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State of Washington

Stormwater Control Transfer Program

Out of the Basin

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Stormwater Control Transfer Program

Out of the Basin

by
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Acknowledgements

This page will be completed after the Public Comment period.

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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 (Appendix 1, Minimum Requirement #7) as it is triggered at new and redevelopment sites. The goal of this innovative stormwater management approach is to direct stormwater management efforts to watersheds where reducing high stream flows is more likely to contribute to maintaining or restoring designated and existing beneficial uses. 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 State[1]

Guidance Overview

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 - Minimum Requirement #7 – when it is triggered at new and redevelopment sites. This stormwater management approach directs stormwater control efforts (e.g., flow control facility upgrades or installation) from the Project to other high priority watersheds within a jurisdiction. The determination of the priority of watersheds for this program is discussed within this document. High priority watersheds are more likely to contribute to maintaining or restoring designated and existing beneficial uses. 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. That said, a Permittee may use a priority ranking system similar to the one described within this document to direct its structural retrofit program. Furthermore, this guidance does not restrict a municipality from also using its structural retrofit program to accelerate improvements in high priority watersheds.

Permittees establishing a Stormwater Control Transfer Program that includes out-of-basin transfers must seek input from local tribes and state and federal natural resource agencies, and must obtain written Department of Ecology (Ecology) approval [2] of their alternative program as required by Special Conditions S5.C.5.a.i. of the Phase I Permit or S5.C.4.a.i. of the Phase II Permit. Ecology strongly recommends that the jurisdiction(s) intending to implement such a plan adopt it locally through a public process.

The focus of the body of this document is out-of-basin transfers. Attachment 1 of this document provides a summary of requirements and guidance for in-basin transfers of stormwater facilities. In-basin transfers refer to the construction of stormwater facilities that discharge to the same receiving water as the development project site.

[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.

[2] For the 2013-18 permit cycle, Ecology intends to use its Administrative Order authority to approve individual Permittee proposals to establish a Stormwater Control Transfer Program. Actions taken though Administrative Orders are appealable by municipalities and third parties. Any parties interested in being notified of Administrative Orders approving transfer programs can contact Ecology to be added to a notification list.

Problem Statement

In the Puget Sound region, the predicted annual rate of new and redevelopment is 1.6 percent[3]. At this pace, it will take 60+ years to install or upgrade stormwater facilities to a level comparable to the current NPDES Municipal Stormwater New and redevelopment standards across the Puget Sound region. Elsewhere in western Washington, new and redevelopment rates are lower, meaning that it may take significantly longer. Regardless, patterns of redevelopment are based on market forces and not on the stormwater management needs nor the environmental value or priority those watersheds represent. A Stormwater Control Transfer Program allows a Permittee to transfer some stormwater improvements from the site-by-site approach of upgrading flow control facilites to high priority watersheds. This allows investments to focus where stormwater control facility upgrades/installations (in this case, flow control improvements) will provide a more immediate benefit to waterbodies showing environmental stress associated with stormwater impacts.

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 improvements to a site in a different 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 high 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. It likewise does not provide direction on siting individual facilities within a high priority watershed. Rather, this guidance is intended to inform Permittees considering this approach and to provide general guidance and principles when developing a Stormwater Control Transfer Program focused on flow control. 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.

[3] Analysis of Stormwater Mitigation Projected to be Constructed by 2040 as Part of New and Redevelopment in WRIA 9, King County, 2014.

General Stormwater Flow Control Transfer Program Principles

1. Environmental goal = Reduce the duration and frequency of high stream flows that are incompatible with protection/restoration of designated[4] and existing[5] uses.
2. A Stormwater Control Transfer Program must accelerate hydrologic improvements in high priority watersheds.
3. Transferring stormwater flow control away from a project site cannot result in increasing the pre-project flow duration within the Flow Control Standard Range to any receiving water.
4. Projects triggering MR #7 and located within a high priority watershed cannot transfer flow control improvements to another watershed.
5. A municipality must evaluate its watersheds and establish a science-based prioritization scheme prior to implementing a Stormwater Control Transfer Program.
6. Ecology approval of a Stormwater Control Transfer Plan does not shield the Permittee from additional or more stringent requirements associated with Total Maximum Daily Loads, S4.F.3 adaptive management plans, future stormwater requirements, or other enforceable mechanisms.

Key Stormwater Control Transfer Program Elements

1. For *replaced and new surfaces*, flow control improvements may be transferred to a high priority watershed.[6] For purposes of this guidance, flow control "improvement transfers" to high priority watersheds are allowed or restricted in the following manner:

   MR #7 Flow Control requires that qualifying projects control flow durations (for the Flow Control Standard Range of pre-developed discharge flow rates from 50% of the 2-year peak flow rate up to the full 50-year peak flow rate) 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 flow control transfer scenario, a project provides flow control to match the pre-project 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.*
2. In accordance with S5.C.9.b. of the Phase I Permit, and S5.C.4.c. of the Phase II Permit, Permittees must verify the long-term operation and maintenance of those offsite stormwater flow control best management practices (BMPs)/facilities constructed as part of an Out of Basin Stormwater Control Transfer Program.
3. Any BMPs/facilities in high priority watersheds built to provide flow control improvements in lieu of making those improvements at an out-of basin project site must be on-line (i.e., fully functional) before or concurrent with any project that shall use that facility to help meet its stormwater requirements.

[4] Designated in Chapters 173-200 and173-201A WAC.

[5] 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."

[6] NOTE: Other in-basin transfer options for flow control, runoff treatment, and LID improvements are available but are not discussed in the body of this guidance. See Attachment 1.

4. In no case can a permitted jurisdiction allow less stormwater improvement than what would have been realized (i.e., equivalent acreage) 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 flow control improvement transfers for each project as explained in Section IV.
6. The Permittee shall provide annual reports to Ecology documenting flow control capacity used and available in offsite facilities associated with this program.
7. Any Permittee implementing a "fee-in-lieu" option must establish a dedicated flow control-account 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.

Specific Technical Guidelines for Flow Control Improvement Transfers

1. Any project in lower priority watersheds transferring stormwater improvements to a high priority watershed must match or improve the pre-project durations within the Flow Control Standard Range. See Table 1 for examples.
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). See Table 2 for examples.
3. For replaced surfaces, permitted jurisdictions may transfer required flow control improvements for the pre-project surfaces to priority watersheds.
4. All new surfaces at development sites 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. 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. See Appendix 1 of the Municipal Stormwater Permits for Western Washington for a definitions of *effective impervious surface* and *converted vegetation areas*.
6. Where regional facilities in a high priority watershed will serve to provide capacity credits for purchase, it should be designed for future build-out of the area draining to it, whenever possible, so that it can fully meet the needs of its drainage area. When a regional facility has exhausted its capacity credits, redevelopment projects within its drainage area that increase

impervious area must either: 1) meet its flow control requirements on-site; 2) transfer its flow control improvements to another flow control facility site within the high priority watershed; or 3) transfer its flow control improvements to another high priority watershed.

Table 1: How MR#7 Flow Control Standards are met in a Stormwater Control Transfer Program		
Surface Subject to MR #7	**Flow Control Improvement Required at a location in a high priority watershed**	**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 *pre-project* land cover condition.

Table 2: Flow Control Requirement Targets for Land Cover Changes in a Stormwater Transfer Control Program		
Pre-Project Land Cover	**Post-Developed Land Cover**	**Flow Control Requirement(s) to be added/used as part of the Development Project**
Forested	New Impervious	Project Site: Impervious to Forested Transfer site: No additional Improvements
Pasture	New Impervious	Project Site: Impervious to Pasture Transfer site: Pasture to Forest
Impervious	Replaced Impervious	Project site: No additional improvements Transfer site: Impervious to forested
Lawn/Landscape	New Impervious	Project site: Impervious to lawn/landscape Transfer site: Lawn/landscape to forested

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

The goal of this innovative stormwater management approach is to direct flow control improvements to high priority watersheds. High priority watersheds are those where reducing high stream flows is more likely to contribute to maintaining or restoring designated and existing beneficial uses. At the same time, the approach prevents increasing the flow durations within the Flow Control Standard Range to any receiving water. As individual high priority watersheds are rehabilitated, remaining watersheds are prioritized for improvement until flow duration-related water quality issues in all of the municipality's watersheds are addressed.

Flow control 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. These improvements may also be transferred among municipalities with an inter-local agreement to do so. 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 high priority watersheds (or, "receiving watersheds"), lower priority watersheds (or, "sending watersheds"), and any watersheds excluded from the program.

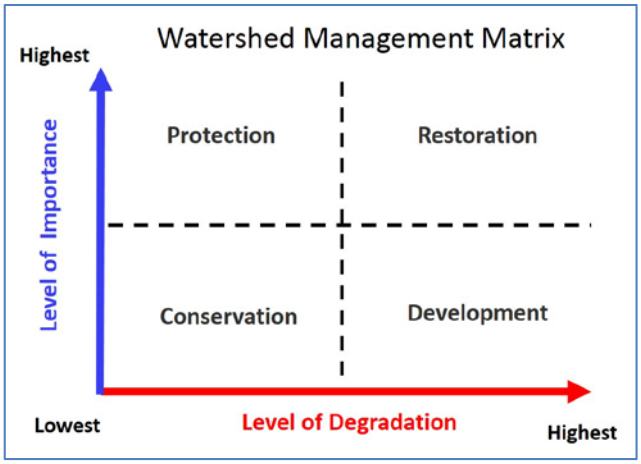

Figure 1: Management matrix for restoration and protection of water flow processes

The Puget Sound Watershed Characterization Process published by the Washington Department of Ecology is one analysis that can be used to set *preliminary* priorities[7]. (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 (Figure 1). See "Puget Sound Characterization – Volume 1: The Water Resource Assessments (Water Flow and Water Quality)" (Ecology Pub.11-06-016) for an explanation of these categories. https://fortress.wa.gov/ecy/publications/SummaryPages/1106016.html.

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

Ultimately, implementing a program to transfer stormwater controls to a site in a different, higher priority watershed requires more detailed, finer scale information about all of a municipality's watersheds. To establish a more detailed, locally informed prioritization, Permittees are encouraged to consult the Building Cities in the Rain Workgroup's[8] four-step process and data source table. Following is an adaptation of the four steps. Permittees must clearly document in their submittal to Ecology all data sources used to prioritize among watersheds.

Step 1: Fish Use and Aquatic Habitat
Review the receiving waterbodies or receiving waters for actual or potential fish use with a focus on the biological conditions and potential for environmental improvement. Give higher priority to receiving waterbodies or receiving waters with low to moderate levels of impairment.

Step 2: Flow Control Opportunities
Assess the watersheds for opportunities to address flow control issues. Give higher priority to watersheds within which hydrologic improvements are expected to accelerate improvements in designated and existing beneficial uses.

Step 3: Environmental Justice Considerations
A Permittee may determine that there are equity and social justice or environmental justice issues that need to be addressed in a given watershed. If two or more watersheds are determined of equal priority using the other data sources listed previously, Permittees are encouraged to consider equity or environmental justice opportunities and needs.

Step 4: Feedback from Federal, Tribal and State Agencies
In all cases, actively seek input from federal (US Fish and Wildlife, NOAA Fisheries, US Environmental Protection Agency), tribal, and state (Departments of Fish and Wildlife and Natural Resources) resource agencies to gain buy-in on proposed watershed prioritization. Those agencies may have data or local knowledge pertinent to establishing priorities, and informed opinions about the relative importance of watersheds. As part of the submittal to Ecology, provide documentation of all outreach efforts, issues raised, and resolution provided.

NOTE: If the Permittee is unable to resolve any issues raised by state, tribal, or federal natural resource agencies, Ecology will confer with that agency prior to making its approval decision.

[8] The Building Cities in the Rain Workgroup is a diverse group of Puget Sound stakeholders convened by the Department of Commerce to address the challenges of meeting state stormwater requirements on a site-by-site basis while also accommodating growth in high density urban centers pursuant to the Washington State Growth Management Act. An early assignment of that group was to develop a watershed prioritization scheme that could support and advance stormwater management, water quality recovery and growth management requirements and aims. Their companion guidance is available at https://www.ezview.wa.gov/site/alias__1780/overview/34828/overview.aspx

Recommended Local Prioritization Data for Flow Control, Low Impact Development and Runoff Treatment

Step 1: Fish Use and Aquatic Conditions	
Actual or Potential Fish Use and Existing Aquatic Conditions: Current Chinook, Coho and other salmonid use and potential use data	
Data Sources	***Comments/Notes5***
Water Resource Inventory Area (WRIA) Plans provide fish distribution information. e.g., WRIA 9 Fish Distribution Maps.	• A local government needs to know that fish are present if they are prioritizing for habitat restoration. • Potential fish use data is highly useful for salmon recovery.
WDFW's SalmonScape web site provides a computer mapping system for salmon recovery planners. It provides lifestage and barriers information for mainstems and named tributaries. It will need to be verified and refined by local data and knowledge, especially for smaller or un-named tributaries.	
WDFW's Salmonid Stock Inventory (SaSI) web site has reports describing and categorizing the status of 435 salmon and steelhead stocks.	
Location of physical and natural barriers: • WDFW maintains a centralized database of fish passage, diversion screening, fish use, and habitat information from inventory efforts on its Fish Passage and Diversion Screening Inventory (FPDSI) database web site. • WSDOT maintains a culvert data base on its web site at *Working with Fish Passage Partners*.	
Subareas (acres) of streams that drain to downstream hatcheries as well as to salmon bearing streams. WDFW hatcheries are listed by county at http://wdfw.wa.gov/hatcheries/facilities.php. A map of the Tribal salmon hatcheries is on the Northwest Indian Fisheries Commission web page.	
County and city-specific fish data, such as the local of physical and natural barriers.	
All available physical stream assessment data related to salmonid habitat conditions, including, but not limited to: pool/riffle ratio; type of substrate; embeddedness; and naturally occurring large woody debris/100 linear feet - weighted average of large woody debris density over walked channel length. This data can be collected by local government staff walking each creek. Standard Operating Procedures for collecting this data can be found at: http://www.ecy.wa.gov/programs/eap/quality.html	Large woody debris is defined as wood at least four inches in diameter and six feet long (WAC 220-110-030), in or over bankfull channel counted by field crews. "Bankfull width" is defined by the Washington State Department of Natural Resources for streams as "the measurement of the lateral extent of the water surface elevation perpendicular to the channel at bankfull depth (WAC 22-16-010). In cases where multiple channels exist, bankfull width is the sum of the individual channel widths along the cross-section (see Forest Practices Board Manual Section 2).
All available physical nearshore marine assessment data related to salmonid habitat conditions (refuge, feeding, and migratory) including, but not limited to: elevation; slope; type of substrate (fish mix gravels); embeddedness; armoring – manmade or natural; and naturally occurring large woody debris/100 linear feet - weighted average of large woody debris density over walked shore length. This data can be collected by local government staff walking the shoreline. The Washington State Department of Natural Resources provides an interactive map of annual eelgrass data at its Puget Sound Eelgrass Monitoring Data Viewer. See also: *Estuarine Habitat Assessment Protocol* (Simenstad *et al.* 1991)	
All available physical river assessment data related to salmonid habitat conditions (refuge, feeding, and migratory), including, but not limited to: pool/riffle ratio; type of substrate (fish mix gravels); embeddedness; and Naturally occurring large woody debris/100 linear feet - weighted average of large woody debris density over walked channel length. This data can be collected by local government staff walking each river. Standard Operating Procedures for collecting this data can be found at: http://www.ecy.wa.gov/programs/eap/quality.html	
A study assessing streams in WRIA 8 provides recommendations for salmon habitat parameters and procedures: http://www.kingcounty.gov/depts/dnrp/wlr/sections-programs/science-section/doing-science/wadeable-streams.aspx	

<table>
<tr><th colspan="2">Step 1: Fish Use and Aquatic Conditions</th></tr>
<tr><td colspan="2">Tree Canopy/Condition of Buffer for Habitat</td></tr>
<tr><td>Data Sources</td><td>Comments/Notes</td></tr>
<tr><td>Tree canopy percentage cover in local government regulatory stream buffers using aerial photography.</td><td>• Tree canopy includes trees with a minimum 10-foot diameter canopy within regulatory buffers for open channel stream reaches within the jurisdictional limits.
• Tree canopy can be used as a tiebreaker between two otherwise equally ranked receiving waterbodies or receiving waters.</td></tr>
<tr><td>Percentage of intact 300-foot vegetated stream buffer using aerial photography.</td><td></td></tr>
<tr><td>Percentage of intact 100-foot vegetated stream buffer using aerial photography.</td><td>The extent of intact buffers throughout a stream system correlates well with fish recovery/potential. Higher values equate to more vegetation. All vegetation including landscaped and mowed or plowed land is included – trees, shrubs, and unmowed grasses.</td></tr>
<tr><td colspan="2">Benthic Index of Biotic Integrity (B-IBI)[9], where appropriate, to measure aquatic health</td></tr>
<tr><td>Data Sources</td><td>Comments/Notes</td></tr>
<tr><td>Other Insect measurements for Marine/Brackish waters: Terrestrial Invertebrates Standard Operating Procedures www.tidalmarshmonitoring.org.</td><td rowspan="3">• BIBI scores provide a quantitative method for determining and comparing the biological condition of streams using the diversity and abundance of macro-invertebrates as indicators. Scores can be shown as the median value of all samples taken from the applicable stream.
• BIBI data is highly useful for fresh water, but is not available for salt water. As it cannot be collected in all streams, other measures of aquatic health may be needed. It is a good metric on a yearly scale for the general health of a stream and shows a good correlation with impervious surface and flow metrics.
• Terrestrial insects are a good indicator of shoreline conditions and an important prey component for juvenile salmon.
• Local government can collect this data relatively inexpensively.</td></tr>
<tr><td>Using passive fallout traps to characterize the insect community simulates insects that could fall on the surface of the water and be available as fish prey. Insect communities may vary depending on the amount of riparian vegetation, shoreline armoring, and other habitat features. Shoreline Monitoring Toolbox. Washington Sea Grant website: https://sites.google.com/a/uw.edu/toolbox/home.</td></tr>
<tr><td>Puget Sound Stream Benthos: Restoration Priorities – King County worked with regional partners to develop a framework for identifying sites and strategies to protect watersheds with “excellent” B-IBI scores or restore watersheds with “fair” B-IBI scores. B-IBI Restoration Decision Framework and Site Identification - This report explains the criteria used for selecting and prioritizing "Fair" B-IBI sites for restoration actions and lists the selected sites.</td></tr>
</table>

[9] Fish Index of Biotic Integrity (F-IBI) is good data where it is available, but it can be hard to interpret as it is stream size dependent.

Step 1: Fish Use and Aquatic Conditions	
Known Water Quality Impairment	
Data Sources	***Comments/Notes***
Ecology listed water quality impairments - State Water Quality Assessment (cat 4a, 4b, 4c, or 5) at Ecology's Water Quality Assessment and 303(d) List.	Waterbodies identified on Ecology's 303(d) list as category 5 or 5B due to impairment from the indicated water quality parameter.
Known water quality concerns based on locally-collected data: High temperature, low dissolved oxygen, and high fecal coliform bacteria. See Ecology's water quality assessment page as a starting point: http://www.ecy.wa.gov/programs/wq/links/wq_assessments.html	These data may be collected by local governments, volunteers, Ecology, and others.
Shellfish bed health - shellfish bed closure(s)- Washington State Department of Health Beach Closures	Shellfish bed closures by the Washington Department of Health are an indicator of water quality issues.
Step 2: Flow Control, LID and Runoff Treatment Opportunity Assessment	
Existing/Current Land Cover - Percentage of land in the watershed in each category: forest, pasture, landscaping and impervious surface.	
Data Sources[10]	***Comments/Notes***
Forest – percentage of land per aerial photography or satellite imagery.	• Disturbed land is the area in watersheds that is developed and not impervious, forested, or pasture. • Total impervious area will generally provide enough information for this purpose. For areas with highly porous soils, total impervious surface should be considered.
Pasture - percentage of land per aerial photography or satellite imagery. The pasture in this instance refers to areas that were pasture in the historic condition, i.e. prior to the influence of Euro-American settlement[12].	
Disturbed Land[13] *and Impervious surfaces* - percentage of land in developed areas (all areas not pasture or forest) are identified as disturbed or impervious. This can be done at the parcel level, combining zoning or land use designations into commercial, industrial, low/medium/high density residential, and roads using aerial photography, satellite imagery or literature values.	

[10] Land use and land cover data are often available in the same data set.

[12] See the definition for "Predeveloped Condition" found on Page G-35 of Volume I of the 2014 Stormwater Management Manuals for Western Washington (SMMWW): "The native vegetation and soils that existed at a site prior to the influence of Euro-American settlement. The pre-developed condition shall be assumed to be forested land cover unless reasonable, historic information is provided that indicates the site was prairie prior to settlement."

[13] See with the definition of "Land Disturbing Activities" on found on Page G-25 of Volume I the 2014 SWMMWW: "Any activity that results in a change in the existing soil cover (both vegetative and nonvegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling, and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices, including landscape maintenance and gardening, are not considered land-disturbing activity. Stormwater facility maintenance is not considered land disturbing activity if conducted according to established standards and procedures."

The Western Washington Land Cover Change Analysis project provides a look at land cover change over time and provides estimates of percent forest cover and impervious surface for designated catchment areas. It is based on specific aerial photographic analysis. WDFW is currently working on a high resolution land cover change product, available at: http://wdfw.wa.gov/conservation/research/projects/aerial_imagery/index.html Square miles of road density as a percentage of the watershed – as a metric of aquatic health. Local governments will need to derive this data from GIS layers.	• Effective impervious surface is the area in developed watersheds that is impervious and directly connected to the storm drain system.[11] But if effective impervious area information is available, it can be more useful. • If comparing two identical watersheds and one has a much higher effective impervious area, it should be considered for high priority retrofit designation. • A local government should use the best available data to determine these surfaces. See the Western Washington Land Cover Change Analysis discussed under Data Sources.
Existing/Current Land Use Data – Percentage of land in use for commercial, industrial, roads (include the right-of-way parcel, private, and public roads), single-family and multi-family residential, and parks and undeveloped land.	
Data Sources	**Comments/Notes**
Land uses are parcel based and calculated by summing different land use types into the categories presented from a maintained city or county Land Use GIS database.	
Buildable Lands Analysis per RCW 36.70A.215 information can also be used. Under the Buildable Lands Program, five Puget Sound counties (King, Snohomish, Pierce, Kitsap and Thurston) monitor the intensity and density of development to determine whether a county and the cities within its boundaries are achieving urban densities sufficient to meet state growth projections. The 2014 reports can be viewed on county web sites at: • King County Buildable Lands Report 2014 • 2014 Pierce County Buildable Lands Report • Snohomish County 2012 Buildable Lands Report • Kitsap County 2014 Buildable Lands Report • Thurston Regional Planning Council Buildable Lands Program – Thurston County 2014 Buildable Lands Report	• Land use designations/zoning are not always indicative of existing uses. • This exercise should be simple once the jurisdiction decides what to use for categories of existing land use. • Runoff treatment transfers should go to a like land use or to a land use with greater pollutant-generating potential.
City or county mapped number of culvert crossings (street, driveway or utility)/1,000 linear feet on mapped stream channels in each watershed within the jurisdiction. Local governments should use DNR or their own stream typing for mapping.	• Doesn't include trail bridges, long storm pipes, pipe outfalls, or piped sections of stream headwaters (even if mapped in culvert layer). • Multiple parallel culverts are counted as one crossing.
SalmonScape web site maintained by WDFW provides a computer mapping system for salmon recovery planners. It has lifestage and barriers information for mainstems and named tributaries. It will need to be verified and refined by local data and knowledge, especially for smaller or un-named tributaries.	

[11] Municipal Stormwater Permits for Western Washington, Appendix 1, Section 2, Definitions related to Minimum Requirements for a complete definition of "effective impervious surface".

Step 2: Flow Control, LID and Runoff Treatment Opportunity Assessment	
Age and condition of stormwater management treatment and flow control infrastructure	
Data Sources	***Comments/Notes***
Local government inventory of outdated flow control infrastructure needing retrofit based on flow duration. Infrastructure built to earlier stormwater design standards (or prior to adoption of standards) is likely to be more appropriate for retrofit.	• Local government infrastructure inspection and maintenance records may offer insight into the age and condition of stormwater controls. • This data indicates the environmental lift potential from installing stormwater retrofits. While a good indicator, not all jurisdictions will have this information.
Local government mapped number and distribution of stormwater piped and ditch outfalls.	• Mapped stormwater outfalls draining pollution generating surfaces for 1,000 linear feet on all stream classes within the jurisdiction. • All permitted MS4 cities and counties are required to map all known MS4 outfalls and discharge points.
Ripeness to proceed	
Data Sources	***Comments/Notes***
Local knowledge of alignment with other programs such as tree planting, capital improvement plan, asset management plans, etc.	This criterion recognizes opportunities for leveraging other programs.
Watershed Area Data	
Data Sources	***Comments/Notes***
Watershed area data –inside and outside jurisdictional boundaries. Local governments could be very accurate with this exercise or simply use topography to delineate areas that drain to each receiving water body/receiving waters. If nothing else, local governments could use catchments delineated in the Puget Sound Watershed Characterization Model.	Includes stormwater conveyance and topographic based watershed.
Each stream length—total stream miles and percentage of total stream miles within jurisdictional boundaries. Local governments should create their own stream data, which likely occurred as part of developing the critical areas ordinance.	• Even with inaccuracies local critical area maps should be sufficient. • Newer LiDAR data to map water bodies is by far the most accurate. • If a stream flows into the jurisdiction from a less developed area outside the jurisdiction, then the jurisdiction may want to prioritize that stream. Context will be important to understand the habitat well.
Class II (Department of Natural Resources Type F plus S[14]) stream length inside jurisdictional boundaries. Local critical area mapping may provide this data.	

[14] The Washington State Forest Practices Board has adopted an interim water typing system in WAC 222-16-031. Type F streams have fish use as defined in WAC 222-16-031(2) and (3). Type S streams are inventoried shorelines of the state as referenced in WAC 222-16-031(1).

Step 2: Flow Control, LID and Runoff Treatment Opportunity Assessment	
Coordination with State, Regional and Local Plans	
Data Sources	***Comments/Notes***
The Puget Sound Salmon Recovery Plan includes strategies and actions associated with marine and freshwater habitat protection and restoration, hatchery management, and harvest management. The Watershed Recovery Plan Chapters of the Salmon Recovery Plan include three-year work plans that identify priority projects and programs that can be started within the next three years. This includes capital and non-capital activities/projects for habitat protection and restoration.	
Total Maximum Daily Load plans, active and planned: A total maximum daily load (TMDL) is a numerical value representing the highest amount of pollutant a surface water body can receive and still meet water quality standards. Washington State's TMDL process identifies pollution sources within a watershed and determining what needs to change so that pollution is reduced or eliminated. A TMDL plan is developed with public input, and implemented through water quality improvement projects.	
Puget Sound Initiative Site Cleanups - Through the Puget Sound Initiative, Washington State has committed the resources and funding for a healthier Puget Sound and surrounding communities. Ecology's Toxics Cleanup Program has identified contaminated sites within one-half mile of the Sound. Ecology is taking a baywide approach, rather than site-specific, approach to cleaning up numerous sites within a geographic area. The web site provides information on identified projects in each of these bays.	
Puget Sound Action Agenda Ecosystem Recovery Targets – Setting targets is a critical part of the Action Agenda. The Partnership adopted ecosystem recovery targets as policy statements that reflect the region's commitments to and expectations for recovery, or a measurable path to recovery, by 2020. Targets are based on scientific understandings of the ecosystem. For example, a freshwater water quality target of B-IBI scores in small streams.	
Endangered Species Act listings and critical habitat designations – The federal services (NOAA Fisheries, US Fish and Wildlife, etc.) have authority under the federal Endangered Species Act to list plant or animal species as endangered (in danger of extinction) or threatened (likely to become endangered), and to designate critical habitat that must be protected for the species. For example, Chinook Salmon are listed as threatened with critical habitat in Puget Sound.	
Existing prioritization efforts if available, especially those with tribal co-manager involvement. [15]	

[15] See King County example at http://www.govlink.org/regional-water-planning/tech-committees/trib-streamflow/TribStrmflwFinalReport10-2006.pdf.

Step 3: Environmental Justice and Social Equity (Tie Breaker)	
Coordination with State, Regional and Local Plans	
Data Sources	***Comments/Notes***
The U.S. Environmental Protection Agency (EPA) provides an Environmental Justice Screening and Mapping Tool that may help a city or county identify areas with minority and/or low-income populations, potential environmental quality issues, or the potential for disproportionate impacts due to a combination of environmental and demographic indicators.	A city or county may determine that there are equity and social justice or environmental justice issues that need to be addressed in a watershed. If two or more watersheds are determined of equal priority using the other data sources listed above, cities and counties are encouraged to prioritize a watershed for stormwater retrofits using the factors in the EPA's ESJ Screening and Mapping Tool that are appropriate to their jurisdiction.

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 waterbodies that show low to moderate levels of impairment (e.g., as assessed via water quality data, Benthic Index of Biotic Integrity (B-IBI) scores, habitat surveys). These watersheds are expected to benefit more quickly as a result of stormwater control improvements.
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. In other words, if the municipality coordinates a priority watershed identification and rehabilitation strategy approach with a neighboring municipality, a shared watershed may score higher.
3. 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 listed in the 303(d) Watershed Assessment as Category 5 based on B-IBI scores may warrant higher priority if low B-IBI scores are likely due at least in part to hydrologic conditions).

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 the 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 hydrologic changes. 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.

An approach that would provide the most definitive data involves installing continuous recording stream flow gages to record 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.

The continuous streamflow monitoring described is the preferred 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 to provide data for comparing 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.

IV. Stormwater Facility Transfer Capacity Credits and Tracking Purpose

This section describes a recommended method by which a municipality implementing a Stormwater Control Transfer Program (SCTP) 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 flow control 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 cover[16]to any other post-developed land cover cannot 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-hundredth acre. Table 3 provides an example of a proponent proposing a 5 acre re-development project that will convert an existing mixed land use to 100% impervious (5 acres).

[16] 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.

Table 3: Example Project to demonstrate how and where Flow Control Requirements are met in a Stormwater Transfer Control Program		
Pre-Project Land Cover	**Post-Developed Land Cover**	**Flow Control Requirement(s) to be added as part of the Development Project**
0.5 acres Forested	0.5 acres New Impervious	Project Site: 0.5 Acres Impervious to Forested Transfer site: No additional Improvements (transfer not allowed)
3.3 acres Pasture	3.3 acres New Impervious	Project Site: 3.3 Acres Impervious to Forested Transfer site: 3.3 Acres Pasture to Forest
1.0 acre Lawn/Landscape	1.0 acre New Impervious	Project site: 1.0 acre Impervious to lawn/landscape Transfer site: 1.0 acre Lawn/landscape to forested
0.2 Effective Impervious	0.2 Replaced Impervious	Project site: No additional improvements Transfer site: 0.2 acre Impervious to forested

The Stormwater Control Transfer Program allows the proponent to construct flow control facilities or purchase available capacity in an existing facility in a high priority watershed that serves a contributing area with at least:

- 3.3 acres of Pasture
- 1.0 acres of Lawn/Landscape
- 0.2 acres of Effective Impervious Area

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 is included as **Table 4**. All of the information in Table 4 shall also be tracked by the municipality. Note that Project ID is a unique ID attached to the project site by the municipality. Similarly, Facility ID is a unique ID attached to the regional facility by the municipality.

A copy of the 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.

Table 4: Project Transfer Obligation Table	
Project ID: **Project Name**: **Date:** **Address:** **Parcel #:** **Watershed:** **Date of Complete Application:**	**Acres** **(to the hundredth)**
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	
4. Stormwater Control Provided Only at Facility in Priority Watershed **Facility ID:** **Facility Name**:	
a. Impervious redeveloped as Impervious at the project site	
b. Other Hard Surface redeveloped as Other Hard Surface at the project site	

Notes:
1a = 3a
1b = 3b
1c = 2c + 2f
1d = 2b + 2e + 2h

B. Regional Facility Tracking

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

- Facility ID.
- Name of Priority Watershed being served.
- Net Capacity in terms of acres of impervious surface, other hard surface, pasture, and lawn/landscape areas that it serves. For more details on calculating the Net Capacity, see **Calculating Net Capacity (in terms of acreage) of Regional or Equivalent Facilities in Priority Watersheds below.**
- Used Capacity in terms of acres of the same land covers noted previously.
- Remaining Capacity in terms of acres of the same land covers noted previously.
- The flow control standard used to determine the facility's capacity credit.

An example of a facility tracking table is included as **Table 5**. The municipality shall update the table upon each purchase of credit by development projects. Credits can be used 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 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 available for purchase.

In addition, for each 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, See **Table 6** for an example. The total of Land Cover in **Table 6** shall agree with the Used Capacity column in **Table 5**.

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. These tracking tables will be made publicly available through the PARIS database.

Table 5: Example Regional or Equivalent Facility Tracking Table

Facility ID: F001
Facility Name: Sample Detention Facility
Name of Priority Basin Location:

	Net Capacity (X.XX acres)	Used Capacity (X.XX acres)	Remaining Capacity (X.XX acres)
MR #7			
Impervious	5.00	3.05	1.95
Other hard surface	4.00	2.00	2.00
Lawn/landscape	3.00	1.10	1.90
Pasture	2.00	0.50	1.50

Table 6: Example Summary Sheet for Projects using Regional Flow Control Facility				
Project Name and ID No.	**Impervious (X.XX acres)**	**Other Hard Surface (X.XX acres)**	**Lawn/landscape (X.XX acres)**	**Pasture (X.XX acres)**
Elysian Fields; ID No. P123	2.00	1.00	0.60	0.30
Scab Lands Estates ID No. P456	1.05	1.00	0.50	0.20
TOTAL	3.05	2.0	1.10	0.50

C. Equivalent Facility Tracking

A municipality may permit a project applicant with an out of basin development project to construct a facility in a high priority watershed. It is allowable that the constructed facility in the high priority watershed only serves an area that matches the out of basin development project's stormwater improvement obligation. In this case, it may only be necessary to create a **Table 4** and **Table 5** to track the project and its corresponding facility. Since the Equivalent facility will only serve one project, **Table 6** may not be necessary. These tables shall also be submitted as an attachment to the annual reports and made publicly available through the PARIS database.

Allowable Regional and Equivalent Facilities

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. Preferably, new facilities should be designed to meet the historic (generally forested) land cover condition for the areas that they serve. However, the following guidance describes procedures to use where that is not possible.

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

A. Detention/Retention Facilities

Permittees will use the following detailed procedure 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 following procedures describe how to design and determine capacity credits for new ponds, and expanded ponds.

No Upgradient Flow Splitters Allowed: Flow splitters upgradient of retention (infiltration), detention, or combined retention/detention facilities are not an acceptable design option where a facility cannot be designed to fully meet the flow control standard for its service drainage area. Flow splitting cannot replicate the distribution of flows that would be produced by a subset of the drainage area.

If the proposed facility does not have a flow splitter, the following steps are an accepted method to determine the Flow Control Net Available Capacity for each Detention/Retention Facility at the beginning of the Stormwater Control Transfer Program (SCTP). Table 7 is provided as a template to be used for each facility.

Step A1- Determine the Pre-SCTP Contributing Area to the Detention/Retention Facility prior to the SCTP

Step A1.1: Is this a new facility that will be constructed after the Ecology approved Stormwater Control Transfer Program?

If Yes:

The Pre-SCTP Contributing area and Capacity is zero. Enter 0 in all boxes on Table 7, Row 1 and Row 2. **Skip to Step 3.**

If No:

Enter the land use (impervious areas, Other Hard Surfaces, Lawn/Landscape, Pasture areas) of the contributing area to the Facility at the prior to SCTP implementation in Table 7, Row 1.

Step A2 - Determine the Pre-SCTP Capacity of the Detention/Retention Facility.

Step A2.1: Determine the smallest Retention/Detention Facility that can meet the Flow Control Standard for the area contributing to the facility prior to the SCTP implementation. Is it smaller than the as-built pre-SCTP Retention/Detention Facility?

If Yes:

The pre-SCTP Capacity is the Pre-SCTP Contributing Area determined in Step 1. Enter this information in Table 7 in Row 2. **Skip to Step 3.**

If No:

If the Detention/Retention Facility cannot meet the Flow Control Standard, begin reducing the contributing area that was entered into the WWHM (preferably by

first eliminating the lawn area, and then by reducing the impervious area) and adjust the Outlet Control Structure. This may be less than the actual area contributing to the facility. Ensure that the facility can bypass up to the 100-year peak flow from the actual area contributing to the facility within the Outlet Control Structure (typically through the standpipe) prior to engaging the Emergency Overflow Spillway. Iterate to ensure that the any overflow structure adjustments do not modified the area that can meet the Flow Control Standard. Enter the modeled area that meets the Flow Control Standard in Table 7, Row 2.

Step A3. Determine the Contributing Area for the Detention/Retention facility in the SCTP program

Enter the characteristics (impervious areas, lawn/landscape, and pasture areas) of the contributing area to the Detention/Retention Facility at the time of SCTP implementation in Table 7, Row 3.

Step A4 Is the SCTP proposed Detention/Retention facility able to meet the Flow Control Standard for the SCTP proposed contributing area?

If Yes:

The proposed SCTP Contributing Area is the SCTP Gross capacity. Enter the contributing area in Table 7, Row 4.

If No:

If the Detention/Retention Facility cannot meet the Flow Control Standard, begin reducing the contributing area that was entered into the WWHM (preferably by first eliminating the lawn area, and then by reducing the impervious area) and adjust the Outlet Control Structure. This may be less than the actual area contributing to the facility. Ensure that the facility can bypass up to the 100-year peak flow from the actual area contributing to the facility within the Outlet Control Structure (typically through the standpipe) prior to engaging the Emergency Overflow Spillway. Iterate to ensure that the any overflow structure adjustments do not modified the area that can meet the Flow Control Standard. Enter the modeled area that meets the Flow Control Standard in Table 7, Row 4.

Step A5- Determine the final Net Capacity credit available for use in the SCTP

Subtract the pre-SCTP capacity determined in Step2 (Table 7 Row 2) from the capacity at SCTP implementation in Step A4 (Table 7 Row 4). Enter this information in Table 7, Row 5

Table 7: Detention/Retention Facility Net Capacity Determination				
Facility Name:	**Impervious (X.XX acres)**	**Other Hard Surface (X.XX acres)**	**Lawn/Landscape (X.XX acres)**	**Pasture (X.XX acres)**
Row 1: Pre-SCTP Contributing Area to Facility				
Row 2: Capacity used Pre-SCTP				
Row 3: SCTP Contributing Area to Facility				
Row 4: Gross Capacity in SCTP Retention/Detention Facility				
Row 5: Net Capacity Available for SCTP				

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).

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. The legal covenant may allow logging as long as the area is re-planted in accordance with Department of Natural Resources requirements and remains in long-term forestry.

Reforested areas are considered stormwater facilities and should be mapped and maintained. Existing native vegetation areas that have the potential to be developed cannot be used for this reforestation credit.

Attachment 1: In-Basin Transfers

NOTE: Although the body of this guidance document focuses on out-of-basin transfers, this attachment provides some information for a municipality considering an in-basin transfer program. In-basin transfers are not integral to the Stormwater Control Transfer Program. However, municipalities have an option of allowing in-basin transfers for projects that must comply with Minimum Requirements #6, #7, or #8. This attachment provides:

1) Excerpts from Appendix 1 of the Phase I and II Western Washington Municipal Stormwater Permits regarding in-basin options.
2) Guidance taken from the Stormwater Management Manual for Western Washington (2012, as amended in 2014) pertinent to in-basin transfers. Though this guidance is not expressly incorporated into the municipal stormwater permits, Permittees may infer Ecology's acceptance of programs that follow the guidance.

In-basin transfers are restricted to the extent described in the following section. An in-basin transfer program, and in-basin transfers for individual projects, do not require prior approval of the Washington State Department of Ecology.

Excerpts from Appendix 1 of the 2013 Western Washington Municipal Stormwater Permits

Section 3.3: Redevelopment

The local government may allow the Minimum Requirements to be met for an equivalent (flow and pollution characteristics) area within the same site. For public road projects, the equivalent area does not have to be within the project limits, but must drain to the same receiving water.

Section 3.4: Additional Requirements for Re-development Project Sites

The Permittee may exempt or institute a stop-loss provision for redevelopment projects from compliance with Minimum Requirements #5 On-site Stormwater Management, Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control and/or Minimum Requirement #8 Wetlands Protection as applied to the replaced hard surfaces if the Permittee has adopted a plan and a schedule that fulfills those requirements in regional facilities.

Section 7: Basin Planning

Basin/Watershed planning may be used by the Permittee to tailor Minimum Requirement #5 On-site Stormwater Management, Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin Planning may also be used to demonstrate an equivalent level of treatment, flow control, and/or wetland protection through the construction and use of regional stormwater facilities.

Explanatory Note – i.e., not an excerpt from Appendix 1 of the permits:
A Basin Plan may recommend use of regional facilities in lieu of site-by-site facilities for new development and redevelopment. However, basin planning is not a prerequisite for regional facilities. Regional facilities planning and design can occur without a commitment to Basin Planning. Basin Planning usually encompasses a broader geographic focus. It may include development of alternative strategies for implementing the default Minimum Requirements, including placement of some regional

facilities within a basin. Basin Planning may also include development of alternative (i.e., different) treatment, flow control, and /or wetland protection requirements. Those alternative requirements must have a science basis for determining that the alternative requirements will comply with federal and state statutory requirements.

Excerpts from Volume 1 of the Stormwater Management Manual for Western Washington (as amended in 2014)

Excerpt from Supplemental Guidelines for Section 2.4.1 – New Development:
Regional stormwater facilities may be used as an alternative method of meeting Minimum Requirements #6, #7, or #8, through documented engineering reports detailing how the proposed facilities meet these requirements for the sites that drain to them. Such facilities must be operational prior to and must have capacity for new development.

Where new development projects require improvements (e.g., frontage improvements) that are not within the same threshold discharge area, the local government may allow the Minimum Requirements to be met for an equivalent (flow and pollution characteristics) area that drains to the same receiving water.

Excerpt from Volume 1: Section 2.4.2 - Redevelopment
Local governments can also establish criteria for allowing a redevelopment project to pay a fee in lieu of constructing water quality or flow control facilities on a redeveloped site. 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. The local government should use such funds for the implementation of stormwater control projects that would have similar benefits to the same receiving water as if the project had constructed its required improvements. Expenditure of such funds is subject to other state statutory requirements.

Regional Facilities for Redevelopment: *Permittees are reminded that where 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, and that will fully meet the flow control standard for that area.*

Glossary

“Beneficial Uses” means uses of waters of the state which include but are not limited to use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state. (excerpted from Western Washington Municipal Stormwater Permit)

"Designated uses" are those uses specified in this chapter for each water body or segment, regardless of whether or not the uses are currently attained. (excerpted from WAC 173-201A-020)

"Existing uses" means those uses actually attained in fresh or marine waters on or after November 28, 1975, whether or not they are designated uses. Introduced species that are not native to Washington, and put-and-take fisheries comprised of nonself-replicating introduced native species, do not need to receive full support as an existing use. (excerpted from WAC 173-201A-020)

Flow Control Standard Range : The range of pre-developed condition discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow.

Out-of-Basin Transfer: Construction of, or purchase of capacity credit in, a facility that discharges into a receiving water other than the receiving water to which the project site will or does discharge.

In-Basin Transfer: Construction of, or purchase of capacity credit in, a facility that discharges into the same receiving water as the project site.

Pre-developed condition: The land cover that likely existed at the project site prior to European settlement of Western Washington. Pre-developed land covers are either forested or prairie. The latter is represented in approved stormwater runoff models as “pasture.”

Pre-project condition: The land cover of the project site that is either a) the land cover that exists immediately prior to the proposed project; or 2) the land cover that meets the “existing” land cover as that term is defined by the local code. Some local governments establish a specific date as defining the “existing” land cover condition.