2021

City of Bellingham
Stormwater Management Program

Attachment A to the NPDES Phase II Permit Annual Report

City of Bellingham

Public Works Department

Storm and Surface Water Utility

Bellingham, WA

March 31, 2021

FOREWORD

This document serves as an attachment to the City of Bellingham's annual report submittal to the Department of Ecology to meet the requirements of the Western Washington Phase II Municipal Stormwater Permit (WAR04-5550) under the National Pollutant Discharge Elimination System (NPDES) program. This Stormwater Management Plan (SWMP) is prepared to demonstrate the City's understanding of and commitment to fully meeting the regulatory requirements of this permit. The SWMP is a dynamic document that will be updated on an annual basis and will be integral to our permit compliance.

This report will address work completed in the calendar year 2020, which documents and informs the public of the City of Bellingham's implementation of its municipal stormwater permit. The Permit was issued on August 1, 2019 and will expire in 2024. The formatting of this report was updated this year to meet the new requirements of the 2019 municipal stormwater permit. Some permit requirements changed and section headers were amended and renumbered.

A major change applicable to the City under our current permit is the requirement for a coordinated response to restoration of Lake Whatcom. Specific requirements are found in Appendix 2 of the 2019-2024 Permit. The City's efforts related to this requirement are found in the Lake Whatcom TMDL Implementation Plan Annual Report, attached as an Appendix to this report.

It should be noted that our annual capital programing has been added to the document. This portion of the report, outlining need-driven water quality protection projects and fish passage improvements, is not a requirement of the applicable NPDES permits. The information is included in this report to provide the citizens of Bellingham a more comprehensive view of stormwater efforts that are funded through our rates and fees but aren't part of the City's formal NPDES-required SWMP. Similarly, many sections of this report are significantly more detailed than required by permit reporting obligations, to demonstrate the City of Bellingham's dedication to serving our community above and beyond minimum performance measures and regulatory thresholds.

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INTRODUCTION

Stormwater runoff from streets, parking lots, construction sites, industrial properties, and residential areas is recognized as one of the leading sources of pollution to our streams, lakes, wetlands, and Puget Sound. The City of Bellingham's (City) is committed to regional goals for keystone species protection, including endangered salmon species and resident Orca, which requires preservation of water quality in freshwater streams, lakes, and wetlands. The City recognizes the need to protect nearshore marine water quality to prevent bioaccumulation of pollutants in that same food chain. Significant effort is also put toward preserving and restoring the quality of water in Lake Whatcom, the source of drinking water for over 120,000 city and county residents.

In 1969, the Cuyahoga River near Cleveland, Ohio, caught fire. Unregulated chemical pollutants accumulated to such a dangerous concentration that the surface of the water ignited. The imagery of a river on fire captivated the Nation and inspired the U.S. Congress of 1972 to strengthen existing environmental law to create the United States' current and marquis water quality protection law: The Clean Water Act. Congress, through the Clean Water Act, intended to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (CWA Section 101(a)). Around this same time, the Environmental Protection Agency (EPA) was created. One of EPA's first responsibilities was to administer the Clean Water Act. With this new authority, EPA established the National Pollutant Discharge and Elimination System (NPDES) to regulate industrial and municipal stormwater runoff, and wastewater from publicly owned treatment works. EPA delegates authority to states to assist with the administration of the NPDES program. Washington State is approved by EPA to administer the NPDES program. Washington meets this responsibility through Washington State Department of Ecology (Ecology). Ecology and EPA require that municipalities, such as the City of Bellingham, meet the requirements of the Clean Water Act.

To address stormwater pollution at the local level, the City established a Storm and Surface Water Utility in 1990. In 2007, the City expanded its existing stormwater protection into a formal Stormwater Management Program (SWMP) when it was approved for permit coverage by Ecology. This permit is known as the Western Washington Phase II Municipal Stormwater Permit (Permit). The City continues to refine its stormwater program to meet the terms and conditions of the Permit, including the current requirements of the fourth version (third issuance) of the Permit, effective August 2019 through July 2024.

The Permit allows municipalities to discharge stormwater from municipal systems into "waters of the state" such as streams, lakes, and Puget Sound, as long as there are programs in place to reduce pollutants in stormwater to the "maximum extent practicable". Stormwater runoff from the City of Bellingham discharges to four main waterbodies: Lake Whatcom, Lake Padden, Bellingham Bay, and Chuckanut Bay. Improving habitat and water quality in these waterbodies were identified as top priorities in the City's Legacies and Strategic Commitments to its citizens. The City administers programs to meet these commitments such as the Lake Whatcom Management Program, Bellingham Water Quality Improvement

Plans, Aquatic Habitat Restoration Program, and the Downtown Renovation and Waterfront Restoration Programs. Requirements under the Permit provide the City additional opportunities to restore water quality in the City's neighboring streams, lakes, and bays.

STORMWATER MANAGEMENT PROGRAM DEVELOPMENT (S5.A and S5.B)

Permit Requirements

Sections S5.A and S5.B of the 2019-2024 Permit require the City to:

- Develop and implement a Stormwater Management Program (SWMP) within City limits, as determined in section S1.A of the Permit.
- Prepare and maintain a SWMP Plan which is to be submitted to Ecology with annual compliance reports.
- Manage an ongoing program for gathering, tracking, maintaining and using information to evaluate the SWMP development, implementation and permit compliance and set priorities. Examples of data collected include:
    - The cost of the development and implementation of the SWMP.
    - The number of inspections, follow-up actions, and official enforcement actions
    - The types of public education activities as required by each respective SWMP program requirement.
- Coordinate with other NPDES permittees and partners in the region on stormwater related policies, programs, and projects.
- Coordinate internally among City Departments.

Notable Accomplishments

Prior to Permit implementation, the City of Bellingham proactively managed the quality of stormwater for 17 years using a variety of approaches designed to control runoff, treat runoff, reduce pollutant sources, and employ adaptive management. Over the course of four Permit terms spanning from 2007 to the current 2019-2024 permit, the City built a strong stormwater program adding depth to existing programs and increasing staff as needed. Through education and the use of incentive programs, the City continues to engage a variety of audiences in stormwater issues; from classroom children and rain garden planting volunteers, to focus groups targeting restoration options and survey respondents documenting behavioral changes. Stormwater control and treatment was accomplished by implementing Best Management Practices (BMPs) and development standards, designing and building capital projects for new treatment facilities and retrofitting older public facilities. The City worked with businesses to control sources of pollution as well as individual homeowners to reduce runoff and pollution from their properties. These strategies worked in unison to form a multifaceted program that addresses stormwater quality and meets the six Phase II permit elements in the 2012-2018 Permit: education and outreach, public involvement, illicit discharge detection and elimination, runoff control from new development and redevelopment, good housekeeping in municipal operations, and water quality monitoring. The current 2019-2024 Permit

expands upon three previously generalized requirements—for stormwater planning, mapping of the City's stormwater system, and source control for existing businesses—bringing the formal number of program elements to nine. In addition, the 2019-2024 Permit includes specific requirements applicable to the Lake Whatcom Total Maximum Daily Load (TMDL) Implementation Plan. The City's stormwater code was revised five times (1990, 1995, 2006, 2009, and 2017), with the most recent revision incorporating new Low Impact Development (LID) principles for development codes and standards.

2020 Surface and Stormwater Comprehensive Plan Update and Stormwater Rate Increase

In 2020, the City updated the Surface and Stormwater Comprehensive Plan. This effort was informed by a detailed analysis of the City's topography, land use, and existing infrastructure and included a planning-level cost estimates for priority projects. The purpose of this Comprehensive Plan is to provide goals, policies, guidance, and planned program activities required to manage regulator, capital improvement, development, and maintenance requirements associated with the Stormwater Management Program. This Comprehensive plan informs a six-year Capital Improvement Plan (CIP), which is designed to address some of the largest challenges for water quality, fish passage, and flood protection within city limits. The City used a predictive tool that helped identify areas that are best suited for new infrastructure or retrofits. This capital improvement prioritization exercise identified an additional ten years of priority projects that are now programmed into the CIP and/or selected for grant applications for voluntary retrofit projects. A stormwater rate increase was passed by the City Council this year to allow the completion of these identified capital improvements, as well as other Surface and Stormwater Utility needs.

Inter-Jurisdictional Collaboration in the Lake Whatcom Watershed

The City works very closely with other local jurisdictions to coordinate stormwater efforts citywide and in the Lake Whatcom watershed. One example is the City's participation in the Lake Whatcom Management Program. This program is a joint effort of the City of Bellingham, Whatcom County, and Lake Whatcom Water and Sewer District to protect Lake Whatcom as a source of drinking water. The goal is to reduce or eliminate pollutant load and the amount of stormwater entering the lake. The pollutants that are typically within urban stormwater, including suspended solids, metals, and hydrocarbons, phosphorus and fecal coliform bacteria, are the foremost pollutants of concern to Lake Whatcom's health. Since 1992, the City has been documenting reductions in phosphorus (P) achieved by capital infrastructure improvements. Starting in 2011, the City began documenting reductions in P achieved through private property retrofits, land use regulations, and enhanced operations and maintenance procedures. In 2020, the City received pilot use level designation (PULD) on an ambitious project to identify and refine a new, enhanced treatment media. The City's Phosphorus Optimized Stormwater Treatment (POST) system is now in the field-testing phase to determine real-world performance and maintenance needs. Once pilot level monitoring is complete, the City will apply for general use level designation (GULD). A GULD designation will allow this project to provide an open-source media to other municipalities that provides phosphorus treatment

exceeding the levels currently available using widely available best management practices. Further efforts to protect Lake Whatcom include the land preservation program, which aims to reduce water quality impacts by preserving land within the Lake Whatcom Watershed that might otherwise be made available for development, and ongoing water quality facility retrofits.

Capital Improvement Projects

The City's Storm and Surface Water Utility is constantly evaluating, retrofitting, and improving Bellingham's stormwater system and has completed many projects to date. The City operates six regional detention facilities and continues to be a leader in integrating low impact development (LID) techniques into infrastructure. Several projects were developed or completed during 2019 to upgrade existing infrastructure and install or enhance treatment to remove common pollutants. The Meridian Street Retrofit project, designed in 2019, will address the City's highest vehicle-trip-per-day corridor and provide enhanced water quality treatment for nearly two miles of high-use roadway that currently drains to Squalicum Creek without treatment. The City also made significant progress in the redesign of the Park Place Water Quality Facility, the largest piece of infrastructure that collects and treats runoff draining to Lake Whatcom. The Park Place rebuild project will be the City's largest investment to date in the Lake Whatcom watershed, treating more runoff from more developed area than any other facility in the basin. In 2019, phosphorus treatment systems were installed at three major intersections in the Lake Whatcom watershed, treating a combined 20 acres. The City also continues to develop city-wide plans to guide the next set of improvements, including an ongoing Comprehensive Plan update as well as predictive assessment tools that will direct retrofits to the areas of greatest need.

Additional Highlights

The City completed the self-guided Stormwater Discovery Tour program to further inform the community of on-the-ground solutions in place to restore water quality throughout the City. The Pollution Prevention Program provided pollution prevention technical assistance to 16 businesses and the Wash Right campaign continued to promote proper outdoor washing practices. The Bellingham Water School Program reached 28 5th grade elementary school classes in 12 schools, totaling 700 students. City Stormwater Inspectors conducted 5223 construction site inspections and 105 private facility inspections. The detailed sections that follow will describe these efforts and their impacts on water quality protection for our residents, Bellingham's many visitors, and the local and regional environment.

City Organizational Responsibilities for the Stormwater Management Program (S5.B.5.b)

The City's Storm and Surface Water Utility (SSWU) Section in the Natural Resources Division of the Public Works Department holds the primary responsibility for developing and implementing the stormwater program and tracking Phase II Permit requirements. Within the Public Works Department, the Engineering and Operations divisions also hold integral roles in implementing the components of the stormwater

program. The program is also supported by Planning & Community Development, Fire, Police, and Parks and Recreation (see Table 1). Internal coordination between these city departments occurs regularly as issues arise (e.g. handoff between construction inspectors and the private facility inspector, incident response and follow-up actions to stormwater violations) and more formally through stormwater committee meetings and Operations and Engineering coordination meetings.

Plans for Program Activities in 2020-2024 Permit Cycle

- Creating a new an NPDES Permit Coordinator position. This position will be responsible for maintaining the City's compliance with all aspects of the Permit.
- Maintain an interdepartmental team to assess stormwater planning efforts including watershed and basin prioritization.
- Documenting illicit discharge tracking and cross-connection screening for the City's existing infrastructure.
- Updating mapping requirements to include all known outfalls.
- Launching a required Source Control Program for existing businesses.
- Implementing regulations on industrial discharges directed to sanitary sewer that could affect water quality discharged from the City's wastewater treatment plant.
- Addressing Lake Whatcom Total Maximum Daily Load Implementation Plan requirements detailed in Appendix 2 of the Permit.
- Updating all Stormwater Pollution Prevention Plans (SWPPP) for lands controlled by the City to meet new Permit requirements.

Table 1: City Organizational Responsibilities for the NPDES program (S5.B.5.b)

City Department	Description of NPDES Stormwater Responsibilities
Public Works - Natural Resources Storm & Surface Water Utility Section	Administers and develops the SWMP and coordinates with other divisions within the City (and other NPDES jurisdictions) to address Permit elements including: • Stormwater system planning • Education and outreach • Public involvement • Illicit Discharge Detection and Elimination (IDDE) program • Stormwater incident response • Private facility inspections • Municipal staff training • Pollution prevention practices • Annual Reporting • Business inspections for source control of pollutants • Pre-treatment for industrial discharges to sewer
Public Works - Engineering	• Design of capital projects (new stormwater facilities and retrofits) • Oversight of construction contractor and other professionals and experts • Inspection of construction sites to ensure they meet stormwater requirements for water quality protection before, during, and after construction.

Public Works - Engineering Development Section	• Site plan review for stormwater permits in partnership with Planning and Community Development Department
Public Works - Operations Surface and Stormwater Division	• Inspection, operation, and maintenance of public stormwater facilities • Stormwater incident response • Tracing and screening infrastructure for illicit discharges
Public Works Laboratory at Post Point	• Water quality sample analysis for illicit discharge characterization and source tracing • Field monitoring of water quality in streams, lakes, and marine waters • Evaluation of stormwater facility performance
Planning & Community Development	• Permit Center provides first contact for residents proposing new or redevelopment projects needing stormwater permits • Distributes Notice of Intent for projects meeting thresholds
Police Department	• First responder to stormwater incident if called • Code enforcement for stormwater violations
Fire Department	• First responder to stormwater incident if called

1.0 STORMWATER PLANNING (Permit Section S5.C.1)

1.1 Summary of Permit Requirements

The Stormwater Planning program is intended to inform and assist in the development of policies and strategies as water quality management tools to protect receiving waters.

The Stormwater Planning Permit conditions require the City to:

- Convene an interdisciplinary team of subject experts to inform and assist in the development, progress, and influence of the Stormwater Planning program.
- Coordinate with long range plan updates, such as the newly updated City of Bellingham 2020 Surface and Stormwater Comprehensive Plan. Specific requirements are as follows:
    - Describe in the SWMP how stormwater management needs and protection/improvement of receiving water health are, or are not, informing the planning update processes and influencing policies and implementation strategies in the City jurisdiction.
    - Describe in the SWMP the water quality and watershed protection policies, strategies, codes, and other measures intended to protect and improve local receiving water health through planning or consider stormwater management needs or limitations.
- Implement planning codes to require Low Impact Development (LID), which shall be designed to minimize impervious surfaces, native vegetation loss, and stormwater runoff. The City shall enforce these LID principles though ordinances and annually identify and remove barriers to compliance.
- Develop a Stormwater Management Action Planning (SMAP) program. Specific requirements are as follows:
    - Document and assess existing information pertaining to local receiving waters and their watersheds to aid in the identification of waters most likely to benefit from stormwater management planning.
    - Develop a watershed inventory which describes relative conditions of receiving waters and their watersheds.
    - Develop and implement a prioritization method and process to determine which receiving waters will receive the most benefit from SMAP actions.
- No later than March 31, 2023, develop a Stormwater Management Action Plan (SMAP) for at least one priority watershed as identified in the above prioritization process. The SMAP shall include the following:
    - A description of needed stormwater facility retrofits.
    - Land management and development actions to improve water quality.
    - Targeted and enhanced elements of the City SWMP program.

- Changes needed to long range plans to meet SMAP priorities.
- A proposed implementation schedule and budget for short-term and long-term actions.
- A process and schedule to assess and improve the SMAP.

1.2 Program Overview

The City operates multiple programs that combine to provide ad-hoc stormwater planning across departments. Those programs will be consolidated in the next year to meet new permit requirements. A NPDES Permit Coordinator position, which will be responsible for the City's Permit compliance, is planned to be filled by the end of 2021. As of 2020, the City plans for stormwater impacts through its Watershed Plans and its newly updated 2020 Surface and Stormwater Comprehensive Plan.

Land use planning within the City also aims to address future development impacts to water quality by formalizing Low Impact Development (LID) as the standard for land development. LID includes site development elements, such as clustering subdivisions and limiting street width, and specific engineered best management practices such as rain gardens, permeable pavement, green roofs, and low-impact foundations. LID requirements may only be waived if the project proponents demonstrate that using LID is not feasible.

1.3 Accomplishments in 2020

In 2020, the City continued the watershed and basin planning process outlined in the 2019-2024 Permit. An expert team of City staff and hired consultants were brought together to investigate the ways that City departments incorporate water quality improvements and other environmental protections in their work practices. This effort highlighted a number of important issues that will continue to be discussed and clarified across City departments though the basin prioritization process.

In addition to the Capital Improvement Plan and Stormwater Comprehensive Plan goals, the City is actively assessing its infrastructure network to determine the most appropriate places for future water quality improvements or retrofits. Eight sampling sites within the City's MS4 were selected for monitoring in 2020 and a Quality Assurance Project Plan (QAPP) was submitted to the Department of Ecology for review. This QAPP outlines the sampling plan to collect data from these eight sites.

1.4 Plans for Program Area in 2021

The basin prioritization and infrastructure study projects will continue. Sampling of the eight new sites for water quality parameters will inform a predictive model that will be calibrated throughout 2021. This model will allow the City to input land use information, such as the density of development or the number of vehicle trips, and output a prediction about the types of pollutants likely to be found in runoff from that area. This information will help the City plan for the next round of improvements, known as Stormwater Management Actions (SMAs) for implementation from 2023-2028.

2.0 PUBLIC EDUCATION AND OUTREACH (Permit Section S5.C.2)

2.1 Summary of Permit Requirements

Section S5.C.2 Permit requires the City to address the following public education and outreach elements:

- Develop a program that targets specific audiences including general public, businesses, homeowners, landscapers, property managers, engineers, contractors, developers, and City employees including review staff and land use planners.
- Develop a program that aims to create general awareness, promote positive behavior change and create public stewardship opportunities. Elements of this program include:
    - Selecting a new topic annually for general outreach and behavior change, based on target audiences for high-priority pollutants or behaviors.
    - Evaluating an existing behavior change program implemented in the previous permit.
    - Updating the evaluated behavior change effort based on the results of the evaluation.
    - Measure improvements in the target audience's understanding of the problem and what they can do to solve it. Use this information to improve the education program.
    - Track and maintain records of public education and outreach activities.

2.2 Program Overview

The City of Bellingham implements a comprehensive stormwater education and outreach program with two main goals; to increase awareness of stormwater pollution issues and to provide tools, assistance, and incentives to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. City staff emphasize the importance of environmental education and technical assistance in daily interactions with the Bellingham community.

Through both broad-based educational efforts aimed at the general public, and targeted resources for residents, specific businesses, contractors, stormwater facility owners, and/or municipal staff, the City compiled a library of resources ready for scheduled presentations or available on hand as outreach opportunities arise. Pollution prevention factsheets and brochures are routinely distributed to specific audiences and many of the resources are available on the City's website.

City educators are active in STORM, the Stormwater Outreach for Regional Municipalities group, participating in meetings, roundtable discussions, hosting community work parties, and giving presentations. The City's outreach team also works with local partners to coordinate stormwater outreach opportunities for the community, such as workshops on LID techniques, and stormwater facility maintenance. Local stewards and restoration groups are also a priority for City educators as they support groups such as the Washington Native Plant Society, Nooksack Salmon Enhancement Association and RE

Sources for Sustainable Communities. Specific educational efforts that reach the youth in our community include the Bellingham Water School program.

Through the Homeowner Incentive Program (HIP), the City provides technical and financial assistance to residents living in the Lake Whatcom watershed. Outreach services provided through HIP include online workshops, one-on-one site assessments, project design resources, and permitting assistance. HIP-eligible projects protect water quality by reducing sources of phosphorus, improving stormwater treatment, encouraging infiltration, or a combination of best management practices for phosphorus control. Project examples include native planting areas, phosphorus-limiting rain gardens, infiltration trenches, media filter drains, and dispersion systems.

Through experiences, lessons learned, and public feedback, the City continues to improve the outreach program. In particular, the use of audience surveys, both pre- and post-contact, have helped measure improvements in the target audience's understanding of the problem and document behavioral changes.

2.3 Accomplishments in 2020

The City of Bellingham undertook many outreach activities that brought stormwater information to a variety of audiences. Highlights include the development of the Stormwater Discovery Tours, continuing support of the Homeowner Incentive Program, the We Scoop campaign, the Wash Right campaign, neighborhood meeting presentations, and the Bellingham Water School program. In addition, the City has partnered with RE Sources and Whatcom County to carry out joint public education and outreach activities. Table 3 summarizes City education and outreach activities during 2020 and the following paragraphs highlight a few of the efforts.

Stormwater Discovery Tours

This is series of self-guided web-based tours of stormwater features (http://.stormwater.cob.org) which provide context, historical information, technical details, and interpretive messaging to members of the public who interact with the tours.

Stormwater Discovery Tours can be found in five areas around Bellingham; two focus on the more urbanized areas of the city (Downtown, Fairhaven), two are located at public parks (Bloedel-Donovan Park on Lake Whatcom and Squalicum Creek Park), and one focuses on a segment of the popular Railroad Trail. Together, these tours highlight stormwater infrastructure – water quality and flow control structures – by guiding users to highly-visible systems like rain gardens and detention ponds and nearly invisible facilities such as filter vaults and infiltration trenches. These tours are accessible to and can be used by students, teachers, professors, non-profit partners, and curious citizens.

In 2020, tours were promoted through the Parks Summer Playbook and as a Whatcom Water Week event. Participation was limited by Covid-19 complications and by poor air quality due to wildfire smoke.

Homeowner Incentive Program (HIP)

The Lake Whatcom Homeowner Incentive Program (HIP) is a joint City of Bellingham and Whatcom County program that reduces phosphorus pollution in Lake Whatcom. HIP provides free technical assistance and financial reimbursement for voluntary water quality improvement projects on properties within the Lake Whatcom watershed. In 2020, outreach efforts focused on program promotion, which included messaging about COVID-19 safety protocols. Efforts included:

- Advertisements on social media, including Facebook and Nextdoor platforms
- Interest generating articles in targeted publications, such as the Whatcom Conservation District newsletter
- Two postcard mailers with program information and calls to action
- Prominent signage in public areas and on private properties of past HIP participants

In addition to a coordinated advertising campaign, City staff also supported a virtual information session for homeowners interested in HIP, coordinated in-person and online workshops for the HIP DIY Native Landscaping program, and developed two promotional videos for program promotion in 2021. A total of 38 households participated in DIY workshops, which provide individualized resources for each homeowner and

are supported by on-site visits and one-on-one technical assistance when the homeowner elects to enroll in the program and pursue a project.

Pet Waste Management

The City's We Scoop campaign promotes proper pet waste disposal on both public and residential properties.

The pledge program is promoted via an annual dog photo contest and, for the first time this year, with a prize drawing. This year the City partnered with Whatcom County to increase our reach, both promoting the contests with Facebook ads, posts on the City's We Scoop Bellingham Facebook page and the County's Public Works page, participation in the Whatcom Humane Society's online version of their Dog Days of Summer event, and community calendar entries. Participation in the contests directs dog owners to the We Scoop pledge ("to scoop at home at least once a week, bag it and put it in the trash").

Pledgers are then sent two We Scoop stickers to adhere to either side of their curbside trash toter. We Scoop stickers serve four purposes: (1) to make the dog owner's pledge publicly visible and durable thereby encouraging the dog owner to follow through with their pledge, (2) to serve as a prompt to the dog owner to remind them to scoop the poop as often as they take out their trash, (3) to make the social norm of scooping visible to people walking or driving by on trash day, and (4) to inform people that the trash is the appropriate place to dispose of dog poop.

Pledgers are also offered their choice of a dog bag dispenser for their leash, a small flashlight for their leash, and/or a clip for their leash to carry full poop bags hands-free. Each tool is requested equally by dog owners, though almost no one asks for all three – preferences depend on the person. Prize drawing winners chose from one of three options (all about a $50 value): a year's supply of refill rolls for their leash bag dispenser, one month's worth of weekly home poop scooping service, or a home long-handled rake-and-bin scooper. The year's supply of refill rolls prize was by far the favorite, and the home scooper was a close second.

The City's Public Works Department works closely with the Parks and Recreation Department to coordinate scoop the poop messaging in Parks and along trails. Parks' poop cleanup events were cancelled this year due to Covid-19. Parks maintains 76 dog stations with signs and bag dispensers and distributed about 475,000 bags in 2020. Parks also provides 177 trash cans, some of which are part of the dog bag dispenser station and many others very nearby the bag stations. 54 of their stations are maintained by staff and 22 are maintained by "Bark Stewards," the volunteer park stewards interested in dog issues. This enhanced partnership between Public Works and Parks leverages the skills of the complimentary programs (stormwater education and park maintenance) to better protect water quality for the environment and park/trail users.

School Programs

City educators offer a water education program, "Bellingham Water School", for 5th grade students centered on watersheds, the Lake Whatcom Watershed, the drinking water and wastewater treatment processes, water conservation and stormwater pollution prevention. Bellingham Water School was conducted at 2 classes in 1 school, reaching 50 students in spring of 2020 prior to schools transitioning to remote learning due to COVID-19. In Spring of 2020 Bellingham Water School was adapted to be an asynchronous program which was distributed to the remainder of classrooms that were unable to attend Water School in the 2019/2020 school year; 16 classes in 7 schools were provided with lessons, worksheets, and online links reaching up to 400 students. In Fall of 2020, Bellingham Water School was adapted again to be a synchronous, remote-learning program. Live lessons were offered to students learning from home over Zoom; 10 classes at 4 schools and one all online class participated, serving 250 students.

The program involves an in-person or virtual tour of water treatment facility and wastewater treatment facility, in-class or at-home hands-on activities about watersheds, water distribution, pervious and impervious surfaces, and pollution prevention.

The City contracted with RE Sources for Sustainable Communities' Sustainable Schools program to offer some stormwater action projects for students. Students, either through a class or a club, have the option of doing a litter cleanup, stormdrain marking, or a project of their own design.

Neighborhood Meetings and Capital Project Outreach

Public Works staff provided stormwater education to residents and answered questions via neighborhood meetings, city council meetings, the askpw@cob.org email, pre-construction mailers, and capital project web pages.

Habitat Restoration

Public Works staff incorporate educational stormwater messaging into outreach events and materials that support the City's Habitat Restoration Program. In 2020, there were 504 participants at one pre-COVID volunteer work party who received stormwater education from displays and printed materials. The City sponsored a Stewardship Class hosted by the Washington Native Plant Society that resulted in 29 graduates and contributing 936 volunteer hours on 22 City restoration sites. About 460 individuals who are subscribed to the City's Habitat News, a quarterly newsletter with updates from the Restoration Program, received four newsletters about events and capital projects that include stormwater benefits.

Business Sector Education / Pollution Prevention Assistance Program (See also**:** S5.C.8 in 2019-2024 permit "Source Control for Existing Businesses")

The City operates a voluntary pollution control and reduction program known as the Pollution Prevention Program Assistance Program (PPA). The program is funding by Ecology and presents a unique opportunity for the City to engage the local business community in a non-regulatory and technical assistance focused manner. Pollution Prevention staff conducted 16 site visits to local businesses providing technical assistance on pollution prevention practices. Business owners receive one-on-one education on good housekeeping practices specific to activities they are conducting such as proper storage and disposal of chemicals, cleaning products, paint, cooking grease, and other hazardous materials. In addition, owners are assisted with locating and maintaining their storm drains and informed about the impacts of illicit discharges, how to report them, and how to prevent them. In 2020, the primary target sectors were health care facilities, restaurants, and property managers.

2.4 Plans for Program Activities in 2021

The City plans to continue work on stormwater education and outreach at a level commensurate with 2020 efforts building on established systems and procedures.

To build general awareness about low impact development principles and LID BMPs (S5.C.2.a.i), the City will promote the Stormwater Discovery Tours through the addition of small markers at each tour stop with QR codes that allow easy access to the web content with a smartphone, as well as community-wide promotion of the tours through media ads. In addition, we will continue to run ads about what stormwater is (This

Drains Here) and how to report spills (Spills Happen), as well as participating in regional Puget Sound Starts Here advertising campaigns.

To effect behavior change, the City will continue our We Scoop pet waste campaign, the Lake Whatcom Homeowner Incentive Program (HIP), and the Natural Yard Care program. The We Scoop program will continue to engage dog owners through the annual photo contest and prize drawing to regular scooping and proper disposal with a pledge and trash tote sticker. We will continue to strategically increase dog stations and volunteer opportunities in parks. Beginning in 2021, HIP will expand to the entire Lake Whatcom watershed. The City program will be improved to offer new options that increase program benefits and reduce barriers to participation. Using the results of our evaluation and social marking strategy, the City will begin to implement our Natural Yard Care campaign, adapted to focus on natural weed management strategies.

As part of the City's Pollution Prevention Program, our pollution prevention specialists will continue to work with businesses to reduce or eliminate pollution from entering the storm sewer or surrounding waterways. Specialists will also assist businesses with general housekeeping, preventing pollution from entering the sanitary sewer, and transitioning away from harmful chemicals to more healthful and less toxic alternatives. PPA specialists will also be addressing water pollution concerns arising from improper recreational vehicle wastewater disposal. More information about the Pollution Prevention Program is found in section 8.0 of this report. In 2021, specialists will be reaching out to businesses in the follow sectors for additional pollution prevention assistance:

- Automotive maintenance and repair
- Gymnastic and other athletic centers.
- Alcoholic beverage breweries
- Restaurants

To provide stewardship opportunities, the City will continue our partnership with Parks to engage citizens in habitat restoration work parties, as well as dog-related volunteers in parks, the Bark Stewards.

Table 2: Education and Outreach Activities Undertaken in 2020

Education/ Outreach Activity	Description	Targeted Audiences
Stormwater Discovery Tours	• Promoted a web-based self-guided stormwater tour (http://stormwater.cob.org) highlighting 5 areas in town with 31 tour stops that include multiple facility types (rain gardens, gravel filters, bioswales, ponds, bioretention basins, etc.) • *Website users:* 782 visits, avg. of 54/month, except in Aug. (108) & Sept. (123) when there were increased visits due to promotion in the Parks Playbook and Whatcom Water Weeks.	• General public • College students and professors
We Scoop **pet waste campaign**	• *Pledge:* 112 dog owners pledged to scoop the poop at home at least weekly, bag it and put it in the trash in 2020, for a total of 804 pledgers since 2014 • *Pledge/Prompt:* We Scoop stickers for trash cans distributed to 133 dog owners at through online pledge (www.SurveyMonkey.com/r/WeScoop) (lower in 2020 due to Covid cancelling events) • *Tools:* 200 poop scooping toolkits distributed to pledgers, humane society adoptees, and puppy class participants. Toolkits include trash stickers, info rack card, and photo contest flyer and a bag dispenser (63), a bag carrying clip (52), and/or leash flashlight (51). • *Promotion:* Facebook posts on WHS and We Scoop Facebook pages during online event (Dog Days of Summer).	• Dog owners at home • Dog walkers in public places

	• *Promotion:* Scooping Stars photo contest (54 dogs entered), promoted the contest via Facebook posts (www.Facebook.com/WeScoopBellingham, and Whatcom County PW), Parks Playbook, and Whatcom Water Weeks promotion. *Promotion:* Ads profiling local Scooping Stars with messaging about regular scooping and proper disposal in Cascadia Weekly's Pet Guide, Parks Playbook, Pickford Film Center. • Bark Stewards logged 89 volunteer hours picking up pet waste.	
Bellingham Water School **Program**	• 28 5th grade classes in 12 schools (700 students). Curriculum includes concepts of watersheds, stormwater, pollution prevention, water and wastewater treatment, and water conservation.	• Elementary school students (mostly 5th grade) Teachers, parents/guardians
Lake Whatcom Homeowner Incentive Program (HIP) – **A joint program between City of Bellingham and Whatcom County**	• Raised awareness of both Target and DIY HIP programs through postcards (to about 2,700 eligible households), six Facebook boosted posts (total of over 33,000 impressions), three Nextdoor announcements (average of 939 impressions per post), eight street signs, yard signs installed in participants' yards, and the HIP website www.lakewhatcomHIP.org. • Engaged participants in visiting the website (2,305 unique visits) , participating in a DIY workshop (38 households), scheduling a site visit (11-Target, 9-DIY), signing an intention to participate (4-Target, 8-DIY), or getting a permit (3-Target, 6-DIY). • Actions taken by HIP participants included seven DIY native landscaping projects, and two Target program projects (BMPs offered included infiltration trenches, media filter drains, rain gardens, and	• DIY program: all Lake Whatcom watershed homeowners in basins 1 and 2 not eligible for Target program (City and County) • Target program: Lake Whatcom watershed shoreline, creekside, and large lawn homeowners in basins 1 and 2 (City and County)

	native landscaping). Six homeowners committed to becoming Watershed Ambassadors.	
Outdoor washing campaign	• Pressure Wash Kit and technical assistance offered to assist residents and small businesses in proper wash water management. • Drivers were encouraged to wash cars at a commercial car wash through an ad on an electronic billboard ad near car dealerships that directed people to more info on the City's website, www.cob.org/cleanwater.	• Residents • Businesses
Local Source Control Program	• Provided pollution prevention technical assistance to 16 businesses, including landscapers, restaurants, and property managers.	• Businesses • Industries
Restoration Program outreach	• 617 participants at three work parties and four tours at local streams received education about stormwater from tour leaders, displays, and printed materials. • Approximately 400 Habitat News subscribers received four newsletters about habitat restoration projects that included stormwater benefits. • Sponsorship of Washington Native Plant Society Stewardship Class of 29 graduates. 22 city restoration sites were adopted by stewards. • 936 volunteer hours completed on City managed restoration sites.	• General Public • People interested in Restoration program
Water Use Efficiency outreach	• Online pledge for residential outdoor watering, promoted via social media and available on our webpage (www.cob.org/conserve) and received over 20 pledges. Each pledge participant is able to receive a	• Utility customers

	water saving device such as a hose timer, moisture meter or low-flow spray nozzle.	
Don't Drip and Drive **vehicle leak campaign**	• Drivers were encouraged to check for and fix car leaks through an ad on an electronic billboard ad near car dealerships that promoted the regional website, www.FixCarLeaks.org.	• Automobile owners
Resident, Neighborhood & Capital Project outreach	• Public Works staff provided stormwater education to residents and answered questions via phone, email, neighborhood meetings, city council meetings, the askpw@cob.org email, pre-construction mailers, and capital project web pages.	• General public • Residents impacted by construction
This Drains Here stormwater awareness campaign	• Ads raising awareness about stormwater in Cascadia Weekly, Pickford Film Center, exterior bus ads, interior bus ads.	• General public
Spills Happen stormwater hotline campaign	• Ads promoting stormwater hotline on buses and at Pickford Film Center. "Spills happen. Help us find them. www.cob.org/StormwaterHotline".	• General public
Puget Sound Starts Here stormwater awareness campaign	• Participated in regional group ad campaign which included video and display ads in Whatcom County in English and Spanish on Facebook, Instagram, YouTube, local news sites (such as the Herald, King5, Seattle Times, etc.), and other web ads.	• People interested in gardening, car maintenance, and dog owners.
Video Outreach	• City website includes stormwater resources and videos, including "What's the Scoop About Healthy Streams?" and "Stormwater University".	• Dog owners • Business owners

	• City television station, BTV10, aired programs about Public Works' utility services including a specific video about what our stormwater utility does.	• General public
Natural Yard Care	• Completed evaluation of past program (Gardening Green: Sustainable Landscaping Course) by July 1st. • Selected option S5.C.2.a.ii.(c).2 to develop a strategy to expand the program to a new BMP: natural weed management.	• Staff and partners

3.0 PUBLIC INVOLVEMENT AND PARTICIPATION (Permit Section S5.C.3)

3.1 Summary of Permit Requirements

Section S5.C.3 of the Permit requires the City to address the following public involvement and participation elements:

- Provide ongoing opportunities for public involvement in the SWMP and SMAP process through committees/commissions and updating the SWMP to reflect input.
- Make the SWMP and Annual Compliance Report available to the public, including posting it on the City's website.

3.2 Program Overview

The Bellingham public is invited to participate in stormwater decision-making. Opportunities include the City Council meetings, Community meetings, public hearings, neighborhood association meetings, focus groups, community surveys, and webpage communications. The City also solicits public comment through press releases specific to projects and code updates, and leisure guide advertisements. Status reports on the Stormwater Management Program were presented at the monthly Public Works Committee meetings. In addition, the current SWMP and Annual Compliance Report were made available to the public by posting downloadable versions on the City's website[1] and a copy is available for public review at City Hall.

3.3 Accomplishments in 2020

Public involvement opportunities to comment on the stormwater program in 2020 are summarized in Table 4.

Table 3: Public Involvement Opportunities Completed in 2020

Public Involvement Opportunity	Description of Opportunity
City Council Meetings	City Council holds meetings that are open to the public, generally two each month. In 2019, major stormwater items discussed at Council meetings included interlocal agreements with local partners,

[1] https://cob.org/services/planning/environmental/stormwater-program

	contracts with regional agencies, and project-specific awards (bids, consultant agreements) for ongoing work.
City Council Public Works Committee	This oversight committee meets monthly to consider changes to Public Works policies, procedures, budgets, and operations. This committee will consider changes to the Stormwater Comprehensive Plan and stormwater fees in 2020. This committee meets in Council Chambers and meetings are open to the public, who can submit written comment.
Public Works Advisory Board	Annual review of Stormwater Management Program
Lake Whatcom Management Program public meetings	The LWMP maintains two venues for public input and engagement: • Three Joint Policy Group meetings, attended by City of Bellingham City Council and Whatcom County Council representatives, along with partners from the Lake Whatcom Water and Sewer District and Sudden Valley (a 2,500-home private development in the watershed) were held. These meetings invite private citizens to attend and ask questions of policymakers. • Annually, the full membership of each of these bodies meets for a review of program activities. This meeting has a public comment period.

Website posting of SWMP and Annual Report	Downloadable versions of the current stormwater management documents are on the City website

3.4 Plans for Program Activities in 2021

The City plans to offer public involvement opportunities similar to those offered in 2020. The City Council will be briefed on the operation and function of the Stormwater Utility as well as information about upcoming stormwater plans for restoration in the Whatcom Creek watershed. Work conducted in support of the Lake Whatcom Management Program will be presented to the public at the Annual Joint Councils and Commissions Meeting for Lake Whatcom on March 31, 2021.

4.0 MUNICIPAL SEPARATED STORM SEWER SYSTEM (MS4) MAPPING AND DOCUMENTATION (Permit Section S5.C.4)

4.1 Summary of Permit Requirements

The Permit requires the City to implement the following related to mapping and documentation:

- Continue ongoing mapping projects begun under previous permits, including the documentation of the location of all outfalls, discharge points, receiving waters, water quality and flow control BMPs, conveyances (pipes/ditches) to all outfalls larger than 24" diameter, and certain connections to the MS4.
- Develop new mapping projects that identify and display:
    - All outfalls, including those smaller than 24" which were exempt from past permit requirements.
    - All known connections to the City's MS4 from privately-owned stormwater systems from any date.
    - The ability to display of all data in an electronic mapping format that follows well-defined standards and uses industry-standard software.
    - The ability to share all created maps with Ecology, recognized Tribes, and other municipalities and NPDES permit holders.

4.2 Program Overview

The City of Bellingham Public Works Department includes a workgroup of Geographic Information System (GIS) mapping specialists who continually update maps and their data sources to ensure an accurate electronic mapping system is available for use by City staff and the public. This mapping tool,

known as City IQ[2], includes layers dedicated to stormwater infrastructure, including BMPs and the areas for which they provide treatment. Our mapping includes most private facilities, especially those in our inspection program, and all public facilities that are operated and maintained by Public Works Operations Crews. Through this program, outfalls are mapped as they are identified by field staff, infrastructure details such as sump depth of catch basins are field-verified, and new/retrofit water quality and flow control BMPs are integrated into the treatment network upon completion.

While many features are available in the City IQ and GIS system, the City also has developed a customized application of the Western Washington Hydrology Model version 3 (WWHM3) to evaluate the hydrology and hydraulics of the City's stormwater system components. The updated model will include characterization of marine outfalls and their capacity and feasibility for capital improvements in their upstream conveyances.

4.3 Accomplishments in 2020

The city has not yet begun to implement these permit requirements as they are new to the 2019-2024 Permit and no permit-mandated deadlines occurred in 2020.

4.4 Plans for Program Activities in 2021

The City plans to complete mapping tasks new to the Permit in 2020, including launching a new mapping effort to capture outfalls less than 24" in diameter and historical known connections to the MS4, added to our City IQ system as those connections are field-verified.

5.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION (Permit Section S5.C.5)

5.1 Summary of Permit Requirements

The Permit requires the following related to illicit discharge detection and elimination (IDDE):

- Develop an ongoing program to detect and remove illicit discharges, connections, and improper disposal, including any spills into the municipal separate storm sewers owned or operated by the City.
- Inform public employees, businesses, and the general public of the hazards associated with illicit discharges to the storm sewer system.
- Implement an ordinance that prohibits illicit discharges.

[2] https://www.cob.org/services/maps/online-mapping,

- Implement a program to detect and address illicit discharges and connections. The following are specific elements of this program:
    - Procedures for conducting investigations.
    - Publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges.
    - Maintain an ongoing training program for staff pertaining to proper IDDE spill identification, investigation, clean-up and response procedures.
    - Procedures for characterizing the nature of, and responding to, any potential public or environmental threat posed by illicit discharges.
    - Procedures for tracing the source of an illicit discharge.
    - Procedures for eliminating illicit discharges including inspections, technical assistance, and compliance and enforcement measures.
- Track all spills, illicit discharges and connections reported to the City and response actions taken, including enforcement actions.
- Screen the MS4 system for illicit connections at a rate of at least 12% of the system each year, for a total of at least 60% at the completion of the five-year permit cycle.

5.2 Program Overview

The City implements a program to detect and remove illicit discharges and connections into the City's Municipal Separate Storm Sewer System (MS4).

Bellingham Municipal Code 15.42.050.C prohibits non-stormwater illegal discharges, and/or dumping into the City's MS4. The enforcement of all stormwater code provisions including illicit discharges is provided for in BMC 15.42, subsections 070-110. Illicit discharges were prohibited in the 1995 adopted code; this language was refined in the 2009 ordinance update to fully reflect the NPDES permit language. The City is active in the enforcement City code to prevent and respond to illicit discharges.

The City engages in interdepartmental coordination to report and respond to illicit discharges. City staff utilize many methods to discover and trace illicit discharges and IDDE problems including visual observation and chemical analysis, dye testing, internal pipe video inspection, observations during pipe cleaning, stormwater outfall monitoring/dry weather monitoring, and source control inspections. The City also uses customer information to identify and resolve stormwater issues.

A stormwater hotline number (360-778-7979) is posted on the City's website and publicized on storm drain markers throughout the City. SSWU staff are ready to record and respond to all calls regarding illicit discharges or spills that are received on the hotline. All reports that are found to represent illicit discharges

or connections are followed up as necessary to resolve the issue. Follow-up actions are tracked, and feedback is given to the reporting party as well as Ecology, as necessary. The City both receives and sends information through the Ecology-administered Environmental Response Tracking System (ERTS) and responds similarly, providing closure information back to Ecology. When accidental discharges occur as part of the City's provision of services (for example, during water main breaks or as a result of contractor inaction on City capital projects) the City self-reports these incidents to ERTS if they have reached our MS4. In the cases where City staff observes a potential illicit discharge as part of their daily work duties, these staff contact the stormwater hotline and/or ERTS as appropriate for the event.

SSWU staff respond to most stormwater incidents to assess the situation and plan follow-up actions to resolve them. For discharges that reach the MS4, SSWU staff work with the Storm Operations crew and a vacuum truck (or other appropriate tools and equipment) is used if needed. Fire and Police are often the first responder; however, if it is not a hazardous materials situation, they are trained to call SSWU responders and the Storm Operations crew. All Public Works Operations vehicles have spill kits for containment and cleanup of small spills. The Storm Operations crew receives training on spill response and addresses any additional questions or concerns through the stormwater committee. The City of Bellingham Emergency Response Plan for Public Works Operations: Water, Wastewater, Stormwater: Chapter 8 Water Quality Contamination, and Checklists 10 and 11 Hazardous Materials Spill to Streets or Storm Water System cover procedures for spill response.

In addition to responding to illicit discharge incidents, the City is proactive in tracing the source of illicit discharges. The City started utilizing system video inspection in 2003 to both discover illicit discharges and trace the sources as well as to detect maintenance issues. The crew is trained to look for signs of non-stormwater discharges from private piping entering our system. Signs of staining, foam, and/or discolored discharges are all indications that would be part of the condition report of the piping system. This information is provided to the supervisor and is also logged into system reports for future referral. In recent years, the City reviewed 100% of our total 28 square miles of stormwater network, including about 284 miles of storm mains, and is beginning to review the system a second time, with approximately 22% completed. The initial effort covered older infrastructure in the Central Business District and known problem areas. Crews have since proceeded by quarter-sections starting in the northwest moving east and then south. This system review has located many problems including misconnections and suspicious flows.

The City requires IDDE training for all municipal field staff, including the Surface and Storm, Street, Water, Wastewater, and Traffic crews, and the Police and Fire Departments. Public Works inspectors and supervisors have also been trained on illicit discharge identification and procedures. The City has 75 Certified Erosion and Sediment Control Lead (CESCL) trained personnel on staff, in addition to requirements for on-site CESCLs on private development or capital projects (e.g. new parks) greater than one acre in size.

5.3 Accomplishments for 2020

Staff responded to 198 stormwater pollution complaints

The City operated a successful program to identify and eliminate illicit discharges in 2020. Knowledge of City infrastructure improves as the City's comprehensive map of its MS4 continues to be updated. In 2020, the City received 96 hotline calls, as well as an additional 102 notifications from online submittals, direct calls, emails, staff complaints, and ERTS referrals. All incidents reported were responded to in some manner. Some inquiries were discussed with the caller and did not require further action while others were forwarded on to a different department as appropriate. Most inquiries were addressed by SSWU staff and follow-up responses were tracked in the Bellingham Environmental Response Tracking System (BERTS) database.

The IDDE training was completed by 32 new and seasonal field staff. This training will be renewed by all field staff in the Police, Fire, Parks and Public Works departments in 2020. SSWU Staff also participated in:

- Monthly conference call presentations and quarterly in-person trainings with regional Local Source Control Specialists on topics such as Community Based Social Marketing, the Product Replacement Program, Pollution Prevention in Golf Courses, and the Paint Stewardship Program.
- PFA's Transport, Fate and Remediation in Soil, Surface Water and Groundwater Training.
- 2020 Stormwater Solutions Webinar Fest
- American Stormwater Institute MS4 LID / Green Infrastructure Training
- National Stormwater Center - CSI Network Monthly Webinars
- EPA Webinar Series: Strategies for Small POTWs Handling High Strength Influent (Pretreatment/non-domestic sewage, establishing local limits, examples regarding dairies and breweries)
- Certified Erosion & Sediment Control Lead (CESCL) certification renewal
- Certified Stormwater Inspection training

5.4 Plans for Program Activities in 2021

The City plans to continue responding to illicit discharges at a commensurate level of effort as in 2020. Additionally, SSWU Staff intend to provide refresher training opportunities for field crews, first responders, inspectors, and supervisors/management.

In 2021, the City plans to implement one new program and continue another program related to IDDE. In recent years, the City has observed that the number of residents living in RVs on City streets is on the rise.

While this presents an obvious housing and human services outreach challenge, it also creates impacts to water quality. Many RV residents will dump the contents of their full grey and blackwater tanks onto City right of way. The contents are then flushed into the municipal storm sewer with the next storm event. Compounding the issue, only one location on the North side of the City may accept RV wastes. In addition, performing maintenance on the storm sewer to respond to areas of concentrated dumping is expensive. In anticipation of a TMDL for fecal coliform bacteria on Whatcom Creek, the Public Works Department is proactively pursuing solutions. Long term, the City will potentially install permanent public RV dump stations in areas to increase accessibility across the City. Until these permanent solutions are implemented, and perhaps after completion, the City is implementing the following two programs:

RV Dump Station Vouchers - The City is partnering with our contracted Homeless Outreach Team to distribute free dump station vouchers to RV residents. These vouchers have a five-dollar value and may be redeemed at a private RV dump station within City limits.

Mobile RV Pumping - The City is pursuing contracts with several septic service companies to provide RV grey and blackwater tank pumping services to RV residents free of charge.

6.0 CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND CONSTRUCTION SITES (Permit Section S5.C.6)

6.1 Summary of Permit Requirements

The Permit requires the following elements regarding controlling runoff from new development, redevelopment and construction sites:

- Develop, implement, and enforce a program to reduce pollutants in stormwater runoff discharging to the municipal separate storm sewer system from new development, redevelopment, and construction site activities.
- Adopt an ordinance to address runoff from new development, redevelopment, and construction activities from both public and private sites that meets requirements within Appendix 1 of the permit. (See also Stormwater Planning requirements under section S5.C.1 of the Permit).
- Adopt local requirements to apply stormwater controls on construction sites. The City's local requirements are more stringent than those required within the Permit.
- Maintain the legal authority to inspect and enforce maintenance standards for privately owned stormwater facilities which discharge to the City storm sewer.
- Implement a permitting process for public and private projects which includes site plan review, inspection, and enforcement capability to meet Permit standards.

- Provide copies of the Notice of Intent (NOI) for construction or industrial activities to representatives of the proposed new development and redevelopment and post a link to the online electronic version of the NOI.
- The program shall enforce local stormwater control ordinances controlling runoff from sites that are also covered by Ecology-issued stormwater permits.
- Provide training to staff that implement the program to control stormwater runoff from new development, redevelopment, and construction sites.
- Develop a process to record and maintain all inspections and enforcement actions by staff.

6.2 Program Overview

The City implements and enforces a program to control runoff from new development, redevelopment, and construction sites. In 2006 and 2009, the City updated its stormwater code to address construction runoff control from both public and private sites using language consistent with the "Minimum Technical Requirements" in Appendix 1 of the Permit. However, since the adoption of the City's initial stormwater ordinance in 1995, a permitting, inspection, and enforcement program has been in place that is more restrictive than the Appendix 1 thresholds. The City requires some form of erosion control on all projects that exceed 120 square feet of impervious surfaces or disturb more than 500 square feet of soil. These local requirements have been retained as the City continues to regulate stormwater from smaller sites or at lower thresholds than required pursuant to section S5.C.4 of the Permit. Sites that trigger the Appendix 1 thresholds receive more detailed reporting, increased inspection frequencies, and additional compliance items as necessary to meet the Permit requirements.

The City previously followed the planning process and BMP selection and design criteria outlined in the 2005 Stormwater Management Manual for Western Washington (the Manual). The 2012 and 2019 Manuals were adopted by the City automatically at the time they were adopted by Ecology. Our permitting process includes site plan review, inspection, and enforcement capability. Copies of the Notice of Intent for construction or industrial activities are provided to project proponents. City databases are used to record permit activity and maintain a record of all inspections and enforcement actions taken by staff.

All permitted development sites are inspected by qualified Public Works Department Inspectors for proper erosion and sediment controls and appropriate enforcement actions are taken as necessary to ensure compliance. The City's inspection program includes site visits before, during, and after construction. Verbal warnings are often given during inspections and corrections are made when the inspector is present. When necessary, stormwater permit correction notices are issued listing the items that do not comply with City codes along with required corrective actions. Stop-work orders are issued in cases where non-compliance persists, and they remain in effect until additional inspections show compliance. All permitted development sites are inspected upon completion and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls and to verify that a maintenance plan is in place. The City uses an escalating enforcement strategy of corrective warnings, monetary ticketing, and if necessary, the case is transferred to the City's legal staff.

Site plan reviewers, inspectors, city engineers and SSWU staff have had stormwater code training, Ecology Manual training, and have attended permit overview workshops.

6.3 Accomplishments in 2020

The Public Works Development Section reviewed 319 site plans in 2020. These plans were distributed as follows into the four permit levels:

- 162 level 1 permits for projects containing more than 300 square feet and less than or equal to 1,000 square feet of new or replaced impervious surface or containing more than 500 square feet and less than or equal to 5,000 square feet or clearing or grading.
- 120 level 2 permits for projects containing more than 1,000 square feet and less than or equal to 5,000 square feet of new or replaced impervious surface or containing more than 5,000 square feet and less than or equal to 30,000 square feet or clearing or grading.
- 26 level 3 permits for projects containing more than 5,000 square feet and less than or equal to one acre of new or replaced impervious surface or containing more than 30,000 square feet of clearing or grading.

- 11 level 4 permits for projects containing more than one acre of impervious surface.

The City will continue to regulate stormwater from smaller sites or at lower thresholds than required pursuant to the current Permit using local ordinances that were in place prior to the first issuance of the Permit.

City Stormwater Inspectors made 5223 stormwater inspections related to active construction during 2020. These inspections occurred on over 939 different sites, including both private and public projects, of which 59 included work without a permit. Stormwater permit correction notices were issued to document 103 construction activities that were not in compliance with City stormwater code. These sites were re-inspected until corrective actions were taken. Eighteen stop work orders and four formal written warnings were issued.

6.4 Plans for Program Activities in 2021

The City plans to continue to control runoff at a commensurate level of effort as in 2020.

7.0 OPERATIONS AND MAINTENANCE (Permit Section S5.C.7)

7.1 Summary of Permit Requirements

The Permit requires the City to implement a program which addresses the following concerning stormwater pollution prevention for operation and maintenance activities:

- Implement maintenance standards for the municipal separate stormwater system that are at least as protective as those specified in Ecology's *Stormwater Management Manual for Western Washington.* For facilities not listed in the above manual, develop a maintenance standard.
- Perform annual inspections, and require maintenance as needed, of stormwater mitigation facilities regulated by the City under the new development, redevelopment, and construction site pollutant reduction program.
- Perform annual inspections, and perform maintenance as needed, of stormwater facilities owned or operated by the City.
- Develop standard operating procedures to reduce stormwater impacts associated with runoff from all lands owned by the City and municipal road maintenance activities.
- Implement an ongoing training program for City staff whose construction, operations, or maintenance functions may impact stormwater quality.

  Prepare Stormwater Pollution Prevention Plans (SWPPPs) for all heavy equipment maintenance yards, storage yards, or material storage facilities that are owned or operated by the City that are not already regulated by a separate NPDES stormwater permit.

7.2 Program Overview

The City implements an operations and maintenance program with the goal of preventing or reducing pollutant runoff from municipal operations and regulated private stormwater facilities. One focus of the program is the training of municipal staff on good housekeeping pollution-prevention practices that are applicable to daily City operations and activities. Other components include performing annual inspection and maintenance of public stormwater facilities, updating stormwater pollution prevention plans for City facilities, and constructing capital improvement projects that reduce pollution.

City-Owned Facility Maintenance and Inspection

The City maintains a comprehensive program for maintaining City-owned or operated permanent stormwater treatment and flow control facilities. Maintenance standards from Ecology's *Stormwater Management Manual for Western Washington* were adopted by the City and are used to evaluate facilities for both private and public inspections. The City maintains over 910 facilities including 6 regional detention ponds, 153 detention/water quality ponds, vaults or pipes, 107 bioswales, 141 rain gardens and bioretention facilities, 49 infiltration/dispersion trenches, 245 sand and media filters, 8 hydrodynamic pre-treatment structures, 21 sections of permeable pavement, one stormwater treatment wetland, and 28 pollution control/oil-water separator structures.

Inspection and maintenance of facilities are scheduled and tracked through a maintenance management system. Inspections occur at a minimum annually, with most facilities inspected several times throughout the year. Filters are inspected more frequently, typically on a three-month circuit. Maintenance is scheduled when a facility exceeds the applicable maintenance standards and corrective actions are executed as soon as practical. Catch basins and inlets owned or operated by the City of Bellingham are inspected and cleaned as necessary to comply with the maintenance standards. In addition, City Storm Operations staff have identified potentially vulnerable stormwater facilities that are monitored during and after major storm events.

Privately-Owned Facility Maintenance and Inspection

The City's private stormwater facility inspection program has two major components. The highest priority is the inspection of private facilities that trigger the NPDES annual inspection requirement to ensure maintenance standards are met on post-construction private facilities. Secondarily, the City inspects and provides technical assistance to owners of smaller or older private facilities within the City's jurisdiction. Private facilities built after 2007 that trigger the Appendix 1 thresholds are inspected annually. Inspection reports document conditions and itemize specific maintenance corrective actions. Notification letters are sent to the property owners along with the inspection report and a timeline for action. Typically, maintenance is required prior to the next annual inspection, however there are circumstances that call for

more frequent follow-up inspection; the City continues to work with owners until maintenance issues have been resolved.

Stormwater Hotline

The City operates a Stormwater Hotline which allows the public to call in and report a stormwater facility maintenance issue or illicit discharge directly with a representative from the Public Works division. The public may also submit an online report through the Stormwater Hotline webpage. The City is also piloting a "See, Click, Fix" program. This program allows the public, using a mobile app, to inform City staff of any observed stormwater maintenance issues. The program also allows the City to easily provide in-app responses and to follow up with the public as needed.

Stormwater Pollution Prevention Plans (SWPPPs) were developed for the Public Works Operations Complex and the Parks & Recreation Operations Center. Stormwater Committee members perform regular site inspections of operations facilities to ensure that proper good housekeeping practices are being followed and provide training for municipal employees.

The City's street sweeper program aims to clean all city streets on a two- to three-month circuit. More frequent street sweeping occurs in the downtown Central Business District where streets are serviced twice a week and in the Lake Whatcom watershed where streets are cleaned twice a month. In addition, the City led a joint venture to purchase a street sweeper for Whatcom County NPDES partners to proactively prevent pollutants from entering TMDL water bodies. This state-of-the-art high-efficiency street sweeper has a higher rate of fine particulate capture and is used around the city and particularly in the Lake Whatcom watershed to improve removal of particulate phosphorus from roadways. The sweeper is also used by the Port of Bellingham and is available to both Whatcom County and the City of Ferndale.

Capital improvement projects are a major component of the City's effort to reduce stormwater impacts associated with runoff from streets and parking lots. Over the past decade, numerous stormwater quality retrofit projects were completed citywide and many more are scheduled with funding secured. Projects have used LID techniques, conventional water quality facilities, and in-line treatment options. Current capital improvement projects are described in detail in section 11, Capital Projects and Retrofitting, of this report.

For the Lake Whatcom Watershed in particular, a key component to the City's stormwater treatment strategy is implementing controls that reduce the amount of phosphorus entering the Lake. A notable

accomplishment in this regard is that all public stormwater facilities in the City's portion of the Lake Whatcom Watershed are now utilizing phosphorus-specific filtration media, improving phosphorus removal efficiency to approximately 72%. The City has 53 main treatment systems in the Lake Whatcom Watershed and approximately 150 other smaller ones (including native landscape areas) associated with our Homeowner Incentive Program (HIP). HIP facilities are required by ordinance to be maintained by the homeowner and, as of 2017, participation in HIP requires the homeowner to sign a detailed Maintenance Agreement with an obligation to inform the City upon sale of the property so similar agreements can be made with subsequent landowners.

7.3 Accomplishments in 2020

The City of Bellingham inspected over 90% of all publicly owned stormwater facilities and completed required maintenance for 80% of those inspected. All reported maintenance issues were responded to promptly. In addition, crews performed and completed inspections on 15,620 catch basin/manhole structures, out of which 1,316 were cleaned and maintained as required. Publicly owned structures include 12,436 catch basins and 2,335 manholes. City crews also maintain approximately 282 miles of stormwater mains throughout the city.

The City continued the inspection program for privately owned and maintained stormwater mitigation facilities. The City conducted 105 inspections. Of these, 76 inspections were for facilities which meet the NPDES requirements for inspection, and 29 inspections were performed on systems that did not meet the NPDES requirements. Further technical assistance was provided through an additional 5 site visits.

The City plans to continue to implement pollution prevention and maintenance for municipal operations, private and public facilities, and infrastructure at a commensurate level of effort as in 2020. In addition, the City is gearing up to launch a new project to normalize, city-wide, the practices, policies, and procedures needed to ensure that municipal operations protect water quality to the maximum extent practicable. The City will be engaging a consultant to review our actions related to infrastructure maintenance, ice control, dust control, roadside upkeep, herbicide/pesticide/fungicide use, fertilizers, and trash and pet waste management, amongst others. The complete list of actions is outlined in permit condition S5.C.7.d in the 2019 – 2024 Permit. The following table was developed to identify, across departments and divisions, the appropriate stakeholders for this exercise.

7.4 Plans for Program Activities in 2021

The City is implementing a cross-training program to other Public Works inspectors so that in the event of a vacancy in the private stormwater facility Stormwater Inspector position, other staff would constitute as "qualified personnel" to perform private stormwater facility inspections. The addition of trained inspector personnel will also assist the Stormwater Inspector to manage developmental growth in the City that results in more privately-owned stormwater BMP/facilities requiring inspection annually.

Table 4: City Workgroups and Policies, Practices, and Procedures to Protect Water Quality

Applicability of City Departments/Divisions to Practices, Policies, and Procedures in Stormwater Practices Handbook															
Action (from NPDES S5.C.7d)	Pipe Cleaning	Culvert Cleaning	Ditch Maint.	Street Cleaning	Road Repair	Snow and Ice	Utility Install	Pavement Striping	Roadside Vegetation	Dust control	Fertilizers/ Pesticides	Erosion Control	Vegetation Mgmt	Trash	Pet Waste
Public Works															
Operations Division															
Streets				x	x	x		x	x		x	x		x	x
Sewer Utility	x						x								x
Water Utillity							x								
Storm Maintenance	x	x	x	x			x		x		x	x	x	x	x
Facilities Maintenance											x	x		x	
Natural Resources Division															
Stormwater	x	x	x	x			x		x	x		x			x
Restoration			x						x		x		x	x	x
Land Management										x		x	x	x	x
Education									x		x			x	x
Engineering Division															
Utility Engineering					x		x	x				x			
Parks and Recreation															
Operations Section	x	x	x							x	x	x	x	x	x
Development Section							x	x				x			
Police						x							x	x	
Fire/EMS						x				x			x	x	

8.0 SOURCE CONTROL FOR EXISTING BUSINESSES (Permit Section S5.C.8)

8.1 Summary of Permit Requirements

The source control for existing businesses aims to reduce or eliminate pollutants from running off public and private properties during storm events into the municipal storm sewer. This section of the Permit contains escalating requirements of the City over the term of the Permit. Specific requirements for this Permit element include:

- Require pollution reducing best management practices (BMPs) be utilized on properties with the potential to discharge pollutants to the storm sewer.
- Inspect sources of pollution from private and public sites, including institutional, commercial, and industrial lands within the City.
- Enforce violations of local codes or other permits that limit pollution from these land uses.
- Implement practices to reduce runoff of fertilizers, herbicides, or pesticides that are found entering the storm sewer.
- By August 1, 2022, the City must have an inventory of properties that have a potential to discharge to the municipal storm sewer.
- By January 1, 2023, the City must implement an inspection and enforcement program of those properties identified in the inventory.

8.2 Program Overview

During 2020, the City was not required by the Permit to have an inventory of properties which have a potential to discharge to the storm sewer, nor was it required to implement an inspection and enforcement program of the inventoried properties. However, the City continued to engage in voluntary technical assistance to reduce pollutants discharging to the storm sewer from private businesses.

The City, through our Pollution Prevention Assistance (PPA) Partnership with Ecology, provides technical assistance and pollution prevention education to businesses. The PPA program is voluntary and is in place to assist the State with meeting its dangerous waste reduction requirements; however, it still serves as a key component of the City's efforts to reduce pollutants from entering the storm sewer and meeting our Permit requirements. The City evaluates priority businesses and industrial activities likely to have illicit discharges and provides technical assistance to these entities on ways to reduce sources of pollution. Site visits with businesses include in-depth surveys of current practices, including outdoor storage, catch basin maintenance, and the potential for stormwater contamination. Good housekeeping practices are commended, and corrective actions are discussed. Follow-up letters are sent to establishments highlighting existing good practices and itemizing practices that need to be corrected along with recommendations on how to remedy them. Certain high priority environmental issues trigger an automatic follow-up visit. During

these site visits the City suggests business practice changes or educates to correct persistent problems. Dye testing is used in cases where questions arise about the source of the pollutants entering the storm sewer.

Since the program's inception in 2008, the PPA program focused technical assistance visits on sectors including boat repair, chiropractors, printers, photo processors, dry cleaners, hotels, landscapers, nail salons, nurseries, dentists, veterinary clinics, gas stations, painters, pharmacies, auto body, auto repair shops, wood workers, metal workers, property managers, grocery stores, restaurants, and scrap recyclers. The visits have resulted in significant reductions in stormwater pollution along with reduction in hazardous waste materials sent to our wastewater treatment plant.

8.3 Accomplishments in 2020

Covid-19 social distancing requirements and protocols did not allow the City to complete as many technical assistance visits as in previous years. The PPA Program conducted 16 technical assistance visits and provided additional resources to local businesses and residents. In addition, PPA specialists were able to lead state-wide PPA training and continue to address issues concerning local water quality and dangerous waste disposal.

8.4 Plans for Program Activities in 2021

By August of 2022, the City must have finished creating an inventory that identifies businesses that may be a source of stormwater pollution. By January of 2023, the City must implement an inspection and enforcement program which requires limits or other pollution reduction practices on these newly identified sources of pollution. In preparation of these expanded requirements, the City will be adding a new NPDES Permit Coordinator position. This coordinator will be responsible for ensuring the City's compliance with all Permit requirements. The coordinator will identify potential gaps in the City's programs, and make necessary adjustments to ensure permit compliance and environmental protection.

The PPA program will be focusing primarily on the health care, restaurant, and property management business sectors. In addition, the City's PPA specialists will be participating in the Product/Equipment Replacement Program (PRP). The PRP will provide financial incentives to Washington State businesses to eliminate sources of toxic chemicals. Use of chemicals such as PFAS, PCBs, PBDE flame retardants, PERC, lead, and mercury typically lead to the generation of hazardous waste and are difficult or impossible to clean up in wastewater and stormwater. The best way to reduce the generation of this hazardous waste, prevent further environmental contamination, protect water quality, and reduce human health risk is to eliminate the use of products that these chemicals through active removal programs. In response to the COVID-19 pandemic, PPA specialists will develop a remote inspection program to allow specialists to continue to provide pollution prevention assistance without requiring close contact and proximity to business and City staff.

9.0 TOTAL MAXIMUM DAILY LOAD REQUIREMENTS (Permit Section S7 and Appendix 2)

9.1 Summary of Permit Requirements

Total Maximum Daily Load (TMDL) pollutant limitations and permit requirements must be met by the City if the City storm sewer discharges to a waterbody an Ecology approved TMDL in place. Lake Whatcom is protected by a multi-parameter TMDL for dissolved oxygen, fecal coliform bacteria, and phosphorus. Lake Whatcom receives stormwater from part of the City storm sewer which triggers the following permit requirements found in Appendix 2 of the Permit:

- Develop and report annual results of a repeatable survey to gauge the public's understanding and beliefs regarding Lake Whatcom water quality to inform the development of public outreach programs.
- Update and prioritize a list of new and retrofit treatment and flow control capital improvement projects that are intended to improve Lake Whatcom water quality.
- Analyze and track phosphorous reductions.
- By March 31, 2024, submit to Ecology an operational plan for managing City owned public spaces.
- In coordination with Whatcom County, submit a Quality Assurance Project Plan, which updates models used to assess Lake Whatcom pollutant levels and response to water quality improvement efforts.
- By the submittal of the March 2024 annual report, submit to Ecology a new pollutant loading capacity of Lake Whatcom based on new models.

9.2 Lake Whatcom Total Maximum Daily Load Implementation Plan

While the effort to restore water quality in Lake Whatcom has been ongoing since 1992, the formal regulations that require action on the lake first became embedded in this current Permit term (2019 – 2024). As a result, the City and Whatcom County launched ambitious 50-year plan, the first 10 years of which are outlined in the Lake Whatcom TMDL Implementation Plan. The TMDL Implementation plan and the annual report describing the activities completed in 2020 is attached in Appendix A of this report.

10.0 MONITORING AND ASSESSMENT (Permit Section S8)

10.1 Summary of Permit Requirements

The Permit requires the City to engage in regional and local measures to monitor water quality and assess the efficacy of the City's water quality improvement programs. To meet permit requirements, the City elects to contribute to a regional fund to conduct both "Regional Status and Trends" and "SWMP

Effectiveness" monitoring studies through the Stormwater Action Monitoring (SAM) Program, formerly Regional Stormwater Monitoring Program (RSMP), through the Department of Ecology. The City also engages in local water quality monitoring to assess the water quality of its stormwater discharges.

10.2 Program Overview

The Regional SAM studies are very efficient and produce locally applicable results which the City may employ when making stormwater planning decisions. These studies also help identify sources of pollution which the City may address through its SWMP programs. To-date, the City has utilized SAM derived data to make decision when creating ordinances and updating the SWMP, Capital Improvement Plan, and the Surface and Stormwater Comprehensive Plan.

Locally, The City of Bellingham has conducted routine water quality monitoring for 30 years through our Urban Streams Monitoring Program. This program was initiated in 1990 with the purpose of collecting data and maintaining a record of stream conditions at up to 19 separate stream sites on the 5 major creeks within Bellingham. In addition, the City sponsors an in-depth water quality program focused on the Lake Whatcom watershed. The program began over 50 years ago due primarily to the City's requirement as a purveyor of water to test the quality of incoming water to our water treatment system. The program continues to grow and expand in scope as additional parameters and studies are deemed necessary. In recent years, the City focused not only on the lake quality but also on the nature of the water entering the lake through creeks and large storm drains. Western Washington University (WWU) is commissioned by the City to provide ambient lake monitoring and stormwater input monitoring from the various creeks. Current water quality research information is available online at www.lakewhatcom.whatcomcounty.org and under the Lake Whatcom tab at WWU's Institute for Watershed Studies website www.wwu.edu/iws/.

A third facet of the City's program involves stormwater monitoring. For over 15 years, the City has tested inflows to creeks primarily in the Lake Whatcom Watershed following storm events. Monitoring started with the inclusion of the Park Place stormwater wet pond in the WWU Lake Monitoring study. Today, the City's stormwater monitoring program has expanded to test a variety of BMP's for effectiveness in removing common pollutants and high priority pollutants such as phosphorus. Analysis of systems in Lake Whatcom is used to typify phosphorus removal rates for TMDL compliance. This program is of regional significance because it provides credible information for evaluating new stormwater treatment and infiltration techniques that are specific to Western Washington. Best management practices (BMPs) used in the Lake Whatcom watershed, including filter cartridges, proprietary devices, and infiltration facilities are approved by the Department of Ecology for use to treat phosphorus.

The City also engages in short-term monitoring as a part of our illicit discharge program. During field investigations, flowing outfalls have been tested for basic water quality parameters including fecal coliform, turbidity, pH, conductivity, dissolved oxygen and temperature. In addition, testing for total phosphorus is included where applicable.

10.3 Accomplishments in 2020

The City's Urban Stream Monitoring Program and Lake Whatcom Monitoring programs continued to collect data through 2020.

The City participated in SAM by not only paying into the program but offering to allow regional partners to monitor two bioretention systems (rain gardens) owned and operated by the City. This research will inform engineers, developers, scientists, and citizens about the real-world performance of systems designed under the 2012 Stormwater Management Manual for Western Washington (the Manual). This builds upon a 2017 SAM study that the City led, which evaluated older rain gardens constructed under the 2005 Manual. Results from that study show that systems are working as designed, while providing valuable insight into different design strategies, inspection requirements, permitting review steps, and long-term maintenance options throughout the region. The current study evaluates bioretention systems constructed under the 2012 Stormwater Management Manual. The City also participated in the development of videos produced by SAM and shared region-wide related to the importance and function of bioretention systems for protecting water quality at the municipal level.

The City of Bellingham, with the financial and technical support of the Department of Ecology, continued a research project aimed at developing and testing a new media blend specifically intended to increase phosphorus-removal capability. The new media blend is expected to provide a best-available solution for municipalities dealing with high levels of phosphorus loading. The media study, funded partially by a state Grant of Regional or Statewide Significance, builds on research completed by Kitsap County and the City of Seattle, which investigated new bioretention mixes that would not leach metals or nutrients. The Phosphorus-Optimized Stormwater Treatment (POST) media was approved for Pilot Use Level Designation (PULD) through the Department of Ecology in 2019. This designation means that the City can move forward on developing the media by instituting field testing to show real-world performance. Laboratory results showed removal of total phosphorus exceeding 80% for the POST media.

10.4 Plans for Program Activities in 2021

The City plans to continue its monitoring at a commensurate level of effort as in 2020. The City will again be electing to pay into the SAM research studies and is an active participant in planning and defining those research projects.

As part of the City's obligation to meet the targets and requirements in the Lake Whatcom Total Maximum Daily Load (TMDL) study, as detailed in the attached TMDL Implementation Plan, the City will continue to monitor stormwater facilities throughout the jurisdiction during 2021. Monitoring results from 2020 will be used to re-calibrate the Lake Whatcom Management Program's annual phosphorus reduction goals and determine appropriate capital improvements to maximize protection of Lake Whatcom.

11.0 CAPITAL PROJECTS AND RETROFITTING (Not Required by Permit)

11.1 Program Overview

The City of Bellingham implements an active Capital Improvement Program associated with the Storm and Surface Water Utility (SSWU). A part of the SSWU funding is used for the replacement of capital assets to maintain the infrastructure and retrofitting stormwater facilities to improve water quality and maximize environmental benefits provided by the stormwater network.

Since the 1980's Bellingham has been active in providing system retrofits and managing stormwater. The retrofits were first primarily related to the prevention of flooding. In 1992 Bellingham received a grant from Ecology and constructed our first water quality facility retrofit for the protection of Lake Whatcom. Lake Whatcom is the drinking water source for about 120,000 people and has remained a top priority for water quality improvement and protection. In this basin alone, the City maintains an oil water separator and more than 57 facilities that reduce phosphorus and other pollutants.

Retrofitting is also of importance to areas outside of Lake Whatcom. The City's stewardship of a temporal resource such as stormwater can make drastic and long-term impacts on the health of all lakes and streams within and adjacent to the City. In addition to required water quality improvements related to transportation improvements, the City employs water quality retrofits in water and sewer utility replacements whenever possible.

11.2 Capital Projects

During 2020, the following capital projects were completed or in progress:

City Operations Center Maintenance Yard Upgrade

As part of a resurfacing of approximately 5 acres of concrete pavement at the City's Operations yard, the provided flow control and water quality treatment for nearly 32 acres of industrial and residential land use. This included enhanced treatment for entire 5.7-acre public site using Clara and Aquip Treatment System by StormwateRX and basic/phosphorus treatment for off-site 26-acre basin using a Stormfilter Vault with Phosposorb media.

Northshore Drive Cross-Culvert Drainage Improvement

Completed by City crews, this project corrected a failing drainage channel that was quickly eroding and causing sediment to enter and compromise a downstream water quality facility. Crews installed 260 feet of 30" diameter pipe and manholes in the channel to connect the upstream piped system to the downstream facility creating an enclosed system. Up to 15 feet of backfill was installed over the pipe and the area was restored and replanted to create a natural forested buffer through the project area.

Cornwall Avenue Outfall Improvement

This project relocated the existing stormwater outfall from the southern end of Cornwall Avenue further west to a deeper part of Bellingham Bay in order to prevent siltation of the outfall and flooding of Cornwall Avenue.

Meridian Street Water Quality Improvement

This project provides stormwater runoff treatment through installation of 17 water quality devices on Meridian Street (State Route 539) between Bakerview Road and Stuart Road as well as Kellogg Road. This project addresses untreated runoff from one of the highest-volume roadways in the City. Portions of Meridian Street, which has an estimated 32,000 average daily vehicle trips, contribute runoff directly to Spring and Baker Creeks, which are tributaries to 303(d)-listed Squalicum Creek. Baker Creek itself also has been listed on the 303(d) list for bacterial contamination

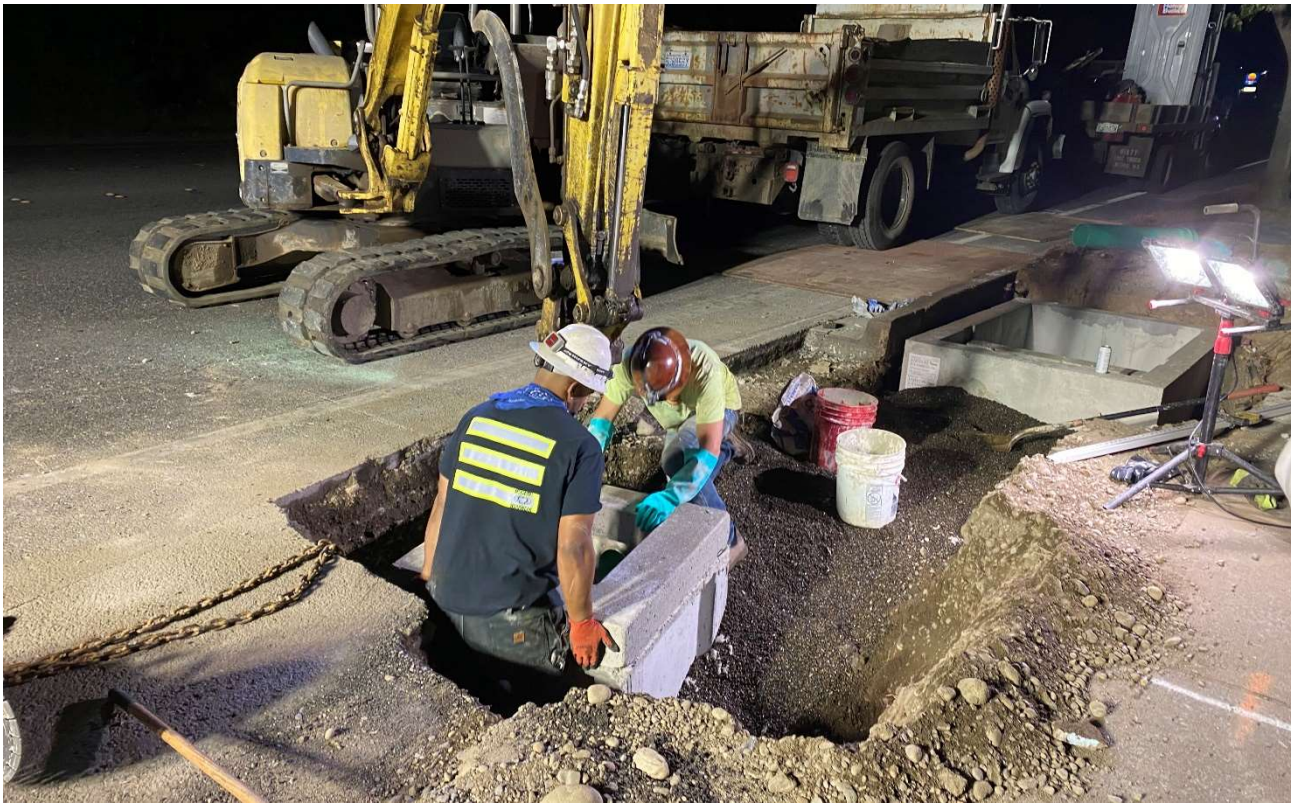

Photo 1. Night work installing water quality devices on Meridian Street.

11.3 Retrofit Projects

Bellingham's stormwater capital program has included a substantial number of retrofits over the years. SSWU policy has been that street projects that create new stormwater impacts and trigger code compliance are responsible for those mitigations. SSWU funding has been used to augment those mitigations or to provide funding in total to retrofit project areas that are not responsible for mitigation. Primary examples of this are street projects that are overlaying existing roadways with new asphalt or replacing existing curb/gutter systems. If the improvements do not trigger any code requirements, we look at retrofitting as an opportunity to improve our systems. In such cases decisions are based on average daily traffic for the street, the degree of opportunity, and available funding. Where street projects are only responsible to mitigate for new impervious surfaces, retrofitting is incorporated to aid providing total mitigation for the project area. This is to avoid having streets that are only partially mitigated that may present problems in the future if comprehensive retrofitting is desired or required. New roadways constructed in 2020 met all requirements for stormwater runoff treatment.

11.4 Fish Passage Improvements

A portion of the SSWU Capital Improvement Program budget funds the improvement of culverts that are impediments to fish passage. The City maintains a list of priority City-owned fish passage barriers improvements. Projects are funded based on a prioritization ranking which analyzes existing stream conditions, the potential for improvement, coordination with other projects, community support, funding opportunities, and the cost to complete the project.

Work to reduce fish passage barriers in 2020 included securing funding, completing design, and receiving permit approvals for the Middle Fork Nooksack River Fish Passage Project. Scheduled for construction in 2020, this project will remove a dam to restore approximately 16 miles of pristine spawning and rearing habitat for three Endangered Species Act listed fish species. In addition, the City updated the project prioritization ranking to more efficiently spend project dollars where they will secure the most benefit for fish passage. Funding was secured and the project design was refined for a Squalicum Creek fish passage improvement as part of the Squalicum Creek Re-route project (construction scheduled for 2020). Finally, a grant application was submitted to the Brian Abbott Fish Barrier Removal Board for design of a Padden Creek fish passage improvement at 30th Street.