

CITY OF ORTING 2021 Annual Report Question

#17a

S5.C.1.d - Developed a watershed inventory as outlined in S5.C.1.d.i. Document attached separately.

Excerpts are attached in the category: Stormwater Planning Q17a.

Excerpts

TECHNICAL MEMORANDUM

DATE: March 16, 2022
TO: Maryanne Zukowski, City Engineer
FROM: Jeffrey Coop, PE, CFM
SUBJECT: SMAP Phase 1
CC: JC Hungerford
PROJECT NUMBER: 216-1711-024
PROJECT NAME: Stormwater Management Action Plan



3/16/2022

INTRODUCTION

Section S5.C.1.d of the National Pollutant Discharge Elimination System (NPDES) Western Washington Phase 2 Municipal Stormwater Permit (NPDES Permit effective date August 2, 2019) (Ecology 2019a) issued by the Washington State Department of Ecology (Ecology) requires permittees to prepare a Stormwater Management Action Plan (SMAP). The first phase of the SMAP process required by Section S5.C.1.d.i of the NPDES Permit is to assess receiving waters and to document the results. This technical memorandum has been prepared to support the City of Orting (City) with Section S5.C.1.d.i to address the Phase 1 receiving water assessment requirement.

To facilitate the schedule for City review, SMAP Phase 1 is being completed based on the steps listed below. The following steps are based on Stormwater Management Action Planning Guidance (Ecology 2019b). This technical memorandum will be updated as the steps are completed.

- Step 1 – Delineate basins and identify receiving waters.
- Step 2 – Assess receiving water conditions.
- Step 3 – Assess stormwater management influence.
- Step 4 – Assess relative conditions and contributions.

The results for SMAP Phase 1 Steps 1 and 2 were documented in the SMAP Phase 1 Technical Memorandum (Parametrix; February 11, 2022). The technical memorandum is updated herein with the results for SMAP Phase 1 Step 3.

OVERVIEW

The City is located between the Puyallup River and the Carbon River. The City has stormwater outfalls that discharge directly into these rivers on the water side of existing levees or into constructed drainage channels along the levees that subsequently discharge into these rivers through outfalls on the river side of the levees. Based on Appendix I-A of the Stormwater Management Manual for Western Washington (SWMMWW; Ecology 2019c), direct discharges from the City into both the Puyallup River and Carbon River are exempt from flow control. Based on SWMMWW Appendix III-A, discharges from the City into both the Puyallup River and Carbon River require enhanced treatment for the types of projects identified in SWMMWW Section III-1.2 Step 5. The

STEP 1 – DELINEATE BASINS AND IDENTIFY RECEIVING WATERS

Although there are limited areas for receiving waters within the City, two areas were identified for SMAP Phase 1 Step 1. The two areas are on the landward side of the Carbon River along the easterly side of town. The two identified receiving waters, subbasin boundaries, and outfall locations are shown in Attachment A. The two receiving waters are summarized in Table 2 below.

Table 2. Summary of Receiving Waters

Parameter	Carbon River Unnamed Tributary North	Carbon River Unnamed Tributary South
Receiving water footprint area	16.96 acres	60.92 acres
Total potential contributing area	93.79 acres	399.66 acres
Developed subbasins	Village Crest/Rivers Edge South	Orting Central Orting East Rainier Meadows
Undeveloped/underdeveloped subbasins	None	Orting Central Future Orting East Future
Discharges through	Existing pipe through levee	Existing pipe through levee

STEP 2 – ASSESS RECEIVING WATER CONDITIONS

There are no designated uses for either the Carbon River North Unnamed Tributary or the Carbon River South Unnamed Tributary. However, they both discharge into the Carbon River. Based on Chapter 173-201A-602 Table 602 of the Washington Administrative Code (WAC), designated uses for the Carbon River include the following:

- Aquatic Life uses: char spawning/rearing
- Recreation uses: Primary contact
- Water supply uses: all (domestic, industrial, agricultural, and stock water)
- Miscellaneous uses: all (wildlife habitat, fish harvesting, commerce/navigation, boating, aesthetics)
- Additional: Spawning and incubation protection

Table 3 summarizes current development coverage within the tributary areas to the two identified receiving waters.

Table 3. Summary of Receiving Water Tributary Conditions

Parameter	Carbon River North Unnamed Tributary	Carbon River South Unnamed Tributary
Total Tributary Area	93.79 acres	427.2 acres
Approximate Impervious Area	26.07 acres	87.32 acres
Approximate Pervious Area	67.72 acres	339.88 acres
Number of Existing stormwater management facilities	2	9
Approximate percentage of pervious area as percent of total tributary area	72 percent	80 percent

actions in areas to these unnamed tributaries than for areas that directly discharge into the Puyallup River or Carbon River.

Stormwater management influence to the Carbon River North Unnamed Tributary and Carbon River South Unnamed Tributary vary because of the size differences between the tributary areas, amount of existing development, number of existing SWM facilities, and potential future development or redevelopment. Carbon River South Unnamed Tributary has the greatest potential for new development or redevelopment because of currently undeveloped land. The 2019 Comprehensive Plan Land Use and Zoning Map show the following land uses within the Carbon River South Unnamed Tributary area. The land use descriptions are summarized from OMC 13-3-2. Attachment F includes a figure that shows the zoning within the Carbon River North Unnamed Tributary and Carbon River South Unnamed Tributary. Allowable uses are included in Attachment G.

- Residential – Urban: provides for high-density urban single-family, townhouse, cottage, and duplex residential uses which benefit from the full array of services and amenities available in the town core.
- Residential – Conservation: provides for low-density single-family residential and duplex uses along the Puyallup and Carbon Rivers where there are critical areas such as frequently flooded areas, wetlands, and fish and wildlife habitat.
- Mixed Use – Town Center: provides a mix of commercial retail, office, residential and service development in the town core. Elements that impact stormwater management, such as pedestrian amenities and public transportation, will be considerations in development approvals for projects in this zone.
- Mixed Use – Town Center North: this area provides the greatest flexibility in development potential because of the large lots and land area. This area can include a mix of residential, nonresidential, open space and recreational uses that support a sustainable community by providing jobs and increasing the tax base. Elements that impact stormwater management, such as pedestrian amenities and public transportation, will be considerations throughout master planning and development approvals for projects in this zone. A Master Plan Development per OMC 13-3-2.E.2 and 3 is required for development in the Mixed Use – Town Center North area.
- Public Facilities: The intent of the Public Facilities Zone is to be applied to major parcels of land serving the cultural, educational, recreational, and public-service needs of the community, such as, but not limited to, schools, water and wastewater facilities, city buildings, city parking lots, and other City-owned uses. This zone applies only to lands owned by governmental agencies.

A feasibility study by the Orting School District is currently in process for parcels in the Mixed Use – Town Center North area. The results will likely require a code amendment for zoning changes.

The qualitative assessment of stormwater management influence for existing and future conditions for the two unnamed tributaries are summarized in Tables 5 and 6, respectively.

Table 5. Summary of Stormwater Management Influence, Existing Conditions

Factor Considered	Carbon River North Unnamed Tributary	Carbon River South Unnamed Tributary
General Description	Tributary area mostly developed. Stormwater from existing development routed through existing SWM facilities for Village Crest/Rivers Edge.	Tributary area mostly developed but has more area than Carbon River North Unnamed Tributary that could be developed or redeveloped.

Factor Considered	Carbon River North Unnamed Tributary	Carbon River South Unnamed Tributary
		Stormwater from some areas routed through existing SWM facilities. Not all areas are routed through existing SWM facilities.
Total Suspended Solids	Treatment provided through existing SWM facilities	Some treatment is provided for areas that are routed to existing SWM facilities.
Total Zinc	Potential removal through function of existing SWM facilities.	Potential removal through function of existing SWM facilities.
Total Copper	Potential removal through function of existing SWM facilities.	Potential removal through function of existing SWM facilities.
Receives Stormwater Point Flow Discharges	From outfalls from existing SWM facilities.	Most area has direct discharge into Carbon River through existing outfalls. Some areas have surface discharges into Carbon River South Unnamed Tributary.
Existing SWM Facilities	Village Crest/Rivers Edge Phase 1A, 2A, 3A.	Rainier Meadows, City Hall, Pierce County Public Safety, High School, Pioneer Village, Gas Station. SR 162/Washington Avenue infiltration gallery.

Notes: Pollutant selection based on Qualitative Procedures for Surface Water Impact Assessments (WSDOT 2009).
SWM = stormwater management

Table 6. Summary of Stormwater Management Influence, Future Conditions

Factor Considered	Carbon River North Unnamed Tributary	Carbon River South Unnamed Tributary
Total Suspended Solids	No change anticipated.	Will likely decrease as undeveloped areas develop and underdeveloped areas redevelop and new SWM facilities are provided.
Total Zinc	No change anticipated.	To be determined when Step 4 calculations are performed.
Total Copper	No change anticipated.	To be determined when Step 4 calculations are performed.
Future land use	No change anticipated. Continued residential development.	Existing developed areas not likely to redevelop. However, there are many lots that are underdeveloped. See zoning in Attachment F.
Future Stormwater Point Flow Discharges	No change anticipated.	Require level spreaders and prohibit point discharges for areas that discharge to Carbon River South Unnamed Tributary.
Future SWM Facilities	No change anticipated.	Will be provided in accordance with Orting Municipal Code.
Low-Impact Development	No change anticipated.	Will be provided where technically feasible in accordance with Orting Municipal Code.

Notes: Pollutant selection based on Qualitative Procedures for Surface Water Impact Assessments (WSDOT 2009).
SWM = stormwater management