12) inches or more in size/depth; and
   (4) Does not contain or lie adjacent to a landslide, steep slope, or erosion hazard area; and
   (5) The project is exempt from minimum requirement No. 8; or

c. The project does not change the rate, volume, duration, or location of discharges to and from the project site (e.g., where existing impervious surface is replaced with other impervious surface having similar runoff-generating characteristics, or where pipe/ditch modifications do not change existing discharge characteristics).

(Amended: Ord. 2009-12-01)

D. Definitions. For the purposes of this chapter, the following definitions shall apply. Additional definitions can be found in the SMMWW.

Basin plan	"Basin Plan" means a plan that assesses, evaluates, and proposes solutions to existing and potential future impacts to the beneficial uses of, and the physical, chemical, and biological properties of waters of the state within a basin.
Best management practices (BMPs)	"Best management practices (BMPs)" means schedules of activities, prohibitions of practices, maintenance procedures, managerial practices, or structural features that prevent or reduce adverse impacts to waters of Washington State.
Drainage project	"Drainage project" means the excavation or construction of pipes, culverts, channels, embankments or other flow-altering structures in any stream, stormwater facility or wetland in Clark County.
Impervious surface	"Impervious surface" means a hard surface that either prevents or retards the entry of water into the soil. Examples include, but are not limited to, structures, walkways, patios, driveways, carports, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, haul roads and soil surface areas compacted by construction operations, and oiled or macadam surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for the purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.

Land-disturbing activity	"Land-disturbing activity" means any activity that results in movement of earth, or a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land-disturbing activities include, but are not limited to, clearing, grading, filling, and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land-disturbing activity. Vegetation maintenance practices are not considered land-disturbing activity.
Low impact development	"Low impact development" means a stormwater management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings.
Maintenance	"Maintenance" means repair and upkeep activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond that previously existing and results in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional facilities, including cases where environmental permits require replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed.
Minimum requirements	"Minimum requirements" means the ten (10) sets of requirements that are part of the SMMWW, as follows: • Minimum requirement No. 1: Preparation of stormwater site plans; • Minimum requirement No. 2: Construction stormwater pollution prevention; • Minimum requirement No. 3: Source control of pollution; • Minimum requirement No. 4: Preservation of natural drainage systems and outfalls; • Minimum requirement No. 5: On-site stormwater management; • Minimum requirement No. 6: Runoff treatment; • Minimum requirement No. 7: Flow control; • Minimum requirement No. 8: Wetlands protection; • Minimum requirement No. 9: Basin/watershed planning; and • Minimum requirement No. 10: Operation and maintenance.
Native vegetation	"Native vegetation" means plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site.
New development	"New development" means: • Land-disturbing activities, including Class IV general forest practices that are conversions from timber land to other uses;

	• Construction or installation of a building or other structure; • Creation of impervious surfaces; and • Subdivisions, short subdivisions, and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.
Pre-developed condition	"Pre-developed condition" means the land cover condition used to determine flow control requirements as required by Section 40.385.020(C)(2).
Project site	"Project site" means that portion of a property, properties, or right-of-way subject to land-disturbing activities, new impervious surfaces, or replaced impervious surfaces.
Redevelopment	"Redevelopment" means on a site that is already substantially developed (i.e., has thirty-five percent (35%) or more of existing impervious surface coverage): • The creation or addition of impervious surfaces; • The expansion of a building footprint or addition or replacement of a structure; • Construction, installation or expansion of a building or other structure; • Replacement of impervious surface that is not part of a routine maintenance activity; or • Land-disturbing activities.
Replaced impervious surface	"Replaced impervious surface" means: • For structures, the removal and replacement of any exterior impervious surfaces or foundation; or • For other impervious surfaces, the removal down to bare soil or base course plus the replacement.
Responsible official	"Responsible official" means the Director of Clark County Public Works or their designee.
Road-related development	"Road-related development" means land-disturbing activity where the sole objective is the development or redevelopment of roads, sidewalks and bike lanes.
Site	"Site" means the area within the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.
Stormwater Facility Maintenance Manual	"Stormwater Facility Maintenance Manual" means the January 2009 stormwater facility maintenance manual maintained by Clark County Public Works.

Stormwater Management Manual for Western Washington	"Stormwater Management Manual for Western Washington" (SMMWW) means the stormwater manual adopted by the Department of Ecology in February 2005.
Stormwater Manual	"Stormwater Manual" means the November 2009 stormwater manual maintained by Clark County Public Works.
Substantial completion	"Substantial completion" means: • Following inspection, stormwater facilities are operational and constructed to county standards; • Streets are constructed and at least one (1) lift of asphalt is installed when paving is required; and • The project is in full compliance with this chapter.
Underground injection control	"Underground injection control" means a manmade subsurface fluid distribution system designed to discharge fluids into the ground that consists of an assemblage of perforated pipes, drain tiles, or other similar mechanisms, or a dug hole whose depth is greater than the largest surface dimension.

(Amended: Ord. 2009-01-01; Ord. 2009-12-01)

40.385.020 Standards – Stormwater Control

A. General Standards.
   1. The SMMWW as modified by the county's Stormwater Manual is adopted by reference, and the recommendations and requirements contained therein will be the minimum standards for this chapter except as modified in this chapter.
   2. Where provisions of this chapter conflict with other Title 40 requirements, the more stringent shall apply.
   3. Stormwater facilities shall be constructed in accordance with the Standard Specifications for Road, Bridge, and Municipal Construction 2008 as prepared by the Washington Department of Transportation.
   4. All urban new development and redevelopment shall comply with the following:
      a. Minimum requirement No. 2 and Section 40.385.030.
      b. New development and redevelopment that creates or adds two thousand (2,000) square feet or more of new, replaced, or new-plus-replaced impervious surface or which has land-disturbing activity of seven thousand (7,000) square feet or more shall comply with minimum requirements No. 1 through No. 5 for the new and replaced impervious surfaces and the land disturbed.
      c. New development and redevelopment that creates or adds five thousand (5,000) square feet or more of new impervious surface, converts three-quarters (0.75) of an acre or more of native vegetation to lawn or landscaped area, or converts two-and-a-half (2.5) acres or more of native vegetation to pasture shall comply with minimum requirements No. 1 through No. 10 for the new impervious and converted pervious surfaces.
      d. An off-site analysis as described in the Stormwater Manual, unless exempted

by Section 40.385.010(C)(4).

e. The county may allow the minimum requirements to be met for an equivalent (flow and pollution characteristics) area within the same site. For public road projects, the equivalent area does not have to be within the same project limits but must drain to the same receiving water. For frontage improvements required within the public right-of-way, the equivalent area must be immediately adjacent to the site.

5. All rural new development and redevelopment shall comply with the following:
   a. Minimum requirement No. 2 and Section 40.385.030.
   b. New development and redevelopment that adds or replaces impervious area of greater than two thousand (2,000) square feet and less than five percent (5%) of a site, or is a land-disturbing activity greater than seven thousand (7,000) square feet, are subject to the minimum requirements dependent on site-specific characteristics.
      (1) Minimum requirements No. 1 through No. 5 shall apply if the project meets all of the following criteria:
         (a) Is outside of habitat or wetland areas or their buffers; and
         (b) Does not generate runoff in channelized flow or discharge directly or indirectly to the county's storm sewer system; and
         (c) Is not located in, and does not discharge onto, steep slope hazard areas or landslide hazard areas as designated in Section 40.430.010.
      (2) Projects not meeting all the criteria in Section 40.385.020(A)(5)(b)(1) shall be subject to minimum requirements No. 1 through No. 10.
   c. New development and redevelopment that adds impervious area of greater than two thousand (2,000) square feet and that is more than five percent (5%) of a site shall comply with minimum requirements No. 1 through No. 10 for the new impervious surface.
   d. An off-site analysis as described in the Stormwater Manual, unless exempted by Section 40.385.010(C)(4).
   e. The county may allow the minimum requirements to be met for an equivalent (flow and pollution characteristics) area within the same site. For public road projects, the equivalent area does not have to be within the same project limits but must drain to the same receiving water. For frontage improvements required within the public right-of-way, the equivalent area must be immediately adjacent to the site.
6. In addition, all redevelopment shall comply with the following:
   a. Road-related projects that create or add five thousand (5,000) square feet or more of new impervious surface and the new impervious surface totals fifty percent (50%) or more of the existing impervious surface within the project limits, shall comply with minimum requirements No. 1 through No. 10 for new and replaced impervious surfaces. The project limits shall be defined by the physical length of the project and the width of the right-of-way.
   b. Nonroad-related projects where the valuation of the proposed improvements exceeds fifty percent (50%) or more of the existing site tax assessment valuation of the existing site improvements, and the total of new plus replaced impervious surface is either five thousand (5,000) square feet or more in the urban area or five percent (5%) or more of the site in the rural area, shall comply with minimum requirements No. 1 through No. 10 for new and replaced impervious surfaces.

7. Drainage Structure Labeling and Signage. All catch basins and manholes capable of accepting stormwater shall be signed or stenciled in accordance with the Stormwater Manual.
8. Basin Plans.
   a. Basin plans as addressed in minimum requirement No. 9 are strategies designed to protect and enhance surface and groundwater within a watershed.
   b. A plan shall include but not be limited to recommendations for:
      (1) Stormwater requirements for new development and redevelopment;
      (2) Capital improvement projects;
      (3) Land use management through identification and protection of critical areas, comprehensive land use and transportation plans, zoning regulations, site development standards, and conservation areas;
      (4) Source control activities, to include public education and involvement, and business programs;
      (5) Other targeted stormwater programs and activities, such as maintenance, inspections, and enforcement;
      (6) Monitoring; and
      (7) An implementation schedule and funding strategy.
   c. To be valid, a basin plan must:
      (1) Be stamped, signed and dated by a registered professional engineer licensed in the state of Washington;
      (2) Be adopted by the board;
      (3) Meet the requirements of Chapter 36.94 RCW and the SMMWW;
      (4) Be formally adopted by all jurisdictions with responsibilities under the plan; and
      (5) Be approved by the Department of Ecology.

      In addition, all ordinances or regulations called for by the plan must be in effect.
   d. The policies and standards in an adopted basin plan shall supersede the requirements of this chapter.
9. Regional Stormwater Facilities.
   a. The county encourages the use of regional stormwater facilities.
   b. If regional stormwater facilities are used to meet some or all of the requirements of this chapter, the following conditions shall be met:
      (1) Stormwater runoff shall be transported from a project site to a regional stormwater facility through a pipe or manmade open channel conveyance system.
      (2) If the regional stormwater facility does not yet exist, interim quantity control and treatment methods shall be used to meet the requirements of this chapter. All interim methods shall be approved in writing by the responsible official.
      (3) The facility must have sufficient capacity to provide the treatment and quantity control specified in this chapter at the time of connection.
      (4) A written commitment from the owner of the facility, or the responsible official in the case of county-owned facilities, shall be provided that allows use of the facility by the applicant.
   c. Where a stormwater utility exists, a system development charge can be assessed for use of a regional stormwater facility.
10. Wetland Protection. If the county determines based on information in the preliminary stormwater plan, or information submitted for wetland review per

Chapter 40.450, that the proposed project will degrade wetland function, then the applicant shall implement flow control or other measures to mitigate the adverse impacts of this alteration in accordance with the wetland hydrology protection guidelines in Volume I, Appendix 1-D of the SMMWW.

11. Off-site Analysis. If the county determines based on information in the preliminary stormwater plan that the proposed project will adversely impact off-site drainage systems, then the applicant shall implement additional flow control or other measures to mitigate those adverse impacts.

(Amended: Ord. 2009-12-01)

B. Water Quality Treatment.

1. General Standards.
   a. If project site conditions are appropriate and groundwater quality will not be impaired, infiltration is the preferred BMP. Direct discharge of untreated stormwater to groundwater is prohibited. All discharges to groundwater shall comply with the Water Pollution Control Act (Chapter 90.48 RCW), the Water Resources Act (Chapter 90.54 RCW), and Water Quality Standards for Ground Waters of the State of Washington (Chapter 173-200 WAC). Infiltration may be limited near public water supply wells.
   b. Runoff treatment facilities shall be selected pursuant to Volume V, Chapter 2 of the SMMWW.
   c. The stormwater treatment facilities shall be sized for the entire flow directed to them.
   d. The following water quality management plans and local ordinances/regulations have been identified pursuant to Volume V, Chapter 2 of the SMMWW as having specific requirements for receiving waters:
      (1) Total maximum daily load plans for Gibbons Creek and Salmon Creek; and
      (2) Lake management plans for Lacamas and Round Lakes.
2. Phosphorus treatment is required in the Lacamas watershed above the dam at the south end of Round Lake for all project sites exceeding one (1) acre in size.
3. Experimental BMPs shall follow the guidelines for emerging technologies Volume V, Chapter 12 of the SMMWW.
4. Stormwater treatment facilities shall be maintained in accordance with the latest version of the Stormwater Facility Maintenance Manual.
5. Hydrologic analysis for runoff treatment design shall be in accordance with Volume III and Volume V, Chapter 4 of the SMMWW, with the following exceptions:
   a. Table III-2.1, Hydrologic Soil Groups for Selected Soils in Washington State, is replaced by:
      (1) The Soil Conservation Service Clark County Soil Survey published in 1972 and updated by the Natural Resources Conservation Service (NRCS);
      (2) GIS soil maps of Clark County; or
      (3) Washington Soil Survey data as available on the NRCS website.

      In the case of conflicts, the more stringent soil group shall apply unless site-specific hydrological soil groups are developed by a registered soil scientist using criteria in the NRCS National Soils Handbook.
   b. Appendix III-A, Isopluvial Maps for Design Storms, is replaced by Isopluvial Maps for Design Storms in Clark County.

C. Quantity Control.
1. General Standards.
a. No new development or redevelopment shall be allowed to materially increase or concentrate stormwater runoff onto an adjacent property or block existing drainage from adjacent lots.
b. All lots must be designed to provide positive drainage from the bottom of footings to an approved stormwater facility, unless a geotechnical report has been prepared stating that a footing drain is not required.
c. Detention facilities shall be functional prior to completion of site improvements (e.g., impervious surfaces). If permanent infiltration ponds are used for flow control during construction, these facilities shall be protected from siltation during the construction phase in accordance to the project SWPPP, including but not limited to temporary sedimentation ponds.
d. In addition to the requirements of Chapter 40.420, no reduction of existing conveyance capacity and no net loss of existing storage capacity for the one hundred (100) year storm is permitted in special flood hazard areas as defined in Section 40.420.010(C). This requirement shall also apply to all areas within the limits of the existing one hundred (100) year floodplain for all streams and manmade channels within the county.
2. Pre-development Land Cover Requirements.
a. The pre-developed condition to be matched shall be the land cover condition existing at the time of the development application.
b. Where an approved basin plan exists, the land cover condition to be matched shall be commensurate with achieving a target flow regime identified in the study. If no land cover condition or target flow regime is identified, land cover condition to be matched shall be as required above.
c. This requirement is not applicable to project sites designed to retain all stormwater runoff on-site.
3. Design Methodology for Stormwater Infiltration Systems.
a. The design of stormwater infiltration facilities shall follow the requirements in Volume III, Section 3.3 of the SMMWW and the Stormwater Manual, except as revised herein, and the

Washington Department of Ecology Guidance for UIC Wells that Manage Stormwater. If a facility meets any part of the UIC definition in Section 40.385.010(D), the developer must register the UIC and provide proof of registration to the county prior to use.
b. The design shall follow the methodology in either the simplified or detailed approaches in Volume III, Section 3 of the SMMWW, except that the infiltration testing shall only be conducted using the methods described in the Stormwater Manual.
c. Infiltration receptor characterization shall include the installation of groundwater monitoring wells unless the highest groundwater level is demonstrated to be at least fifteen (15) feet below the proposed infiltration facility. These wells shall be installed and monitored during at least one (1) wet season within three (3) years prior to the date of final approval.
d. Test locations for performing infiltration tests as called for in the simplified method shall be performed as follows:

(1) One (1) or more infiltration tests shall be conducted at the location of each proposed infiltration facility; and

(2) At least one (1) test shall be conducted for each location where the soil characteristics significantly vary within the vicinity of proposed infiltration facilities.

e. Allowable methods for determining infiltration rates as called for in the simplified method (Section 3.3.4 of the SMMWW) are as follows:

(1) The single-ring falling head test as described in the Stormwater Manual; or

(2) A pilot infiltration test (PIT) conducted pursuant to Appendix III-D, Volume III of the SMMWW.

f. Groundwater. The base of all infiltration basins or trench systems shall be greater than five (5) feet above the seasonal high-water mark, bedrock (or hardpan) or other low permeability layer. A separation down to three (3) feet may be considered if the groundwater mounding analysis, volumetric receptor capacity, and the design of the overflow and/or bypass structures are judged by the county to be adequate to prevent overtopping and meet the site suitability criteria specified in the SMMWW.

g. Stormwater Infiltration Facility Setbacks.

(1) Stormwater infiltration facilities shall be set back according to Table 40.385.020-1.

Table 40.385.020-1. Stormwater Infiltration Facility Setbacks

Stormwater infiltration facility set back from:	Distance:
Drinking water wells[1]	One hundred (100) feet minimum
Building foundations	Twenty (20) feet minimum, upslope One hundred (100) feet minimum, downslope
Slopes equal to or greater than fifteen percent (15%)[2]	Fifty (50) feet minimum
Roof downspout infiltration systems	Ten (10) feet minimum from any structure or property line

1 Infiltration facilities upslope of drinking water supplies and within the one (1), five (5), and ten (10) year time of travel zones must comply with Chapter 40.410.

2 See Chapter 40.430 for steep slope and landslide hazard area setbacks.

(2) Setbacks may be reduced if a geotechnical report addresses potential impacts of trench phreatic surface on structures within twenty (20) feet of the proposed facility.

h. No permanent infiltration systems shall be allowed into service until:

(1) The entire contributing drainage area has received final stabilization; and

(2) Permanent water quality BMPs are in place and have been approved by the county.

i. Before acceptance of any infiltration facility by the county, the completed facility must be tested and monitored to demonstrate that the facility performs as

designed. If the tested coefficient of permeability determined at the time of construction is at least ninety-five percent (95%) of the uncorrected coefficient of permeability used to determine the design rate, construction shall be allowed to proceed. If the tested rate does not meet this requirement, the applicant shall submit an additional testing plan to Clark County that follows the requirements in Chapter 2 of the Stormwater Manual. This plan shall address steps to correct the problem, including additional testing and/or resizing of the facility to ensure that the system complies with the provisions of this chapter.

j. A groundwater mounding analysis shall be conducted at all sites where the depth to seasonal groundwater table or low permeability stratum is less than five (5) feet or where the depth to seasonal groundwater table or low permeability stratum is less than fifteen (15) feet and the runoff to the infiltration facility is from more than one (1) acre of effective impervious surface. Groundwater modeling (mounding analysis) of the proposed infiltration facility shall be done using the design infiltration rate and the estimated maximum groundwater elevation determined for the proposed facility location.

D. Stormwater Facilities.

1. General.

a. Stormwater facilities shall be located in accordance with the county's critical areas ordinances, Chapters 40.410 through 40.450.

b. Stormwater facilities, other than closed conveyance systems, shall be located in relation to existing and proposed on-site sewage system drainfields as follows:

(1) At least thirty (30) feet when downslope from the drainfield system.

(2) At least ten (10) feet when upslope from the drainfield system.

(3) At least one hundred (100) feet for infiltration and dispersion systems. This distance can be reduced upon submittal of a report prepared by a registered geotechnical engineer licensed in the state of Washington that provides evidence that neither system will be compromised by a closer proximity. All applicable state and federal regulations must still be followed.

c. Stormwater facilities, other than underground closed systems, shall be located outside easements and corridors used by phone, electric, water, natural gas, and other utilities unless the utilities are installed prior to construction of the facility.

d. Sites used for stormwater facilities shall be owned by the applicant, county, or state.

(1) If the county or state owns the site, a letter from the responsible agency allowing use of the site for stormwater control shall be submitted with the preliminary stormwater plan.

(2) If the county or state does not own the site, the ownership shall be included for consideration with the land use application for the development.

e. Stormwater facilities other than underground closed systems in urban residential subdivisions and short plats shall be located on separate tracts which are recommended, but not required, to meet minimum zoning lot size requirements. The plat or other dedication instrument shall indicate tract disposition in the event of county abandonment or vacation.

2. Side Slopes. Side slopes of stormwater facilities shall be according to Table 40.385.020-2 and Section 40.385.020(D)(3).

Table 40.385.020-2. Stormwater Facility Side Slopes	
All facilities with slopes flatter than or equal to three to one (3:1)	Allowed.
All facilities with slopes flatter than or equal to two to one (2:1)	Allowed, if:
	• Side slopes don't need mowing; and
	• Erosion control and slope stability are provided.
Public facilities, vertical slopes	Allowed, if:
	• Perimeter has less than or equal to seventy-five percent (75%) vertical slopes;
	• Vertical slopes more than two (2) feet tall are fenced;
	• Maintenance access is adequate; and
	• Side slopes in a biofiltration treatment area are three to one (3:1) or flatter.
Private facilities, slopes steeper than three to one (3:1)	Allowed if:
	• Perimeter has less than or equal to seventy-five percent (75%) vertical slopes;
	• Vertical slopes more than two (2) feet tall are fenced;
	• Long-term erosion control is provided;
	• Side slopes in a biofiltration treatment area are three to one (3:1) or flatter; and
	• It is demonstrated that the facility can be adequately maintained.

3. Fencing.
   a. Public stormwater treatment and runoff control facilities shall be fenced in accordance with Volume III of the SMMWW.
   b. Fences are not required for private stormwater facilities, provided a hold-harmless agreement is provided to the county.
   c. If the facility is not enclosed by a fence, the covers for all control structures, manholes, and catch basins shall be bolted in place.
   d. A gate or lockable bollards shall be provided across any access road.
   e. Wood board fences are not allowed.

E. Maintenance and Ownership.
   1. County Ownership of Stormwater Facilities. County ownership of stormwater facilities is required for all such facilities that are to be located within a public right-of-way or for which arrangements for private long-term maintenance which are

acceptable to the responsible official have not been made.

2. Acceptance of Ownership by the County.
   a. Stormwater facilities that are to be owned by the county will be provisionally accepted for ownership upon the approval of the record drawings and approval of an inspection of the facilities by the county. Provisional acceptance of the facilities shall not relieve the applicant from any obligation to undertake any remedial measures to correct deficiencies in the design, construction, maintenance or operation of the facilities.
   b. No sooner than eighteen (18) months following the provisional acceptance of the facilities, the applicant shall notify the responsible official that the facilities are eligible for final acceptance of ownership by the county. Prior to their final acceptance for ownership, the facilities shall be inspected to determine that they are properly maintained and in satisfactory condition. The responsible official shall require the applicant to conduct tests of the facilities to reasonably demonstrate that they are operating as designed and to the county standards for quality and quantity control as a condition of final acceptance. Upon approval of the facilities by the responsible official and all necessary ownerships and easements entitling the county to properly access and maintain the facilities have been conveyed to the county and recorded with the County Auditor, they will be finally accepted for ownership by the county.
3. Maintenance of Stormwater Facilities.
   a. County-Owned Facilities.
      (1) For a period of at least two (2) years following the provisional acceptance of stormwater facilities or thereafter until the facilities are finally accepted by the county, the developer constructing the facilities shall maintain, repair, redesign, or reconstruct the facilities to ensure that they operate as designed and to the county standards for quality and quantity control. This obligation shall extend to remedying any damage caused to the facilities by builders or other third parties during the initial maintenance period. The required maintenance shall be performed according to the county's Stormwater Facility Maintenance Manual pursuant to Section 13.26A.040.
      (2) During the initial maintenance period, remedial work to correct deficiencies shall be the responsibility of the developer and shall be completed prior to final acceptance. Required remedial work to correct maintenance and construction deficiencies shall be completed by the applicant prior to final acceptance.
      (3) Following final acceptance for county ownership, the county shall maintain stormwater facilities.
   b. Privately Owned Facilities.
      (1) For stormwater facilities for which the county will not provide maintenance, the developer shall make arrangements with the existing or future (as appropriate) occupants or owners of the subject property for assumption of maintenance to the standards in the county's Stormwater Facility Maintenance Manual pursuant to Section 13.26A.040. The responsible official shall approve such arrangements prior to county approval of the final stormwater plan. Final plats shall include a note specifying the party (ies) responsible for long-term maintenance of stormwater facilities.
      (2) The county shall inspect privately maintained facilities for compliance with the requirements of this chapter. If the parties responsible for long-term

maintenance fail to maintain their facilities to acceptable standards, the county shall issue a written notice specifying required actions to be taken in order to bring the facilities into compliance. If these actions are not performed in a timely manner, the county shall take enforcement action and recover from parties responsible for the maintenance in accordance with Section 32.04.060.

(3) Easements or a covenant acceptable to the responsible official shall be provided to the county for purposes of inspection and maintenance of all privately maintained facilities. The minimum dimensions of easements are listed in the Stormwater Manual, and shall allow for access to all areas within the pond and drainage structures by standard maintenance equipment vehicles.

4. Recovering Costs of Stormwater Facilities.
   a. The following costs associated with stormwater facilities may be recoverable through latecomers' agreements (RCW 35.91.010):
      (1) Over-sizing on-site facilities above their existing capacity or the capacity required for the proposed development; and
      (2) A proportionate share of the total cost of off-site facilities.
   b. If a stormwater utility exists, the costs for building or over-sizing a stormwater facility may be eligible as a credit against applicable system development charges.
5. Bonds and Insurance.
   a. Performance Security. In lieu of completing required stormwater facilities within a preliminary plat prior to recording, the applicant may, with the approval of the county, post a performance bond or other security acceptable to the responsible official in the amount of one hundred fifty percent (150%) of the estimated cost (prepared by the project engineer) of completing construction per the approved stormwater plan. After determination by the responsible official that all facilities are constructed in compliance with the approved plan, are performing their intended functions in a satisfactory manner, and that the maintenance bonding requirements of Section 40.385.020(E)(3) are met, the performance bond or security shall be released. No building permits shall be issued until the stormwater facilities are completed and provisionally accepted.
   b. Maintenance Security. In cases identified in Section 40.385.020(E)(3), a maintenance bond or other security acceptable to the responsible official, in the amount of ten percent (10%) of the project engineer's construction cost, shall be posted and maintained throughout the two (2) year initial maintenance period for a stormwater facility.

(Amended: Ord. 2009-01-01)

40.385.030 Standards – Erosion Control

A. General Standards.
   1. Contractor Certification. All land-disturbing activity performed by licensed contractors shall be supervised by an individual who shall have successfully completed formal training in erosion and sediment control during construction by a recognized organization acceptable to the responsible official. A certification of successful completion of such training shall be submitted at the pre-construction conference.

2. Permanent infiltration BMPs shall not be used as temporary erosion control devices.
3. Vehicles not performing a construction activity shall not be permitted off-street. Worker personal vehicles shall be parked on adjacent streets or other approved areas.

B. Underground Utility Construction. The construction of underground utility lines shall be subject to the following:
1. An erosion control plan specifically related to underground work shall be submitted and approved prior to beginning work.
2. BMPs shall be used to control erosion during and after construction.
3. BMPs damaged during construction shall be replaced or repaired.

C. Signage.
1. Erosion control signage approved by the responsible official shall be installed at each point of entry for any subdivision or short plat prior to issuance of provisional acceptance by the county. Signs may be purchased from the county.
2. Removal of signage shall occur when either certificates of occupancy have been issued for seventy percent (70%) of the lots or there are less than ten (10) unoccupied lots remaining within the project site, whichever is later, or as determined by the responsible official.

(Amended: Ord. 2009-01-01)

40.385.040 Administration

A. Submittals – General.
1. A stormwater plan shall be submitted identifying how stormwater runoff originating on the project site or flowing through the project site is presently controlled and how this will change due to the proposed development, redevelopment, or drainage project. The purpose of the stormwater plan is to determine whether a proposal can meet the requirements set forth in this chapter.
2. Applicants proposing any new development or redevelopment governed by this chapter shall submit the plans, studies, and information as provided herein. If the project site is within the region covered by a basin plan pursuant to this chapter, then the responsible official may waive information requirements.
3. Except for projects under Section 40.385.040(A)(3)(a), all plans, studies, and reports shall be stamped, signed and dated by a registered professional civil engineer(s) licensed in the state of Washington, and a registered soil scientist, if appropriate, responsible for their preparation, and by the project engineer responsible for preparation of the stormwater plan.
   a. Stormwater site plans are exempt from the requirement to be prepared by a licensed engineer for projects that only apply minimum requirements No. 1 through No. 5 for construction of agricultural or residential buildings and their appurtenances on an existing lot.
4. Record Drawings.
   a. Record drawings which accurately represent the project site as constructed shall be provided to the county prior to:
      (1) The issuance of building permits for single-family/duplex residential subdivisions;

(2) The issuance of occupancy permits for development subject to site plan review; and

(3) Within sixty (60) days following completion of construction of other development.

b. The record drawings shall include corrected engineering plans for the stormwater system, showing constructed dimensions and elevations. In addition, revisions to the final stormwater plan shall be submitted with the record drawings where changes during construction significantly alter the calculations and assumptions contained in the plan.

c. All plans submitted shall be reproducible and on Mylar.

d. The record drawing submittal shall be stamped, signed and dated by a registered professional engineer licensed in the state of Washington.

e. Record drawings shall be submitted on computer disk in one (1) of the following approved file formats: Portable Document Format (.pdf), AutoCAD (.dwg, .dxf), or MicroStation (.dgn).

f. Record drawings shall clearly indicate the ownership of any stormwater facility and who is responsible for its maintenance.

(Amended: Ord. 2009-12-01)

B. Preliminary Stormwater Plan.

1. A preliminary stormwater plan is required for all new development and redevelopment not exempted by Section 40.385.010(C).
2. A preliminary stormwater plan meeting the requirements of this section shall be submitted with the land use application.
3. The preliminary stormwater plan submittal shall consist of a preliminary development plan and a preliminary technical information report (TIR) prepared in accordance with the Stormwater Manual. The project engineer shall include a statement that all required information is included and that the proposed stormwater facilities are feasible.

C. Final Stormwater Plan.

1. The final stormwater plan is required and must be approved by the responsible official prior to beginning construction related to new development, redevelopment, or drainage project. The final stormwater plan provides final engineering design and construction drawings in accordance with the Stormwater Manual.
2. The final stormwater plan shall include the following:
   a. A final development plan;
   b. A final technical report (TIR);
   c. The approved preliminary stormwater plan with an explanation of any differences between the design concepts included in the preliminary and final stormwater plans;
   d. Final engineering plans that provide sufficient detail to allow construction of the stormwater facilities. These plans shall be stamped, signed and dated by registered professional engineer(s) licensed in the state of Washington responsible for hydrologic, hydraulic, geotechnical, and structural and general civil engineering design, and by the project engineer responsible for the preparation of the final stormwater plan. Additionally, the final engineering plan shall show all utilities to ensure conflicts between proposed utility lines do not

exist;

e. Any easements, covenants or agreements that are necessary to permit construction must be included; and

f. A construction stormwater pollution prevention plan (SWPPP).

3. The final stormwater plan shall be prepared in accordance with the Stormwater Manual.

D. Construction Stormwater Pollution Prevention Plan. A construction stormwater pollution prevention plan (SWPPP) prepared in accordance with Volume II, Section 3.3 of the SMMWW is required for all development and redevelopment not exempted by Section 40.385.010(C).

E. Plan Review.

1. For a land use application requiring a public hearing, the preliminary stormwater plan shall be decided on in accordance with the procedures applicable to the land use application. All other

preliminary stormwater plans shall be acted on by the responsible official within the timeline for the preliminary land use decision.

2. The responsible official may waive in writing some or all of the content requirements in the preliminary stormwater plan if:

a. The development activity or drainage project is included in an approved final stormwater plan which meets the requirements of this chapter; or

b. A basin plan exists that supersedes any of the requirements.

The waiver of some or all of the preliminary stormwater control plan requirements does not relieve the applicant of a final stormwater control plan.

3. Variances. For purposes of this chapter, the following requirements shall apply with regard to variances:

a. Type I and Type II (Administrative) Variances. The responsible official may grant an administrative variance to the numerical standards of this chapter using a Type I or Type II process pursuant to Sections 40.510.010 and 40.510.020 prior to permit approval and construction; provided, that the provisions of this chapter are met. These variances deal with the design and construction of facilities, are not limited to any percentage change, and typically include (but are not limited to) the following:

(1) Conveyance system analysis and design;
(2) Off-site analysis;
(3) Materials;
(4) Facility side slopes;
(5) Easements;
(6) Percent of facility made up of retaining wall;
(7) Fencing requirements; and
(8) Varying from the standard details.

b. Type III Variances. The responsible official may grant a variance from the requirements of this chapter using a Type III process pursuant to Section 40.510.030 prior to permit approval and construction; provided, that the provisions of this chapter are met. A written finding of fact is required that addresses the following:

(1) The variance provides for equivalent environmental protection and is in the overriding public interest; and that the objectives of safety, function, environmental protection and facility maintenance, based upon sound engineering, are fully met;

(2) That there are special physical circumstances or conditions affecting the property such that the strict application of these provisions would deprive the developer of all reasonable use of the property of land in question, and all feasible efforts to meet the intent of the requirements have been made, including:

(a) The current (pre-project) use of the site;

(b) How the application of the minimum requirements restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of the minimum requirements;

(c) The possible remaining uses of the site if the variance were not granted;

(d) The uses of the site that would have been allowed prior to the adoption of the minimum requirements;

(e) A comparison of the estimated percentage of value loss as a result of the minimum requirements versus the estimated amount and percentage of value loss of requirements that existed prior to adoption of the minimum requirements; and

(f) The feasibility for the owner to alter the project to comply with the minimum requirements.

(3) That the granting of the variance will not be detrimental to the public health and welfare, nor injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state; and

(4) The variance is the least possible variance that could be granted to comply with the intent of this section.

4. Exceptions for Single-Family/Duplex Residential Subdivisions.

a. The responsible official may approve the issuance of building permits for up to fifty percent (50%) of the lots after the stormwater and road improvements are substantially complete.

b. Building permits for model homes may be approved pursuant to Section 40.260.145.

5. Stormwater plans decisions may be appealed in conjunction with the associated land use application.

(Amended: Ord. 2009-01-01)

APPENDIX 11

WASHINGTON STATE LEGISLATURE
Legislature Home | Senate | House of Representatives | Contact Us | Search | Help

Inside the Legislature
- Find Your Legislator
- Visiting the Legislature
- Agendas, Schedules and Calendars
- Bill Information
- Laws and Agency Rules
- Legislative Committees
- Legislative Agencies
- Legislative Information Center
- E-mail Notifications (Listserv)
- Civic Education
- History of the State Legislature

Outside the Legislature
- Congress - the Other Washington
- TVW
- Washington Courts
- OFM Fiscal Note Website

Access Washington

2010 NCSL Online Democracy Award

Chapter 90.48 RCW
Water pollution control

Chapter Listing | RCW Dispositions

RCW Sections

90.48.903 Severability -- 1971 ex.s. c 180.

90.48.904 Severability -- 1989 c 262.

90.48.906 Short title -- 1971 ex.s. c 180.

Notes:

County water and sewerage systems, approval of the department of social and health services and the department of ecology: RCW 36.94.100.

Domestic waste treatment plants -- Certification and regulation of operators: Chapter 70.95B RCW.

Environmental certification programs -- Fees -- Rules--Liability: RCW 43.21A.175.

Oil and hazardous substance spill prevention and response: Chapter 90.56 RCW.

Oil tankers on Puget Sound, restrictions, etc.: RCW 88.16.170 through 88.16.190.

Shellfish, sanitary control: RCW 69.30.130.

Washington clean air act: Chapter 70.94 RCW.

Water-sewer district powers as to mutual systems, approval of exercise by pollution control commission: RCW 57.08.065.

Water pollution control facilities, tax exemptions and credits: Chapter 82.34 RCW.

Water resources act of 1971: Chapter 90.54 RCW.

90.48.010
Policy enunciated.

It is declared to be the public policy of the state of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington. Consistent with this policy, the state of Washington will exercise its powers, as fully and as effectively as possible, to retain and secure high quality for all waters of the state. The state of Washington in recognition of the federal government's interest in the quality of the navigable waters of the United States, of which certain portions thereof are within the jurisdictional limits of this state, proclaims a public policy of working cooperatively with the federal government in a joint effort to extinguish the sources of water quality degradation, while at the same time preserving and vigorously exercising state powers to insure that present and future standards of water quality within the state shall be determined by the citizenry, through and by the efforts of state government, of the state of Washington.

[1973 c 155 § 1; 1945 c 216 § 1; Rem. Supp. 1945 § 10964a.]

90.48.020
Definitions.

Whenever the word "person" is used in this chapter, it shall be construed to include any political subdivision, government agency, municipality, industry, public or private corporation, copartnership, association, firm, individual or any other entity whatsoever.

Wherever the words "waters of the state" shall be used in this chapter, they shall be construed to include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Whenever the word "pollution" is used in this chapter, it shall be construed to mean such contamination, or other alteration of the physical, chemical or biological properties, of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

Wherever the word "department" is used in this chapter it shall mean the department of ecology.

Whenever the word "director" is used in this chapter it shall mean the director of ecology.

Whenever the words "aquatic noxious weed" are used in this chapter, they have the meaning prescribed under RCW 17.26.020.

Whenever the words "general sewer plan" are used in this chapter they shall be construed to include all sewerage general plans, sewer general comprehensive plans, plans for a system of sewerage, and other plans for sewer systems adopted by a local government entity including but not limited to cities, towns, public utility districts, and water-sewer districts.

[2002 c 161 § 4; 1995 c 255 § 7; 1987 c 109 § 122; 1967 c 13 § 1; 1945 c 216 § 2; Rem. Supp. 1945 § 10964b.]

Notes:

Severability -- Effective date -- 1995 c 255: See RCW 17.26.900 and 17.26.901.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.030
Jurisdiction of department.

The department shall have the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, water courses, and other surface and underground waters of the state of Washington.

[1987 c 109 § 123; 1945 c 216 § 10; Rem. Supp. 1945 § 10964j. FORMER PART OF SECTION: 1945 c 216 § 11; Rem. Supp. 1945 § 10964k, now codified as RCW 90.48.035.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.035
Rule-making authority.

The department shall have the authority to, and shall promulgate, amend, or rescind such rules and regulations as it shall deem necessary to carry out the provisions of this chapter, including but not limited to rules and regulations relating to standards of quality for waters of the state and for substances discharged therein in order to maintain the highest possible standards of all waters of the state in accordance with the public policy as declared in RCW 90.48.010.

[1987 c 109 § 124; 1970 ex.s. c 88 § 11; 1967 c 13 § 6; 1945 c 216 § 11; Rem. Supp. 1945 § 10964k. Formerly RCW 90.48.030, part.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.037
Authority of department to bring enforcement actions.

The department, with the assistance of the attorney general, is authorized to bring any appropriate action at law or in equity, including action for injunctive relief, in the name of the people of the state of Washington as may be necessary to carry out the provisions of this chapter or chapter 90.56 RCW.

[1991 c 200 § 1102; 1987 c 109 § 125; 1967 c 13 § 7.]

Notes:

Effective dates -- Severability -- 1991 c 200: See RCW 90.56.901 and 90.56.904.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.039
Hazardous substance remedial actions — Procedural requirements not applicable.

The procedural requirements of this chapter shall not apply to any person conducting a remedial action at a facility pursuant to a consent decree, order, or agreed order issued pursuant to chapter 70.105D RCW, or to the department of ecology when it conducts a remedial action under chapter 70.105D RCW. The department of ecology shall ensure compliance with the substantive requirements of this chapter through the consent decree, order, or agreed order issued pursuant to chapter 70.105D RCW, or during the department-conducted remedial action, through the procedures developed by the department pursuant to RCW 70.105D.090.

[1994 c 257 § 19.]

Notes:

Severability -- 1994 c 257: See note following RCW 36.70A.270.

90.48.045
Environmental excellence program agreements — Effect on chapter.

Notwithstanding any other provision of law, any legal requirement under this chapter, including any standard, limitation, rule, or order is superseded and replaced in accordance with the terms and provisions of an environmental excellence program agreement, entered into under chapter 43.21K RCW.

[1997 c 381 § 26.]

Notes:

Purpose -- 1997 c 381: See RCW 43.21K.005.

90.48.080
Discharge of polluting matter in waters prohibited.

It shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the department, as provided for in this chapter.

[1987 c 109 § 126; 1967 c 13 § 8; 1945 c 216 § 14; Rem. Supp. 1945 § 10964n.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.090
Right of entry — Special inspection requirements for metals mining and milling operations.

The department or its duly appointed agent shall have the right to enter at all reasonable times in or upon any property, public or private, for the purpose of inspecting and investigating conditions relating to the pollution of or the possible pollution of any of the waters of this state.

The department shall have special inspection requirements for metals mining and milling operations regulated under chapter 232, Laws of 1994. The department shall inspect these mining and milling operations at least quarterly in order to ensure compliance with the intent and any permit issued pursuant to this chapter. The department shall conduct additional inspections as needed during the construction phase of these mining operations in order to ensure compliance with this chapter.

[1994 c 232 § 21; 1987 c 109 § 127; 1945 c 216 § 15; Rem. Supp. 1945 § 10964o.]

Notes:

Severability -- 1994 c 232: See RCW 78.56.900.

Effective date -- 1994 c 232 §§ 6-8 and 18-22: See RCW 78.56.902.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.095
Authority of department to compel attendance and testimony of witnesses, production of books and papers — Contempt proceedings to enforce — Fees.

In carrying out the purposes of this chapter or chapter 90.56 RCW the department shall, in conjunction with either the adoption of rules, consideration of an application for a waste discharge permit or the termination or modification of such permit, or proceedings in adjudicative hearings, have the authority to issue process and subpoena witnesses effective throughout the state on its own behalf or that of an interested party, compel their attendance, administer oaths, take the testimony of any person under oath and, in connection therewith require the production for examination of any books or papers relating to the matter under consideration by the department. In case of disobedience on the part of any

person to comply with any subpoena issued by the department, or on the refusal of any witness to testify to any matters regarding which he may be lawfully interrogated, it shall be the duty of the superior court of any county, or of the judge thereof, on application of the department, to compel obedience by proceedings for contempt, as in the case of disobedience of the requirements of a subpoena issued from such court or a refusal to testify therein. In connection with the authority granted under this section no witness or other person shall be required to divulge trade secrets or secret processes. Persons responding to a subpoena as provided herein shall be entitled to fees as are witnesses in superior court.

[1991 c 200 § 1103; 1987 c 109 § 128; 1967 c 13 § 9.]

Notes:

Effective dates -- Severability -- 1991 c 200: See RCW 90.56.901 and 90.56.904.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.100
Request for assistance.

The department shall have the right to request and receive the assistance of any educational institution or state agency when it is deemed necessary by the department to carry out the provisions of this chapter or chapter 90.56 RCW.

[1991 c 200 § 1104; 1987 c 109 § 129; 1945 c 216 § 16; Rem. Supp. 1945 § 10964p.]

Notes:

Effective dates -- Severability -- 1991 c 200: See RCW 90.56.901 and 90.56.904.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.110
Plans and proposed methods of operation and maintenance of sewerage or disposal systems to be submitted to department — Exceptions — Time limitations.

(1) Except under subsection (2) of this section, all engineering reports, plans, and specifications for the construction of new sewerage systems, sewage treatment or disposal plants or systems, or for improvements or extensions to existing sewerage systems or sewage treatment or disposal plants, and the proposed method of future operation and maintenance of said facility or facilities, shall be submitted to and be approved by the department, before construction thereof may begin. No approval shall be given until the department is satisfied that said plans and specifications and the methods of

operation and maintenance submitted are adequate to protect the quality of the state's waters as provided for in this chapter. Approval under this chapter is not required for large on-site sewage systems permitted by the department of health under chapter 70.118B RCW or for on-site sewage systems regulated by local health jurisdictions under rules of the state board of health.

(2) To promote efficiency in service delivery and intergovernmental cooperation in protecting the quality of the state's waters, the department may delegate the authority for review and approval of engineering reports, plans, and specifications for the construction of new sewerage systems, sewage treatment or disposal plants or systems, or for improvements or extensions to existing sewerage system or sewage treatment or disposal plants, and the proposed method of future operations and maintenance of said facility or facilities and industrial pretreatment systems, to local units of government requesting such delegation and meeting criteria established by the department.

(3) For any new or revised general sewer plan submitted for review under this section, the department shall review and either approve, conditionally approve, reject, or request amendments within ninety days of the receipt of the submission of the plan. The department may extend this ninety-day time limitation for new submittals by up to an additional ninety days if insufficient time exists to adequately review the general sewer plan. For rejections of plans or extensions of the timeline, the department shall provide in writing to the local government entity the reason for such action. In addition, the governing body of the local government entity and the department may mutually agree to an extension of the deadlines contained in this section.

[2007 c 343 § 13; 2002 c 161 § 5; 1994 c 118 § 1; 1987 c 109 § 130; 1967 c 13 § 10; 1945 c 216 § 17; Rem. Supp. 1945 § 10964q.]

Notes:

Captions and part headings not law -- 2007 c 343: See RCW 70.118B.900.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.112
Plan evaluation — Consideration of reclaimed water.

The evaluation of any plans submitted under RCW 90.48.110 must include consideration of opportunities for the use of reclaimed water as defined in RCW 90.46.010. Wastewater plans submitted under RCW 90.48.110 must include a statement describing how applicable reclamation and reuse elements will be coordinated as required under RCW 90.46.120(2).

[2003 1st sp.s. c 5 § 12; 1997 c 444 § 9.]

Notes:

Severability -- 2003 1st sp.s. c 5: See note following RCW 90.03.015.

Severability -- 1997 c 444: See note following RCW 90.46.010.

90.48.120

Notice of department's determination that violation has or will occur — Report to department of compliance with determination — Order or directive to be issued — Notice.

(1) Whenever, in the opinion of the department, any person shall violate or creates a substantial potential to violate the provisions of this chapter or chapter 90.56 RCW, or fails to control the polluting content of waste discharged or to be discharged into any waters of the state, the department shall notify such person of its determination by registered mail. Such determination shall not constitute an order or directive under RCW 43.21B.310. Within thirty days from the receipt of notice of such determination, such person shall file with the department a full report stating what steps have been and are being taken to control such waste or pollution or to otherwise comply with the determination of the department. Whereupon the department shall issue such order or directive as it deems appropriate under the circumstances, and shall notify such person thereof by registered mail.

(2) Whenever the department deems immediate action is necessary to accomplish the purposes of this chapter or chapter 90.56 RCW, it may issue such order or directive, as appropriate under the circumstances, without first issuing a notice or determination pursuant to subsection (1) of this section. An order or directive issued pursuant to this subsection shall be served by registered mail or personally upon any person to whom it is directed.

[1992 c 73 § 25; 1987 c 109 § 131; 1985 c 316 § 3; 1973 c 155 § 2; 1967 c 13 § 11; 1945 c 216 § 18; Rem. Supp. 1945 § 10964r.]

Notes:

Effective dates -- Severability -- 1992 c 73: See RCW 82.23B.902 and 90.56.905.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.140

Penalty.

*** CHANGE IN 2011 *** (SEE 5168-S.SL) ***

Any person found guilty of willfully violating any of the provisions of this chapter or chapter 90.56 RCW, or any final written orders or directive of the

department or a court in pursuance thereof is guilty of a gross misdemeanor, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars and costs of prosecution, or by imprisonment in the county jail for not more than one year, or by both such fine and imprisonment in the discretion of the court. Each day upon which a willful violation of the provisions of this chapter or chapter 90.56 RCW occurs may be deemed a separate and additional violation.

[2003 c 53 § 419; 1992 c 73 § 26; 1973 c 155 § 8; 1945 c 216 § 20; Rem. Supp. 1945 § 10964t.]

Notes:

Intent -- Effective date -- 2003 c 53: See notes following RCW 2.48.180.

Effective dates -- Severability -- 1992 c 73: See RCW 82.23B.902 and 90.56.905.

90.48.142
Violations — Liability in damages for injury or death of fish, animals, vegetation — Action to recover.

(1) Any person who:

(a)(i) Violates any of the provisions of this chapter or chapter 90.56 RCW;

(ii) Fails to perform any duty imposed by this chapter or chapter 90.56 RCW;

(iii) Violates an order or other determination of the department or the director made pursuant to the provisions of this chapter or chapter 90.56 RCW;

(iv) Violates the conditions of a waste discharge permit issued pursuant to RCW 90.48.160; or

(v) Otherwise causes a reduction in the quality of the state's waters below the standards set by the department or, if no standards have been set, causes significant degradation of water quality, thereby damaging the same; and

(b) Causes the death of, or injury to, fish, animals, vegetation, or other resources of the state;

shall be liable to pay the state and affected counties and cities damages in an amount determined pursuant to RCW 90.48.367.

(2) No action shall be authorized under this section against any person operating in compliance with the conditions of a waste discharge permit issued pursuant to RCW 90.48.160.

[1991 c 200 § 810; 1989 c 262 § 2; 1988 c 36 § 69; 1987 c 109 § 132; 1985 c 316 § 6; 1970 ex.s. c 88 § 12; 1967 ex.s. c 139 § 13.]

Notes:

Effective dates -- Severability -- 1991 c 200: See RCW 90.56.901 and 90.56.904.

Findings -- 1989 c 262: "The legislature finds that there is confusion regarding the measure of damages authorized under RCW 90.48.142. The intent of this act is to clarify existing law on the measure of damages authorized under RCW 90.48.142, not to change the law." [1989 c 262 § 1.]

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

Severability -- 1967 ex.s. c 139: See RCW 82.34.900.

90.48.144
Violations — Civil penalty — Procedure.

Except as provided in RCW 43.05.060 through 43.05.080 and 43.05.150, every person who:

(1) Violates the terms or conditions of a waste discharge permit issued pursuant to RCW 90.48.180 or 90.48.260 through 90.48.262, or

(2) Conducts a commercial or industrial operation or other point source discharge operation without a waste discharge permit as required by RCW 90.48.160 or 90.48.260 through 90.48.262, or

(3) Violates the provisions of RCW 90.48.080, or other sections of this chapter or chapter 90.56 RCW or rules or orders adopted or issued pursuant to either of those chapters, shall incur, in addition to any other penalty as provided by law, a penalty in an amount of up to ten thousand dollars a day for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be and be deemed to be a separate and distinct violation. Every act of commission or omission which procures, aids or abets in the violation shall be considered a violation under the provisions of this section and subject to the penalty herein provided for. The penalty amount shall be set in consideration of the previous history of the violator and the severity of the violation's impact on public health and/or the environment in addition to other relevant factors. The penalty herein provided for shall be imposed pursuant to the procedures set forth in RCW 43.21B.300.

[1995 c 403 § 636; 1992 c 73 § 27; 1987 c 109 § 17; 1985 c 316 § 2; 1973 c 155 § 9; 1970 ex.s. c 88 § 13; 1967 ex.s. c 139 § 14.]

Notes:

Findings -- Short title -- Intent -- 1995 c 403: See note following RCW 34.05.328.

Part headings not law -- Severability -- 1995 c 403: See RCW 43.05.903 and

43.05.904.

Effective dates -- Severability -- 1992 c 73: See RCW 82.23B.902 and 90.56.905.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

Severability -- 1967 ex.s. c 139: See RCW 82.34.900.

90.48.150
Construction of chapter.

This chapter shall not be construed as repealing any of the laws governing the pollution of the waters of the state, but shall be held and construed as ancillary to and supplementing the same and an addition to the laws now in force, except as the same may be in direct conflict herewith.

[1945 c 216 § 21; Rem. Supp. 1945 § 10964u.]

90.48.153
Cooperation with federal government — Federal funds.

The department is authorized to cooperate with the federal government and to accept grants of federal funds for carrying out the purposes of this chapter. The department is empowered to make any application or report required by an agency of the federal government as an incident to receiving such grants.

[1987 c 109 § 133; 1949 c 58 § 1; Rem. Supp. 1949 § 10964pp. Formerly RCW 90.48.040.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.156
Cooperation with other states and provinces — Interstate and state-provincial projects.

The department is authorized to cooperate with appropriate agencies of neighboring states and neighboring provinces, to enter into contracts, and make contributions toward interstate and state-provincial projects to carry out the purposes of this chapter and chapter 90.56 RCW.

[1991 c 200 § 1105; 1987 c 109 § 134; 1949 c 58 § 2; Rem. Supp. 1949 § 10964pp-1. Formerly RCW 90.48.050.]

Notes:

Effective dates -- Severability -- 1991 c 200: See RCW 90.56.901 and 90.56.904.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.160
Waste disposal permit — Required — Exemptions.

Any person who conducts a commercial or industrial operation of any type which results in the disposal of solid or liquid waste material into the waters of the state, including commercial or industrial operators discharging solid or liquid waste material into sewerage systems operated by municipalities or public entities which discharge into public waters of the state, shall procure a permit from either the department or the *thermal power plant site evaluation council as provided in RCW 90.48.262(2) before disposing of such waste material: PROVIDED, That this section shall not apply to any person discharging domestic sewage only into a sewerage system.

The department may, through the adoption of rules, eliminate the permit requirements for disposing of wastes into publicly operated sewerage systems for:

(1) Categories of or individual municipalities or public corporations operating sewerage systems; or

(2) Any category of waste disposer;

if the department determines such permit requirements are no longer necessary for the effective implementation of this chapter. The department may by rule eliminate the permit requirements for disposing of wastes by upland finfish rearing facilities unless a permit is required under the federal clean water act's national pollutant discharge elimination system.

[1989 c 293 § 2; 1973 c 155 § 3; 1967 c 13 § 13; 1955 c 71 § 1.]

Notes:

***Reviser's note:** The "thermal power plant site evaluation council" was redesignated the "energy facility site evaluation council" by 1975-'76 2nd ex.s. c 108.

90.48.162
Waste disposal permits required of counties, municipalities and public corporations.

Any county or any municipal or public corporation operating or proposing to operate a sewerage system, including any system which collects only domestic sewerage, which results in the disposal of waste material into the

waters of the state shall procure a permit from the department of ecology before so disposing of such materials. This section is intended to extend the permit system of RCW 90.48.160 to counties and municipal or public corporations and the provisions of RCW 90.48.170 through 90.48.200 and 90.52.040 shall be applicable to the permit requirement imposed under this section. A permit under this chapter is not required for large on-site sewage systems permitted by the department of health under chapter 70.118B RCW or for on-site sewage systems permitted by local health jurisdictions under rules of the state board of health.

[2007 c 343 § 12; 1972 ex.s. c 140 § 1.]

Notes:

Captions and part headings not law -- 2007 c 343: See RCW 70.118B.900.

90.48.165

Waste disposal permits required of counties, municipalities and public corporations — Cities, towns or municipal corporations may be granted authority to issue permits — Revocation — Termination of permits.

Any city, town or municipal corporation operating a sewerage system including treatment facilities may be granted authority by the department to issue permits for the discharge of wastes to such system provided the department ascertains to its satisfaction that the sewerage system and the inspection and control program operated and conducted by the city, town or municipal corporation will protect the public interest in the quality of the state's waters as provided for in this chapter. Such authority may be granted by the department upon application by the city, town or municipal corporation and may be revoked by the department if it determines that such city, town, or municipal corporation is not, thereafter, operated and conducted in a manner to protect the public interest. Persons holding municipal permits to discharge into sewerage systems operated by a municipal corporation authorized by this section to issue such permits shall not be required to secure a waste discharge permit provided for in RCW 90.48.160 as to the wastes discharged into such sewerage systems. Authority granted by the department to cities, towns, or municipal corporations to issue permits under this section shall be in addition to any authority or power now or hereafter granted by law to cities, towns and municipal corporations for the regulation of discharges into sewerage systems operated by such cities, towns, or municipal corporations. Permits issued under this section shall automatically terminate if the authority to issue the same is revoked by the department.

[1987 c 109 § 135; 1967 c 13 § 14.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.170

Waste disposal permits required of counties, municipalities and public corporations — Application — Notice as to new operation or increase in volume — Investigation — Notice to other state departments.

Applications for permits shall be made on forms prescribed by the department and shall contain the name and address of the applicant, a description of the applicant's operations, the quantity and type of waste material sought to be disposed of, the proposed method of disposal, and any other relevant information deemed necessary by the department. Application for permits shall be made at least sixty days prior to commencement of any proposed discharge or permit expiration date, whichever is applicable. Upon receipt of a proper application relating to a new operation, or an operation previously under permit for which an increase in volume of wastes or change in character of effluent is requested over that previously authorized, the department shall instruct the applicant to publish notices thereof by such means and within such time as the department shall prescribe. The department shall require that the notice so prescribed shall be published twice in a newspaper of general circulation within the county in which the disposal of waste material is proposed to be made and in such other appropriate information media as the department may direct. Said notice shall include a statement that any person desiring to present his or her views to the department with regard to said application may do so in writing to the department, or any person interested in the department's action on an application for a permit, may submit his or her views or notify the department of his or her interest within thirty days of the last date of publication of notice. Such notification or submission of views to the department shall entitle said persons to a copy of the action taken on the application. Upon receipt by the department of an application, it shall immediately send notice thereof containing pertinent information to the director of fish and wildlife and to the secretary of social and health services. When an application complying with the provisions of this chapter and the rules and regulations of the department has been filed with the department, it shall be its duty to investigate the application, and determine whether the use of public waters for waste disposal as proposed will pollute the same in violation of the public policy of the state.

[1994 c 264 § 91; 1988 c 36 § 70; 1987 c 109 § 136; 1967 c 13 § 15; 1955 c 71 § 2.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.180

Waste disposal permits required of counties, municipalities and

public corporations — Issuance — Conditions — Duration.

The department shall issue a permit unless it finds that the disposal of waste material as proposed in the application will pollute the waters of the state in violation of the public policy declared in RCW 90.48.010. The department shall have authority to specify conditions necessary to avoid such pollution in each permit under which waste material may be disposed of by the permittee. Permits may be temporary or permanent but shall not be valid for more than five years from date of issuance.

[1987 c 109 § 137; 1967 c 13 § 16; 1955 c 71 § 3.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.190

Waste disposal permits required of counties, municipalities and public corporations — Termination — Grounds.

A permit shall be subject to termination upon thirty days' notice in writing if the department finds:

(1) That it was procured by misrepresentation of any material fact or by lack of full disclosure in the application;

(2) That there has been a violation of the conditions thereof;

(3) That a material change in quantity or type of waste disposal exists.

[1987 c 109 § 138; 1967 c 13 § 17; 1955 c 71 § 4. (1987 3rd ex.s. c 2 § 43 repealed by 1989 c 2 § 24, effective March 1, 1989.)]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.195

Waste disposal permits required of counties, municipalities and public corporations — Modification or additional conditions may be ordered.

In the event that a material change in the condition of the state waters occurs the department may, by appropriate order, modify permit conditions or specify additional conditions in permits previously issued.

[1987 c 109 § 139; 1967 c 13 § 18.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.200
Waste disposal permits required of counties, municipalities and public corporations — Nonaction upon application — Temporary permit — Duration.

In the event of failure of the department to act upon an application within sixty days after it has been filed the applicant shall be deemed to have received a temporary permit. Said permit shall authorize the applicant to discharge wastes into waters of the state as requested in its application only until such time as the department shall have taken action upon said application.

[1987 c 109 § 140; 1967 c 13 § 19; 1955 c 71 § 5.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.215
Upland finfish facilities — Waste discharge standards — Waste disposal permit.

(1) The following definition shall apply to this section: "Upland finfish hatching and rearing facilities" means those facilities not located within waters of the state where finfish are hatched, fed, nurtured, held, maintained, or reared to reach the size of release or for market sale. This shall include fish hatcheries, rearing ponds, spawning channels, and other similarly constructed or fabricated public or private facilities.

(2) Not later than September 30, 1989, the department shall adopt standards pursuant to chapter 34.05 RCW for waste discharges from upland finfish hatching and rearing facilities. In establishing these standards, the department shall incorporate, to the extent applicable, studies conducted by the United States environmental protection agency on finfish rearing facilities and other relevant information. The department shall also issue a general permit as authorized by the federal clean water act, 33 U.S.C. 1251 et seq., or RCW 90.48.160 by September 30, 1989, for upland finfish hatching and rearing facilities. The department shall approve or deny applications for coverage under the general permit for upland finfish hatching and rearing facilities within one hundred eighty days from the date of application, unless a longer time is required to satisfy public participation requirements in the permit process in accordance with applicable rules, or compliance with the requirements of the state environmental policy act

under chapter 43.21C RCW. The department shall notify applicants for coverage by a general permit as soon as it determines that a proposed discharge meets or fails to comply with the standards or general permit conditions set forth pursuant to this section, or that a time period longer than one hundred eighty days is necessary to satisfy public participation requirements or the state environmental policy act.

[1989 c 293 § 1.]

90.48.220
Marine finfish rearing facilities — Waste discharge standards — Discharge permit applications — Exemption.

(1) For the purposes of this section "marine finfish rearing facilities" means those private and public facilities located within the salt water of the state where finfish are fed, nurtured, held, maintained, or reared to reach the size of release or for market sale.

(2) Not later than October 31, 1994, the department shall adopt criteria under chapter 34.05 RCW for allowable sediment impacts from organic enrichment due to marine finfish rearing facilities.

(3) Not later than June 30, 1995, the department shall adopt standards under chapter 34.05 RCW for waste discharges from marine finfish rearing facilities. In establishing these standards, the department shall review and incorporate, to the extent possible, studies conducted by state and federal agencies on waste discharges from marine finfish rearing facilities, and any reports and other materials prepared by technical committees on waste discharges from marine finfish rearing facilities. The department shall approve or deny discharge permit applications for marine finfish rearing facilities within one hundred eighty days from the date of application, unless a longer time is required to satisfy public participation requirements in the permit process in accordance with applicable rules, or compliance with the requirements of the state environmental policy act under chapter 43.21C RCW. The department shall notify applicants as soon as it determines that a proposed discharge meets or fails to comply with the standards adopted pursuant to this section, or if a time period longer than one hundred eighty days is necessary to satisfy public participation requirements of the state environmental policy act.

(4) The department may adopt rules to exempt marine finfish rearing facilities not requiring national pollutant discharge elimination system permits under the federal water pollution control act from the discharge permit requirement.

[1993 c 296 § 1.]

90.48.230
Application of administrative procedure law to rule making and adjudicative proceedings.

The provisions of chapter 34.05 RCW, the Administrative Procedure Act, apply to all rule making and adjudicative proceedings authorized by or arising under the provisions of this chapter.

[1989 c 175 § 181; 1967 c 13 § 21.]

Notes:

Effective date -- 1989 c 175: See note following RCW 34.05.010.

90.48.240
Water pollution orders for conditions requiring immediate action — Appeal.

Notwithstanding any other provisions of this chapter or chapter 90.56 RCW, whenever it appears to the director that water quality conditions exist which require immediate action to protect the public health or welfare, or that a person required by RCW 90.48.160 to obtain a waste discharge permit prior to discharge is discharging without the same, or that a person conducting an operation which is subject to a permit issued pursuant to RCW 90.48.160 conducts the same in violation of the terms of said permit, causing water quality conditions to exist which require immediate action to protect the public health or welfare, the director may issue a written order to the person or persons responsible without prior notice or hearing, directing and affording the person or persons responsible the alternative of either (1) immediately discontinuing or modifying the discharge into the waters of the state, or (2) appearing before the department at the time and place specified in said written order for the purpose of providing to the department information pertaining to the violations and conditions alleged in said written order. The responsible person or persons shall be afforded not less than twenty-four hours notice of such an information meeting. If following such a meeting the department determines that water quality conditions exist which require immediate action as described herein, the department may issue a written order requiring immediate discontinuance or modification of the discharge into the waters of the state. In the event an order is not immediately complied with the attorney general, upon request of the department, shall seek and obtain an order of the superior court of the county in which the violation took place directing compliance with the order of the department. Such an order is appealable pursuant to RCW 43.21B.310.

[1991 c 200 § 1106; 1987 c 109 § 15; 1967 c 13 § 22.]

Notes:

Effective dates -- Severability -- 1991 c 200: See RCW 90.56.901 and 90.56.904.

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.250
Agreements or contracts to monitor waters and effluent discharge.

The department is authorized to make agreements and enter into such contracts as are appropriate to carry out a program of monitoring the condition of the waters of the state and the effluent discharged therein, including contracts to monitor effluent discharged into public waters when such monitoring is required by the terms of a waste discharge permit or as part of the approval of a sewerage system, if adequate compensation is provided to the department as a term of the contract.

[1987 c 109 § 141; 1967 c 13 § 23.]

Notes:

Purpose -- Short title -- Construction -- Rules -- Severability -- Captions -- 1987 c 109: See notes following RCW 43.21B.001.

90.48.260
Federal clean water act — Department designated as state agency, authority — Delegation of authority — Powers, duties, and functions.

*** CHANGE IN 2011 *** (SEE 1478-S.SL) ***

The department of ecology is hereby designated as the state water pollution control agency for all purposes of the federal clean water act as it exists on February 4, 1987, and is hereby authorized to participate fully in the programs of the act as well as to take all action necessary to secure to the state the benefits and to meet the requirements of that act. With regard to the national estuary program established by section 320 of that act, the department shall exercise its responsibility jointly with the Puget Sound partnership, created in RCW 90.71.210. The department of ecology may delegate its authority under this chapter, including its national pollutant discharge elimination permit system authority and duties regarding animal feeding operations and concentrated animal feeding operations, to the department of agriculture through a memorandum of understanding. Until any such delegation receives federal approval, the department of agriculture's adoption or issuance of animal feeding operation and concentrated animal feeding operation rules, permits, programs, and directives pertaining to water quality shall be accomplished after reaching agreement with the director of the department of ecology. Adoption or issuance and implementation shall be accomplished so that compliance with such animal feeding operation and concentrated animal feeding operation

rules, permits, programs, and directives will achieve compliance with all federal and state water pollution control laws. The powers granted herein include, among others, and notwithstanding any other provisions of chapter 90.48 RCW or otherwise, the following:

(1) Complete authority to establish and administer a comprehensive state point source waste discharge or pollution discharge elimination permit program which will enable the department to qualify for full participation in any national waste discharge or pollution discharge elimination permit system and will allow the department to be the sole agency issuing permits required by such national system operating in the state of Washington subject to the provisions of RCW 90.48.262(2). Program elements authorized herein may include, but are not limited to: (a) Effluent treatment and limitation requirements together with timing requirements related thereto; (b) applicable receiving water quality standards requirements; (c) requirements of standards of performance for new sources; (d) pretreatment requirements; (e) termination and modification of permits for cause; (f) requirements for public notices and opportunities for public hearings; (g) appropriate relationships with the secretary of the army in the administration of his responsibilities which relate to anchorage and navigation, with the administrator of the environmental protection agency in the performance of his duties, and with other governmental officials under the federal clean water act; (h) requirements for inspection, monitoring, entry, and reporting; (i) enforcement of the program through penalties, emergency powers, and criminal sanctions; (j) a continuing planning process; and (k) user charges.

(2) The power to establish and administer state programs in a manner which will insure the procurement of moneys, whether in the form of grants, loans, or otherwise; to assist in the construction, operation, and maintenance of various water pollution control facilities and works; and the administering of various state water pollution control management, regulatory, and enforcement programs.

(3) The power to develop and implement appropriate programs pertaining to continuing planning processes, area-wide waste treatment management plans, and basin planning.

The governor shall have authority to perform those actions required of him or her by the federal clean water act.

[2007 c 341 § 55; 2003 c 325 § 7; 1988 c 220 § 1; 1983 c 270 § 1; 1979 ex.s. c 267 § 1; 1973 c 155 § 4; 1967 c 13 § 24.]

Notes:

Severability -- Effective date -- 2007 c 341: See RCW 90.71.906 and 90.71.907.

Intent -- Finding -- 2003 c 325: See note following RCW 90.64.030.

Severability -- 1983 c 270: "If any provision of this act or its application to any person or circumstance is held invalid, the remainder of the act or the application of the provision to other persons or circumstances is not affected." [1983 c 270 § 5.]

APPENDIX 12

CERTIFICATION OF ENROLLMENT

ENGROSSED SUBSTITUTE HOUSE BILL 1478

Chapter 353, Laws of 2011

62nd Legislature
2011 Regular Session

LOCAL GOVERNMENTS--FISCAL RELIEF--DELAY OF REQUIREMENTS

EFFECTIVE DATE: 07/22/11

Passed by the House April 22, 2011
Yeas 90 Nays 6

FRANK CHOPP

Speaker of the House of Representatives

Passed by the Senate April 22, 2011
Yeas 33 Nays 13

BRAD OWEN

President of the Senate

Approved May 16, 2011, 2:25 p.m.

CHRISTINE GREGOIRE

Governor of the State of Washington

CERTIFICATE

I, Barbara Baker, Chief Clerk of the House of Representatives of the State of Washington, do hereby certify that the attached is **ENGROSSED SUBSTITUTE HOUSE BILL 1478** as passed by the House of Representatives and the Senate on the dates hereon set forth.

BARBARA BAKER

Chief Clerk

FILED

May 17, 2011

Secretary of State
State of Washington

ENGROSSED SUBSTITUTE HOUSE BILL 1478

AS RECOMMENDED BY THE CONFERENCE COMMITTEE

Passed Legislature - 2011 Regular Session

State of Washington 62nd Legislature 2011 Regular Session

By House Local Government (originally sponsored by Representatives Springer, Asay, Takko, Orcutt, Haler, Rivers, Eddy, Hunt, Klippert, Sullivan, Goodman, Clibborn, Armstrong, Probst, Jacks, Johnson, and Kenney)

READ FIRST TIME 02/15/11.

AN ACT Relating to fiscal relief for cities and counties during periods of economic downturn by delaying or modifying certain regulatory and statutory requirements; amending RCW 36.70A.215, 43.19.648, 43.325.080, 43.185C.210, 46.68.113, 82.02.070, 82.02.080, 82.14.415, 90.46.015, 90.48.260, 90.58.080, and 90.58.090; reenacting and amending RCW 36.70A.130; and creating a new section.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

NEW SECTION. **Sec. 1.** It is the legislature's intent to provide local governments with more time to meet certain statutory requirements. Many cities and counties in Washington are facing revenue shortfalls, higher expenses, and more difficulty with borrowing money as a result of the economic downturn. The effects of the economic downturn on the budgets of local governments will be felt most deeply from 2010 to 2012. Local governments are facing the combined impact of decreased tax revenues, a falloff in state and federal aid, and increased demand for social services. With the loss of tax revenue and state and federal aid, local governments are being forced to make significant cuts that will eliminate jobs, curtail essential services, and increase the number of people in need. Additionally, local

(3) The department of ecology must consult with the advisory committee created under RCW 90.46.050 in all aspects of rule development required under this section.

Sec. 12. RCW 90.48.260 and 2007 c 341 s 55 are each amended to read as follows:

(1) The department of ecology is hereby designated as the state water pollution control agency for all purposes of the federal clean water act as it exists on February 4, 1987, and is hereby authorized to participate fully in the programs of the act as well as to take all action necessary to secure to the state the benefits and to meet the requirements of that act. With regard to the national estuary program established by section 320 of that act, the department shall exercise its responsibility jointly with the Puget Sound partnership, created in RCW 90.71.210. The department of ecology may delegate its authority under this chapter, including its national pollutant discharge elimination permit system authority and duties regarding animal feeding operations and concentrated animal feeding operations, to the department of agriculture through a memorandum of understanding. Until any such delegation receives federal approval, the department of agriculture's adoption or issuance of animal feeding operation and concentrated animal feeding operation rules, permits, programs, and directives pertaining to water quality shall be accomplished after reaching agreement with the director of the department of ecology. Adoption or issuance and implementation shall be accomplished so that compliance with such animal feeding operation and concentrated animal feeding operation rules, permits, programs, and directives will achieve compliance with all federal and state water pollution control laws. The powers granted herein include, among others, and notwithstanding any other provisions of chapter 90.48 RCW or otherwise, the following:

((~~(1)~~)) (a) Complete authority to establish and administer a comprehensive state point source waste discharge or pollution discharge elimination permit program which will enable the department to qualify for full participation in any national waste discharge or pollution discharge elimination permit system and will allow the department to be the sole agency issuing permits required by such national system operating in the state of Washington subject to the provisions of RCW 90.48.262(2). Program elements authorized herein may include, but are

not limited to: ((~~(a)~~)) (i) Effluent treatment and limitation requirements together with timing requirements related thereto; ((~~(b)~~)) (ii) applicable receiving water quality standards requirements; ((~~(c)~~)) (iii) requirements of standards of performance for new sources; ((~~(d)~~)) (iv) pretreatment requirements; ((~~(e)~~)) (v) termination and modification of permits for cause; ((~~(f)~~)) (vi) requirements for public notices and opportunities for public hearings; ((~~(g)~~)) (vii) appropriate relationships with the secretary of the army in the administration of his responsibilities which relate to anchorage and navigation, with the administrator of the environmental protection agency in the performance of his duties, and with other governmental officials under the federal clean water act; ((~~(h)~~)) (viii) requirements for inspection, monitoring, entry, and reporting; ((~~(i)~~)) (ix) enforcement of the program through penalties, emergency powers, and criminal sanctions; ((~~(j)~~)) (x) a continuing planning process; and ((~~(k)~~)) (xi) user charges.

((~~(2)~~)) (b) The power to establish and administer state programs in a manner which will insure the procurement of moneys, whether in the form of grants, loans, or otherwise; to assist in the construction, operation, and maintenance of various water pollution control facilities and works; and the administering of various state water pollution control management, regulatory, and enforcement programs.

((~~(3)~~)) (c) The power to develop and implement appropriate programs pertaining to continuing planning processes, area-wide waste treatment management plans, and basin planning.

The governor shall have authority to perform those actions required of him or her by the federal clean water act.

(2) By July 31, 2012, the department shall:

(a) Reissue without modification and for a term of one year any national pollutant discharge elimination system municipal storm water general permit first issued on January 17, 2007; and

(b) Issue an updated national pollutant discharge elimination system municipal storm water general permit for any permit first issued on January 17, 2007. An updated permit issued under this subsection shall become effective beginning August 1, 2013.

Sec. 13. RCW 90.58.080 and 2007 c 170 s 1 are each amended to read as follows:

APPENDIX 13

Technical Memorandum #19

700 Washington St.
Suite 401
Vancouver, WA 98660
Phone (360) 737-9613
Fax (360) 737-9651

To:	Robin Krause, PE
From:	Tim Kraft, PE; Andrew Stoeckinger
Copies:	File
Date:	July 2, 2008
Subject:	Clark County's Historical Land Cover
Project No.:	14505

This memo summarizes some of the available historical information regarding Clark County's early transition from historic forest to agriculture. We have reviewed the following information:

- A 1888 map of Clark County
- State census information on cultivated and farmed lands in the early 1900's.
- Historical documents and newspaper articles from the Clark County Historical Museum

The historical descriptions, maps, and census data suggest that much of the developable portions of Clark County were cleared of and being farmed before 1900.

A 1888 map of Clark County

A review of an 1888 map of Clark County suggests that a large portion of Clark County was being farmed before 1900. This map shows the homesteads that were claimed across an extensive area of Clark County by 1888. The Homestead Act required claimants to live on the land, build a home, make improvements and farm the land for 5 years before they could gain title to the land.

State census information on cultivated and farmed lands in the early 1900's.

The US Census Bureau has conducted a farm census in Clark County every five years since 1880. This census data suggests that 46% of the 420,060 total acres in Clark County was farmland by the year 1900. In comparison, 21% of King County and 14% of Pierce County was farmland by the year 1900.

Of the total 420,060 acres in Clark County, there are 158,068 acres that is zoned as Tier I Forest. This area is in the eastern part of Clark County, in the Cascade Mountain foothills, and these areas have been designated for long-term production of commercially significant forest products. Development is not permitted in these areas; therefore, these areas can be subtracted from the total acreage of the County for a comparison of developable areas, or of farmed areas. Excluding the

areas zoned for forestry practices, and using the census data, the farmed areas would constitute 74% of the Clark County by 1900. The census results from 1880 through 1920 are provided in Table 1.

Table 1. Washington Farm Census from 1880 to 1950 Conducted by the US Census Bureau

Year	Total Farm Acreage	Percentage of Entire Clark County	Percentage of Clark County without Tier 1 Forest Areas
1880	115,300	27%	44%
1890	138,600	33%	53%
1900	192,737	46%	74%
1910	186,926	44%	71%
1920	194,309	46%	74%

These results collaborates the information shown on the 1888 map, where a significant portion of the area west of the Cascade Foothills had already been homesteaded.

Historical documents and newspaper articles from the Clark County Historical Museum

Descriptive excerpts from various historical documents also suggest Clark County was swiftly becoming an agrarian landscape before 1900. Around 1860, the first American settlers in Vancouver described expanses of "great forest and dense undergrowth" to the north and west of town. Accounts describe "thousands of acres of agricultural land....being cleared of the splendid timber" as settlers arrived and built homes for their families. However, there were also several expanses of prairie land readily adaptable for agriculture, including First through Fourth Plains. The following excerpts are from *History of Clarke County, Washington Territory* by B.F. Alley and J.P. Munro-Fraser that describe the communities outlying Vancouver as they appeared around 1885:

- Battle Ground – "As we reached the more elevated places.....imagination ran riot into the future when the brush, fern, stumps and logs that now covered the surface shall have been swept away and the whole land be made to bloom 'neath the magic touch of the husbandman."
- Pioneer (15 miles northwest from Vancouver) – "From the vast number of stumps that still dot the expanse of country we are reminded of the fact that....the country was visited by a forest fire of marvelous proportions, wherein miles upon miles of magnificent timber fell prey to the devastating scourge. These will in time, however disappear and leave the land free to profitable agriculture."
- Second Plain – "Is the second of the series of four pieces of open ground whereon in by-gone days the herds of the Hudson Bay Company were wont to pasture and as on the route to the Fourth Plain, the largest of these unwooded tracts."
- Chelachie Prairie (20 miles northeast from Vancouver) – "Its settlement is of comparatively recent date, but even already splendid farms and excellent homes are found in every hand."

These historical descriptions provide some indication of the aggressive land conversion from native forest to viable agriculture that was occurring in Clark County through the late 1800's. This trend continued through the first half of the 20th century as Clark County became a major fruit producer in the state and was once known as the "Prune Capitol of the World". The historical descriptions, maps, and census data suggest that most of the developable portions of Clark County were being farmed before 1900.

Clark County's proposed flow control standard maintains a forested pre-development standard where forest still exists, and also in watersheds where more than 40% of the forest has been reserved thereby protecting to the greatest level those watersheds that would be in the best condition today. For those watersheds where more than 40% of the forest cover has been removed prior to 1955, the requirement shifts to the land cover since 1955 that generated the least runoff. Typically, this would be fields and pasture lands as existed since the late 1800s and early 1900s.

The attached diagram shows the approximate areas of the county that would remain held to a forested pre-development condition (shown in green and yellow). Comparing that map to the map of the County in 1888 shows a similar extents of farmed properties.

References

1. Alley, B.F. *History of Clarke County, Washington Territory.* Washington Publishing, Portland, Oregon. 1885.

2. Hurley, R. *United States Census of Agriculture: 1950 - Volume I, Part 32.* U.S. Department of Commerce: Bureau of the Census. United States Printing Office, 1952.

3. Habersham, R.A. *Map of Clarke County, Washington Territory.* Library of Congress, 1888.