



MEMORANDUM

July 15, 2015

SWPermitComments@ecy.wa.gov

Attn: Mr. Edward O'Brien and Ms. Anne Dettlebach
Municipal Permit Comments
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Subject: Bellevue comments - Draft Stormwater Control Transfer Program

Dear Mr. O'Brien^{Ed} and Ms. Dettlebach^{Anne}:

Thank you for this opportunity to review Ecology's May 2015 Draft Stormwater Control Transfer Program – Out of the Basin document (Publication No. 15-10-017).

This is our first look at a new, innovative, alternative program to the NPDES municipal stormwater permit requirements for new development and redevelopment stormwater control requirements. Employing a citywide watershed-based transfer program approach to stormwater controls would allow Bellevue to be strategic with resources, projects and programs, meet conflicting regulatory drivers while supporting future development and redevelopment, and achieve more immediate and measurable improvements to flow, water quality, and aquatic habitat in our streams and lakes.

To be a viable alternative for municipalities' consideration, several concerns with the proposed program that we believe constrains its application in highly urbanized areas need to be addressed. These challenges and constraints, as well as suggestions to address them, are outlined in the attached Overall Assessment comments. Following the Overall Assessment comments are General Comments organized by draft Program section.

We ask that Ecology provide opportunities for follow-up discussions with commenters on viability and high profile issues before the guidance is finalized. Issues include those program components receiving a large number of comments, alternative proposals or areas which require clarification and better understanding of the direction intended by Ecology. The discussions would focus on the comments received and the potential direction(s) Ecology is considering in its response.

For questions about Bellevue's comments or to schedule follow-up discussions, please contact Phyllis Varner, NPDES Permit Manager, at 425-452-7683 or pvarner@bellevuewa.gov.

Sincerely,

A handwritten signature in blue ink that reads "Paul A. Bucich".

Paul A. Bucich, PE
Assistant Director of Engineering
Utilities Department
City of Bellevue, WA

Attachments

Overall Assessment of Draft Alternative Stormwater Control Transfer Program's Viability

Bellevue's Perspective

The current NPDES Permit regulatory approach requires stormwater control requirements to be applied on a piecemeal, parcel by parcel new development/redevelopment basis. The proposed alternative program could allow municipalities to invest new development and redevelopment stormwater control resources strategically by prioritizing watersheds and transferring stormwater control improvement "credits" (for flow control, water quality treatment and low impact development) from lower to higher priority watersheds where they will deliver the greatest environmental benefit sooner. The concepts have great potential, however the costs to develop, additional requirements to justify coupled with a limited applicability may outweigh the benefits for a municipality, especially in already highly urbanized municipalities:

1. Very costly and requires years to implement. To implement this alternative program will require hundreds of thousands of dollars, significant staff resources, and several years to perform baseline monitoring, characterize and prioritize city's watersheds and develop an alternative program approved by Ecology. Then it will require significant expense both in capital costs as well as staff resources and a minimum of two additional years to permit and construct at least one alternative program stormwater facility. Further limiting the applicability of this transfer program is the requirement that a facility must be online before any project may rely on it to help meet its stormwater requirements (per Key Program Element #3, page 2). The alternative program also requires the municipality to take on new, potentially significant costs for on-going program administration, post-implementation water quality monitoring and annual reporting to Ecology.
2. Potentially limited application in highly urbanized municipalities. The level of redevelopment activity and timing will be significant factors in determining if an alternative program is feasible and cost-effective.
3. Limited NPDES municipal stormwater management program application and benefits. The watershed prioritization and this alternative new development/redevelopment program is an important step forward in investing stormwater management resources strategically and wisely. It would be rewarding to see this approach applied to other existing stormwater management program requirements such as TMDLs and future requirements, such as a stormwater retrofit requirement (for Phase II municipalities). At this time, however, Ecology has indicated that the vision for this alternative approach to stormwater management has limited application and benefits per Program Principles #6:
"Ecology approval of a Stormwater control Transfer Plan does not shield the Permittee from additional or more stringent requirements associated with TMDLs, S4.F.3 adaptive management plans, future stormwater requirements, or other enforceable mechanisms."
4. Lack of certainty. The alternative program is a significant investment for municipalities and there is no assurance that stormwater control requirements will be vested to provide a level of certainty in the parameters of an alternative program approach. Jurisdictions need assurances that a facility that is designed to meet current standards will be allowed to be used by development at that same standard until the facility is fully bought into to recuperate costs.

5. Unknowns (technical issues, others?) There are several technical questions that need to be addressed, such as how wetland requirement, MR#8, will be addressed by the alternative program.
6. Alternative program isn't a practical, timely alternative for small, redevelopment sites. This guidance doesn't address the unique and immediate difficulties of individual, small redevelopment sites called out in the PCHB No. 12-097c appeal's Stipulation and Agreed Order of Dismissal which requires Ecology to "continue to work with Phase II Coalition members, other permittees, and the Washington State Department of Commerce to explore options for meeting stormwater development/flow control standards on small, redevelopment sites in urban growth centers."

Bellevue's Suggestions

The alternative program's viability is a high profile issue for Bellevue. We've had limited time to brainstorm and develop suggestions that can improve use of the alternative program. We do think the alternative program could be an important tool to achieve environmental improvements sooner and, as noted in our cover letter, would welcome Ecology continuing discussions with stakeholders to help achieve this. Here are a few suggestions to consider in addressing the above viability issues.

1. Very costly and requires years to implement.

- a. Key Program Element #3, page 2, requiring a facility to be on-line before any project may rely on it to help meet its stormwater requirements.

Comment: If a municipality is required to prebuild a facility before a project may rely on it to help meet its stormwater requirements, then the municipality is constrained from charging or collecting more than the proportionate cost of the prebuilt facility. This is a deal for the developer and a loss for potential environmental lift. If however, municipalities can charge the stormwater savings to the project (from being able to transfer their stormwater requirements off-site to an unspecified location), then the municipality can leverage those dollars to provide greater environmental lift (possibly three facilities versus one facility). It's analogous to giving \$10 of groceries to a food bank versus giving a \$10 bill and having the food bank leverage the \$10 to buy \$30 of groceries through their connections with food manufacturers and vendors.

Suggestion: Ecology holds discussion on alternatives to this Program Element which allows the Program to build in certainty that stormwater requirements are met without constraining potential environmental lift and alternative program benefits.

- b. Watershed characterization and prioritization

Suggestion: Add the following conditions and clarifications to the watershed characterization and prioritization process in the guidance. The intent is to minimize costs, add certainty (for approvable outcome) and encourage consideration of this tool for municipalities who may have limited local data.

- Allow municipalities to use *existing* federal, state and local data to characterize and prioritize their basins.
- Clearly articulate the framework of what elements are non-negotiable for characterizing or prioritizing basins.

c. Monitoring

Suggestion: Allow reasonable parameters or indicators of environmental improvements or lift for the monitoring program, rather than monitoring each parameter of interest.

2. Limited NPDES municipal stormwater management program application and benefits

Comment: If Ecology doesn't intend to consider potentially expanding this watershed prioritization approach to other stormwater management requirements to achieve environmental improvements sooner without resulting in increased stormwater impacts to other receiving waters, then this will limit program's viability for many jurisdictions.

Suggestion: Consider adding clarification that Ecology will consider potentially expanding this watershed prioritization approach to other stormwater management requirements if they will achieve environmental improvements sooner without resulting in increased stormwater impacts to other receiving waters.

3. Lack of Certainty

Comment: For municipalities to garner support for this alternative program approach, there has to be some level of certainty that the standards to which the program is accountable are stable. It's important to define some level of vesting of stormwater development standards either for the basin, facilities or program for municipalities to feel comfortable with the large investment necessary to implement the program (i.e., what prevents Ecology from issuing new rules that would make an approved Transfer Plan obsolete?).

Suggestion: Ecology holds discussions with stakeholders on ways to build certainty into the alternative program.

4. Alternative program isn't a practical, timely alternative for small, redevelopment sites

Comment: Alternatives need to be developed that provide practical, timely alternatives for small redevelopment sites to meet NPDES and Growth Management Act goals and requirements. This alternative program is costly, time-consuming and doesn't provide practical, timely alternatives for small, redevelopment sites to do so.

Suggestion: As previously discussed at Building Cities in the Rain project meetings, the state departments of Ecology and Commerce will wrap up this alternative program tool and begin developing practical timely alternatives for small, redevelopment sites. The goal would be to develop these alternatives by the December 31, 2016 deadline for implementing the new stormwater development standards.

General Comments on the Draft Alternative Stormwater Control Transfer Program

Bellevue's General Comments Organized by Draft Guidance Section

I. Key Features of Programs

1. General Program Principle #1 on page 2 states that the Program's: "Environmental goal = Full attainment of water quality standards, including protection/restoration of designated and existing uses."

This is an unattainable goal for a Program that addresses only one component of the much larger, complex stormwater issues needed to attain water quality standards. Bellevue suggests that Ecology remove this Principle or work with a variety of stakeholders and identify reasonable, attainable goals for this program.

2. General Program Principle #3 on page 2 states that "A municipality must evaluate its watersheds and establish a prioritization scheme prior to implementing a Stormwater Control Transfer Program." Consistent with our Overall Assessment comment #3, Bellevue suggests Ecology explore the use of watershed prioritization for broader application to NPDES Permit and Stormwater Management Program requirements. See additional comments under Overall Assessment.
3. Specific Guidelines for Minimum Requirements (MRs) #5, 6 and 7. The guidance doesn't address if or how wetlands and development requirements necessary to comply with MR #8 Wetland Protection will be considered or addressed under a Stormwater Control Transfer Program.

II. Watershed Prioritization

1. Bellevue suggests that Ecology add for clarity and certainty the following information or statements to this section
 - Allow municipalities to use *existing* federal, state and local data to characterize and prioritize their basins.
 - Clearly articulate the framework of what elements are non-negotiable for characterizing or prioritizing basins.
 - Reference both the Puget Sound Watershed Characterization Process and the watershed characterization and prioritization guidance developed by the Building Cities in the Rain interagency project team and state that these documents identify data and approaches for municipalities to consider when characterizing and prioritizing their watersheds;
 - The watershed characterization process has to consider many conditions and factors and that prioritization of watersheds requires clear environmental goals, depends on local knowledge and data and municipalities' thoughtful development of criteria on which to rank watersheds to reach these goals;

2. In the first paragraph of this section, the term “target goals” is used. There is no definition for this term and it’s not used elsewhere in the document. Do “target goals” mean “environmental improvements” (as used in General Program Principle #2)? Suggest defining this term or deleting it to avoid confusion.
3. A potential management categorization approach from The Puget Sound Watershed Characterization Process document is referred to on page 9 without explanation and was very confusing. If you intend to identify this approach in the guidance as an option for municipalities to consider during watershed prioritization process, then recommend adding “Figure 5 - The Management Matrix” from the Process document (attached) as an example of how the categories could be used. This figure also helps clarify the following statement in the guidance (which is very confusing without the “matrix” figure to help illustrate how these categories are defined).

“Generally, watersheds that fall into the “Protection” and “Restoration” categories are expected to rank as higher priority than watersheds in the “Conservation” or “Development” categories.”

III. Considerations for Developing Effective Monitoring

1. As noted above, Redmond’s and others water quality effectiveness monitoring studies of the Program’s environmental improvements (under the NPDES Regional Stormwater Monitoring Program) may help answer this programmatic question.
2. Allow reasonable parameters or indicators of environmental improvements or lift for the monitoring program, rather than monitoring each parameter of interest.

display Sound-wide results (such as Figures 6–8) are usefully summarized into only eight categories (Figure 5b); and if only the most broad characterization is desired, they can be further condensed into just four quadrants (Figure 5c) that define the major management strategies of restoration, protection, conservation, and development.

Figure 5b:

IMPORTANCE	HIGH	Protection 1		Restoration 1	
	MED-HIGH	Protection 2		Restoration 2	
	MEDIUM	Conservation 1		Restoration with Development	
	LOW	Conservation 2		Development	
		LOW	MEDIUM	MED-HIGH	HIGH
		DEGRADATION			

Figure 5c:

IMPORTANCE	HIGH	Protection		Restoration	
	MED-HIGH	Protection		Restoration	
	MEDIUM	Conservation		Development	
	LOW	Conservation		Development	
		LOW	MEDIUM	MED-HIGH	HIGH
		DEGRADATION			

Figure 5. The Management Matrix, displaying 3 alternatives with different levels of discrimination. In all tables, the rating for importance is on the vertical axis, and rating for degradation is along the horizontal axis; the combination of these two indicates suitability of the assessment unit for various combinations of protection, restoration, conservation, or development. The categories in each of the sixteen boxes in Figure 5a express the range of outcomes generated by the combined importance and degradation submodels, and they provide an initial framework for evaluating management actions. In the following maps, the legends follow Figure 5b; for the solution templates (pp. 36–39), these categories are further condensed as shown in Figure 5c.

Combining the results of the Importance and degradation submodels can yield two (related) sets of maps. One set of maps suggests the appropriate management strategy for each *individual* water-flow process (i.e., delivery, storage, and recharge/discharge) used in the analysis, for each AU. The second set is a single map, displaying the *integration* of all processes into an appropriate strategy based on the combined importance and degradation results for all



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July 13, 2015

Subject: CH2M Review Comments on the Stormwater Control Transfer Program: Out of the Basin, Draft Guidance

Dear Ms. Dettelbach:

Ch2M is pleased to provide review comments on the draft guidance document entitled, "Stormwater Control Transfer Program: Out of the Basin. Draft," (May, 2015).

Purpose of the Document

"This document lays out features of an alternative program (a Stormwater Control Transfer Program) that Western Washington State municipal stormwater Permittees (Permittees) can implement to satisfy permit requirements associated with flow control, runoff treatment, and/or low impact development triggered at new and redevelopment sites. This stormwater management approach directs rehabilitation efforts to watersheds within a jurisdiction (referred to as priority watersheds) where they will provide more immediate environmental benefit."

Review Comments from an Economist's Perspective on Requirements to Successfully Implement Stormwater Regulatory Incentives

This review should not be considered comprehensive, but rather the perspective of one economist. The intent of the alternative program is consistent with sound economics and I believe it could move stormwater management in a positive direction by providing flexibility and incentives for reducing the costs and time lags of achieving watershed improvements. Therefore, I read the document with the aim of considering what it might take for the program to be successful.

To be successful with implementing stormwater regulatory incentives, several requirements must be met. The Stormwater Control Program was reviewed and assessed in relation to such requirements as follows:

1. Stormwater ordinance includes the flexibility to allow offsite alternatives for achieving desired improvements in flow regimes and protection of resources.

Yes. “The goal of this innovative stormwater management approach is to direct rehabilitation efforts to watersheds (referred to as priority watersheds) where they will provide more immediate environmental benefit. At the same time, the approach prevents further degradation in all watersheds. As individual priority watersheds meet rehabilitation goals, remaining watersheds are prioritized for improvement until all of the municipality’s watersheds have been rehabilitated to target levels (P. 9-Draft)”

2. Stormwater ordinances must be stringent enough to create a potential for viable incentives. Without requirements, there is no incentive to find a more economical approach to implementation.

Yes. The stormwater permit requirements are to improve the site (or transfer site) to a pre-development standard. This requirement goes beyond maintaining conditions to the pre-project standard.

3. A plan that identifies priority watersheds, BMPs and locations as well as expected proportional benefits of each BMP in achieving target flows, run-off and LID requirements.

Partial. The Stormwater Control Transfer Program provides guidance on identifying and defining a priority watershed for receiving the improvements as well as the performance standards that must be met at the specific site within the watershed. It is up to the municipality to make the case for the priority watershed and the permittee has the choice of whether to identify the location for the necessary stormwater management measures or purchase the equivalent capacity within a previously constructed facility. The availability of the option to purchase credits will contribute toward reducing the transaction costs of the transfer program thus encouraging transfers. However, if no such regional facility with capacity is available, high transaction costs may limit transfers.

4. Establishes clear responsibility for monitoring requirements.

Yes, but if the requirements are asymmetric, this will discourage transfers. The permittee is required to develop a monitoring plan to measure the effectiveness of improvements in the priority watershed(s) where stormwater facilities have been constructed under a Stormwater Control Transfer Program. Does the permittee have a similar monitoring requirement to measure the effectiveness of stormwater facilities constructed at the project site? If not, applying this monitoring requirement for transfers but not for on-site improvements will discourage transfers as it will increase the cost of a transfer relative to an on-site improvement.

5. A common metric or performance standard to allow comparison of the onsite versus offsite stormwater management that will provide the basis for establishing a Permittee’s contribution toward implementation of offsite alternative stormwater management.

Yes. The Document provides specific procedures for the permittees to follow to calculate the credit earned by regional or equivalent stormwater facilities built in priority watersheds.

6. Preliminary design/estimated costs and required property control for offsite BMPs.

Partial. Design requirements are specified, but not the costs of implementing the measures necessary to meet the requirements. It is up to the Permittee to determine whether or not there is a cost advantage to the transfer option. This will tend to increase transactions costs and discourage transfers. However, as previous observed in comment #3, where it is possible for the permittee to purchase credits from a regional facility in a priority watershed, the transaction costs are minimized and trades become attractive.

7. Permittee and regulator awareness of the flexibility of the onsite stormwater discharge Requirements.

There was not sufficient information to evaluate the level of awareness of the stormwater control transfer program.

8. Site redevelopment cost comparisons that allow or favor offsite compared to onsite control of stormwater discharges.

The document did not provide any information to support potential cost advantages from offsite control. Such information or a reference to where such information could be found, would be a useful addition to help permittees understand the value of investigating the offsite options.

9. Agreements that include, contingency agreements, instruments to minimize uncertainties, and responsibility for long-term maintenance of offsite BMPs.

Partial. Permittees must verify the long-term operation and maintenance of those offsite stormwater runoff treatment and flow control BMPs/facilities constructed as part of a Stormwater Control Transfer Program. However, the document did not discuss how this requirement would be enforced.

In summary, the guidance incorporates the critical economic features for facilitating transfers, especially in those instances where the municipality has identified regional stormwater management facilities in priority watersheds that have a cost advantage over smaller on-site facilities elsewhere. By publicizing the cost advantage of purchasing credits, the municipality can reduce transaction costs and encourage trades. Further efficiencies may be gained by decreasing monitoring costs as well as maintenance costs as these activities would become more centralized. The effect of increasing trades supports the environmental objective of expending watershed improvements in priority watersheds. Thank you for the opportunity to review this stormwater control transfer guidance document.

Regards,

Mary Jo Kealy, PhD
Senior Principal Economist
CH2M



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DEPARTMENT OF PUBLIC WORKS
Design and Engineering

May 27, 2015

Municipal Permit Comments
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

**Re: Stormwater Control Transfer Program: May 2015 Draft
(Publication no. 15-10-017)**

As requested, I have reviewed the above publication. This letter includes some general comments and suggestions. Additional comments specific to the draft document are included in the attached PDF (Attachment 1).

This is an excellent idea to optimize the use of local funds in developing a more active watershed rehabilitation capability for the Department of Ecology, given the difficulty in obtaining state funding for important watershed projects. Additional benefits should accrue to related environmental programs such as wetland restoration and endangered fish recovery programs.

To be successful, the strategy will need to be *effective, cost-effective, legally defensible, and attractive to participants*. By essentially constructing two needed and effective projects rather than one, the strategy will be *effective*, as long as good project selection criteria are used. For similar reasons, the strategy will be *cost-effective* watershed rehabilitation. The project will also share the same *cost effectiveness* benefits as other proven strategies such as wetland banking. Stormwater projects typically come with additional environmental benefits other than flow control or water quality treatment, also adding to their *cost-effectiveness* (from a watershed standpoint).

By providing full water quality treatment and flow control to the Existing Condition there will be no impacts at the project site and so the strategy will be *legally defensible*; however:

- It is important that a single measure, such as a WWHM Flow-Duration analysis, is used to determine “no impact” at the project site, and that that single measure suffices for all agencies charged with reviewing projects. Uncertainty in obtaining all the necessary approvals may cause potential partners to abandon proposals, potentially after having expended a great amount of time and funding.
- Note that a very similar proposal for off-site stormwater mitigation was attempted by Clark County and was successfully challenged at the Pollution Control Hearings Board level. The essential stormwater mitigation transfer component of Ecology’s current proposal should be checked with the Board and legal staff to assure that a similar outcome will not occur. Attachment 2 provides some supporting information for the county’s previous proposal.

With this proposed strategy, Ecology essentially shifts from performing a purely regulatory function into becoming a more active partner in watershed restoration efforts. If Ecology is to be successful in this new role, the program will need to be *attractive to participants*. Following are some considerations that may help Ecology attract partners and funds for the hoped-for watershed improvements:

- The onsite-plus-offsite stormwater mitigation alternative will need to be cheaper than the standard onsite mitigation-only alternative.
- The program should facilitate simple proposals from the permittee that can be completed in a timely manner without relying on the completion of long-duration studies or similar.
- The proposal should not require an excessive amount of additional analysis beyond that currently required for a standard design.
- A high degree of certainty in approval, from all approving agencies, is needed. Ecology will need to work carefully on the draft language with other agencies to accomplish this.
- Good assurance of approval needs to be established early in the proposal process.
- The program should acknowledge and make allowances for the additional responsibilities of Ecology's partnering agencies, such as drainage and flood control. The environmental improvements should not come at the risk of flooding of upstream or downstream roadways and homes. In this regard, we have found at Clark County that it is best to have totally separate "Hydrologic Accounting" modeling (i.e. computation of "stormwater credits"; hypothetical upstream basin) and "Final Hydrologic and Hydraulic modeling" (actual upstream basin; may include required single-event hydrologic modeling).
- The program should not require unnecessary and unduly burdensome post-project requirements, e.g. performance monitoring.
- The success of the program in attracting proposals from permittees, and in constructing watershed improvement projects *is* worth monitoring to identify potential program improvements (incentives, multi-benefit opportunities, etc.)

More specific comments related to each of the above are included in Attachment 1.

I believe this is an excellent initiative from Ecology that could potentially be highly effective in helping "jump start" watershed restoration and endangered fish recovery efforts that have stalled due to a lack of reliable funding. Ecology's Western Washington Retrofit Grant Program, and WSDOT/Ecology's DAT approach, show similar promise in this regard. Ecology is to be commended for taking this new active approach and moving us forward towards watershed restoration and sustainability.

Yours Sincerely,

John Milne, P.E.

CC: Ken Lader, John Davis, Mike Soliwoda, Jeff Kostechka



DEPARTMENT OF
ECOLOGY
State of Washington

Stormwater Control Transfer Program

Out of the Basin

DRAFT

May 2015
Publication no. 15-10-017

Publication and Contact Information

This document is available on the Department of Ecology's website at <https://fortress.wa.gov/ecy/publications/SummaryPages/1510017.html>

For more information contact:

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To request ADA accommodation including materials in a format for the visually impaired, call the Water Quality Program at 360-407-6600. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

Stormwater Control Transfer Program

Out of the Basin

by
Edward J. O'Brien, P.E and Anne Dettelbach

Water Quality Program
Washington State Department of Ecology
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Acknowledgements

This page will be completed after the Public Comment period.

The authors of this guidance would like to thank the following people for their contribution:

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Abstract

This document describes an alternative program that Phase I and Western Washington Phase II Municipal Stormwater Permittees can implement to fully satisfy permit requirements associated with flow control, runoff treatment, and/or low impact development (i.e., Appendix 1, Minimum Requirements #5-7) as they are triggered at new and redevelopment sites. The goal of this innovative stormwater management approach is to direct stormwater management efforts to watersheds where they can provide more immediate environmental benefit. The report describes key elements of an approvable program, including stormwater control transfer opportunities, watershed prioritization principles and data needs, allowable types and credit capacities of regional facilities, program tracking tools, and evaluation techniques.



I. Key Features of Programs to Transfer Stormwater Controls to Priority Watersheds in Western Washington State¹

Overview Statement

This document lays out features of an alternative program (a Stormwater Control Transfer Program) that Western Washington State municipal stormwater Permittees (Permittees) can implement to satisfy permit requirements associated with flow control, runoff treatment, and/or low impact development triggered at new and redevelopment sites. This stormwater management approach directs rehabilitation efforts to watersheds within a jurisdiction (referred to as priority watersheds) where they will provide more immediate environmental benefit. This program cannot serve to meet municipal Permittees' obligation to implement a structural retrofit program as currently required by Special Condition S5.C.6 of the Phase I permit. Permittees establishing a Stormwater Control Transfer Program that includes out-of-basin transfers must seek Department of Ecology (Ecology) approval of their alternative program through Section 7 of Appendix 1 (Basin/Watershed Planning) in the Municipal Stormwater Permits.

How to Use this Guidance

This guidance document contains four sections, each of which provides information that will be useful to establish an approvable Stormwater Control Transfer Program in Washington State. The first section of the guidance (**Key Features**) provides a description of the overall program, including general guiding principles, key elements, and opportunities/limitations on the transfer of flow control, runoff treatment, and LID improvements to a site in a different priority watershed. The next section (**Watershed Prioritization**) describes the types of data or information that can inform watershed prioritization as well as several principles that must be considered during that prioritization process. The third section (**Effectiveness Monitoring**) proposes how a monitoring effort can be designed and implemented to document the effectiveness of improvements made in priority watersheds. Finally, the fourth section of the guidance (**Stormwater Facility Transfer Capacity Credits and Tracking**) lays out an accounting program that can be established to track stormwater control transfers on an area basis.

This document does not provide exhaustive and detailed instructions on how to set-up and implement a Stormwater Control Transfer Program. Rather, it is intended to support Permittees considering this approach and to provide general guidance and principles when developing such a program. This guidance is based on Ecology's experience in reviewing and approving alternative programs on a case-by-case basis, and may evolve as issues or nuances are raised and better understood. Permittees exploring this alternative approach to meet permit requirements are encouraged to contact Ecology early in the planning stage.

¹ These guidelines apply to Permittees covered under Phase I and Western Washington Phase II Municipal Stormwater Permits. Many aspects of these guidelines are applicable to Stormwater Control Transfer Programs that incorporate fee-in-lieu features.

General Stormwater Control Transfer Program Principles

1. Environmental goal = Full attainment of water quality standards, including protection/restoration of designated² and existing³ uses.
2. A Stormwater Control Transfer Program must accelerate environmental improvements in high priority watersheds.
3. Transferring stormwater controls (runoff treatment/flow control/LID) away from a project site **cannot result in increased stormwater impacts** to any receiving water.
4. Projects triggering MRs #5, 6, or 7 and **located within a high priority watershed cannot transfer** those stormwater control improvements to another watershed.
5. A municipality must evaluate its watersheds and establish a prioritization scheme **prior** to implementing a Stormwater Control Transfer Program. (See related guidance)
6. Ecology approval of a Stormwater Control Transfer Plan **does not shield the Permittee** from additional or more stringent requirements associated with TMDLs, S4.F.3 adaptive management plans, future stormwater requirements, or other enforceable mechanisms.

Key Stormwater Control Transfer Program Elements

1. For *replaced surfaces*, flow control, runoff treatment, and LID improvements may be transferred to a high priority watershed. For *new surfaces*, only flow control and LID improvements may be transferred.⁴ For purposes of this guidance, the following situations describe where “improvement transfers” to high priority watersheds are allowed or restricted.
 - a. Flow Control: **MR #7 Flow Control** requires that **qualifying projects** control flow 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) to match those conditions produced by the *pre-developed* land cover condition (generally, forested) rather than by the immediate *pre-project* land cover condition. *In the control transfer scenario, a project provides flow control to match the pre-project land cover conditions at the project site. The project then transfers the flow control improvement requirement (match the pre-project land cover to the pre-developed land cover condition) to a high priority watershed.*
 - b. Runoff Treatment: **MR #6 Runoff Treatment** requires that various types of runoff treatment be provided to address the post-project condition for certain hard and pervious surfaces at qualifying projects. *In the runoff treatment transfer scenario, a project may transfer certain in-kind runoff treatment improvements to a high priority watershed. Reducing pollutant discharges to levels below those produced by the immediately pre-project condition are considered treatment improvements.*

² Designated in Chapters 173-200 and 173-201A WAC.

³ Existing uses are defined in 40CFR 131.3 as “those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.”

⁴ NOTE: Other in-basin transfer options for flow control, runoff treatment, and LID improvements are available but are not discussed in this guidance. See the Supplemental Guidelines for Sections 2.4.1 and 2.4.2 in the Stormwater Management Manual for Western Washington (SWMMWW).

- c. **LID: MR #5 On-Site Stormwater Management** requires projects to infiltrate, disperse, and retain stormwater runoff at a project site. Controlling flow rates to the pre-developed land cover condition (generally, forested) for the LID performance standard range⁵ is the LID improvement. *In the LID transfer scenario, a project transfers to a high priority watershed its obligation to meet the LID performance standard for the project site's replaced or new impervious surfaces or converted vegetation areas.* Under this program, the project controls flows at the project site to match flows produced by the pre-project land cover within the specified range of discharge rates (1% to 10% frequency of exceedance flow rates) predicted for the pre-project land cover. The project then transfers the LID improvement requirement (i.e., match flows produced by the pre-project land cover to the pre-developed land cover within the range of 8% to 50% of the pre-developed 2-year flows) to the high priority watershed.
2. **Permittees must verify the long-term operation and maintenance** of those offsite stormwater runoff treatment and flow control BMPs/facilities constructed as part of a Stormwater Control Transfer Program.
3. Any facilities in priority watersheds built to provide flow control, runoff treatment, or LID improvements in lieu of making those improvements at a project site **must be online before any project may rely on the facility to help meet its stormwater requirements.**
4. In no case can a permitted jurisdiction allow less stormwater improvement than what would have been realized (i.e., equivalent acreage, runoff treatment level, or LID performance standard) by following the jurisdiction's adopted stormwater runoff controls program. That program could include:
 - a. The default Appendix 1 permit requirements, or
 - b. Requirements approved through S5.C.5 of the Phase I permit, or
 - c. Requirements allowed through S5.C.4 of the Phase II permit, or
 - d. Alternative requirements established through an Ecology-approved watershed plan per Section 7 of Appendix 1 of the Phase I and II Western Washington Municipal Stormwater Permits.
5. The Permittee must track runoff treatment, flow control, and/or LID improvement transfers for each project as explained in a related guidance.
6. The Permittee shall provide annual reports to Ecology documenting runoff treatment, flow control, and LID capacity or **credits used**/available in offsite facilities associated with this program.
7. Any Permittee implementing a **"fee-in-lieu" option** must establish dedicated flow control, runoff treatment, and LID sub-accounts to manage any "fee-in-lieu" payments (public and private) that it collects. These funds will not be used for any capital investment outside of this program and are not transferable among sub-accounts.

⁵ The Low Impact Development Performance standard states that "Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow." Expressing the standard as a percentage of 2-year flow rates was a reader-friendly substitute for the 1% to 10% frequency of exceedance range for a forested condition. For a pre-developed condition other than forested, it is necessary to express the standard as a frequency of exceedance range because the 8% to 50% of the 2-year flows do not correspond to the target 1% to 10% frequency of exceedance.


Specific Guidelines re: Minimum Requirement 7 Flow Control

1. For all projects participating in a Stormwater Control Transfer Program, the flow control standard to be matched is: “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.”
2. Flow control transfers will be based on land cover on an area basis for each type of land cover (i.e., impervious surfaces, other hard surfaces, lawn/landscape, and pasture).
3. For **replaced (like) surfaces** (such as replacing impervious surfaces with impervious surfaces), permitted jurisdictions **may transfer** required flow control improvements to priority watersheds.
4. All **new surfaces** must have flow control facilities to match the *pre-project* land cover condition at the project site. The **incremental obligation** to provide flow control of the *pre-project* condition to the pre-developed land cover condition **may then be approved** for transfer to the high priority watershed. If a Permittee does not approve the transfer, the project must provide flow control to the pre-developed condition at the project site.
5. Consider converted vegetation areas, and those impervious and other hard surfaces that are effective at conveying runoff: a) when calculating those impervious and other hard surfaces that are proposed for transfer, and b) when using an approved continuous runoff model for producing the pre-project flow durations. See Appendix 1 of the municipal stormwater permits for Western Washington for a definition of effective impervious surface.

MR #7: Flow Control Improvement Transfer Option for projects in non-priority watersheds		
Surface Subject to MR #7	Flow Control Improvement Transfer Option	Flow Control Required at Project Site
New or replaced impervious surface, or converted vegetation areas	Match flow durations within the Flow Control Standard range produced by the pre-project land covers to the pre-developed land cover. Use an equivalent amount and type of pre-project land covers within the High Priority Watershed.	Match flow durations within the Flow Control Standard range to the <u>pre-project</u> land cover condition.

Specific Guidelines re: Minimum Requirement 6 Runoff Treatment

1. For replaced pollution generating surfaces (impervious or pervious surfaces), Permittees may allow transfer of runoff treatment improvements for like surface types (e.g., impervious for impervious) and equivalent acreage to priority watersheds.
2. Where a previously developed site with inadequate treatment controls (e.g., lacks necessary Basic treatment) is redeveloped, the runoff treatment improvement for replaced pollution generating surfaces subject to MR #6 may be transferred.
3. Treatment transfers for in-kind runoff are allowed; i.e., Basic treatment at a facility in a priority watershed substitutes for Basic Treatment at a project site. Enhanced treatment at a facility in a priority watershed substitutes for Enhanced treatment at a project site. Note that Enhanced Treatment facilities constructed in high priority watersheds must serve a land use type designated in the Enhanced Treatment menu. Providing runoff treatment in areas with higher pollution potential (i.e., enhanced treatment or high pollution generating land uses) than the project site is preferred.
4. Runoff treatment transfers to priority watersheds are not allowed for any new pollution generating surfaces at any project site.
5. Where a project site converts non-pollution generating surfaces (e.g., a building) to pollution generating surfaces (e.g., a parking lot), runoff treatment requirements cannot be transferred to a high priority watershed.
6. Redevelopment sites that trigger more stringent runoff treatment than would apply to the site prior to redevelopment (e.g., a change in the use of the site associated with redevelopment converts runoff treatment requirements from basic to enhanced) cannot transfer runoff treatment requirements.
7. Oil control requirements cannot be transferred to another watershed under any circumstance.

MR #6: Runoff Treatment Improvement Transfer Options for projects in non-priority watersheds		
Surface Conversion/Site Condition Subject to MR#6	Runoff Treatment Improvement Transfer Options	Runoff Treatment required at Project Site
Replaced Pollution-Generating Surface	Transfer runoff treatment improvement to constructed facility within High Priority watershed built to provide required type of treatment.	None 

<p>New Pollution-Generating Surface OR Non Pollution-Generating Surface (e.g., roof) → Pollution-Generating Surface (e.g., parking lot)</p>	<p>Runoff treatment improvement transfer to High Priority watershed not allowed.</p>	<p>Provide 100% of necessary runoff treatment.</p>
<p>Redevelopment site triggers more stringent runoff treatment requirements than would apply to the existing project site</p>	<p>Runoff treatment improvement cannot be transferred away from project site.</p>	<p>Provide all necessary runoff treatment at project site.</p>
<p>Site triggers oil control</p>	<p>Runoff treatment improvement cannot be transferred away from project site.</p>	<p>Provide all necessary runoff treatment at project site.</p>

Specific Guidelines re: Minimum Requirement 5 On-Site Stormwater Management

1. Transferring **MR #5: On-site Stormwater Management** is allowed only by using the **LID performance standard option**. The “mandatory list” option is not available under a Stormwater Control Transfer Program.
2. Transfers will be based on land cover (impervious and other hard surfaces, lawn/landscape, and pasture) and **equivalent acreage**.
3. Consider converted vegetation areas, and those impervious and other hard surfaces that are effective at conveying runoff: a) when calculating those impervious and other hard surfaces that are proposed for transfer, and b) when using an approved continuous runoff model for producing the pre-project flow durations. See Appendix 1 of the municipal stormwater permits for Western Washington for a definition of effective impervious surface.
4. **For replaced surfaces, permitted jurisdictions may transfer low impact development improvements to high priority watersheds.**
5. Ideally, LID improvement transfers will occur with the transfer of flow control improvements so that a single project within the priority watershed generates flows that approximate durations ranging from 8% of the 2-year peak through the 50-year peak flow. Where a project transfers its LID improvements **and** flow control improvements to separate locations within a high priority watershed, an equivalent pre-project land cover must have its flow durations controlled to flow durations produced by a pre-developed land cover at both locations. One location controls flows within the LID Performance Standard range; the other controls flows within the range required by Minimum Requirement #7.
6. For new impervious surfaces and converted vegetation areas, the project must control flows at the project site to match flows produced by the pre-project land cover within the range of

1% to 10% frequency of exceedance flow rates predicted for the pre-project land cover. The project may transfer the LID improvement requirement of controlling flows produced by the pre-project land cover to flows produced by the pre-developed land cover within the range of 8% to 50% of the pre-developed 2-year flows.

- 7. Post-Construction Soil Quality and Depth requirements (BMP T5.13) may NOT be transferred and in all cases must be implemented at any project site that triggers MR #5.




MR #5: On-site Stormwater Management		
Surface Conversion/Site Condition	LID Improvement Transfer Option	On-site Stormwater Management Required at Project Site
New or Replaced Impervious Surfaces or Converted Vegetation Areas	Match flow durations within the LID Performance Standard range produced by the pre-project land covers to the pre-developed land cover. Use an equivalent amount and type of pre-project land covers within the High Priority watershed.	Match flow durations within the LID Performance Standard range (1%-10% frequency of exceedance) to the pre-project land cover condition. Implement BMP T5.13 on project site.
NOTE: For all MR #5 transfers, projects must use the LID performance standard.		


REMINDER re: Regional Facilities: *Permittees are reminded that where treatment and flow control requirements apply to replaced hard surfaces at a redevelopment site, they may exempt the project from those requirements on replaced hard surfaces if they have adopted a construction plan and schedule for constructing regional facilities within five years that will serve an area that includes the project site. This option is independent of the stormwater control transfer program discussed above.*




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II. Establishing a Watershed Prioritization for Stormwater Control Transfer Programs in Washington State

The goal of this innovative stormwater management approach is to direct rehabilitation efforts to watersheds (referred to as priority watersheds) where they will provide more immediate environmental benefit. At the same time, the approach prevents further degradation in all watersheds. As individual priority watersheds meet rehabilitation goals, remaining watersheds are prioritized for improvement until all of the municipality's watersheds have been rehabilitated to target levels. 

Flow control and runoff treatment improvements, and LID improvements for replaced impervious surfaces, and in some cases, flow control improvements for new impervious surfaces can be transferred to a high priority watershed within the same municipality. The watershed receiving the improvements ("receiving watershed") must have a higher priority than the watershed from which the improvements are transferred ("sending watershed"). 

Prioritization Analysis Support

As a first step in establishing the Stormwater Control Transfer Program, a Permittee must articulate a clear prioritization goal/focus (e.g., restore beneficial uses). Next, a Permittee must evaluate its watersheds to identify those it considers as priority. The Puget Sound Watershed Characterization Process published by the Washington Department of Ecology is **one analysis that can be used to set initial priorities**⁶. (For more information, see: http://www.ecy.wa.gov/puget_sound/characterization/index.html.) Generally, watersheds that fall into the "Protection" and "Restoration" categories are expected to rank as higher priority than watersheds in the "Conservation" or "Development" categories. 

Ultimately, to implement a program that involves transferring stormwater controls to priority watersheds, more detailed, finer scale information for the municipality's watersheds is needed to refine the categorization of watersheds. Pertinent information includes: 



- Existing hydrology.
- Existing water quality conditions.
- Habitat conditions.
- Presence of sensitive species (e.g., salmonids).
- Land Use – density/intensity, full build-out projections, prevalence of pollution-generating surfaces.
- Watershed boundaries and associated drainages.
- Historical knowledge.

⁶ The Puget Sound Watershed Characterization output should not be relied upon as the only line of information to designate priorities. Local jurisdictions need to verify drainage/watershed area delineations and may need to perform in-stream assessments to better refine the analysis.

Permittees must clearly identify data resources used to prioritize among watersheds. 

Prioritization Principles to Consider

As part of the prioritization analysis, Permittees must consider the following principles for establishing priority watersheds:

1. Give higher priority to watersheds with low to moderate levels of impairment (e.g., as assessed via BIBI scores, habitat surveys). These watersheds are expected to respond more quickly to rehabilitation efforts and thus provide more immediate water quality benefit. This focus allows selected watersheds to be rehabilitated in a shorter amount of time as compared to spreading rehabilitation efforts equally among all of the municipality's watersheds. 
2. Give higher priority to watersheds where the municipality can exert greater influence. For example, assign higher  priority to watersheds that have most of their associated drainage area within the municipality. However, if the municipality coordinates a priority watershed identification and rehabilitation strategy approach with a neighboring municipality, a shared watershed may be scored higher.
3. Give higher priority to watersheds in which stormwater management improvements are expected to accelerate environmental improvement.
4. Give higher priority to watersheds where regional rehabilitation efforts are also focused. Certain watersheds may be identified as important under other planning processes such as WRIA plans, Salmon Recovery Plans, MTCA/Superfund cleanups, Endangered Species Act listings and critical habitat designations. Watersheds with TMDLs may warrant higher priority (e.g., for receiving treatment transfers if the treatment types used will address pollutant(s) of concern in the TMDL, or for flow and LID transfers to address low B-IBI scores associated with hydrologic conditions).
5. In all cases, seek input from federal (US Fish and Wildlife, NOAA fisheries), tribal, and state (Fish and Wildlife, Ecology, Natural Resources) natural resources agencies. Those agencies may have data pertinent to establishing priorities, and informed opinions about the relative importance of watersheds.





III. Considerations for Developing an Effectiveness Monitoring Plan for Stormwater Control Transfer programs

Background

The Washington State Pollution Control Hearings Board ruled (PCHB No. 10-013) that a monitoring program is necessary to confirm the equivalency of a stormwater control transfer approach concerning compliance with default stormwater management requirements in the Phase I Municipal Stormwater Permit. Ecology supports the concept of establishing a monitoring program to document effectiveness of a Stormwater Control Transfer Program in improving water quality and/or quantity conditions in a targeted, priority watershed and offers the following guidance for establishing such a program.

Overview



The purpose of a monitoring plan is to measure the effectiveness of improvements in the priority watershed(s) where stormwater facilities have been constructed under a Stormwater Control Transfer Program. The monitoring plan shall track stream water quality and/or hydrologic changes, depending on the type of transfers approved in the program. Monitoring in priority watersheds in advance of facilities' construction is necessary to establish a baseline condition. Repeat the monitoring at some infrequent interval (i.e., annually is probably not necessary) to track cumulative improvements over a number of years, and after significant increments of program implementation.

Case #1: Stormwater control transfer program includes low impact development BMPs as well as flow control facilities to improve all stream flow conditions.

In this case, install continuous recording stream flow gages to record sufficient flow data over a period of at least one year to establish a baseline. Two or more years of continuous streamflow data prior to initiating construction of flow control BMPs in the priority watershed is preferred. The more data available to establish the baseline, the more likely changes in stream flows as a result of BMP implementation will be discernible through computation of various hydrologic metrics. (If the watershed under study includes upgradient areas with uncontrolled inputs, then gages upstream and immediately downstream of the transfer area in the priority watershed will be needed.) Repeat the monitoring in a future year(s) after the Stormwater Control Transfer Program is well under way, and a significant portion of the priority watershed has been retrofitted with flow control BMPs.

Case #2: Stormwater Control Transfer Program is restricted to providing retention/detention ponds to meet Minimum Requirement #7 (Flow Control).

The continuous streamflow monitoring described in Case #1 is the best option. However, municipalities can also consider reducing the monitoring to focus on capturing stream flows during storm events. Rainfall and corresponding flow gage-based monitoring should target a number of storms, covering all seasons and a range of storm sizes to define a baseline of stream responses to a variety of events. Repeat the monitoring in a future year after the Stormwater Control Transfer Program is well under way will provide data used to compare the pre- and post-project stream responses. The more pre- and post-data collected, the easier it will be to discern changes in stream flows.

Case #3: Stormwater control transfer program is restricted to transferring runoff treatment improvements.

In this case, collection of in-stream samples for targeted pollutants (Total Suspended Solids (TSS), dissolved metals, and/or phosphorus) will establish a baseline. Repeat the sample collection after the stormwater control transfer program is under way. Composite sampling (flow- or time-weighted) should occur during multiple storm events to establish the baseline and evaluate future conditions. A composite sample is made up of multiple aliquots taken over a number of hours of elevated stream flows - indicating the influence of surface runoff.

Alternatively, if the transfer program targets one or a limited number of discharge locations in the priority watershed, establish a monitoring program to estimate a reduction in the annual loading of targeted pollutants from those discharges. TSS is the target for basic treatment. Dissolved metals and TSS are the targets for Enhanced Treatment. Total Phosphorus and TSS are the targets for Phosphorus Treatment. The outfall monitoring programs developed by Phase I permittees for the 2007 municipal stormwater permits provide a guide for this type of monitoring and loading estimations.

IV. Stormwater Facility Transfer Capacity Credits and Tracking

Purpose

This document describes how a municipality implementing a Stormwater Control Transfer Program can:

- Track the stormwater “improvement transfer” obligation for each development project that proposes to either construct its stormwater obligation in another location (equivalent facility), or purchase capacity in a regional stormwater facility.
- Determine the total and available capacity credits of each facility constructed to provide stormwater treatment, flow control, or LID capacity in a priority watershed.

Determining a Project’s Stormwater Improvement Transfer Obligation

Flow Control, Minimum Requirement #7: The transfer obligation of a development/redevelopment project participating in a Stormwater Control Transfer Program is to provide flow control facilities fully meeting Minimum Requirement #7 of Appendix 1 of the Phase I or western Washington Phase II Municipal Stormwater Permit for areas equivalent to the pre-project land cover of the development/redevelopment project site. The transfer obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:

- Impervious Area
- Other hard surfaces
- Lawn/landscape
- Pasture



NOTE: Projects that convert a forested land cover⁷ to any other post-developed land cover will not make use of the Stormwater Control Transfer Program because the flow durations required to be matched at the project site are those of the forested condition.



Transfer obligation areas will be tracked by the Permittee to the nearest one-tenth acre. For example, an applicant proposing a 5-acre re-development project having a pre-project (existing) land cover of 1.2 acres of effective impervious area (EIA), 3.3 acres of pasture, and 0.5 acres of forest would provide flow control at the project site to match flow durations produced by the pre-project (existing) land cover AND either: 1) provide flow control facilities in a high priority watershed (designated by the municipality) to match flow durations of a pre-project land cover (1.2 acres of EIA and 3.3 acres of pasture) to flow durations produced by 4.5 acres of the pre-developed (generally, forested) land cover; or (2) to purchase capacity associated with



⁷ Where reasonable historic information indicates that the site was prairie prior to settlement, project applicants model land cover as “pasture” and use that as the land cover condition to be matched.

equivalent areas of EIA and pasture in an already constructed facility in a high priority watershed.

Runoff Treatment, Minimum Requirement #6: The project proponent may transfer the runoff treatment improvement obligation to provide stormwater treatment for replaced pollution-generating surfaces that qualify per the guidelines. Note that Enhanced Treatment facilities constructed to support this program must serve a land use type designated in the Enhanced Treatment menu. **Oil control requirements cannot be transferred to another watershed.** The Transfer Obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:



- Pollution generating impervious surface (PGIS)
- Non-pollution generating impervious surface (Non-PGIS that mixes with PGIS)
- Pollution-generating pervious surface (PGPS)

Transfer obligation areas will be tracked to the nearest one-tenth acre.

On-site Stormwater Management (LID) Requirement #5: The transfer obligation of a development/redevelopment project is to provide facilities fully meeting the LID Performance Standard in Appendix 1 of the western Washington Municipal Stormwater Permits for areas equivalent to the pre-project land cover of the development/redevelopment project site. The transfer obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:

- Impervious Area
- Other hard surfaces
- Lawn/landscape
- Pasture

Conversion of pre-project forest on the development/redevelopment site to a post-developed land cover is excluded from consideration because development/redevelopment projects must take pre-project forested area into consideration when matching flow durations within the 1% to 10% frequency of exceedance flow rate range at the original project site.

The transfer obligation areas will be tracked to the nearest one-tenth acre. For example, a participating 5-acre re-development project would be required to provide flow control/reduction BMPs at the project site to match flow durations within the 1% to 10% frequency of exceedance range that are produced by the pre-project (existing) land cover of 1.2 acres of effective impervious area (EIA), 3.3 acres of pasture, and 0.5 acres of forest. Additionally the applicant would either: (1) provide flow control facilities in a high priority watershed (designated by the municipality) to match flow durations of a pre-project land cover (1.2 acres of EIA and 3.3 acres of pasture) to flow durations produced by 4.5 acres of the pre-developed (generally, forested) land cover; or (2) to purchase capacity associated with equivalent areas of EIA and pasture in an already constructed BMPs/facility in a high priority watershed.

Tracking/Storing Stormwater Obligation Transfers

A. Project Transfer Obligation Tables

The project applicant will submit, and the municipality shall retain, tables for each development/redevelopment project proposing a stormwater transfer. The table will identify whether and to what extent surfaces are being managed on-site, and what surfaces are proposed for transfer. A useable tracking table for each Minimum Requirement is included as **Tables 1A, 1B, and 1C**. The following information shall also be tracked by the municipality:

Project ID: a unique ID attached to the project site by the municipality.

Project Name: is assigned to development projects as their applications are accepted.

Date:

Address:

Parcel #:

Watershed:

Date of Complete Application:

Name of Facility to which obligation was transferred (completed by municipality):

A copy of the above information and each applicable tracking table shall be retained with the project file. A second copy shall be placed within the file for the facility (regional or equivalent) in which capacity was purchased by that project.

B. Regional Facility Tracking

The municipality will maintain a table for each regional facility that documents:

- Facility ID.
- Name of Priority Watershed being served.
- Built Capacity in terms of acres of impervious surface, other hard surface, pollution-generating impervious surface (for tracking MR #6 transfers only), pasture, and lawn/landscape areas that it serves.
- Used Capacity in terms of acres of the same land covers noted above.
- Remaining Capacity in terms of acres of the same land covers noted above.

A regional facility tracking table is included as **Table 2**. The regional facility table need only track acreages for the Minimum Requirement(s) which it addresses. The municipality shall update the table upon each purchase of credit by development projects. Credits can be purchased by projects in a lower priority watershed, and by projects within the drainage area of the regional facility. Whenever a development or redevelopment project occurs within the drainage area to the regional facility, the new effective impervious and other hard surfaces, and converted vegetation areas draining to that facility subtract from its available capacity in regard to credits for Minimum Requirements #5 and #7. Also, any new pollution-generating surfaces from projects within its drainage area, subtract from the available treatment capacity of a regional treatment facility.

In addition, for each regional facility, the municipality shall maintain a summary sheet that identifies each project that has purchased capacity and the acreage amount of each land cover type that was purchased by each project. Land cover totals in this summary sheet shall agree with the Used Capacity totals in **Table 2**. An example is attached as **Table 3**.

Phase I or Phase II municipal stormwater permittees shall submit as an attachment to their annual reports the regional facility tracking tables that are updated to at least the calendar year covered by the annual report.

C. Equivalent Facility Tracking

In a priority watershed, a municipality may permit a project applicant to construct a facility which only serves an area that matches a development project's stormwater improvement obligation. In this case, a file shall be created for the Equivalent Facility that documents the area served and identifies the development project which constructed the facility to meet its stormwater transfer obligation. These files shall be retained by the municipality and made available to Ecology upon request.

Allowable Regional and Equivalent Facilities

A. Flow Control

There are several types of facilities that can serve either as equivalent facilities or as banks with acreage credits that can be purchased by development projects to meet their stormwater transfer obligation. The flow control facility types include:

- Detention Basins
- Retention Basins (Infiltration for flow control)
- Combination Retention/Detention Basins
- Full Dispersion
- Existing facility retrofits
- Permeable Pavements
- Bioretention Facilities
- Reforestation of impervious area, pasture, and/or lawn landscaping on land protected by covenant or easement.

Each of these categories except reforestation has design criteria specified in the *Stormwater Management Manual for Western Washington (SWMMWW) as amended in 2014*. New facilities shall be designed to meet the historic (generally forested) land cover condition for the areas that they serve. Bioretention and Permeable Pavements may be used to fully achieve the flow control requirement (MR #7) as predicted by an approved continuous runoff model, or they may be used to reduce the size of downgradient flow control facilities serving an area that includes them. Where a detention facility is constructed, use **procedure 1** below to determine the land cover acreage that can be assigned to the facility and is available for purchase by project applicants. Where an existing detention pond is being expanded to support the Stormwater Control Transfer

Program, follow **procedure 2** below to determine the land cover acreage that can be assigned and be available for purchase.

B. Runoff Treatment

There are several types of facilities that can serve either as equivalent facilities or as banks with acreage credits that can be purchased by development projects to meet their stormwater transfer obligation. The runoff treatment facility type must either be listed in Chapter 2 of Volume V of the *SWMMWW*, or on the TAPE website (<http://www.wastormwatercenter.org/tape/>) as approved for General Use. Basic Treatment facilities can only receive transfers from sites that require only Basic Treatment. Enhanced Treatment facilities can receive transfers from sites that require Basic or Enhanced Treatment.

C. On-Site (LID)

Only LID types that are listed in Chapter 5 of Volume V of the *SWMMWW* may be used to meet the LID Performance Standard, or to help reduce the size of a detention or retention facility built to meet MR #7.

Calculating Capacity (in terms of acreage) of Regional or Equivalent Facilities in Priority Watersheds

A. Detention/Retention Facilities

Permittees will use the procedures detailed below to calculate the Minimum Requirement #7 (flow control) capacity credit earned by regional or equivalent stormwater facilities built in priority watersheds. The procedure uses the Western Washington Hydrology Model (WWHM) to iteratively test the amount of impervious area, lawn, or pasture that is fully controlled to historical conditions by a proposed pond. Recognizing that a new facility may not fully control 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 pre-developed flow control duration standard. The method can also be used to aid design of a simple flow control structure. The step-by-step procedures are as follows:

Procedure 1: Pond Sizing Method for Determining Area Credits in Cases Where There is No 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, reduce the pond size and adjust orifices until just meeting the standard. The entire drainage area is the capacity credit.

Case 2: If the pond cannot meet the flow duration curve, begin reducing the drainage area that was entered into the WWM (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 capacity 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 capacity credit. If the standpipe is not adequate, increase the diameter designated in the WWHM, 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 capacity credit (in Case 2) can pass through the orifices and standpipe overflow and still meet the flow duration standard. If not, reduce the drainage area until it does. This is the adjusted capacity credit.

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




Procedure 2: 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 controlled (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 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 controlled 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 the capacity credit. 

B. LID Facilities

LID projects built in priority watersheds to support a Stormwater Control Transfer Program must be structural (i.e., permeable pavement or bioretention facilities). If the pavement or bioretention facility fully infiltrates the runoff file as demonstrated by using the WWHM, the entire area draining to it is considered the capacity credit for flow control (MR #7) and LID (MR #5). If the permeable pavement fully infiltrates and is underlain by native soils that meet the Soil Suitability Criteria, the area draining to it is considered the capacity credit for treatment (MR #6).

C. Reforestation


These are projects that directly convert effective impervious area, landscaped area or maintained pasture in the priority watershed to native vegetation that will develop into a fully evergreen forested condition. The native vegetation area must be protected with a conservation covenant, or with a conservation easement granted to the Permittee in cases where the Permittee does not own the land. In this case, the Capacity Credit is the totals of effective impervious area, lawn/landscaping, and pasture that are converted to native vegetation.

The area undergoing reforestation must meet the following criteria:

- Existing impervious, lawn/landscaped, and pasture areas that are intended for conversion back to native pre-developed conditions must meet the soil quality and depth requirements of BMP T5.13 in Volume V of the *SWMMWW*.
- The area must be planted with native vegetation, including evergreen trees. For further guidelines, see the Washington State Department of Transportation (WSDOT) *Roadside Manual*. Refer to Sections 800 and 810 in regard to design, procedures, and other recommendations pertinent to Accelerated Climax Community Development.
- The area must be permanently protected from development through a conservation easement or some other legal covenant that requires it to remain in native vegetation.

Reforested areas are considered stormwater facilities and should be mapped and maintained.

D. Runoff Treatment BMPs

Regional or Equivalent runoff treatment facilities that are fully sized for the area draining to them - as determined using the applicable design criteria in the *SWMMWW* in combination with the water quality design flow rate or volume - use the drainage area characteristics (impervious area, lawn area, pasture area) as the capacity credit. If the space available for a runoff treatment facility is not adequate to fully size the facility for its tributary drainage area, an upstream flow splitter may be used to bypass flows above the flow rate for which it meets design criteria. In that case, the capacity credit is restricted to that theoretical area for which the runoff treatment facility would be fully sized a etermined using an approved continuous runoff model.

Note: Pond facilities (wet ponds, treatment wetlands, wet vaults) must be fully sized for the drainage area. Flow splitters cannot be used.

Tables

Table 1A: Minimum Requirement #7

	Acres (to the tenth)
1. Stormwater Control Improvement Transfer to Facility in Priority Watershed	
a. Impervious to Forest Debit	
b. Other Hard Surface to Forest Debit	
c. Lawn/landscape to Forest Debit	
d. Pasture to Forest Debit	
2. Stormwater Control Provided at Project Site	
a. Impervious to Existing Forest	
b. Impervious to Existing Pasture	
c. Impervious to Existing Lawn/Landscape	
d. Other hard surface to Existing Forest	
e. Other hard surface to Existing Pasture	
f. Other hard surface to Existing Lawn/landscape	
g. Lawn/landscape to Existing Forest	
h. Lawn/landscape to Existing Pasture	
i. Pasture to Existing Forest	
3. Stormwater Control Provided Only at Facility in Priority Watershed	
a. Impervious redeveloped as Impervious Debit	
b. Other Hard Surface redeveloped as Other Hard Surface Debit	
c. Pasture redeveloped as Pasture Debit	
d. Lawn redeveloped as Lawn Debit	

Notes:

1a = 3a

1b = 3b

1c = 2c + 2f + 3d

1d = 2b + 2e + 2h + 3c

Table 1B: Minimum Requirement #6

	Acres (to the tenth)
Proposed Transfers of Replaced Surfaces	
PGIS	
Non-PGIS that mixes with PGIS	
Pasture	
Lawn/landscaping	
Replaced Surfaces Treated on the Project Site	
PGIS	
Non-PGIS that mixes with PGIS	
Pasture	
Lawn/landscaping	
New Surfaces and Non-PGIS converted to PGIS (both must be treated on the Project Site)	
PGIS	
Non-PGIS that mixes with PGIS	
Pasture	
Lawn	

Table 1C: Minimum Requirement #5

	Acres (to the tenth)
1. Stormwater Control Improvement Transfer to Facility in Priority Watershed	
a. Impervious to Forest Debit	
b. Other Hard Surface to Forest Debit	
c. Lawn/landscape to Forest Debit	
d. Pasture to Forest Debit	
2. Stormwater Control Provided at Project Site	
a. Impervious to Existing Forest	
b. Impervious to Existing Pasture	
c. Impervious to Existing Lawn/Landscape	
d. Other hard surface to Existing Forest	
e. Other hard surface to Existing Pasture	
f. Other hard surface to Existing Lawn/landscape	
g. Lawn/landscape to Existing Forest	
h. Lawn/landscape to Existing Pasture	
i. Pasture to Existing Forest	

3. Stormwater Control Provided Only at Facility in Priority Watershed	
a. Impervious redeveloped as Impervious Debit	
b. Other Hard Surface redeveloped as Other Hard Surface Debit	
c. Pasture redeveloped as Pasture Debit	
d. Lawn redeveloped as Lawn Debit	

Notes:

1a = 3a

1b = 3b

1c = 2c + 2f + 3d

1d = 2b + 2e + 2h + 3c

Table 2: Regional Facility Tracking Table

Facility ID:			
Name of Priority Basin Location:			
	Total Capacity (X.X acres)	Credits Purchased (X.X acres)	Remaining Capacity (X.X acres)
MR #7			
Impervious			
Other hard surface			
Lawn/landscape			
Pasture			
MR #6			
PGHS			
PGPS			
MR #5			
Impervious			
Other hard surface			
Lawn/landscape			
Pasture			

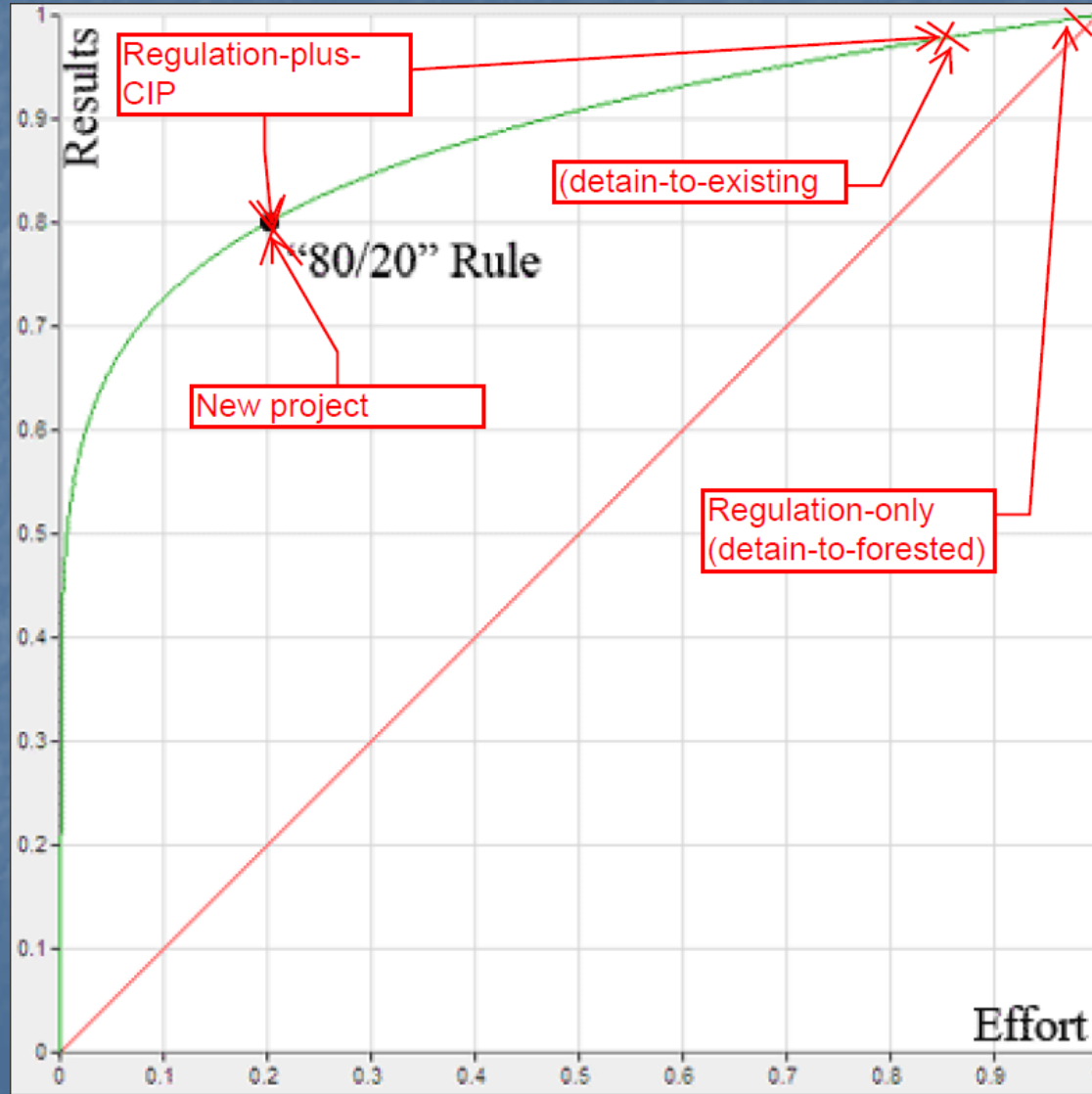
Table 3: Example Project Identification Table for a Regional Facility

Project Name and ID No.	Impervious (X.X acres)	Other Hard Surface (X.X acres)	Lawn/landscape (X.X acres)	Pasture (X.X acres)	PGHS (X.X acres)	PGPS (X.X acres)
Elysian Fields; ID No. 123						
Scab Lands Estates ID No. 456						
Etc.						

CLARK COUNTY WATERSHED MANAGEMENT:

Comparison of "Regulation-only" vs.
county's "Regulation plus CIP" watershed
management strategy

"REGULATION-ONLY" VS. "REGULATION PLUS CIP"



"REGULATION-ONLY" VS. "REGULATION PLUS CIP"

a. "Regulation-only"

The screenshot displays the WWHM3 software interface. The main window is titled "WWHM3 Run 3" and contains a menu bar (File, Edit, View, Help) and a toolbar with various icons. The interface is divided into several panels:

- SCENARIOS:** Includes a "Run Scenario" button and a list of scenarios: "Predeveloped" (unchecked) and "Mitigated" (checked).
- ELEMENTS:** A grid of icons representing different land use and infrastructure elements.
- Move Elements:** A set of directional arrows for moving elements on the schematic.
- Schematic:** A central grid showing the layout of the subbasin. It includes a "NEWDEV" element at the top, a "Pond" element in the middle, and an "A11" element at the bottom. Lines connect these elements, indicating flow paths.
- TD1 Mitigated:** A detailed configuration panel for the selected subbasin. It includes:
 - Subbasin Name:** "NEWDEV".
 - Designate as Bypass for POC:** A checkbox that is currently unchecked.
 - Flows To:** Three fields: "Surface" (ain to forested pond), "Interflow" (ain to forested pond), and "Groundwater" (empty).
 - Area in Basin:** A section with a "Show Only Selected" checkbox.
 - Available Pervious:** A list of pervious land use types with their respective acreages. The "Mitigated" scenario shows 3 acres of pervious area.
 - Available Impervious:** A list of impervious land use types with their respective acreages. The "Mitigated" scenario shows 17 acres of impervious area.
 - Totals:** Pervious Total: 3 Acres; Impervious Total: 17 Acres; Basin Total: 20 Acres.
 - Select By:** A dropdown menu set to "GO".

The status bar at the bottom right of the window shows the date and time: 8/10/2010 8:48 AM.

"REGULATION-ONLY" VS. "REGULATION PLUS CIP"

b. "Regulation plus CIP"

The screenshot displays the SWMM5 software interface. The main window shows a map view of a subbasin with various land use elements and flow paths. The 'Subbasin Properties' dialog is open, showing the following configuration:

- Subbasin Name:** REGDEV
- Designate as Basin to HSD:**
- Flows To:** Surface: Contain to existing pond; Inflow: Contain to existing pond; Groundwater:
- Area in Basin:** Show Only Selected
- Available Pervious:**

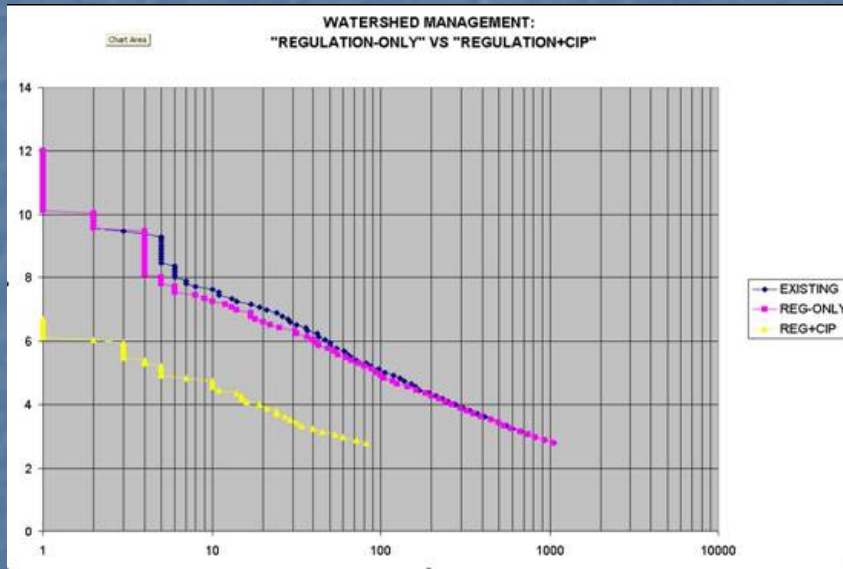
<input type="checkbox"/> 003 Lawn_Steep	0
<input type="checkbox"/> 003 Forest_Flat	0
<input type="checkbox"/> 003 Forest_Mod	0
<input type="checkbox"/> 003 Forest_Steep	0
<input type="checkbox"/> 003 Field_Flat	0
<input type="checkbox"/> 003 Field_Mod	0
<input type="checkbox"/> 003 Field_Steep	0
<input checked="" type="checkbox"/> 003 Lawn_Flat	1
<input type="checkbox"/> 003 Lawn_Mod	0
<input type="checkbox"/> 003 Lawn_Steep	0
<input type="checkbox"/> 004 Forest_Flat	0
<input type="checkbox"/> 004 Forest_Mod	0
<input type="checkbox"/> 004 Forest_Steep	0
<input type="checkbox"/> 004 Field_Flat	0
<input type="checkbox"/> 004 Field_Mod	0
<input type="checkbox"/> 004 Field_Steep	0
<input type="checkbox"/> 004 Lawn_Flat	0
<input type="checkbox"/> 004 Lawn_Mod	0
- Available Impervious:**

<input checked="" type="checkbox"/> ROOF_FLAT	17
<input type="checkbox"/> ROOF_SAND	0
<input type="checkbox"/> ROOF_STEEP	0
<input type="checkbox"/> ROOF_TOPFLAT	0
<input type="checkbox"/> DRIVEWAY_FLAT	0
<input type="checkbox"/> DRIVEWAY_SAND	0
<input type="checkbox"/> DRIVEWAY_STEEP	0
<input type="checkbox"/> SIDEWALK_FLAT	0
<input type="checkbox"/> SIDEWALK_SAND	0
<input type="checkbox"/> SIDEWALK_STEEP	0
<input type="checkbox"/> DRIVEWAY_FLAT	0
<input type="checkbox"/> DRIVEWAY_SAND	0
<input type="checkbox"/> DRIVEWAY_STEEP	0
<input type="checkbox"/> PARKING_FLAT	0
<input type="checkbox"/> PARKING_SAND	0
<input type="checkbox"/> PARKING_STEEP	0
<input type="checkbox"/> POND	0
- Summary:** Pervious Total: Acres; Impervious Total: Acres; Basin Total: Acres
- Buttons:** Cancel, OK, Select By:

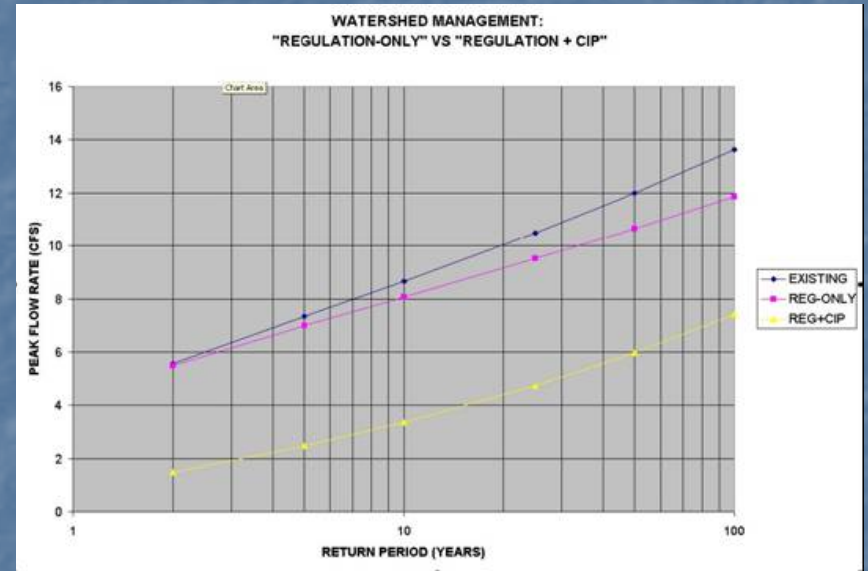
The status bar at the bottom right shows the date and time: 8/10/2010 9:43 AM.

"REGULATION-ONLY" VS. "REGULATION PLUS CIP"

Results:

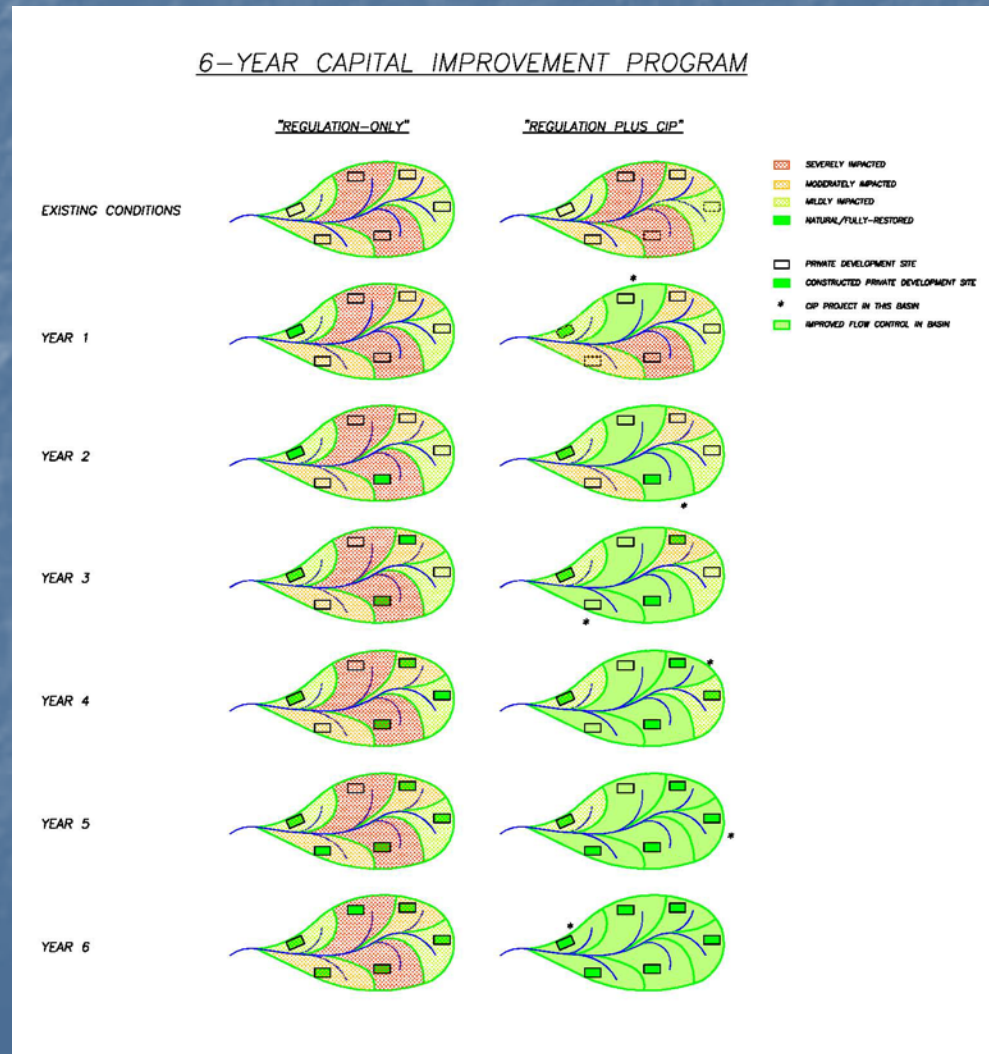


FLOW-DURATION



FLOW-FREQUENCY

"REGULATION-ONLY" VS. "REGULATION PLUS CIP" 6 year CIP period



"REGULATION-ONLY" VS. "REGULATION PLUS CIP"

Reasons for improved performance

- The recent increases in stormwater detention volumes are used to make flow control improvements in key, targeted watershed locations rather than randomly (i.e. wherever new development occurs)
- The *differential* detention volume produces only marginally improved flow control for the "regulation-only" alternative("80-20 rule", "pareto principle"); those same storage volumes are utilized more often and more effectively when included in targeted watershed improvement projects
- The WWHM model set up and "passing" criteria is fairly conservative; because of this, facilities designed to "match" existing peak flow and duration may actually produce a significant improvement over existing flow conditions over much of the stream's hydrologic regime. This allows the county's approach to make significant flow control improvements in two stream locations rather than one
- By developing Infiltration Zone mapping, and emphasizing an infiltration-retention-detention hierarchy for stormwater runoff, the county's selected projects can provide better flow control than a similarly sized project in many new development locations
- In marginal infiltration areas, but where flood risks are shown to be minimal, *public* projects that utilize infiltration or retention of stormwater runoff can be built; a regulation-only approach would require the use of detention ponds for private developments in those same locations.
- A "regulation-only" approach may be unnecessarily over-controlling flows releasing to stream channels that have already adjusted over a long period to a pasture condition; this is common in much of the agricultural area of Clark County.

"REGULATION-ONLY" VS. "REGULATION PLUS CIP" Additional Environmental Benefits

The following additional benefits may also result from sustained use of the county's watershed management strategy over time:

- Significant watershed improvements are constructed concurrently with new development
- In addition to improved flow control, the county's strategy provides significant additional watershed and environmental benefits
- The county's offsite flow control mitigation projects can include additional *water quality* treatment components at little additional cost
- The development of "multi-use" projects, and cost-sharing between county departments can leverage Stormwater CIP funds to improve the cost-effectiveness of the Stormwater CIP still further
- The county's holistic watershed management approach improves the "sustainability" of the county's water resources and natural resources
- The cost-effectiveness of the county strategy also improves the *economic* sustainability of the county's water resources, salmon-recovery, and environmental programs.



July 28, 2015

Comments submitted via email to:

SWPermitComments@ecy.wa.gov

Re: Draft Stormwater Control Transfer Program

I. Introduction

These comments are provided on behalf of Puget Soundkeeper Alliance. Thank you for the opportunity to comment and for the extension of the comment deadline.

Overall, we are disappointed and troubled by the proposed guidance, and believe that both the fundamental premise and the specific execution of the guidance are deeply flawed. Of particular concern is Ecology's willingness to relax the hard-fought requirement to impose low-impact development ("LID") in exchange for an ecologically unsupported and readily abused out-of-basin transfer program. We predict that the ultimate outcome will be cost savings for developers and regulated jurisdictions, and an overall reduction in environmental benefit for waters protected by the Clean Water Act ("CWA"). While we appreciate the desire to fund capital retrofit programs, and believe them to be a crucial element of a water quality recovery strategy, we strongly disagree that the way to do so is by relaxing practicable and achievable standards that provide improvements to water quality.

II. Maintenance of Degraded Status Quo Causes Additional Environmental Harm

The concept of stormwater transfer arises from a number of fundamentally flawed premises. The first of these premises is that the maintenance of the status quo at a developed site avoids new environmental harm. *See* Draft at 9 ("the approach prevents further degradation in all watersheds."). This is a product of an engineering mindset, rather than one grounded in the actual response of the environment to disrupted flow regimes. This precise question was litigated in Rosemere Neighborhood Association's challenge to Clark County's flawed stormwater transfer system, which bears a lot of similarity to the draft guidance. *See Rosemere Neighborhood Association v. Dept. of Ecology*, 201 WL 62921 (Wash. PCHB Jan 5, 2011). Rosemere submitted expert testimony on the effects of maintaining the status quo where flow regimes have been altered. Dr. Derek Booth, a national authority on flow control and stormwater impacts, offered the following testimony to the PCHB:

Contrary to the County's apparent perspective, their flow control standard does not "preserve" the status quo. As noted above, damage 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) does not freeze the environmental conditions in place, but allows for ongoing, cumulative degradation of the stream.

See Direct Testimony of Dr. Derek Booth, at ¶ 26 (included as an appendix to this letter).

In its decision finding the Clark County program unlawful, the PCHB cited Dr. Booth's testimony in this regard extensively and found: "The weight of expert testimony recognizes that streams, once degraded, can continue to degrade. *Plainly the premise that allowing developers to maintain the flow 'status quo' preserves the environmental status quo is flawed.* To the contrary, maintaining existing disrupted conditions perpetuates and amplifies environmental damage. This is simply inconsistent with the Clean Water Act's requirement to protect and restore waters using 'practicable' approaches to stormwater control." *Rosemere, supra* at ¶ 28 (emphasis added). Given the Board's sweeping rejection of this principle, Ecology's recitation of it in this guidance is unfathomable.

III. Both Retrofits and Improvements During New Development Are Required

The premise of the transfer program is that retrofitting higher priority issues can be a better use of limited resources than controlling runoff from new development in lower priority areas. But the CWA and its implementing regulations recognize that there is a need for both approaches. A century or more of development has resulted in a profoundly altered landscape and corresponding damage to water resources. By focusing on new and redevelopment controls, the CWA recognizes that each redevelopment project is an opportunity to turn this legacy around and, gradually, restore damaged waters. At the same time, priority retrofits will help speed the process along and should be maximized. In other words, both redevelopment and retrofits are critical strategies in meeting the CWA's goals. The transfer concept sidesteps this fundamental element of the statute and trades one for the other. A redevelopment project that fails to contribute to improved water quality simply perpetuates the existing degradation for another 50-100 years.

An unstated assumption of the transfer program is that achieving flow control standards, pollution control, and LID goals is impracticable, and that developers need relief from an onerous regulatory burden. Given the level of political capital that Ecology has invested in these requirements, which have withstood repeated political attacks and lawsuits, its decision to unilaterally retreat and offer a relaxation of the requirements is mystifying. The

flow control standard has now been in place for many years and has been used in countless projects. What specific evidence is Ecology relying on that it is too expensive or that it is suddenly no longer “practicable” in certain places, warranting relaxation? During the various legal challenges to the flow control standard and LID, such claims were often made but never substantiated by proponents.

IV. LID Standards Should Not be Waived

Perhaps the most disappointing element of the transfer program is Ecology’s willingness to allow the Permits’ LID requirements to be transferred. In other words, developers would be allowed to build new projects that do not use LID but instead fund flow control projects in another place. As Ecology has repeatedly found, LID is practicable and provides extensive benefits to receiving waters and the environment. The PCHB agreed in 2008 that LID should be a mandatory feature of the Permits. Ecology conducted years of technical and policy input to develop the current LID standard, which is far more modest than Soundkeeper advocated. The inclusion of LID requirements in the current version of the Permits were sustained by the PCHB. *Pierce County v. Dept. of Ecology*, 2014 WL 1262544 (Wash. PCHB March 21, 2014) (LID provisions “are consistent with our prior rulings, constitute AKART and MEP, and advance the protection of beneficial uses and compliance with water quality standards”). Having finally, after years of effort, imposed a modest LID requirement in the Permits, Ecology cannot now relax it by offering speculative offsite transfer of LID benefits.

Moreover, the guidance is unclear on whether LID-based requirements under other provisions under the Permits are also relaxed. Specifically, S.5.c.5.b of the Permits requires adoption of jurisdiction-wide LID requirements that “shall” make LID the “preferred and commonly-used approach” to site development. It is unclear how the program could excuse the LID requirements of Appendix 1 but leave this requirement in place.

V. Ecology Lacks Authority to Authorize Out of Basin Transfers

The authority for this program appears to derive from Appendix 1, Section 7 of the Permits. What is surprising is that none of the features of Section 7 are included in the Guidance. Most notably, Section 7 appears to contemplate a basin planning process that would allow alteration of standards based on the specific needs *of the basin*. Ecology’s proposal, in contrast, is to transfer stormwater benefits out of the basin altogether, something that does not even appear to be within the contemplation of Section 7 at all. Moreover, this provision includes a number of highly specific requirements that are not included in the Guidance. For example, “Basin planning will require the use of continuous runoff model and field work to verify and support the models.” App. 1 at 32. Basin plans must be formally adopted by all jurisdictions, as well as Ecology, and all ordinances or regulations in the plan “must be in effect.” *Id.* These requirements—intended to ensure that Section 7 alternatives do not yield lesser environmental benefits—are absent from the guidance. In the challenge to Clark

County's alternative plan, the PCHB found that the County's transfer system was not based on basin planning or anything that looked like basin planning, further undermining its legality. Order, at ¶ 19.

In other words, it appears that Ecology lacks authority to relax standards in the Permits in exchange for out-of-basin transfer of benefits. In the absence of a valid permit modification, failure to comply with Permit standards would be a violation of the Permits. Clark County paid a heavy price for adopting a similar transfer approach when its alternative program was set aside by the PCHB, and Clark County was ultimately liable for \$3.5 million in penalties and fees for violating the CWA.

VI. Environmental Justice Considerations

We also have significant concerns that Ecology has failed to consider the impact of this guidance on environmental justice and communities that suffer from reduced water quality and compromised fishing and other uses. The goal of the CWA is the protection and recovery of beneficial uses, which in many places regulated by the Permits includes fishing and contact recreation. In this guidance, Ecology appears to be endorsing the idea that the most disrupted and polluted waters of the region can remain that way while we focus on protecting the higher quality watersheds. There are significant concerns that this means a transfer of pollution control benefits from economically and politically disadvantaged communities to more advantaged ones (where elected officials can steer environmental restoration projects where they will benefit wealthier or more powerful constituents). Ecology needs to analyze and address whether the claimed benefits of the proposal will come at a cost to disadvantaged communities, in violation of environmental justice principles.

VII. Significant Risk of "Double Counting" Retrofit Projects

A further critical problem with the concept of stormwater transfer is that jurisdictions will use the transfer process to fund retrofit projects that would have happened anyway. Appellants in the *Rosemere* case were able to demonstrate, through painstaking development of the specific facts, that this was occurring with Clark County's transfer program. The PCHB agreed that this was a critical flaw. Order, at ¶ 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.").

It is plain that Ecology has not figured out how to avoid this problem here. Part of the problem lies in Ecology's failure to set any meaningful metric for retrofits for Phase I permittees, or any obligation at all for Phase II permittees. As such, there doesn't appear to be any mechanism to ensure that the "receiving" projects would not have happened anyway, nor

does Ecology propose one in the Guidance. As such, the program becomes simply a way for permittees to fund projects that they would like to have done (and which they will presumably trumpet as providing benefits for the environment) by relaxing standards elsewhere. The predictable result is that the total level of stormwater control will decrease, and redevelopment projects will be built that do not use practicable approaches to regulating stormwater.

Relatedly, nothing in the draft would prevent a jurisdiction from partially funding receiving basin projects (that could then be used to “offset” relaxed flow control for new development) with grant funds intended for restoration. The guidance should strictly prohibit use of grant funds for receiving basin projects. Such funds are intended to provide an additional environmental benefit, not be used to offset environmental harm elsewhere to achieve at best a zero sum gain.

VIII. Lack of Scientific Support for Transfer Principles

Another feature of the Clark County proposal that was rejected by the PCHB, and mysteriously perpetuated here, is that the “transfer” concept did not account for any of the specifics of the sending and receiving streams, including soil type and slopes. Again, this was the subject of extensive unrebutted expert testimony. Dr. Booth opined as follows:

Specifically, the “acreage” metric is largely if not entirely divorced from how the landscape responds to flow alteration. As explained above, soils and conditions are highly variable from site to site, and those variables have consequences for how alteration to the site impacts the stream. Soil types, slopes, vegetation, stream morphology, and aquatic life (e.g., the presence or absence of salmon spawning and rearing habitat) are all relevant factors. The same development in two different sites—even nearby sites—could have dramatically different impacts on receiving waters; and since the mitigation is not constrained to any but the broadest landscape feature (i.e., a Water Resources Inventory Area or “WRIA”) the damage caused by the initial activity will likely not be mitigated at all.

Booth Testimony at ¶ 34. The PCHB agreed:

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. 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.*

Order at ¶ 25 (emphasis added). Surprisingly, nothing in the guidance appears to address or even acknowledge this problem. The fundamental premise of the program is that the benefits of controlling stormwater can be picked up and moved around the landscape without regard for any of the ecological specifics of the receiving streams. That premise has been rejected repeatedly for good reason.

One element of the proposal that we do agree with is the importance of ensuring that receiving end projects are in place and providing benefits before development is allowed. This is yet another issue dealt with by the PCHB. See Rosemere, at ¶ 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.”). Plainly, the benefit must precede the harm (as long as the “benefit” was not something that the permittee had already planned, funded or was required to do).

IX. Process Going Forward

In terms of the process going forward, our suggestion is to abandon this guidance in its current form. While the Permits contemplate adjustments to permit requirements based on basin planning processes, this draft is so far divorced from those standards as make them meaningless. Should Ecology choose to proceed, we understand that there will be another draft of this document that includes additional input and that may be substantially different. Ecology should ensure that there is another opportunity for public comment on any revised drafts. Finally, should Ecology choose to finalize this guidance, the actual use of the guidance by any permittee to relax standards must be an appealable permit modification subject to public comment. Failure to obtain a permit modification means permittees are potentially out of compliance with the Permits.

X. Conclusion

In sum, the draft guidance endorses an out-of-basin accounting system that is flawed in both concept and execution. It will not achieve its general principles of fully attaining water


July 28, 2015

Page 7

quality standards and protection and restoration of designated uses, and in fact it is likely to retard those goals. The predictable result will be a reduction in the total amount of stormwater benefits within regulated entities and a weakening of Ecology's position that the flow control, pollution reduction and LID requirements constitute the "maximum extent practicable." Jurisdictions that accept the invitation to follow this path will expose themselves to legal challenges and potential CWA liability.

Thank you for the opportunity to provide these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "JH", followed by a horizontal line extending to the right.

Jan Hasselman

cc: Heather Trim, Futurewise
John Palmer, U.S. EPA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
WATER AND
WATERSHEDS

July 14, 2015

Reply To: OWW-135

Municipal Permit Comments
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear Ecology Municipal Permit Program:

The purpose of this letter is provide EPA's comments on Ecology's May 14, 2015 Stormwater Control Transfer Program draft guidance. In general, the EPA supports the draft guidance and the ability for local jurisdictions to develop and implement a Stormwater Control Transfer Program. If done correctly, a Stormwater Control Transfer Program should result in accelerated environmental improvements in priority watersheds. However, the EPA believes Ecology should proceed cautiously and gain experience with a few early adopter jurisdictions to ensure the local programs achieve the intended results prior to broader application. The following are EPA's comments on the draft guidance:

- The EPA supports the statement on Ecology's website stating Ecology's approval of a local Stormwater Control Transfer Program will be made public and subject to appeal. The final guidance should include an explanation of the public review and appeal processes, including the administrative mechanism Ecology will follow when approving a Stormwater Control Transfer Program under Section 7 of Appendix A of the Municipal Stormwater Permits.
- The EPA is concerned about the use of state and federal grant funds to support a local Stormwater Control Transfer Program and recommends the use of grants funds be addressed in the final guidance. In general, the EPA recommends stormwater facilities built with state or federal grants should not be allowed to be used as credits as part of a Stormwater Control Transfer Program. In discussions with Ecology staff, it has been suggested that it may be appropriate to use grants funds to build an initial stormwater retrofit facility to serve as credits along with a "fee-in-lieu" program that would generate private funds from re-developments in sending areas to pay for a second and subsequent facilities built later in time. The concern with this approach is that stormwater improvements would be built later as compared to the current approach where the developer makes improvements at the re-developed site and a grant funds a separate stormwater retrofit facility. This delay in stormwater improvements is why the EPA does not recommend grant funds be allowed to be used in the above scenario. At the very least, EPA recommends that in the above scenario, a state grant should be limited to funding a

small percentage of the initial stormwater facility (e.g., less than 25%), with local funds covering the rest.

- The EPA strongly supports language in the Overview Statement stating that a Stormwater Control Transfer Program cannot serve to meet a municipal Permittees' obligation to implement a structural retrofit program required by the Phase I permit.
- The EPA believes the transfer of flow control requirements may be the most useful aspect of a local Stormwater Control Transfer Program. The scenario where such as transfer may be most useful is for re-developments projects in areas zoned for high density development with minimal or zero building setbacks that are in watersheds with flow altered streams from urban runoff. In these locations, stormwater flow control facilities (e.g., underground vaults) may be relatively costly and the marginal environmental benefit to the receiving water may be low. In such situations, if the flow control requirement is transferred to a higher priority watershed, the equivalent amount of flow control can provide greater environmental benefit at less cost. Additionally, this scenario complements the State's Growth Management Act objectives of focusing new development in urban centers and minimizing urban sprawl. Accordingly, EPA recommends that this scenario be highlighted in the final guidance as an illustrated example where application of a Stormwater Control Transfer Program may be most beneficial.
- The EPA has concerns about the transfer of treatment requirements. One concern is the potential for treatment requirements be transferred from an area with high levels of toxic pollutant runoff to an area with low levels of toxic pollutant runoff, which could result in the transfer removing less amount of overall pollutants. This potential is possible because the treatment requirement in the Municipal Stormwater Permits only requires BMPs to meet a percent reduction in total suspended solids. The EPA recommends that the statement in the draft guidance on page 5 stating "Providing runoff treatment in areas with higher pollution potential than the project sites is preferred" be significantly strengthened. Due to the potential for the scenario of concern noted above to occur, it's important that safeguards are included to ensure a beneficial outcome (i.e., equal or more pollutants removed as a result of the transfers). The EPA also has environmental justice concerns with the transfer of treatment requirements. Thus, the EPA recommends the final guidance include a requirement that the local jurisdiction provide a reasonable demonstration that the transfer of treatment requirements will likely result in an equal or more amount of pollutants removed and will not raise concerns of unequal environmental protection.
- The EPA also has concerns with the transfer of on-site stormwater management (LID) requirements. If transfer of LID requirements were to become wide-spread, it could undercut the intent and requirement of the Municipal Stormwater Permits to have "LID be the preferred and commonly used approach to site development." Incorporating LID into site development is a fundamental change in development practice and it would be counterproductive to have large areas where traditional site development is encouraged vis-à-vis a transfer of LID requirements. Further, even in urban centers where flow control transfers could be beneficial as described above, LID can be successfully incorporated. For instance, greenscapes and vegetative areas are important in urban design, which provide opportunity for integrated LID design. However, given that the draft guidance only allows LID transfers based on the LID performance standard, it is

unlikely that developers will seek LID transfers in very many situations because it will be cheaper to meet the LID requirements on site. In summary, considering the above, the EPA questions the value of including LID transfers as part of the program.

- The EPA sees an advantage of the Stormwater Transfer Control Program primarily focusing on flow control transfers because treatment and LID requirements applied at redeveloped sites would still provide environmental improvements in sending watersheds and associated downstream waters even though the flow control requirement is transferred. This helps address the concern of delayed environmental protection for sending areas.
- The EPA supports incorporating the work done in the Washington State Department of Commerce's Building Cities in the Rain project in regards to guidelines on selecting priority watersheds for receiving areas. This project has developed more in-depth guidance and criteria for selecting priority watersheds than what is in the draft Stormwater Control Transfer Program guidance. Incorporating this information in the final guidance would be helpful and would avoid duplicative and potentially confusing state guidance related to Stormwater Control Transfer Programs.
- The EPA supports the general principal #6 on page stating that a Stormwater Control Transfer Program does not shield the Permittee from additional requirements associated with TMDLs, S4.F.3 adaptive management plans, future stormwater requirements, or other enforceable mechanisms. However, there are some questions related to 303(d) listings and TMDLs that the EPA recommends be addressed in the final guidance. For example, if a stream is listed or if a TMDL is completed that relates to stormwater runoff, should that stream's watershed be eligible as a sending area? Or if a TMDL assigns responsibility to the municipal Permittee for stormwater runoff improvements for a stream, can that stream serve as a receiving area and accept a transfer from another watershed?

In summary, with the incorporation of the above recommendations, the EPA believes local Stormwater Control Transfer Programs based on the guidance can accelerate watershed benefits in priority areas and supports testing this approach over the next several years. The EPA emphasizes, however, that Stormwater Control Transfer Programs do not substitute for an aggressive retrofit program to restore priority watersheds impacted by urban development. Rather, the EPA views Stormwater Control Transfer Programs as being complementary to a larger stormwater retrofit effort that likely will grow in significance in the future.

Thank you for the opportunity to provide comments on the draft guidance. If you have any questions, please contact me at 206-553-6521.

Sincerely,

/s/

John Palmer, Senior Policy Advisor
Office of Water and Watersheds



July 28, 2015

Daniel S. Gariépy, P.E.
Stormwater Engineer
Water Quality Program
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Anne Dettelbach
Water Quality Program
Department of Ecology, NWRO
3190 160th Ave. SE
Bellevue, WA 98008-5452
VIA email

Dear Dan and Anne,

Thank you for the opportunity to comment on Ecology's *Stormwater Control Transfer Program Draft Guidance*, dated May 14, 2015. In general, I agree with the concerns raised by Puget Soundkeeper Alliance/Earthjustice including cumulative degradation at sites, environmental justice, surety that this program will not be double-counting, transfer of LID, and overall legality.

Below are specific comments about the document:

- Page iii (and elsewhere). The term “immediate environmental benefit” is vague and thus subject to a range of interpretations. This needs to be a clearer term that is well defined.
- Page 2: The principles should include that the program must be based on science.
- Page 9 on (general comments):
 - There is a lack of detail about proportion of sending and receiving areas (ratio). In my mind, the sending area should be small and the receiving area larger. One could imagine that the bulk of the jurisdiction is designated “sending” and only a small area as receiving, which could lead to abuse of the program.
 - There is lack of specification about minimum or maximum size of a sending or receiving area, which could lead to abuse of the program.
 - It seems highly problematic that jurisdictions should be able to transfer treatment for toxics to a receiving area that doesn't have significant toxic loading. Overall, I am concerned about the use of this program for transferring from “like” to “unlike” basins. For example, from commercial areas to low density residential areas.

- The document needs to identify more detailed prioritization goals and data sources.
- Page 9: We have heard from numerous sources that the Puget Sound Watershed Characterization is not adequate. It is truly just a starting point and thus should be de-emphasized in this document.
- Page 9: The document should include BIBI scores in the list of data
- Page 10: The text should be rewritten so that it is not focused on watersheds with “low to moderate” levels of impairment but rather on areas that have the potential for the highest ecological lift
- Page 11: The description of monitoring is not adequate. There should be a specified frequency and it should be of a short enough period (every two years?) to provide adequate data. BIBI should be included as part of required monitoring (many jurisdictions are already doing BIBI).
- Page 15 on: The annual reporting should include the specifics about the sites that were included in the transfer program so that these can be easily reviewed by the public, rather than requiring the public to have to go to each jurisdiction individually to see the details. It would be easy to include that detail, especially because there are unlikely to be more than a few sites per year. In sum, the document should include the requirement that Table 1 information be sent to Ecology included within Table 3 (or a requirement that both Tables 1 and 3 must be submitted).
- General comment: The document doesn’t specify that the programs have to be “adopted” by cities.
- General comment: There is no mention of public review. There should be the opportunity for public review of the plans before they are approved by Ecology.
- General comment: The approval of the transfer programs for each jurisdiction needs to be appealable.

Finally, you stated that you had not included quite a few items that were discussed in the Building Cities in the Rain committee and that your next draft would include those items. Thus, we would like the opportunity to comment on the next draft.

Thanks again for consideration of our comments.

Sincerely,



Heather Trim
Director and Science and Policy

GENERAL COMMENTS

Ecology's "Stormwater Control Transfer Program - Out of the Basin" guidance was prepared, for the most part, to respond to the Phase 2 Permit appeal (PCHB No. 12-097c) whereby the State PCHB in the Stipulation and Agreed Order of Dismissal required Ecology to "*continue to work with Phase II Coalition members, other permittees, and the Washington State Department of Commerce to explore options for meeting stormwater development/flow control standards on small, redevelopment sites in urban growth centers*".

PCHB order was supposed to create additional and practical options for small redevelopment sites that need to meet the Permit requirements. However, Ecology's guidance fails to address this because the guidance requires 1) hundreds of thousands of public dollars and several years to develop a watershed plan approved by Ecology, 2) many millions of public dollars and several additional years to permit and construct a regional facility for a fee-in-lieu program for properties to transfer stormwater mitigation into, and 3) a significant critical mass of large property owners within a sending area to economically justify a regional facility. It also requires property owners to be totally dependent on local jurisdictions to implement a Transfer Program, few of which have the resources to support this large and costly effort.

This guidance leaves a vast void in finding immediate and practical stormwater solutions at urban redevelopment projects, whether it be a stand-alone redevelopment project that can't ever expect to be included in a Transfer Program due to lack of a local critical mass needing such help, a large urban area that has no local jurisdiction willing or capable of funding a Transfer Program (probably most jurisdictions), or an urban area that just doesn't have any opportunities for a Transfer Program (e.g., Lynnwood).

SPECIFIC COMMENTS

General Stormwater Control Transfer Program Principles (Page 2)

"2. A Stormwater Control Transfer Program must accelerate environmental improvements in high priority watersheds".

This statement appears to significantly expands the regulatory scope of the Permit, creating additional requirements for Permittees currently not authorized the in the Permit. This statement should mirror the current relevant Permit policy as stated in S5.C.4: "More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances through the use of Ecology-approved basin plans or other similar water quality and quantity planning efforts. Such local requirements and

thresholds shall provide equal protection of receiving waters and equal levels of pollutant control to those provided in Appendix 1.”

“5. A municipality must evaluate its watersheds and establish a prioritization scheme prior to implementing a Stormwater Control Transfer Program.”

This principle and associated new technical requirements for stormwater mitigation creates additional Ecology regulatory oversight over stormwater permitting. This new policy is inappropriate in a guidance document, in that it places additional restrictions through the Permit on how stormwater mitigation is approved by local governments. In meetings with Ecology on the draft guidance they admitted that the prioritization scheme can end up being arbitrary, as it really comes down to a Permittees preference for selecting sending and receiving sites. Thus, prioritization should be left to the Permittee to identify and propose, following a general principle that the resulting Transfer Program will result in equal or better protection of pollutant control.

“6. Ecology approval of a Stormwater Control Transfer Plan does not shield the Permittee from additional or more stringent requirements associated with TMDLs, S4.F.3 adaptive management plans, future stormwater requirements, or other enforceable mechanisms.”

This principle implies that a Transfer Plan and associated regional facilities that are constructed under it carry no vesting for stormwater requirements. This is contrary to the vesting that is provided by the Permit for other permitted development actions. Most Permittees wouldn't accept taking on that risk knowing that a fee-in-lieu program could be invalidated in the future by a simple change in the Permit. Regional facilities should carry vesting that they were designed to accommodate.

Specific Guidelines re: Minimum Requirement 7 Flow Control (Page 4)

“2. Flow control transfers will be based on land cover on an area basis for each type of land cover (i.e., impervious surfaces, other hard surfaces, lawn/landscape, and pasture).”

Attempting to track lawn/landscape and pasture land covers separately is unnecessary detail that significantly complicates the tracking process and limits the flexibility of regional facilities accepting fee-in-lieu transfers. Parameters that define what is transferred must be simple to provide such flexibility. We recommend total impervious surfaces and total pervious surfaces because it will effectively achieve the same flow control results. Simple conversion factors between impervious and pervious surfaces should also be allowed, if backed up by modeling.

Specific Guidelines re: Minimum Requirement 5 OnSite Stormwater Management (Page 6)

“1. Transferring MR #5: On-site Stormwater Management is allowed only by using the LID performance standard option. The “mandatory list” option is not available under a Stormwater Control Transfer Program”.

Requiring the LID performance standard to be used where it is otherwise not required (i.e., in the UGA) shouldn't be required. We believe Ecology does have the ability to develop and defend guidance for transfer of mandatory list requirements. Otherwise, few (if any) jurisdictions would include LID in a Transfer Program because it would significantly increase the cost of regional facilities due to the significantly greater amount of detention storage needed (2x to 3x) to meet the 8% to 50% flow duration standard.

“6. For new impervious surfaces and converted vegetation areas, the project must control flows at the project site to match flows produced by the pre-project land cover within the range of 1% to 10% frequency of exceedance flow rates predicted for the pre-project land cover. The project may transfer the LID improvement requirement of controlling flows produced by the pre-project land cover to flows produced by the pre-developed land cover within the range of 8% to 50% of the pre-developed 2-year flows “.

This guidance is confusing. Where does the “1% to 10% frequency of exceedance flow rates” criteria come from? Control of flow frequencies is a flow control standard, not an LID standard. The 1% exceedance frequency is the 100-year storm and the 10% frequency is the 10-year storm. Is Ecology raising the flow control standard to the 100-year storm, up from the current 50-year storm?

III. Considerations for Developing an Effectiveness Monitoring Plan for Stormwater Control Transfer programs (Page 11)

“The Washington State Pollution Control Hearings Board ruled (PCHB No. 10-013) that a monitoring program is necessary to confirm the equivalency of a stormwater control transfer approach concerning compliance with default stormwater management requirements in the Phase I Municipal Stormwater Permit.”

It is unclear where in the PCHB ruling a requirement for a monitoring program is mandated. It appears that the PCHB's statements on this (and other items) were used solely in the context of rejecting Clark County's transfer program, and not to change the content of the Phase 1 permit to require individual facility performance monitoring (which it didn't).

Regardless, a post-construction monitoring program for structural BMPs is very problematic. Performance monitoring is both inappropriate and ineffective:

- 1. This guidance will set precedence on requiring costly, labor-intensive and largely ineffective programs at all stormwater facilities authorized under the Permit.*

2. *The regional monitoring program which all Permittees are part of already meets the monitoring objectives for all permit activities. Adding a new requirement is unnecessary and costly to Permittees.*
3. *The guidance describes various monitoring approaches as potential ways to discern changes in stream flow and pollutant loading in receiving streams in response to adding a stormwater management facility within a watershed. However, due to the inherent hydrologic variability and pollutant loading characteristics of stormwater runoff, it is scientifically impossible to generate any meaningful data or conclusions on the performance of an individual stormwater facility using these approaches. There are too many other uncontrollable factors in hydrologic systems that cannot be controlled to allow effects of a single stormwater management facility to be detected with any level of confidence. The accepted hydrologic modeling methods that are currently being used to design such facilities provides much more accurate information on benefits of flow control because it eliminates those independent factors.*

Tracking/Storing Stormwater Obligation Transfers (Page 15)

“The project applicant will submit, and the municipality shall retain, tables for each development/redevelopment project proposing a stormwater transfer”.

Ecology is requiring submittal of development permitting detail that is otherwise not required for other permitting activities. This level of reporting is inappropriate. Ecology’s annual report can simply include questions asking how many transfer facilities are in operation, how many development project bought into it, or other basic data. It is the duty of Permittees to track all their permitted activities, but annual reporting to Ecology specifically excludes the details.

Allowable Regional and Equivalent Facilities (Page 17).

“B. Runoff Treatment

There are several types of facilities that can serve either as equivalent facilities or as banks with acreage credits that can be purchased by development projects to meet their stormwater transfer obligation. The runoff treatment facility type must either be listed in Chapter 2 of Volume V of the SWMMWW, or on the TAPE website (<http://www.wastormwatercenter.org/tape/>) as approved for General Use. Basic Treatment facilities can only receive transfers from sites that require only Basic Treatment. Enhanced Treatment facilities can receive transfers from sites that require Basic or Enhanced Treatment.”

The transfer program for runoff treatment should also include Phosphorus treatment. For all alternative treatment technologies, Conditional Use facilities should also be allowed because they are currently allowed by the Permit for use at any site.

FINAL COMMENTS

Ecology needs to develop more relevant and useful guidance in response to PCHB's ruling. Ecology's approach for requiring a regional facility to be built as the only approach for addressing the issues of redevelopment of small, urban site provides no immediate or practical benefit. What is needed are Permit options and flexibility that small redevelopment sites can use immediately, not 10 years from now, in a cost effective manner and without dependence on the local jurisdiction and many other property owners to implement.

Ecology can develop guidance that provides real flexibility in densely developed urban areas. For example, one possible approach can be to achieve primary water quality goals (e.g., removal of pollutants from stormwater) while providing relief from the costly and much more difficult mitigation requirements that have relatively lower benefit on downstream water quality (e.g., flow control to forested pre-developed condition). Such hydrologic mitigation can be easily replaced by other actions, such as open space preservation and habitat restoration, to achieve comparable – and probably much more effective - improvements in receiving waters. This approach will require Ecology to place less reliance on the quantitative criteria and numerical hydrologic models that forms the core of the Permit Appendix 1, and more on being open to holistic analyses of stream and watershed processes and alternative means to improve beneficial uses.



MUCKLESHOOT INDIAN TRIBE Fisheries Division

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July 22, 2015

Mr. Ed O'Brien and Ms. Anne Dettelbach
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Re: Washington State Department of Ecology's proposed Stormwater Control Transfer Program for Western Washington Municipal Stormwater Permits

Dear Mr. O'Brien and Ms. Dettelbach:

Thank you for the opportunity to review the Washington State Department of Ecology's (Ecology's) draft guidance document regarding a Stormwater Control Transfer Program for Western Washington Municipal Stormwater Permits. In general, we understand that the intent of the proposed guidance is to provide flexibility for achieving permit requirements for municipal stormwater permittees; however, we are concerned that this guidance document would limit the State's ability to implement Clean Water Act requirements and would have serious implications for treaty fisheries resources in the Muckleshoot Indian Tribe's (Tribe's) Usual and Accustomed Fishing Area. We believe that the guidance document deviates from principles described in the "Treaty Rights at Risk" report authored by the Western Washington Tribes (2011) and does not support Clean Water Act requirements to "*achieve full attainment of water quality standards, including protection and restoration of designated uses.*" Our concerns and recommendations are summarized below by topic.

Prioritization Principles

Watershed prioritization would be extremely important to the efficacy of the transfer program. Although the proposed program could benefit impaired waters identified for active restoration efforts, the prioritization process described could also undermine existing or planned restoration measures by transferring stormwater controls and pollutant reduction potential away to other areas. This will effectively keep some places permanently degraded, while concentrating restoration in only limited areas.

Concern: While these stormwater control transfers may accelerate clean up in "priority" areas, the approach would likely prevent improvements in many areas important to tribal fisheries

resources, including watershed areas that support hatchery production, salmon migration corridors, natural spawning and rearing areas. In following the “priority” basin concept, some areas or watersheds could be explicitly excluded from improvements by allowing stormwater flow control, treatment, and low impact development requirement trade-offs, as described in the guidance manual. For example, necessary improvements could be traded away from areas that support hatchery programs that the Tribe relies upon in Soos Creek, Crisp Creek, Issaquah Creek, and the White River, for the benefit of other areas.

Recommendation:

We request that Ecology consult with the Tribe before allowing any improvements in a given area to be traded away under this program. This would insure that transfers are not inconsistent with tribal fisheries programs and objectives.

Concern: The proposed stormwater control transfer program could authorize permanent degradation by transferring away opportunities for enhanced treatment in a watershed where both pollutants and flow conditions impair fish survival. For example, this program would authorize maintaining conditions that impair coho salmon survival in urban streams, which would be the case for many parts of Western Washington.¹ Antidegradation requirements and the Clean Water Act’s requirements to protect beneficial uses both raise questions regarding the validity of these out of basin transfers.

Recommendation:

Add prioritization principles to the proposed guidance document that would prohibit the use of a stormwater control transfer program when the “sending watershed” is impaired for water quality or other parameters caused in part by the surrounding land uses. This would help to prevent the trade-offs allowed through this guidance from thwarting future cleanup efforts required under state and federal law. In order to fulfill general principle 1 (page 2), and achieve compliance with state and federal clean water law, transfers should be prohibited when the sending watershed is listed on the §303(d) list as a category 5 impairment for parameters related to pollution generated or caused in part by the surrounding land uses in the basins seeking a transfer. This approach would also be consistent with tier I anti-degradation requirements described in WAC 173-201A-310(1). Furthermore, regulations provide that when waters are not meeting standards, or designated uses are not being protected (as is currently the case with most urban coho-bearing streams), Ecology is supposed to take “*definitive steps*” to protect those uses per WAC 173-201A-310(2).

Second Recommendation:

In areas where it may be possible to consider stormwater transfers, add language to the guidance document that requires permittees to assess impacts of transfers on receiving

¹ See Feist BE, Buhle ER, Arnold P, Davis JW, Scholz NL (2011) Landscape Ecotoxicology of Coho Salmon Spawner Mortality in Urban Streams. PLoS ONE 6(8): e23424. doi:10.1371/journal.pone.0023424; see also Spromberg and Scholz, (2011) Estimating the Future Decline of Wild Coho Salmon Populations Resulting from Early Spawner Die-Offs in Urbanizing Watersheds of the Pacific Northwest, USA. Integrated Environmental Assessment and Management.

waters in the sending watershed. This information should be provided to Ecology, tribes, and federal agencies with opportunities for full participation by affected tribes and retention of existing authorities for Ecology and federal agencies prior to approval of any stormwater transfers. For this approach to work, maintenance of existing hydrological conditions and water quality discharges in the sending watershed must be demonstrated as causing no harm to designated uses or reduction of existing water quality.

Pollutant transfers

Concern: This program would allow pollutant loading in certain areas to continue, with no required improvements. Under the current stormwater permits, a permittee must comply with water quality standards at the receiving waters (See Phase I Permit S.4.B.).

Recommendation: Transfer of runoff treatment should not be authorized. At a minimum, guidance should restate permit compliance with S.4.B requirements to ensure no violation of water quality standards at receiving waters, and state law requirements to apply AKART for all discharges to surface waters. [See WAC 173-201A-300(1)(d); see also 90.48.010, RCW 90.48.520]. This is especially true for toxicants, where even the smallest concentrations can have adverse bioaccumulative effects, and state law requires evaluation of permitted discharges and application of AKART to treat those discharges.

Mitigation/Credit Equivalency

Concern: The simple arithmetic of acre to acre equivalency is not likely to fully account for the site-by-site complexity of pollutant generation and temporal differences between deforestation and reforestation activities. In addition, the guidance provides that transfers cannot occur until facilities are “on-line,” but this definition is too vague to provide assurances that there will be no lag time between development and fully effective mitigation. This is an important consideration if land purchases and easements are required, as well as construction timing for the receiving sites.

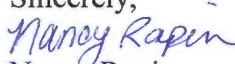
Recommendation: Provide further technical guidance on credit equivalency and accounting to provide clarity and assurances. Additionally, some regional stormwater control facilities should be prohibited from serving as a bank (the receiving watershed). Regional stormwater control facilities that are located in wetlands or in streams are clearly problematic for avoiding salmonid habitat degradation, and can contribute to violations of state water quality standards. In those instances, those facilities should not be authorized serve as credit. To do so, would further degradation and not provide accelerated environmental benefits.

Program Administration

Ecology should provide an immediate administrative appeal or review mechanism for transfer program decisions. Otherwise, in the event that affected tribes disagree with permittee prioritizations, tribes will be forced to use the more time consuming and costly court systems, when more direct administrative review could be a better use of time and resources for all interested parties.

The transfer program should establish an accessible database that allows tribes to track transfers. The program currently contemplates that permittees shall manage all data associated with transfers. This, however, would not provide affected tribes with an accessible and transparent means to evaluate program effectiveness.

We appreciate the opportunity to review this program guidance document. Based on these comments, we recommend a meeting with Ecology staff to discuss these issues further, prior to Ecology's adoption of this guidance document. Please contact me at (253)876-3128 to set up this meeting.

Sincerely,

Nancy Rapin
Water Quality Specialist

Cc: Todd Bolster, NWIFC



People. Partnership. Performance.

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July 14, 2015

Anne Dettelbach
Municipal Permit Comments
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Sent electronically to SWPermitComments@ecy.wa.gov

Dear Ms. Anne Dettelbach,

Thank you for the opportunity to review and comment on the Draft Stormwater Control Transfer Program. The Port of Tacoma (Port) appreciates Ecology's effort to provide opportunities and flexibility for Phase I Municipal Stormwater Permittees to implement innovative technologies and treatment that will provide the best water quality benefit throughout the Port and Commencement Bay.

The Port is committed to environmental stewardship and we are happy to present our comments. The Port was issued the Phase I Municipal Stormwater Permit (Permit) as a Secondary Permittee in 2007. Many of the Port's tenant and customers are also covered under the Permit.

The Port has been building a robust Municipal Stormwater Management Program and is very interested in providing water quality improvements where they are most needed and would deliver immediate environmental benefit particularly when the land uses are industrial-maritime related. However, the Draft Stormwater Control Transfer Program document does not address applicability to Port-owned properties.

The Port requests clarification on applicability to ports in an effort to participate in this program and include the program in our Stormwater Management Guidance Manual.

Respectfully,

Anita Fichthorn

Anita Fichthorn
Environmental Project Manager, Water Quality

ajf
CC: Jason Jordan, Port of Tacoma

Draft Stormwater Control Transfer Program

Review Draft Pub. No 15-10-017 (May 2015)

City of Redmond Natural Resources Division, Public Works Department Comments

General Comment

The City of Redmond appreciates the opportunity to review and comments on this document. Redmond has been working closely with Washington Department of Ecology on developing a method to apply stormwater requirements for development/redevelopment in a way that is more effective from an in-stream habitat recovery standpoint, compared to the default application of stormwater requirements. This is important because of the massive amount of developed land within western Washington municipal stormwater permitted areas that have antiquated or no stormwater controls that reduce impacts from land conversions (forest to impervious polluted surfaces). Allowing this or other innovated approaches that target more immediate and effective recovery of aquatic habitat is critical to stopping the decline in habitat function and viability most of western Washington is experiencing.

What's missing?

This concept is complex and warrants a more detailed primer. We suggest adding a definitions section that discusses what a watershed is, what a priority watershed is, what flow control is, what predeveloped, existing condition, proposed condition is, what the LID performance standard is, and so on. This is important so that a reference area is within the document that people can use to refresh themselves on technical concepts/terms while reviewing the document.

This document references section 2.4.1 and 2.4.2 of the 2012 Stormwater Management Manual for Western Washington (SWMMWW) for in-basin transfer options. However, currently the 2012 SWMMWW is not well known or adopted in the majority of permitted cities and counties. The language in sections 2.4.1 and 2.4.2 that pertains to in-basin transfers is new and not well known. Redmond recommends including the language for development and redevelopment in-basin transfers to this document so that all options are discussed together. During review it was confusing that in-basin discussions were omitted.

Specific Comments

Page 2 –General Stormwater Control Transfer Program Principles

Principle #4 – this is where it's important to identify the in-basin transfer language, or at least point it out that it exists. Redmond has concern that once a priority watershed is retrofitted that a redevelopment will occur within the retrofitted area and in-basin transfers are not available. This would essentially allow a development to either do nothing or build redundant facilities on-site. We would rather retrofit a different portion of the priority watershed using an in-basin transfer method.

Add a 7th principle about the fee for development/redevelopment projects to buy into a transfer program, similar to section 2.4.2 of the 2012 SWMMWW: "At a minimum, the fee should be the

equivalent of an engineering estimate of the cost of meeting all applicable stormwater requirements for the project.”

This safeguards the public and environmental groups from seeing this program used by local governments to place the cost of stormwater controls solely on the public.

Page 2 – Key Stormwater Control Transfer Program Elements

Item #1 – Second sentence. Consider revising to clarify that only the pre-project to pre-development conversion may be transferred (e.g., “For new surfaces, only incremental flow control and LID improvements that improve site conditions beyond the pre-project condition may be transferred.” Alternatively, or additionally, define “improvement” transfers so that it is clear that these are additional benefits (beyond pre-project conditions) that are required under the permit, but may be transferred to a priority watershed.

Page 3 – Key Stormwater Control Transfer Program Elements (cont.)

Item #1c – MR #5 On-site stormwater management – the allowable transfer in addition to what is proposed to be required on-site will make the transfer option more expensive and will detour project proponents from exploring the option. LID’s hydrologic benefit is only realized when widely used throughout a watershed. Based on Juanita Creek and WRIA 9, we are becoming very aware that restoring a stream in a developed watershed will require LID performance standard + flow control. So, to leave LID on-site is a mistake. Typically within the UGA, we are redeveloping land to make it more densely used. The “off ramps” for LID include consideration of urban design/planning and if LID doesn’t fit in, you can disregard. Allowing for a reasonable transfer of LID to priority watersheds will have more environmental benefit than pushing the issue of requiring some LID on-site in addition to paying a fee to have LID installed in priority watersheds.

Item #1c – Why does the document reference the target range of flows as both 1% to 10% exceedance and 8% 2-year to 50% 2-year? Shouldn’t the requirement, whether in reference to the flows matched on-site or the flows matched for transfers, be the same (and more correctly stated as 1% to 10% exceedance)? We recognize that for a forest pre-developed condition, these target ranges are essentially the same, but if your pre-developed condition is pasture, this no longer holds true.

Item #2 - “permittees must verify the long term operation and maintenance of those offsite stormwater runoff treatment and flow control facilities.” I would recommend that the permittees that chose a stormwater control transfer program must own and operate the facilities. If you only want to require verifying O&M, I would omit from this document. Permittees are already required to verify O&M on new facilities.

Item #5 - “Permittee must track runoff treatment, flow control, and/or LID improvement transfers for each project as explained in a related guidance.” – What guidance is being suggested here? Is that guidance available? I would suggest that tracking must be done by land cover area (acres of forest, pasture, landscape, impervious).

Add 8th bullet: Facilities must be designed for future build out of the area draining to them so they do not become obsolete as redevelopment occurs in the future.

Page 4 – Minimum Requirement 7 Flow Control

The discussion of converted surfaces is not clear. What if you convert an impervious surface to a landscaped area? I suggest revising # 5 so it reads like #3 and #4.

As previously mentioned, in basin transfers need to be discussed. If we retrofit an area within a priority watershed, sell all the area to through transfers, and then a redevelopment action occurs in the retrofitted area, it needs to be clear that we need to or must transfer within basin. If not, redevelopment/development would have stormwater controls funded by the public.

We recommend using consistent language between minimum requirement guidelines where applicable to minimize confusion (see MR #7, Item #2 and MR #5, Item #2, for example).

Add 6th item – Consider adding guideline for minimum requirement #7 that “Where a previously developed site with inadequate flow controls (e.g., detention facility that does not meet current flow control requirements) is redeveloped, the flow control requirement for new and replaced surfaces subject to MR #7 should be satisfied onsite”. This is, in some ways addressed by requiring projects to match pre-project hydrologic conditions, however, it will be difficult to transfer and credit the delta from existing flow control pre-project to pre-developed conditions. From a modeling standpoint, this would involve modeling the existing flow control facility in the on-site “pre-developed” (pre-project) condition, then modeling your proposed condition as the “developed” scenario to determine what additional flow control is needed (if any) to match pre-project conditions. While this portion of the process is doable, it becomes increasingly difficult (if not impossible) to credit this delta in an already constructed flow control facility in a priority watershed.

Alternatively, current inspection and O&M requirements in the municipal stormwater permits for privately owned facilities suggest that there is minimal benefit realized from these facilities (i.e. permittees are not required to inspect or maintain them, which one can conclude they can disappear and no one would know). Therefore, should the same conclusion of the benefits of these facilities be applied to stormwater control transfers and allow transfer of stormwater requirements to priority watersheds?

Table – Suggest switching the second and third column (provide on-site requirements first)

Table – Consider revising the transfer option requirements to better align with the language provided for MR #6. The current language is confusing. E.g., “Transfer remaining flow control requirement to constructed facility within high priority watershed. Facility must manage an equivalent amount of in-kind (like) surface where “in-kind surface” is defined as a surface with equal or higher runoff potential than the pre-project land cover.

Page 5 – Minimum Requirement 6 (Runoff Treatment)

Only basic treatment transfers should be allowed. The reasons for this are:

1. Allowing just basic treatment transfers is complex, adding another treatment type to be transferred will double the complexity and will make the program very hard to manage.

2. Enhanced treatment is best applied as close to the surface that requires enhanced treatment. Enhanced treatment on a regional scale is not feasible and is not effective at removing metals once clean runoff is mixed with runoff that needs basic treatment. We don't have the technology available to treat runoff to enhanced standards on a retrofit basis unless it's surface specific retrofits.

Consider providing guidance on the transfer of phosphorous treatment requirements (similar to oil control?)

Item #3 – Consider clarifying treatment requirements for sites triggering basic treatment. Could these basic treatment requirements be transferred to an enhanced treatment facility in a priority watershed?

Item #4 - Note that this is different than what Redmond is currently proposing. We are allowing transfer of treatment requirements for new-pollution generating surfaces when the total new PGIS is less than 5,000 square feet. This scenario arises only when all minimum requirements are triggered for new and replaced impervious surfaces due to a large amount of replaced impervious surface. This is intended to prevent the construction of a small treatment facility on-site to manage an otherwise below the treatment threshold pollution-generating surface, in favor of transferring the treatment requirements for the small fraction of new pollution generating surface with the treatment requirements for replaced surfaces.

Item #5 – isn't this just an example of the item #4 guidance? Why differentiate?

Table – Suggest switching the second and third column (provide on-site requirements first)

Table – Replaced PGS - Consider adding the following to the end of the transfer option requirements: "...for equivalent area with equal or higher pollution potential"

Page 6 – Minimum Requirement 6 (Runoff Treatment) (cont.)

Table – New PGS – Why differentiate between new PGS and non-PGS to PGS conversion? Isn't the conversion, by definition, "new PGS"?

Table – Site Triggers Oil Control – The requirement in the table is inconsistent with Item #7 on page 5. Does only oil control need to be provided on site? Or if oil control is triggered, do all treatment requirements (basic and enhanced) need to be met on site?

Page 6 – Specific Guidelines re: Minimum Requirement 5 On-site stormwater management

Either have the header repeat from page 5 on top the table on page 6 or have the entire table on one page.

We recommend using consistent language between minimum requirement guidelines where applicable to minimize confusion (see MR #7, Item #2 and MR #5, Item #2, for example. Also, Item #4 – consider providing an example (similar to MR#7, Item #3)).

Item #5 - Same as previous comment, #5 should be reconsidered and potentially omitted. We will not be successful in getting project proponents to do on-site management to match flow durations and buy in

to a stormwater control transfer to match forested conditions for the LID performance standard. Project proponents will opt to apply the list as applicable to the site.

#6 – does WWHM 2012 allow for modeling 1% to 10% frequency of exceedance flow rates predicted for the pre-project land cover? Again, requiring this level of analysis and application of matching flow durations on-site to existing conditions PLUS matching LID performance standard to forested conditions offsite will make the stormwater control transfer option a financial disincentive.

Page 7 – Specific Guidelines re: Minimum Requirement 5 On-site stormwater management (cont.)

Table – see comments on MR #7 transfer option language.

Table – Why not split up the requirements for “new or replaced impervious surfaces” and “converted vegetated surfaces”? Because MR #5 for converted vegetated surfaces can be satisfied per the list approach with BMP T5.13 alone, and BMP T5.13 is not transferrable, all requirements for converted vegetated surfaces must be met onsite.

Page 9 – Establishing a Watershed Characterization for Stormwater Control Transfer Programs in Washington State

Some jurisdictions in Thurston County would like to make transfers out of their jurisdiction and we recommend this as an option that should not be disallowed. Correcting issues outside of one’s jurisdiction might do a lot for water quality inside the jurisdiction.

Language needs to be added that the clear goal/focus of creating a stormwater control transfer program be adopted within the jurisdictions comprehensive plan or another plan that is officially approved by the governing body (i.e. city council). This will make sure that the commitment is understood and supported throughout the organization.

This section needs to incorporate Building Cities in the Rain guidance.

Page 10 – Prioritization Principle to Consider

Item 3: “expected to accelerate environmental improvement” should be “expected to accelerate recovery of aquatic habitat.” Environmental improvement seems to be loose and easy to interpret different ways.

Item 5: should include the Puget Sound Partnership in list of organizations to seek input.

Should the guidance also recommend public and local stakeholder involvement in the prioritization process?

Page 11 – Considerations for Developing an Effectiveness Monitoring Plan for Stormwater Control Transfer Programs

Is a monitoring program required or not? This section is not clear if monitoring is required or not. PCHB critique of Clark County called for monitoring to occur. Redmond included it but perhaps every agency is

not required to monitor? Redmond's finding should be representative of other jurisdictions and is funded by the RSMP.

If monitoring is required, it should be in-stream monitoring. The guidance is not clear on this point. Proponent could be read as effectiveness monitoring is facility performance.

The guidance currently indicates a "monitoring plan" is required to meet Washington State Pollution Control Hearing Board requirements. In actuality, would a formal Quality Assurance Project Plan be required to describe the monitoring procedures to be employed?

The stated goal of the monitoring is to document the effectiveness of a Stormwater Control Transfer Program in improving water quality and/or quantify conditions in a targeted, priority watershed. More clarification should be provided with regard to this goal. For example, does these improvements need to be statistically significant? If so, what level of confidence would be required?

The guidance indicated stream water quality and/or hydrologic changes should be tracked to quantify improvements in stream health within the priority watersheds that result from a Stormwater Control Transfer Program. Could improvements in stream health be documented on the basis of B-IBI scores as a surrogate for these more costly monitoring endpoints?

Infrequent interval monitoring is not defined. Define what the minimum acceptable is if monitoring is required. Continuous hydrologic monitoring is not infrequent interval monitoring.

Case #3, requiring outfall monitoring to measure load reductions from installing runoff treatment facilities is outfall monitoring. Do we want in-stream or stormwater monitoring? If we want outfall monitoring the ability for jurisdictions to capture storms is limited and if required would turn smaller jurisdictions away from the stormwater control transfer program.

The literature review performed for the Redmond Paired Watershed study has indicated the detection of improving water quality and/or quantity conditions can be difficult without a significant (and costly) monitoring effort. What repercussions, if any, would a jurisdictions face if the monitoring cannot document improvements?

Page 13 – Determining a Project's Stormwater Improvement Transfer Obligation

Is one-tenth of an acre (~4,400 square feet) too coarse a resolution for this tracking? It seems like it may be more appropriate to set the resolution at least as fine as the thresholds that trigger the requirements themselves (i.e., 2,000 square feet?).

Page 14 – Determining a Project's Stormwater Improvement Transfer Obligation

Runoff Treatment, Minimum Requirement #6 – Bullet #2 – How are you proposing that non-PGIS that mixes with PGIS be tracked? Would all sites with even a small amount of PGIS be required to transfer requirements for their non-PGIS because you are assuming that it will mix with PGIS either on-site or offsite? This seems overly onerous and not consistent with the current treatment requirements in the Manual. Would this requirement also apply to non-pollution generating surfaces that mix with PGPS?

Page 15 - Tracking/Storing Stormwater Obligation Transfers

Section B: third bullet should refer to fully built out conditions. This section is focused on regional facilities. We should also consider distributed retrofit systems.

Page 18 - Calculating Capacity

Why are flow splitters not mentioned? We can model flow splitters in WWHM and it seems that some retrofits, especially expanding existing ponds, will not control the full flow that drains to them. We can assume smaller areas are fully controlled and use a splitter to divert additional flows around the facility. It seems this is not an option in the calculation and it should be. Also noted on page 20 that flow splitters are not allowed. Why?



City of Seattle
Seattle Public Utilities

July 14, 2015

Municipal Permit Comments
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Seattle Comments on Ecology's Proposed Stormwater Control Transfer Program

Thank you for the opportunity to comment on Ecology's draft Stormwater Control Transfer Program. Seattle appreciates Ecology's effort to provide guidance for the development of an out of watershed alternative program to satisfy permit requirements associated with flow control, runoff treatment, and/or low impact development triggered at new and redevelopment sites. Seattle's comments and recommendations on application, monitoring and tracking are provided below.

Application (Section 1. Key Features of Programs to Transfer Stormwater Controls to Priority Watersheds in Western Washington State)

Seattle agrees with Ecology that the Stormwater Control Transfer program draft guidance does not apply to in-watershed transfers. However, Seattle recommends further clarifying this through the following:

1. Revise the following two footnotes as indicated:

FN 1 (page 1). These guidelines apply to Permittees covered under Phase I and Western Washington Phase II Municipal Stormwater Permits. The guidelines apply to out-of-watershed transfers rather than in-watershed transfers, which Ecology has not addressed in crafting this guidance. Many aspects Aspects of these guidelines ~~are~~ may be applicable to Stormwater Control Transfer Programs that incorporate fee-in-lieu features.

FN 4 (page 2). NOTE: ~~Other in-basin~~ In-basin transfer options for flow control, runoff treatment, and LID improvements are available but are not the topic of and are not discussed in this guidance. See the Supplemental Guidelines for Sections 2.4.1 and 2.4.2 in the Stormwater Management Manual for Western Washington (SWMMWW).

2. Consistently use the terms "watershed" and "basin" throughout the draft guidance.

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Monitoring (Section III: Considerations for Developing an Effectiveness Monitoring Plan for Stormwater Control Transfer program)

Seattle suggests that Ecology restate its reference to the PCHB decision by quoting the decision. The PCHB has not considered stormwater control transfer approaches in general, but instead ruled on one particular alternative program, which it found lacking on several grounds under Special Condition S.5.C.5.b.ii. Seattle also recommends that Ecology clarify that there are other potential mechanisms (that would require Ecology approval) besides that provided in guidance to provide assurance that the beneficial use will have at least the same level of protection as provided by the permit. Recommended revisions to the Background section (page 11) are as follows:

The Washington State Pollution Control Hearings Board ruled (PCHB No. 10-013) that a ~~monitoring program is necessary to confirm the equivalency of a stormwater control transfer approach concerning compliance with default stormwater management requirements in~~ “alternative mechanisms ... 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 Phase I Municipal Stormwater Permit. Ecology supports the concept of establishing a monitoring program as one way to document effectiveness of a Stormwater Control Transfer Program in improving water quality and /or quantity conditions in a targeted, priority watershed and offers the following guidance for establishing such a program.

Tracking (Section IV. Stormwater Facility Transfer Capacity Credits and Tracking)

Seattle recommends that Ecology clarify that there are other potential methods (that would require Ecology approval) for tracking transfers besides that provided in guidance. Recommended revisions to the Purpose section (page 13) are as follows:

The document describes ~~how~~ one way a municipality implementing a Stormwater Control Transfer Program can:

Please feel free to contact Kate Rhoads of my staff if you have any questions regarding this letter. Kate can be reached at (206) 684-8298 or at kate.rhoads@seattle.gov.

Sincerely,



Julie Crittenden
Planning & Program Management Division Director
Seattle Public Utilities

cc: Ingrid Wertz, SPU
Kate Rhoads, SPU
Sherell Ehlers, SPU
Theresa Wagner, Seattle City Attorney's Office

Stormwater Control Transfer Program – Out of the Basin City of Tacoma Comments

Thank you for the opportunity to provide comments to the program documents. The City appreciates the time, effort and technical expertise that Ecology has put into the document. The City also acknowledges and appreciates Ecology’s efforts to provide guidance and flexibility in meeting the NPDES MS4 Permit.

Tacoma is developing a regional in-lieu of program. While Ecology has stated that discussion of in-basin regional in-lieu of programs do not belong in the “Stormwater Control Transfer Program – Out of the Basin” report, Ecology is requiring Tacoma to use much of the same calculation methodology and approach as is outlined in this report. Please provide some clarification of the portions of this document that apply to in-basin in-lieu programs either in this document or a separate guidance document.

General

1. Provide information to outline guidance for in basin in lieu of programs.
2. Use equivalent terminology between the Permit, the Manual, and this guidance document. Provide a glossary where new terminology is needed.
3. Revise to change retention to infiltration for consistency with the Permit and Manual.
4. Provide section numbers for reference.
5. It is unclear how this guidance document relates to the Basin and Watershed Planning section of the Permit and how it relates to the regional facilities that will be located within the same watershed. Provide a statement as to how these relate.

Table of Contents - Page i

6. Under the Table of Contents include the number sign (#) in front of the Minimum Requirement #s for consistency.

Abstract - Page iii

7. When referencing MR#5 change low impact development to onsite stormwater management for consistency amongst the Permit, manual, and this guidance document. Make a similar change throughout the document.

Overview Statement – Page 1

8. In the second sentence, recommend changing the word rehabilitation to mitigation. Rehabilitation is not a commonly used term when referring to stormwater facilities.
9. Define out-of-basin transfers.
10. Please provide a written statement in the beginning of the document acknowledging “in-basin transfers” and that this document doesn’t cover “in-basin transfers”.
11. Do programs that include “in-basin transfers” require approval of their alternative program through Section 7 of Appendix 1? Please provide a written statement in the document.

General Stormwater Control Transfer Program (Page 2)

12. #4 states, "Projects triggering MRs #5, 6, or 7 and located within a high priority watershed cannot transfer those stormwater control improvements to another watershed." This statement does not appear to allow for re-prioritization of watersheds. Is it Ecology's intent to re-evaluate jurisdictions programs as priorities change, sites change or as work is complete?

Key Stormwater Control Transfer Program Elements (Page 2)

13. Add distinction between LID Improvements and MR#5 on-site stormwater management. In addition, LID BMPs may be used for MR #6, 7 and 8.
14. Under #1, it is stated, "For replaced surfaces, flow control, runoff treatment, and LID improvements may be transferred to a high priority watershed. For new surfaces, only flow control and LID improvements may be transferred." The Permit allows and encourages the use of Basin Planning to tailor MRs #5, #6, #7, and #8. The Permit has no restrictions in terms of which MRs may be transferred – this guidance document appears to conflict with the Permit language in terms of applicability. Provide justification.
15. Provide justification for the following: "For new surfaces, only flow control and LID improvements may be transferred." The Permit does not appear to limit basin planning to MR#5 and MR#7. For projects that have a combination of new and replaced surfaces that require treatment it appears that the applicant would be allowed to transfer a portion of surface area for treatment transfer but not the complete area requiring treatment. Per the Manual, all areas that drain to a treatment device would be required to provide treatment. Limiting the surfaces that are allowed to transfer treatment mitigation will limit the applicability of this program for many sites. Provide justification.
16. Section a. appears to state that a given project will be required to provide flow control to existing conditions in every scenario. Provide justification for this requirement.
17. In section b. define in-kind runoff treatment improvements.

Key Stormwater Control Transfer Program Elements (Page 3)

18. Section c. appears to state that a given project will be required to provide some level of onsite stormwater management (1-10% frequency) to existing conditions in every scenario. Provide justification for this requirement.
19. Under #2, consider providing the Permit section under which the maintenance is required for reference.
20. Under #3, it is stated, "Any facilities in priority watershed built to provide flow control, runoff treatment, or LID improvements in lieu of making those improvements at a project site must be online before any project may rely on the facility to help meet its stormwater requirements." This statement appears to conflict with the Permit and SWMMWW. The Permit (Appendix 1, Section 3.4-Redevelopment) states: "The Permittee may exempt or institute a stop-loss provision for redevelopment projects from compliance with MR#5, MR #6, MR#7, and MR#8 as applied to the replaced hard surfaces if the Permittee has adopted a plan and a schedule that fulfills those requirements in regional facilities." The Permit does not specify that the facility must be online.

21. Under #5, it is stated that the tracking mechanism is “explained in a related guidance.” Consider adding section numbers and referencing the section within this document. As written, one might think there is a separate guidance document that contains this information.

Specific Guidelines re: Minimum Requirement 7 Flow Control (Page 4)

22. Under #2, change “other hard surfaces” to “hard surfaces” to avoid confusion.
23. Provide a definition for like surfaces. Replaced surfaces are not the same as like surfaces but in #3, it appears that they are being used synonymously.
24. It is unclear if statement #4 applies to new surfaces associated with new development site and redevelopment sites.
25. In # 4 and the MR #7 Table, is pre-project the same as existing? Recommend using terms consistent with the Permit and SWMMWW.
26. For clarity consider rewriting #5 to state: “Only effective impervious surfaces, hard surfaces, and converted vegetation areas that are subject to Minimum Requirement #7 have to be considered when determining the areas proposed for transfer and when determining which areas to use for matching existing conditions.”

Specific Guidelines re: Minimum Requirement #6 Runoff Treatment (Page 5)

27. It is unclear under Statement #1 why transfers only apply to similar surface types. Treatment transfers should be applicable to the type of treatment required as opposed to the surface type. Revise.
28. Under Statement #3, it is stated, “Note that Enhanced Treatment facilities constructed in high priority watersheds must serve a land use type designated in the Enhanced Treatment menu.” It is unclear if this statement is implying that only land use types that are required to provide enhanced treatment are allowed to drain to the regional facility. In practice regional facilities will treat parcels that may be a variety of land uses. The regional facility should be designed for the land use with the highest treatment requirement and its capacity should be allowed to be sold based upon the design treatment type. Provide additional clarifying language.
29. Describe the rationale behind statement #4 and how this statement relates to the Permit.
30. Describe the rationale behind statement #5 and how this statement relates to the Permit.
31. Describe the rationale behind statement #6 and how this statement relates to the Permit.

Specific Guidelines re: Minimum Requirement 5 On-Site Stormwater Management (Page 6)

32. Throughout this section, onsite stormwater management techniques are called low impact development improvements. Consider revising to state onsite stormwater management to more closely align with the typical SWMMWW or equivalent manual language. There may be references in this document where Ecology is trying to describe that portion of MR #5 On-site Stormwater Management that refers to certain LID BMPs. There should be a definition section to clarify the terms used in this guidance. Whenever possible use constant language, terms and definitions as in the Permit and Manual.

33. For clarity, consider rewriting #3 to state: “Only effective impervious surfaces, hard surfaces, and converted vegetation areas that are subject to Minimum Requirement #7 have to be considered when determining the areas proposed for transfer and when determining which areas to use for matching existing conditions.” Also, the concept of effective impervious surfaces as related to MR#5 does not appear in the Permit.
34. In # 3, #5, #6 and the MR #5 Table, is pre-project the same as existing? Recommend using terms consistent with the Permit and SWMMWW.

Specific Guidelines re: Minimum Requirement #5 On-Site Stormwater Management (Page 7)

35. #7, Post Construction Soil Quality and Depth must be implemented unless infeasible. Revise language.

Prioritization Analysis Support (Page 9)

36. Paragraph 1: Please clarify where the criteria and definitions are related to the terms “Protection”, “Restoration”, “Conservation” and “Development”. It is unclear from the website which areas have specific designations or the criteria used to develop the designations.

Prioritization Principles to Consider (Page 10)

37. Item 5 states “In all cases, seek input” from federal, tribal and state natural resources agencies. What are the mechanisms for the contacts? Exactly who is required to be contacted, how much time must a participant wait for a response from these agencies? Revise item 5 to “Where the local jurisdiction lacks adequate knowledge, seek input...”

Overview (Page 11)

38. The overview first paragraph and all three cases discuss streams and sampling in streams. What about discharges that are not to streams (i.e. marine waters)? At a minimum revise the overview first paragraph and Case 3.
39. There will be many activities in a watershed that affect water quality and/or flow over the timeframe discussed in this section that are beyond the effect of the regional flow/treatment facilities. Evaluating or monitoring for the effect of just the regional flow/treatment facilities may not be possible or practicable on basin scale.
40. Ecology seems to lead participants to certain types of monitoring schemes in this guidance. There are other monitoring programs that may be able to more effectively measure the effectiveness of a regional program based upon each individual facility installation. Please clarify that alternative monitoring will be allowed.
41. This section does not discuss how the results of the monitoring might be used or the implications of monitoring. This program is part of Ecology’s prescriptive BMP approach. If a site does not utilize the regional facility but instead builds its own facility, no monitoring is required under the prescriptive approach. Regional facilities and transfers to those facilities continue to utilize the

prescriptive approach outlined in the Permit and SWMMWW therefore no monitoring should be required.

Overview (Page 12)

42. First paragraph Edit the second to the last sentence of this paragraph to revise “Repeat” to “Repeating”.

Determining a Project’s Stormwater Improvement Transfer Obligation (Page 13)

43. It is stated, “The transfer obligation of a development/redevelopment project participating in a Stormwater Control Transfer Program is to provide flow control facilities fully meeting Minimum Requirement #7 of Appendix 1 of the Phase I or Western Washington Phase II Municipal Stormwater Permit for areas equivalent to the pre-project land cover of the development/redevelopment project site.” Revise statement for clarity. The City recommends: A new or redevelopment project is required to provide flow control at the site to match developed discharge rates to pre-project (existing) discharge rates for the range of discharge rates from 50% of the 2-year return period flowrate up to the full 50-year return period flowrate. This area is known as the transfer obligation.
44. Replace pre-project with existing throughout the guidance.
45. The City recommends revising the Note to state: Projects that convert forest to any other developed land cover (lawn, landscape, impervious, etc.) cannot use this program. Replace will not with cannot.
46. The example does not include the proposed scenario. Provide the proposed scenario.
47. The document states that tracking shall be to the tenth of an acre. Suggest tracking acreage to the nearest 0.01 acre. Many urban projects that trigger MRs #5, 6 and 7 that would potentially participate in this project, could be small enough to round to 0 acres if using 0.1 acre (4350 square feet) increments. This may allow those sites to effectively provide no treatment or flow control. For example, the entire area for new and re- development triggers minimum requirement but the portions of the site that is redevelopment is 0.04 acres. When transferring this portion of the site to a regional facility, it would be 0.0 acres.

Allowable Regional and Equivalent Facilities (Page 16)

48. The term retention basin is not used in the BMP section of the SWMMWW; consider revising to use similar terminology (Infiltration Pond/Basin).
49. Will infiltration trenches be allowed as part of this program? They are not specifically listed but could be used for a regional facility.
50. Please provide a definition of and requirements for reforestation? What types of covenants or easements are required and how do those have to be filed?

Allowable Regional and Equivalent Facilities (Page 17)

51. It is unclear why other flow control facilities (such as detention ponds) cannot be used to meet the LID Performance Standard. Provide justification. As a regional facility the onsite stormwater management techniques would not likely be considered low impact development.

52. Item C – revise “LID types” to “LID BMPs”.

Calculating Capacity (in terms of acreage) of Regional or Equivalent Facilities in Priority Watersheds
(Page 17 & 18)

- 53. Provide the rationale behind the procedures used to determine pond sizing.
- 54. It is stated, “Use the actual land cover and soils conditions for the post-developed condition of the drainage basin.” This statement is unclear. Does actual land cover for the post-developed condition mean the full-build out conditions for the drainage basin or the build-out conditions based upon the proposed project or the existing conditions? Revise statement for clarity.
- 55. Under Procedure 1, it is unclear what design to use for the pond, the design with the adjusted diameter (per Step 4) or the design reached in Step 3 or another design. Provide guidance.
- 56. Under Procedure 2, Step 3, it is stated, “Enter the characteristics of the actual area draining to the expanded pond...” Is the actual area the existing conditions or the full build-out conditions?
- 57. Under the Reforestation Section, could areas that are already considered native vegetation but have the potential to be developed be used in this program?

Calculating Capacity (in terms of acreage) of Regional or Equivalent Facilities in Priority Watersheds
(Page 20)

- 58. Provide justification for why pond facilities must be fully sized for the drainage area. Does this restriction extend to combined detention/wetpond facilities?
- 59. Provide justification for why flow splitters cannot be used. In many situations, including urban areas, the opportunities for regional facilities, especially in already developed areas are extremely limited. It is necessary to be opportunistic in the siting and construction of these facilities. If a flow splitter is used to direct a portion of the total basin flow into a facility, and that facility is sized to treat or provide flow control for entirety of the flow that is directed to it, it is a benefit to the receiving water body and should be eligible to be part of the program.
- 60. If flow splitters are allowed, there should also be an allowance strategies to upgrade a facility from partial sizing to sizing for the entire basin

Table 1A

- 61. Define “Debit” concept.
- 62. It does not appear that the Notes would apply in every scenario, please clarify.



DEPARTMENT OF
ECOLOGY
State of Washington

Stormwater Control Transfer Program

Out of the Basin

DRAFT

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This document is available on the Department of Ecology's website at <https://fortress.wa.gov/ecy/publications/SummaryPages/1510017.html>

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Stormwater Control Transfer Program

Out of the Basin

by

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Washington State Department of Ecology
Olympia, Washington

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Stormwater Source Control Transfer Program-Out of the Basin

Acknowledgements

This page will be completed after the Public Comment period.

The authors of this guidance would like to thank the following people for their contribution:

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Abstract

This document describes an alternative program that Phase I and Western Washington Phase II Municipal Stormwater Permittees can implement to fully satisfy permit requirements associated with flow control, runoff treatment, and/or low impact development (i.e., Appendix 1, Minimum Requirements #5-7) as they are triggered at new and redevelopment sites. The goal of this innovative stormwater management approach is to direct stormwater management efforts to watersheds where they can provide more immediate environmental benefit. The report describes key elements of an approvable program, including stormwater control transfer opportunities, watershed prioritization principles and data needs, allowable types and credit capacities of regional facilities, program tracking tools, and evaluation techniques.

Commented [MM1]: In general, Thurston County supports the Stormwater Control Transfer Program. We think it will be a good tool to use in accelerating the recovery of ecological functions in priority watersheds. We also like its approach of encouraging redevelopment over green field development as a way to reduce sprawl without further degrading water resources in a non-priority area.

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Stormwater Source Control Transfer Program-Out of the Basin

I. Key Features of Programs to Transfer Stormwater Controls to Priority Watersheds in Western Washington State¹

Overview Statement

This document lays out features of an alternative program (a Stormwater Control Transfer Program) that Western Washington State municipal stormwater Permittees (Permittees) can implement to satisfy permit requirements associated with flow control, runoff treatment, and/or low impact development triggered at new and redevelopment sites. This stormwater management approach directs rehabilitation efforts to watersheds within a jurisdiction (referred to as priority watersheds) where they will provide more immediate environmental benefit. This program cannot serve to meet municipal Permittees' obligation to implement a structural retrofit program as currently required by Special Condition S5.C.6 of the Phase I permit. However, in developing a transfer control program, permittees can utilize the aspects of their structural retrofit program methodology that identify priority stormwater retrofit locations in watersheds where rehabilitation efforts will provide more immediate environmental benefits. Permittees establishing a Stormwater Control Transfer Program that includes out-of-basin transfers must seek Department of Ecology (Ecology) approval of their alternative program through Section 7 of Appendix 1 (Basin/Watershed Planning) in the Municipal Stormwater Permits.

How to Use this Guidance

This guidance document contains four sections, each of which provides useful information that will be useful to establish an approvable Stormwater Control Transfer Program in Washington State. The first section of the guidance (**Key Features**) provides a description of the overall program, including general guiding principles, key elements, and opportunities/limitations on the transfer of flow control, runoff treatment, and LID improvements to a site in a different priority watershed. The next section (**Watershed Prioritization**) describes the types of data or information that can inform watershed prioritization as well as several principles that must be considered during that prioritization process. The third section (**Effectiveness Monitoring**) proposes how a monitoring effort can be designed and implemented to document the effectiveness of improvements made in priority watersheds. Finally, the fourth section of the guidance (**Stormwater Facility Transfer Capacity Credits and Tracking**) lays out an accounting program that can be established to track stormwater control transfers on an area basis. This document does not provide exhaustive and detailed instructions on how to set-up and implement a Stormwater Control Transfer Program. Rather, it is intended to support Permittees considering this approach and to provide general guidance and principles when developing such a program. This guidance is based on Ecology's experience in reviewing and approving

¹ These guidelines apply to Permittees covered under Phase I and Western Washington Phase II Municipal Stormwater Permits. Many aspects of these guidelines are applicable to Stormwater Control Transfer Programs that incorporate fee-in-lieu features.

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Stormwater Source Control Transfer Program-Out of the Basin

Commented [MM2]: While Thurston County understands Ecology's concern that this program not be used to meet the Phase I obligation of the structural retrofit program (or a future Phase II obligation), we do see it as a means to augment or accelerate implementation of retrofit programs. In other words, our retrofit program is prioritized by priority basins and other rational measures. Thus, our highest priority retrofit projects are usually in high environmental priority basins too. In that regard, we consider it appropriate to use the same priority list to identify high environmental priorities for transfer program too. As we see it, if we chose a project off of our structural retrofit list to build with transfer funds we would just move another project up on the list. In other words, we feel there doesn't have to be a separate list or prioritization process for each program as long as the transfer program doesn't dilute the resources dedicated to the a permit required capital improvement retrofit program. If Ecology wants to pursue a transfer program as currently described, it might lead permittees to adjust their capital improvement programs prioritization methodology to not take in consideration the realization of immediate environmental benefits. That would drive the capital improvement program to focus on issues such as flooding and replacing failing infrastructure (i.e., corroded pipes, leaky vaults, etc.). TMDL-required retrofits might also fall in this category.

In the Rosemere Neighborhood Association (PCHB No. 10-013), the PCHB found that the Agreed Order between Ecology and Clark County allowed a reduced level of effort in meeting the stormwater management goals of the Phase I Permit because of the lack of requirement to maintain the level of effort in their structural retrofit efforts. If there is some way to document that the transfer program is not reducing the level of effort for the structural retrofits, then we believe that one list should be permissible. Likewise the PCHB found that by subsidizing mitigation Clark County was not making the enhanced investment in retrofit projects. However, the transfer program is not subsidizing mitigation because the mitigation would be required of the new development or paid for by a lieu in fee program funded by the development rather than funding provided by the jurisdiction.

alternative programs on a case-by-case basis, and may evolve as issues or nuances are raised and better understood. Permittees exploring this alternative approach to meet permit requirements are encouraged to contact Ecology early in the planning stage.

General Stormwater Control Transfer Program Principles

1. Environmental goal = Full attainment of water quality standards, including protection/restoration of designated² and existing³ uses.
2. A Stormwater Control Transfer Program must accelerate environmental improvements in high priority watersheds.
3. Transferring stormwater controls (runoff treatment/flow control/LID) away from a project site cannot result in increased stormwater impacts to any receiving water.
4. Projects triggering MRs #5, 6, or 7 and located within a high priority watershed cannot transfer those stormwater control improvements to another watershed.
5. A municipality must evaluate its watersheds and establish a prioritization scheme prior to implementing a Stormwater Control Transfer Program. (See related guidance)
6. Ecology approval of a Stormwater Control Transfer Plan does not shield the Permittee from additional or more stringent requirements associated with TMDLs, S4.F.3 adaptive management plans, future stormwater requirements, or other enforceable mechanisms.

Commented [MM3]: This gets to our point on the first page. Ideally the retrofit projects should be targeted to high priority watersheds and those projects that will give us the highest environmental lift for the cost.

Commented [MM4]: What is meant by receiving water? Is it just fresh water or does it include all receiving waters? Please clarify.

Key Stormwater Control Transfer Program Elements

1. For *replaced surfaces*, flow control, runoff treatment, and LID improvements may be transferred to a high priority watershed. For *new surfaces*, only flow control and LID improvements may be transferred.⁴ For purposes of this guidance, the following situations describe where “improvement transfers” to high priority watersheds are allowed or restricted.
 - a. Flow Control: **MR #7 Flow Control** requires that qualifying projects control flow 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) to match those conditions produced by the *predeveloped* land cover condition (generally, forested) rather than by the immediate *preproject* land cover condition. *In the flow control transfer scenario, a project provides flow control to match the pre-project land cover conditions at the project site. The project then transfers the flow control improvement requirement (match the pre-project land cover to the pre-developed land cover condition) to a high priority watershed.*
 - b. Runoff Treatment: **MR #6 Runoff Treatment** requires that various types of runoff treatment be provided to address the post-project condition for certain hard and pervious

Commented [MM5]: In general, there doesn't seem to be any distinction between soil type for transfer credits. Is this problematic? If a project doesn't do LID flow control because soils are marginal (though not determined to be LID infeasible) and facilities would be large and transfers that credit to a location where soils are good and infiltration of stormwater from like surfaces is easy and the facilities relatively small – doesn't that perhaps result in a less restrictive standard? Soil types aren't addressed anywhere in this document, should they be? PCHB No. 10-013 found that the acreage metric was fundamentally flawed in part because it did not take into account the differences between soil types. Is there something that has changed since then?

² Designated in Chapters 173-200 and 173-201A WAC.

³ Existing uses are defined in 40CFR 131.3 as “those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.”

⁴ NOTE: Other in-basin transfer options for flow control, runoff treatment, and LID improvements are available but are not discussed in this guidance. See the Supplemental Guidelines for Sections 2.4.1 and 2.4.2 in the Stormwater Management Manual for Western Washington (SWMMWW).

surfaces at qualifying projects. *In the runoff treatment transfer scenario, a project may transfer certain in-kind runoff treatment or greater improvements to a high priority watershed.* Reducing pollutant discharges to levels below those produced by the immediately preproject condition are considered treatment improvements.

- c. LID: **MR #5 On-Site Stormwater Management** requires projects to infiltrate, disperse, and retain stormwater runoff at a project site. Controlling flow rates to the pre-developed land cover condition (generally, forested) for the LID performance standard range⁵ is the LID improvement. *In the LID transfer scenario, a project transfers to a high priority watershed its obligation to meet the LID performance standard for the project site's replaced or new impervious surfaces or converted vegetation areas.* Under this program, the project controls flows at the project site to match flows produced by the pre-project land cover within the specified range of discharge rates (1% to 10% frequency of exceedance flow rates) predicted for the pre-project land cover. The project then transfers the LID improvement requirement (i.e., match flows produced by the preproject land cover to the pre-developed land cover within the range of 8% to 50% of the pre-developed 2-year flows) to the high priority watershed.
2. Per permit requirement S5.C.4, pPermittees must ~~verify-ensure~~ the long-term operation and maintenance of those offsite stormwater runoff treatment and flow control BMPs/facilities constructed as part of a Stormwater Control Transfer Program.
3. Any facilities in priority watersheds built to provide flow control, runoff treatment, or LID improvements in lieu of making those improvements at a project site must be online before any project may rely on the facility to help meet its stormwater requirements.
4. In no case can a permitted jurisdiction allow less stormwater improvement than what would have been realized (i.e., equivalent acreage, runoff treatment level, or LID performance standard) by following the jurisdiction's adopted stormwater runoff controls program. That program could include:
 - a. The default Appendix 1 permit requirements, or
 - b. Requirements approved through S5.C.5 of the Phase I permit, or
 - c. Requirements allowed through S5.C.4 of the Phase II permit, or
 - d. Alternative requirements established through an Ecology-approved watershed plan per Section 7 of Appendix 1 of the Phase I and II Western Washington Municipal Stormwater Permits.
5. The Permittee must track runoff treatment, flow control, and/or LID improvement transfers for each project as explained in a related guidance.
6. The Permittee shall provide annual reports to Ecology documenting runoff treatment, flow control, and LID capacity or credits used/available in offsite facilities associated with this program.

⁵ The Low Impact Development Performance standard states that "Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow." Expressing the standard as a percentage of 2-year flow rates was a reader-friendly substitute for the 1% to 10% frequency of exceedance range for a forested condition. For a predeveloped condition other than forested, it is necessary to express the standard as a frequency of exceedance range because the 8% to 50% of the 2-year flows do not correspond to the target 1% to 10% frequency of exceedance.

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Stormwater Source Control Transfer Program-Out of the Basin

Commented [MM6]: On page 2, #3 states that the project cannot result in increased stormwater impacts to any receiving water. To use that says (and it was stated this way at the May 20th briefing in Tacoma) that the project has to meet pre-project flows after the new or redevelopment project is complete. However, this sentence indicates that the project has to control flows on site to match the LID standard for the pre-project land cover and then meet the LID standard for the pre-developed (forested) condition off site in the priority location. This seems more restrictive than saying that the project has to meet the pre-project flows from the site. Please clarify which standard rules.

On a separate note, how does one model this? Can it be done in WWHM or are there changes required to WWHM to model this? In a phone conversation with Ed O'Brien, he stated that it is possible to model this and that Ecology is working on instructions to change the defaults to do the modeling. Please complete and post the instructions and examples so that designers and reviewers can verify that the this option is being met.

Commented [MM7]: What does this mean? How does one verify the long term operation and maintenance of a site before it happens? It seems to us that this is redundant given that permit requirement S5.C.4 covers this. Please consider the suggested rewording.

Commented [MM8]: This might be difficult to achieve for some jurisdictions, especially if they are looking to build a regional facility that could be used to treat a large area. It would be good if the facility could be built concurrently with the project. Concurrent should be construction if the final permit for the re-development or final occupancy is held up pending completion of the mitigation site. Also it was mentioned at the Tacoma briefing that Ecology is considering allowing jurisdictions to apply for grants to build the first facility in a priority watershed and then use the money that comes in to pay for credits used at that facility to fund the building of subsequent facilities. Thurston County supports and encourages that use of grant funds.

7. Any Permittee implementing a “fee-in-lieu” option must establish dedicated flow control, runoff treatment, and LID sub-accounts to manage any “fee-in-lieu” payments (public and private) that it collects. These funds will not be used for any capital investment outside of this program and are not transferable among sub-accounts.

Specific Guidelines re: Minimum Requirement 7 Flow Control

1. For all projects participating in a Stormwater Control Transfer Program, the flow control standard to be matched is: “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.”
2. Flow control transfers will be based on land cover on an area basis for each type of land cover (i.e., impervious surfaces, other hard surfaces, lawn/landscape, and pasture).
3. For replaced (like) surfaces (such as replacing impervious surfaces with impervious surfaces), permitted jurisdictions may transfer required flow control improvements to priority watersheds.
4. All new surfaces must have flow control facilities to match the *pre-project* land cover condition at the project site. The incremental obligation to provide flow control of the preproject condition to the pre-developed land cover condition may then be approved for transfer to the high priority watershed. If a Permittee does not approve the transfer, the project must provide flow control to the pre-developed condition at the project site.
5. Consider converted vegetation areas, and those impervious and other hard surfaces that are effective at conveying runoff: a) when calculating those impervious and other hard surfaces that are proposed for transfer, and b) when using an approved continuous runoff model for producing the pre-project flow durations. See Appendix 1 of the municipal stormwater permits for Western Washington for a definition of effective impervious surface.

Commented [MM9]: Surfaces are used here for transferring credits. However, the LID flow duration standard is used for LID credit transfers. Why not allow for projects to meet the flow duration standard here instead of using surface area? How does this reconcile with PCHB No. 10-013 which found that the acreage metric is fundamentally flawed?
If the surface area concept is the only option given, perhaps another way of doing this is to have the mitigation site credits shown in terms of impervious surface and then have an exchange rate or equivalency chart for other types of surfaces, i.e., 1 acre of impervious = x acres of pasture, etc.

MR #7: Flow Control Improvement Transfer Option for projects in nonpriority watersheds		
Surface Subject to MR #7	Flow Control Improvement Transfer Option	Flow Control Required at Project Site

New or replaced impervious surface, or converted vegetation areas	Match flow durations within the Flow Control Standard range produced by the preproject land covers to the predeveloped land cover. Use an equivalent amount and type of pre-project land covers within the High Priority Watershed.	Match flow durations within the Flow Control Standard range to the <u>pre-project</u> land cover condition.
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Specific Guidelines re: Minimum Requirement 6 Runoff Treatment

1. For replaced pollution generating surfaces (impervious or pervious surfaces), Permittees may allow transfer of runoff treatment improvements or greater for like surface types (e.g., impervious for impervious) and equivalent acreage to priority watersheds.
2. Where a previously developed site with inadequate treatment controls (e.g., lacks necessary Basic treatment) is redeveloped, the runoff treatment improvement for replaced pollution generating surfaces subject to MR #6 may be transferred.
3. Treatment transfers for in-kind runoff are allowed; i.e., *Basic treatment* at a facility in a priority watershed substitutes for *Basic Treatment* at a project site. Enhanced treatment at a facility in a priority watershed substitutes for *Enhanced treatment* at a project site. Note that *Enhanced Treatment* facilities constructed in high priority watersheds must serve a land use type designated in the *Enhanced Treatment* menu. Providing runoff treatment in areas with higher pollution potential (i.e., *enhanced treatment* or high pollution generating land uses) than the project site is preferred.
4. Runoff treatment transfers to priority watersheds are not allowed for any new pollution generating surfaces at any project site.
5. Where a project site converts non-pollution generating surfaces (e.g., a building) to pollution generating surfaces (e.g., a parking lot), runoff treatment requirements cannot be transferred to a high priority watershed.
6. Redevelopment sites that trigger more stringent runoff treatment than would apply to the site prior to redevelopment (e.g., a change in the use of the site associated with redevelopment converts runoff treatment requirements from *basic to enhanced*) cannot transfer runoff treatment requirements.
7. Oil control requirements cannot be transferred to another watershed under any circumstance.

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Commented [LS10]: How about allowing transfer if it's to the more stringent level of treatment?

Commented [LS11]: Phosphorous control too?

MR #6: Runoff Treatment Improvement Transfer Options for projects in non-priority watersheds

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Stormwater Source Control Transfer Program-Out of the Basin

Surface Conversion/Site Condition Subject to MR#6	Runoff Treatment Improvement Transfer Options	Runoff Treatment required at Project Site
Replaced Pollution-Generating Surface	Transfer runoff treatment improvement to constructed facility within High Priority watershed built to provide at a minimum the required type of treatment.	None

New Pollution-Generating Surface OR Non Pollution-Generating Surface (e.g., roof) → Pollution-Generating Surface (e.g., parking lot)	Runoff treatment improvement transfer to High Priority watershed not allowed.	Provide 100% of necessary runoff treatment.
Redevelopment site triggers more stringent runoff treatment requirements than would apply to the existing project site	Runoff treatment improvement cannot be transferred away from project site.	Provide all necessary runoff treatment at project site.
Site triggers oil control	Runoff treatment improvement cannot be transferred away from project site.	Provide all necessary runoff treatment at project site.

Commented [LS12]: How about allowing transfer if it's to the more stringent level of treatment?

Commented [LS13]: Phosphorous control too?

Specific Guidelines re: Minimum Requirement 5 OnSite Stormwater Management

1. Transferring **MR #5: On-site Stormwater Management** is allowed only by using the LID performance standard option. The "mandatory list" option is not available under a Stormwater Control Transfer Program.
2. Transfers will be based on land cover (impervious and other hard surfaces, lawn/landscape, and pasture) and equivalent acreage.

Commented [MM14]: It isn't clear to us why Ecology is allowing this type of transfer. If LID is infeasible at the project site then the project doesn't have to meet MR #5. If it is feasible to do LID on site what might be the benefit of transferring the obligation? It seems like this adds an unnecessary layer of complexity.

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Stormwater Source Control Transfer Program-Out of the Basin

3. Consider converted vegetation areas, and those impervious and other hard surfaces that are effective at conveying runoff: a) when calculating those impervious and other hard surfaces that are proposed for transfer, and b) when using an approved continuous runoff model for producing the pre-project flow durations. See Appendix 1 of the municipal stormwater permits for Western Washington for a definition of effective impervious surface.
4. For replaced surfaces, permitted jurisdictions may transfer low impact development improvements to high priority watersheds.
5. Ideally, LID improvement transfers will occur with the transfer of flow control improvements so that a single project within the priority watershed generates flows that approximate durations ranging from 8% of the 2-year peak through the 50-year peak flow. Where a project transfers its LID improvements and flow control improvements to separate locations within a high priority watershed, an equivalent pre-project land cover must have its flow durations controlled to flow durations produced by a pre-developed land cover at both locations. One location controls flows within the LID Performance Standard range; the other controls flows within the range required by Minimum Requirement #7.
6. For new impervious surfaces and converted vegetation areas, the project must control flows at the project site to match flows produced by the pre-project land cover within the range of 1% to 10% frequency of exceedance flow rates predicted for the pre-project land cover. The project may transfer the LID improvement requirement of controlling flows produced by the pre-project land cover to flows produced by the pre-developed land cover within the range of 8% to 50% of the pre-developed 2-year flows.
7. Post-Construction Soil Quality and Depth requirements (BMP T5.13) may NOT be transferred and in all cases must be implemented at any project site that triggers MR #5.

Commented [MM15]: This is not clear, what are you asking the developer to do? We considered the converted vegetated areas and other hard surfaces when we did our calculations, but what it isn't clear what to do with the consideration. It seems like there is something missing. What's the outcome for considering this? Please clarify.

Commented [MM16]: We think that this is going to be a lot more difficult to verify than just seeing if the post project flows match the pre-project flows. We're just thinking of reviewing a project that a developer wants to build and what we would have to see from the model runs to verify this. Please include guidance for modeling and verifying this requirement.

MR #5: On-site Stormwater Management		
Surface Conversion/Site Condition	LID Improvement Transfer Option	On-site Stormwater Management Required at Project Site
New or Replaced Impervious Surfaces or Converted Vegetation Areas	Match flow durations within the LID Performance Standard range produced by the pre-project land covers to the pre-developed land cover. Use an equivalent amount and type of pre-project land covers within the High Priority watershed.	Match flow durations within the LID Performance Standard range (1%10% frequency of exceedance) to the pre-project land cover condition. Implement BMP T5.13 on project site.

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Stormwater Source Control Transfer Program-Out of the Basin

NOTE: For all MR #5 transfers, projects must use the LID performance standard.

REMINDER re: Regional Facilities: *Permittees are reminded that where treatment and flow control requirements apply to replaced hard surfaces at a redevelopment site, they may exempt the project from those requirements on replaced hard surfaces if they have adopted a construction plan and schedule for constructing regional facilities within five years that will serve an area that includes the project site. This option is independent of the stormwater control transfer program discussed above.*

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Stormwater Source Control Transfer Program-Out of the Basin

II. Establishing a Watershed Prioritization for Stormwater Control Transfer Programs in Washington State

The goal of this innovative stormwater management approach is to direct rehabilitation efforts to watersheds (referred to as priority watersheds) where they will provide more immediate environmental benefit. At the same time, the approach prevents further degradation in all watersheds. As individual priority watersheds meet rehabilitation goals, remaining watersheds are prioritized for improvement until all of the municipality's watersheds have been rehabilitated to target levels.

Commented [LS17]: Might want to refer to this as subbasins.

Flow control and runoff treatment improvements, and LID improvements for replaced impervious surfaces, and in some cases, flow control improvements for new impervious surfaces can be transferred to a high priority watershed within the same municipality or between municipalities with a inter-local agreement to do so. The watershed receiving the improvements ("receiving watershed") must have a higher environmental priority than the watershed from which the improvements are transferred from ("sending watershed").

Commented [LS18]: We suggest adding this language in recognition that watersheds and subbasins can often cross jurisdictional boundaries and that there might be a mutual benefit to apply this approach across jurisdictional boundaries.

Prioritization Analysis Support

As a first step in establishing the Stormwater Control Transfer Program, a Permittee must articulate a clear prioritization goal/focus (e.g., restore beneficial uses). Next, a Permittee must evaluate its watersheds to identify those it considers as an environmental priority. The Puget Sound Watershed Characterization Process published by the Washington Department of Ecology is one analysis that can be used to set *initial* priorities⁶. (For more information, see: http://www.ecy.wa.gov/puget_sound/characterization/index.html.) Generally, watersheds that fall into the "Protection" and "Restoration" categories are expected to rank as higher environmental priority than watersheds in the "Conservation" or "Development" categories.

Ultimately, to implement a program that involves transferring stormwater controls to environmental priority watersheds, more detailed, finer scale information for the municipality's watersheds is needed to refine the categorization of watersheds. Pertinent information includes:

- Existing hydrology.
- Existing water quality conditions.
- Aquatic Habitat conditions.
- Presence of sensitive species (e.g., salmonids).
- Land Use – density/intensity, full build-out projections, prevalence of untreated pollution-generating surfaces.
- Watershed and subbasin boundaries and associated drainages.

⁶ The Puget Sound Watershed Characterization output should not be relied upon as the only line of information to designate priorities. Local jurisdictions need to verify drainage/watershed area delineations and may need to perform in-stream assessments to better refine the analysis.

- Historical [and local](#) knowledge [regarding known stormwater impacts and receiving water integrity](#).

Permittees must clearly identify data resources used to prioritize among watersheds.

Prioritization Principles to Consider

As part of the prioritization analysis, Permittees must consider the following principles for establishing priority watersheds [receiving waters](#):

1. Give higher priority to watersheds with [receiving waters with](#) low to moderate levels of impairment (e.g., as assessed via [water quality data](#), BIBI scores, habitat surveys). [Receiving waters in](#) these watersheds are expected to respond more quickly to rehabilitation efforts and thus provide more immediate water quality benefit. This focus allows selected watersheds to be rehabilitated in a shorter amount of time as compared to spreading rehabilitation efforts equally among all of the municipality's watersheds.
2. Give higher priority to watersheds where the municipality can exert greater influence. For example, assign higher priority to watersheds that have most of their associated drainage area within the municipality [or where an inter-local agreement is in place with one or more neighboring municipalities to implement the transfer approach](#). ~~However~~[In other words](#), if the municipality coordinates a priority watershed identification and rehabilitation strategy approach with a neighboring municipality, a shared watershed may be scored higher.
3. Give higher priority to watersheds in which stormwater management improvements are expected to accelerate environmental improvement [to receiving waters](#).
4. Give higher priority to watersheds where regional rehabilitation efforts are also focused. Certain watersheds may be identified as important under other planning processes such as WRIA plans, Salmon Recovery Plans, MTCA/Superfund cleanups, Endangered Species Act listings and critical habitat designations. Watersheds with TMDLs may warrant higher priority (e.g., for receiving treatment transfers if the treatment types used will address pollutant(s) of concern in the TMDL, or for flow and LID transfers to address low B-IBI scores associated with hydrologic conditions).
5. In all cases, seek input from federal (US Fish and Wildlife, NOAA fisheries), tribal, and state (Fish and Wildlife, Ecology, Natural Resources) natural resources agencies. Those agencies may have data [and local knowledge](#) pertinent to establishing priorities, and informed opinions about the relative importance of watersheds [and their receiving waters](#).

III. Considerations for Developing an Control Transfer programs

Effectiveness Monitoring Plan for Stormwater Background

The Washington State Pollution Control Hearings Board ruled (PCHB No. 10-013) that a monitoring program is necessary to confirm the equivalency of a stormwater control transfer approach concerning compliance with default stormwater management requirements in the Phase I Municipal Stormwater Permit. Ecology supports the concept of establishing a monitoring program to document effectiveness of a Stormwater Control Transfer Program in improving water quality and/or quantity conditions in a targeted, priority watershed and offers the following guidance for establishing such a program.

Overview

The purpose of a monitoring plan is to measure the effectiveness of improvements in the priority watershed(s) where stormwater facilities have been constructed under a Stormwater Control Transfer Program. The monitoring plan shall track stream water quality and/or hydrologic changes, depending on the type of transfers approved in the program. Monitoring in priority watersheds in advance of facilities' construction is necessary to establish a baseline condition. Repeat the monitoring at some infrequent interval (i.e., annually is probably not necessary) to track cumulative improvements over a number of years, and after significant increments of program implementation.

Case #1: Stormwater control transfer program includes low impact development BMPs as well as flow control facilities to improve all stream flow conditions.

In this case, install continuous recording stream flow gages to record sufficient flow data over a period of at least one year to establish a baseline. Two or more years of continuous streamflow data prior to initiating construction of flow control BMPs in the priority watershed is preferred. The more data available to establish the baseline, the more likely changes in stream flows as a result of BMP implementation will be discernible through computation of various hydrologic metrics. (If the watershed under study includes upgradient areas with uncontrolled inputs, then gages upstream and immediately downstream of the transfer area in the priority watershed will be needed.) Repeat the monitoring in a future year(s) after the Stormwater Control Transfer Program is well under way, and a significant portion of the priority watershed has been retrofitted with flow control BMPs.

Case #2: Stormwater Control Transfer Program is restricted to providing retention/detention ponds to meet Minimum Requirement #7 (Flow Control).

Commented [MM19]: The construct of Clark County's stormwater control transfer approach litigated in PCHB No. 10-013 was very different than the in-kind approach being put forth in this document which employs the transfer of Ecology-approved flow control and/or treatment to an alternative location that can realize a greater environmental benefit. To require effectiveness monitoring in the deployment of Ecology-approved BMPs merely because they are being deployed in an alternate location is inconsistent with the presumptive approach that the SWMWW, and for that matter, the Municipal permits themselves operates under. This application is also different from PCHB No. 10-013 in that:

- The mitigation is done before (or at least concurrently with) the impact as opposed to afterwards in the Clark County order.
- This program uses Ecology approved BMPs as opposed to non-standard BMPs.
- Uses an Ecology approved basin prioritization scheme (Clark Co. didn't).

In addition, given the various inputs and variables establishing the cause of any type of trend in a watershed is a difficult process at best, and even if it was possible it might take a "huge" amount of retrofitting to actually identify any measurable change at all. In addition, these variables and inputs confound monitoring and trying to see if the program is working or not. Examples of the confounding variables and inputs include, changes in precipitation patterns due to climate change, changes in the land cover in the priority basin, maintenance of the BMPs, etc.

This requirement would likely be one of the biggest barriers to cost-effectively implementing this stormwater control trading transfer program.

Commented [LS20]: Ecology has been struggling to respond to the question as to how effective are the permits (or aspects of the permits) in improving water quality and/or quality conditions. It would seem that a baseline of the effectiveness of the prescribed BMPs in the SWMMWW would be needed at a minimum to even try to perform a comparative evaluation. Ecology's TAP-E process does not evaluate the effectiveness in the receiving waters.

We would like to see this whole section deleted for the reasons stated above, but at the very least delete this sentence. It seems redundant at best. If Ecology didn't support establishing a monitoring program why would you make it part of the control transfer program in the first place? If this is in response to PCHB # 10-013, then why is the surface area swap in this document and not some other standard since the surface, or acreage metric, discounted by PCHB No. 10-013 as well?

Commented [MM21]: If not annually, what interval is acceptable? Please clarify.

Commented [LS22]: But as mention the previous comments, changes in baseline could be the result of factors completely unrelated to the effects of a stormwater transfer control program. Why should the presumptive effectiveness of Ecology-approved BMPs not transfer too?

The continuous streamflow monitoring described in Case #1 is the best option. However, municipalities can also consider reducing the monitoring to focus on capturing stream flows during storm events. Rainfall and corresponding flow gage-based monitoring should target a number of storms, covering all seasons and a range of storm sizes to define a baseline of stream responses to a variety of events. Repeat the monitoring in a future year after the Stormwater Control Transfer Program is well under way will provide data used to compare the pre- and post-project stream responses. The more pre- and post-data collected, the easier it will be to discern changes in stream flows.

Case #3: Stormwater control transfer program is restricted to transferring runoff treatment improvements.

In this case, collection of in-stream samples for targeted pollutants (Total Suspended Solids (TSS), dissolved metals, and/or phosphorus) will establish a baseline. Repeat the sample collection after the stormwater control transfer program is under way. Composite sampling (flow- or time-weighted) should occur during multiple storm events to establish the baseline and evaluate future conditions. A composite sample is made up of multiple aliquots taken over a number of hours of elevated stream flows - indicating the influence of surface runoff.

Alternatively, if the transfer program targets one or a limited number of discharge locations in the priority watershed, establish a monitoring program to estimate a reduction in the annual loading of targeted pollutants from those discharges. TSS is the target for basic treatment. Dissolved metals and TSS are the targets for Enhanced Treatment. Total Phosphorus and TSS are the targets for Phosphorus Treatment. The outfall monitoring programs developed by Phase I permittees for the 2007 municipal stormwater permits provide a guide for this type of monitoring and loading estimations.

IV. Stormwater Facility Transfer Capacity Credits and Tracking

Purpose

This document describes how a municipality implementing a Stormwater Control Transfer Program can:

- Track the stormwater “improvement transfer” obligation for each development project that proposes to either construct its stormwater obligation in another location (equivalent facility), or purchase capacity in a regional stormwater facility.
- Determine the total and available capacity credits of each facility constructed to provide stormwater treatment, flow control, [and](#)/or LID capacity in a priority watershed.

Determining a Project’s Stormwater Improvement Transfer Obligation

Flow Control, Minimum Requirement #7: The transfer obligation of a development/redevelopment project participating in a Stormwater Control Transfer Program is to provide flow control facilities fully meeting Minimum Requirement #7 of Appendix 1 of the Phase I or western Washington Phase II Municipal Stormwater Permit for areas equivalent to the pre-project land cover of the development/redevelopment project site. The transfer obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:

- Impervious Area
- Other hard surfaces
- Lawn/landscape
- Pasture

NOTE: Projects that convert a [forested pre-European settlement](#) land cover⁷ to any other post-developed land cover [will](#) not [be eligible to](#) make use of the Stormwater Control Transfer Program because the flow durations required to be matched at the project site are those of the [forested pre-European settlement](#) condition.

Transfer obligation areas will be tracked by the Permittee to the nearest one-tenth acre. For example, an applicant proposing a 5-acre re-development project having a pre-project (existing) land cover of 1.2 acres of effective impervious area (EIA), 3.3 acres of pasture, and 0.5 acres of forest would provide flow control at the project site to match flow durations produced by the preproject (existing) land cover AND either: 1) provide flow control facilities in a high priority watershed (designated by the municipality) to match flow durations of a pre-project land cover (1.2 acres of EIA and 3.3 acres of pasture) to flow durations produced by 4.5 acres of the

⁷ Where reasonable historic information indicates that the site was prairie prior to settlement, project applicants model land cover as “pasture” [\(rather than “forest” default\)](#) and use that as the land cover condition to be matched.

Commented [MM23]: This example needs further explanation. At a minimum it should state what the post project land cover will be. Is it all impervious or some combination of land cover? Since part of it is already EIA, why does the project have to buy credits to get it to the pre-developed condition? That would be the case if the project didn't currently meet the pre-developed flow duration standard, but that's not stated in the example. Or in another case, what if the new condition is 2 acres of impervious and 2.6 acres of pasture, i.e., converting 0.7 acres from pasture to impervious. Why would the project be on the hook for bringing the whole 4.5 acres to the pre-developed flow duration standard? Having to purchase credits for 1.2 acres of EIA and 3.3 acres of pasture does imply that the new site is 100% impervious. Also, unless the existing impervious is converted in such a way that is considered “new impervious” – e.g., gravel to be paved or the project meets requirements for “replaced areas” to meet runoff treatment & flow control, it shouldn't have to purchase transfer credits for all of the 1.2 acres EIA and 3.3 acres of pasture. Please clarify and perhaps provide some graphics to show the example better.

predeveloped (generally, forested) land cover; or (2) to purchase capacity associated with equivalent areas of EIA and pasture in an already constructed facility in a high priority watershed.

Runoff Treatment, Minimum Requirement #6: The project proponent may transfer the runoff treatment improvement obligation to provide stormwater treatment for replaced pollution generating surfaces that qualify per the guidelines. Note that Enhanced Treatment facilities constructed to support this program must serve a land use type designated in the Enhanced Treatment menu. Oil control requirements cannot be transferred to another watershed. The Transfer Obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:

- Pollution generating impervious surface (PGIS)
- Non-pollution generating impervious surface (Non-PGIS that mixes with PGIS)
- Pollution-generating pervious surface (PGPS)

Transfer obligation areas will be tracked to the nearest one-tenth acre.

On-site Stormwater Management (LID) Requirement #5: The transfer obligation of a development/redevelopment project is to provide facilities fully meeting the LID Performance Standard in Appendix 1 of the western Washington Municipal Stormwater Permits for areas equivalent to the pre-project land cover of the development/redevelopment project site. The transfer obligation shall be represented and tracked as acres of pre-project land cover for each of the following land cover categories:

- Impervious Area
- Other hard surfaces
- Lawn/landscape
- Pasture

Conversion of pre-project forest on the development/redevelopment site to a post-developed land cover is excluded from consideration because development/redevelopment projects must take pre-project forested area into consideration when matching flow durations within the 1% to 10% frequency of exceedance flow rate range at the original project site.

The transfer obligation areas will be tracked to the nearest one-tenth acre. For example, a participating 5-acre re-development project would be required to provide flow control/reduction BMPs at the project site to match flow durations within the 1% to 10% frequency of exceedance range that are produced by the pre-project (existing) land cover of 1.2 acres of effective impervious area (EIA), 3.3 acres of pasture, and 0.5 acres of forest. Additionally the applicant would either: (1) provide flow control facilities in a high priority watershed (designated by the municipality) to match flow durations of a pre-project land cover (1.2 acres of EIA and 3.3 acres of pasture) to flow durations produced by 4.5 acres of the pre-developed (generally, forested) land cover; or (2) to purchase capacity associated with equivalent areas of EIA and pasture in an already constructed BMPs/facility in a high priority watershed.

Commented [LS24]: Would this apply to phosphorous control too?

Commented [MM25]: Same as previous comment on the example for Minimum Requirement #7.

Tracking/Storing Stormwater Obligation Transfers

A. Project Transfer Obligation Tables

The project applicant will submit, and the municipality shall retain, tables for each development/redevelopment project proposing a stormwater transfer. The table will identify whether and to what extent surfaces are being managed on-site, and what surfaces are proposed for transfer. A useable tracking table for each Minimum Requirement is included as **Tables 1A, 1B, and 1C**. The following information shall also be tracked by the municipality:

Project ID: a unique ID attached to the project site by the municipality.

Project Name: is assigned to development projects as their applications are accepted.

Date:

Address:

Parcel #:

Watershed:

Date of Complete Application:

Name of Facility to which obligation was transferred (completed by municipality):

A copy of the above information and each applicable tracking table shall be retained with the project file. A second copy shall be placed within the file for the facility (regional or equivalent) in which capacity was purchased by that project.

B. Regional Facility Tracking

The municipality will maintain a table for each regional facility that documents:

- Facility ID.
- Name of Priority Watershed being served.
- Built Capacity in terms of acres of impervious surface, other hard surface, pollution generating impervious surface (for tracking MR #6 transfers only), pasture, and lawn/landscape areas that it serves.
- Used Capacity in terms of acres of the same land covers noted above.
- Remaining Capacity in terms of acres of the same land covers noted above.
- [Version of the manual the facility was designed to.](#)

Commented [LS26]: In recognition that design standards can change overtime.

A regional facility tracking table is included as **Table 2**. The regional facility table need only track acreages for the Minimum Requirement(s) which it addresses. The municipality shall update the table upon each purchase of credit by development projects. Credits can be purchased by projects in a lower priority watershed, and by projects within the drainage area of the regional facility. Whenever a development or redevelopment project occurs within the drainage area to the regional facility, the new effective impervious and other hard surfaces, and converted vegetation areas draining to that facility subtract from its available capacity in regard to credits for Minimum Requirements #5 and #7. Also, any new pollution-generating surfaces from

projects within its drainage area, subtract from the available treatment capacity of a regional treatment facility.

In addition, for each regional facility, the municipality shall maintain a summary sheet that identifies each project that has purchased capacity and the acreage amount of each land cover type that was purchased by each project. Land cover totals in this summary sheet shall agree with the Used Capacity totals in **Table 2**. An example is attached as **Table 3**.

Phase I or Phase II municipal stormwater permittees shall submit as an attachment to their annual reports the regional facility tracking tables that are updated to at least the calendar year covered by the annual report.

C. Equivalent Facility Tracking

In a priority watershed, a municipality may permit a project applicant to construct a facility which only serves an area that matches a development project's stormwater improvement obligation. In this case, a file shall be created for the Equivalent Facility that documents the area served and identifies the development project which constructed the facility to meet its stormwater transfer obligation. These files shall be retained by the municipality and made available to Ecology upon request.

Allowable Regional and Equivalent Facilities

A. Flow Control

There are several types of facilities that can serve either as equivalent facilities or as banks with acreage credits [available for that can be purchased](#) by development projects to meet their stormwater transfer obligation. The flow control facility types include:

- Detention Basins
- Retention Basins (Infiltration for flow control)
- Combination Retention/Detention Basins
- Full Dispersion
- Existing facility retrofits
- Permeable Pavements
- Bioretention Facilities
- Reforestation of impervious area, pasture, and/or lawn landscaping on land protected by covenant or easement.

Each of these categories except reforestation has design criteria specified in the *Stormwater Management Manual for Western Washington (SWMMWW) as amended in 2014*. New facilities shall be designed to meet the historic (generally forested) land cover condition for the areas that they serve. Bioretention and Permeable Pavements may be used to fully achieve the flow control requirement (MR #7) as predicted by an approved continuous runoff model, or they may be used to reduce the size of downgradient flow control facilities serving an area that includes them.

17-DRAFT

Stormwater Source Control Transfer Program-Out of the Basin

Where a detention facility is constructed, use **procedure 1** below to determine the land cover acreage that can be assigned to the facility and is available for purchase by project applicants. Where an existing detention pond is being expanded to support the Stormwater Control Transfer Program, follow **procedure 2** below to determine the land cover acreage that can be assigned and be available for purchase.

B. Runoff Treatment

There are several types of facilities that can serve either as equivalent facilities or as banks with acreage credits ~~available for that can be~~ purchased by development projects to meet their stormwater transfer obligation. The runoff treatment facility type must either be listed in Chapter 2 of Volume V of the SWMMWW, or on the TAPE website (<http://www.wastormwatercenter.org/tape/>) as approved for General Use. Basic Treatment facilities can only receive transfers from sites that require only Basic Treatment. Enhanced Treatment facilities can receive transfers from sites that require Basic or Enhanced Treatment.

C. On-Site (LID)

Only LID types that are listed in Chapter 5 of Volume V of the SWMMWW may be used to meet the LID Performance Standard, or to help reduce the size of a detention or retention facility built to meet MR #7.

Commented [PA27]: Any BMP allowed to meet the LID flow control standard on-site should be allowed for meeting the LID flow control standard at the off-site location. Stated another way, Ecology should allow for all infiltration BMP's to meet the LID Standard, not just the BMP's in Chapter 5.

Calculating Capacity (in terms of acreage) of Regional or Equivalent Facilities in Priority Watersheds

A. Detention/Retention Facilities

Permittees will use the procedures detailed below to calculate the Minimum Requirement #7 (flow control) capacity credit earned by regional or equivalent stormwater facilities built in priority watersheds. The procedure uses the Western Washington Hydrology Model (WVHM) to iteratively test the amount of impervious area, lawn, or pasture that is fully controlled to historical conditions by a proposed pond. Recognizing that a new facility may not fully control the area draining to it, the area draining to a facility - as represented in the WVHM - is gradually or iteratively reduced until the pond outflow meets the pre-developed flow control duration standard. The method can also be used to aid design of a simple flow control structure. The step-by-step procedures are as follows:

Procedure 1: Pond Sizing Method for Determining Area Credits in Cases Where There is No 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, reduce the pond size and adjust orifices until just meeting the standard. The entire drainage area is the capacity credit.

Case 2: If the pond cannot meet the flow duration curve, begin reducing the drainage area that was entered into the WWM (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 capacity 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 capacity credit. If the standpipe is not adequate, increase the diameter designated in the WWHM, 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 capacity credit (in Case 2) can pass through the orifices and standpipe overflow and still meet the flow duration standard. If not, reduce the drainage area until it does. This is the adjusted capacity credit.

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

Procedure 2: 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 controlled (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 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 controlled 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 the capacity credit.

B. LID Facilities

LID projects built in priority watersheds to support a Stormwater Control Transfer Program must be structural (i.e., permeable pavement or bioretention facilities). If the pavement or bioretention facility fully infiltrates the runoff file as demonstrated by using the WWHM, the entire area draining to it is considered the capacity credit for flow control (MR #7) and LID (MR #5). If the permeable pavement fully infiltrates and is underlain by native soils that meet the Soil Suitability Criteria, the area draining to it is considered the capacity credit for treatment (MR #6).

C. Reforestation

These are projects that directly convert effective impervious area, landscaped area or maintained pasture in the priority watershed to native vegetation that will develop into a fully evergreen forested condition. The native vegetation area must be protected with a conservation covenant, or with a conservation easement granted to the Permittee in cases where the Permittee does not own the land. In this case, the Capacity Credit is the totals of effective impervious area, lawn/landscaping, and pasture that are converted to native vegetation.

The area undergoing reforestation must meet the following criteria:

- Existing impervious, lawn/landscaped, and pasture areas that are intended for conversion back to native pre-developed conditions must meet the soil quality and depth requirements of BMP T5.13 in Volume V of the *SWMMWW*.
- The area must be planted with native vegetation, including evergreen trees. For further guidelines, see the Washington State Department of Transportation (WSDOT) *Roadside Manual*. Refer to Sections 800 and 810 in regard to design, procedures, and other recommendations pertinent to Accelerated Climax Community Development.
- The area must be permanently protected from development through a conservation easement or some other legal covenant that requires it to remain in native vegetation.

Reforested areas are considered stormwater facilities and should be mapped and maintained.

D. Runoff Treatment BMPs

Regional or Equivalent runoff treatment facilities that are fully sized for the area draining to them - as determined using the applicable design criteria in the *SWMMWW* in combination with the water quality design flow rate or volume - use the drainage area characteristics (impervious area, lawn area, pasture area) as the capacity credit. If the space available for a runoff treatment facility is not adequate to fully size the facility for its tributary drainage area, an upstream flow splitter may be used to bypass flows above the flow rate for which it meets design criteria. In

Commented [PA28]: Why limit it to this? Why wouldn't full dispersion or infiltration facilities be allowed as a BMP? Seems that anything that would be allowed to meet the LID flow control standard should be allowed as a regional facility. E.g., if we take 50 acres of impervious surface that currently discharges uncontrolled in a priority watershed, and provide runoff treatment and infiltration of all of it, that should create credits for MR 5, 6, and 7. It seems unduly restrictive to limit it to Permeable Pavement and bioretention facilities.

Commented [PA29]: Can the covenant allow logging as long as it is replanted in accordance with DNR requirements?

Also what kind of credit is created? If we restore a riparian area in a priority watershed by replanting a pasture area, do we get transfer credit for pasture?

I think this section implies that, but we would like to be sure. Please clarify.

that case, the capacity credit is restricted to that theoretical area for which the runoff treatment facility would be fully sized as determined using an approved continuous runoff model.

Note: Pond facilities (wet ponds, treatment wetlands, wet vaults) must be fully sized for the drainage area. Flow splitters cannot be used.

Tables

Table 1A: Minimum Requirement #7

	Acres (to the tenth)
1. Stormwater Control Improvement Transfer to Facility in Priority Watershed	
a. Impervious to Forest Debit	
b. Other Hard Surface to Forest Debit	
c. Lawn/landscape to Forest Debit	
d. Pasture to Forest Debit	
2. Stormwater Control Provided at Project Site	
a. Impervious to Existing Forest	
b. Impervious to Existing Pasture	
c. Impervious to Existing Lawn/Landscape	
d. Other hard surface to Existing Forest	
e. Other hard surface to Existing Pasture	
f. Other hard surface to Existing Lawn/landscape	
g. Lawn/landscape to Existing Forest	
h. Lawn/landscape to Existing Pasture	
i. Pasture to Existing Forest	
3. Stormwater Control Provided Only at Facility in Priority Watershed	
a. Impervious redeveloped as Impervious Debit	
b. Other Hard Surface redeveloped as Other Hard Surface Debit	
c. Pasture redeveloped as Pasture Debit	
d. Lawn redeveloped as Lawn Debit	

Notes:

1a = 3a

1b = 3b

1c = 2c + 2f + 3d

1d = 2b + 2e + 2h + 3c

Commented [MM30]: Ecology should provide a better explanation about these tables by explaining what they are used for and how to use them.

Commented [MM31]: General note, fix this per the discussion at the Building Cities in the Rain presentation.

Table 1B: Minimum Requirement #6

	Acres (to the tenth)
Proposed Transfers of Replaced Surfaces	
PGIS	
Non-PGIS that mixes with PGIS	
Pasture	
Lawn/landscaping	
Replaced Surfaces Treated on the Project Site	
PGIS	
Non-PGIS that mixes with PGIS	
Pasture	
Lawn/landscaping	
New Surfaces and Non-PGIS converted to PGIS (both must be treated on the Project Site)	
PGIS	
Non-PGIS that mixes with PGIS	
Pasture	
Lawn	

Commented [MM32]: Ecology should provide a better explanation about these tables by explaining what they are used for and how to use them.

Table 1C: Minimum Requirement #5

	Acres (to the tenth)
1. Stormwater Control Improvement Transfer to Facility in Priority Watershed	
a. Impervious to Forest Debit	
b. Other Hard Surface to Forest Debit	
c. Lawn/landscape to Forest Debit	
d. Pasture to Forest Debit	
2. Stormwater Control Provided at Project Site	
a. Impervious to Existing Forest	
b. Impervious to Existing Pasture	
c. Impervious to Existing Lawn/Landscape	
d. Other hard surface to Existing Forest	
e. Other hard surface to Existing Pasture	

Commented [MM33]: Ecology should provide a better explanation about these tables by explaining what they are used for and how to use them.

f. Other hard surface to Existing Lawn/landscape	
g. Lawn/landscape to Existing Forest	
h. Lawn/landscape to Existing Pasture	
i. Pasture to Existing Forest	
3. Stormwater Control Provided Only at Facility in Priority Watershed	
a. Impervious redeveloped as Impervious Debit	
b. Other Hard Surface redeveloped as Other Hard Surface Debit	
c. Pasture redeveloped as Pasture Debit	
d. Lawn redeveloped as Lawn Debit	

Notes:

1a = 3a

1b = 3b

1c = 2c + 2f + 3d

1d = 2b + 2e + 2h + 3c

Table 2: Regional Facility Tracking Table

Facility ID:			
Name of Priority Basin Location:			
	Total Capacity (X.X acres)	Credits Purchased (X.X acres)	Remaining Capacity (X.X acres)
MR #7			
Impervious			
Other hard surface			
Lawn/landscape			
Pasture			
MR #6			
PGHS			
PGPS			

Commented [MM34]: Ecology should provide a better explanation about these tables by explaining what they are used for and how to use them.

MR #5			
Impervious			
Other hard surface			
Lawn/landscape			
Pasture			

Table 3: Example Project Identification Table for a Regional Facility

Project Name and ID No.	Impervious (X.X acres)	Other Hard Surface (X.X acres)	Lawn/landscape (X.X acres)	Pasture (X.X acres)	PGHS (X.X acres)	PGPS (X.X acres)
Elysian Fields; ID No. 123						
Scab Lands Estates ID No. 456						
Etc.						



**Washington State
Department of Transportation**

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July 14, 2015

Ms. Abbey Stockwell
Water Quality Program
Washington Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

RE: WSDOT Comments on the Draft *Stormwater Control Transfer Program - Out of the Basin* Guidance Document

Dear Ms. Stockwell:

The Washington State Department of Transportation (WSDOT) appreciates the opportunity to provide comments on the draft *Stormwater Control Transfer Program* guidance document. WSDOT supports Ecology's efforts to develop a stormwater control transfer program and believes this option will provide jurisdictions with additional tools to achieve environmental benefits and focus project funds where they are needed most. We see parallels between the proposed transfer program and our own needs to mitigate in-kind, offsite via our opportunity-based retrofits, which are outlined in our Stormwater Management Program Plan. We would like to provide the following comments that reflect the knowledge we've gained implementing our stormwater retrofit program:

1. The framework presented in the draft guidance needs to provide more flexibility on how stormwater impacts are quantified, how they are transferred to the high priority watershed, and how they are tracked. For flow control, WSDOT suggests tracking transferred requirements using volume and/or dollars instead of area. The "volume" tracked is the difference between a detention pond sized to the duration standard for a forested pre-developed condition versus a detention pond sized to meet the duration standard for an existing pre-developed condition. This would help alleviate any conflicts when trying to match 1:1 land cover conversions between the project site and the high priority watershed.
2. WSDOT suggests reframing the stormwater transfer control program to something more familiar, like building Regional Detention Facilities and Regional Runoff Treatment Facilities. WSDOT believes this may be easier for readers to understand

and that tracking of mitigation and costs would be easier if using this type of scheme. See specific comments for more details.

3. For clarity and consistency of interpretation, WSDOT suggests adding a glossary to define terms.

In addition to the general comments above, WSDOT has the following specific comments:

4. Page 3 Item 3: *“Any facilities in priority watersheds built to provide flow control, runoff treatment, or LID improvements in lieu of making those improvements at a project site must be online before any project may rely on the facility to help meet its stormwater requirements.”*

Comment: Requiring advanced stormwater mitigation projects to be constructed before a project can transfer mitigation introduces some challenges that may limit its usefulness.

- This implies a pay-it-forward approach, and as described, a regional detention facility approach would be applicable. If this is the intent, we suggest adding a discussion on the pay-it-forward concept to the draft guidance document.
- If the intent is that projects transfer funds directly to pay for new construction of BMPs in high priority watersheds (i.e., not using the pay-it-forward concept with regional detention facilities), we suggest adding language in the guidance document clarifying this. Allowing projects to transfer project funds into a general stormwater control fund for the transferrable portion of the stormwater requirements would make tracking of mitigation easier. This would allow the fund to grow until enough money is available to fully fund a contract (to build the BMP in the high priority watershed). We also suggest adding the option to track by dollars instead of 1:1 square foot to square foot transfers.
- There may be timing difficulties associated with constructing the mitigation project first. Project delays related to fund transfers, the need to develop two separate contracts (one for the main project and one for the transferred BMP), or any construction delays associated with the BMP project would delay the main project. Therefore, WSDOT suggests allowing the timing requirement

Ms. Abbey Stockwell

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to be flexible. The BMP in the high priority watershed could be built within “X” years after the completion of the main project, or at least allow concurrent construction of the BMP and main project.

- There may also be increased costs to the project if using the Transfer Program. Two projects will require separate contract documents and associated construction costs (mobilization, traffic control, etc.). These factors should be discussed in the draft guidance.

5. Page 3 Item #4: *“In no case can a permitted jurisdiction allow less stormwater improvement than what would have been realized (i.e., equivalent acreage, runoff treatment level, or LID performance standard) by following the jurisdiction’s adopted stormwater runoff controls program...”*

Comment: WSDOT suggests including a discussion for the scenario where a high priority watershed falls under the 40% by 1985 condition and the flow control standard is using “existing” conditions. Does this still meet the intent of the stormwater transfer program since the new flow control facility in the high priority watershed would be designed to existing conditions and not historic forested conditions?

6. Page 3, number 5: *“The Permittee must track runoff treatment, flow control, and/or LID improvement transfers for each project as explained in a related guidance.”*

Comment: WSDOT suggests adding a reference or footnote for the “related guidance.”

7. Page 3, number 6: *“The Permittee shall provide annual reports to Ecology documenting runoff treatment, flow control, and LID capacity or credits used/available in offsite facilities associated with this program.”*

Comment: WSDOT questions how to evaluate when a high priority watershed is fully mitigated and won’t accept any more stormwater transfers. Suggest describing this in the draft document.

8. Page 3, number 7: *“Any Permittee implementing a “fee-in-lieu” option must establish dedicated flow control, runoff treatment, and LID sub-accounts to manage any “fee-in-lieu” payments (public and private) that it collects. These funds will not*

be used for any capital investment outside of this program and are not transferable among sub-accounts.”

Comment: WSDOT suggests adding more details for the fee-in-lieu concept. For example, if there are funds in the LID subaccount, does that money pay for only the BMP construction or does it also pay for other project components (such as contract creation and administration, TESC, etc.) associated with construction?

9. Page 4, number 5: *“Consider converted vegetation areas, and those impervious and other hard surfaces that are effective at conveying runoff: a) when calculating those impervious and other hard surfaces that are proposed for transfer, and b) when using an approved continuous runoff model for producing the pre-project flow durations. See Appendix 1 of the municipal stormwater permits for Western Washington for a definition of effective impervious surface.”*

Comment: WSDOT suggests defining what to do with converted vegetation areas and if their impacts are transferrable.

10. Page 5 and 6, MR#6: Runoff Treatment Improvement Transfer Options for projects in non-priority watersheds.

Comment: For clarity, we suggest revising *“Runoff Treatment Improvement Transfer Options”* (column 2) to state “None” for rows 2, 3, and 4. For consistency, we suggest revising *“Runoff Treatment required at Project Site”* (column 3) to state “Provide 100% of necessary runoff treatment,” or “Provide all necessary runoff treatment at project site” for rows 2, 3, and 4.

11. Page 6, number 2: *“Transfers will be based on land cover (impervious and other hard surfaces, lawn/landscape, and pasture) and equivalent acreage.”*

Comment: For consistency, we suggest making this sentence and Page 4 Item 2 the same if the intent is for flow control transfer criteria (land cover and area) and LID transfer criteria to be the same.

12. Page 6, number 3: *“Consider converted vegetation areas, and those impervious and other hard surfaces that are effective at conveying runoff: a) when calculating those impervious and other hard surfaces that are proposed for transfer, and b) when*

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using an approved continuous runoff model for producing the pre-project flow durations. See Appendix 1 of the municipal stormwater permits for Western Washington for a definition of effective impervious surface.”

Comment: See comment number 9.

13. Page 6, number 5: *“Ideally, LID improvement transfers will occur with the transfer of flow control improvements so that a single project within the priority watershed generates flows that approximate durations ranging from 8% of the 2-year peak through the 50-year peak flow. Where a project transfers its LID improvements and flow control improvements to separate locations within a high priority watershed, an equivalent pre-project land cover must have its flow durations controlled to flow durations produced by a pre-developed land cover at both locations. One location controls flows within the LID Performance Standard range; the other controls flows within the range required by Minimum Requirement #7.”*

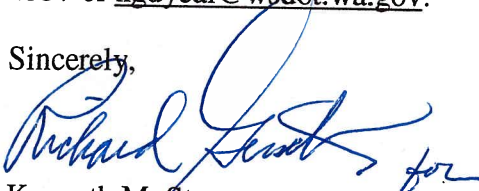
Comment: WSDOT suggests adding a discussion on the pros and cons of building two BMPs versus one BMP and the associated long term maintenance obligation considerations.

14. Page 9, 2nd paragraph: *“The watershed receiving the improvements (“receiving watershed”) must have a higher priority than the watershed from which the improvements are transferred (“sending watershed”).”*

Comment: WSDOT suggests clarifying whether lateral transfers (i.e., from a high priority to another high priority) are allowed.

Thank you for the opportunity to provide input regarding the draft *Stormwater Control Transfer Program* guidance document. Please direct questions regarding these comments to Jana Ratcliff, Municipal Stormwater Permit Coordinator, at 360-570-6649 or ratclij@wsdot.wa.gov; or Alex Nguyen, Highway Runoff Program Manager, at 206-440-4537 or nguyeal@wsdot.wa.gov.

Sincerely,


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