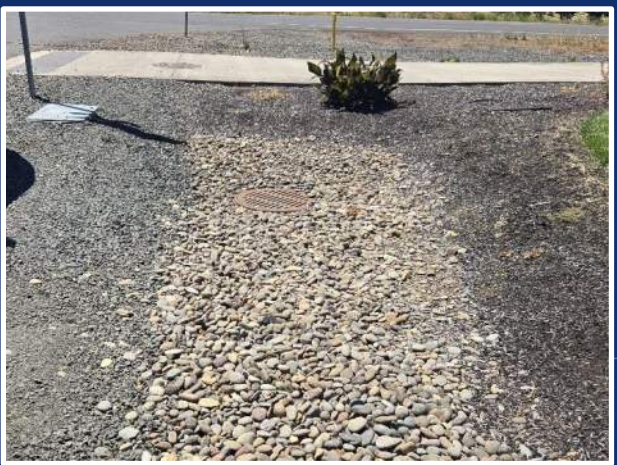
STORMWATER MASTER PLAN



October 2024

STORMWATER MASTER PLAN

PREPARED FOR:

THE CITY OF COBURG, OREGON

PREPARED BY:

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION AND STUDY AREA

The City of Coburg contracted with Branch Engineering, Inc. (BEI) to develop this stormwater master plan. The purpose of this plan is to provide a comprehensive catalog of the existing storm drain system, an analysis of drainage deficiencies, recommendations for system improvements, and review of funding options.

The City of Coburg is in Lane County, 8-miles north of Eugene, Oregon and approximately 2.2-miles northeast of the confluence of the McKenzie River and Willamette Rivers. According to the 2020 census, the population within city limits was determined to be 1,306 people. The City resides in an area of relatively flat topography with slopes within city limits generally not exceeding 20-percent (approximately 11-degrees), and then only for short distances. The average elevation within city limits is approximately 400-feet above sea level.

Two Hydrologic Unit Code (HUC) 12 subwatersheds overlap the City of Coburg, the Dry Muddy Creek-Muddy Creek subwatershed (1709000306) and Sring Creek – Willamette River (170900030601). A contributing channel to the Muddy Creek Irrigation Canal flows through the industrial areas along the east side of Coburg. The Mill Slough lies west of Coburg, with contributing drainageways bordering Coburg to the south and west. The county roads running through Coburg have corresponding stormwater infrastructure owned by the county. The County stormwater infrastructure drains to City owned swales. Soils within the City are well drained and suitable for a variety of retention-based stormwater infrastructure. As a result, stormwater infrastructure is primarily retention focused, utilizing infiltration facilities with overflows connected to the county drainage system or to adjacent drainageways. A more detailed description to the study area is provided in Section 4.

The scope of this document includes an analysis of existing City stormwater infrastructure, identification of drainage deficiencies, an analysis of existing regulations affecting stormwater development within the City, and a discussion of current and potential funding mechanisms for future stormwater capital improvement projects. An analysis of existing County stormwater infrastructure within city limits and streams crossing the City is beyond the scope of this document.

1.2 EXISTING FACILITIES

The City of Coburg utilizes several regional stormwater facilities to detain and treat runoff from the adjacent areas of the City, two connected detention swales in the northeast area of the City, shown in Figure 1, a series of detention swales in the northwest area, shown in Figure 2, and a retention facility in the southwest area of the City, shown in Figure 3. Two of these facilities have overflows into either the tributary to Muddy Creek or to the Mill Slough. A More detailed description of existing City infrastructure is provided in Section 5.1.

The county roads running through Coburg, Willamette St. and E. Pearl St., drain to the facilities in the west side of Coburg (Figures 2 and 3). The County infrastructure includes stub outs with the intention of connecting City infrastructure. Recent residential developments have either retained stormwater entirely on site like Coburg Crossing, or retained on site with larger storm events being discharged to surface drainage, like Hatfield Estates and Coburg Creek, rather than connect to the county storm drain pipes. Recent City infrastructure improvements have included overflow connections to the County drainage system in Willamette St. Historically, the well-drained soils have been utilized in planning for managing stormwater, with most roads and properties within city limits draining to gravel shoulders with the expectation that stormwater will infiltrate underlying

soils. These developments and their associated stormwater infrastructure are also detailed in Section 5.1.

Interviews with City Public Works staff were performed to determine where known drainage problems exist across the City. BEI staff performed site visits that included observations of City facilities after rainfall events and later in the rainy season when soils are saturated to determine how well runoff is managed by existing facilities.

Figure 1: Detention swales in NE of Coburg, with overflow draining into tributary to Muddy Creek

Figure 2: Detention swales in NW of Coburg, with overflow to Mill Slough

Figure 3: Infiltration swale in SW area of city

1.3 RECOMMENDATIONS

Two types of recommendations are provided in this document; recommendations for expanding stormwater development standards and recommendations for infrastructure improvement projects.

Recommended updates to City stormwater development are based on preparing the City for future National Pollution Discharge Elimination System (NPDES) permitting requirements, specifically Phase II municipal separate storm sewer system (MS4) permitting. Updates to stormwater standards should clearly define triggers for stormwater requirements, and provide guidance for implementation. The analysis of current City stormwater development code and recommendations are provided in Section 3.3.

Recommendations for infrastructure improvements were based on observations of drainage deficiencies, an analysis of past improvements, the resulting performance of said improvements, discussion with City staff, and an analysis of best management practices suited to the site conditions. Recommended improvements were categorized by relation to street infrastructure deficiencies or directly to stormwater facility malfunction. Recommendation details are provided in Section 5.2.

City streets generally do not include sidewalks for pedestrian and bicycle traffic, instead relying on gravel shoulders and street access. Areas with inadequate drainage cause hazards to vehicular, bicycle, and pedestrian traffic. When large areas of ponded waters extend across street surfaces, it reduces access to bicycle and pedestrian traffic, and increases risk for all traffic.

Street grading deficiencies and degraded pavement surfaces reduce drainage efficiency, causing ponding and reducing the life of the pavement surfaces. When stormwater is allowed to pond on pavement surfaces, it can seep into the subgrade, causing degradation and leading to severe

distresses. The highest priority improvement projects involve reconstructing degraded pavement and regrading deficient street surfaces to improve stormwater drainage and eliminate ponding. These recommended projects include the construction of adjacent stormwater infiltration facilities to effectively manage stormwater runoff.

Two high priority areas are E. McKenzie St. between N. Coleman St. and N. Skinner St., where pavement is severely distressed and ponding is present in road surfaces after minor rainfall events, and S. Skinner St. where pavement is deficient and water ponds along the sides of the road. Figures 4 and 5 show the deficiencies in these two areas.

Figure 4: E. McKenzie St. between N. Coleman St. and N. Skinner St. showing degraded pavement and resulting ponded water after a mild rainfall event.

Figure 5: S. Skinner St. just south of E. Pearl St. showing roadside ponding and pavement distresses.

The other category of stormwater deficiencies identified within city limits are related to a lack of infiltration capacity in existing roadside stormwater facilities, which may indicate clogged infiltration media, or a lack of capacity in roadside shoulder media. In these cases, the recommendation includes the installation of new infiltration trenches for retention of stormwater runoff. These projects are lower priority, as street surfaces adequately drain and ponding occurs within roadside shoulders, extending only partially across road surfaces after smaller rainfall events. They should be addressed after higher priority projects with the understanding that large rainfall events will lead to ponding extending across travel ways increasing the risk to traffic.

Figures 6 and 7 show ponded water extending from the edge of road surfaces into the travel way. Figure 6 shows E. McKenzie St. looking west toward N. Miller St. Figure 7 shows E. Locust St. looking west to N. Diamond St. where ponded water accumulates just east of the curve in N. Diamond St., extending from the north side of the road and partway across the street surface. The recommendation to resolve these drainage deficiencies is to install new infiltration trenches along the road shoulders.

Figure 6: E. McKenzie St. looking west to N. Miller St. showing ponded water on road surfaces due to a lack of infiltration capacity in shoulder facilities.

Figure 7: Ponded water on E. Locust St. due to deficient roadside infiltration, looking west to N. Diamond St.

1.4 FUNDING FOR CAPITAL IMPROVEMENTS

The City may fund capital improvement projects through a variety of funding mechanisms including through avenues currently utilized like the general fund and government grants. Other options include establishing stormwater service fees, system development charges, expanding the utilization of federal and state grants and loans, and utilizing bonds. These options are discussed in full in Section 6.

2.0 INTRODUCTION

This stormwater master plan documents the current state of the City of Coburg's stormwater system, provides guidance on managing the City's existing stormwater infrastructure, and managing stormwater for the following 20-year planning period. The overall need and objectives of this master plan, the approach taken in preparing the plan, and the overall plan organization are discussed in this section.

2.1 NEED FOR THE MASTER PLAN

The City of Coburg contracted with KCM, Inc. to develop a Storm Drainage Master Plan in 1999. The US Census Bureau reported the City's population in 1999 as 845, with a population in 2020 of 1,306. Significant new developments and infrastructure improvements have occurred within the City during the last 25 years. The direction taken by development during this time frame no longer aligns with the 1999 master plan. According to Portland State University Population Research Center, the forecasted Average Annual Growth Rate (AAGR) between 2020 to 2045 in the City of Coburg is 1.6%. Based on this population growth rate, the population in 2045 is expected to be 2,092.

The 1999 Storm Drainage Master Plan made the following series of recommendations:

1) Enter into an agreement with Lane County to discharge stormwater to the County's system in Coburg and Van Duyn Roads.
2) Determine the feasibility of implementation and projected rates for a city-wide stormwater utility. Considering the current makeup of residential and industrial lands, a stormwater utility should be capable of generating annual funds for maintenance and small works needs in the range of $25,000.
3) Set aside funds for annual maintenance needs and small capital projects from the general fund or from a new stormwater utility.
4) Prepare and apply stormwater design standards for new development.
5) Implement Miller Street/Mill Street project in coordination with Lane County, to resolve existing flooding problems in the area. Total project costs assuming a 24-inch diameter pipeline for 1100 feet, @ $5 per inch-diameter-foot, and a 50% markup for contingency and engineering, are estimated at $200,000.
6) Implement new two-stage dry wells on an as-needed basis using stormwater utility funds or general funds.

Some of the recommendations have been implemented since the 1999 master plan was issued. The City of Coburg relies upon the County drainage system to connect overflow pipes from storm facilities in newer developments. During the last 25 years since the previous master plan, annual maintenance and small capital projects have been implemented from the general fund, Small City Allotment Grants and other grant funds, and a transportation utility fee for transportation related projects. Flooding was not visible in the intersection of N. Miller St. and E. Mill St. and overall roadway conditions are fair to good.

The remaining recommendations were not implemented during this time span, some of which are still critical items. Implementing additional funding mechanisms for future capital projects is a high priority for the City. A more thorough and current inventory of City stormwater infrastructure is critical to planning and obtaining capital funding. Expanding and providing more detailed design standards, including specific triggers for stormwater requirements is another critical goal for the City during the next planning period.

2.2 OBJECTIVES

The primary objectives of this master plan are to provide guidance for future city stormwater improvement projects. The specific objectives of the master plan are the following:

1. Provide a stormwater regulatory assessment.
2. Provide a current inventory and assessment of public stormwater facilities with supportive location maps.
3. Provide prioritized improvement recommendations with associated cost estimates and priorities.
4. Provide a comprehensive analysis of the City's current funding mechanisms and options to fund future capital projects.

2.1 AUTHORIZATION

BEI was authorized by the City in 2018 to provide municipal stormwater planning services and assist in the expansion of the City's stormwater management program. BEI worked closely with City personnel to determine the master plan goals and areas with known drainage problems.

3.0 REGULATIONS AND RECOMMENDED POLICIES

3.1 FEDERAL REGULATIONS

3.1.1 CLEAN WATER ACT

The Clean Water Act (CWA) defines the federal regulations governing the discharge of pollutants into Waters of the US, providing the guidelines for permitting programs implemented at the state level and federal level. Regulatory requirements defined by the CWA cover both point and non-point sources of pollutants. Point source pollution from municipal, industrial, and construction sources are regulated under the NPDES permit program. Non-point sources of pollution include stormwater runoff from existing and new public and private developments that may carry pollution from impervious surfaces, primarily when these developments require disturbing Waters of the US (Waters of the State).

CWA SECTION 303(D)

While NPDES permits cover point sources of pollution in stormwater, the CWA also provides regulations for non-point sources of pollution in stormwater, primarily through the Total Maximum Daily Load (TMDL) program under section 303(d). The Oregon Department of Environmental Quality (ODEQ) identified beneficial uses for all waters of the state, including the following.

- Fish and aquatic life
- Water contact recreation
- Domestic water supply
- Fishing
- Industrial water supply
- Boating
- Livestock watering
- Aesthetic quality
- Wildlife and hunting
- Hydropower
- Commercial navigation and transportation

As part of the TMDL process, ODEQ developed water quality standards to protect beneficial uses and performed testing to identify pollutant sources that impact beneficial uses and the levels of these pollutants in surface waters. ODEQ identified and included impaired surface waters on the 303(d) list of impaired waters of the state, and developed TMDLs to define the pollutant loading capacity of impaired waterbodies.

The City of Coburg is required to implement ODEQ's water quality management plan for the Willamette Basin TMDLs. The three Willamette Basin TMDLs are for temperature, bacteria, and mercury. The City of Coburg's TMDL Implementation Plan developed in 2008 defines how Coburg plans to address these TMDLS in the. The strategy identified in the TMDL Implementation Plan to address temperature is to identify and prioritize riparian restoration and protection areas. The City identified many strategies to address the bacteria TMDL including addressing pet waste through providing pet waste stations in parks and adopting a pet waste pick-up ordinance, educating residents about stormwater quality and the need to regularly inspect and maintain septic systems, investigating and tracking illegal discharges, requiring state erosion control permit (1200C) approval prior to new development approval, and requiring water quality control facilities for new and redevelopment residential and commercial areas.

The strategies the City of Coburg identified to address the mercury TMDL are similar to the bacteria strategies. Sources of mercury in the Willamette Basin are primarily from eroded native soil carried to waterways by stormwater runoff. Establishing water quality treatment requirements for new developments, requiring state erosion control permit (1200C) approval prior to new development approval, and informing single lot developers of state erosion control permit (1200C) requirements

are three ways identified in the City's TMDL Implementation Plan for reducing mercury concentrations in stormwater discharges.

Additional TMDLs and impairment classifications are also identified for smaller watersheds. TMDLs assigned at the Subbasin level, watershed level, and stream level should be taken into consideration when developing stormwater management strategies. The HUC12 watersheds that overlap Coburg area are also classified as impaired for different water quality parameters. The Dry Muddy Creek-Muddy Creek HUC12 Watershed is classified as impaired for Dissolved Oxygen during the spawning season and for E. coli. The Sring Creek-Willamette River HUC12 watershed is impaired for Dissolved Oxygen year-round, Dissolved Oxygen during the spawning season, and for E. coli. Two of the waterways within the vicinity of Coburg, an unnamed tributary to Muddy Creek and Muddy Creek, are also impaired. The unnamed tributary to Muddy Creek that flows along Coburg Industrial Way is impaired for E. coli, and Muddy Creek is impaired for dissolved oxygen during the spawning season.

CWA SECTION 319

Section 319 established a national program to control nonpoint sources (NPS) of water pollution. States must develop assessment reports and state and local programs for implementation NPS pollution control plans. It also provides the guidelines for providing funds to state and local agencies for the implementation of approved nonpoint source management programs. USEPA awards Section 319 grant funds to states to support enforcement, technical assistance, financial assistance, education, training, technology transfer, and demonstration projects to achieve best management practices (BMPs).

CWA SECTION 401

Section 401 requires that applicants for Federal permits or licenses, including removal/fill permits under Section 404 and NPDES permits under Section 402, obtain a 401 Water Quality Certification demonstrating that the permitted or licensed activity does not violate applicable water quality standards. Section 401 Water Quality Certifications are issued by ODEQ.

CWA SECTION 402

Non-point sources of pollution common in small cities include wastes generated from traffic, residential areas, sediments, and any other wastes deposited on the ground surface. Traffic using paved surfaces generate hydrocarbon and metal pollution; residential areas are sources of excess nutrients from fertilizers, toxic chemicals from pesticides and herbicides, and bacteria from pet wastes; atmospheric deposition of is a primary source of mercury pollution in the Willamette Valley; metals and chemical contaminants can be carried with deposited sediments into storm drain systems and into surface waters; and eroding drainageways are another source of sediments in surface waters.

One of the primary ways the CWA regulates stormwater is through the National Pollutant Discharge Elimination System (NPDES), which defines permit requirements for municipal, industrial, and construction stormwater. Oregon is authorized by the USEPA to implement these permits at the state level. Municipal NPDES MS4 Phase I and Phase II permits are required for cities based on population size. Cities with populations greater than 100,000 require Phase I MS4 permits. Cities with populations less than 100,000 require a Phase II MS4 permit when they are either designated by the Census Bureau as an urban area or designated by ODEQ as requiring a Phase II MS4 permit. According to the Code of Federal Regulations (CFR), Title 40, Part 122.34, the purpose of Phase II MS4 permits is "to reduce the discharge of pollutant to the maximum extent practicable (MEP), to

protect water quality, and to satisfy the water quality requirements of the Clean Water Act." The City of Coburg does not meet these qualifiers and is not required to obtain a Phase II MS4 permit.

The City of Coburg should prepare for future growth and updates to TMDLs by implementing stormwater management strategies that align with the Phase II MS4 permit. This requires implementing the following six control measures.

1. Public education and outreach program about the impacts of stormwater on receiving waterbodies.
2. Public involvement and participation program.
3. Illicit discharge and detection program.
4. Construction site runoff control program.
5. Post-construction site runoff control program for new development and redevelopment.
6. Pollution prevention and good housekeeping program for municipal operations.

NPDES permits covering industrial facilities within city limits only apply to private industry, while construction sites within the City are all subject to NPDES permitting depending on the total land area that is disturbed. The NPDES 1200-C Construction Stormwater General Permit was partially implemented by the Phase I stormwater rule, for construction sites disturbing five acres or more of land, and expanded as part of the Phase II stormwater rule to cover construction sites disturbing one to five acres. The 1200-C permit regulates the release of stormwater runoff that encounters disturbed soils on construction sites and applies to all construction activity occurring within city limits, including public improvement projects.

CWA SECTION 404

Section 404 relates to impacting wetlands and waterways through dredging or filling activities, and requires that no discharge of dredged or fill material be permitted in waters of the U.S. if a practicable alternative exists that is less damaging to the aquatic community, or the nation's waters would be significantly degraded. These permits are usually obtained from the US Army Corps of Engineers (ACOE) and DSL as a joint permit and apply to private and public developments.

The ACOE and DSL have different events that trigger the need for a permit. The ACOE requires a permit for any amount of material to be removed or placed within waters of the US. DSL maintains a statewide wetland inventory (SWI) map showing approximate locations of wetlands within the City. Additionally, a Local Wetland Inventory (LWI) was performed for the City about 25 years ago. These two resources can inform developers and the City of the likelihood of wetlands being present in desired development areas. If wetlands are located near these areas, a wetland delineation should be performed to determine if wetlands exist on the sites of interest. When wetlands are found on desired development sites, developers should submit a jurisdictional determination request to the ACOE to find out if a permit will be needed from the agency. DSL has different triggering events, which are discussed in Section 3.2.2 of this report.

The SWI and LWI identify wetlands along the east and west edges of the City, primarily along the drainageway bordering the west edge of the City and contributing to the Mill Slough, and along the west side of the Interstate-5. Additional areas of wetlands are found at the north end of Coburg Industrial Way. There is some variation between the SWI and LWI. As a result, both of these resources should be consulted prior to initiating development projects. Additional information about the LWI is included in Section 4.8. The wetlands identified on the LWI is included in Figure 11.

3.1.2 SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) regulates public drinking water systems and requires treatment, disinfection, testing, and source water protections. The USEPA sets the standards under the SDWA, and state drinking water programs provide the direct oversight of water systems. Source water protections include protecting surface water and groundwater sources through protecting the integrity of streambanks and riparian zones, implementing best management practices for agriculture and forestry activities, as well as reducing runoff pollution and implementing stormwater best management practices.

The SDWA provides the requirements for state-implemented Underground Injection Control (UIC) programs, regulated under 40 CFR part 144-146, to prevent contamination of underground drinking water sources. The SDWA in conjunction with the CWA and the Oregon Groundwater Quality Protection Act of 1989 all require protection of groundwater from contamination. The Water Quality Division of the ODEQ oversees the implementation of the Groundwater Quality Protection Act and the related sections of the CWA and SDWA through the designation of Groundwater Management Areas, Underground Injection Control Programs, and wastewater and onsite sewage permitting programs. More information about state UIC and groundwater protection regulations is provided in Section 3.2.3.

3.1.3 ENDANGERED SPECIES ACT

The purpose of the Endangered Species Act (ESA) of 1973 is to conserve and protect endangered and threatened species and their habitats. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) administer the ESA. The USFWS is responsible for terrestrial and freshwater organisms, while the NMFS is responsible for marine wildlife. Under the ESA, wildlife may be classified as “endangered” or “threatened.” According to the USFWS, an endangered species means any species which is in danger of extinction throughout all or a significant portion of its range. A threatened species means any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

The nearest areas containing threatened and endangered species are southeast of the City of Coburg at the Coburg Ridge Preserve and south to the McKenzie River. There are no threatened and endangered species within the Coburg planning area.

3.1.4 FEMA FLOODPLAIN MANAGEMENT REQUIREMENTS – FEMA 480

Floodplains are areas that have a 1% chance of becoming inundated with floodwaters within any given year. Floodplains create important habitat including river channels, riparian area, and wetlands, which provides the elements needed for diverse flora and fauna in these areas. See Figure 11 for mapped flood hazard areas in and around the City of Coburg. The Oregon Department of Land Conservation and Development (DLCD) works with FEMA and local governments to implement the National Flood Insurance Program (NFIP) and help local governments maintain their NFIP status.

Local governments must regulate activities that occur within FEMA Special Flood Hazard Area (SFHA) including ensuring that new developments adhere to FEMA floodplain permitting and requirements. Additionally, local governments must educate residents of local flood hazards, floodplain regulations, and other state and federal permits required for development. Development projects within the FEMA SFHA and/or within a threatened or endangered species habitat may also require a Biological Assessment to describe how the proposed development will impact the existing floodplain and instream habitat functions.

3.2 OREGON STATUTES, REGULATIONS, AND PERMITS

3.2.1 OREGON DRAINAGE LAW

Oregon drainage law, which comes from court decisions rather than legislative law, protects the normal course of natural drainage across adjoining properties. For a landowner to drain water onto lands of another in the State of Oregon, one of two conditions must be satisfied initially: 1. the lands must contain a natural drainage course; or, 2. the landowner must have acquired the right of drainage supported by valuable consideration. Oregon drainage law applies to city development projects just as it does to private land development projects.

Case law dictates the following:

1. A landowner may not divert water onto adjoining land that would not otherwise have flowed there. “Divert water" includes but is not necessarily limited to:
    a. water diverted from one drainage area to another, and,
    b. water collected and discharged which normally would infiltrate into the ground, pond, and/or evaporate.
2. The upper landowner may not change the place where the water flows onto the lower owner's land. (Most of the diversions not in compliance with this element result from grading and paving work and/or improvements to water collection systems.)
3. The upper landowner may not accumulate a large quantity of water, then release it, greatly accelerating the flow onto the lower owner’s land. This does not mean that the upper landowner cannot accelerate the water at all; experience has found the drainage to be improper only when the acceleration and concentration were substantially increased.

3.2.2 OAR 141, DIVISION 85 AND 86

Oregon Administrative Rule 141, Divisions 85 and 86 regulate removal and fill activities in Oregon wetlands, streams, lakes, rivers, and other Waters of the State. Developers who plan to remove, add, or move more than 50 cubic yards of material from within wetlands or other waters, or any amount of material from within streams designated as Essential Salmonid Habitat, are required to obtain a removal-fill permit from the Oregon Department of State Lands (DSL). Removal-fill permits are usually issued as joint permits from DSL and the ACOE along with permits from other state and federal agencies.

Local governments are required to conduct local wetland inventories and adopt wetland protection programs to meet Statewide Planning Goal 5. This involves performing a wetland inventory and assessment of the value and significance of the mapped wetlands. Wetland protection plans help local communities meet Stateside Planning Goal 14, requiring cities to estimate future growth needs, without impacts to wetlands by allowing local governments to remove significant wetlands from the inventory of buildable land.

3.2.3 OAR 340, DIVISION 40

This OAR implements the CWA and SDWA regulations relating to protecting the quality of groundwater resources in alignment with Statewide Planning Goal 6. The ODEQ designates Groundwater Management Areas (GWMAs) when elevated contaminant concentrations are present in groundwater in a certain region. Designating a GWMA allows for the formation of a groundwater management committee focused on developing an action plan and coordinating with state regulators to restore groundwater quality. The Southern Willamette Valley Groundwater Management Area, designated as such for elevated nitrate levels, overlays the City of Coburg, which allows regulatory

bodies to require additional protections from new developments to demonstrate that Nitrate levels in stormwater runoff will not impact groundwater within the GWMA.

The ODEQ also regulates waste injection into the ground through the UIC program. While Coburg relies on infiltration to control stormwater throughout most of the City, the ODEQ currently shows no active UIC permits within the city limits. The most common UIC systems are stormwater drywells and requirements for permitting systems depends on the depth to the groundwater table, and the land use for the property implementing the infiltration facilities. Coburg uses shallow stormwater infiltration systems due to the presence of well drained soils, rather than deep infiltration facilities.

3.2.4 OAR 340, DIVISION 42

The ODEQ is required to meet the requirements of the CWA and USEPA to develop TMDLs for water bodies on the state's polluted waters list, the 303(d) list. Local governments were identified as Designated Management Agencies and tasked with developing TMDL Implementation Plans as a tool to reduce pollutants and meet water quality goals in the future. The City of Coburg developed a TMDL Implementation Plan in 2008 to meet this requirement.

Two HUC12 watersheds that cover part of Coburg are classified as impaired for 1st through 4th order streams. The Dry Muddy Creek-Muddy Creek HUC12 watershed streams have impaired statuses for water quality parameters. The Unnamed Tributary to Muddy Creek that flows north through eastern Coburg has a Category 4 classification as impaired for E. coli. The main Muddy Creek channel, northeast of Coburg, has a Category 5 classification as impaired for dissolved oxygen during the spawning season. The Sring Creek-Willamette River watershed also has an impaired status for dissolved oxygen and E. coli, but the Mill Slough flowing from west Coburg is currently in compliance with water quality standards.

3.2.5 OAR 635, DIVISION 412

The Oregon Department of Fish and Wildlife (ODFW) implements fish passage regulations under this OAR, which require developers altering or placing artificial obstructions in waterways to allow for passage of native migratory fish both upstream and downstream. This affects the placement of bridges and culverts in waterways containing these fish species, and affects not only new structures, but existing structures under certain conditions. Existing structures that do not provide for fish passage must be brought into compliance when trigger events occur, including installation, major replacement, abandonment, or a fundamental change in permit status. ODFW determines what constitutes a trigger event in specific cases. Meeting fish passage requirements should be a consideration when the City plans road widening or reconstruction projects over waterways.

3.2.6 OAR 660, DIVISION 15

OAR 660, Division 15 establishes statewide planning goals carried out by the DLCD and implemented by local governments. Goal 5 is to protect natural resources and conserve scenic and historic areas and open spaces, including resources impacted by stormwater practices like riparian corridors, wetlands, scenic waterways, and groundwater resources. Goal 5 includes guidelines for local governments to protect streamflow and water levels to maintain an adequate level for fish and wildlife, pollution abatement, recreation, aesthetics, and agriculture. Significant natural areas that are historically, ecologically, or scientifically unique should be inventoried, evaluated, and plans prepared to conserve these areas.

Goal 6 is to maintain and improve the quality of the air, water, and land resources of the state. The goal states that "all waste and process discharges from future development, when combined with such discharges from existing developments shall not threaten to violate, or violate applicable state

or federal environmental quality statutes, rules, and standards." This goal affects how stormwater runoff is managed, requiring that discharges not exceed the carrying capacity of water resources, degrade water resources, or threaten the availability of water resources.

Goal 7 is to protect people and property from natural hazards, which requires local governments to adopt comprehensive plans that take inventory, implement policies and measures to reduce the risk to people and property from natural hazards, including flood and landslide hazards. Local governments are required to adopt and implement local floodplain regulations that meet the minimum National Flood Insurance Program (NFIP) requirements to be in compliance with Goal 7. Additionally, local governments should implement stormwater management programs to help address risks from these hazards.

3.2.7 OAR 660, DIVISION 11

OAR 660, Division 11 implements Statewide Planning Goal 11 by requiring cities and counties having populations of 2,500 or larger to implement public facility plans for water, sanitary sewer, storm sewer, and transportation facilities. Public Facility Plans are supportive documents to local comprehensive plans with the purpose of assuring that urban development within the UGB is guided and supported by the types and levels of urban facilities and services appropriate for the needs and requirements of the urban areas to be serviced, and that those facilities are provided in a timely, orderly, and efficient arrangement. The City of Coburg does not require a Public Facility Plan for stormwater to meet the requirements of OAR 660, Division 11.

3.2.8 ORS 223.297 TO 223.316

Oregon Revised Statutes 223.297 through 223.316 creates the framework for local governments to impose system development charges (SDCs), one-time charges on new development and certain types of redevelopment. SDCs are a tool to allow cities to recover the cost of expanding infrastructure and the increased demands new developments place on the system.

3.3 LOCAL REGULATIONS

3.3.1 EXISTING CITY POLICIES

The City of Coburg zoning code identifies City regulations for stormwater management. Basic requirements and allowances are outlined for each Zoning District in the City. For example, Highway Commercial (Article VII D.4.d.) allows water quality treatment in setback yards, and Light Industrial (Article VII E.4.b(3) and 5.e.) allows water quality treatment to be provided in setback yards and landscape areas with City approval. Water quality facilities on Campus industrial lots (Article VII F.4.b(3)) can be incorporated into landscape areas.

The Downtown Coburg Overlay District (Article VII K.5.) has more extensive stormwater requirements including that runoff control and requirements to include vegetated stormwater infrastructure.

Article VII 5.a.(1) includes the following text:

The role of landscape has also evolved to promote environmental stewardship, addressing sustainability concerns particularly in relation to biofiltration stormwater management. This section focuses on the ways in which site designs can integrate practices of sustainable stormwater management known as "Low Impact Development (LID)."

Article VII 5.a.(2) reads as follows:

New developments must provide on-site vegetated stormwater infrastructure as necessary, appropriately sized by the site designers to mitigate any increase in stormwater runoff post-development.

Article VII 5.b.(1) reads as follows:

LID is an approach to land development that works with nature in managing stormwater as close to its source as possible to minimize stormwater runoff from buildings and impervious surfaces. Unlike a conventional system that would simply pipe unfiltered stormwater through metal grates straight into drainage channels, LID-based stormwater management approach relies on vegetated natural systems to collect, infiltrate, and filter rainwater on site, often reducing the need for costly underground structures.

Article VII 5.c.(3)(ii) includes recommendations for the use of alternative paving materials in parking areas when conditions allow as well as specific stormwater requirements for parking areas in the Downtown Coburg Overlay District that read as follows:

Landscaping using a combination of vegetated stormwater infrastructure, planters, and shade trees within and/or around the parking area must be provided at a minimum ratio of 10 percent of the gross area of the parking lot.

Article XI E.2.j. includes design standards within the Downtown Coburg Overlay District Development Checklist, which includes the following sections:

a. Applicant or developer of new development, redevelopment, alteration to the footprint, height, or massing of an existing building, or improvement to parcels, demonstrates post-development runoff at or below pre-development rates.

b. New development, redevelopment, alteration to the footprint, height, or massing of an existing building, or improvement to parcels provides on-site vegetated stormwater infrastructure as necessary, appropriately sized by the site designers to mitigate any increase in stormwater runoff post-development.

3.3.2 RECOMMENDED NEW CITY POLICIES

The expansion of City stormwater regulations will prepare Coburg for the potential future implementation of Phase II MS4 permit requirements. Stormwater design standards should include specific language identifying triggers for each requirement, and how to apply each requirement in infrastructure design. The language used in article VII 5.a. and b. does not set specific standards. The City should modify the language to identify triggers with specific numerical limits and requirements.

Stormwater quantity and quality requirements should be triggered for developments of half an acre or more in size and proposing 3,000 or more square feet of new impervious surface. Flow control requirements should be implemented for all new developments to the same standard as the Downtown Coburg Overlay District, with post-development flows not to exceed pre-development flows. Designers should be directed to Eugene's Stormwater Management Manual (ESWMM) for design storm requirements, and detention facilities should be designed to the 25-year, 24-hour design storm.

Designers should also be directed to the ESWMM for design methodology once water quality requirements are triggered. The existing City policies encourage Low Impact Development (LID), or vegetated stormwater treatment. These should be emphasized as the preferred water quality treatment method, with the ESWMM providing the design requirements for these types of facilities.

Developers should be required to provide operations and maintenance plans for proposed stormwater facilities, in accordance with ESWMM requirements.

Erosion control requirements should be included in City policy updates to match the Lane County requirements, with developments disturbing a quarter of an acre or more requiring erosion and sediment control permitting. Additionally, all new development, redevelopment, and land disturbing activities should be required to implement erosion and sediment practices to avoid any construction-related impacts to stormwater quality.

Article VIII should also include more detailed language to prohibit illicit discharges into the storm drain system. The City should expect to respond to reported illicit discharges within two days, faster if the discharge is a risk to public health or the environment. Serious spills must be reported immediately to the Oregon Emergency Response system. These spills include a spill of any amount of oil to waters of the state, oil spills on land of more than 42 gallons, and hazardous materials and reportable quantities equal to 40 CFR Part 302.4.