



October 31, 2017

Steve Hood
Water Quality Program
Washington Department of Ecology
Bellingham Field Office
1440 – 10th Street, Suite 102
Bellingham, WA 98225

Mr. Hood:

The City of Bellingham and Whatcom County hereby submit the Lake Whatcom Watershed Total Phosphorus and Bacteria Total Maximum Daily Load (TMDL) Implementation Plan for 2018-2029 in fulfillment of the requirements outlined in the *Water Quality Improvement Report and Implementation Strategy* of the TMDL. The plan spans eleven years instead of ten to address the one-year extension of the 2013-2018 Western Washington Phase II Municipal Stormwater Permit to 2019. The Plan outlines the tasks the City and County will implement to improve water quality in Lake Whatcom. We understand that the relevant tasks included for the first six years of the plan (2018- 2024) will be included in the next Western Washington Phase II Municipal Stormwater Permit (for 2019-2024) as presented herein, unless we hear otherwise from you.

We thank the Department of Ecology for the coordinated review and comments and general assistance provided during the development of this plan. Please feel free to contact us if you have any questions regarding this submittal.

Best regards,

A handwritten signature in black ink, appearing to read "Ted Carlson".

Ted Carlson, Director
Public Works Department
City of Bellingham
104 W. Magnolia
Bellingham, WA 98225

A handwritten signature in black ink, appearing to read "Jon Hutchings".

Jon Hutchings, Director
Public Works Department
Whatcom County
322 N. Commercial Street, Suite 210
Bellingham, WA 98225

**LAKE WHATCOM WATERSHED TOTAL PHOSPHORUS AND BACTERIA
TOTAL MAXIMUM DAILY LOAD (TMDL) IMPLEMENTATION PLAN
2018-2029**

Prepared By: City of Bellingham
and Whatcom County



Overview

The City of Bellingham (the City) and Whatcom County (the County) are required by the Washington State Department of Ecology (Ecology) to develop a Water quality Improvement Plan to address phosphorus and bacteria loading as determined by the Lake Whatcom Watershed Total Phosphorus and Bacteria Total Maximum Daily Load (TMDL). Tasks to accomplish the plan are submitted in the form of a *10-Year Implementation Plan*. These tasks will address, primarily: public education and outreach activities, stormwater management and treatment projects and programs, land use regulations, operational best practices, and water quality monitoring. A watershed pollutant loading model and lake response model will be utilized and updated to guide implementation plan focus and evaluate implementation plan effectiveness.

This document fulfills all of the requirements of a 10-Year Implementation Plan and outlines milestones to accomplish starting in 2018. The original schedule of the 10-Year Implementation Plan (the Implementation Plan) was intended to follow the schedule of the next Western Washington Phase II Municipal Stormwater Permit (issued for 2018-2023, the Permit). The first five years of the Implementation Plan will be adopted into *Appendix 2: Total Maximum Daily Load Requirements* of the Permit. The last five years of the Plan are intended to highlight and forecast phosphorus reduction programs and projects that may occur, but have not gone through the budget planning process yet.

In June 2017, Ecology decided to extend the 2013-2018 Permit for one year (August 1, 2018-July 31, 2019), and issue the next five year Permit on August 1, 2019. To accommodate the Permit extension, the Implementation Plan for the City and County will cover 11 years instead of 10, from 2018-2029. This change will also align the schedule of the Lake Whatcom Management Program's Five-Year Work Plans and the five year tasks outlined in the Implementation Plan.

The City and County elected to update the Implementation Plan and submit it to Ecology every five years, and Ecology will adopt the appropriate milestones into *Appendix 2* of the Permit.

A preferred timeline and budget for implementing the Water Quality Improvement Plan was submitted by the City and the County on October 20, 2016. The Jurisdictions proposed a 50-year timeline and a \$100 million budget (\$50 million per jurisdiction; 2016 dollars) to complete full implementation of Water Quality Improvement Plan

City of Bellingham

Section 1: Public Education, Outreach, and Engagement

- A. The City will develop education, outreach, and engagement campaigns as follows:
 - 1. Develop a repeatable survey to measure watershed residents' beliefs, behaviors, and attitudes over time related to Lake Whatcom water quality problems and solutions to inform the development of Lake Whatcom Watershed outreach programs.
 - 2. Create an informational packet to be distributed to all watershed residents, including an annual distribution to new watershed property owners, including but not limited to:
 - a. A guidebook for homeowners explaining water quality Best Management Practices (BMPs), both structural and behavioral/operational and which includes descriptions and locations of available resources to facilitate the adoption of these BMPs on residential sites.
 - b. A guide to Lake Whatcom Watershed-specific regulations applicable to properties within the City of Bellingham's jurisdiction and subject to Bellingham Municipal Code provisions.
- B. As a participating jurisdiction in the Lake Whatcom Cooperative Management Program, the City will continue to develop and implement other education, outreach, and engagement materials and activities as outlined in the most current version of the Lake Whatcom Work Plan, updated and adopted by City Council Resolution every five years.

Section 2: Stormwater Management

- A. Capital Stormwater Program
 - 1. The City will develop a prioritized list of new treatment and flow control Capital Improvement Projects addressing the Lake Whatcom TMDL, and implement projects from this list in order to progress toward stormwater treatment targets. The list will be updated annually and submitted to Ecology with the Annual Report by March 31 of each year. The submittal will track all relevant steps of the project(s) including, but not limited to:
 - a. Land acquisition
 - b. Design
 - c. Construction

- d. Cost
 - e. Drainage area
 - f. Treated acres
2. The City will develop a plan to retrofit, as new technologies and/or strategies become available, existing stormwater infrastructure to increase treatment efficiency. Best Management Practices found in current and future versions of the Stormwater Management Manual for Western Washington will be considered, along with new technologies approved through the Technology Assessment Protocol - Ecology (TAPE) process.
 3. The City will commit local funding to complete Capital Improvement Projects while simultaneously seeking funding for high-priority new and retrofit facilities through competitive grants and other sources as identified.

B. Cooperative Stormwater Management Strategies

1. The City will track phosphorus reductions in the following categories:
 - a. Phosphorus treatment and flow control capital projects;
 - b. Homeowner improvements through the Homeowner Incentive Program (HIP);
 - c. Land use regulations; and
 - d. Operations and maintenance activities.
2. The City will continue as a partner in the interjurisdictional Lake Whatcom Management Program and support implementation of Stormwater Management actions as outlined in the most current version of the Lake Whatcom Work Plan, to be updated and adopted by City Council resolution at least every five years.

C. Other Stormwater Management Activities

1. The City will continue enhanced street sweeping activities within its jurisdiction to remove phosphorus sources from public streets as conditions allow, and track, to the best of its ability, the total annual phosphorus reduction achieved through this activity.
2. The City will continue to inspect and maintain public infrastructure dedicated to phosphorus removal.

Section 3: Land Use and Development Regulations

- A. The City will continue to implement and enforce land-use and development regulations specific to the Lake Whatcom watershed, as found in the Lake Whatcom Regulatory Chapter Bellingham Municipal Code (BMC) 16.80, and detailed in BMC 15.42, Stormwater Management.

- B. The City will continue to require ongoing maintenance of 1) privately-held engineered stormwater facilities dedicated to phosphorus removal and 2) conservation easements dedicated to phosphorus prevention. Strategies to ensure maintenance requirements are met include education and outreach as well as enforcement for non-compliance.

Section 4: Operational Best Practices and Good Housekeeping

- A. The City will continue to respond to reports of spills or illicit discharges and address the situations as necessary to protect water quality. Reports will continue to be collected via the City's Stormwater Hotline system, Ecology's ERTS process, and other notification pathways.
- B. The City will, through participation in the Lake Whatcom Management Program, support efforts to acquire and dispose of hazardous or environmentally-harmful materials (including phosphorous chemicals such as fertilizers) collected from watershed residents.
- C. The City will develop a Lake Whatcom watershed-specific appendix to its operational plan for managing public areas such as parks, trails, rights-of-way, and open spaces. Operational activities within the watershed will focus on management of phosphorus and fecal coliform sources. In cases where source control proves infeasible, the City will seek to provide runoff treatment for public areas to the maximum extent practicable, primarily through retrofitting of infrastructure.

Section 5: Water Quality Monitoring and Effectiveness Evaluation

- A. The City will continue to support and partner in work that focuses on monitoring and documenting water quality parameters on behalf of the Lake Whatcom Management Program.
- B. By December 31, 2020, the City shall complete an evaluation of the effectiveness of built stormwater treatment and flow control facilities, and assess overall performance in reducing phosphorus and fecal coliform.
- C. The City will, through participation in and support of the Lake Whatcom Cooperative Management Program, engage in thorough and scientifically-valid assessments of hydrologic, water quality, and/or pollutant-loading models at regular intervals as described in a to-be-developed Ecology-Approved Quality Assurance Project Plan (QAPP).
- D. By July 31, 2018, the City will coordinate with the County to submit a list of studies needed to narrow uncertainty of the lake response and watershed loading models.

Whatcom County

Section 1: Public Education, Outreach, and Engagement

- A. Within the next Lake Whatcom Cooperative Management Program Five-Year Work Plan, anticipated to be prepared in 2019, the County will continue to develop education, outreach, and engagement campaigns and materials contained in Program Area 9: Education and Outreach , and will implement those tasks related to TMDL implementation in the Management Program schedule.
- B. The County will conduct an annual workshop(s) on private stormwater facility maintenance (for residential and commercial developments), and provide/coordinate facility inspections and technical reports with maintenance guidelines and recommendations to the developments. The target audiences include residents, homeowners/condominium associations, and property managers/owners.
- C. By July 31, 2024, the County will conduct/coordinate hazardous waste (fertilizers, chemicals, hazardous cleaning supplies, etc.) outreach and materials pick-up event for residents and businesses in the Lake Whatcom watershed.

Section 2: Stormwater Management

- A. Capital Stormwater Program
 - 1. The County will develop a prioritized list of (new) treatment and flow control Capital Improvement Projects addressing the Lake Whatcom TMDL, and implement projects from this list in order to progress toward watershed-wide stormwater treatment targets. The list will forecast six years of projects, and will be updated annually and submitted to Ecology with the Annual Report by March 31 of each year. The submittal will track all relevant steps of the project including, but not limited to:
 - a. Land acquisition
 - b. Design
 - c. Construction
 - d. Cost
 - e. Drainage area
 - f. Treated acres
 - 2. By December 31, 2023, the County will develop a plan identifying retrofit opportunities with applicable timeframes for existing stormwater infrastructure that will include new technologies and/or strategies as they become viable to increase treatment efficiency.

B. Cooperative Stormwater Management Strategies

1. The County will track phosphorus reductions by the following categories:
 - a. Phosphorus treatment and flow control capital projects
 - b. Homeowner improvements through the Homeowner Incentive Program (HIP)
 - c. Land use regulations
 - d. Operations and maintenance activities
2. The County will continue as a partner in the Lake Whatcom Cooperative Management Program and support implementation of Stormwater Management actions as outlined in the most current version of the Lake Whatcom Work Plan.

C. Other Stormwater Management Activities

1. The County will continue inspections of all publicly-owned catch basins within the Lake Whatcom watershed at least every 18 months. The inspection schedule was initiated in spring 2016. The inspection and maintenance guidelines will follow the most current version of the Stormwater Management Manual for Western Washington.

Section 3: Land Use, Stormwater Management, and Environmental Regulations

- A. The County will continue to implement the following ordinances:
 - a. Whatcom County Code 20.50 Lake Whatcom Watershed Overlay
 - b. Whatcom County Code 16.36 Illicit Discharge Detection and Elimination (IDDE) Program
 - c. Whatcom County Code 16.40 National Pollutant Discharge Elimination System (NPDES)

Section 4: Operational Best Practices and Good Housekeeping

- A. The County will continue with its plans and regulations for reducing stormwater impacts and pollutants discharging from public areas such as parks, trails, rights-of-way, roads, open spaces, etc. in the Lake Whatcom watershed. (Sections S5.C.5.f and g of the 2007-2011 Western Washington Phase II Municipal Stormwater Permit)

Section 5: Water Quality Monitoring and Effectiveness Evaluation

- A. The County will continue to support and partner in work that focuses on monitoring and documenting water quality parameters on behalf of the Lake Whatcom Management Program.

- B. By December 31, 2020, the County shall complete an evaluation of the effectiveness of built stormwater treatment and flow control facilities, and assess overall performance in reducing phosphorus and fecal coliform.
- C. The County will, through participation in and support of the Lake Whatcom Cooperative Management Program, engage in thorough and scientifically-valid assessments of hydrologic, water quality, and/or pollutant-loading models at regular intervals as described in a to-be-developed Ecology-Approved Quality Assurance Project Plan (QAPP).
- D. By July 31, 2018, the County will coordinate with the City to submit a summary of studies needed to narrow uncertainty of the lake response and watershed loading models.

Administration-City and County

- A. The City of Bellingham and Whatcom County shall submit the Lake Whatcom Implementation tasks for 2024-2029 to Ecology for review by August 1, 2023.

- B. The City of Bellingham and Whatcom County shall submit to Ecology an annual report tracking phosphorus reduction activities and calculations by March 31 of each calendar year (to coincide with the Annual Reporting schedule of the Western Washington Phase II Municipal Stormwater Permit).

Summary of Milestones 2018-2024

Discrete Milestones

- A. By July 31, 2018, the City will coordinate with the County to submit a summary of studies needed to narrow uncertainty of the lake response and watershed loading models.
- B. Within the next Lake Whatcom Cooperative Management Program Five-Year Work Plan, anticipated to be prepared in 2019, the County and City will continue to develop education, outreach, and engagement campaigns and materials contained in Program Area 9: Education and Outreach , and will implement those tasks related to TMDL implementation in the Management Program schedule.
- C. By December 31, 2020, the County and City shall complete an evaluation of the effectiveness of built stormwater treatment and flow control facilities, and assess overall performance in reducing phosphorus and fecal coliform.
- D. By August 1, 2023, the City of Bellingham and Whatcom County shall submit the Lake Whatcom Implementation tasks for 2024-2029 to Ecology for review.
- E. By July 31, 2024, the County will conduct/coordinate, with the support of the City, hazardous waste (fertilizers, chemicals, hazardous cleaning supplies, etc.) outreach and materials pick-up event for residents and businesses in the Lake Whatcom watershed.
- F. By December 31, 2023, the County and City will develop jurisdiction-specific plans identifying retrofit opportunities with applicable timeframes for existing stormwater infrastructure that will include new technologies and/or strategies as they become viable to increase treatment efficiency.
- G. The County and City will, through participation in and support of the Lake Whatcom Cooperative Management Program, engage in thorough and scientifically-valid assessments of hydrologic, water quality, and/or pollutant-loading models at regular intervals as described in a to-be-developed Ecology-Approved Quality Assurance Project Plan (QAPP).

Recurring Annual Milestones

- H. The County will conduct an annual workshop(s) on private stormwater facility maintenance (for residential and commercial developments), and provide/coordinate facility inspections and technical reports with maintenance guidelines and recommendations to the developments. The target audiences include residents, homeowners/condominium associations, and property managers/owners.
- I. The County will develop a prioritized list of treatment and flow control Capital Improvement Projects addressing the Lake Whatcom TMDL, and implement projects from this list in order to

progress toward watershed-wide stormwater treatment targets. The list will forecast six years of projects, and will be updated annually and submitted to Ecology with the Annual Report by March 31 of each year.

- J. The City of Bellingham and Whatcom County shall submit to Ecology an annual report tracking phosphorus reduction activities and calculations by March 31 of each calendar year (to coincide with the Annual Reporting schedule of the Western Washington Phase II Municipal Stormwater Permit).

2025-2029

City of Bellingham and Whatcom County

Section 1: Public Education, Outreach, and Engagement

- A. The City and County will continue to develop education, outreach, and engagement campaigns and materials outlined in the Five-Year Work Plans of the Lake Whatcom Cooperative Management Program.

Section 2: Stormwater Management

- A. Capital Stormwater Program

- 1. The City and County will continue to develop a prioritized list of Capital Improvement Projects and seek to annually complete projects to address the TMDL phosphorus loading target.

- B. Cooperative Stormwater Management Strategies

- 1. The City and County will assess ongoing implementation of the Homeowner Incentive Program (HIP), or similar programs within their own jurisdiction, to achieve retrofits to reduce phosphorus in stormwater runoff from private properties.
 - 2. The City and County will continue as a partner in the Lake Whatcom Cooperative Management Program and support implementation of Stormwater Management actions as outlined in the most current version of the Lake Whatcom Work Plan.

- C. Other Stormwater Management Activities

- 1. The County will complete inspections of all publicly-owned catch basins within the Lake Whatcom watershed at least every 18 months. The inspection schedule was initiated in spring, 2016. The inspection and maintenance guidelines will follow the most current version of the Stormwater Management Manual for Western Washington.

Section 3: Land Use and Development Regulations

- A. The City will continue to implement and enforce land-use and development regulations specific to the Lake Whatcom watershed, as found in the Lake Whatcom Regulatory Chapter Bellingham Municipal Code (BMC) 16.80, and detailed in BMC 15.42, Stormwater Management.

- B. The County will continue to implement in the following ordinances:

- a. Whatcom County Code 20.50 Lake Whatcom Watershed Overlay

- b. Whatcom County Code 16.36 Illicit Discharge Detection and Elimination (IDDE) Program
- c. Whatcom County Code 16.40 National Pollutant Discharge Elimination System (NPDES)

Section 4: Operational Best Practices and Good Housekeeping

- A. The City and County will, through participation in the Lake Whatcom Cooperative Management Program, assess hazardous waste education and outreach opportunities every five years.

Section 5: Water Quality Monitoring and Effectiveness Evaluation

- A. The City and County will continue to support and partner in work that focuses on monitoring and documenting water quality parameters on behalf of the Lake Whatcom Management Program.
- B. The City and County will, through participation in and support of the Lake Whatcom Cooperative Management Program, engage in thorough and scientifically-valid assessments of hydrologic, water quality, and/or pollutant-loading models at regular intervals as described in a to-be-developed Ecology-Approved Quality Assurance Project Plan (QAPP).
- C. By October 31, 2026, the City and County will revise the phosphorus loading capacity based on the updated watershed loading model.