Summary of Proposed Changes

Administrative Rules, Chapter 109, Division 001 Appendix A – Acronyms and Definitions

Administrative Rules, Chapter 109, Division 004 – Stormwater System

Administrative Rules, Chapter 109, Division 011 – Public Works Operations and Maintenance of Stormwater Facilities

Overview. This document summarizes the proposed changes to the City of Salem Administrative Rules (Rules), Division 001 Appendix A (Acronyms and Definitions) and Division 004 (Stormwater System), hereby referred to as the Stormwater Standards. Also included in this summary are proposed changes to Division 011 (Public Works Operations and Maintenance of Stormwater Facilities), hereby referred to as the Stormwater Facilities O&M Standards.

Most of the proposed changes are the result of requirements contained in the City's Phase I National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer (MS4) permit (Municipal Stormwater Permit), issued by the Oregon Department of Environmental Quality (DEQ) in 2021 under the authority of the federal Clean Water Act. Additional proposed changes are related to maintaining consistency with the Salem Revised Code (SRC), Chapters 70 and 71; better clarifying and organizing requirements specific to submittals and stormwater facility design; and incorporating lessons learned based on the last 10 years of implementing the City's 2014 Stormwater Standards and the City's Stormwater Facilities O&M Standards. Minor editorial changes made solely to address grammatical or typographical errors are not detailed below.

Summary of Proposed Revisions to Rules, Division 001 Appendix A.

Definition of Acronyms. Additional acronyms are defined and referenced in the updated Stormwater Standards including: Department of State Lands (DSL), Washington State Department of Ecology (Ecology), Numeric Stormwater Retention Requirement (NSRR), and Underground Injection Control (UIC).

Cross Referencing. Some terms used in the updated Stormwater Standards have been cross referenced with another term used in the Stormwater Standards or to another chapter of the SRC. These include Earth Material (refer to SRC 82), Erosion (refer to SRC 82), NSRR (see Water Quality Design Storm), and Single-Family Residential Project (see Residential Project).

Consistency with SRC Definitions. Updated definitions and additional definitions have been added in accordance with SRC Chapter 70 (adopted September 23, 2024). Many of these updates and additions address compliance needs with the Municipal Stormwater Permit.

Specific definitions added or modified for consistency with the SRC include those for: BMP or Best Management Practice, Design Storm Event, Drainage Water, Flow Control Exemption Area, Flow Control Facility, Green Stormwater Infrastructure (GSI), Ground Disturbing Activity, Impervious Surface, Large Project, Maximum Extent Feasible, New Impervious Surface, New

Pervious Surface, Pervious Surface, Pollutant, Post-development, Private Stormwater Facility, Project, Replaced Impervious Surface, Residential Project, Stormwater Facility, Stormwater System, Treatment Facility, Waterway, Water Quality Design Storm Event, and Wetland.

Modified Definitions (Clarification or Revised for Compliance). Existing terms and definitions were updated for consistency with their use in the updated Stormwater Standards. These terms and associated definitions are used in the updated Stormwater Standards only and are reflected in Table 1 (see strike out and underlines to show modifications made). A rationale for the modification is also provided.

Added Definitions (Clarification or Revised for Compliance). New terms and definitions were added for consistency with their application and use in the updated Stormwater Standards. These new terms were either added based on the Municipal Stormwater Permit requirements or to address implementation needs and are reflected in Table 2. These terms and associated definitions are not used in the SRC.

Table 1. Modified Definitions in Administrative Rules, Division 001	
Proposed Change	**Rationale**
Green Stormwater Infrastructure (GSI) – A stormwater facility that uses vegetation, soils, or natural processes to promote ~~mimics~~ natural surface hydrologic functions throughout infiltration or evapotranspiration~~, or that involves stormwater reuse~~. Stormwater facilities designed for full infiltration (no underdrain) or partial infiltration (with underdrain) of stormwater runoff are considered GSI.	Definition updated for consistency with SRC Chapter 70 and Municipal Stormwater Permit definition of Green Infrastructure (GI). Clarification added that stormwater facilities that promote infiltration qualify as GSI.
Predevelopedment. The conditions on a site in its natural or undeveloped state, generally characterized by a mixture of trees, brush, ~~weeds~~ forbs, and grass, which is used to determine the allowable post-development discharge peak rates and flow volumes. The runoff characteristics for calculating allowable, predeveloped outflow are based on the combination of woods and grasslands (see calculated curve numbers in Appendix 4D).	Definition added to Division 001 based on updated SRC definition. Modifications to SRC definition include adjustment of terminology (weeds to forbs) and reference to the predeveloped runoff characteristics in the updated Stormwater Standards, Appendix 4D.
Pretreatment. A sedimentation ~~basin,~~ manhole or other structure or device used to remove sediment and debris from stormwater prior to entering a stormwater facility. These structures do not meet the requirements for stormwater treatment only and must be used as part of a treatment train. Appendix 4F includes a list of acceptable manufactured facilities for stormwater pretreatment.	Updated reference to typical pretreatment facilities and included reference to acceptable pretreatment facilities in the updated Stormwater Standards, Appendix 4F.
Private Stormwater System. Owned and operated by a private property owner(s), a stormwater ~~collection and conveyance~~ system located outside the building envelope which serves one or multiple ~~building storm drains~~ properties and includes ~~storm drains,~~ catch basins, area drains, or other ~~drainage~~ stormwater facilities. Generally synonymous with private storm sewer and private storm drain.	Updated to simplify the definition and reference updated terminology in the Stormwater Standards including “storm system” and “stormwater facilities”.
Retention Facility. A facility designed to receive and hold ~~stormwater runoff~~ and provide water quality treatment to drainage water. Rather than storing and releasing the entire runoff volume, retention facilities ~~permanently retain~~ store a portion of the water on site, where it infiltrates or evaporates ~~or is absorbed by surrounding vegetation~~. In this way, the full volume of stormwater that enters the facility is not released off site.	Updated to reflect that retention facilities that infiltrate or utilize evapotranspiration of drainage water meet water quality performance standards.
Swale. A vegetated strip of land designed to attenuate stormwater runoff and clean it with natural soil and vegetation filters through filtration ~~and then infiltrate it into the ground~~.	Updated to clarify that swales are no longer classified as an infiltration or partial infiltration facility. Instead, their use and application is as a filtration facility.

Table 2. Added Definitions in Administrative Rules, Division 001	
Proposed Change	**Rationale**
Downstream Analysis. Calculation of peak flows, velocities, and hydraulic effects at critical downstream locations to ensure that proposed projects do not increase post-development peak flows at these locations.	This definition was added, as a downstream analysis is a potential requirement for final design submittals.
Drainage Basin. A geographical area of land where all surface water converges to a single point.	This definition was added as a term used throughout Division 004.
Drywell. A subsurface structure (e.g. cylinder or vault) with perforated sides and/or bottom, used to infiltrate stormwater into the ground. A drywell is an Underground Injection Control structure by the Department of Environmental Quality (DEQ) definition and must conform to DEQ standards.	This definition was added because a drywell is an approved stormwater facility option. The definition helps relate drywell applications to DEQ's UIC regulations.
Filtration Facility. A stormwater facility designed to exclusively treat stormwater runoff by filtration through media. A filtration facility does not promote infiltration and may be lined.	This definition was added to describe a category of stormwater facilities in Division 004 that meet the City's water quality performance standards, but not through infiltration in the native soil.
Impervious Area Reduction Facility. A facility used to intercept rainfall that would otherwise be impervious, such as a roof or sidewalk. Such facilities include pervious pavement and eco roofs. These facilities are not designed to manage run-on but can be used to treat or infiltrate a design storm event within the facility footprint.	This definition was added to describe a defined category of stormwater facilities and LID approaches described in Division 004 that meet the City's infiltration requirements and water quality performance standards.
Infiltration. The process by which stormwater penetrates the soil.	This definition was added for consistency with the City's Municipal Stormwater Permit.
Infiltration Facility. A stormwater facility designed without a liner or underdrain to treat and fully infiltrate a design storm event.	This definition was added to describe a category of stormwater facilities in Division 004 that meet the City's infiltration requirements and water quality performance standards, solely through infiltration in the native soil.
Low Impact Development (LID). A comprehensive land planning and engineering design approach to stormwater management with a goal of mimicking the pre-development hydrologic regime of urban and developing watersheds.	This definition was added for consistency with the City's Municipal Stormwater Permit requirements. Adherence to the post-construction stormwater standards of the permit require application of LID (as a land planning practice) to minimize stormwater runoff as well as stormwater facilities to manage stormwater runoff.
Partial Infiltration Facility. A stormwater facility designed without a liner but with an underdrain to treat and promote infiltration of a design storm event.	This definition was added to describe a category of stormwater facilities in Division 004 that meet the City's infiltration and water quality performance standards, but not solely through infiltration in the native soil.
Pervious Pavement. Pervious concrete, porous asphalt, or permeable paver blocks that infiltrate drainage water.	This definition was added to describe a type of impervious area reduction technique referenced in Division 004, as well as for consistency with the definition of pervious surface.

Seasonal High Groundwater. The highest level that the permanent groundwater table or perched groundwater may reach on a seasonal basis.	This definition was added to help validate technical infeasibility criteria related to the use of stormwater retention and infiltration.

Summary of Proposed Revisions to Rules, Division 004

Modifications to the City's Stormwater Standards, as documented as Chapter 109, Division 004 of the City of Salem Administrative Rules include: 1) regulatory changes to comply with the City's 2021 Municipal Stormwater Permit; and 2) editorial and organizational changes, driven by updates to City planning processes and observed implementation challenges since adoption of the City's 2014 Stormwater Design Standards.

Regulatory-driven changes include the following:

1. Updated impervious area thresholds for consistency with the Municipal Stormwater Permit.

   The City's Large Project impervious area threshold was reduced from 10,000 square feet to 5,000 square feet in conjunction with the 2021 Municipal Stormwater Permit. Large project references were adjusted in the updated Stormwater Standards to reflect the adjusted impervious area threshold. No changes to the Residential (formerly Single-Family Residential) project impervious area threshold, nor the project sizes applicable to use of the Simplified Method for stormwater facility sizing were made. Language was added to clarify application of a Large project designation and requirements to land divisions for consistency with SRC Chapter 71.

2. Promoting and prioritizing retention as the preferred method for stormwater treatment where feasible.

   The City's 2014 Stormwater Standards historically required the use of Green Stormwater Infrastructure (GSI) to the Maximum Extent Feasible (MEF) for new and redevelopment activities that meet defined project thresholds. Based on the City's definition of GSI, this means that infiltration-based stormwater facilities are prioritized where feasible.

   As part of the updated Stormwater Standards, the use and application of GSI (i.e., a stormwater facility that uses vegetation, soils, or natural processes to promote natural surface hydrologic functions through infiltration or evapotranspiration) is highlighted upfront in the Standards (see Section 4.4 – General Design Requirements). Use of GSI is focused on management of the water quality design event (in accordance with the intent of the Municipal Stormwater Permit to require a numerical stormwater retention requirement). Additional guidelines related to GSI applications are provided in the form of technical infeasibility criteria (see Table 4-1) to indicate where infiltration is not possible due to safety concerns or site limitations. Limitations related to the design infiltration rate of the soil (< 0.5"/hr) are maintained from the 2014 Stormwater Standards, indicating when full or partial infiltration

stormwater facilities should be used. Finally, performance standards (Section 4.5) are documented to establish how stormwater facilities using infiltration and retention should be prioritized.

3. Addressing the City's strategy for incorporating Green Stormwater Infrastructure and Low Impact Development.

   In accordance with the City of Salem's Municipal Stormwater Permit, the City submitted an LID/ GSI Strategy to DEQ in November 2023. The City's LID/ GSI Strategy outlined how the City's 2014 Stormwater Standards promote GSI and site planning practices (i.e., LID principles), as well as listed potential updates to the Design Standards to ensure that LID/ GSI are the preferred and commonly used approaches to site development.

   To adhere to recommendations in the City's LID/ GSI Strategy, site planning practices, including preservation of trees and vegetation, minimizing site disturbance areas, and minimizing soil compaction, that were previously and more generally referenced in the 2014 Stormwater Standards are identified as specific LID practices in Section 4.3 (Site Assessment and Planning). A definition of LID was added to Division 001, Appendix A of the Administrative Rules (see Table 2 above).

   To ensure that City staff have an upfront understanding of project features, infiltration feasibility, and physical attributes of a proposed development, the City developed a Site Assessment Checklist to be submitted with the Land Use Application. The Site Assessment Checklist includes documentation of site information, preliminary mapping, and documentation of infiltration feasibility to help ensure development can adhere to the City's LID/ GSI Strategy and Municipal Stormwater Permit requirements. The Site Assessment Checklist is provided in the updated Stormwater Standards, Appendix 4A, which includes additional descriptions of submittal requirements.

Implementation-related changes include the following:

1. Reorganization of the Design Standards. The organization of Division 004 was updated to move general policies and procedures upfront and consolidate technical information related to stormwater facility sizing in one location (Section 4.5.(b) and (c)). Design criteria for stormwater facilities were consolidated in one section (Section 4.6) and organized based on stormwater facility application (GSI, filtration facilities, flow-control facilities). Design information related to each stormwater facility was standardized with consistent subheadings.

   Forms and checklists (i.e., Site Assessment Checklist, Simple Sizing Form) were moved to Appendix 4A of the Stormwater Standards.

2. Prioritization and categorization of stormwater facilities. Stormwater facilities listed in Section 4.6 were reviewed and categorized based on whether they qualify as a GSI

facility (i.e., an infiltration or partial infiltration facility), a filtration facility, or a flow control facility. Approved stormwater facilities by category are summarized in the updated Stormwater Standards, Table 4-3.

Leach lines, which are traditionally a stormwater facility used in residential applications, were added to the updated Stormwater Standards as an allowable stormwater facility. Parking lot detention basins, which were listed as a flow control facility in the 2014 Stormwater Standards, were removed as a stormwater facility because of challenges with the long-term tracking and preservation of parking lots as a stormwater facility (for Municipal Stormwater Permit compliance) as well as potential challenges with redevelopment if parking lots were defined as a stormwater facility.

3. Removal of soil compaction requirement for partial infiltration stormwater facilities. Section 4.3 of the proposed Stormwater Standards was updated to reflect that the site planning practice to minimize soil compaction in areas where infiltration facilities will be used applies when only full infiltration stormwater facilities have been specified and no longer applies to partial infiltration stormwater facilities.

4. Updated design criteria for stormwater facilities. Design criteria for select stormwater facilities were updated based on consistency with Standard Details and internal and external stakeholder input. Examples of updated design criteria include:

    a. Facility drawdown time (increased from 30 to 48 hours)
    b. Minimum freeboard (established as 2" per Standard Details)
    c. Standardized setback distances for each stormwater facility category based on infiltration potential.
    d. Increased the design infiltration rate for growing media (from 2"/hour to 3"/hour)
    e. Allowed use of walls in detention pond facilities, in accordance with specified design criteria.
       Allowed use of pervious pavement on slopes exceeding 6% with demonstration of adequate conveyance and storage in the design. Previously, installation of pervious pavement was prohibited on slopes over 6%.

5. Consistency in sizing criteria for stormwater facilities and updated calculation methods. Sizing criteria and calculation methods were updated to improve flexibility and application of GSI. Examples of updated sizing criteria include:
    a. Consistent application of a "design" versus "measured" infiltration rate to inform sizing. Throughout the updated Stormwater Standards, infiltration rates are now defined as a "design" infiltration rate, implying use of a factor of safety of 2.0 being applied to the measured infiltration rate of the site. Thus, partial infiltration facilities are required if the "design" infiltration rate of the

site is less than 0.5"/ hour. This helps to clarify the appropriate use and application of GSI.

b. Limitations related to the use and specific application of curve numbers to represent unamended soils were removed. Language was added that allows engineering judgement in the determination of pre-development land use conditions, including selection of a unique curve number that represents the pre-development vegetative cover and soil condition.

c. Sizing criteria associated with pervious pavement applications were adjusted to reflect a minimum design infiltration rate of 0.1"/hour. If designed in accordance with the updated Stormwater Standards, pervious pavement can meet water quality and flow control performance standards without use of an underdrain.

6. Updated Simple Method sizing factors and form. In conjunction with updated stormwater facility sizing and design criteria, updated stormwater facility sizing factors, for use with the Simplified Method of stormwater facility sizing were established. Sizing factors are based on a range of a design infiltration rates to meet the water quality performance standard; or the water quality and flow control performance standards.

   Sizing factors reflecting full infiltration facilities or partial infiltration/ lined facilities are provided on an updated Simple Sizing Form (see the updated Stormwater Standards, Appendix 4A).

7. Expanded list of allowable stormwater system materials. Section 4.9 was updated to allow additional pipe materials for applications with less than 30 inches of cover. Previously, only ductile iron pipe was allowed in these applications.

8. Inclusion of a comprehensive appendix related to submittals. Appendix 4A of the proposed Stormwater Standards (Stormwater Submittal Requirements) was updated to include submittal requirements for both land use and final design. The land use submittal process was previously not documented in the Stormwater Standards. The Site Assessment Checklist is integrated into the land use submittal process and requires preliminary site plans to show how GSI and LID are considered with the proposed development.

Summary of Proposed Revisions to Rules, Division 011

Changes to the Stormwater Facilities O&M Standards include the following:

1. Updates to definitions (Section 11.2): Six existing definitions were removed, as these definitions were for industrial facilities (e.g., "Aboveground Storage Tank" and "Bulk Fuel Terminal") and not applicable to this rule. Thirty-four definitions were added that define terms used in the maintenance forms. Definitions were cross-referenced with

the Stormwater Standards and SRC and updated as necessary for consistency.

2. Removal of former Appendix A: Previously Appendix A contained a copy of the Private Stormwater Facility Agreement form. Because the City updates this form as needed, the form was removed from the Appendix. Instead, the proposed rule states that the form will be provided as part of the development permit application process for new stormwater facilities.

3. Revisions to facility maintenance forms in Appendix A (formerly Appendix B): The most significant changes to the rule includes revisions to existing maintenance forms and the addition of new maintenance forms. New forms were added for the following stormwater facilities: Manufactured Chamber Technology, Flow Control Structures, Pollution Control Manholes, American Petroleum Institute (API) Oil/Water Separators, and Parking Lot Detention Basins. Existing forms were adjusted to better match terminology used in the Stormwater Standards; for example “Amended Soils” was changed to “Growing Medium.” Additional categories for inspection were added to some facility types that were missing relevant sections.