

**Department of Ecology Criteria Regarding New Development
To Comply With the Lake Whatcom TMDL**

What measure will Ecology use to evaluate the regulations Whatcom County develops to implement the Lake Whatcom TMDL?

Overview:

1. Post construction phosphorus runoff matches phosphorus runoff of forested or native vegetated site by one of two means:
 - a. Presumptive approach:
 - i. By means of infiltration using full dispersion (WWSWMM Vol. III, App. C 7.2.2 and 7.2.4), we presume that total runoff and loading from site matches runoff of a forested or native vegetated site.
 - b. Demonstrative approach:
 - i. By means of storage for subsequent re-use or infiltration, systems evaluated using WWHM3 or a HSPF model calibrated to the specific site and demonstrating that total runoff after development matches total runoff from forested or native vegetation land cover. Storage can be internal in the form of a reservoir of water within an infiltration facility or external in the form of ponds, cistern or rain barrels.
 - ii. Where total post-construction runoff exceeds forested or native vegetated land cover, discharge concentrations from treatment systems match natural phosphorus loading for the site. (Could also target 20 µg/L, if attainable.)
2. Reliable long term performance of the stormwater systems.
 - a. Monitoring for preservation of required forested or native land cover required for the infiltration/dispersion system.
 - b. Maintenance of all structural treatment and detention facilities ensured through compliance inspections.

Discussion:

There is no additional capacity for phosphorus loading to Lake Whatcom from new development, therefore, the allocations in the Water Quality Cleanup Plan will be based on reductions from the existing loading. This means that new development can generate no increase in loading above that from a forested or native vegetated site, and maintenance of the treatment system into the future must be assured. To meet the waste load allocation under the MS4 permit, this will be required on all new development within Whatcom County jurisdiction.

There are two approaches available to meet the “no additional loading” standard. The first is the presumptive approach. To meet the presumptive approach the stormwater system of a given development must be designed to meet the full dispersion requirement, as described in Volume III, Appendix C of the Western Washington Stormwater Manual, section 7.2.1 and 7.2.4. . This requires that no more than 10 percent of the site be impervious area and that there is a 6.5 to 1 ratio of forested or

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native vegetation to impervious area. The impervious area must be located so that the forest or native vegetation can accommodate all of the runoff from the impervious area. An enforceable legal document protecting the forest or native vegetation is a requirement, as described in Volume III, Appendix C of the Western Washington Stormwater Manual, section 7.2.

The second approach is the demonstrative approach. There are two ways to demonstrate that no increase in loading will result. The first is to demonstrate that though a combination of infiltration, or storage and reuse the developed site will generate runoff that does not exceed the runoff from the site in a forest or native vegetated condition. This can be modeled with the Western Washington Hydrology Model 3. Also, peak flows must meet Ecology's flow duration standard to protect discharge channels if the water is conveyed to the lake by ditches or streams.

The alternative demonstrative approach requires showing that treatment is available to reduce phosphorus from the runoff to meet a total loading that does not exceed the loading from the site in forest or native vegetation land cover.

To be in compliance with the Western Washington Phase II Municipal Stormwater Permit (Condition S5.C.4c) , Whatcom County has an obligation to ensure that new developments that discharge to the county municipal separate storm sewer system (MS4) maintain stormwater facilities if the development is greater than one acre, or is part of a plan of development of one acre or greater. However, to meet the allocations in the Water Quality Cleanup Plan, all stormwater systems associated with new development, regardless of size or discharge location, will have to be maintained to ensure continued proper performance.

When Whatcom County development regulations meet these criteria they will be adequate to meet the allocations for new development under the Water Quality Cleanup Plan.

Department of Ecology

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