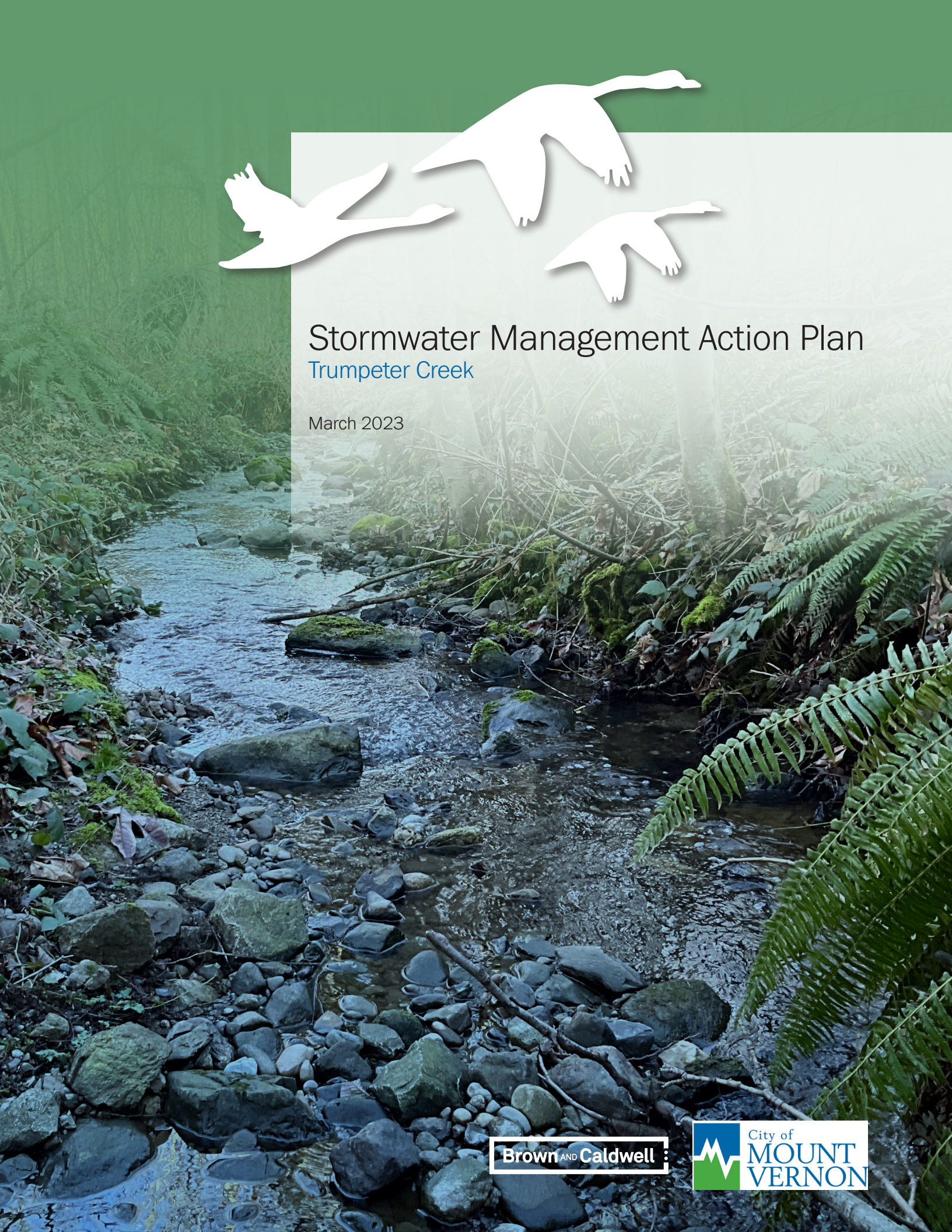

Stormwater Management Action Plan

Trumpeter Creek

March 2023

Brown AND Caldwell

City of MOUNT VERNON

City of MOUNT VERNON

Stormwater Management Action Plan

Trumpeter Creek

March 2023

City of Mount Vernon, Washington
Stormwater Management Action Plan: Trumpeter Creek

Prepared by
Brown and Caldwell
March 2023

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Acknowledgements

The City of Mount Vernon (City) would like to acknowledge all the valuable contributors that assisted in the development of this Stormwater Management Action Plan (SMAP).

Specifically, the City recognizes members of the Interdisciplinary Team for their efforts on Stormwater Management Action Planning program during meetings held between August 2021 and December 2022:

- Blaine Chesterfield, Engineering Manager, Surface Water Utility
- Alan Danforth, Engineering Manager, Development Services
- Daniel Schmidt, Senior Engineering Technician, Surface Water Utility
- Jason Brickley, Operations Manager
- Lyosha Grechishkin, Operator/Laborer
- Rebecca Bradley-Lowell, Principal Planner & Planning Manager

The City would also like to thank:

- Skagit County
- Skagit Conservation District
- Skagit County Department of Health

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- Jessica Christofferson, Principal Engineer
- Damon Diessner, Senior Advisor
- Mike Milne, Vice President
- Daniel Shapiro, PE, Project Manager

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List of Abbreviations

BC	Brown and Caldwell
BMP	best management practice
CCTV	closed-circuit television
CIP	Capital Improvement Project (or Program)
City	City of Mount Vernon
CMP	corrugated metal pipes
CSO	combined sewer overflow
DO	dissolved oxygen
DS	Development Services
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
GIS	geographic information system
IDT	Interdisciplinary Team
MS4	municipal separate stormwater sewer system
MVWWTP	Mount Vernon Wastewater Treatment Plant
NPDES	National Pollutant Discharge Elimination System
Permit	Western Washington Phase II Municipal Stormwater Permit
SCD	Skagit Conservation District
SEPA	State Environmental Policy Act
SMAP	Stormwater Management Action Plan
SWU	Surface Water Utility
SWMMWW	Stormwater Management Manual for Western Washington
SWMP	Stormwater Management Program
TIP	Transportation Improvement Project (or Plan)
TM	technical memorandum

Document Control

The purpose of this section is to track the version history of the Stormwater Management Action Plan (SMAP) and to summarize updates to the SMAP planning process and management actions. Table A lists SMAP versions by date, author, and provides a summary of changes made in each version.

Table A: Document Control

Date	Author, Organization	Version	Description of changes
3/27/2023	D. Shapiro, J. Christofferson, D. Diessner	01	Original
4/XX/2024			
4/XX/2025			
4/XX/2026			
4/XX/2027			
4/XX/2028			

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Executive Summary

The City of Mount Vernon, Washington, (City) is permitted to discharge surface water runoff to the streams, rivers, and other 'waters of the state'. All discharges from the City drainage system to waters of the state must comply with the Western Washington Phase II Municipal Stormwater Permit (the Permit). The Washington State Department of Ecology (Ecology) issued the Permit in July 2019 in compliance with the provisions of the federal Water Pollution Control Act (or Clean Water Act, i.e. CWA) and State of Washington Water Pollution Control Law. The Permit expires July 31, 2024.

The Permit requires that cities develop a plan to accommodate future growth and development while preventing water quality degradation and/or improving water quality and aquatic habitat conditions in receiving waters harmed by past development. That plan must be prepared according to guidance from Ecology.

The City completed this Stormwater Management Action Plan (SMAP) to meet the requirements of Special Condition S5.C.1.d.iii in the Permit. The City completed the following three-part process as prescribed in the Permit:

1. Receiving Water Assessment to document and assess existing conditions and information for watershed basins
2. Receiving Water Prioritization to determine which receiving waters will receive the most benefit from implementation of water quality improvements and other land/development management actions.
3. Stormwater Management Action Plan (SMAP, the Plan) to identify potential retrofit opportunities, land management/development strategies and/or actions, targeted enhancement strategies, implementation schedule and budget sources as well as a strategy for future plan updates.

The City followed Ecology's SMAP guidance to meet the Permit requirements. That process identified the Trumpeter Creek basin as the focus of the SMAP. Through this process the City identified appropriate retrofits, land management strategies and actions, and specific stormwater management actions for the Trumpeter Creek basin. The Trumpeter Creek SMAP includes the following elements:

Stormwater Retrofits

Three retrofit opportunities were identified and are currently included in the City's Capital Improvement Plan (CIP). The City also identified several detention ponds where retrofits may be feasible. These retrofits aim to improve fish passage, address sedimentation and erosion issues, reduce maintenance costs, and mitigate localized flooding.

The SMAP actions associated with these projects will be funded either through the existing CIP program, Grants, or from reallocations from the existing Surface Water Utility (SWU) SWUbudget.

See Section 3.1 for more information on Stormwater retrofits.

Land Management/Development Strategies

The SMAP identified two land management strategies in the Trumpeter Creek basin:

- Enhanced Treatment, with a preference toward infiltrating or bioretention Best Management Practices (BMPs), will be required for single-family residential developments in addition to

developments of all zoning types that trigger requirements for Enhanced Treatment per the Stormwater Management Manual for Western Washington (SWMMWW).

- BMPs addressing 6PPD-quinone will be required in accordance with Ecology guidance and recommendations.

These two efforts aim to reduce nutrient loads associated with wet ponds and mitigate risks to in-stream salmonids, respectively.

The SMAP actions associated with these two efforts are underway, and will be funded under the existing SWU and Development Services budgets and in part by the development community as part of the development review process.

See Section 3.2 for more on Land management/development strategies.

Customized Stormwater Management Actions

The City has identified eight initiatives to customize its Stormwater Management Program. These initiatives aim to customize various aspects of the City's ongoing education and outreach efforts, operations and maintenance activities, and forthcoming source control program.

SMAP actions associated with these initiatives will be funded through reallocations from the existing SWU budget.

See Section 3.3 for more information on these initiatives.

Changes Needed to Other Long-Range Plans

No changes to local-long range planning efforts have been identified through this SMAP effort. As part of the ongoing stormwater planning Interdisciplinary Team process, the City will continue coordinating with other City planning efforts.

These actions are funded through the existing operating budget for the City.

Implementation Schedule and Budget Sources

Section 4 provides detailed information on the implementation schedules and budget sources for each initiative described in Section 3. Where possible, the source of initiative funding in the existing SWU budget is provided. If reallocations are necessary, they will be sourced from the SWUSWU budget.

See Tables 4-1 and 4-2 for management actions, schedules, and budget sources.

Future Assessment and Adaptive Management to the SMAP

This SMAP and each of the short- and long-term actions described in Section 4.3 will be reviewed annually and updated as necessary.

Section 1

Purpose and Background

In July 2019, the Washington State Department of Ecology (Ecology) issued a Western Washington Phase II Municipal Stormwater Permit (the Permit), to the City of Mount Vernon (City) in compliance with the provisions of the federal Pollution Control Act (CWA) and State of Washington Water Pollution Control Law. The Permit, which expires on July 31, 2024, allows the City to discharge stormwater from the City drainage system to 'waters of the state'.

The Permit requires cities to develop a plan to accommodate future growth and development while preventing water quality degradation and/or improving water quality and aquatic habitat conditions in receiving waters harmed by past development. Special Condition S5.C.1.d. of the Permit requires Stormwater Management Action Planning, which includes the following components:

- S5.C.1.d.i *Receiving Water Assessment*
- S5.C.1.d.ii *Receiving Water Prioritization*
- S5.C.1.d.iii *Stormwater Management Action Plan*

The City has already completed drafts of the first two components listed above. See Appendix A for more information on the receiving water assessment and inventory. The draft technical memorandum (TM) included as Appendix B provides a detailed description of the assessment and prioritization process. This Stormwater Management Action Plan (SMAP) fulfills the requirements of S5.C.1.d.iii..

1.1 Document Purpose

The City prepared this SMAP to meet the requirements of the Permit and ultimately improve water quality within the Trumpeter Creek basin.

1.2 Background

The city of Mount Vernon is located in Skagit County and included within Water Resource Inventory Area 3–Lower Skagit River—with Whatcom County to the north and Snohomish County to the south. While the 2011 Puget Sound Watershed Characterization project defined the entire city topography as 'lowland', the elevation drops off significantly as it enters the floodplains of Nookachamps Creek to the northeast, and the Skagit River to the north and west. The elevation ranges from around 30 feet, where Trumpeter Creek leaves city bounds, to over 180 feet in the eastern part of the city. The soil type in these upland areas is typified by a glaciated, gravelly loam, whereas the lowland areas by Nookachamps Creek and the Skagit River consist of alluvially deposited fine sandy loams, and loam soils.

Figure 1-1 provides an aerial view of the Skagit River and the cities of Mount Vernon and Burlington.

Figure 1-1. Aerial view of the Skagit River including Mount Vernon and Burlington

The natural elevation drop-off seen across Mount Vernon can lead to steep watercourses and erosion and sedimentation issues, which are often exacerbated by increased flows associated with increases in impervious surfaces. When not addressed, erosion and sedimentation issues can lead to stream blockages, spawning area degradation, and overall water quality decline. Although it is a flow control exempt water body as determined by Ecology, degrading water quality in Mount Vernon impacts the Skagit River, to which all the water bodies in Mount Vernon are tributary. Figure 1-2 shows a view of the Skagit River at the West Division Street bridge.

Figure 1-2. Skagit River at the West Division Street bridge

In addition to erosion and downcutting, the water bodies within Mount Vernon also face the usual challenges of creeks in urbanized areas including increased runoff volumes due to impervious surface creation, bacteria from human and pet waste, as well as nutrient and toxic loads from urban runoff.

The Mount Vernon drainage area is almost 19 square miles and contains approximately 150 miles of stormwater gravity mainlines, one sixth of which are within the Trumpeter Creek basin. The average age of the mainlines in Mount Vernon is 27 years, although for one-third of the pipes entered into the City's GIS database, the installation year was not recorded.

Most of the land within the city limits is developed, with an estimated 62% impervious cover. Refer to Appendix B: *SMAP: Receiving Water Assessment, Inventory, and Prioritization Technical Memorandum*, for details. The southeast portion of the city, which includes the majority of undeveloped lands, is located within the Nookachamps, Carpenter, and Maddox Creek basins. Current city zoning designates 61% for residential uses, 28% for commercial and industrial uses, and 12% for other uses (public lands, rights-of-way, and Skagit River and flood zones). The Trumpeter Creek basin zoning is 85% residential, 14% commercial and industrial, and 1% public.

Figure 1-3 shows the location of Mount Vernon within the overall region.

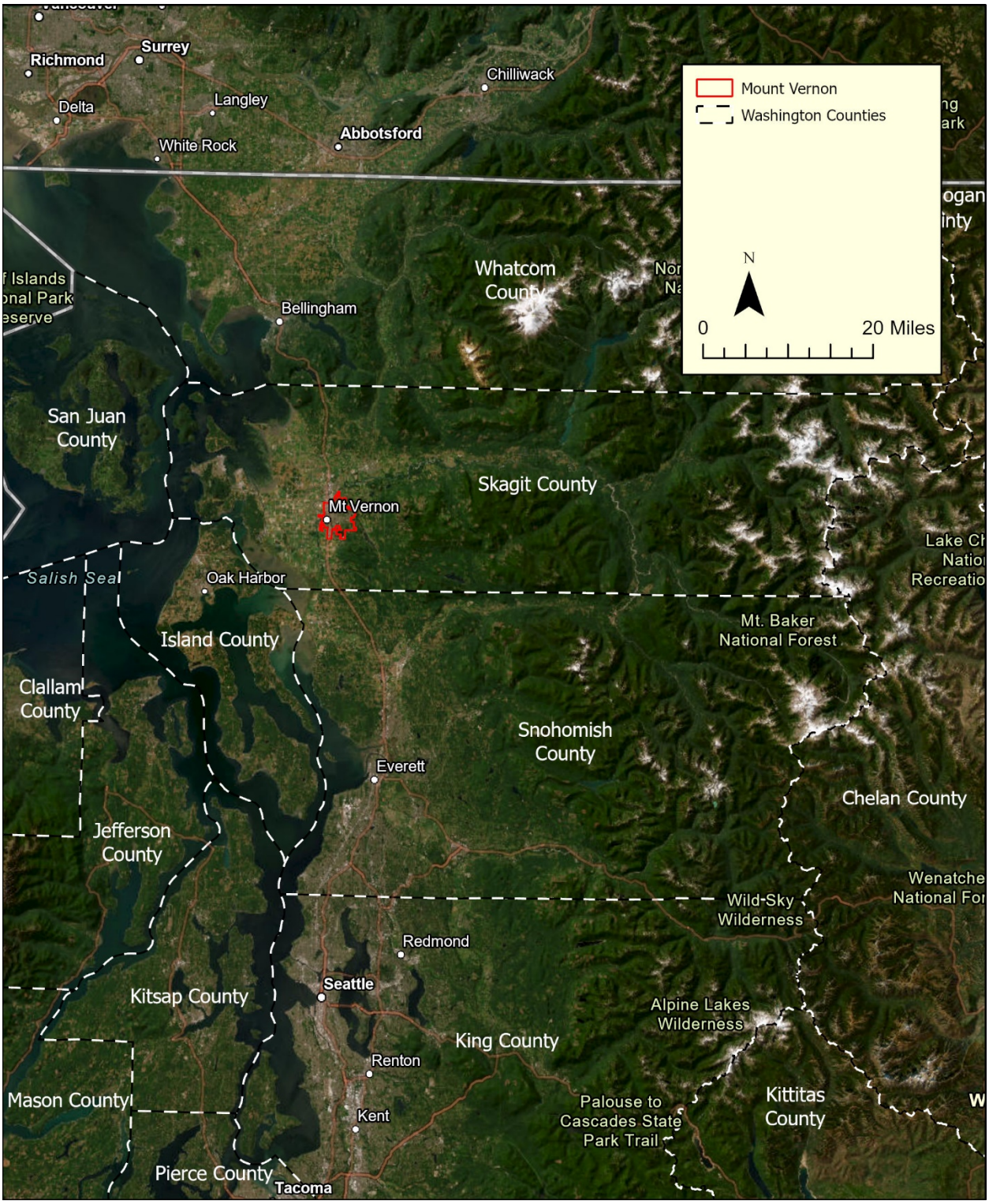

Figure 1-3. Mount Vernon regional view

1.3 Major Water Bodies

As a part of the City's Receiving Water Assessment, major water bodies within Mount Vernon were identified and contributary areas, or basins, delineated (see Figure 1-4). The water bodies identified include:

- Britt Slough
- Carpenter Creek
- Kulshan Creek
- Maddox Creek
- Nookachamps Creek
- Skagit River Tributary
- Trumpeter Creek
- West Mount Vernon

A portion of the downtown area is served by a combined sewer system that conveys wastewater and stormwater to the Mount Vernon Wastewater Treatment Plant (MVWWTP). Flows from the combined sewer area are managed under the City's National Pollutant Discharge Elimination System Waste Discharge Permit (expired January 2022), and not under the Stormwater Permit. The Waste Discharge Permit is currently being reviewed by Ecology and Mount Vernon is awaiting its approval.

The City is working to reduce the combined sewer area by implementing tie-ins to the drainage system where in-fill developments are constructed.

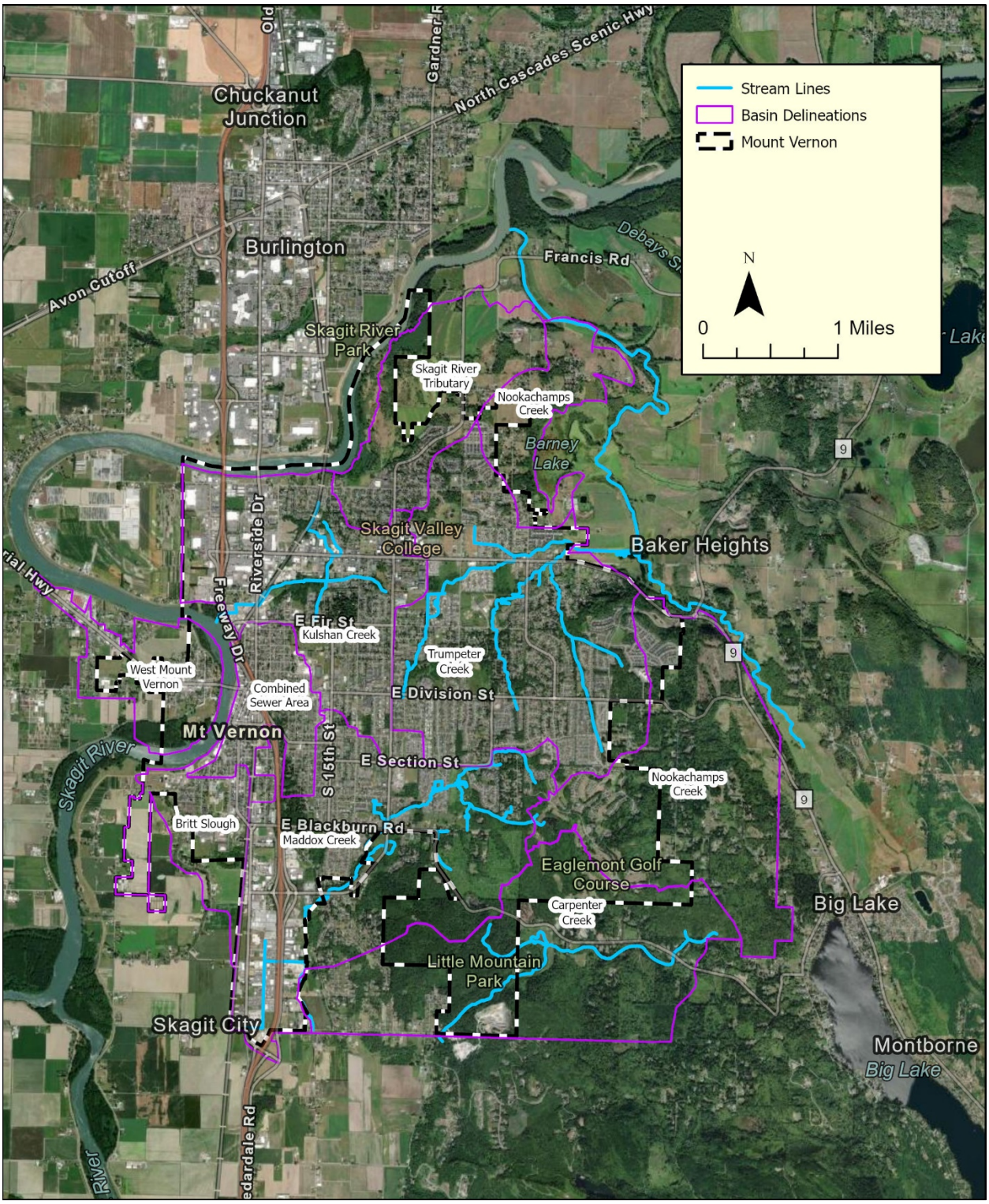

Figure 1-4. Mount Vernon and delineated basins

The Washington Department of Fish and Wildlife integrated fish distribution dataset indicates every basin, with the exception of West Mount Vernon, has been documented to contain some species of fish, with fish habitat stream length totaling 25 miles city-wide. The presence of fish habitat

throughout the city makes fish barriers, dissolved oxygen, and 6PPD-quinone (harmful to Coho salmon and Rainbow Trout) primary concerns for the City.

Trout species documented within these streams include Bull, Cutthroat, Rainbow, and Steelhead. Documented salmon species include Chum and Coho. The City also has significant wetland areas, which are critical to water quality and habitat health. City GIS data have documented approximately 2,000 acres of wetlands city-wide, of which roughly 400 acres are within the Trumpeter Creek basin. Figure 1-5 shows an example of educational signage provided by the City in the Trumpeter Creek basin.

Figure 1-5. Educational signage in the Trumpeter Creek basin

1.4 SMAP outline

This SMAP includes the stormwater management initiatives and accompanying actions that make up the SMAP for Trumpeter Creek. The remainder of this document is organized as follows:

- Section 2 Approach
  - Includes an overview of the first two steps of the SMAP process, the Receiving Water Assessment and Receiving Water Prioritization.
- Section 3 Action Plan Elements
  - Includes SMAP elements that satisfy permit *Special Condition S5.C.1.d.iii(a)-(c)*, i.e., the initiatives associated with Retrofits, Land Management Strategies, and Targeted SWMP implementation.
- Section 4 SMAP Implementation
  - Includes Plan elements that satisfy permit *Special Condition S5.C.1.d.iii(d)-(f)*, i.e., the short- and long-term actions associated with each initiative, as well as budget sources and implementation schedules.
- Section 5 Public Involvement
  - Summarizes the City's public involvement activities to date.
- Section 6 Conclusion
- Section 7 References

Section 2

Approach

This section summarizes the first two components of the Stormwater Management Action Planning process, namely the Receiving Water Assessment and Receiving Water Prioritization. These are required by Special Condition S5.C.1.d.i and ii of the Western Washington Phase II Municipal Stormwater Permit (the Permit). The City of Mount Vernon (City) completed these two elements in accordance with the Permit requirements and in consultation with the Stormwater Management Action Planning Guidance Document, published by Ecology in August of 2019[1]. For the full report, please see Appendix B.

2.1 Receiving Water Assessment

The City of Mount Vernon (City) delineated nine receiving water basins that drained to water bodies within its jurisdiction and analyzed each to identify total watershed areas. This analysis considered the percent of each basin within the City's jurisdiction, and of the potential influence that stormwater management has on each receiving water. Table 2-1 represents the Receiving Water Assessment table as submitted to Ecology with the City's 2021 Annual Report.

Table 2-1. Receiving Water Assessment

Receiving Water Name	Total Watershed Area (sq. miles)	% within City Jurisdiction	SMAP Influence Findings	Included in Receiving Water Prioritization?	Summary Description: Relative Conditions and Contributing Area
Britt Slough	0.76	71%	Medium	Yes	• Basin is primarily in a developed, built-out condition. • Of the zoned areas, the watershed is approximately divided into quarters of commercial, residential, residential-agricultural, and public space (Skagit County Fair Grounds, Sherman Anderson Park).
Carpenter Creek	2.89	32%	Medium	Yes	• Basin is almost entirely forested, in a natural condition, and is largely outside of the city's existing bounds and Permit area. • The area within city bounds is zoned for agricultural and public space (Little Mountain Park).
Combined Sewer Area	0.69	100%	Low	Yes	• The downtown area of Mount Vernon is primarily in a developed, built-out condition. • Zoned areas are primarily residential and commercial, with some public space as well. • Low influence due to separate NPDES wastewater discharge permit covering this area, as well as fully built-out conditions.
Kulshan Creek	2.21	100%	High	Yes	• Basin is primarily in a developed, built-out condition. • Zoned areas of this watershed are approximately half residential and half commercial.

[1] Stormwater Management Action Planning Guidance

Table 2-1. Receiving Water Assessment

Receiving Water Name	Total Watershed Area (sq. miles)	% within City Jurisdiction	SMAP Influence Findings	Included in Receiving Water Prioritization?	Summary Description: Relative Conditions and Contributing Area
Maddox Creek	3.27	83%	High	Yes	• Basin is roughly half in a developed condition, and half in a forested, natural condition. • Of the zoned area within City bounds approximately one third is commercial, and the remaining two thirds are residential. Also contains some of Little Mountain Park.
Nookachamps Creek	3.31	29%	Medium	Yes	• Basin is primarily in a forested, natural condition, with large portions outside of the City's existing bounds and NPDES Permit area. • Of the developed area within this watershed, approximately a third is zoned for residential, with two thirds zoned for agricultural.
Skagit River Tributary	1.34	48%	Low	Yes	• Basin is partially developed and includes parks as well as large natural areas in proximity to the Skagit River. • Zoned areas are primarily for residential and public space (Riverfront area). • Low influence due to the Skagit River being flow-control exempt water body.
Trumpeter Creek	3.26	96%	High	Yes	• Basin is primarily in a developed condition. • Of the zoned areas, roughly 7/8's of the watershed area is zoned for residential, while the remainder is zoned for public space (including Bakerview Park and Skagit Valley College).
West Mount Vernon	0.80	48%	Medium	Yes	• Basin is primarily in a developed condition. • Of the zoned areas, the watershed is roughly split into thirds of commercial, residential, and public space (Edgewater Park).

See Appendix A for the full Receiving Water Condition Inventory submitted to Ecology.

The Receiving Water Assessment determined stormwater management would have a "Low" influence on the combined sewer overflow (CSO) area and the Skagit River Tributary area, a "High" potential influence on the Trumpeter, Maddox, and Kulshan Creeks, and "Medium" potential influence on remaining areas.

The CSO area "Low" influence rating is because this area drains to the MVWWTP and is covered under a separate state wastewater permit rather than the Phase II Municipal Stormwater Permit. Because the Skagit River watershed is relative to the contributing area in the City's jurisdiction, this watershed was given a "Low" rating for city drainage influence.

Trumpeter, Kulshan, and Maddox Creeks were given "High" influence ratings due to several factors including the amount of existing infrastructure within those basins (presenting opportunities for retrofits), a high percentage of the watershed within City jurisdiction (enabling more thorough implementation of SMAP actions), and the presence of high value resources for conservation such as fish habitat and wetlands. The City also placed an emphasis on areas that were in a primarily developed condition (presenting opportunities to treat currently untreated runoff from impervious areas), and residential zoning (the majority of expected in-fill developments).

The remaining receiving waters, Britt Slough, Carpenter Creek, and Nookachamps Creek were given "Medium" influence ratings, along with the West Mount Vernon basin.

2.2 Receiving Water Prioritization

As part of the Receiving Water Prioritization process, the City collected data on wetlands, fish habitat, overburdened communities, planned capital improvement projects, impervious areas, zoning designations, anticipated development pressure, existing infrastructure, as well as water quality assessment data from Ecology. The various data were analyzed and quantified by basin to enable the City to rank and prioritize each based on the criteria listed in Table 2-2. Table 2-2 also lists the, scoring methods, and weights (importance level) for each criterion the City considered for its Receiving Water Prioritization.

Table 2-2. Criteria, Scores, and Weights

Criteria	Score of 1 [a]	Score of 0 [b]	Weight [c]
Percent of watershed within jurisdiction	80%	30%	1
Development pressure	High	Low/Redevelopment	3
Transportation projects, new construction (feet)	1,000	100	5
Salmonid habitat stream length (miles)	4	2	5
WSDOT sensitive waterbodies (feet)	2,000	1,000	0
National Wetlands Inventory: wetlands and deep water habitat (acres)	75	50	0
Mount Vernon wetlands inventory	400	100	2
Estimated percent impervious [d]	50%	33%	4
Zoning: commercial	30%	10%	0
Zoning: residential	40%	20%	1
Zoning: public	40%	20%	2
Street sweeping (miles)	30	10	1
Length of stormwater infrastructure (miles)	15	10	1
Infrastructure (miles/sq. miles)	6	1	1
Infrastructure average age	40	25	0
Surface water CIPs	More than 1 project	No projects	3
Ecology 303(d) listed? (i.e., Cat. 5 impaired)	Impaired water body within or directly discharging to.	No impaired water body	4

a. Values greater than or equal to this value received a score of 1.
b. Values less than or equal to this value received a score of 0. Values in between received a score of 0.5.
c. Weights were determined by the SMAP Team and reflect importance to the City as well as the multiplier applied to the received score.
d. For impervious area, catchments that were in between the range shown here received scores of 1.0, while catchments below scored a 0, and the highest range scored a 0.5.

This scoring methodology resulted in the following scores for each basin:

Table 2-3. Receiving Water Prioritization Results

Receiving Water Name	Total Weighted Score
Trumpeter Creek	29.0
Maddox Creek	22.0
Kulshan Creek	17.5
Nookachamps Creek	15.0
Skagit River Tributary	13.0
Carpenter Creek	9.5
West Mount Vernon	6.0
Britt Slough	6.0
Combined Sewer Area	4.5

For more information on the Receiving Water Prioritization see Appendix B.

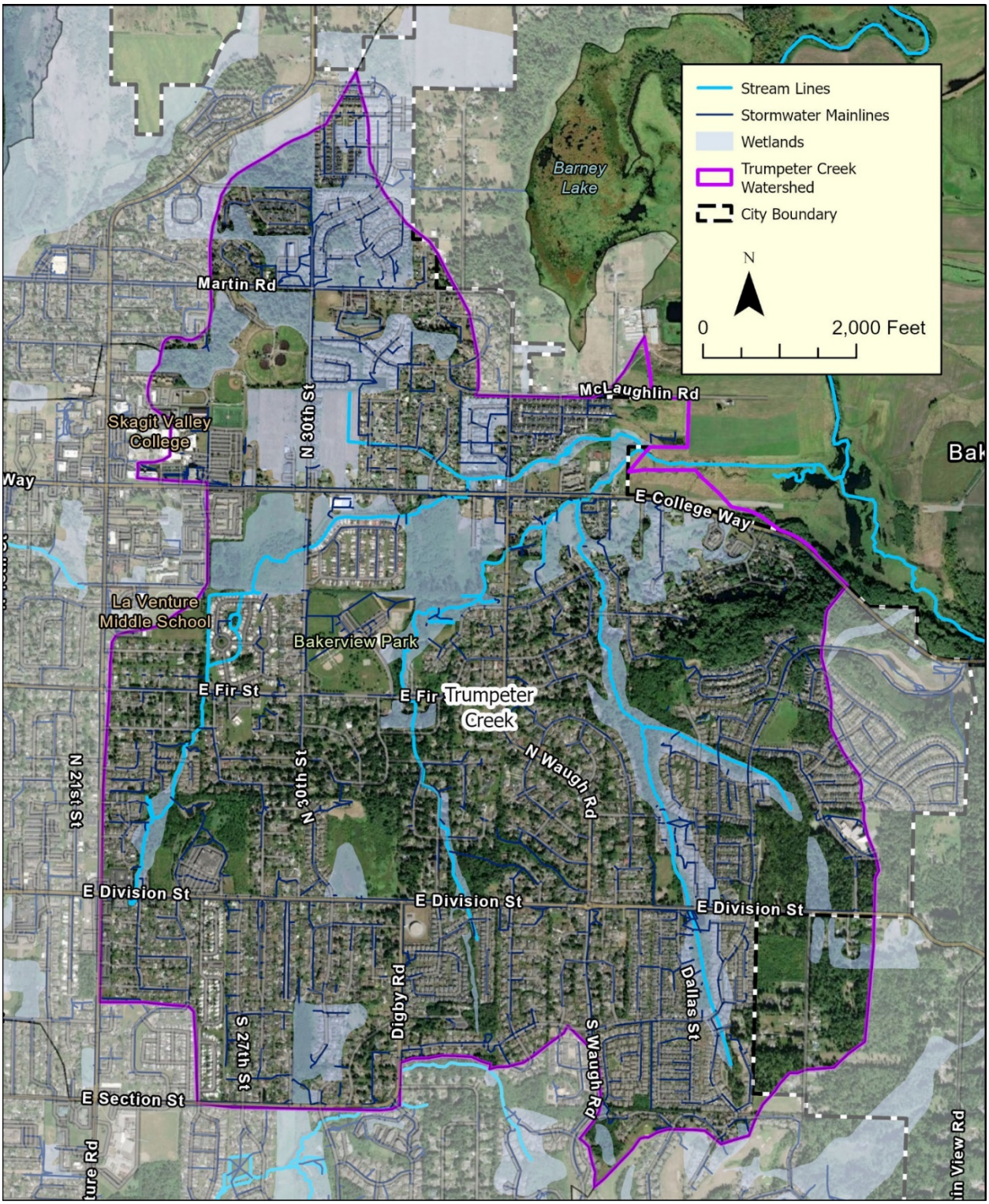

Figure 2-1. Trumpeter Creek basin

Section 3

Stormwater Management Action Planning Elements

Section 3 describes the initiatives identified to meet the requirements of the first three elements of the Stormwater Management Action Planning (SMAP) Program, as set forth in Special Conditions S5.C.1.d.iii.(a) through (c) of the Permit. The SMAP must include the following:

- S5.C.1.d.iii.(a) A description of the stormwater facility retrofits needed for the area, including the BMP types and preferred locations.
- S5.C.1.d.iii.(b) Land management/development strategies and/or actions identified for water quality management.
- S5.C.1.d.iii.(c) Targeted, enhanced, or customized implementation of stormwater management actions related to permit Special Condition S5, including Illicit Discharge Detection and Elimination field screening, Prioritization of Source Control inspections, operation and maintenance (O&M) inspections or enhanced maintenance, or Public Education and Outreach behavior change programs.

Per the Permit, identified actions shall support other specifically identified stormwater management strategies and actions for Trumpeter Creek basin.

3.1 Stormwater Retrofits

The City of Mount Vernon's (City's) Interdisciplinary Team identified three retrofit projects to address stormwater issues within Trumpeter Creek basin and improve water quality and fish passage. Initiative IDs were taken from the City's Capital Improvements Plan for 2022-2027.

Table 3-1. Retrofits

Initiative ID	Title	Description	Water Quality Benefit
RETRO-01	Seneca Drive Culvert	CIP# D-21-04–This CIP will address a cross culvert under Seneca Drive that is the frequent site of sediment and debris buildup. The culvert sits in an alluvial fan, a natural location for sedimentation build-up, causing a frequent maintenance concern, and acts as a barrier to fish passage.	Restores habitat, stabilizes eroding creek beds, and improves fish passage.
RETRO-02	North 30th Street Improvements	CIP# T-02-24–This CIP will complete sidewalk, curb, and gutter installation and improve existing system drainage along 30th Street. This project also includes upgrading a culverted portion of Logan Creek under North 30th Street.	Improves sediment removal through catch basins with sumps and improves fish passage.
RETRO-03	Logan Creek Stream Restoration	CIP# D-14-01–This CIP was initiated to address down cutting and erosion in the upper reaches of Logan Creek though the installation of grade control weirs.	Reduces erosion and expand fish habitat.

Figure 3-1 shows the general location of each of the stormwater retrofits listed in Table 3-1.

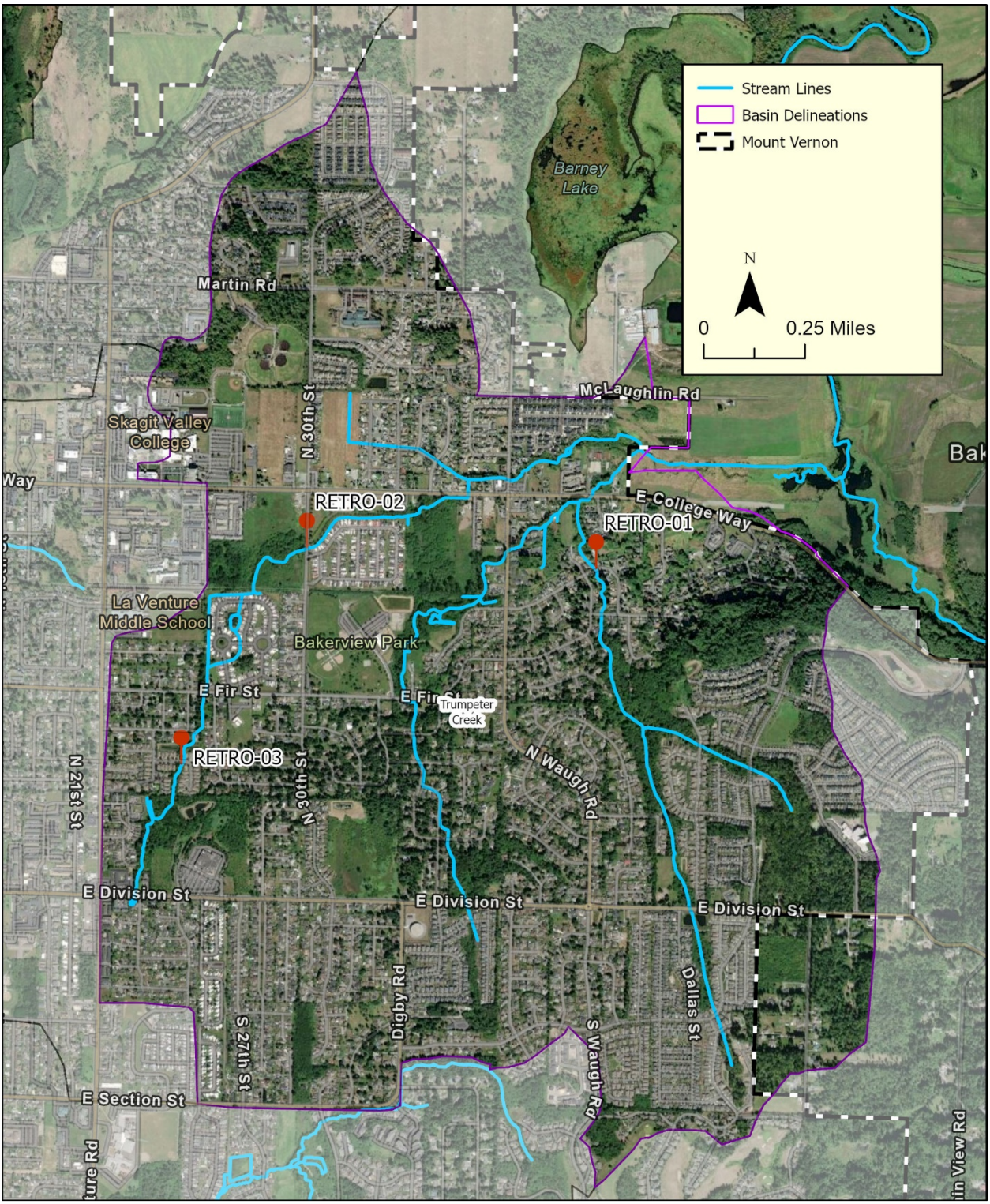

Figure 3-1. Retrofit locations

The City engaged with operations staff and the Streets Division to review known problem areas as well as new or previously undocumented issues within the Trumpeter Creek basin. Through these efforts, the City identified three additional programmatic initiatives to identify retrofits. These initiatives, CUST-04, -05, and -06, will be incorporated as customized components of the City's SWMP, as well as in the yearly Adaptive Management component of this SMAP. For more on these initiatives, see Section 3.3.

3.2 Land Management Strategies

The City's Interdisciplinary Team identified two land management/development strategies within the Trumpeter Creek basin that required initiatives to protect water quality and fish habitat. These initiatives are intended to protect water quality by going above and beyond the current stormwater standards.

Table 3-2. Land Management/Development Strategies

Initiative ID	Title	Description	Water Quality Benefit
LM-01	Enhanced Treatment	Through the development review process, as well as the State Environmental Policy Act (SEPA) process, the City will require single-family residential developers to install enhanced treatment BMPs, with a preference toward infiltrating or bioretention BMPs (feasibility dependent) over wet ponds.	This strategy aims to minimize the creation of stagnant ponds that can become nutrient sources, as opposed to sinks.
LM-02	BMPs for 6PPD-quinone	Through the development review process, as well as the SEPA process, the City will require all developers to install BMPs that can mitigate the risk associated with 6PPD-quinone, as per latest Ecology guidance and recommendations.	This strategy aims to mitigate the risk to salmonids in Trumpeter Creek.

Implementing BMPs for 6PPD-quinone within the Trumpeter Basin will serve two purposes. First, the BMPs will help protect over 6 miles of potential habitat for Salmonids. Secondly, implementing these BMPs within the Trumpeter Basin will prepare Mount Vernon for future NPDES Phase II Permit regulations that the State has indicated will likely impact all of Mount Vernon, and Western Washington in upcoming updates to the SMMWW.

3.3 Customized implementation of the SWMP

The City's Interdisciplinary Team identified eight customized water quality initiatives for implementation in its ongoing SWMP within the Trumpeter Creek basin. Initiatives CUST-01 through CUST-03, and CUST-07 and -08 are summarized in the table below, and initiatives CUST-04, -05, and -06 identify additional programmatic retrofits, which are further detailed in the text and figures below.

Table 3-3. Customized SWMP Implementation

Initiative ID	Title	Description	Water Quality Benefit
CUST-01	Public Education and Outreach–'Poop Fairy' Signage	A customized implementation of S5.C.2 Public Education and Outreach; this initiative aims to reassess placement and scope of "Poop Fairy" signs and other public notices to curb bacteria loads in Trumpeter Creek. All initiatives to customize the City's Education and Outreach will be coordinated with the Skagit Conservation District (SCD).	This initiative aims to reduce bacteria loadings in Trumpeter Creek.
CUST-02	Bacteria Monitoring	A customized implementation of S5.C.2 Public Education and Outreach; this initiative entails a yearly review of monitoring data (if available) published by the Skagit Conservation District Stream Team, to assess current bacteria levels at the confluence of Thunderbird and Trumpeter Creeks. Additional	This initiative aims to reduce bacteria loadings to Trumpeter Creek.

Table 3-3. Customized SWMP Implementation			
Initiative ID	Title	Description	Water Quality Benefit
		Education and Outreach materials may be prepared based on the results, if appropriate. All initiatives to customize the City's Education and Outreach will be coordinated with the SCD.	
CUST-03	Rain Garden Implementation	A customized implementation of S5.C.2 Public Education and Outreach, this initiative will monitor the ongoing Rain Garden program within the City and assess effectiveness by looking at implementation within the Trumpeter Creek basin.	This initiative aims to reduce nutrient loadings to Trumpeter Creek, reduce algal growth, and improve DO
CUST-04	CCTV Inspection Program	A customized implementation of S5.C.7 Operations and Maintenance, this initiative is intended to address legacy flooding and infrastructure issues in the northern portion of Trumpeter Creek basin, near Trumpeter Way and Trumpeter Boulevard. This initiative will dovetail with the City's existing inspection and lining program to prioritize issues within the Trumpeter Creek basin.	This initiative aims to identify and prevent drainage system failures and the resulting erosion, sedimentation, debris, litter, and trash loads to Trumpeter Creek.
CUST-05	Stormwater Pond Retrofit Identification Program	A customized implementation of S5.C.7 Operations and Maintenance, this initiative entails inspecting stormwater ponds installed before 1992 Stormwater Standards and to assess their potential for retrofitting.	This initiative aims to identify ponds amenable to retrofitting to improve water treatment and improve DO in Trumpeter Creek.
CUST-06	Maintenance Improvements	A customized implementation of S5.C.7 Operations and Maintenance, this initiative seeks to organize and begin CIP/retrofit development for maintenance issues that would require over $25,000 to address.	This initiative aims to address legacy maintenance issues that lead to erosion and sedimentation in Trumpeter Creek.
CUST-07	Targeted Street Sweeping	A customized implementation of S5.C.7 Operations and Maintenance, this initiative will allow the City to interpret new street sweeping requirements expected in the 2024 Permit reissuance and adapt these requirements to priority areas within the Trumpeter Creek basin. While the City expects to already meet any new requirements, specific adaptations could include specialized timing (after storms, snow events), frequency of sweeps, and targeted sweeps for leaf removal in the late fall.	This initiative aims to reduce the loads of TSS, nutrients, and other pollutants from street dirt, to improve water quality in Trumpeter Creek.
CUST-08	Prioritized Business Inspections	A customized implementation of S5.C.8 Source Control Program for Existing Development, this initiative will review businesses included in the City's inventory for potential pollutant generating sources and will review historical violations to find intersections within the Trumpeter Creek basin.	This initiative aims to enhance source control within the Trumpeter Creek basin.

The following provides additional information on Initiatives CUST 04, 05, and 06.

Initiative CUST-04 was identified through Interdisciplinary Team discussions of known problem areas. The neighborhood in the vicinity of Trumpeter Drive and Trumpeter Boulevard has previously experienced flooding issues due to a failed stormwater detention facility. The City has recently lined this facility and other corrugated metal pipes (CMP) in the area.

As a part of this SMAP, the City reviewed drainage assets and identified additional CMP pipes that are advancing in age, and pose a risk of failing, which could lead to debris, sediment, or flooding and excessive flow to Trumpeter Creek. Initiative CUST-04 will direct the City's ongoing Storm System Restoration program to prioritize a known problem area within the Trumpeter Creek basin.

Figure 3-2 shows the general location of CUST-04 in relation to stream lines and stormwater mainlines.

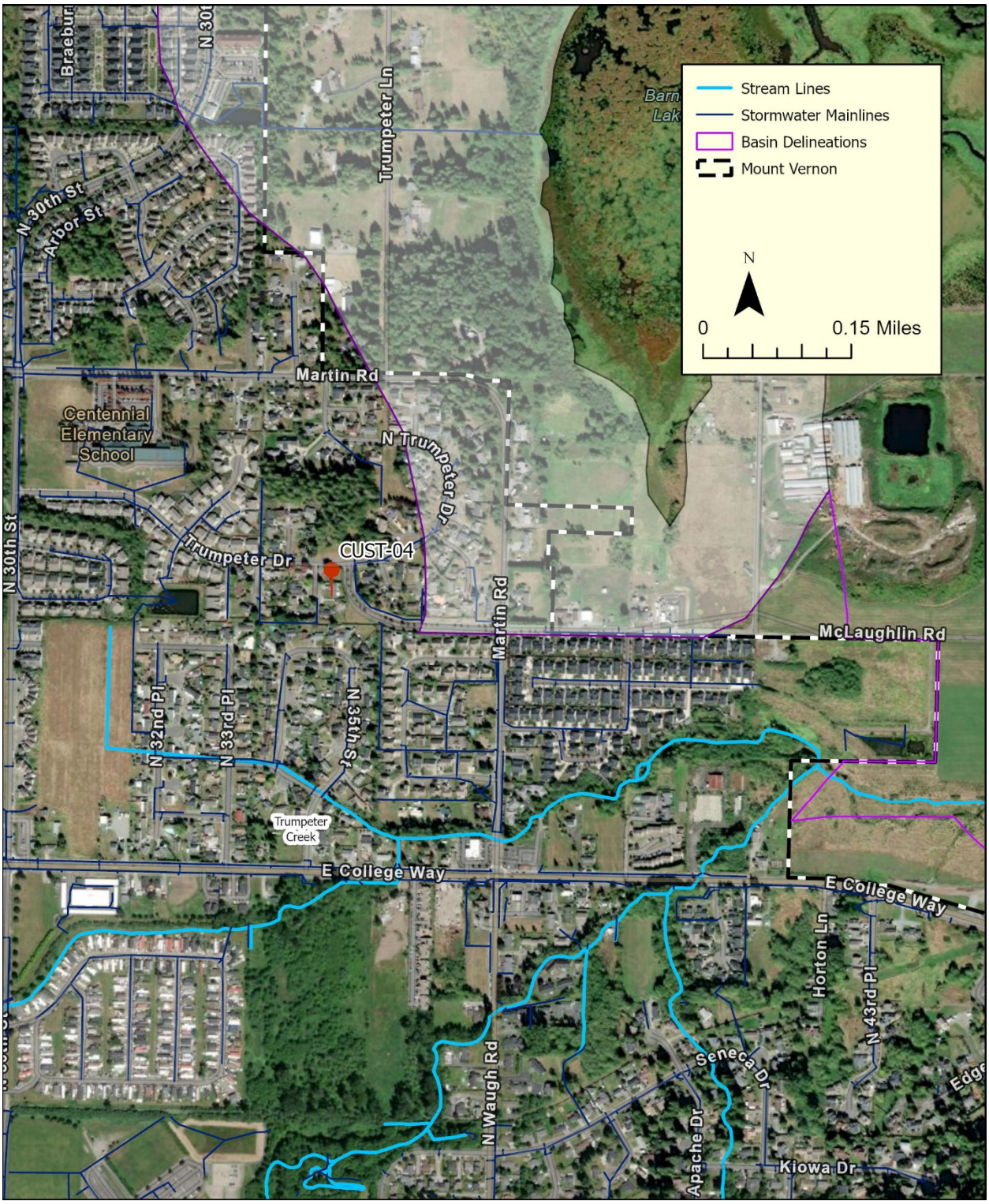

Figure 3-2. Initiative CUST-04 Trumpeter Drive and Trumpeter Boulevard neighborhood

Initiative CUST-05 (Figure 3-3) was also identified through discussions with the Interdisciplinary Team and is designed to address issues with aging detention ponds. Detention ponds with an install year predating 1992 are targeted, due to this preceding the first stormwater standards in Washington. As a part of the development of this SMAP, the City has already identified several ponds

that meet this age criteria. Though not every pond identified here will be a good candidate for retrofitting, the next steps proposed in this initiative will be the development of a pond inspection program that will create criteria to assess each pond for retrofit feasibility based on site specific conditions.

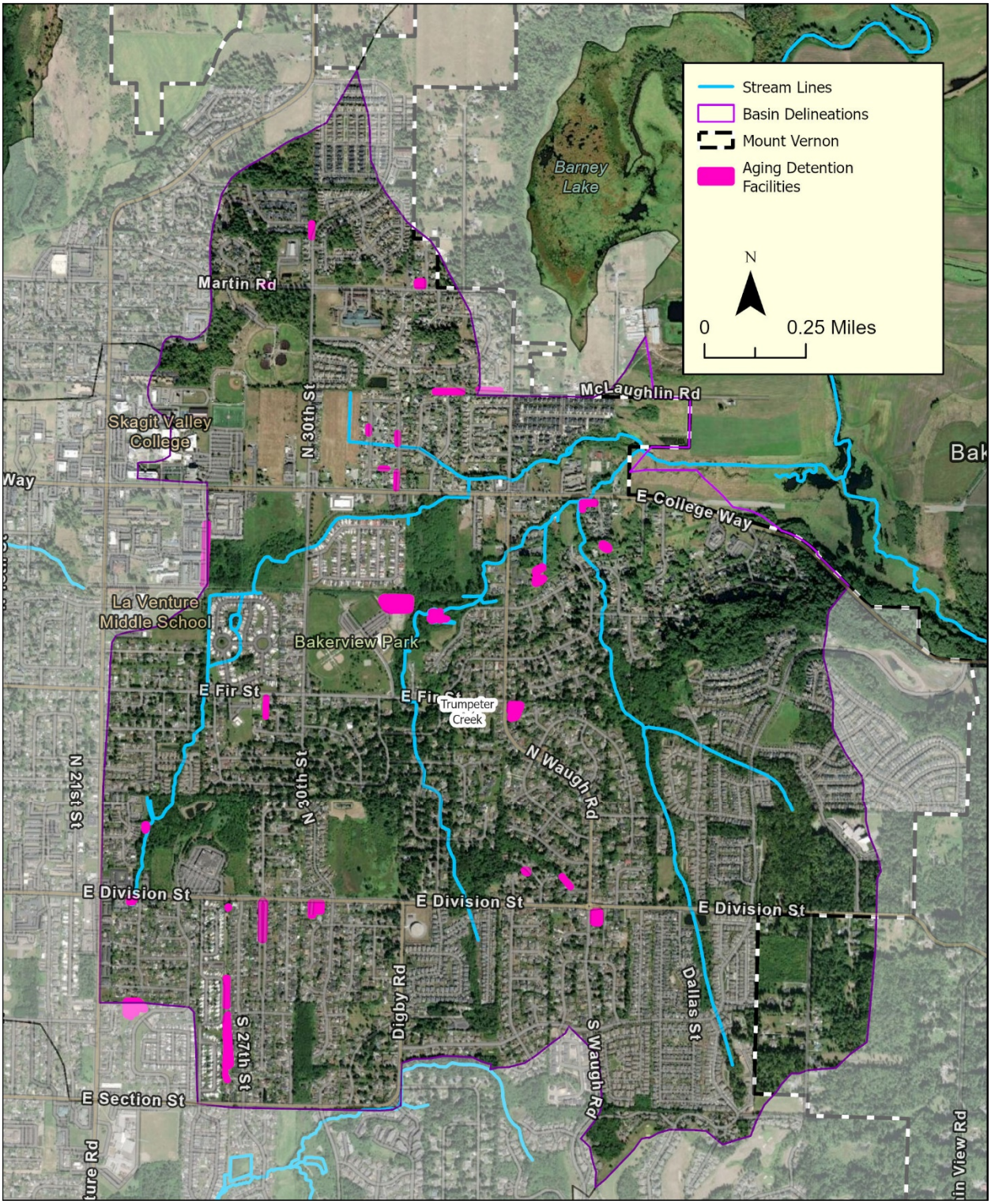

Figure 3-3. Initiative CUST-05 stormwater facilities installed prior to 1992

For initiative CUST-06 (Figure 3-4), the City identified three, high-priority locations which are frequent maintenance concerns that will require over $25,000 in capital expenditures to address. These retrofits all include neighborhood scale issues with roadside ditches that are frequently overwhelmed, causing localized flooding as well as sedimentation and erosion issues.

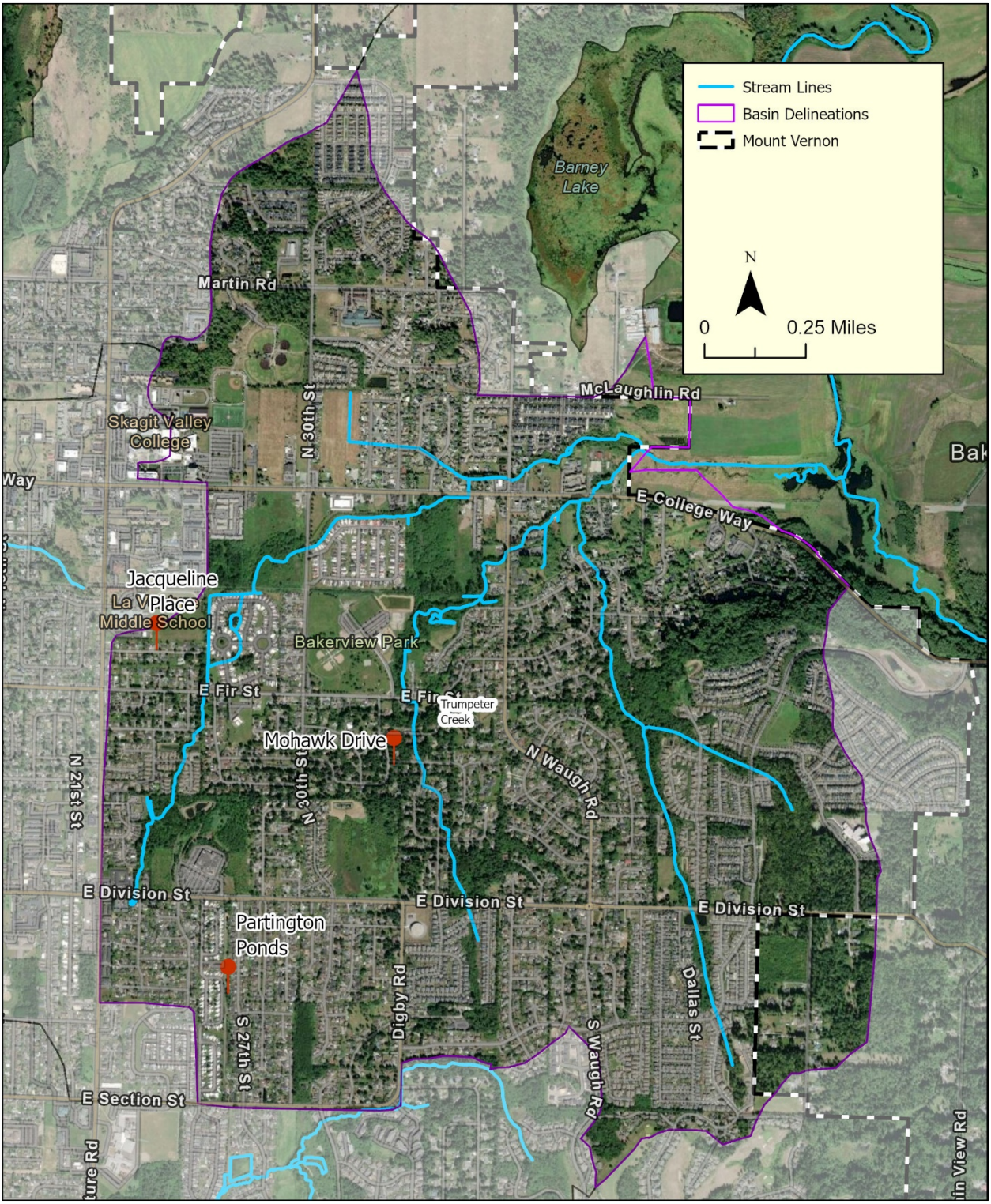

Figure 3-4. Initiative CUST-06 maintenance retrofit locations

Section 4

Plan Implementation

Section 4 describes the final three elements of the City of Mount Vernon's (City's) Stormwater Management Plan (SMAP), identified in Special Condition S5.C.1.d.iii.(d) through (f) of the Western Washington Phase II Municipal Stormwater Permit (the Permit). The SMAP must include the following:

- S5.C.1.d.iii (d) If applicable, identification of changes needed to local long-range plans, to address SMAP priorities.
- S5.C.1.d.iii (e) A proposed implementation schedule and budget sources for:
  - Short-term actions (i.e., actions to be accomplished within 6 years)
  - Long-term actions (i.e., actions to be accomplished within 7 to 20 years)
- S5.C.1.d.iii (f) A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.

4.1 Incorporation into Long-Range Planning

Through monthly inter-departmental coordination and meetings with the Interdisciplinary Team, the City determined the Trumpeter Creek SMAP did not require changes to any long-range plans at this time. Potential impacts and opportunities to coordinate with other planning efforts will be revisited during quarterly meetings of the Interdisciplinary Team.

Quarterly meetings of the Interdisciplinary Team and inter-departmental communications will be documented under initiative PLAN-01–Interdepartmental Coordination. The goal of this initiative is to maintain regular communication and ensure that stormwater management is being considered for all long-term plans, including the Citywide Comprehensive Plan.

4.2 Proposed Short- and Long-Term Actions, Schedule, and Budget Sources

The City's Interdisciplinary Team identified specific actions for the SMAP initiatives described in Section 3. Tables 4-1 and 4-2 respectively, summarize the short-term and long-term actions.

Table 4-1. Short-Term Actions (0-6 years)

Initiative ID	Title	Action	Responsibility	Schedule	Budget Source [a]
RETRO-01	Seneca Drive Culvert	Document project status	• SWU	Yearly, April (until project completion)	Existing funds (CIP 2026, Fish Passage Removal Board Grant)
		Make contact and coordinate with outside agencies	• SWU	Yearly, April (until project completion)	
RETRO-02	North 30th Street Improvements	Document project status	• SWU	Yearly, April (until project completion)	Existing funds (TIP 2023, 2024)
RETRO-03	Logan Creek Stream Restoration Project	Document project status	• SWU	Yearly, April (until project completion)	Existing funds (CIP 2024, Surface Water Utility Fund)
LM-01	Enhanced Treatment	Require enhanced treatment for single-family residential developments, utilizing the State EPA process, with a preference towards infiltrating and biofiltrating BMPs	• DS	Ongoing	Existing funds (DS)
LM-02	BMPs for 6PPD-quinone	Require BMPs for mitigating the risk associated with 6PPD-quinone for roads and parking lots associated with new and redevelopment	• DS	Ongoing	Existing funds (DS)
		Review Ecology's latest guidance on effective BMPs for treating 6PPD-quinone	• SWU	Yearly, April	
		Evaluate feasibility of codifying BMPs for 6PPD-quinone into development standards	• SWU • DS	Yearly, April	
CUST-01	Public Education and Outreach 'Poop Fairy' Signage	Review current locations of public signage	• SWU • Parks Department	Yearly, April	Existing funds ($4,000 set aside for "Public Education")
		Pending review, install, alter, or enhance current signage	• SWU • Parks Department	Yearly, April	
		Coordinate efforts with SCD	• SWU • Parks Department	Yearly, April	
CUST-02	Bacteria Monitoring	Review latest SCD Stream Team Report bacteria monitoring results	• SWU • SCD	Yearly, or as reports are published	Existing funds ($4,000 set aside for "Public Education")
		Assess current strategies to decrease bacteria concentrations in Trumpeter Creek	• SWU • SCD	Yearly, or as reports are published	
CUST-03	Rain Garden Implementation	Assess existing program within Trumpeter Creek basin	• SWU • SCD	August 2027	Existing funds ($4,000 set aside for "Public Education")
CUST-04	CCTV Inspection Program	Identify all CMP pipes within Trumpeter Creek basin that have not been inspected in the past 9 years (since 2013)	• SWU	August 2025	Existing funds, in coordination with Senior Engineer and existing City needs (current budget requests $230,000 for Storm line Replacement & Repair program)
		Identify and prioritize all CMP pipes that have an age of greater than 40 years for inspection (i.e., 40 years old in 2022)	• SWU	August 2025	
		Meet with Senior Engineer to coordinate inspections and lining projects	• SWU	December 2025	

Table 4-1. Short-Term Actions (0-6 years)

Initiative ID	Title	Action	Responsibility	Schedule	Budget Source [a]
CUST-05	Stormwater Pond Retrofit Identification Program	Draft inspection program to provide direction for inspectors, including criteria to identify potential retrofit opportunities	• SWU	August 2026	Existing funds ($45,000 for Operational Maintenance & Repair)
CUST-06	Maintenance Improvements	Prioritize the three identified maintenance issues at Mohawk Drive, Jacqueline Place, and Partington Ponds	• Public Works • SWU	Yearly, January	Existing funds
		Begin the CIP development process for the selected project(s)	• Public Works • SWU	Yearly, January	
		Convene an Interdisciplinary Team (IDT) meeting with Public Works' Roads and Maintenance staff to continue to add projects to list	• Public Works • SWU	Yearly, January	
CUST-07	Targeted Street Sweeping	Review new Permit language in 2024 and assess how new requirements can be met while prioritizing the Trumpeter Creek Basin.	• SWU	July 2025	Existing funds
CUST-08	Prioritized Business Inspections	Review historical stormwater issues identified from local business inspections in the Trumpeter Creek basin	• SWU	July 2024	Existing funds
		Coordinate with Skagit County as necessary to prioritize inspections (if businesses with prior violations have been found)	• SWU • Skagit County	TBD	
PLAN-01	Interdepartmental Coordination	Convene an IDT meeting twice yearly with design services to stay apprised of impacts to long-range plans and CIP development	• SWU • DS	Quarterly (specific meeting times TBD)	Existing funds

a. Specific budget values documented where available. Values are from Mount Vernon's budget document for 2022.

Abbreviations:

BMPs =best management practices

CCTV = closed-circuit television

DS = Development Services

IDT = Interdisciplinary Team

SWU = Surface Water Management Division

SCD = Skagit Conservation District

TBD = To be determined

Table 4-2. Long-Term Actions (7+ years)

Initiative ID	Title	Action	Responsibility	Schedule	Budget
LM-01	Enhanced Treatment	None (ongoing)	Development Services	Ongoing	Existing funds
LM-02	BMPs for 6PPD-quinone	Update or remove this action as necessary to reflect latest guidelines from Ecology in the 2019 SWMMWW and/or latest Phase II Municipal Permit	Surface Water Management Division	Ongoing	Existing funds
CUST-01	Public Education and Outreach 'Poop Fairy' Signage	Assess status and effectiveness of program. Revise or end program as deemed appropriate	• Surface Water Management Division • Parks Department	April, 2030	Existing funds
CUST-02	Bacteria Monitoring	Review previous decade of monitoring data to identify long-term trends	• Surface Water Management Division • Skagit Conservation District	April, 2030	Existing funds
		Assess current strategies to curb bacteria	• Surface Water Management Division • Skagit Conservation District Stream Team	April, 2030	
CUST-03	Rain Garden Implementation	Assess existing program within Trumpeter Creek basin	Surface Water Management Division	April, 2030	Existing funds
CUST-04	CCTV Inspection Program	Assess status of program and add retrofits for damaged or vulnerable pipes into ongoing lining program (if applicable)	Surface Water Management Division	April, 2030	Existing funds, in coordination with Senior Engineer and existing City needs
CUST-05	Stormwater Pond Retrofit Identification Program	Assess effectiveness of program. If applicable continue to add projects to CIP program and allocate funds	Surface Water Management Division	April, 2030	Existing funds and Future CIP allocations
CUST-06	Maintenance Improvements	Assess effectiveness of program. If applicable continue to add projects to CIP program and allocate funds	• Public Works • Surface Water Management Division	April, 2030	Existing funds
CUST-07	Targeted Street Sweeping	Ongoing	Surface Water Management Division	Ongoing	Existing funds
CUST-08	Prioritized Business Inspections	Review historical water quality violations from previous permit cycle within the Trumpeter Creek basin	Surface Water Management Division	April, 2030	Existing funds
		Coordinate with Skagit County as necessary to prioritize inspections (if businesses with prior violations have been found)	• Surface Water Management Division • Skagit County	April, 2030	
PLAN-01	Interdepartmental Coordination	Ongoing	• Surface Water Management Division • Development Services	Ongoing	Existing funds

4.3 Plan Adaptive Management

The process of adaptive management of the SMAP will document the City's progress toward meeting its goals and enable them to report progress to the stormwater utility rate payers, the public, and Ecology.

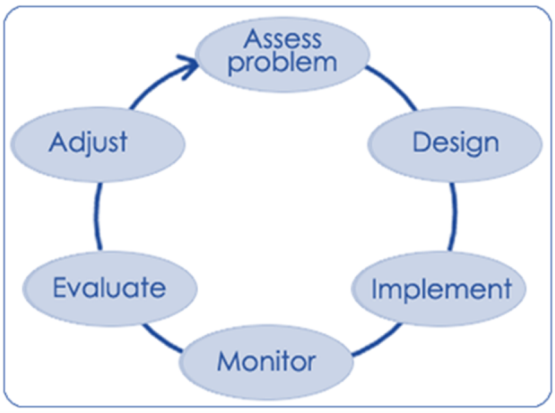

Figure 4-1. The adaptive management process

This Plan will be revisited and revised every year in April, using the above framework as a guide. Each year, the short- and long-term actions, identified in Section 4.2, and the goals of each initiative, identified in Tables 3-1, 3-2, and 3-3, will be reviewed, marked as complete, revised, or removed, as deemed necessary by the Surface Water Management Utility, the Interdisciplinary Team, and the Public Works Director or their designee. The evaluation of each action will be completed with respect to the stated water quality goals, laid out in the tables in Section 3. If the stated goal has not been met, or City priorities have changed, the action may be modified or removed.

Section 5

Public Involvement

Per section S5.C.3 of the City of Mount Vernon's (City's) Permit, *Public Involvement and Participation*, the City is required to provide opportunities for the public, including overburdened communities, to participate in decision making processes involving the Stormwater Management Plan and the SMAP. The City will continue to hold public comment periods for both documents yearly, in March.

In response to this requirement, the City produced an online survey with an accompanying announcement to solicit feedback from the public regarding the *Receiving Water Prioritization* for the SMAP The survey was advertised on local TV and was made available from May 24 through June 10, 2022, and could be accessed using QR codes displayed on Mount Vernon's TV10, publications in the Skagit Valley Herald, and on the Mount Vernon Surface Water website landing page. The public involvement materials were provided in English and Spanish to increase accessibility for potentially overburdened communities. The City will continue to gather feedback throughout implementation of the SMAP and its educational and outreach initiatives.

See Appendix B for the full report on the Receiving Water Assessment and Prioritization.

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Section 6

Conclusion

This document constitutes the Stormwater Management Action Plan for Trumpeter Creek Basin, created in accordance with the Permit and Ecology's SMAP guidance document. This SMAP will be reviewed annually and updated as needed to address new City stormwater management needs and opportunities to improve water quality and habitat in Trumpeter Creek. The City may revise the SMAP actions based on public feedback, City Council direction, available budget, and/or new regulatory requirements.

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Section 7

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Appendix A: Receiving Water Assessment Inventory

City of Mount Vernon, Receiving Water Assessment Inventory

	Ecology Reporting						
Receiving Water Name	**Total Watershed Area (acres)$_2$**	**Total Watershed Area (sq. miles)$_2$**	**Percent of Watershed Within Jurisdiction$_2$**	**SMAP Influence?$_1$**	**Included in prioritization?$_1$**	**Relative conditions and contributing area**	**SMAP Influence Findings:$_{18}$**
Carpenter Creek	1849	2.89	32%	Medium	Yes	Basin is almost entirely forested, in a natural condition, and is largely outside of the City boundary. The area within city bounds is zoned for agricultural and public space (Little Mountain Park).	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation) and agriculture. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Maddox Creek	2095	3.27	83%	High	Yes	Basin is roughly half in a developed condition, and half in a forested, natural condition. Of the developed portion, approximately half is zoned for residential, and one quarter zoned for commercial.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources such as runoff from commercial/industrial land uses, runoff from residential homes and gardens, and roadway runoff. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for home and lawn care, targeted SWPPPs for commercial/industrial properties, and operational BMPs such as street sweeping. Future growth can be managed with easements for conservation and prioritizing low-impact development

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)[2]	Total Watershed Area (sq. miles)[2]	Percent of Watershed Within Jurisdiction[2]	SMAP Influence?[1]	Included in prioritization?[1]	Relative conditions and contributing area	SMAP Influence Findings:[18]
Nookachamps Creek	2121	3.31	29%	Medium	Yes	Basin is primarily in a forested, natural condition, with large portions outside of City bounds. Of the developed area within this basin, approximately a third is zoned for residential, with two thirds zoned for agricultural.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and agriculture. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Trumpeter Creek	2097	3.28	96%	High	Yes	Basin is primarily in a developed condition. Of the zoned areas, roughly 7/8's of the basin area is zoned for residential, while the remainder is zoned for public space.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care). This pollutant loading is expected to stay the same. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)$_2$	Total Watershed Area (sq. miles)$_2$	Percent of Watershed Within Jurisdiction$_2$	SMAP Influence?$_1$	Included in prioritization?$_1$	Relative conditions and contributing area	SMAP Influence Findings:$_{18}$
West Mount Vernon	514	0.80	48%	Medium	Yes	Basin is primarily in a developed condition. Of the zoned areas, the basin is roughly split into thirds of commercial, residential, and public space (Edgewater Park).	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and runoff from commercial and industrial land uses. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for home and lawn care, targeted SWPPPs for commercial/industrial properties, and operational BMPs such as street sweeping. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Britt Slough	485	0.76	71%	Medium	Yes	Basin is primarily in a developed, built-out condition. Of the zoned areas, the basin is roughly split into quarters of commercial, residential, residential-agricultural, and public space (Coutny Fair Grounds, Sherman Anderson Park)	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Point sources including the MV WWTP as well as non-point sources including human activity (recreation, lawn care) and agriculture. This pollutant loading is expected to stay the same. These sources can be addressed with best management practices for agriculture and lawn care. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)$_2$	Total Watershed Area (sq. miles)$_2$	Percent of Watershed Within Jurisdiction$_2$	SMAP Influence?$_1$	Included in prioritization?$_1$	Relative conditions and contributing area	SMAP Influence Findings:$_{18}$
Kulshan Creek	1413	2.21	100%	High	Yes	Basin is primarily in a developed, built-out condition. Zoned areas of this basin are approximately half residential and half commercial.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and runoff from residential and commercial land uses. This pollutant loading is expected to stay the same. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Skagit River Tributary	860	1.34	48%	Low	Yes	Basin is partially developed, and includes parks as well as large natural areas in proximity to the Skagit River. Zoned areas are primarily for residential and public space (riverfront area).	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and agriculture. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for residents and lawn care. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)[2]	Total Watershed Area (sq. miles)[2]	Percent of Watershed Within Jurisdiction[2]	SMAP Influence?[1]	Included in prioritization?[1]	Relative conditions and contributing area	SMAP Influence Findings:[18]
Combined Sewer Area	444	0.69	100%	Low	Yes	The downtown area of Mount Vernon is primarily in a developed, built-out condition. Zoned areas are primarily residential and commercial, with some public space as well.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including runoff from residential and commercial properties. This pollutant loading is expected to stay the same. These sources can be addressed with increased stormwater storage to minimize CSO occurence. Future growth can be managed by creating new development requirements for on-site storage of storwmater or through capacity improvements.
ALL WATERSHEDS / NOTES	11879	18.56					

City of Mount Vernon, Receiving Water Assessment Inventory

	Further Data Collection									
Receiving Water Name	**Opportunity for Coordination? (parties)**	**EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]**	**EPA 305(b) Listed?[3]**	**Designated Uses[4]**	**Zoning: Residential[5]**	**Zoning: Residential-Agricultural[5]**	**Zoning: Commercial[5]**	**Zoning: Public[5]**	**Zoning: Other (F-1, RR, DIKE)[5]**	**Unzoned (R/W)[5]**
Carpenter Creek	- Skagit County		- Category 1 for temperature (i.e. meets water standard)	- Uses designated in WAC 173-201A-600 - Core Summer Habitat - Primary Contact - All miscellaneous uses - All water supply uses	2%	36%	1%	60%	0%	1%
Maddox Creek	- Skagit County	- Maddox Slough impaired for dissolved oxygen and temperature	- Unnamed Ditch, dissolved oxygen (Cat. 2 - water of concern)	- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	44%	3%	23%	14%	1%	15%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
Nookachamps Creek	- Skagit County	- Impaired for dissolved oxygen		- Uses designated in WAC 173-201A-600 - Core Summer Habitat - Primary Contact - All miscellaneous uses - All water supply uses	28%	63%	0%	1%	0%	8%
Trumpeter Creek	- Skagit County	- Contains College Way Creek - Impaired for dissolved oxygen and temperature	- Contains Unnamed Trib to Nookachamps - Impaired for Bacteria (cat. 4A - TMDL in place) and dissolved oxygen (cat. 2 - water of concern)	- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	72%	1%	1%	12%	0%	13%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
West Mount Vernon	- Skagit County			- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	18%	0%	28%	28%	12%	14%
Britt Slough	- Skagit County			- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	20%	27%	18%	21%	3%	10%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
Kulshan Creek	- Skagit County		- Cat 1 - pH - Cat. 2 - DO and Ammonia (Nitrogen) - Cat. 4a - Bacteria TMDL in place	- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	33%	2%	38%	10%	1%	16%
Skagit River Tributary	- Skagit County	- Impaired for dissolved oxygen		- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	47%	9%	0%	34%	0%	10%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
Combined Sewer Area	- Skagit County			- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	39%	0%	19%	7%	2%	33%
ALL WATERSHEDS / NOTES		- All watersheds are tributary to the Skagit River which has a TMDL for PCBs		- All surface waters of the state not named in Table 602 are to be protected for the designated uses of: Salmonid spawning, rearing, and migration; primary contact recreation; domestic, industrial, and agricultural water supply; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values. - All Skagit River tributaries have designated uses of Spwaning/Rearing, Primary Contact, and all "Water Supply" and "Miscellaneous" uses						

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Carpenter Creek	66%	5 years	High	2.4	0.8	14	0	-
Maddox Creek	64%	5 years	High	14.2	4.3	25	2,985	Contains projects T-02-06, T-02-10, T-94-21, T-94-19, T-13-01, T-21-03, and T-07-06

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Nookachamps Creek	40%	10-20 years	Medium	6.5	2.0	19	911	Contains small portion of project T-94-21
Trumpeter Creek	52%	5 years	High	27.9	8.5	22	1,685	Contains projects T-20-02, T-02-24, and T-94-14

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
West Mount Vernon	68%	Low / Redevelopment	Low	0.6	0.7	44	987	Contains project T-02-17
Britt Slough	65%	Low / Redevelopment	Low	2.5	3.3	21	0	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Kulshan Creek	75%	Low / Redevelopment	Low	15.6	7.1	27	2,002	Contains projects T-19-03, T-20-01, T-21-02
Skagit River Tributary	59%	5 years	High	3.6	2.7	27	260	Contains project T-06-07, T-06-05

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Combined Sewer Area	72%	Low / Redevelopment	Low	2.6	3.7	22	620	Contains projects T-03-02, T-19-04, T-21-03
ALL WATERSHEDS / NOTES	62%					Note: Approximately 1/3 of storm sewer links did not have an install year defined.		

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
Carpenter Creek		D-21-01	Hickox Road Culvert Replacement	-	-	-	-
Maddox Creek	30th street, Fowler Trail Connection, Blackburn Rd, Blackburn/Laventure intersection projects, and Kincaid and 15th intersection improvements	D-09-02, D-05-02	Blodgett Road Culvert replacement and stream restoration and South Mount Vernon Surface Water Enhancement	P-07-06, P-02-04, P-15-01, P-09-04, P-09-01, P-21-05	Includes work in Little Mountain Park, Bonnie Rae Park, and Hillcrest Park	-	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
Nookachamps Creek	Blackburn Rd between Little Mountain and Eaglemont	-	-	-	-	-	-
Trumpeter Creek	30th street improvements and Fir street widening	D-14-01, D-21-04	Logan Creek stream restoration and Seneca Drive culvert replacement	P-94-01, P-21-02, P-21-04	Bakerview Park, retreat center and dog park improvements	-	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
West Mount Vernon	River Dike Trail System	D-05-03	West Mount Vernon Stormwater Force Main Upgrade	P-05-02, P-09-05	Community Boat Launch and Edgewater Park Improvements	-	-
Britt Slough		D-19-01	Park Street pump station upgrades	P-12-01, P-21-01	Sherman Anderson updates and Park&Ride facility renovations	S-20-02, S-14-01, S-21-01, S-21-02	Header and pump upgrades, collection system expansion, rotary drum procurement, WWTP upgrades

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
Kulshan Creek	Riverside Drive Improvements Phases 1 and 2, College Way rail crossings	D-06-03, D-21-02, D-21-03	Regional SW treatment facility, 19th and 18th St. culvert replacements	-	-	-	-
Skagit River Tributary	Laventure Road, Hoag/Laventure intersection improvements	-	-	-	-	-	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description$_{10}$	Surface Water CIPs$_{11}$	Surface Water CIPs Desctipion$_{11}$	Parks CIPs$_{11}$	Park CIPs Description$_{11}$	Wastewater CIPs$_{11}$	Wastewater CIPs Description$_{11}$
Combined Sewer Area	Broad St improvements and Kincaid Street corridor improvements, W Gates St and S 2nd St intersection improvements	-	-	P-19-01	Telecomms tower renovation	-	-
ALL WATERSHEDS / NOTES							

City of Mount Vernon, Receiving Water Assessment Inventory

						AU_ID	WF_M1_Q
Receiving Water Name	**Other CIPs?[11]**	**WSDOT Sensitive Waterbodies (feet)[12]**	**National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]**	**Mount Vernon Wetlands Layer[19]**	**Salmonid Habitat Stream Length (miles)[14]**	**Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]**	**Watershed Characterization Project: Importance - Overall Score for Flow[15]**
Carpenter Creek	-	0	65	149	3.9	3296	L
Maddox Creek	-	1,988	63	218	6.6	3427	L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
Nookachamps Creek	-	3,619	88	520	3.6	3432	L
Trumpeter Creek	Fire Department projects F-00-02 and F-99-01 - Station #3 addition and radio replacement	3,341	134	425	6.4	3267	L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
West Mount Vernon	-	1,414	65	118	0.0	3294	L
Britt Slough	-	0	5	70	1.1	3294	L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
Kulshan Creek	Fire Department station #2 addition and defibrillator replacement; General facilities G-99-02 Public Works / Shop Facility improvements; Police traffic camera system and Evidence building extension	2,508	26	141	2.0	3293/3426	L/M
Skagit River Tributary	-	0	33	291	1.4	3291/3428	L/L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
Combined Sewer Area	General facilities/Library CIPs G-13-01, G-18-01, G-17-01, and L-94-07; Fire Department facilities construction F-02-01	453	0	3	0.0	Four AU's intersect with this area -- Analysis not completed.	-
ALL WATERSHEDS / NOTES		13,323	479		25	See "Explanation of PSWC Parameters" Tab.	See "Explanation of PSWC Parameters" Tab.

City of Mount Vernon, Receiving Water Assessment Inventory

	WF_M2_Q	WF_RP					
Receiving Water Name	**Watershed Characterization Project: Degradation - Overall Score$_{15}$**	**Watershed Characterization Project: Restoration and Protection Priorities - Overall$_{15}$**	**Assessment Unit Landscape Position$_{15}$**	**Street Sweeping (miles)$_{16}$**	**Current Management Strategies$_{1}$**	**SMAP: Targeted Management Strategies$_{1}$**	**SMAP: Retrofits Required$_{1}$**
Carpenter Creek	MH	D2	Lowland	0.7	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- Education and outreach materials for hikers - "Poop Fairy" waste management materials are posted	- Eaglemont Plats wetland rehabilitation facility
Maddox Creek	H	D1	Lowland	31.1	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- Education and outreach materials for headwaters, walking trails and residential areas - Targeted E&O for commercial properties in lower watershed	- Eleanor Lane water quality - Wells Nursery culvert

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
Nookachamps Creek	H	D1	Lowland	8.2	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- DO mitigation	
Trumpeter Creek	H	D1	Lowland	42.2	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- DO mitigation - Waste services camp clean up duties	- Twin Brooks detention pond retrofit - Kiowa and Seneca Dr. culverts - Stream channel restoration for issues at Seneca Dr. culvert - Sanitation improvements for homeless encampment - Trumpeter Dr. metal corrugated pipe replacement

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
West Mount Vernon	H	D1	Lowland	4.0	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings		
Britt Slough	H	D1	Lowland	5.7	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- Residential areas E&O	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
Kulshan Creek	H/H	D1/RD1	Lowland	28.7	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings - SWPPP Implementation	- DO mitigation - E&O opportunities for commercial properties	
Skagit River Tributary	H/H	D1	Lowland	5.3	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- E&O opportunities for residential areas	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
Combined Sewer Area	-	-	Lowland	24.1	- Stormwater Standards - Routine inspections and maintenance - Street sweeping		- Plaza Paver maintenance program or retrofit to remove silt - Analysis and retrofits for flow impacts to natural systems as areas are separated from combined system
ALL WATERSHEDS / NOTES	See "Explanation of PSWC Parameters" Tab.	See "Explanation of PSWC Parameters" Tab.	See "Explanation of PSWC Parameters" Tab.	150.0		Intended to address SMAP permit element S5.C1.d.iii.(c)	Intended to address SMAP permit element S5.C1.d.iii.(a)

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Carpenter Creek						-
Maddox Creek						-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Nookachamps Creek	- Work with development and land services to plan future development and potential strategies concerning golf course area					- 2019/2020 sampling indicated some DO issues. - Temperature, Turbidity, and Fecal Coliform generally met state standards.
Trumpeter Creek						- 2019/2020 sampling indicated some DO issues. - Temperature, Turbidity, and Fecal Coliform generally met state standards.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
West Mount Vernon						-
Britt Slough						-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Kulshan Creek						- 2019/2020 sampling indicated some DO and Fecal Coliform issues. - Temperature and Turbidity generally met state standards.
Skagit River Tributary						-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Combined Sewer Area						-
ALL WATERSHEDS / NOTES	Intended to address SMAP permit element S5.C1.d.iii.(b)	Intended to address SMAP permit element S5.C1.d.iii.(d)	Intended to address SMAP permit element S5.C1.d.iii.(e)	Intended to address SMAP permit element S5.C1.d.iii.(e)	Intended to address SMAP permit element S5.C1.d.iii.(f)	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Carpenter Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Some flooding issues noted, specifically around Eaglemont Plats and the associated wetland rehabiliation. - Eaglemont Golf Course sees some flooding, have issues primarily outside City limits.	
Maddox Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- South Maddox creek experiences some water quality and flooding issues. - Jack's Lane experiences some flooding issues. - Eleanor Lane has had water quality issues. - Large portion of South Maddox Creek basin currently being developed. - Culvert near Wells Nursery has had clogging issues.	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Nookachamps Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	-	- Large percentage of basin will be incorporated in UGA - presents opportunity to manage growth
Trumpeter Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Area near trailer park currently has flooding issues. Existing CIP in place to raise road profile (2-year time frame estimated) - Kiowa and Seneca culverts both experience clogging and sedimentation issues. Have blown out in the past. - Twin Brooks detention pond has also had issues. - Skagit Conservation district frequently does fecal coliform testing near E College Way - solid waste crews also have regular maintenance activities here. A homeless encampment is in this area. - Area near Trumpeter Dr sees some flooding issues. Old corrugated metal pipes in this area.	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
West Mount Vernon	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Homeless encampent just outside of City limits	- Drains to a pump station
Britt Slough	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	-	- Fair grounds location will potentially be moved in the future.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Kulshan Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Area near William Way and Roosevelt/Parker frequently sees debris. - Beaver dams are also an issue here.	
Skagit River Tributary	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	-	- Rationale for LOW influence: relatively small watershed, with little development, is within MS4 area and very small relative to entire Skagit River Watershed

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Combined Sewer Area	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- As projects are completed and drainage areas are separated from the combined system the City will have to analyze flow impacts to natural systems. - May need retrofit project for pavers in Plaza area to remove silt.	- Rationale for LOW influence: fully developed area, and is managed under separate permit. - Can take credit for existing LID use - Could do specialized maintenance program for plaza area - hi-efficiency vacuum to remove silt
ALL WATERSHEDS / NOTES	Ecology definition of Overburdened Communities: "Overburdened Communty means minority, low-income, tribal, or indigenous populations or geographic locations in Washington State that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities."		- All watersheds drain to the Skagit River, which has segments in proximty to Mount Vernon that are impaired for PCBs - All watersheds within WRIA 3 - Lower Skagit - Samish - All contribute to Lower Skagit River which has a TMDL for temperature and Phosphorous

City of Mount Vernon, Receiving Water Assessment Inventory

Notes and Sources

1	Determined during Interdisciplinary Team meetings and/or from data request feedback from city staff.
2	Calculated using City GIS data titled, "Watershed Boundaries.shp" and "City Boundary.shp", received from the City 10/14/2021.
3	Summarized from EPA's 303(d) and 305(b) lists of impaired water and waters of concern. Data downloaded 12/2/2021.
4	Designated uses determined from Washington State Administrative Code (WAC) 173-201A-600.
5	Zoning calculations done using city GIS data titled, "Zoning_Designations.shp", received from the City on 10/14/2021.
6	Estimated impervious area calculated using "Zoning_Designations.shp" as well as full lot coverages described in Mount Vernon municipal code section 17.93, "Landscaping".
7	Infrastructure calculations done using city provided GIS data titled, "MountVernonAllSewerLinks.shp", and was only done for the stormwater drainage links. Data was provided 8/17/2021.
8	Infrastructure age information is taken from "MountVernonAllSewewLinks.shp", and is specific to the stormwater drainage system, and was available for approximately two-thirds of features present.
9	Transportation projects measured by the linear foot is sourced from city provided GIS data titled, "Transportation_Projects_2022to2027_Polylines.shp", received 10/14/2021.
10	Transportation project information gathered from city-provided shapefiles, "Transportation_Projects_2022to2027_Polylines.shp" and "Transportation_Projects_2022to2027_Points.shp", received 10/14/2021.
11	Other CIP project information is sourced from city-provided shapefiles, "CIP_Projects.shp", received 10/21/2021, and cross-checked against Mount Vernon's 2021-2026 CIP Facilities Plan.
12	Data sourced from Washington Department of Transportation's GIS data used to alert crews of potential habitat of endangered species and downloaded on 4/20/2022.
13	Data sourced from U.S. Fish and Wildlife Service's National Wetlands Inventory and downloaded on 4/20/2022.
14	Data sourced from the Washington Department of Fish and Wildlife's Integrated Fish Distribution dataset and downloaded 4/25/2022.
15	Data sourced from the Puget Sound Watershed Characterization Project's 2020 update to the Water Flow Assessment and downloaded 1/10/2022.
16	Calculated using city-provided GIS data titled, "Sweeping Routes.shp", received 10/21/2021. This dataset covers all roads within city limits.
17	Data summarized from Skagit Conservation District Stream Team reports.
18	Recommended documentation from SMAP guidance document. Compiled as a best guess informed by data review and interdisciplinary team meetings.
19	Mount Vernon's internal wetlands layer, received from City 6/3/2022.

Appendix B: SMAP: Receiving Water Conditions Assessment, Inventory and Prioritization TM

August 4, 2022

Brown AND Caldwell

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Technical Memorandum

DRAFT

Prepared for: City of Mount Vernon

Project Title: Mount Vernon NPDES 2021-2023

Project No.: 157067

DRAFT Technical Memorandum

Subject: Stormwater Management Action Planning (SMAP): Receiving Water Assessment, Inventory, and Prioritization

Date: June 29, 2022

Date Revised: August 4, 2022

To: Blaine Chesterfield, Engineering Manager, Program Coordination Division

From: Daniel Shapiro, P.E., Brown and Caldwell
Jessica Christofferson, Principal Engineer
Damon Diessner, Senior Advisor

Copy to: Mike Milne, Vice President

Prepared by: Daniel Shapiro, P.E., Project Manager

Reviewed by: Mike Milne, Vice President

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List of Abbreviations and Acronyms

BC	Brown and Caldwell
BMP	Best Management Practice
CIP	Capital Improvement Projects
City	City of Mount Vernon
CSO	Combined Sewer Overflow
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
guidance document	*Stormwater Management Action Planning Guidance* document (Ecology, 2019)
GIS	geographic information system
MS4	municipal separate stormwater sewer system
MVMC	Mount Vernon Municipal Code
NPDES	National Pollutant Discharge Elimination System
Permit	NPDES MS4 Phase II Permit
SMAP	Stormwater Management Action Planning or Stormwater Management Action Plan
SMAP Team	SMAP Interdisciplinary Team
SWMP	Stormwater Management Program
TM	technical memorandum
WSDOT	Washington Department of Transportation

Section 1: Introduction and Purpose

This Technical Memorandum (TM) documents the first two steps of the Stormwater Management Action Planning (SMAP) process for the City of Mount Vernon, Washington (City).

The SMAP process is a requirement of the 2019-2024 Western Washington National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Phase II Permit (Permit). This Permit, issued by the Washington State Department of Ecology (Ecology), allows the City to discharge stormwater runoff to waters of the state. The Permit program originates with the Federal Clean Water Act and is intended to improve water quality over time, making all waters "fishable and swimmable."

Section S5.C.1.d. of the Permit requires SMAP planning, which has three components:

- S5.C.1.d.i *Receiving Water Assessment*
- S5.C.1.d.ii *Receiving Water Prioritization*
- S5.C.1.d.iii *Stormwater Management Action Plan*

This TM describes the City's *Receiving Water Assessment* and *Receiving Water Prioritization*. The City will use the information presented in this TM to develop its SMAP for submittal to Ecology prior to March 31, 2023, the deadline specified in the Permit.

Section 2: S5.C.1.d.i *Receiving Water Assessment*

2.1 Permit Requirements

Section S5.C.1.d.i of the Permit requires permittees to compile and submit a *Receiving Water Assessment* containing the following information:

- Receiving water names
- Total watershed area
- Percent of total watershed within the permittee's jurisdiction
- The findings of the stormwater management influence assessment

The *Receiving Water Assessment* must also include a brief description of the receiving waters and contributing areas and indicate which receiving waters will be included in the next step in developing Mount Vernon's SMAP which is the *Receiving Water Prioritization*.

2.2 Receiving Water Assessment Results

Table 1 summarizes the City's *Receiving Water Assessment*, which was submitted to Ecology with the City's Permit Annual Report on March 31, 2022. Attachment A to this TM contains the Waterbody Inventory Map, which was also submitted to Ecology at that time.

The City's *Receiving Water Assessment* was performed through analyses of GIS data provided by Mount Vernon and included input from the City's SMAP Interdisciplinary Team (SMAP Team). Stormwater management actions in the Combined Sewer Overflow (CSO) Area, and the Skagit River Tributary watershed were determined to have low potential to influence receiving water bodies with future stormwater management actions.

Table 1. Receiving Water Assessment					
Receiving Water Name	Total Watershed Area (sq. miles)	Percent within City Jurisdiction	SMAP Influence Findings	Included in Receiving Water Prioritization?	Brief Description: Relative Conditions and Contributing Area
Britt Slough	0.76	71%	Medium	Yes	Watershed is primarily in a developed, built-out condition. Of the zoned areas, the watershed is approximately divided into quarters of commercial, residential, residential-agricultural, and public space (Skagit County Fair Grounds, Sherman Anderson Park).
Carpenter Creek	2.89	32%	Medium	Yes	Watershed is almost entirely forested, in a natural condition, and is largely outside of the City's existing bounds and NPDES Permit area. The area within City bounds is zoned for agricultural and public space (Little Mountain Park).
Combined Sewer Area	0.69	100%	Low	Yes	The downtown area of Mount Vernon is primarily in a developed, built-out condition. Zoned areas are primarily residential and commercial, with some public space as well. Low influence due to separate NPDES wastewater discharge permit covering this area, as well as fully built-out conditions.
Kulshan Creek	2.21	100%	High	Yes	Watershed is primarily in a developed, built-out condition. Zoned areas of this watershed are approximately half residential and half commercial.
Maddox Creek	3.27	83%	High	Yes	Watershed is roughly half in a developed condition, and half in a forested, natural condition. Of the zoned area within City bounds approximately one third is commercial, and the remaining two thirds are residential. Also contains some of Little Mountain Park.
Nookachamps Creek	3.31	29%	Medium	Yes	Watershed is primarily in a forested, natural condition, with large portions outside of the City's existing bounds and NPDES Permit area. Of the developed area within this watershed, approximately a third is zoned for residential, with two thirds zoned for agricultural.
Skagit River Tributary	1.34	48%	Low	Yes	Watershed is partially developed and includes parks as well as large natural areas in proximity to the Skagit River. Zoned areas are primarily for residential and public space (Riverfront area). Low influence due to the Skagit River being flow-control exempt water body.
Trumpeter Creek	3.26	96%	High	Yes	Watershed is primarily in a developed condition. Of the zoned areas, roughly 7/8's of the watershed area is zoned for residential, while the remainder is zoned for public space (including Bakerview Park and Skagit Valley College).
West Mount Vernon	0.80	48%	Medium	Yes	Watershed is primarily in a developed condition. Of the zoned areas, the watershed is roughly split into thirds of commercial, residential, and public space (Edgewater Park).

2.2.1 SMAP Influence Findings

As defined in Ecology's *Stormwater Management Action Planning Guidance* (Ecology, August 2019) (guidance document), a Stormwater Management Influence Assessment evaluates the expected level of benefit that stormwater management actions could have on each receiving water.

The CSO area has low potential to influence receiving waters as it contains a comingled sanitary and stormwater drainage system. The CSO Area drains to the Mount Vernon Wastewater Treatment Plant and is covered under a separate NPDES wastewater discharge permit. The rationale for a "Low" influence rating for the Skagit River Tributary is that the City's MS4 flows and pollutant loads are unlikely to have discernible water quality or hydrologic impacts on the Skagit River. Nevertheless, Mount Vernon elected to include these watersheds in the *Receiving Water Prioritization* process to ensure that all receiving waters were given due consideration.

The SMAP Team determined that Kulshan Creek, Maddox Creek, and Trumpeter Creek receiving waters have a relatively "High" potential benefit from stormwater management actions. This determination was based upon several factors including the presence of existing infrastructure presenting opportunities for retrofits and targeted maintenance or operational Best Management Practices (BMPs). These watersheds also include high value salmon habitat and wetland resources (i.e., high value targets for conservation). Lastly, these three watersheds have a high percentage of the contributing area within Mount Vernon's jurisdiction, giving the City more surety regarding SMAP implementation success.

The four remaining receiving waters, Britt Slough, Carpenter Creek, Nookachamps Creek, and West Mount Vernon, were given SMAP Influence ratings of "Medium."

2.3 Further Data Collection

As recommended in the guidance document, Mount Vernon collected additional data to enhance its *Receiving Water Assessment* and support use of additional metrics for the *Receiving Water Prioritization* step. Sections 2.3.1 through 2.3.9 of this TM summarize the City's additional data collection efforts. Attachment B provides the *Receiving Water Assessment*.

2.3.1 Habitat and Wetlands

The City collected data from three sources to quantify the presence of wetlands and potential habitat within its jurisdiction.

- National Wetlands Inventory (United States Fish & Wildlife Service)
- Mount Vernon's internal wetlands inventory
- Washington Department of Transportation (WSDOT) and Washington Department of Fish and Wildlife's (WDFW) stream data

Mount Vernon's internal wetlands inventory was used to quantify total wetland and deep-water habitat areas. Data from WSDOT and WDFW was used to quantify stream length of potential salmon habitat.

2.3.2 Overburdened Communities

The Permit defines an overburdened community as:

> … minority, low-income, tribal, or indigenous populations or geographic locations in Washington State that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities.
>
> *Mount Vernon NPDES MS4 Permit*

In an attempt to identify potentially overburdened communities in Mount Vernon, the SMAP Team reviewed data from the "Washington Environmental Health Disparities" map, provided by the Washington Department of Health, and the "EJSCREEN: Environmental Justice Screening and Mapping Tool", provided by the United States Environmental Protection Agency (EPA), the goal being to assess the intersection of environmental factors and potentially overburdened communities. However, data from these sources did not highlight any communities that were disproportionately affected by environmental factors, specifically for water quality.

The City's Spanish speaking communities were identified as being potentially overburdened, as defined by the Permit, due to a lack of opportunity for public participation. To remedy this, the SMAP public involvement materials have been translated into Spanish, to increase accessibility and encourage input from a potentially overburdened community in Mount Vernon.

The City also considered tribal and indigenous populations in its discussions of overburdened communities. The SMAP Team determined that additional SMAP actions that would conserve or benefit salmon habitat and spawning area would be beneficial to tribal members.

2.3.3 Capital Improvement Projects

The City reviewed previously planned Capital Improvement Projects (CIP) and organized them by watershed to identify potential opportunistic retrofits. A range of CIPs were considered including surface water, transportation, wastewater, parks, as well as improvements to facilities for the fire and police departments, City library improvements, and other CIPs. For the final analysis, only transportation CIPs, which are considered new construction, and not re-paving or maintenance efforts, were included in the *Receiving Water Prioritization* as having a higher likelihood of providing opportunities to improve water quality and habitat.

2.3.4 Impervious Area

Using guidance from Mount Vernon's Municipal Code (MVMC) for lot coverage and landscaping requirements, as well as up-to-date zoning designations, a percent impervious area was estimated using an area-weighted average approach in the City's GIS. Table 2 presents the values used for this calculation.

Table 2. Zoning Designations and Imperviousness

Zoning Designation	Percent (%) Imperviousness	MVMC Reference
C-1a	90	17.45.070
C-1b	90	17.45.070
C-1c	90	17.45.070
C-2	90	17.93.020
C-3	90	17.93.020
C-4	90	17.93.020
C-L	90	17.93.020
H-D	85	17.93.020
L-C	90	17.93.020
M-1	93	17.93.020
M-2	93	17.93.020
P-O	85	17.93.020
F-1	0	17.93.020 (TBD by Council)
R-O	85	17.93.020

Table 2. Zoning Designations and Imperviousness		
Zoning Designation	Percent (%) Imperviousness	MVMC Reference
P	85	17.93.020
R-A	35	17.12.070
MHP	80	17.93.020
R-1,3.0	35	17.15.080
R-1,4.0	35	17.15.080
R-1,5.0	35	17.15.080
R-1,7.0	35	17.15.080
R-2	80	17.93.020
R-3	80	17.93.020
R-4	80	17.93.020
R/W	90	Assumed (primarily roadways)

2.3.5 Development Pressure

A representative from Mount Vernon's Development Services group advised the SMAP Team on where development was imminent, and estimated timelines for initiation of these developments. Development pressure was assigned as:

- "High" for those areas where development was expected within 5-10 years
- "Medium" where development was expected with 10-20 years
- "Low/Redevelopment" for those areas where little development was planned, or where the watershed was already largely developed

2.3.6 Zoning

Each receiving watershed was analyzed by zoning designation to assess the distribution of commercial, residential, residential-agricultural, public (parks and City-owned land), and other zoning areas (railroad easements and flood zones). The percentage of each zoning type by receiving water name was documented in the *Receiving Water Prioritization.*

2.3.7 Infrastructure and City Operations

To assess potential City influence on each watershed, the City documented the stormwater infrastructure in each watershed. The total length of infrastructure was then divided by the total area of the watershed to create a normalized measurement to better differentiate each watershed. City GIS data also included installation years for roughly two thirds of all pipes. This data was used to calculate an average age of the infrastructure in each watershed. Also calculated were total miles of street sweeping and the length of roadway in each watershed to quantify operations and maintenance activities. Street sweeping miles were determined using City-provided GIS data.

2.3.8 Impaired Water Bodies

Ecology's s 303(d) and 305(b) lists of impaired water bodies and water bodies of concern were reviewed and included in the *Receiving Water Assessment*.

2.3.9 Previous Reports, Programs, and Planning Efforts

The following reports and City planning documents were reviewed for potential relevance to the SMAP process:

- Skagit Conservation District's Stream Team Water Quality Reports (2019-2020)
- Mount Vernon Capital Improvements Plan 2021-2026 (2020)
- Mount Vernon Comprehensive Plan (2016)
- Downtown and Waterfront Master Plan (2008)
- Shoreline Master Program (2011)
- Surface Water Management Plan (amended 2016)
- Mount Vernon Design Standards (2018)
- MVMC
- Puget Sound Watershed Characterization Project: Volume 1 The Water Resources Assessments (2011, updated 2020)

The Skagit Conservation District's Stream Team Water Quality Reports (Stream Team Reports), and the Mount Vernon Capital Improvements Plan were deemed relevant to the SMAP process and used to prepare the final *Receiving Water Assessment*. The Stream Team Reports provided sampling data and indicated some dissolved oxygen issues in the three receiving waters sampled (Trumpeter, Nookachamps, and Kulshan Creeks).

As previously noted, the Capital Improvements Plan was reviewed to account for all currently planned CIPs, and to look for additional opportunities to include water quality elements into these projects or to implement specialized stormwater management during construction activities for these CIPs. Several of these plans outline Mount Vernon's goals with respect to surface water and stormwater management. The Capital Facilities element of the Comprehensive Plan states Mount Vernon's Surface Water goal is to:

> Provide, maintain and upgrade surface water management systems to minimize impacts on natural systems and to protect the public, property, surface water bodies, and groundwater from changes in the quantity and quality of stormwater runoff due to land use changes.
>
> *Capital Facilities, Mount Vernon Comprehensive Plan, 2016*

The City aims to achieve this goal through the application of Comprehensive Plan policies 39.1.1 through 39.1.4, which include:

- Designing systems to minimize sedimentation and erosion issues.
- Preserving natural systems.
- Seeking broad funding for stormwater system improvements.
- Promoting and supporting public education and involvement programs.
- Coordinating surface water management programs with adjacent local and regional jurisdictions.

The SMAP process provides an opportunity to further these Comprehensive Plan policies.

Section 3: S5.C.1.d.ii *Receiving Water Prioritization*

3.1 Permit Requirements

Section S5.C.1.d.ii of the Permit requires permittees to develop and implement a prioritization method and process to determine which receiving waters will get the most benefit from the implementation of stormwater management actions. These actions may be stormwater facility retrofits, tailored implementation of Stormwater Management Program (SWMP) actions, and/or other land development management actions. This requirement establishes that by June 30, 2022, permittees shall:

- Document the SMAP priority ranking process used; and
- Identify a high priority catchment area for the Stormwater Management Action Plan.

3.2 Receiving Water Prioritization Results

Using the *Receiving Water Assessment* (Attachment B) as a foundation, the SMAP Team met to determine which criteria (columns of the *Receiving Water Assessment*) would be used, how these criteria would be scored, and what weights would be given to each criterion. Table 3 lists the criteria the SMAP Team considered, their associated scoring ranges, and their associated weights ranging from 1 to 5. Criteria given a weight of "0" did not impact scoring and were not considered in the final *Receiving Water Prioritization*.

Table 3. Criteria, Scores, and Weights

Criteria	Score of 1[a]	Score of 0 [b]	Weight [c]
Percent of watershed within jurisdiction	80%	30%	1
Development pressure	High	Low/Redevelopment	3
Transportation projects, new construction (feet)	1,000	100	5
Salmonid habitat stream length (miles)	4	2	5
WSDOT sensitive waterbodies (feet)	2,000	1,000	0
National Wetlands Inventory: wetlands and deepwater habitat (acres)	75	50	0
Mount Vernon wetlands inventory	400	100	2
Estimated percent impervious [d]	50%	33%	4
Zoning: commercial	30%	10%	0
Zoning: residential	40%	20%	1
Zoning: public	40%	20%	2
Street sweeping (miles)	30	10	1
Length of stormwater infrastructure (miles)	15	10	1
Infrastructure (miles/sq. miles)	6	1	1
Infrastructure average age	40	25	0
Surface water CIPs	More than 1 project	No projects	3
Ecology 303(d) listed? (i.e., Cat. 5 impaired)	Impaired water body within or directly discharging to.	No impaired water body	4

a. Values greater than or equal to this value received a score of 1.

b. Values less than or equal to this value received a score of 0. Values in between received a score of 0.5.

c. Weights were determined by the SMAP Team and reflect importance to the City as well as the multiplier applied to the received score.

d. For impervious area, catchments that were in between the range shown here received scores of 1.0, while catchments below scored a 0, and the highest range scored a 0.5.

See Attachment C of the TM for the full *Receiving Water Prioritization*. Table 4 summarizes the results of the *Prioritization* process.

Table 4. Receiving Water Prioritization Results

Receiving Water Name	Total Weighted Score
Trumpeter Creek	29.0
Maddox Creek	22.0
Kulshan Creek	17.5
Nookachamps Creek	15.0
Skagit River Tributary	13.0
Carpenter Creek	9.5
West Mount Vernon	6.0
Britt Slough	6.0
Combined Sewer Area	4.5

3.3 Public Involvement

Section S5.C.3. *Public Involvement and Participation* of the Permit requires Phase II permittees to provide ongoing opportunities for public involvement and participation when developing elements of their ongoing SWMP and the resultant Stormwater Management Action Plan.

In response to this requirement, Mount Vernon produced an online survey with an accompanying announcement to elicit feedback from the public regarding the *Receiving Water Prioritization*. The survey was made available from May 24 through June 10, 2022, and could be accessed using QR codes displayed on Mount Vernon's TV10, publications in the Skagit Valley Herald, and on the Mount Vernon Surface Water website landing page. The public involvement materials were provided in English and Spanish to increase accessibility for potentially overburdened communities.

Online survey respondents were asked to answer four, multiple-choice questions and one free response question. The questions, and their respective responses, are listed below. The frequency of responses, which were extremely limited, is indicated in parentheses after each lettered response option (e.g., 0/3, 1/3, etc.).

1) What do you rely on Mount Vernon's water bodies for?
    a. Recreation (swimming/boating/fishing) (1/3)
    b. Salmon habitat (or other protected species (1/3)
    c. Irrigation (1/3)
    d. Other (please specify) (0/3)
2) What is the most important factor impacting water quality?
    a. General urban runoff (2/3)
    b. Pollution from vehicles (0/3)
    c. Industrial pollution (0/3)
    d. Waste from pets and farm animals (0/3)
    e. Increases in rainfall intensity (1/3)
    f. Other (please specify) (0/3)

3) Which Mount Vernon water body, if any, is in special need of protection, conservation, or restoration?
    a. Britt Slough (0/3)
    b. Carpenter Creek (0/3)
    c. Kulshan Creek (1/3)
    d. Maddox Creek (0/3)
    e. Trumpeter Creek (2/3)
    f. Other (please specify) (0/3)
4) What strategies should the city use to protect water quality?
    a. Protect existing open space (0/3)
    b. Retrofit existing drainage facilities (2/3)
    c. Some combination of these (1/3)
    d. Other (please specify) (0/3)
5) Please submit any additional feedback you may have on this process.
    a. Open response (0/3, no responses received)

Two of three respondents felt Trumpeter Creek was a high value target for special protections and planning measures which corroborated prioritization results. Two of three respondents also wanted to emphasize the retrofitting of existing facilities, as well as target runoff from urban areas. The public survey responses, while limited, are generally consistent with the SMAP Team's identification of Trumpeter Creek as the highest priority water body for the SMAP.

Section 4: Conclusions

The City completed the first two steps of the SMAP process, the *Receiving Water Assessment* and *Receiving Water Prioritization*, in accordance with the Permit requirements and the guidance document. As a result, the City selected the Trumpeter Creek catchment area (Figure 1) for evaluation in the third and final step of this process, development of the SMAP. The City will complete the SMAP over the next 9 months and submit it to Ecology with the City's Permit Annual Report in March of 2023.

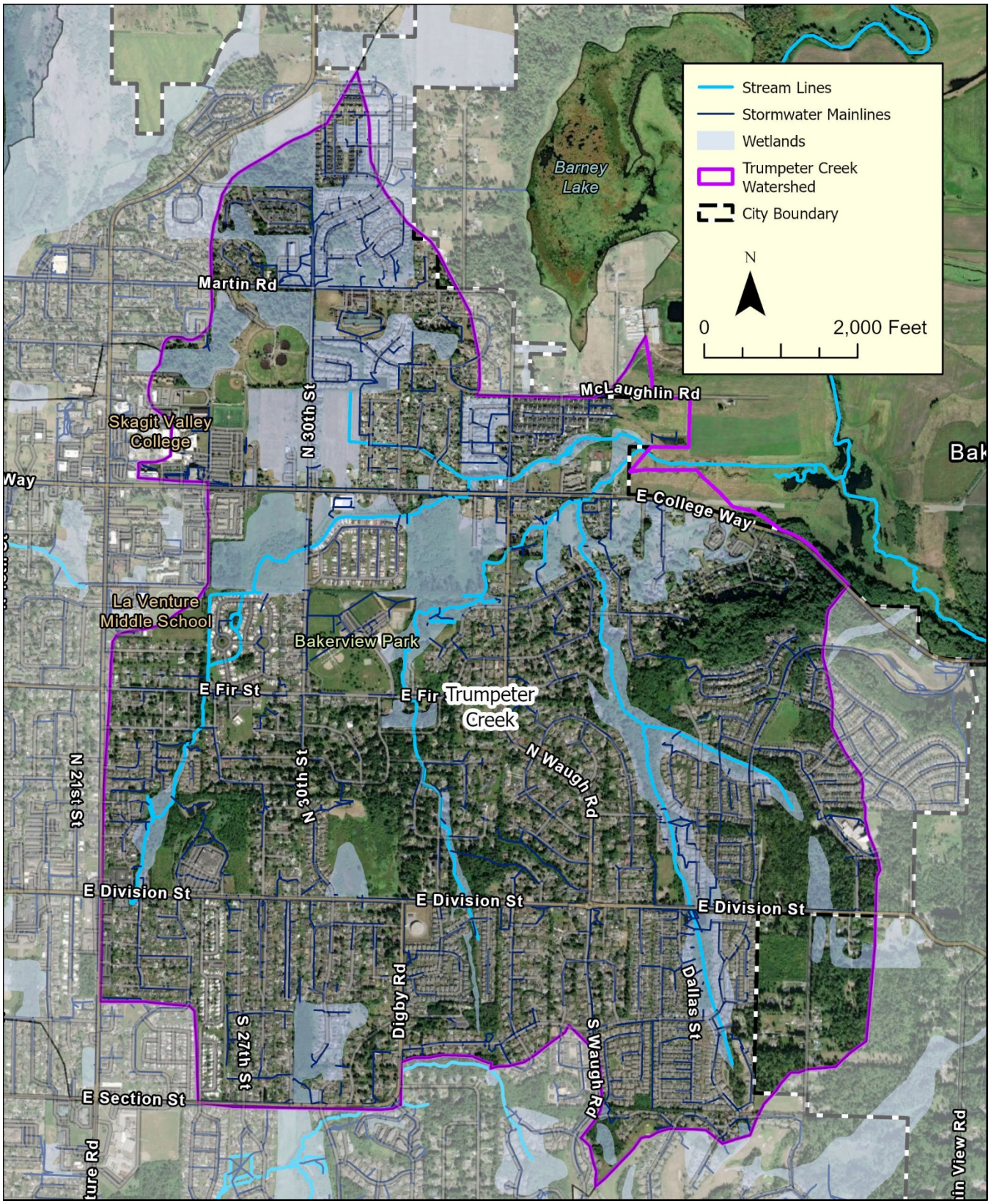

Figure 1. Trumpeter Creek and watershed

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Attachment A: Receiving Water Assessment Figure

Chuckanut Junction
486 ft
Hart Island
Burlington
Debays Slough
Skagit River Park
Skagit River Tributary
Nookachamps Creek
Barney Lake
Hoag Road
Skagit Valley College
Kulshan Creek
Baker Heights
East Fir Street
Big Rock
West Mount Vernon
Combined Sewer Area
Trumpeter Creek
East Division Street
Mt Vernon
Nookachamps Creek
Britt Slough
Maddox Creek
Eaglemont Golf Course
927 ft
Little Mountain
Carpenter Creek
Little Mountain Park
Skagit City
689 ft
Scott Mountain
Sandy Creek

N

Waterbody Inventory
City Boundary
Stream Lines

Brown AND Caldwell

City of MOUNT VERNON

Notes:

Drawn By: D. Shapiro
Checked By:

Spatial Reference:
Name: NAD 1983 StatePlane Washington North FIPS 4601 Feet

N

0 0.25 0.5 1 Miles

Esri, NASA, NGA, USGS, County of Skagit, WA State Parks GIS, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

Stormwater Management Action Plan

Waterbody Inventory

Date: 3/28/2022 12:56 PM

Attachment B: Full Receiving Water Assessment Table

City of Mount Vernon, Receiving Water Assessment Inventory

	Ecology Reporting						
Receiving Water Name	**Total Watershed Area (acres)$_2$**	**Total Watershed Area (sq. miles)$_2$**	**Percent of Watershed Within Jurisdiction$_2$**	**SMAP Influence?$_1$**	**Included in prioritization?$_1$**	**Relative conditions and contributing area**	**SMAP Influence Findings:$_{18}$**
Carpenter Creek	1849	2.89	32%	Medium	Yes	Basin is almost entirely forested, in a natural condition, and is largely outside of the City boundary. The area within city bounds is zoned for agricultural and public space (Little Mountain Park).	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation) and agriculture. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Maddox Creek	2095	3.27	83%	High	Yes	Basin is roughly half in a developed condition, and half in a forested, natural condition. Of the developed portion, approximately half is zoned for residential, and one quarter zoned for commercial.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources such as runoff from commercial/industrial land uses, runoff from residential homes and gardens, and roadway runoff. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for home and lawn care, targeted SWPPPs for commercial/industrial properties, and operational BMPs such as street sweeping. Future growth can be managed with easements for conservation and prioritizing low-impact development

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)[2]	Total Watershed Area (sq. miles)[2]	Percent of Watershed Within Jurisdiction[2]	SMAP Influence?[1]	Included in prioritization?[1]	Relative conditions and contributing area	SMAP Influence Findings:[18]
Nookachamps Creek	2121	3.31	29%	Medium	Yes	Basin is primarily in a forested, natural condition, with large portions outside of City bounds. Of the developed area within this basin, approximately a third is zoned for residential, with two thirds zoned for agricultural.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and agriculture. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Trumpeter Creek	2097	3.28	96%	High	Yes	Basin is primarily in a developed condition. Of the zoned areas, roughly 7/8's of the basin area is zoned for residential, while the remainder is zoned for public space.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care). This pollutant loading is expected to stay the same. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)$_2$	Total Watershed Area (sq. miles)$_2$	Percent of Watershed Within Jurisdiction$_2$	SMAP Influence?$_1$	Included in prioritization?$_1$	Relative conditions and contributing area	SMAP Influence Findings:$_{18}$
West Mount Vernon	514	0.80	48%	Medium	Yes	Basin is primarily in a developed condition. Of the zoned areas, the basin is roughly split into thirds of commercial, residential, and public space (Edgewater Park).	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and runoff from commercial and industrial land uses. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for home and lawn care, targeted SWPPPs for commercial/industrial properties, and operational BMPs such as street sweeping. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Britt Slough	485	0.76	71%	Medium	Yes	Basin is primarily in a developed, built-out condition. Of the zoned areas, the basin is roughly split into quarters of commercial, residential, residential-agricultural, and public space (Coutny Fair Grounds, Sherman Anderson Park)	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Point sources including the MV WWTP as well as non-point sources including human activity (recreation, lawn care) and agriculture. This pollutant loading is expected to stay the same. These sources can be addressed with best management practices for agriculture and lawn care. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)$_2$	Total Watershed Area (sq. miles)$_2$	Percent of Watershed Within Jurisdiction$_2$	SMAP Influence?$_1$	Included in prioritization?$_1$	Relative conditions and contributing area	SMAP Influence Findings:$_{18}$
Kulshan Creek	1413	2.21	100%	High	Yes	Basin is primarily in a developed, built-out condition. Zoned areas of this basin are approximately half residential and half commercial.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and runoff from residential and commercial land uses. This pollutant loading is expected to stay the same. These sources can be addressed with best management practices for hikers, farmers. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.
Skagit River Tributary	860	1.34	48%	Low	Yes	Basin is partially developed, and includes parks as well as large natural areas in proximity to the Skagit River. Zoned areas are primarily for residential and public space (riverfront area).	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including human activity (recreation, lawn care) and agriculture. This pollutant loading is expected to increase with increased development. These sources can be addressed with best management practices for residents and lawn care. Future growth can be managed with easements for conservation, zoning for public space, and by prioritizing low-impact development.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Total Watershed Area (acres)[2]	Total Watershed Area (sq. miles)[2]	Percent of Watershed Within Jurisdiction[2]	SMAP Influence?[1]	Included in prioritization?[1]	Relative conditions and contributing area	SMAP Influence Findings:[18]
Combined Sewer Area	444	0.69	100%	Low	Yes	The downtown area of Mount Vernon is primarily in a developed, built-out condition. Zoned areas are primarily residential and commercial, with some public space as well.	The major pollutant/flow impacts are: sediment and erosion, nutrients, and herbicides, pesticides, and fertilizer. The major pollutants are associated with: Non-point sources including runoff from residential and commercial properties. This pollutant loading is expected to stay the same. These sources can be addressed with increased stormwater storage to minimize CSO occurence. Future growth can be managed by creating new development requirements for on-site storage of storwmater or through capacity improvements.
ALL WATERSHEDS / NOTES	11879	18.56					

City of Mount Vernon, Receiving Water Assessment Inventory

	Further Data Collection									
Receiving Water Name	**Opportunity for Coordination? (parties)**	**EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]**	**EPA 305(b) Listed?[3]**	**Designated Uses[4]**	**Zoning: Residential[5]**	**Zoning: Residential-Agricultural[5]**	**Zoning: Commercial[5]**	**Zoning: Public[5]**	**Zoning: Other (F-1, RR, DIKE)[5]**	**Unzoned (R/W)[5]**
Carpenter Creek	- Skagit County		- Category 1 for temperature (i.e. meets water standard)	- Uses designated in WAC 173-201A-600 - Core Summer Habitat - Primary Contact - All miscellaneous uses - All water supply uses	2%	36%	1%	60%	0%	1%
Maddox Creek	- Skagit County	- Maddox Slough impaired for dissolved oxygen and temperature	- Unnamed Ditch, dissolved oxygen (Cat. 2 - water of concern)	- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	44%	3%	23%	14%	1%	15%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
Nookachamps Creek	- Skagit County	- Impaired for dissolved oxygen		- Uses designated in WAC 173-201A-600 - Core Summer Habitat - Primary Contact - All miscellaneous uses - All water supply uses	28%	63%	0%	1%	0%	8%
Trumpeter Creek	- Skagit County	- Contains College Way Creek - Impaired for dissolved oxygen and temperature	- Contains Unnamed Trib to Nookachamps - Impaired for Bacteria (cat. 4A - TMDL in place) and dissolved oxygen (cat. 2 - water of concern)	- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	72%	1%	1%	12%	0%	13%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
West Mount Vernon	- Skagit County			- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	18%	0%	28%	28%	12%	14%
Britt Slough	- Skagit County			- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	20%	27%	18%	21%	3%	10%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
Kulshan Creek	- Skagit County		- Cat 1 - pH - Cat. 2 - DO and Ammonia (Nitrogen) - Cat. 4a - Bacteria TMDL in place	- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	33%	2%	38%	10%	1%	16%
Skagit River Tributary	- Skagit County	- Impaired for dissolved oxygen		- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	47%	9%	0%	34%	0%	10%

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Opportunity for Coordination? (parties)	EPA 303(d) (I.e. Cat. 5 Impaired) Listed?[3]	EPA 305(b) Listed?[3]	Designated Uses[4]	Zoning: Residential[5]	Zoning: Residential-Agricultural[5]	Zoning: Commercial[5]	Zoning: Public[5]	Zoning: Other (F-1, RR, DIKE)[5]	Unzoned (R/W)[5]
Combined Sewer Area	- Skagit County			- Uses designated in WAC 173-201A-600 (see note for all water bodies not listed, below)	39%	0%	19%	7%	2%	33%
ALL WATERSHEDS / NOTES		- All watersheds are tributary to the Skagit River which has a TMDL for PCBs		- All surface waters of the state not named in Table 602 are to be protected for the designated uses of: Salmonid spawning, rearing, and migration; primary contact recreation; domestic, industrial, and agricultural water supply; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values. - All Skagit River tributaries have designated uses of Spwaning/Rearing, Primary Contact, and all "Water Supply" and "Miscellaneous" uses						

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Carpenter Creek	66%	5 years	High	2.4	0.8	14	0	-
Maddox Creek	64%	5 years	High	14.2	4.3	25	2,985	Contains projects T-02-06, T-02-10, T-94-21, T-94-19, T-13-01, T-21-03, and T-07-06

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Nookachamps Creek	40%	10-20 years	Medium	6.5	2.0	19	911	Contains small portion of project T-94-21
Trumpeter Creek	52%	5 years	High	27.9	8.5	22	1,685	Contains projects T-20-02, T-02-24, and T-94-14

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
West Mount Vernon	68%	Low / Redevelopment	Low	0.6	0.7	44	987	Contains project T-02-17
Britt Slough	65%	Low / Redevelopment	Low	2.5	3.3	21	0	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Kulshan Creek	75%	Low / Redevelopment	Low	15.6	7.1	27	2,002	Contains projects T-19-03, T-20-01, T-21-02
Skagit River Tributary	59%	5 years	High	3.6	2.7	27	260	Contains project T-06-07, T-06-05

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Estimated Percent Impervious[5,6]	Development Pressure Timelines[1]	Development Pressure[1]	Length of Stormwater Infrastructure (miles)[7]	Infrastructure (miles/sq. miles)[7]	Infrastructure Average Age[7,8]	Transportation Projects Planned (feet)[9]	Transportation CIPs[10]
Combined Sewer Area	72%	Low / Redevelopment	Low	2.6	3.7	22	620	Contains projects T-03-02, T-19-04, T-21-03
ALL WATERSHEDS / NOTES	62%					Note: Approximately 1/3 of storm sewer links did not have an install year defined.		

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
Carpenter Creek		D-21-01	Hickox Road Culvert Replacement	-	-	-	-
Maddox Creek	30th street, Fowler Trail Connection, Blackburn Rd, Blackburn/Laventure intersection projects, and Kincaid and 15th intersection improvements	D-09-02, D-05-02	Blodgett Road Culvert replacement and stream restoration and South Mount Vernon Surface Water Enhancement	P-07-06, P-02-04, P-15-01, P-09-04, P-09-01, P-21-05	Includes work in Little Mountain Park, Bonnie Rae Park, and Hillcrest Park	-	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
Nookachamps Creek	Blackburn Rd between Little Mountain and Eaglemont	-	-	-	-	-	-
Trumpeter Creek	30th street improvements and Fir street widening	D-14-01, D-21-04	Logan Creek stream restoration and Seneca Drive culvert replacement	P-94-01, P-21-02, P-21-04	Bakerview Park, retreat center and dog park improvements	-	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
West Mount Vernon	River Dike Trail System	D-05-03	West Mount Vernon Stormwater Force Main Upgrade	P-05-02, P-09-05	Community Boat Launch and Edgewater Park Improvements	-	-
Britt Slough		D-19-01	Park Street pump station upgrades	P-12-01, P-21-01	Sherman Anderson updates and Park&Ride facility renovations	S-20-02, S-14-01, S-21-01, S-21-02	Header and pump upgrades, collection system expansion, rotary drum procurement, WWTP upgrades

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description[10]	Surface Water CIPs[11]	Surface Water CIPs Desctipion[11]	Parks CIPs[11]	Park CIPs Description[11]	Wastewater CIPs[11]	Wastewater CIPs Description[11]
Kulshan Creek	Riverside Drive Improvements Phases 1 and 2, College Way rail crossings	D-06-03, D-21-02, D-21-03	Regional SW treatment facility, 19th and 18th St. culvert replacements	-	-	-	-
Skagit River Tributary	Laventure Road, Hoag/Laventure intersection improvements	-	-	-	-	-	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Transportation CIPs Description$_{10}$	Surface Water CIPs$_{11}$	Surface Water CIPs Desctipion$_{11}$	Parks CIPs$_{11}$	Park CIPs Description$_{11}$	Wastewater CIPs$_{11}$	Wastewater CIPs Description$_{11}$
Combined Sewer Area	Broad St improvements and Kincaid Street corridor improvements, W Gates St and S 2nd St intersection improvements	-	-	P-19-01	Telecomms tower renovation	-	-
ALL WATERSHEDS / NOTES							

City of Mount Vernon, Receiving Water Assessment Inventory

						AU_ID	WF_M1_Q
Receiving Water Name	**Other CIPs?[11]**	**WSDOT Sensitive Waterbodies (feet)[12]**	**National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]**	**Mount Vernon Wetlands Layer[19]**	**Salmonid Habitat Stream Length (miles)[14]**	**Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]**	**Watershed Characterization Project: Importance - Overall Score for Flow[15]**
Carpenter Creek	-	0	65	149	3.9	3296	L
Maddox Creek	-	1,988	63	218	6.6	3427	L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
Nookachamps Creek	-	3,619	88	520	3.6	3432	L
Trumpeter Creek	Fire Department projects F-00-02 and F-99-01 - Station #3 addition and radio replacement	3,341	134	425	6.4	3267	L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
West Mount Vernon	-	1,414	65	118	0.0	3294	L
Britt Slough	-	0	5	70	1.1	3294	L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
Kulshan Creek	Fire Department station #2 addition and defibrillator replacement; General facilities G-99-02 Public Works / Shop Facility improvements; Police traffic camera system and Evidence building extension	2,508	26	141	2.0	3293/3426	L/M
Skagit River Tributary	-	0	33	291	1.4	3291/3428	L/L

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Other CIPs?[11]	WSDOT Sensitive Waterbodies (feet)[12]	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)[13]	Mount Vernon Wetlands Layer[19]	Salmonid Habitat Stream Length (miles)[14]	Watershed Characterization Project: Assessment Unit ID (AU_ID)[15]	Watershed Characterization Project: Importance - Overall Score for Flow[15]
Combined Sewer Area	General facilities/Library CIPs G-13-01, G-18-01, G-17-01, and L-94-07; Fire Department facilities construction F-02-01	453	0	3	0.0	Four AU's intersect with this area -- Analysis not completed.	-
ALL WATERSHEDS / NOTES		13,323	479		25	See "Explanation of PSWC Parameters" Tab.	See "Explanation of PSWC Parameters" Tab.

City of Mount Vernon, Receiving Water Assessment Inventory

	WF_M2_Q	WF_RP					
Receiving Water Name	**Watershed Characterization Project: Degradation - Overall Score$_{15}$**	**Watershed Characterization Project: Restoration and Protection Priorities - Overall$_{15}$**	**Assessment Unit Landscape Position$_{15}$**	**Street Sweeping (miles)$_{16}$**	**Current Management Strategies$_{1}$**	**SMAP: Targeted Management Strategies$_{1}$**	**SMAP: Retrofits Required$_{1}$**
Carpenter Creek	MH	D2	Lowland	0.7	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- Education and outreach materials for hikers - "Poop Fairy" waste management materials are posted	- Eaglemont Plats wetland rehabilitation facility
Maddox Creek	H	D1	Lowland	31.1	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- Education and outreach materials for headwaters, walking trails and residential areas - Targeted E&O for commercial properties in lower watershed	- Eleanor Lane water quality - Wells Nursery culvert

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
Nookachamps Creek	H	D1	Lowland	8.2	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- DO mitigation	
Trumpeter Creek	H	D1	Lowland	42.2	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- DO mitigation - Waste services camp clean up duties	- Twin Brooks detention pond retrofit - Kiowa and Seneca Dr. culverts - Stream channel restoration for issues at Seneca Dr. culvert - Sanitation improvements for homeless encampment - Trumpeter Dr. metal corrugated pipe replacement

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
West Mount Vernon	H	D1	Lowland	4.0	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings		
Britt Slough	H	D1	Lowland	5.7	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- Residential areas E&O	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
Kulshan Creek	H/H	D1/RD1	Lowland	28.7	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings - SWPPP Implementation	- DO mitigation - E&O opportunities for commercial properties	
Skagit River Tributary	H/H	D1	Lowland	5.3	- Stormwater Standards - Routine inspections and maintenance - Street sweeping - IDDE Screenings	- E&O opportunities for residential areas	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Watershed Characterization Project: Degradation - Overall Score[15]	Watershed Characterization Project: Restoration and Protection Priorities - Overall[15]	Assessment Unit Landscape Position[15]	Street Sweeping (miles)[16]	Current Management Strategies[1]	SMAP: Targeted Management Strategies[1]	SMAP: Retrofits Required[1]
Combined Sewer Area	-	-	Lowland	24.1	- Stormwater Standards - Routine inspections and maintenance - Street sweeping		- Plaza Paver maintenance program or retrofit to remove silt - Analysis and retrofits for flow impacts to natural systems as areas are separated from combined system
ALL WATERSHEDS / NOTES	See "Explanation of PSWC Parameters" Tab.	See "Explanation of PSWC Parameters" Tab.	See "Explanation of PSWC Parameters" Tab.	150.0		Intended to address SMAP permit element S5.C1.d.iii.(c)	Intended to address SMAP permit element S5.C1.d.iii.(a)

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Carpenter Creek						-
Maddox Creek						-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Nookachamps Creek	- Work with development and land services to plan future development and potential strategies concerning golf course area					- 2019/2020 sampling indicated some DO issues. - Temperature, Turbidity, and Fecal Coliform generally met state standards.
Trumpeter Creek						- 2019/2020 sampling indicated some DO issues. - Temperature, Turbidity, and Fecal Coliform generally met state standards.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
West Mount Vernon						-
Britt Slough						-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Kulshan Creek						- 2019/2020 sampling indicated some DO and Fecal Coliform issues. - Temperature and Turbidity generally met state standards.
Skagit River Tributary						-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	SMAP: Land Management / Development Strategies[1]	SMAP: Long-Range Plans Impacted	SMAP: Proposed Long-term (7-20) Actions and Budget Sources	SMAP: Proposed Short-term (0-6 years) Actions and Budget Sources	Strategies Evaluated? (date)	Skagit Stream Team Reports?[17]
Combined Sewer Area						-
ALL WATERSHEDS / NOTES	Intended to address SMAP permit element S5.C1.d.iii.(b)	Intended to address SMAP permit element S5.C1.d.iii.(d)	Intended to address SMAP permit element S5.C1.d.iii.(e)	Intended to address SMAP permit element S5.C1.d.iii.(e)	Intended to address SMAP permit element S5.C1.d.iii.(f)	-

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Carpenter Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Some flooding issues noted, specifically around Eaglemont Plats and the associated wetland rehabiliation. - Eaglemont Golf Course sees some flooding, have issues primarily outside City limits.	
Maddox Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- South Maddox creek experiences some water quality and flooding issues. - Jack's Lane experiences some flooding issues. - Eleanor Lane has had water quality issues. - Large portion of South Maddox Creek basin currently being developed. - Culvert near Wells Nursery has had clogging issues.	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Nookachamps Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	-	- Large percentage of basin will be incorporated in UGA - presents opportunity to manage growth
Trumpeter Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Area near trailer park currently has flooding issues. Existing CIP in place to raise road profile (2-year time frame estimated) - Kiowa and Seneca culverts both experience clogging and sedimentation issues. Have blown out in the past. - Twin Brooks detention pond has also had issues. - Skagit Conservation district frequently does fecal coliform testing near E College Way - solid waste crews also have regular maintenance activities here. A homeless encampment is in this area. - Area near Trumpeter Dr sees some flooding issues. Old corrugated metal pipes in this area.	

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
West Mount Vernon	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Homeless encampent just outside of City limits	- Drains to a pump station
Britt Slough	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	-	- Fair grounds location will potentially be moved in the future.

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Kulshan Creek	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- Area near William Way and Roosevelt/Parker frequently sees debris. - Beaver dams are also an issue here.	
Skagit River Tributary	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	-	- Rationale for LOW influence: relatively small watershed, with little development, is within MS4 area and very small relative to entire Skagit River Watershed

City of Mount Vernon, Receiving Water Assessment Inventory

Receiving Water Name	Overburdened Communities[1]	Mount Vernon Staff Comment: Problem Areas[1]	BC Notes
Combined Sewer Area	Mount Vernon has identified Spanish speaking communities as potentially overburdened and will make public involvement materials accessible in Spanish.	- As projects are completed and drainage areas are separated from the combined system the City will have to analyze flow impacts to natural systems. - May need retrofit project for pavers in Plaza area to remove silt.	- Rationale for LOW influence: fully developed area, and is managed under separate permit. - Can take credit for existing LID use - Could do specialized maintenance program for plaza area - hi-efficiency vacuum to remove silt
ALL WATERSHEDS / NOTES	Ecology definition of Overburdened Communities: "Overburdened Communty means minority, low-income, tribal, or indigenous populations or geographic locations in Washington State that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities."		- All watersheds drain to the Skagit River, which has segments in proximty to Mount Vernon that are impaired for PCBs - All watersheds within WRIA 3 - Lower Skagit - Samish - All contribute to Lower Skagit River which has a TMDL for temperature and Phosphorous

City of Mount Vernon, Receiving Water Assessment Inventory

Notes and Sources

1	Determined during Interdisciplinary Team meetings and/or from data request feedback from city staff.
2	Calculated using City GIS data titled, "Watershed Boundaries.shp" and "City Boundary.shp", received from the City 10/14/2021.
3	Summarized from EPA's 303(d) and 305(b) lists of impaired water and waters of concern. Data downloaded 12/2/2021.
4	Designated uses determined from Washington State Administrative Code (WAC) 173-201A-600.
5	Zoning calculations done using city GIS data titled, "Zoning_Designations.shp", received from the City on 10/14/2021.
6	Estimated impervious area calculated using "Zoning_Designations.shp" as well as full lot coverages described in Mount Vernon municipal code section 17.93, "Landscaping".
7	Infrastructure calculations done using city provided GIS data titled, "MountVernonAllSewerLinks.shp", and was only done for the stormwater drainage links. Data was provided 8/17/2021.
8	Infrastructure age information is taken from "MountVernonAllSewewLinks.shp", and is specific to the stormwater drainage system, and was available for approximately two-thirds of features present.
9	Transportation projects measured by the linear foot is sourced from city provided GIS data titled, "Transportation_Projects_2022to2027_Polylines.shp", received 10/14/2021.
10	Transportation project information gathered from city-provided shapefiles, "Transportation_Projects_2022to2027_Polylines.shp" and "Transportation_Projects_2022to2027_Points.shp", received 10/14/2021.
11	Other CIP project information is sourced from city-provided shapefiles, "CIP_Projects.shp", received 10/21/2021, and cross-checked against Mount Vernon's 2021-2026 CIP Facilities Plan.
12	Data sourced from Washington Department of Transportation's GIS data used to alert crews of potential habitat of endangered species and downloaded on 4/20/2022.
13	Data sourced from U.S. Fish and Wildlife Service's National Wetlands Inventory and downloaded on 4/20/2022.
14	Data sourced from the Washington Department of Fish and Wildlife's Integrated Fish Distribution dataset and downloaded 4/25/2022.
15	Data sourced from the Puget Sound Watershed Characterization Project's 2020 update to the Water Flow Assessment and downloaded 1/10/2022.
16	Calculated using city-provided GIS data titled, "Sweeping Routes.shp", received 10/21/2021. This dataset covers all roads within city limits.
17	Data summarized from Skagit Conservation District Stream Team reports.
18	Recommended documentation from SMAP guidance document. Compiled as a best guess informed by data review and interdisciplinary team meetings.
19	Mount Vernon's internal wetlands layer, received from City 6/3/2022.

Attachment C: Receiving Water Prioritization

City of Mount Vernon, Receiving Water Prioritization

	Weighting Scale (5 to 0, with 5 having the greatest importance)																		
	1	3	5	5	0	0	2	4	0	1	2	1	1	1	0	3	4		
	Percent of Watershed Within Jurisdiction	Development Pressure	Transportation Projects Planned (feet)	Salmonid Habitat Stream Length (miles)	WSDOT Sensitive Waterbodies (feet)	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)	Mount Vernon Wetlands Layer	Estimated Percent Impervious	Zoning: Commercial	Zoning: Residential	Zoning: Public	Street Sweeping (miles)	Length of Stormwater Infrastructure (miles)	Infrastructure (miles/sq. miles)	Infrastructure Average Age	Surface Water CIPs	EPA 303(d) Listed? (i.e. Cat. 5 Impaired)	Weighted Score	Receiving Water Name
Scoring	0.5	0.0	0.0	0.5	0.0	0.5	0.5	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.5	0.0	9.5	Carpenter Creek
	1.0	1.0	0.0	1.0	0.5	0.5	0.5	0.5	0.5	1.0	0.0	1.0	0.5	0.5	0.5	1.0	1.0	22.0	Maddox Creek
	0.0	0.5	0.0	0.5	1.0	1.0	1.0	1.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	1.0	15.0	Nookachamps Creek
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	29.0	Trumpeter Creek
	0.5	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.0	0.0	0.0	1.0	0.5	0.0	6.0	West Mount Vernon
	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.0	0.5	0.0	6.0	Britt Slough
	1.0	0.0	1.0	0.5	1.0	0.0	0.5	0.5	1.0	0.5	0.0	0.5	1.0	1.0	0.5	1.0	0.0	17.5	Kulshan Creek
	0.5	1.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0	0.5	0.0	0.0	0.5	0.5	0.0	1.0	13.0	Skagit River Tributary
	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.5	0.0	0.5	0.0	0.0	0.0	4.5	Combined Sewer Area

City of Mount Vernon, Receiving Water Prioritization

Receiving Water Name	Total Watershed Area (acres)	Total Watershed Area (sq. miles)	Percent of Watershed Within Jurisdiction	Development Pressure	Transportation Projects Planned (feet)	Salmonid Habitat Stream Length (miles)	WSDOT Sensitive Waterbodies (feet)	National Wetlands Inventory: Wetlands and Deepwater Habitat (acres)	Mount Vernon Wetlands Layer19	Estimated Percent Impervious
Carpenter Creek	1849	2.89	32%	High	0	3.9	0	65	149	66%
Maddox Creek	2095	3.27	83%	High	0	6.6	1988	63	218	64%
Nookachamps Creek	2121	3.31	29%	Medium	0	3.6	3619	88	520	40%
Trumpeter Creek	2097	3.28	96%	High	1685	6.4	3341	134	425	52%
West Mount Vernon	514	0.80	48%	Low	0	0	1414	65	118	68%
Britt Slough	485	0.76	71%	Low	0	1.1	0	5	70	65%
Kulshan Creek	1413	2.21	100%	Low	2002	2	2508	26	141	75%
Skagit River Tributary	860	1.34	48%	High	0	1.4	0	33	291	59%
Combined Sewer Area	444	0.69	100%	Low	0	0	453	0	3	72%
	high value for scoring *low value for scoring*		*80%* *30%*	*"High" is 1* *"Low" is 0*	*1000* *100*	*4* *2*	*2000* *1000*	*75* *50*	*400* *100*	*50%* *33%*

City of Mount Vernon, Receiving Water Prioritization

Receiving Water Name	Zoning: Commercial	Zoning: Residential	Zoning: Public	Street Sweeping (miles)	Length of Stormwater Infrastructure (miles)	Infrastructure (miles/sq. miles)	Infrastructure Average Age	Surface Water CIPs	Surface Water CIPs Desctipion	EPA 303(d) Listed? (i.e. Cat. 5 Impaired)
Carpenter Creek	1%	2%	60%	0.7	2.4	0.8	14	D-21-01	Hickox Road Culvert Replacement	-
Maddox Creek	23%	44%	14%	31.1	14.2	4.3	25	D-09-02, D-05-02	Blodgett Road Culvert replacement and stream restoration and South Mount Vernon Surface Water Enhancement	- Maddox Slough impaired for dissolved oxygen and temperature
Nookachamps Creek	0%	28%	1%	8.2	6.5	2.0	19	-	-	- Impaired for dissolved oxygen
Trumpeter Creek	1%	72%	12%	42.2	27.9	8.5	22	D-14-01, D-21-04	Logan Creek stream restoration and Sence Drive culvert replacement	- Contains College Way Creek - Impaired for dissolved oxygen and temperature
West Mount Vernon	28%	18%	28%	4	0.6	0.7	44	D-05-03	West Mount Vernon Stormwater Force Main Upgrade	-
Britt Slough	18%	20%	21%	5.7	2.5	3.3	21	D-19-01	Park Street pump station upgrades	-
Kulshan Creek	38%	33%	10%	28.7	15.6	7.1	27	D-06-03, D-21-02, D-21-03	Regional SW treatment facility, 19th and 18th St. culvert replacements	-
Skagit River Tributary	0%	47%	34%	5.3	3.6	2.7	27	-	-	- Impaired for dissolved oxygen

Appendix C: Definitions and Terminology

Appendix C

Definitions and Terminology

Term	Definition
Best Management Practice (BMP)	BMPs include stormwater management facilities, schedules of activities, prohibition of practices, maintenance procedures and other management practices designed to prevent or reduce pollution. BMPs also include treatment requirements, operating procedures, and practices to control stormwater runoff.
Development	Development means the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure; any mining, excavation, landfill or land disturbance; division of a parcel of land into two or more parcels; and any use or extension of the use of land.
Discharge	Any addition of treated or untreated water, stormwater, wastewater, process water or any pollutant or combination of pollutants to waters of the State of Washington, directly or indirectly, by actions of dumping, spilling, disposing, or physically connecting to the public storm system or natural drainage conveyance.
Engineer	A registered professional engineer licensed to practice in the State of Washington, who is responsible for the design and construction of the site stormwater management plan. This person is also referred to as the project engineer or engineer.
Erosion	The visual or measurable movement of soil particles resulting from the flow of, or pressure from, water, wind, or earth movement.
Infiltration	The process by which stormwater penetrates into soil.
Municipal Separate Storm Sewer System (MS4)	A storm drainage system(s) (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human made channels, or storm drains) as defined in 40 Code of Federal Regulations (CFR) 122.26(b)(8).
National Pollutant Discharge Elimination System (NPDES) Permit	A permit issued pursuant to Chapter 402 of the Clean Water Act (40 CFR 122, 123, 124, and 504).
Pollutant	Stormwater pollutants that can harm rivers, streams, lakes, and coastal waters are generally separated into the following categories: suspended solids/sediment (i.e., trash), oxygen-demanding pollutants, temperature, bacteria, organic carbon, organic matter (i.e., leaves, flowers, twigs, pollen), hydrocarbons, metals (i.e., lead, copper, zinc, and cadmium), nutrients (i.e., nitrogen and phosphorous), pathogens (i.e., animal feces, leaking sewers) and toxins (i.e., pesticides, chemical toxins).
Project	A project includes all infrastructure related items for both development and redevelopment conditions. Projects include the organized effort to construct a building or structure and associated utilities and amenities. In the fields of civil engineering and architecture, construction projects involve the process that consists of tangibly assembling infrastructure or buildings.
Stormwater or Stormwater Runoff	Includes snow melt runoff, and surface runoff and drainage, and is defined in 40 CFR §122.26(b)(13). "Stormwater" means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels, or pipes into a defined surface water channel or a constructed infiltration facility.
Receiving Water	Naturally and/or reconstructed naturally occurring surface water bodies, such as creeks, streams, rivers, lakes, wetlands, estuaries, and marine waters, or groundwater, to which an MS4 discharges.
Stormwater Management	A program to provide surface water quality and quantity controls through structural and nonstructural methods. Examples of structural controls include swales, planters, rain gardens, and retention basins as well as structural source controls (e.g., covers and awnings, curbs for isolation, spill control manholes, and shut-off valves). Nonstructural controls include maintenance of surface water facilities, maintenance of roads (e.g., street sweeping, inlet cleaning), public education, implementation of intergovernmental agreements to provide for regional coordination, inspections, and preparation of water quality control ordinances and regulations.
Stream	A surface concentration of flow in an open channel in which flow of water occurs either perennially or intermittently. For the purposes of this manual, streams refer to drainageways that are determined to be jurisdictional by ODSL or the United States Army Corps of Engineers (USACE).

Term	Definition
Waters of the State	Those waters defined in 40 CFR Subpart 122.2 or as amended, which include tributaries, lakes, ponds, adjacent wetlands, and the territorial seas within the geographic boundaries of Washington State, and those waters defined in Chapter 90.48 RCW which includes lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.
Wetlands	"Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

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