City of Eugene
Stormwater Retrofit Plan

November 20, 2014

Submitted in accordance with the requirements of:

National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Discharge Permit Number 101244 (File Number 107989)

City of Eugene
Stormwater Retrofit Plan

Submitted by:
City of Eugene

Submitted to:
Oregon Department of Environmental Quality

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Submitted in accordance with the requirements of:
National Pollution Discharge Elimination System (NPDES) Permit Number 101244,
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Cover Photo: East 18th Avenue Pavement Preservation Project with vegetated swales in Eugene, Oregon

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Introduction

Purpose

The purpose of this Stormwater Retrofit Plan is to document the City of Eugene's stormwater retrofit strategy for reducing water quality impacts from existing developed areas within the Eugene city limits that drain to the municipal stormwater system.

Permit Requirements

The Retrofit Plan fulfills the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Permit #107989 (December 30, 2010). **Table 1** includes the related permit requirements and where the information is location within this report.

Table 1. MS4 Permit Retrofit Plan Requirements

Schedule A.6.b.	Stormwater Retrofit Plan must describe or reference the following:	Location in the Report
i.	Stormwater retrofit strategy statement and summary, including objectives and rationale;	Page 2
ii.	Summary of current stormwater retrofit control measures being implemented, and current estimate of annual program resources directed towards stormwater retrofits;	Page 4
iii.	Identification of developed areas or land uses impacting water quality that are high priority retrofit areas;	Page 13
iv.	Consideration of new stormwater control measures;	Page 13
v.	Preferred retrofit structural control measures, including rationale;	Page 15
vi.	A retrofit control measure project or approach priority list, including rationale, identification and map of potential stormwater retrofit locations where appropriate, and an estimated timeline and cost for implementation of each project or approach.	Page 16

Stormwater Retrofit Strategy Objectives and Summary

The City of Eugene's stormwater retrofit strategy objectives are to: 1) reduce the water quality impacts associated with existing development and 2) support comprehensive watershed restoration. The City of Eugene accomplishes these objectives through a combination of capital projects, regulatory measures that apply to re-development sites, financial incentives and voluntary measures, and education and demonstration. The City's retrofit strategy was originally developed in the context of a broader master planning process, which led to the completion of stormwater basin plans for each of Eugene's seven stormwater basins.

Capital projects are a key element of the City's retrofit strategy. Through the basin planning process, it was determined that capital projects are the most effective solution for addressing the existing water quality condition, in conjunction with other ongoing program activities that aim to protect and improve water quality including stormwater development standards, illicit discharge detection and elimination, spill response, system maintenance, pollution prevention, source controls, and public education.

Regulatory measures in the form of stormwater development standards applicable to re-development sites will have a positive effect on water quality, although over a very long period of time. Incentives for property owners to invest in voluntary water quality retrofits on developed properties, particularly retrofits using low impact development approaches, will further improve water quality.

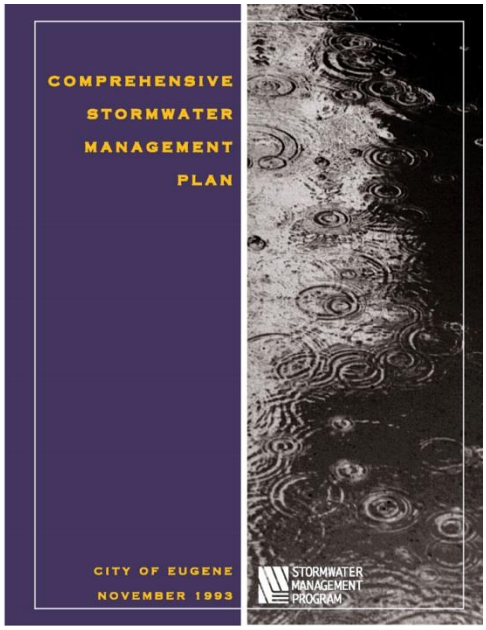
Both public (capital) projects and voluntary stormwater retrofits present opportunities to educate the public about water quality issues and demonstrate functional and attractive best management practices that improve water quality in Eugene's creeks and rivers.

Retrofit Strategy Rationale

The City of Eugene has been implementing retrofit control measures since the beginning of the first MS4 permit term (1994) and the City's reorientation of the stormwater program through adoption of new policy. This section identifies the rationale, in the form of adopted policy and stormwater planning that is the basis for the retrofit strategy.

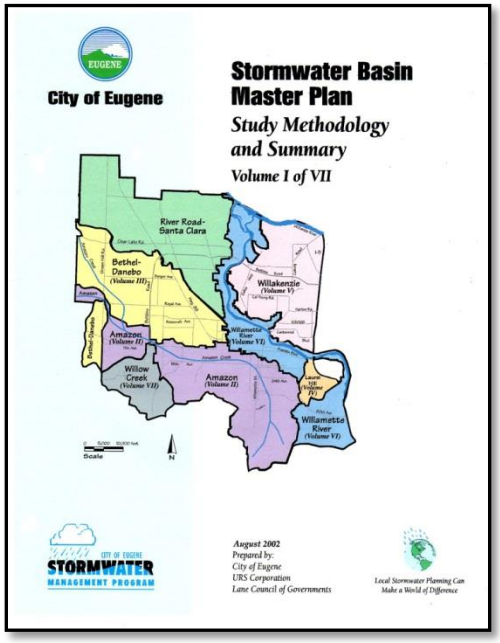
Policy Direction - Comprehensive Stormwater Management Plan

In 1993, in anticipation of the City of Eugene's first MS4 Permit, and following an extensive public process, the Eugene City Council adopted new stormwater policy to guide the program away from a singular focus on conveyance and flood protection toward one that also protects and improves water quality and protects natural resources that provide beneficial stormwater functions. The Comprehensive Stormwater Management Plan (CSWMP) still provides appropriate and relevant policy direction for the stormwater program in general and for the development and implementation of a stormwater retrofit strategy more specifically. CSWMP can be found on the City's web site at: http://www.eugene-or.gov/ and follow links to: Departments > Public Works > Stormwater > Planning, Permits and Regulations > NPDES Municipal Stormwater Permit.



Planning - Stormwater Basin Master Plan

Stormwater Basin Master Planning is one of many action items the City undertook following adoption of CSWMP policy. The basin planning process included assessing existing conditions in each of Eugene's seven stormwater basins, projecting future conditions, identifying problems and opportunities, analyzing alternatives, and selecting stormwater management strategies for implementing CSWMP policies. Since each stormwater basin offers a unique set of conditions and opportunities for implementing capital projects and development standards, basin planning is essentially a refinement of CSWMP's broader policy direction and determines what is feasible and practical to implement at the stormwater system level.



Specific goals of the basin planning were to:

- Protect and improve water quality
- Protect natural resources that provide beneficial stormwater functions

- Provide flood protection and stormwater conveyance
- Use best management practices that promote green infrastructure
- Address the unique qualities of each drainage basin
- Meet federal, state, and local laws and policies
- Complement other existing program activities
- Balance responsibilities community-wide
- Provide a dynamic and flexible program that can be refined based on a changing regulatory climate.

The eight-volume Stormwater Basin Master Plan (Basin Plan), is comprised of a summary document (Volume I) and seven basin-specific documents (Volumes II – VII), and was adopted in 2002 (Volume VIII: River Road-Santa Clara Basin Plan was adopted in 2012). The stormwater management strategy reflected in each basin plan includes a retrofit strategy in the form of water quality capital projects to reduce pollutants from existing developed land with an emphasis on high pollutant source land uses (commercial and industrial land use), yearly capital budget categories, and recommended stormwater development standards applicable to re-development sites. The Executive Summary for Volume I (Study Methodology and Summary) is provided in **Appendix A** and includes the process to develop stormwater management strategies. The Executive Summaries for Volumes II through VIII, including the basin-specific lists of water quality capital projects, yearly capital budget categories, and recommended stormwater development standards, are provided in **Appendix B**. The compiled list of all Basin Plan capital projects is provided in **Appendix C**. The Basin Plan documents are available on the City's web site at: http://www.eugene-or.gov/ and follow links to: Departments > Public Works > Engineering > Plans and Documents > The Stormwater Basin Master Plan

Current Measures

Current measures including capital projects, regulations, incentives, voluntary measures, and public education measures are being implemented to achieve the City's retrofit strategy objectives to reduce the water quality impacts associated with existing development and support comprehensive watershed restoration.

Capital Projects

The full list of Basin Plan projects summarized in **Appendix C** forms the basis for the City's stormwater Capital Improvement Program (CIP). The City's CIP also includes projects with origins in other programs and initiatives that have a stormwater component, such as the Pavement Preservation Program (PPP) which preserves and restores existing streets, the Drywell Elimination Program (DEP) which aims to decommission all remaining City-owned drywells, and the Maintenance Program which identifies system problems such as localized flooding. The City seeks to opportunistically incorporate water quality features into PPP, DEP, and Maintenance projects where possible.

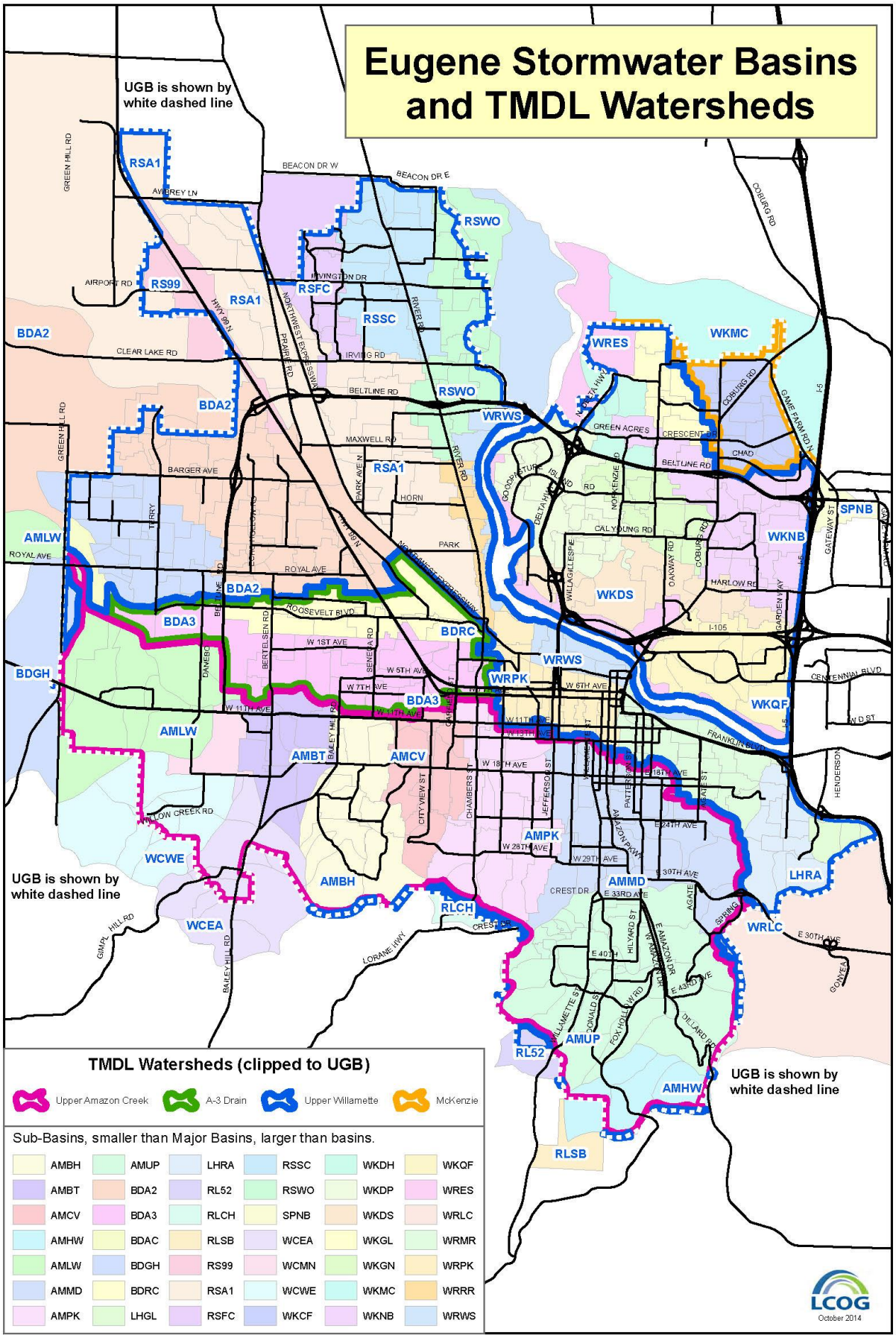
In addition to the Basin Plan retrofit projects and opportunistic retrofit projects, the City has identified many stream restoration projects that include water quality elements such as bank stabilization, channel widening and floodplain restoration, and riparian area plantings. In addition to restoration projects identified in the Basin Plans, restoration opportunities and rehabilitation project needs are identified through regular physical conditions monitoring, field observations, and targeted studies and assessments. For example, the U.S. Army Corps of Engineers Eugene-Springfield Metro Waterways Study, initiated in 2005, identified major waterway restoration opportunities along Amazon Creek. Although local agencies including the City of Eugene formally withdrew from the partnership in 2013, the preliminary feasibility study includes recommendations for restoration projects along 14 reaches of Amazon Creek. These stream restoration projects have been split up into more manageably-sized projects and incorporated into the City's CIP process. Another example of a targeted study is the City's Hydromodification Assessment, completed in parallel with this Retrofit Plan, which will potentially lead to additional stream restoration and stabilization projects to address existing hydromodificaiton issues not identified through other means, and to further minimize future hdyromodification impacts from urbanization activities.

The Basin Plan projects, opportunistic retrofit projects, and stream restoration projects are incorporated into the full list of capital project needs and prioritized for implementation. Stormwater capital project prioritization criteria are provided in **Appendix D** and include considerations of public health and safety, regulatory compliance, resolution of long-term maintenance issues, consistency with local policy, watershed restoration, opportunities, TMDLs, and facilitation of growth.

Specifically related to the TMDL criteria, **Table 2** summarizes the applicable TMDL pollutant parameters by watershed and **Figure 1** illustrates Eugene's TMDL watersheds and stormwater basins.

Table 2. TMDL Pollutants by Watershed

Watershed	TMDL Parameter
Upper Willamette (basin-wide)	Bacteria
Upper Amazon Creek	Bacteria
A-3 Channel	Bacteria
McKenzie River	Bacteria
Amazon Diversion Channel	Dissolved Oxygen
Fern Ridge Reservoir	Bacteria
Fern Ridge Reservoir	Turbidity


Eugene Stormwater Basins and TMDL Watersheds
UGB is shown by white dashed line
UGB is shown by white dashed line
UGB is shown by white dashed line
RSA1
RS99
RSFC
RSSC
RSWO
BDA2
BDA3
BDGH
AMLW
AMBT
AMCV
AMBH
AMPK
AMMD
AMUP
AMHW
WCWE
WCEA
RLCH
RL52
RLSB
WRWS
WRPK
BDRC
WRES
WKMC
WKNB
WKDS
WKQF
SPNB
LHRA
WRLC
TMDL Watersheds (clipped to UGB)
Upper Amazon Creek
A-3 Drain
Upper Willamette
McKenzie
Sub-Basins, smaller than Major Basins, larger than basins.
AMBH AMUP LHRA RSSC WKDH WKQF
AMBT BDA2 RL52 RSWO WKDP WRES
AMCV BDA3 RLCH SPNB WKDS WRLC
AMHW BDAC RLSB WCEA WKGL WRMR
AMLW BDGH RS99 WCMN WKGN WRPK
AMMD BDRC RSA1 WCWE WKMC WRRR
AMPK LHGL RSFC WKCF WKNB WRWS
LCOG
October 2014

Capital projects that have been constructed since the mid-1990's to present that include a water quality retrofit element are referenced in each of the City's Stormwater Annual Reports and listed in **Table 3**.

Table 3. Completed Stormwater Retrofit Projects

Stormwater Capital Improvement Projects – Water Quality Improvements	
1	Polk St. Vault Retrofit
2	Jefferson/I-105 Contech
3	Willamette/ Crest BaySaver
4	Amazon Pool Parking Lot filter strip
5	Ferry St. Bridge Vortechs MH
6	Meadowlark Prairie & Checkermallow pervious pavement
7	Eugene Police Forensics building rain gardens, swales
8	Frederick Ct. pipe daylight and stream restoration
9	Public Works Maintenance Roosevelt Yard Aquaswirl
10	Wastewater Treatment Plant swales and pervious pavement
Stormwater Capital Improvement Projects - Stream Restoration and Rehabilitation	
11	Meadowlark Prairie
12	Dragonfly Bend
13	Delta Ponds
14	Amazon Creek stabilization and enhancements -various locations
15	Greenhill Tributary
16	Upper Amazon Creek at Kinney Park
17	Tugman Creek
18	Riverview/Augusta high flow bypass
19	Braeburn Creek
20	West Branch Willow Creek stabilization at W.18th
21	Videra Creek
22	Golden Gardens
23	Tree & Shrub plantings – various locations
24	Alton Baker Park pond retrofit
Street Improvement Projects with Water Quality Elements	
25	River Ave. swales
26	East 18th St./ University swales
27	Ayres Rd. – swales and WQF
28	W. 11th St. swales
29	Crest Drive rain gardens, Downstream Defender
30	Irvington Dr. water quality facilities
31	River Rd. water quality facilities
32	Roosevelt Blvd. swales
Drywell Elimination Projects with Water Quality Elements	
33	Shirley/Brett Loop / Ferndale Park & Heron Slough Outfall retrofit
34	Escalante
35	Willowbrook
36	Andersen
37	Taz

Frank Kinney Park - Before Retrofit Projects

Frank Kinney Park - After Retrofit Project

Stormwater Management Manual

The Stormwater Management Manual (SWMM) contains selection and design criteria for stormwater facilities that meet the City's development standards aimed at minimizing the water quality and quantity impacts associated with new development and redevelopment. The SWMM was first adopted in 2006 and applies to development adding or replacing impervious surface greater or equal to 1,000 square feet. The SWMM was updated in 2014 to incorporate a BMP hierarchy to place an emphasis on low impact development (LID) facilities. Development must now address the water quality treatment requirement first through infiltration, and if that is not feasible, then through filtration, and if that is not feasible may pay in to an off-site LID mitigation capital project. The Table of Contents for the City's 2014 SWMM is provided in **Appendix E**, and the full document is available on the City's web site at: http://www.eugene-or.gov and follow links to: Departments > Public Works > Stormwater > Planning, Permits and Regulations > Stormwater Management Manual.

The stormwater facility types included in the SWMM are acceptable for new development and in retrofit situations, including: planters, eco-roofs, permeable pavements, tree planting, filter strips, ponds, rain garden, sand filters, swales, proprietary treatment devices. Chapter 2 includes the full list of approved facilities and the categories for which they are approved (e.g. impervious area reduction technique, infiltration, filtration, mechanical treatment, source control, detention, and underground injection controls (UICs)).

The SWMM provides guidance for use of the manual in designing retrofits and distinguishes between retrofits constructed with the intention of qualifying for stormwater user fee reduction vs. those that are not constructed for that purpose. Voluntary retrofits of private facilities with the intent to qualify for system impact credits or fee reductions must meet the standards for siting, design, construction and maintenance set forth in the SWMM. All other voluntary retrofits of private facilities are encouraged to use the SWMM for guidance but are not required to comply given there are no permits or approvals required for the specific work (i.e. land use, building permits, UIC permits, etc.)

Stormwater User Fees & Systems Development Charges

All developed properties in Eugene pay monthly stormwater user fees. User fees pay for on-going operations and maintenance (including street sweeping, catch basin cleaning, litter pick-up, spill response, stormwater education and volunteer activities) and new capital (including major system rehabilitation projects, retrofits of the existing system to address water quality, and new stormwater facilities such as pipes, culverts, constructed wetlands, ponds and filters). The amount of the fee is generally proportional to the amount of impervious surface area on the site. A flat rate is charged for small and medium residential users (less than 3,000 square feet of impervious area), based on an estimated average amount of impervious surface area. Large residential users (over 3,000 square feet of impervious area) and commercial / industrial users pay a fee proportional to the amount of impervious area on the site. Users can qualify for a reduced fee if the quantity of stormwater discharge to the public system is reduced through disconnecting impervious surfaces, or providing on-site retention or infiltration. Users can also quality for reduced fees if the applicant

went beyond the minimum required level of treatment, essentially retrofitting the system to incorporate stormwater treatment for existing developed portions of a site.

Systems development charges (SDCs) are one-time impact fees that are generally collected when expansion, new development, or an intensification of use occurs on property served by City infrastructure. These fees are used to fund the non-assessable portion of the infrastructure costs needed to support growth in the community and to recoup a portion of the community's investment in the infrastructure already in place. Small and medium residential development pay a flat rate based upon an estimated average impervious surface area specific to each category. All other development pays an amount proportional to the impervious surface area of the site. SDC credits (reductions) are given if the quantity of stormwater discharged to the public system is reduced or if the water quality treatment exceeds the minimum standards.

The City of Eugene's stormwater user fee and SDC rate structures thus have built-in financial incentives to reduce impervious area, reduce the quantity of stormwater runoff, and go beyond the minimum in terms of water quality treatment. More information about the City's stormwater charges is available on the web site at: http://www.eugene-or.gov and follow links to Departments > Public Works > Engineering > Systems Development Charges.

Voluntary Retrofits

Voluntary stormwater retrofits of privately owned, developed properties are encouraged by the City through various means including informational, technical assistance, and partnerships with local watershed councils, other non-profits, and other public agencies. For example, the City is currently partnering with the Long Tom Watershed Council in their Urban Waters and Wildlife Program to outreach to business owners of developed commercial and industrial properties to generate interest in voluntary stormwater retrofits. Through this program, the LTWC has successfully worked with property owners on two sites to construct two stormwater retrofits, and has several more sites in various stages of design development. For its part of the partnership, the City provides limited construction funds to the LTWC to match private investment, technical assistance, permitting assistance, and coordination on marketing and outreach. Another partnership the City has is with the non-profit BRING Recycling Center. BRING's Re-Think Program incentivizes retrofits of existing buildings and implementation of certain best management practices including for stormwater quality. The City provided technical expertise and limited financial support for developing and implementing the program.

Planting for Stormwater Quality

List 'A' - Small Trees (3 gallon size)

Blue Elderberry	*Sambucus cerulea*
Cascara	*Rhamnus purshiana*
Douglas Black Hawthorn	*Crataegus douglasii*
Indian Plum	*Oemlaria cerasiformis*
Mock Orange	*Philadelphus lewisii*
Red Elderberry	*Sambucus racemosa*
Serviceberry	*Amelanchier alnifolia*

List 'B' – Shrubs (1 gallon size)

Baldhip Rose	*Rosa gymnocarpa*
Cinquefoil	*Potentilla gracilis*
Dull Oregon Grape	*Mahonia nervosa*
Oregon Grape	*Mahonia aquifolium*
Pacific NineBark	*Physocarpus capitatus*
Redtwig Dogwood	*Cornus sericea*
Sword Fern	*Polystichum munitum*
Thimbleberry	*Rubus parviflorus*
Yellowtwig Dogwood	*Cornus sericea 'Flaviramea'*

List 'C' - Forbs/Perennials/ Groundcovers (4" pot size)

Beach Strawberry	*Fragaria chiloensis*
Broadleaf Lupine	*Lupinus latifolius*
Buttercup	*Ranunculus spp.*
Common Rush	*Juncus effusus*
Deer Fern	*Blechnum spicant*
Dense Sedge	*Carex densa*
Douglas Spirea	*Spiraea douglasii*
Oregon Sunshine	*Eriophyllum lanatum*
Riverbank Lupine	*Lupinus rivularis*
Slough Sedge	*Carex obnupta*
Spreading Rush	*Juncus patens*
Tufted Hairgrass	*Deschampsia cespitosa*

List 'D' - Large Trees:

Deciduous (1-1/2" caliper trunk)

Big Leaf Maple	*Acer macrophyllum*
Oregon Ash	*Fraxinus latifolia*
Oregon White Oak	*Quercus garryana*
Red Alder	*Alnus rubra*
White Alder	*Alnus rhombifolia*

Evergreen (6' height minimum)

Douglas Fir	*Pseudotsuga menziesii*
Western Red Cedar	*Thuja plicata*

List 'E' – Bulbs

Blue Eyed Grass	*Sysirinchium angustifolium*
Camas	*Camassia quamash*
Douglas Aster	*Aster subspicatus*
Harvest Brodeia	*Brodiaea congesta*
Hookers Onion	*Allium acuminatum*
Oregon Iris	*Iris tenax*
Slim Leaf Onion	*Allium amplectans*

List 'F' - Seed Mix

Blue Wildrye	*Elymus glaucus*
Broadleaf Lupine	*Lupinus latifolius*
California Brome Grass	*Bromus carinatus*
Fireweed	*Epilobium angustifolium*
Godetia	*Clarkia amoena*
Popcorn Flower	*Plagiobothrys stipitatus*
Riverbank Lupine	*Lupinus rivularis*
Tufted Hairgrass	*Deschampsia cespitosa*

Infiltration Planter

Flow Through Planter

Vegetated Infiltration Basin

Photos on this page courtesy of:
Lower Columbia River Estuary Partnership www.lcrep.org

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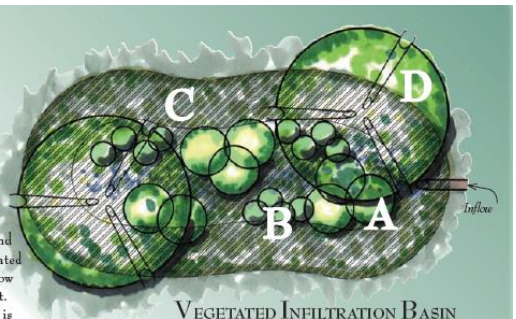
Stormwater Management Facility Types

Plant lists on back

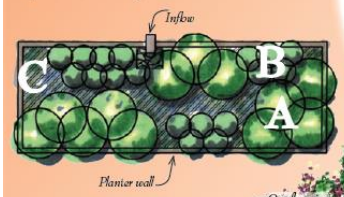
This brochure includes three ways to reduce and treat stormwater runoff at your residence or place of business using "green infrastructure" (a combination of constructed and natural design elements integrated together to form one stormwater system). What are the benefits of these facilities? Pollution reduction facilities capture and treat stormwater runoff from roofs and paved surfaces on-site before it enters the municipal stormwater system. Flow control facilities reduce the quantity of stormwater runoff entering the municipal stormwater system, and can also help with groundwater recharge. The city's storm drainage system then carries lower volumes of cleaner stormwater ultimately to our streams and rivers.

When congress reauthorized the Clean Water Act in 1087, the City of Eugene adopted a more comprehensive stormwater management plan that incorporated flood control, water quality protection and natural resource protection. Capturing and treating stormwater on-site, and reducing stormwater volumes, are important steps to help protect and improve water quality in our waterways.



Infiltration Planter

An infiltration planter is a planter box filled with topsoil and gravel and planted with vegetation. The planter has an open bottom, allowing water to infiltrate into the ground. Storm water runoff from impervious surfaces is directed into the planter box, where the soil and plants filter the water before it drains into the surrounding soil. To size your planter, multiply sq. ft. of impervious surface by 0.07.



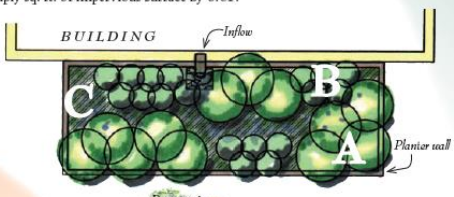
Planting Requirement
(for every 100 square feet of planter)

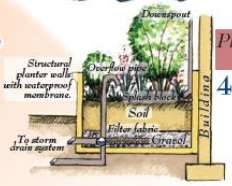
4 from List 'A'
6 from List 'B'
45 from List 'C'

Add as many from lists E and F as desired

Flow Through Planter

A flow through planter is a planter box filled with topsoil and gravel and planted with vegetation. The planter is completely sealed and a perforated collection pipe is placed under the soil and gravel along with an overflow pipe, and the storm water is directed to an acceptable destination point. This type of planter receives runoff from impervious surfaces where it is filtered and drains out very slowly over a long period of time. To size your planter, multiply sq. ft. of impervious surface by 0.07.





Planting Requirement
(for every 100 square feet of planter)

4 from List 'A'
6 from List 'B'
45 from List 'C'

Add as many from lists E and F as desired

Vegetated Infiltration Basin

A vegetated infiltration basin is a vegetated surface facility that temporarily holds and infiltrates storm water into the ground. To size your planter, multiply sq. ft. of impervious surface by 0.11.

Planting Requirement
(for every 100 square feet of planter)

4 from List 'A'
6 from List 'B'
65 from List 'C'
1 from List 'D'

Add as many from lists E and F as desired

Education and Demonstration

Both public (capital) projects and voluntary stormwater retrofits present opportunities to educate the public about water quality issues and demonstrate functional and attractive best management practices that improve water quality in Eugene's creeks and rivers. Several projects have incorporated signage to explain the functions and benefits of stormwater retrofits including the Meadowlark Prairie environmental restoration project and the Alton Baker Park duck pond retrofit. Informational brochures such as the rain garden brochure "Planting for Stormwater Quality" have been produced and distributed to inform and educate. In addition to passive information through signage and brochures, tours of stormwater retrofits are given to professional groups, City staff, elected officials, students, educators,, and the general public. The City collaborated with other agencies and businesses in the community to construct a Water Wise Landscape Demonstration Garden in Alton Baker Park and conducts workshops for residential and business property owners related to naturescaping the appropriate use of and alternatives to pesticides.

Meadowlark Prairie Overlook, West Eugene Wetlands

Identification of High Priority Retrofit Areas

As part of the aforementioned basin planning process, detailed maps were produced for each of Eugene's seven stormwater basins that depict characteristics including drainage system features, existing and future land use, developed and vacant areas, slopes and topography, soil types and permeability. Analysis of the maps and associated data led to the City's decision to emphasize developed high pollutant source areas (commercial and industrial land use) for retrofit projects. **Figure 2**, the Stormwater Retrofit Strategy Map, depicts up to date information similar to what was developed as part of the basin planning process with additional information including major and minor outfalls, public and private water quality facilities, arterial and collector streets, and permitted industrial sites. Specific high pollutant source locations are depicted on the map for potential water quality facilities, consistent with the Basin Plans. A more detailed copy of the Stormwater Retrofit Strategy Map is provided in Appendix G.

Refinements & Consideration of New Measure

The City of Eugene will continue implementing measures, including planning, capital projects, regulations applicable to re-development, voluntary measures, and education and demonstration, to achieve stormwater retrofit strategy objectives to reduce the water quality impacts associated with existing development and support comprehensive watershed restoration. Some refinements to these measures will be necessary, and an additional retrofit measures will be considered namely the potential retrofit of public parking lots.

Planning - Stormwater Basin Master Plan

Some refinements to the Basin Plans will be necessary to reflect long-range planning decisions expected in 2015 regarding urban growth boundary expansion and infill areas, updated hydrologic data and information, and updated capital projects lists. Every community in Oregon has an urban growth boundary (UGB), essentially a limit to how far the city can physically grow out which protects our farms and forests from unplanned development. In Eugene, the Envision Eugene process, currently underway, will determine the best way to accommodate the city's projected growth over the next 20 years, including UGB expansion areas and infill areas. Envision Eugene decisions are expected in the form of City Council adoption in 2015.

Following the Envision Eugene process, the Basin Plan will be updated to align with the long-range planning decisions which will in turn impact projected urban expansion areas, land use and zoning changes, impervious surface calculations, stormwater runoff potential, and location of public projects including water quality retrofit projects. The Basin Plan will also be updated to reflect development that has occurred since the plan was developed and identify new public and private stormwater facilities. The long-term capital projects list will be updated, removing projects from

the Basin Plan that have been constructed and adding projects that will address problems and opportunities in the future planning horizon including stormwater retrofit projects.

Capital Projects

With regard to stormwater retrofit capital projects, the City's plan is to continue implementing the retrofit strategy by focusing on retrofitting the stormwater system in developed high pollutant source areas (commercial and industrial), identifying additional strategic and opportunistic retrofit projects (PPP, DEP, Maintenance program projects), and implementing stream restoration projects that include water quality elements such as bank stabilization, channel widening and floodplain restoration, and riparian area plantings. The City will consider adding projects to retrofit certain public parking lots where feasible and cost-effective. Staff will review the capital project prioritization criteria and refine it to incorporate the updated list of 303(d) pollutants applicable to Eugene's water quality limited waterways.

Stormwater Management Manual

The SWMM was recently updated in 2014 and no additional refinement is needed. The City will continue to track public and private facilities by location, type, and catchment area in its GIS database for future evaluation and program adaptive management.

Stormwater User Fees & Systems Development Charges

The City of Eugene's stormwater user fee and SDC rate structures have built-in financial incentives to reduce impervious area, reduce the quantity of stormwater runoff, and go beyond the minimum in terms of water quality treatment. No refinement is needed.

Voluntary Retrofits

The City will maintain and seek new partnerships including with local agencies including Eugene Water and Electric Board, the Long Tom Watershed Council, BRING, University of Oregon, Lane Community College, 4J and Bethel School Districts, and others, to seek complementariness in our respective programs and collaborate to meet the City's retrofit objectives.

Education and Demonstration

The City will continue to seek opportunities to utilize public (capital) projects and voluntary stormwater retrofits to educate the public about water quality issues and demonstrate functional and attractive best management practices that improve water quality in Eugene's creeks and rivers. Areas targeted for signage and other outreach mechanisms will be those with high visibility and exposure to the public. City will continue to educate and inform the public through its stormwater education program including web site postings, community events, and program newsletters.

Potential New Measure

One additional area for future consideration is the retrofit of some publicly owned parking lots (e.g. River Play in Alton Baker Park). Some of the publicly owned parking lots appear to be amenable to relatively low cost stormwater retrofits, with modest improvement in water quality but significant advantages in terms of visibility for public education and demonstration. The Basin Plan update will

explore opportunities to retrofit public parking lots where feasible and cost-effective. Projects identified will be included in the capital projects list for further prioritization and implementation.

Preferred Retrofit Control Measures

As described in the Current Measures section of this report, the City's Stormwater Management Manual (SWMM) contains selection and design criteria for stormwater facilities that meet the City's standards aimed at minimizing the water quality and quantity impacts associated with new development and redevelopment. Acceptable stormwater facility types include planters, eco-roofs, permeable pavements, tree planting, filter strips, ponds, rain garden, sand filters, swales, and proprietary treatment devices. The rationale for retrofit projects including locations is described earlier in this report and laid out in more detail in the Basin Plans. Once selected, projects make a transition from being conceptual in nature to more detailed design. During this process, more detailed analyses of the problems, opportunities, site characteristics, water quality and other issues are conducted. Based upon these analyses, the appropriate retrofit control measure is selected from the range of acceptable facilities. In some cases, for large public capital projects, specialized design is necessary. An example is the Polk Street Vault Retrofit project, in which an abandoned vault, formerly part of a combined stormwater-wastewater system, was retrofitted with baffles and other features to provide water quality treatment for stormwater during low flow conditions prior to discharging through a large outfall to the Willamette River.

Project List - Capital Improvement Program

Stormwater capital projects including retrofit projects are formalized for implementation by adoption of the City's Capital improvement Program (CIP). The CIP forecasts capital needs over a 6-year period and is updated bi-annually. Development of the CIP is typically a 9-month process, beginning in August of even-numbered years and ending the following spring. The adopted CIP then becomes the basis for preparation of the capital budget which is adopted in the summer of the same year. The current CIP, for Fiscal Years 2014-2019, was adopted in March 2013, and the associated capital budget in June 2013.

The Stormwater Section from the current, adopted Fiscal Years 2014-2019 CIP, including project names, descriptions, timelines, budget, and maps, is provided in **Appendix F**.

Acronyms

CIP	Capital Improvement Program
CSWMP	Comprehensive Stormwater Management Plan
DEP	Drywell Elimination Program
LID	Low Impact Development
MS4	Municipal Separate Stormwater Sewer System
NPDES	National Pollutant Discharge Elimination System
PPP	Pavement Preservation Program
SDC	Systems Development Charge
SWMM	Stormwater Management Manual
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control

Definitions

Impervious Surface: Any surface resulting from development activities that prevents the infiltration of water or results in more stormwater runoff than in the undeveloped condition. Common impervious surfaces include: building roofs, traditional concrete or asphalt paving on walkways, driveways, parking lots, gravel roads, and packed earthen materials.

Low Impact Development (LID): A stormwater management approach that seeks to mitigate the impacts of increased stormwater runoff and pollution using a set of planning, design, and construction approaches and stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater, and can occur at a wide range of landscape scales (i.e., regional, community, and site scales).

Stormwater Retrofit: Installation of a new stormwater facility to treat stormwater from existing impervious area, including, but not limited to existing roofs, patios, walkways, and driving or parking surfaces.

Retrofit Control Measures: Measures that reduce water quality impacts. These may range from individual structural measures on a single property (e.g. eco-roofs or swales) to larger scale approaches (e.g. regional facilities or green streets programs). They may also include non-structural approaches such as public education or pollution prevention.

Stormwater Runoff: The resulting stormwater flows across the ground surface during and after a rainfall event.

References

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7. Minton, Gary, 2005. Stormwater Treatment: Biological, Chemical, and Engineering Principles. Sheridan Books, Inc., Seattle, Washington.
8. Oregon ACWA, 2009. Compilation and Evaluation of Existing Stormwater Quality Data from Oregon.
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City of Eugene
Stormwater Retrofit Plan

Appendix A

Basin Plan Volume I Executive Summary

This document represents the introductory volume of a seven-volume report that describes the process and results of the City of Eugene's development of Stormwater Basin Master Plans. Volume I provides an overview of the Project and also summarizes information that is presented in detail in the six companion volumes, each of which covers one of the City's major drainage basins. Specifically, Volume I includes:

1) Background, goals and objectives, and project scope.
2) City-wide study area characteristics.
3) Study methods for evaluating flood control, water quality, and open waterways.
4) Development of an integrated stormwater management strategy for each basin.
5) Implementation of the strategies.

Volumes II through VII provide more detailed information regarding development of the stormwater management strategies for each of the basins as follows: *Volume II - Amazon Creek, Volume III - Bethel-Danebo, Volume IV – Laurel Hill, Volume V - Willakenzie, Volume VI - Willamette River; Volume VII - Willow Creek*. Each of these basin specific volumes include: characteristics unique to the basin; results of the basin evaluation for flood control, water quality and natural resources; and resulting integrated stormwater management strategies.

Volume I includes information about the characteristics of the River Road Santa Clara basin and specific elements of a stormwater management strategy, but Volume I does not include the full integrated management strategy for this basin as it has not been fully developed. Likewise, a final basin specific plan was not produced for River Road Santa Clara, pending resolution of inter-jurisdictional issues as well as additional information gathering and analysis. An initial study towards the development of a River Road Santa Clara stormwater basin master plan was developed and is available upon request from Public Works Engineering.

NOTE: It should be noted that the term basin is typically used to refer to a defined surface area that drains to a common discharge point. However, for the purposes of this study, the term basin is used to refer to a specific planning or study area. While the planning or study areas were developed based on topography and drainage patterns, they may include several discharge points, or they may exclude specific tributary areas based on convenience for planning purposes. In some cases, portions of the basin were not included in the planning area as they are managed by other jurisdictions. The basin areas as defined in this plan are also further divided into major subbasins and subbasins as described in individual basin master plan reports. See Section 1.4.

As is typical for most cities, large portions of the City of Eugene's existing stormwater collection and conveyance system were designed and built with the sole objective of addressing flooding issues. More recently, concerns related to urban stormwater quality have come into the foreground. As a result, the City has taken a new direction in planning for stormwater management. Eugene Public Works has developed a program to comply with regulatory mandates in ways that reflect the City's unique characteristics, values, needs, intentions, and priorities. The driving forces behind this initiative included the following:

- The need to apply for and comply with a municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit under the Clean Water Act.

- The need to address emerging water quality standards to ensure beneficial uses are met in receiving water bodies (i.e., total maximum daily load (TMDL) requirements under the Clean Water Act).
- Impending Issues - Although not an issue at the outset of the project, listing of the Spring Chinook salmon as a Threatened Species (*Federal Register, Vol. 65, No. 32, February 16, 2000*) was considered in the final development of these plans. Another impending issue includes recently promulgated state rules under the Safe Drinking Water Act requirements related to the underground injection of stormwater.

The first step Eugene took in revising its stormwater management program was to develop a Comprehensive Stormwater Management Plan (CSWMP). CSWMP provides the policy direction for stormwater management in Eugene, and was adopted by the Eugene City Council in 1993. The Stormwater Basin Master Plans described in this document comprise two of the specific CSWMP implementation actions: P&A1, "Develop Comprehensive Basin Plans", and P&A7, Stormwater Development Standards (see CSWMP, pages A-1 to A-3). One additional implementation action was ultimately addressed as part of the project: CAP1, Stream Corridor Acquisition.

The overall goal of the Stormwater Basin Master Plans was to develop a stormwater management strategy for each basin that proactively addresses the multiple objectives of CSWMP. In addition to flood control, these multiple objectives include:

- Protect and improve water quality.
- Protect waterways that provide beneficial stormwater functions.
- Use best management practices (BMPs) that promote a green infrastructure (see glossary for a definition of green infrastructure).
- Address the unique qualities of each drainage basin.
- Meet federal, state, and local laws and policies (including CSWMP).
- Complement other existing BMPs that are part of the City's stormwater program.
- Balance responsibilities community-wide.
- Provide a dynamic and flexible program that can be refined based on a changing regulatory climate.

The work that was conducted to develop these integrated stormwater management strategies included the following major tasks:

Step 1) Compile information regarding the unique characteristics of each basin with respect to the stormwater drainage system.
Step 2) Identify problems and opportunities associated with the stormwater drainage system with respect to flood control, water quality, and open waterways.
Step 3) Develop potential solutions in the form of capital projects and development standards for addressing identified problems.
Step 4) Evaluate and compare potential solutions in terms of feasibility, costs, and effectiveness.
Step 5) Evaluate capital projects to address problems expected under existing conditions.

Step 6) Evaluate capital projects and development standards to address problems expected as a result of future build-out.
Step 7) Select an integrated stormwater management strategy based on the evaluations conducted in steps 5 and 6.
Step 8) Develop a maintenance strategy for the proposed solutions.
Step 9) Obtain feedback regarding integrated stormwater management strategies and the maintenance strategy from the public and refine the strategies as appropriate.
Step 10) Prioritize selected capital projects for implementation and conduct a financial analysis.
Step 11) Develop stormwater basin master plans to summarize the integrated stormwater management strategies including proposed capital projects and development standards.
Step 12) Develop ordinance language to codify the proposed development standards.
Step 13) Develop a best management practices manual to help guide developers in meeting the requirements of the development standards.

As a result of the process described above, a capital improvement program and development standards were proposed. The capital improvement program includes capital projects and stream corridor acquisitions.

Capital Projects:

A total of 44 location specific capital projects were selected for the integrated stormwater management strategies city-wide (not including all of the potential River Road Santa Clara basin capital projects). For flood control, 23 capital projects are proposed which include: increased pipe/culvert sizes, increased open waterway capacities, a piped bypass system, and construction of a new drainage channel. For water quality, 14 capital projects are proposed which include: retrofits of existing ponds, and construction of new water quality facilities. For open waterways, 7 capital projects are proposed which include: bank restoration, wetland protection, and enhancement of physical and biological resources. Although the capital projects are accounted for here according to their main objective, many of the projects will address multiple objectives. For example, if increased capacity is needed in an open waterway system, vegetative resource enhancements will be included as part of the project. In addition to the projects listed above, there are 4 new line items in the capital project budget that will be used in various locations each year to implement the following types of projects: structural water quality facilities in high pollutant source areas, retrofits of tip-ups to address flooding and water quality issues, stream stabilization projects to addressed impacts from increased runoff volumes, and stormwater outfall stabilization projects. See Section 4.2 including Table 4-1 for additional details regarding capital projects.

Stream Corridor Acquisitions:

This is an enhancement of an existing program area where stream corridor protection becomes the primary objective and acquisition for maintenance access purposes continues but on an as needed basis. Approximately eleven miles of corridor length and 172 acres of corridor area are targeted for acquisition over a five-to-seven year period.

Stormwater Development Standards:

Water Quality Related Design Requirements: The recommended water quality development standard is to capture and treat 80% of the average annual rainfall volume. This standard was reviewed and recommended within the context of each of the individual integrated stormwater management strategies. The standard is recommended for application city-wide to all new development and significant redevelopment within Eugene City limits except for those properties which will be listed as exempt under City Code. This standard is scheduled for adoption in Fall 2003.

The water quality standard will require treatment BMPs that are designed according to a City BMP Manual and the City's water quality design storms. The standard will also require additional BMPs for specific land use activities of concern (i.e., oil control for high traffic areas, and structural source controls for commercial/industrial activities that are exposed to stormwater).

Public and private maintenance responsibilities associated with implementation of the BMPs will be outlined in City Code.

An additional water quality requirement is recommended for the headwaters areas located in the south hills of Eugene. Most of the streams in this area are currently in fairly good condition and will require additional protection from imminent and future development to maintain their condition. The purpose of this additional requirement will be to ensure that either a piped bypass system, implementation of stream stabilization projects, or detention ponds to control peak flows from small frequent events are constructed in a manner to protect these streams from impacts associated with the expected increases in runoff peak flows and volumes.

Open Waterways Requirements: Recommended open waterways development standards are as follows. In addition to the selected standards, the strategy includes coordination with other ongoing programs; also described below.

- Support Existing Waterway Protection Standards: (i.e., Waterside Protection Overlay Zone, "Needed Housing", Natural Resource Zone, Planned Unit Development, Site Review as applicable).

- Key Waterways Protection Standard– No Fill/No Pipe: This standard was selected and processed through the Planning Commission and City Council. Ultimately, this standard was replaced by an approach that would apply no-fill/no-pipe prohibitions to all waterways until the Metropolitan Natural Resource Study (NR Study) was completed.

  Note: When processed for adoption, this standard was referred to as the Open Waterways Ordinance which was remanded back to the City for further processing. This ordinance is no longer in effect.

- Interim Setbacks Standard: This standard was selected to be applied as an interim measure until the NR Study was completed. Processing of the ordinance began but was halted when:

1) Oregon voters approved Ballot Measure 7 requiring compensation for land use regulations that would lower land values, and 2) when the open waterways ordinance appeal was upheld by the Oregon Land Use Board of Appeals.

Note: Due to the situation described above with respect to the Open Waterways ordinance, an Interim Setbacks standards will not be pursued at this time.

- Coordination with the Metropolitan Natural Resources Study (described in Section 3.3) to ensure consistency with stormwater program objectives for long term stream corridor protection and to identify and fill gaps in long-term protection measures for waterways.

- Coordination with the Endangered Species Act/Salmon program (described in Section 3.3).

- Coordination with the Metro Waterway Restoration Study (described in Section 3.3).

The Stormwater Basin Master Plans represent three of thirty-four stormwater management practices being implemented as part of the City's National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit requirements and hence CSWMP. This project addresses water quality through the implementation of capital projects, stream corridor acquisitions and development standards. Other essential water quality management practices that the City has already undertaken and are a regular part of the stormwater program include: inspections, enforcement and monitoring with respect to potential illicit connections and illegal dumping; public education programs; revised operations and maintenance practices; and erosion prevention and construction site management requirements.

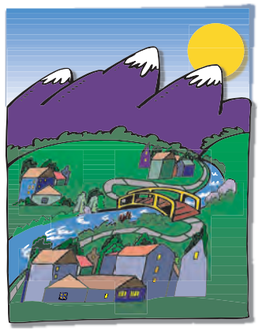
City of Eugene
Stormwater Retrofit Plan

Appendix B

Basin Plan Volumes II-VIII Executive Summaries

Executive Summary

City of Eugene



Vision for a Green Infrastructure

Amazon Basin

Stormwater Management Strategy

The Context

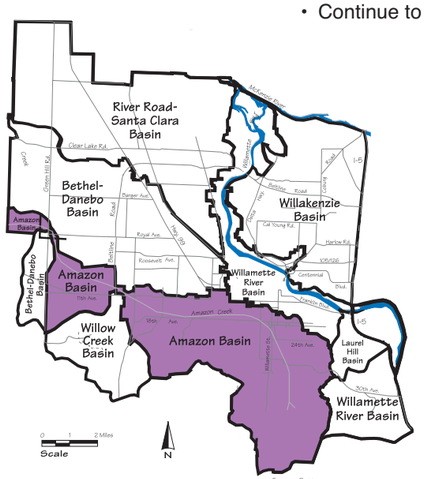
Amazon is the largest of Eugene's drainage basins and the most diverse in terms of land uses, landform, and natural resources. The lay of the land varies from steep hillsides to flat, low-lying valleys. Significant patches of natural resources are located in the upper elevations of the south hills in the form of headwater tributaries, coniferous forests and oak savannas, and in the flatlands of west Eugene in the form of remnant Willamette Valley wet prairie wetlands. Located between these rich natural resource areas are highly urbanized land uses ranging from low-density residential to strip commercial and heavy industrial. Most of the remaining vacant acres are located in the steep hillside areas. Results of the stormwater assessment for this basin revealed:

- Drainage problems occur under existing conditions and will be exacerbated as the basin reaches build-out conditions.
- Untreated stormwater runoff from existing land uses is the primary water quality issue.
- The Amazon Diversion Channel is designated as "water quality limited" for bacteria and temperature and will be subject to future restrictions by the Department of Environmental Quality.
- Channel and bank stability problems exist along most of the headwater tributaries.
- Existing waterways, wetlands, and riparian areas will be impacted by increased runoff volumes, rates, and pollutants.
- Waterway restoration potential exists along most of the waterways.

Strategy

The recommended strategy for this basin is:

- Reduce existing pollutants to the extent feasible through system retrofits, especially in high source areas.
- Minimize future pollutants through on-site development standards and flow controls for headwater areas.
- Protect waterways through a combination of development standards and other techniques including acquisition.
- Address existing stream bank stabilization problems through capital projects.
- Restore waterways through federal-local partnerships.
- Continue to provide flood protection services basin wide.



Basin Context Map

Amazon Basin Facts

- Ranks first among all the basins in total size (11,442 acres).
- Ranks fifth in the amount of area designated as 100-year floodplain (845 acres).
- Ranks third in total length of local open waterways (38 miles) but sixth in proportion of waterways to basin size.
- Impervious surface area in the UGB is projected to increase from 33% to 44% at buildout.
- Is home to twelve plant and animal species listed or being considered for listing as threatened or endangered.
- Amazon Diversion Channel is listed by the Oregon Department of Environmental Quality as water quality limited.

Comprehensive Plan

Cleaner, Safer, Healthier Environment

Adoption of the **Comprehensive Stormwater Management Plan** (CSWMP) in November 1993 ushered in a new vision for managing the City of Eugene's stormwater program. In addition to protecting the community from flooding problems, CSWMP expanded the program to include protection of stormwater water quality and related natural resources.

Basin Planning

Bringing CSWMP into Focus

Basin Planning is one of many action items for implementing CSWMP. The basin planning process includes assessing existing conditions, identifying stormwater system problems and opportunities, and recommending management strategies for implementing several CSWMP policies. Each of the City's seven drainage basins offers unique conditions and opportunities for implementing capital projects and development standards. Basin planning, therefore, is a refinement of CSWMP's broader policy direction and represents what is feasible and practical to implement at the stormwater system level.

Other Activities

In addition to Basin Planning, many other city activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

- Erosion control for construction activities
- Education and outreach
- Monitor stormwater discharges of certain industrial uses
- Street sweeping
- Volunteer programs
- Vegetation management

Green Infrastructure

Green Infrastructure uses the beneficial flood control and water quality treatment characteristics of the natural landscapes to help meet stormwater management objectives. When linked with the constructed system, the two work together to form a coordinated drainage system of streams, ponds, streets, and pipes.

Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solutions for correcting existing problems and will be designed to address the incremental effects of new development.

Water Quality

- *Existing Pollution Problem:* Capital projects are the most cost-effective solution for addressing existing conditions, along with other ongoing program activities.
- *Pollution Associated with New Development:* Development standards are most effective for addressing pollutants at their source and minimizing water quality impacts of new development in headwater areas.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes in open waterways for existing developed areas.
- Stream corridor acquisition can be used to protect a limited number of high-priority waterways.
- Development standards are effective at preventing encroachment into waterways and preserving water quality functions.

More Information

- Visit the City's website at www.ci.eugene.or.us/pw/storm
- Contact Therese Walch at (541) 682-6839

EUGENE

The Management Strategy

Flood Control

Issue: **Over 23% of the major drainage facilities exceed design capacity under existing conditions.**

Desired Outcome: Flooding problems are eliminated or mitigated.

Actions: **Capital Projects – see map**
- Pipe improvements: AM08B, AM11, AM13, AM14, AM15B, AM17, AM27B
- Flood control facilities: AM15B

Stormwater-Related Natural Resources

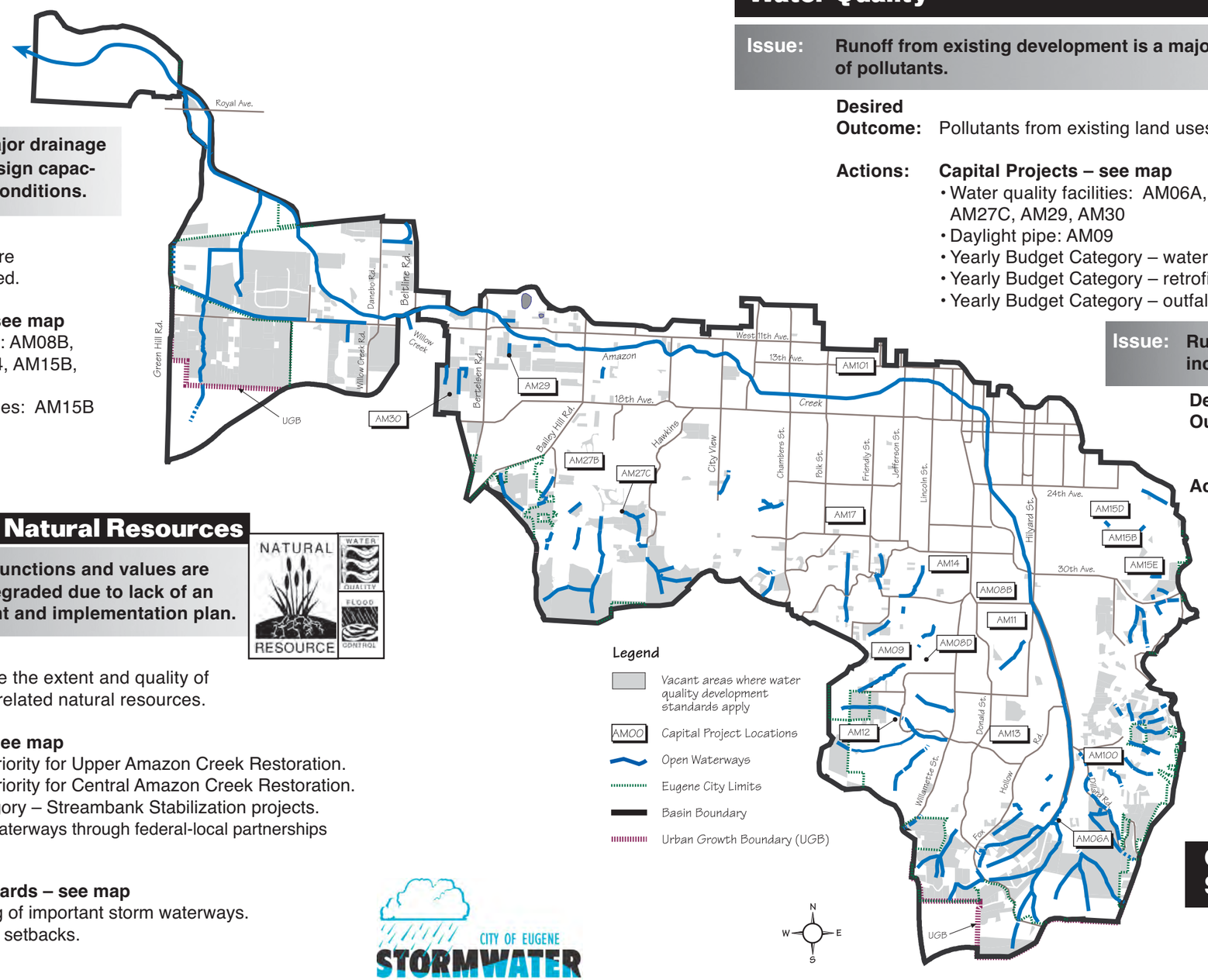
Issue: **Natural resources functions and values are being lost or are degraded due to lack of an overall management and implementation plan.**

Desired Outcome: Maintain and improve the extent and quality of existing stormwater-related natural resources.

Actions: **Capital Projects – see map**
- AM100 – Federal priority for Upper Amazon Creek Restoration.
- AM101 – Federal priority for Central Amazon Creek Restoration.
- Yearly budget category – Streambank Stabilization projects.
- Ongoing: Restore waterways through federal-local partnerships (to be identified).

Development Standards – see map
- Prohibit filling/piping of important storm waterways.
- Require streamside setbacks.

Acquisition
- Acquire stream corridors according to the *City's Stream Corridor Acquisition Study.*



Water Quality

Issue: **Runoff from existing development is a major source of pollutants.**

Desired Outcome: Pollutants from existing land uses are reduced.

Actions: **Capital Projects – see map**
- Water quality facilities: AM06A, AM08D, AM12, AM15D, AM15E, AM27C, AM29, AM30
- Daylight pipe: AM09
- Yearly Budget Category – water quality facilities in high-source areas.
- Yearly Budget Category – retrofit tip-ups.
- Yearly Budget Category – outfall stabilization.

Issue: **Runoff from future development will increase pollutant discharges**

Desired Outcomes: Reduce stormwater pollution from new development.

Actions: **Development Standards – see map**
- New and significant redevelopment projects are required to treat all runoff from City's water quality design standard.
- Incentives – provide incentives for existing development to reduce effective impervious surface areas and treat stormwater runoff.
- Control rate of runoff into headwater streams for water quality benefits.

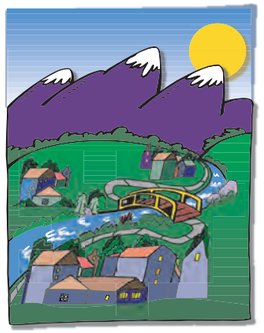
Other Elements of the Strategy

- General Stormwater Rehabilitation Projects.
- Channel Easement Acquisition.

CITY OF EUGENE STORMWATER MANAGEMENT PROGRAM

Executive Summary

City of Eugene



Vision for a Green Infrastructure

Bethel-Danebo Basin

Stormwater Management Strategy

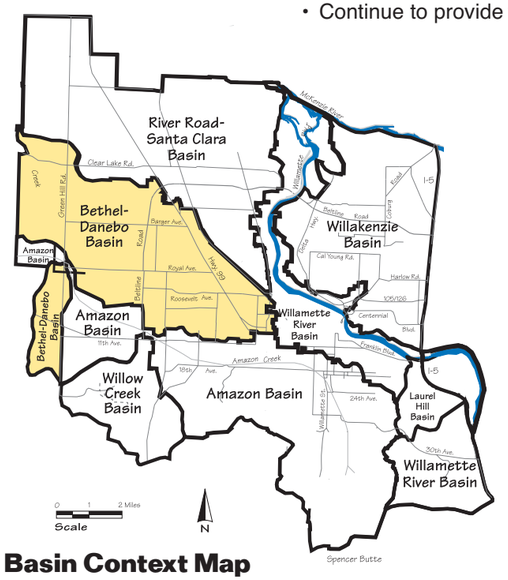
Located in northwest Eugene, the basin is a remnant floodplain of both the Willamette River and Amazon Creek. Abundant rainfall and historic periodic flooding combined with thick clay soils and extremely flat topography resulted in wetland conditions over nearly 90 percent of the basin. Today, most of the basin has been converted to urban uses and is protected from major flood events by a system of regional waterway channels. Most of the remaining vacant lands are designated for residential use and located along the perimeter of the urban growth boundary (UGB). The basin assessment process for this basin revealed:

- Flooding problems are relatively minor under both existing and buildout conditions.
- Untreated stormwater runoff from existing land uses is the primary water quality issue.
- The A3 Channel is designated as "water quality limited" for bacteria and temperature and will be subject to future restrictions by the Department of Environmental Quality.
- Existing waterways, wetlands, and riparian areas will be further impacted by increased runoff volumes, rates, and pollutants.
- Waterway restoration potential exists along most of the waterways.

Strategy

The recommended strategy for this basin is:

- Reduce existing pollutants to the extent feasible through system retrofits, especially in high source areas.
- Minimize future pollutants through on-site development standards.
- Protect waterways through a combination of development standards and other techniques including acquisition.
- Address existing stream bank stabilization problems through capital projects.
- Restore waterways through federal-local partnerships.
- Continue to provide flood protection services basin wide.



Basin Context Map

Bethel-Danebo Basin Facts

- Ranks third among all the basins in total size (9,318 acres).
- Ranks first in the amount of area designated as 100-year floodplain (2,014 acres).
- Ranks second in total length of local open waterways (47 miles) and second in proportion of waterways to basin size.
- Impervious surface area in the UGB is projected to increase from 35% to 50% at buildout.
- Is home to nine plant and animal species listed or being considered for listing as threatened or endangered.
- The A3 Channel is listed by the Oregon Department of Environmental Quality as water quality limited.

Comprehensive Plan

Cleaner, Safer, Healthier Environment

Adoption of the ***Comprehensive Stormwater Management Plan*** (CSWMP) in November 1993 ushered in a new vision for managing the City of Eugene's stormwater program. In addition to protecting the community from flooding problems, CSWMP expanded the program to include protection of stormwater quality and related natural resources.

Basin Planning

Bringing CSWMP into Focus

Basin Planning is one of many action items for implementing CSWMP. The basin planning process includes assessing existing conditions, identifying stormwater system problems and opportunities, and recommending management strategies for implementing several CSWMP policies. Each of the City's seven drainage basins offers unique conditions and opportunities for implementing capital projects and development standards. Basin planning, therefore, is a refinement of CSWMP's broader policy direction and represents what is feasible and practical to implement at the stormwater system level.

Other Activities

In addition to Basin Planning, many other city activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

- Erosion control for construction activities
- Education and outreach
- Monitor stormwater discharges of certain industrial uses
- Street sweeping
- Volunteer programs
- Vegetation management

Green Infrastructure

Green Infrastructure uses the beneficial flood control and water quality treatment characteristics of the natural landscapes to help meet stormwater management objectives. When linked with the constructed system, the two work together to form a coordinated drainage system of streams, ponds, streets, and pipes.

Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solutions for correcting existing problems and will be designed to address the incremental effects of new development.

Water Quality

- *Existing Pollution Problem:* Capital projects are the most cost-effective solution for addressing existing conditions, along with other ongoing program activities.
- *Pollution Associated with New Development:* Development standards are most effective for addressing pollutants at their source.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes in open waterways for existing developed areas.
- Stream corridor acquisition can be used to protect a limited number of high-priority waterways.
- Development standards are effective at preventing encroachment into waterways and preserving water quality functions.

More Information

- Visit the City's website at www.ci.eugene.or.us/pw/storm
- Contact Therese Walch at (541) 682-6839

EUGENE

The Management Strategy

Flood Control

Issue: **Some areas do not meet existing drainage system conveyance standards.**

Desired Outcome: Flood protection needs are met basin-wide.

Actions: **Capital Projects – see map**
- Pipe improvements: BD06, BD15
- BD11A – Green Hill Tributary waterway capacity enhancement
- BD100 – Royal Avenue Node infrastructure enhancements

Stormwater-Related Natural Resources

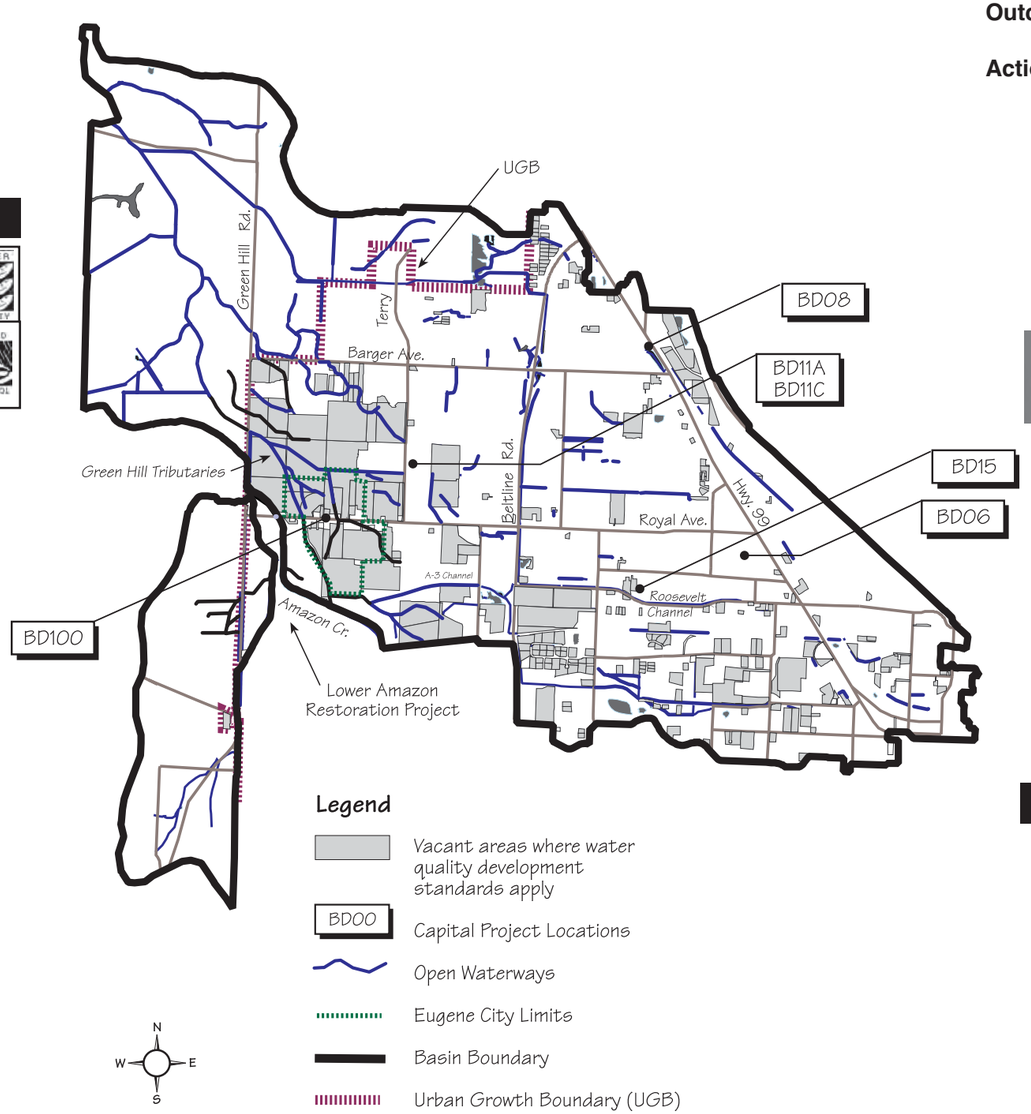
Issue: **Natural resources functions and values are being lost or are degraded due to lack of an overall management and implementation plan.**

Desired Outcome: Maintain and improve the extent and quality of existing stormwater-related natural resources.

Actions: **Capital Projects – see map**
- Yearly budget category – Streambank Stabilization projects.
- Ongoing: Restore waterways through federal-local partnerships (to be identified).

Development Standards – see map
- Prohibit filling/piping of important storm waterways.
- Require streamside setbacks.

Acquisition
- Acquire stream corridors according to the *City's Stream Corridor Acquisition Study.*



Water Quality

Issue: **Runoff from existing development is a major source of pollutants.**

Desired Outcome: Pollutants from existing land uses are reduced.

Actions: **Capital Projects – see map**
- BD08 – Retrofit Empire Pond for water quality enhancement effectiveness.
- BD11C – Green Hill Tributary water quality facility.
- Yearly Budget Item – water quality facilities in high source areas.
- Yearly Budget Category – retrofit tip-ups.
- Yearly Budget Category – outfall stabilization.

Issue: **Runoff from future development will increase pollutant discharges.**

Desired Outcomes: Reduce stormwater pollution from new development.

Actions: **Development Standards – see map**
- New and significant redevelopment projects are required to treat all runoff from City's water quality design standard.
- Incentives – provide incentives for existing development to reduce effective impervious surface areas and treat stormwater runoff.

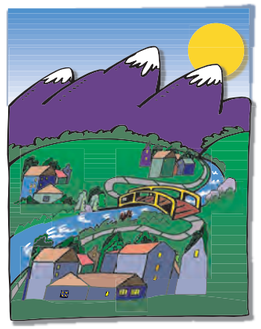
Other Elements of the Strategy

- General Stormwater Rehabilitation Projects.
- Channel Easement Acquisition.

CITY OF EUGENE STORMWATER MANAGEMENT PROGRAM

Executive Summary

City of Eugene



Vision for a Green Infrastructure

Laurel Hill Basin

Stormwater Management Strategy

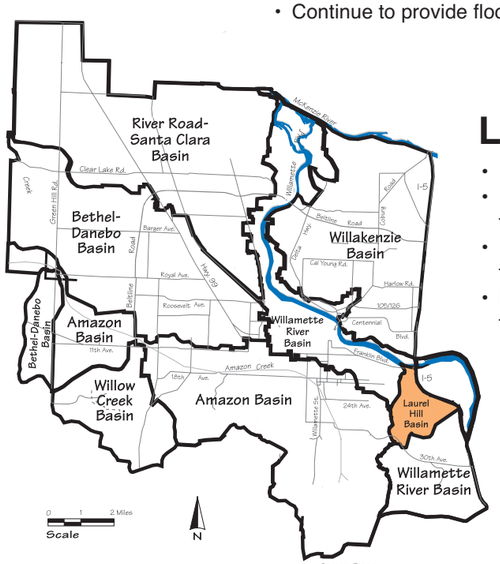
Laurel Hill is the smallest of Eugene's seven drainage basins and is a tribuary to the Willamette River. Laurel Hill Creek is the predominant drainage feature in the basin and collects upstream runoff near Floral Hill Drive and Augusta Street where it flows northerly and enters the Willamette River near the Interstate 5 bridge. While 45 percent of the basin is developed, it is still rural in character. Future development will occur primarily in the steeper hillside areas to the south and east and will primarily be low-density residential. The stormwater assessment process for this basin revealed:

- Flooding problems occur under existing conditions and will be exacerbated as new development occurs,
- Nonpoint source pollution is relatively low under current conditions but will significantly increase with new development, and
- Existing waterways and riparian zones will be impacted by increased runoff volumes and pollutant loads.

Strategy

The recommended strategy for this basin is:

- Reduce existing pollutants to the extent feasible through construction of a neighborhood water quality facility.
- Minimize future pollutants through on-site development standards and flow controls for headwater areas.
- Protect waterways through a combination of development standards and other techniques including acquisition.
- Address existing stream bank stabilization problems through capital projects.
- Restore waterways through federal-local partnerships.
- Continue to provide flood protection services basin wide.



Basin Context Map

Laurel Hill Basin Facts

- Ranks last among all the basins in total size (829 acres).
- Ranks last in the amount of area designated as 100-year floodplain (7 acres).
- Ranks last in total length of local open waterways (4 miles) but fourth in proportion of waterways to basin size.
- Impervious surface area in the UGB is projected to increase from 20% to 43% at buildout.

August 2002

Comprehensive Plan

Cleaner, Safer, Healthier Environment

Adoption of the **Comprehensive Stormwater Management Plan** (CSWMP) in November 1993 ushered in a new vision for managing the City of Eugene's stormwater program. In addition to protecting the community from flooding problems, CSWMP expanded the program to include protection of stormwater quality and related natural resources.

Basin Planning

Bringing CSWMP into Focus

Basin Planning is one of many action items for implementing CSWMP. The basin planning process includes assessing existing conditions, identifying stormwater system problems and opportunities, and recommending management strategies for implementing several CSWMP policies. Each of the City's seven drainage basins offers unique conditions and opportunities for implementing capital projects and development standards. Basin planning, therefore, is a refinement of CSWMP's broader policy direction and represents what is feasible and practical to implement at the stormwater system level.

Other Activities

In addition to Basin Planning, many other city activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

- Erosion control for construction activities
- Education and outreach
- Monitor stormwater discharges of certain industrial uses
- Street sweeping
- Volunteer programs
- Vegetation management

Green Infrastructure

Green Infrastructure uses the beneficial flood control and water quality treatment characteristics of the natural landscapes to help meet stormwater management objectives. When linked with the constructed system, the two work together to form a coordinated drainage system of streams, ponds, streets, and pipes.

Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solutions for correcting existing problems and will be designed to address the incremental effects of new development.

Water Quality

- *Existing Pollution Problem:* Capital projects are the most cost-effective solution for addressing existing conditions, along with other ongoing program activities.
- *Pollution Associated with New Development:* Development standards are most effective for addressing pollutants at their source and minimizing water quality impacts of new development in headwater areas.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes in open waterways for existing developed areas.
- Stream corridor acquisition can be used to protect a limited number of high-priority waterways.
- Development standards are effective at preventing encroachment into waterways and preserving water quality functions.

More Information

- Visit the City's website at www.ci.eugene.or.us/pw/storm
- Contact Therese Walch at (541) 682-6839

The Management Strategy

Flood Control

Issue: **A large portion of the drainage system floods under existing conditions.**

Desired Outcome: Flooding problems are eliminated.

Actions: **Capital Projects - see map**
- LH06C – Construct high flow bypass and improve Riverview/ Augusta drainage system.
- LH07 – Improve the minor drainage system between Riverview and Augusta.
- LH08 – Develop a minor drainage system plan for Riverview/ Augusta.

Related Natural Resources

Issue: **Laurel Hill Creek has limited capacity under existing conditions, and experiences erosion and downcutting problems. Future development will exacerbate these problems.**

Desired Outcome: Eliminate negative effects of high flows and enhance waterway.

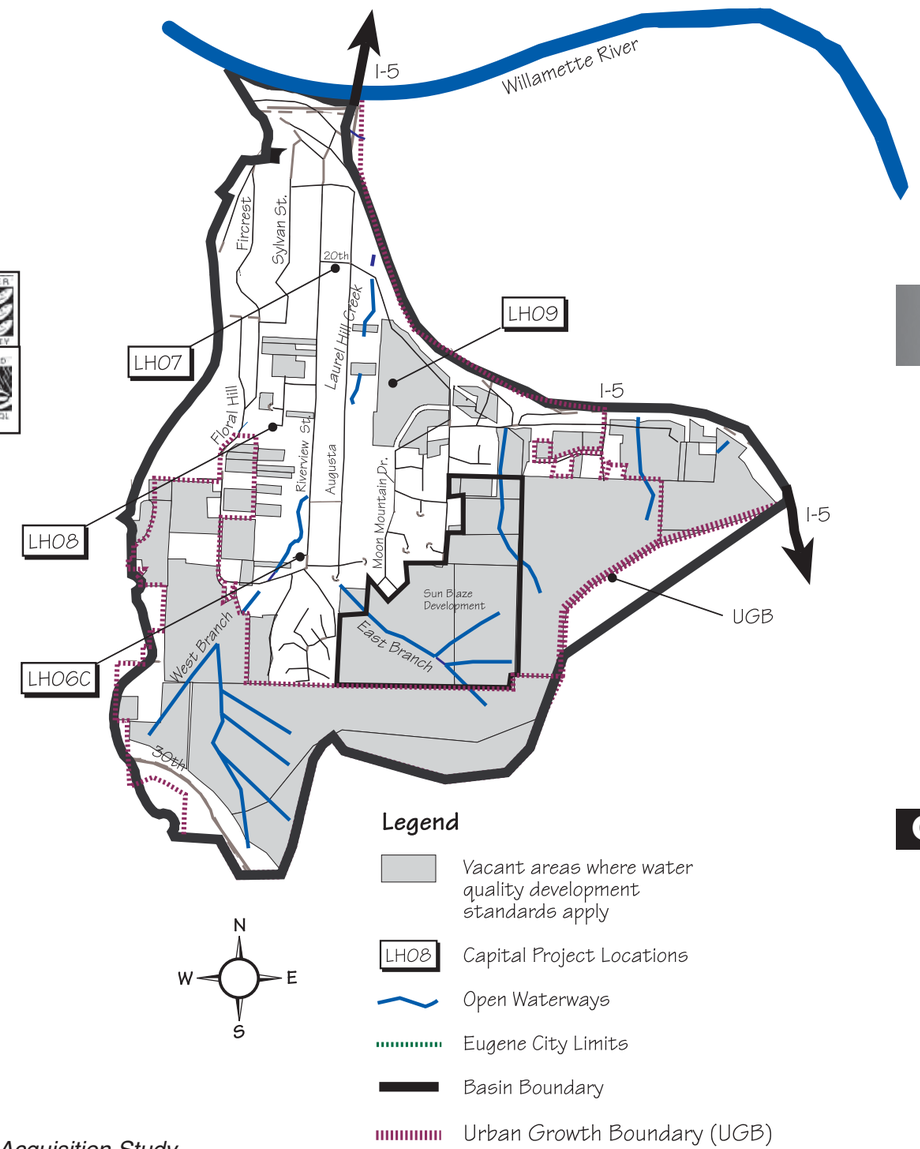
Actions: **Capital Projects - see map**
- LH06C – Construct high flow bypass and improve Riverview/ Augusta drainage system.
- Yearly budget item: Address hydrologic (volume) impacts to open waterways.
- Ongoing: Restore waterways through federal-local partnerships (to be identified).

Issue: **Open waterways and their beneficial stormwater functions are susceptible to impact due to lack of an overall management and implementation strategy.**

Desired Outcome: Maintain and improve the extent and quality of existing waterways and stormwater-related natural resources.

Actions: **Development Standards – see map**
- Prohibit filling/piping of important storm waterways.
- Require streamside setbacks.

Acquisition
- Acquire stream corridors according to the *City's Stream Corridor Acquisition Study.*



Water Quality

Issue: **Runoff from existing development is a major source of pollutants.**

Desired Outcome: Pollutants from existing land uses are reduced.

Actions: **Capital Projects- see map**
- LH09 – Construct neighborhood water quality facility at I-5 and Augusta.
- Yearly Budget Category: Outfall stabilization.
- Yearly Budget Category: Water quality facilities in high source areas.

Issue: **Runoff from future development will increase pollutant discharges.**

Desired Outcomes: Reduce stormwater pollution from new development.

Actions: **Development Standards – see map**
- New and significant redevelopment projects are required to treat all runoff from City's water quality design standard
- Incentives – provide incentives for existing development to reduce effective impervious surface areas and treat stormwater runoff.
- Control rate of runoff into headwater streams for water quality benefits.

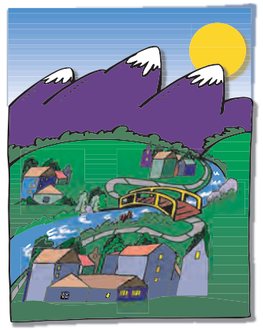
Other Elements of the Strategy

- General stormwater rehabilitation projects.
- Channel easement acquisition.

CITY OF EUGENE STORMWATER MANAGEMENT PROGRAM

Executive Summary

City of Eugene



Vision for a Green Infrastructure

Willakenzie Basin

Stormwater Management Strategy

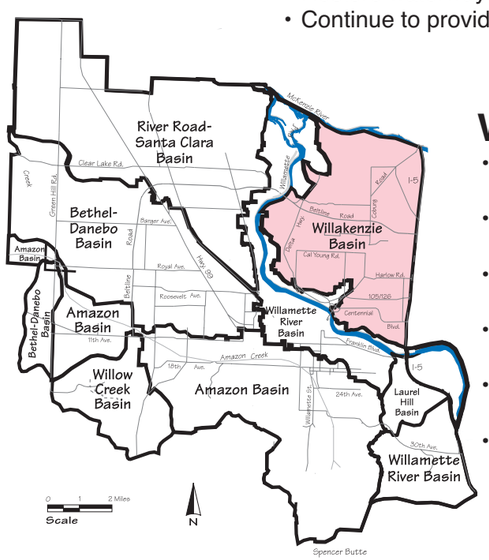
Located in northeast Eugene, the basin is wedged between the Willamette River on the south and west and the McKenzie River to the north. Flat topography and permeable soils combine to create environmental conditions somewhat different than in other city basins, such as less runoff during storm events and fewer wetlands and waterways. Mostly developed and residential in character, there are few remaining vacant acres in the basin. The basin assessment process for this basin revealed:

- Drainage problems are nearly nonexistent under existing conditions and few problems are projected under future buildout conditions.
- Untreated stormwater runoff from existing land uses is the primary water quality issue.
- Existing waterways and riparian areas will be moderately impacted by increased runoff volumes, rates, and pollutants due to new development.
- Waterway restoration potential exists along most of the waterways.

Strategy

The recommended strategy for this basin is:

- Reduce existing pollutants to the extent feasible through system retrofits, especially in high source areas.
- Minimize future pollutants through on-site development standards.
- Protect waterways through a combination of development standards and other techniques including acquisition.
- Address existing stream bank stabilization problems through capital projects.
- Restore waterways through federal-local partnerships.
- Continue to provide flood protection services basin wide.



Basin Context Map

Willakenzie Basin Facts

- Ranks fourth among all the basins in total size (7,314 acres).
- Ranks third in the amount of area designated as 100-year floodplain (1,928 acres).
- Ranks fourth in total length of local open waterways (25 miles) and fifth in proportion of waterways to basin size.
- Impervious surface area in the UGB is projected to increase from 37% to 47% at full buildout.
- Is home to Spring Chinook, listed as a threatened fish species.
- Named after the two major river systems in the Southern Willamette Valley, the Willamette and McKenzie rivers.

Comprehensive Plan

Cleaner, Safer, Healthier Environment

Adoption of the **Comprehensive Stormwater Management Plan** (CSWMP) in November 1993 ushered in a new vision for managing the City of Eugene's stormwater program. In addition to protecting the community from flooding problems, CSWMP expanded the program to include protection of stormwater water quality and related natural resources.

Basin Planning

Bringing CSWMP into Focus

Basin Planning is one of many action items for implementing CSWMP. The basin planning process includes assessing existing conditions, identifying stormwater system problems and opportunities, and recommending management strategies for implementing several CSWMP policies. Each of the City's seven drainage basins offers unique conditions and opportunities for implementing capital projects and development standards. Basin planning, therefore, is a refinement of CSWMP's broader policy direction representing what is feasible and practical to implement at the stormwater system level.

Other Activities

In addition to Basin Planning, many other city activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

- Erosion control for construction activities
- Education and outreach
- Monitor stormwater discharges of certain industrial uses
- Street sweeping
- Volunteer programs
- Vegetation management

Green Infrastructure

Green Infrastructure uses the beneficial flood control and water quality treatment characteristics of the natural landscape to help meet stormwater management objectives. When linked with the constructed system, the two work together to form a coordinated drainage system of streams, ponds, streets, and pipes.

Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solutions for correcting existing problems and will be designed to address the incremental effects of new development.

Water Quality

- *Existing Pollution Problem:* Capital projects are the most cost-effective solutions for addressing existing conditions, along with other ongoing program activities.
- *Pollution Associated with New Development:* Development standards are most effective for addressing pollutants at their source.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes in open waterways for existing developed areas.
- Stream corridor acquisition can be used to protect a limited number of high-priority waterways.
- Development standards are effective at preventing encroachment into waterways and preserving water quality functions.

More Information

- Visit the City's website at www.ci.eugene.or.us/pw/storm
- Contact Therese Walch at (541) 682-6839

EUGENE

The Management Strategy

Flood Control

Issue: **Some areas do not meet existing stormwater protection requirements.**

Desired Outcome: Flood protection requirements are met basin-wide.

Actions: **Capital Projects – see map**
- WK07 – River Point Pond outlet channel.
- WK08A – Gilham Road system culvert replacement.
- WK16A – Enhance capacity of Ascot Park waterway.

Stormwater-Related Natural Resources

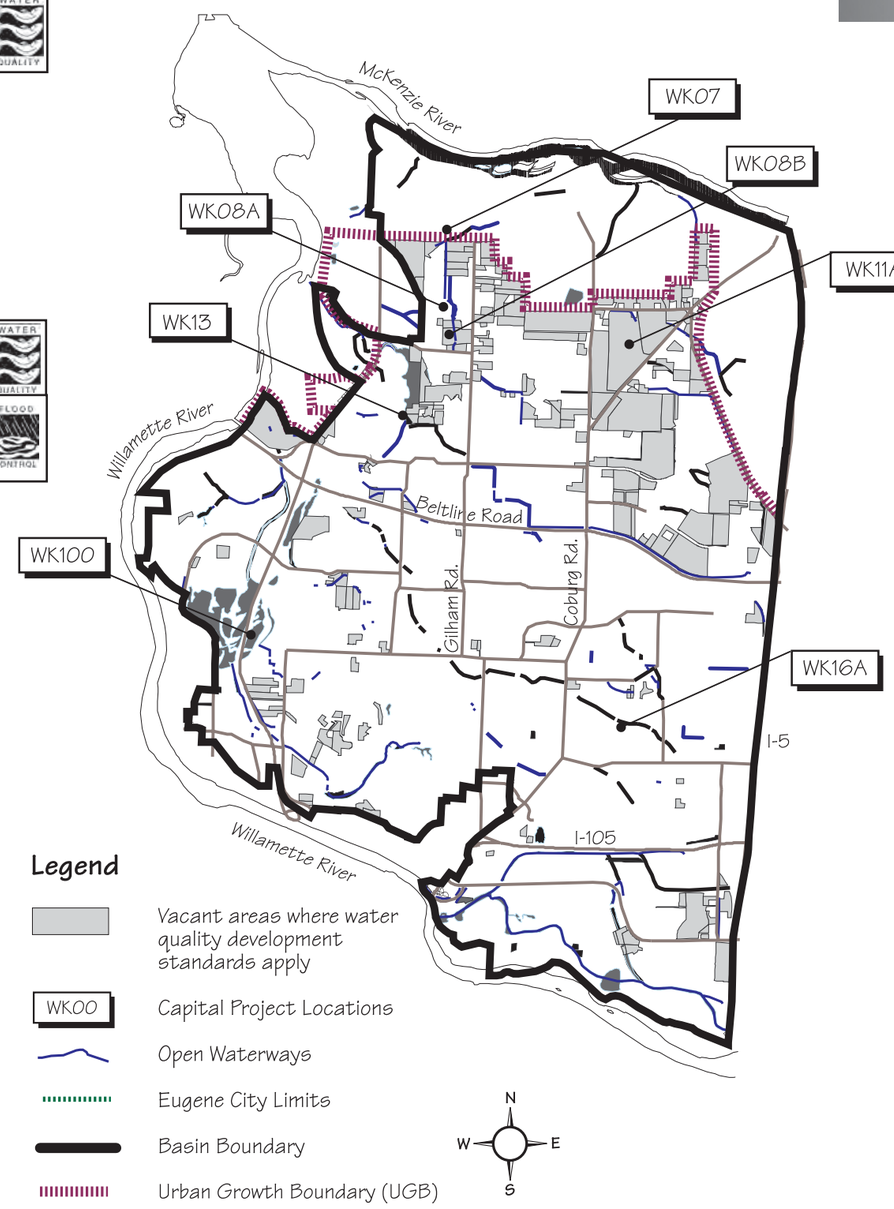
Issue: **Natural resources functions and values are being lost or are degraded due to lack of an overall management and implementation plan.**

Desired Outcome: Maintain and improve the extent and quality of existing stormwater-related natural resources.

Actions: **Capital Projects – see map**
- WK11A – Riparian-wetland waterway protection at Coburg and County Farm roads.
- Yearly budget item: Streambank Stabilization Projects.
- Ongoing: Restore waterways through federal-local partnerships (to be identified).

Development Standards – see map
- Prohibit filling/piping of important storm waterways.
- Require streamside setbacks.

Acquisition
- Acquire stream corridors according to the *City's Stream Corridor Acquisition Study.*



Water Quality

Issue: **Runoff from existing development is a major source of pollutants.**

Desired Outcome: Pollutants from existing land uses are reduced.

Actions: **Capital Projects – see map**
- WK13 – Ayers Pond outfall retrofit.
- WK08B – Gilham Road system water quality facility.
- WK100 – Federal priority project for Delta Ponds enhancement.
- Yearly Budget Item – water quality facilities in high source areas.
- Yearly Budget Category – retrofit tip-ups.
- Yearly Budget Category – outfall stabilization.

Issue: **Runoff from future development will increase pollutant discharges.**

Desired Outcomes: Reduce stormwater pollution from new development.

Actions: **Development Standards – see map**
- New and significant redevelopment projects are required to treat all runoff from City's water quality design standard.
- Incentives – provide incentives for existing development to reduce effective impervious surface areas and treat stormwater runoff.

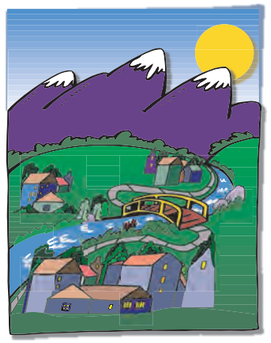
Other Elements of the Strategy

- General Stormwater Rehabilitation Projects.
- Channel Easement Acquisition.

CITY OF EUGENE
STORMWATER
MANAGEMENT PROGRAM

Executive Summary

City of Eugene



Vision for a Green Infrastructure

Willamette River Basin

Stormwater Management Strategy

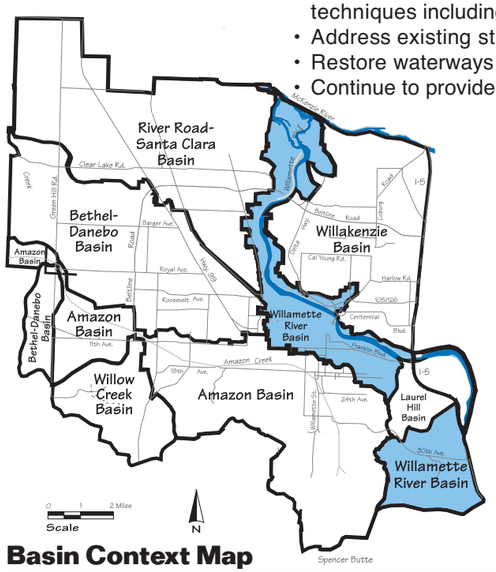
While relatively large in area, the location of this basin is limited to a narrow strip of land on either side of the Willamette River, extending from Lane Community College on the south to the McKenzie River on the north. The middle reach, from I-5 bridge to Beltline bridge, is within the urban growth boundary (UGB), and is nearly fully developed with the downtown area, University of Oregon, Alton Baker Park, and Valley River Center being significant existing land uses. For the purposes of this study, only the middle reach within the UGB is directly affected by the recommended management strategy. Results of the stormwater assessment for this basin revealed:

- Localized flooding is not a significant problem under existing or future land use conditions;
- Untreated stormwater runoff from existing land uses is the primary water quality issue in this basin;
- The Willamette River is designated as "water quality limited" for temperature and toxics and will be subject to future restrictions by the Oregon Department of Environmental Quality;
- Spring Chinook is listed as a threatened species and will effect local land use practices in this basin;
- Significant bank stability problems exist along the Willamette River in Skinner Butte Park; and
- Restoration potential is high for wildlife habitat and water quality functions at Delta Ponds.

Strategy

The recommended strategy for this basin is:

- Reduce existing pollutants to the extent feasible through system retrofits, especially in high source areas.
- Minimize future pollutants through on-site development standards.
- Protect waterways through a combination of development standards and other techniques including acquisition.
- Address existing stream bank stabilization problems through capital projects.
- Restore waterways through federal-local partnerships.
- Continue to provide flood protection services basin wide.



Basin Context Map

Willamette River Basin Facts

- Ranks fifth among all the basins in total size (7,023 acres).
- Ranks second in the amount of area designated as 100-year floodplain (2,002 acres).
- Ranks sixth in total length of local open waterways (12 miles – does not include Willamette River) and last in proportion of waterways to basin size.
- Impervious surface area in the UGB is projected to increase from 40% to 44% at full buildout .
- Is home to Spring Chinook, listed as a threatened fish species.
- The Willamette River listed by the Oregon Department of Environmental Quality as water quality limited.

August 2002

Comprehensive Plan

Cleaner, Safer, Healthier Environment

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Basin Planning

Bringing CSWMP into Focus

Basin planning is one of many action items for implementing CSWMP. The basin planning process includes assessing existing conditions, identifying stormwater system problems and opportunities, and recommending management strategies for implementing several CSWMP policies. Each of the City's seven drainage basins offers unique conditions and opportunities for implementing capital projects and development standards. Basin planning, therefore, is a refinement of CSWMP's broader policy direction and represents what is feasible and practical to implement at the stormwater system level.

Other Activities

In addition to Basin Planning, many other city activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

- Erosion control for construction activities
- Education and outreach
- Monitor stormwater discharges of certain industrial uses
- Street sweeping
- Volunteer programs
- Vegetation management

Green Infrastructure

Green Infrastructure uses the beneficial flood control and water quality treatment characteristics of the natural landscapes to help meet stormwater management objectives. When linked with the constructed system, the two work together to form a coordinated drainage system of streams, ponds, streets, and pipes.

Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solutions for correcting existing problems and will be designed to address the incremental effects of new development.

Water Quality

- *Existing Pollution Problem:* Capital projects are the most cost-effective solution for addressing existing conditions, along with other ongoing program activities.
- *Pollution Associated with New Development:* Development standards are most effective for addressing pollutants at their source.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes in open waterways for existing developed areas.
- Stream corridor acquisition can be used to protect a limited number of high-priority waterways.
- Development standards are effective at preventing encroachment into waterways and preserving water quality functions.

More Information

- Visit the City's website at www.ci.eugene.or.us/pw/storm or
- Contact Therese Walch at (541) 682-6839

EUGENE

The Management Strategy

Flood Control

Issue: **Flooding problems under existing and future conditions are relatively minor and occur primarily due to backwater conditions from the Willamette River.**

Desired Outcome: Flooding problems are minimized.

Actions: Increase system performance through tip-up retrofits and improved access for maintenance.

Related Natural Resources

Issue: **Natural resources functions and values are being lost due to the lack of an overall management and implementation plan.**

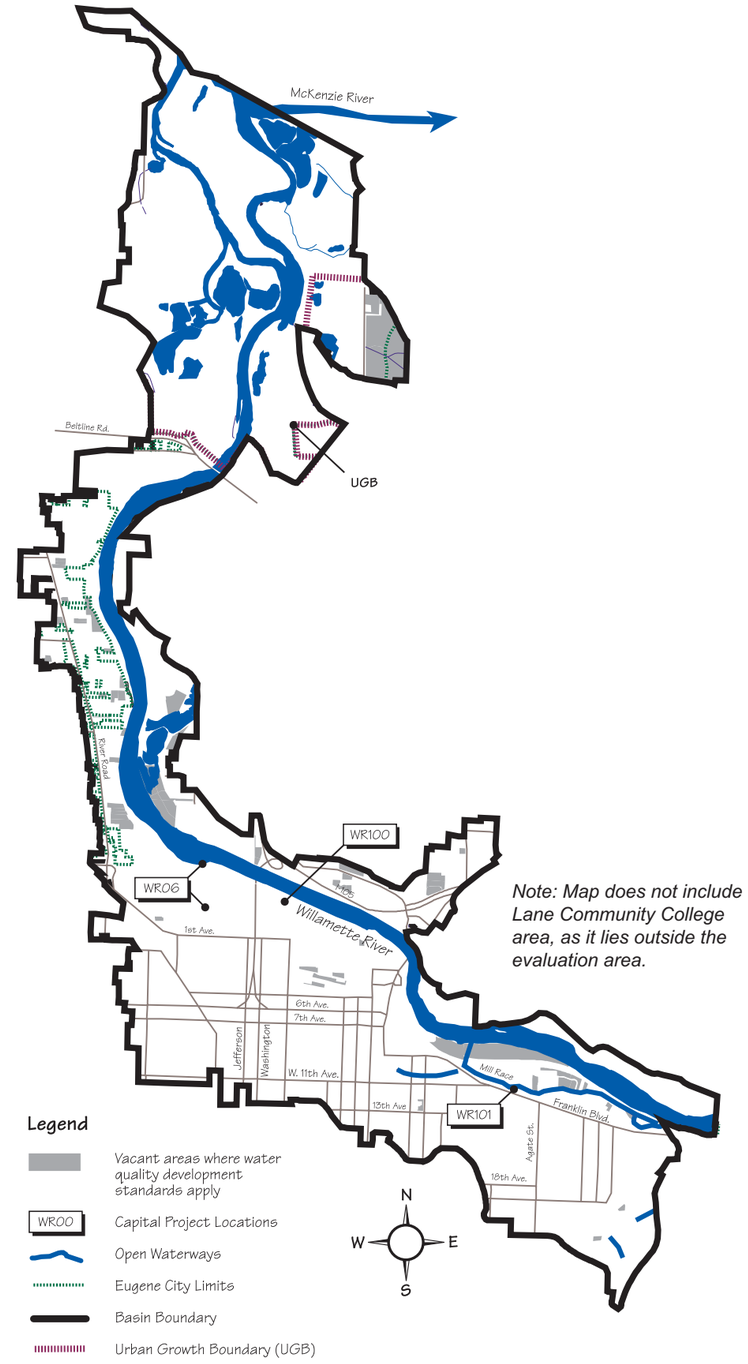
Desired Outcome: Maintain and improve the extent and quality of existing stormwater-related natural resources.

Actions: **Capital Projects (see map)**

- WR100 – Federal priority for Willamette River Bank Restoration.
- WR101 – Federal priority for Eugene Mill Race Enhancement.
- Ongoing: Restore waterways through federal-local partnerships (to be identified).

Development Standards (see map)

- Prohibit filling/piping of important storm waterways.
- Require streamside setbacks.



Note: Map does not include Lane Community College area, as it lies outside the evaluation area.

Water Quality: Pollution Prevention & Reduction

Issue: **Runoff from existing development is a major source of pollutants.**

Desired Outcome: Pollutants from existing land uses are reduced.

Actions: **Capital Projects (see map)**

- WR06 – Polk Street water quality facility.
- Yearly Budget Item – water quality facilities in high source areas.
- Yearly Budget Item – retrofit tip-ups.
- Yearly Budget Item – outfall stabilization.

Issue: **Runoff from future development will increase pollutant discharges.**

Desired Outcomes: Reduce stormwater pollution from new development.

Actions: **Development Standards – see map**

- New and significant redevelopment projects are required to treat all runoff from City's water quality design standard.
- Incentives – provide incentives for existing development to reduce effective impervious surface areas and treat stormwater runoff.
- Control rate of runoff into headwater streams for water quality benefits.

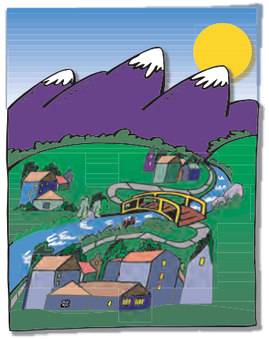
Other Elements of the Strategy

- General stormwater rehabilitation projects.
- Channel easement acquisition.

CITY OF EUGENE STORMWATER MANAGEMENT PROGRAM

Executive Summary

City of Eugene



Vision for a Green Infrastructure

Willow Creek Basin

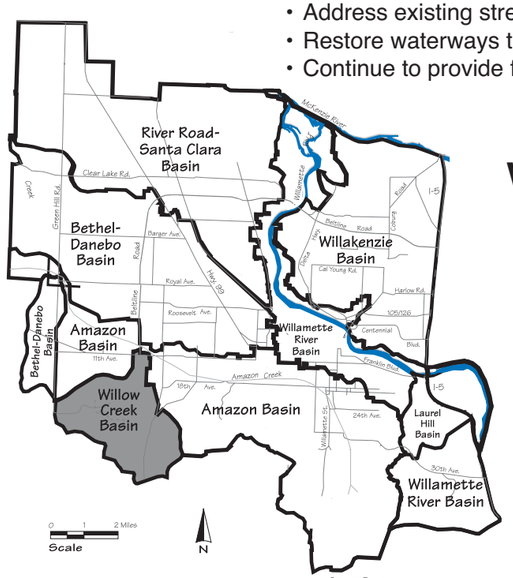
Stormwater Management Strategy

Mostly rural in character today, Willow Creek basin is the most physically and biologically diverse of all the basins within Eugene. Steep, forested hillsides flank a wetland-rich, flat, floodplain that contains extensive wetland prairies and numerous rare plant and animal species. Recent wetland protection efforts within the urban growth boundary have created urban services delivery challenges for the remaining area. The stormwater assessment process for this basin revealed there are relatively few flood control, water quality, and related natural resources problems under existing conditions, but there are likely to be significant problems under future conditions especially if the urban reserve area develops to urban densities.

Strategy

The recommended strategy for this basin is based on recent policy direction by elected officials to remove the urban reserve designation. If this occurs, nearly 55% of the basin would remain in rural resource use. Should this policy not be implemented, strategies in addition to those listed below, would be needed for the urban reserve area. Recommended strategies for the UGB include:

- Reduce existing pollutants to the extent feasible through system retrofits, especially in high source areas.
- Minimize future pollutants through on-site development standards and flow controls for headwater areas.
- Protect waterways through a combination of development standards, capital projects, setback requirements, and acquisition.
- Address existing stream bank stabilization problems through capital projects
- Restore waterways through federal-local partnerships.
- Continue to provide flood protection services basin wide.



Basin Context Map

Willow Creek Basin Facts

- Ranks sixth among all the basins in total size (2,567 acres).
- Ranks sixth in the amount of area designated as 100 year floodplain (22 acres).
- Ranks fifth in total length of open waterways (17 miles) but first in proportion of waterways to basin size.
- Impervious surface area in the UGB is projected to increase from 14% to 42% at full buildout.
- Is home to eleven plant and animal species listed or being considered for listing as threatened or endangered.
- Is a tributary to the Amazon Basin.

Comprehensive Plan

Cleaner, Safer, Healthier Environment

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Other Activities

In addition to Basin Planning, many other city activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

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- Monitor stormwater discharges of certain industrial uses
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- Volunteer programs
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Green Infrastructure

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Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solution for addressing existing problems and will be designed to address the incremental effects of new development within the UGB. (Note: If the Urban Reserve area is allowed to develop, capital projects are the most cost-effective solution for addressing existing problems and would be designed to meet these needs, and on-site development standards would be more cost-effective and more environmentally compatible for addressing problems associated with future development.)

Water Quality

- *Existing Pollution Problem*: Capital projects are the most cost-effective solution for addressing existing conditions, along with other ongoing program activities.
- *Pollution Associated with New Development*: Development standards are most effective for addressing pollutants at their source and minimizing water quality impacts of new development in headwater areas.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes in open waterways for existing developed areas.
- Stream corridor acquisition can be used to protect a limited number of high priority waterways.
- Development standards are effective at preventing encroachment into waterways and preserving water quality functions.

More Information

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- Contact Therese Walch at (541) 682-6839

EUGENE

The Management Strategy

Flood Control

Issue: **Existing flooding problems are relatively minor and are limited to certain road culverts and bridges. The magnitude of future flooding will depend on whether new development is limited to the UGB or to include the urban reserve area.**

Desired Outcomes: Capacity problems at bridges and culverts are eliminated under existing and future conditions.

Actions:

Capital Projects - see map
- WC3C3 – Retrofit driveway culverts along West Branch of Willow Creek.
- WC3C4 – Retrofit culverts and bridge along East Branch of Willow Creek.

Development Standards - see map *(only applies if Urban Reserve develops)*
- All new development and significant redevelopment projects are required to control peak runoff rates to pre-development conditions.

Related Natural Resources

Issue: **Significant types and concentrations of natural resources are present throughout the basin and are susceptible to impact due to a lack of an overall management and implementation strategy.**

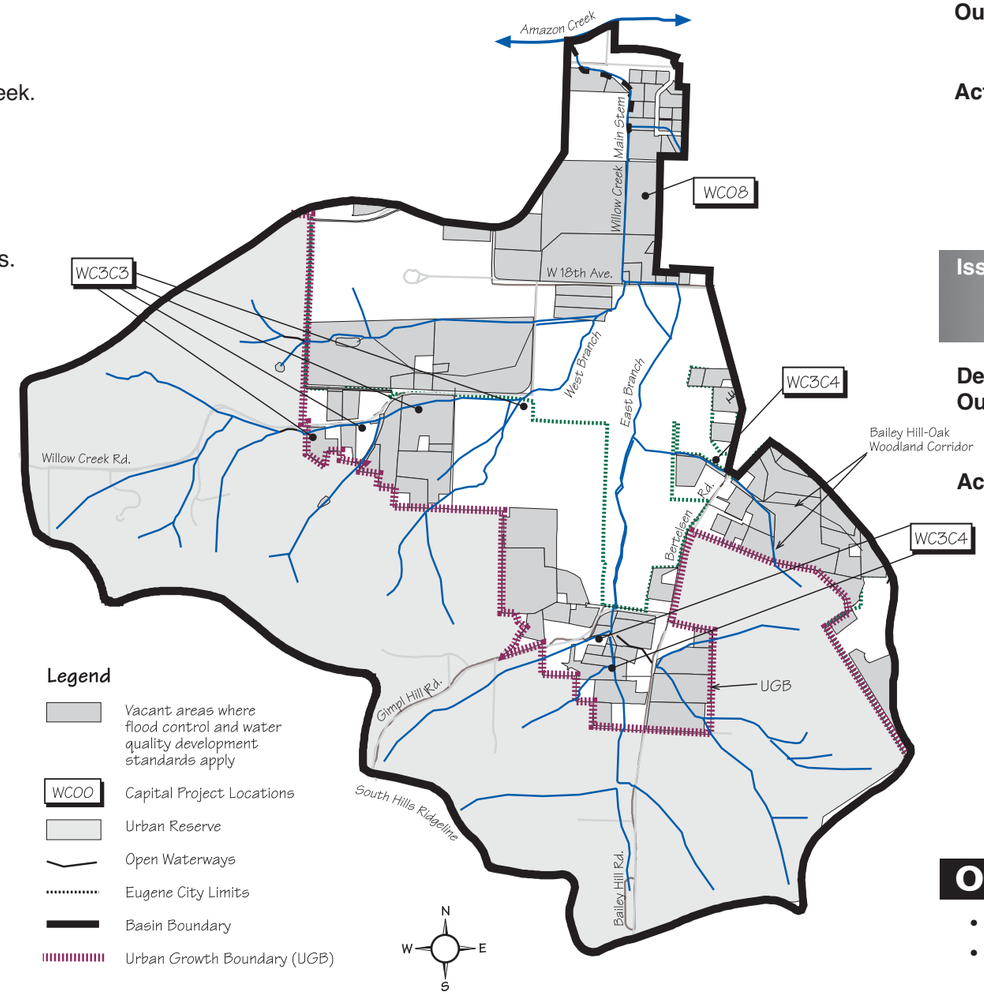
Desired Outcome: Maintain and improve the extent and quality of existing stormwater-related natural resources.

Actions:

Capital Projects (see map)
- WC08 – Realign and restore historic Willow Creek Main Stem between W. 18th and W. 11th avenues.
- Yearly budget item: Streambank Stabilization Projects.
- Ongoing: Restore waterways through federal-local partnerships (to be identified).

Acquisition
- Acquire stream corridors according to the *City's Stream Corridor Acquisition Study.*

Development Standards – see map
- Prohibit filling/piping of important storm waterway.
- Implement streamside setback requirements.
- Ensure hydrologic needs of natural resources are considered when developing future flood control and water quality discharge standards.



Water Quality

Issue: **Runoff from existing development is a source of pollutants.**

Desired Outcomes: Pollutants from existing land uses are reduced.

Actions:

Capital Projects (sites to be selected)
- Yearly Budget Item – water quality facilities in high source areas.
- Yearly Budget Category – outfall stabilization.

Issue: **Runoff from future development will increase pollutant discharges.**

Desired Outcomes: Reduce stormwater pollution from new development.

Actions:

Development Standards – see map
- New and significant redevelopment projects are required to treat all runoff from City's water quality design standard.
- Incentives – provide incentives for existing development to reduce effective impervious surface areas and treat stormwater runoff.
- Control rate of runoff into headwater streams for water quality benefits.

Other Elements to the Strategy

- General Stormwater Rehabilitation Projects.
- Channel Easement Acquisition.

CITY OF EUGENE STORMWATER MANAGEMENT PROGRAM

City of Eugene

The Context

Executive Summary

Vision for a Green Infrastructure

River Road–Santa Clara Basin

Stormwater Management Strategy

The River Road – Santa Clara stormwater basin, located in the northwest corner of the Eugene-Springfield metropolitan area, is generally bounded by the Willamette River on the east, the Bethel-Danebo drainage basin on the south and the Metro Plan boundary on the west and north. The basin is the second largest of Eugene's stormwater basins at 10,458 acres in size, with about 58 percent (6,071 acres) of its area within the Eugene urban growth boundary (UGB) and the remaining 42% located outside of the urban growth boundary. The basin includes five major drainage systems: the A1 Channel, Highway 99, Flat Creek, Spring Creek, and the Willamette Overflow (also referred to as the East Santa Clara Waterway). These waterways flow in a north-northwesterly direction and drain to the Willamette River either directly (Flat Creek, Spring Creek, East Santa Clara Waterway) or indirectly via Amazon Creek and the Long Tom River (A1 Channel, Highway 99).

Inside the UGB, the predominant land uses in the basin are low and medium-density residential (2,558 acres) and industrial/commercial (747 acres). Outside of the UGB, the predominant land uses are government, including the Eugene airport (960 acres) and agriculture (2,433 acres).

The River Road – Santa Clara basin is unique in many ways, including it's patchwork of City/County jurisdictional areas: 1,802 acres located inside Eugene city limits; 4,270 acres outside city limits and inside the UGB; and 4,387 acres outside of the UGB. It is also one of the most complex basins in terms of stormwater management. Results of the stormwater assessment for this basin revealed:

- A discontinuous stormwater system comprised of pipes, drywells, ditches and waterways
- Historic use of drywells for managing stormwater drainage
- Very flat topography
- Shallow groundwater levels
- Rapidly draining soils in some areas
- Rural "country" feel in some areas, with large residential lots and curbless streets

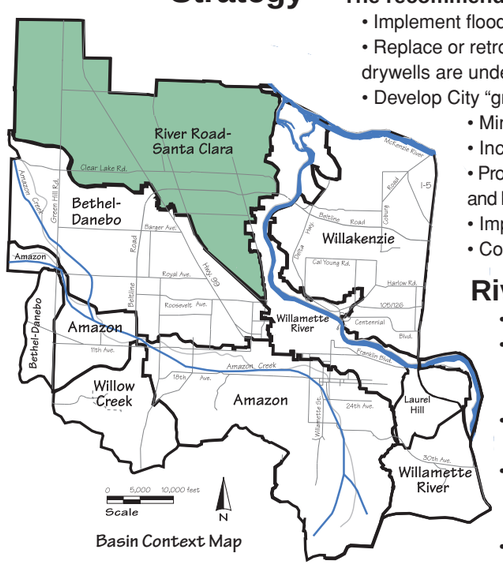
City and County Jurisdictions

Given the mixed jurisdictional nature of the River Road-Santa Clara basin, the City and County will ultimately view and implement strategies and opportunities differently. Through a "basin partnership," the jurisdictions will work together for the best benefit of all. This executive summary attempts to outline some of these opportunities.

Strategy

The recommended strategy for this basin is:

- Implement flood control capital projects to address predicted flooding problems in specific areas.
- Replace or retrofit existing public drywells to meet Safe Drinking Water Act requirements (private drywells are under the authority of DEQ).
- Develop City "green street" concepts for local street improvements.
- Minimize future pollutants through City's on-site stormwater development standards.
- Increase City's implementation of low impact development practices.
- Protect water quality by relying on Goal 5 natural resource protections for certain waterways and by filling the gaps in protection on specific waterway segments not protected by Goal 5.
- Implement City's *Stream Corridor Acquisition Plan*.
- Continue to provide flood protection services basin wide.



Basin Context Map

River Road–Santa Clara Basin Facts:

- Almost all of the basin (99%) has slopes of 5% or less.
- Ranks 1st among the City's major basins in total length of open waterways (48 miles within the basin boundary) and 2nd in extent of open drainage system per square mile of basin area (3.0 miles/square mile), relative to other basins.
- Impervious surface area inside the UGB is projected to increase from 37.5% to 50.1% at buildout.
- The Willamette River, to which runoff from River Road – Santa Clara drains directly or indirectly, is listed by the Oregon DEQ as water quality limited for temperature, bacteria and mercury.
- Approximately 25% of the basin drains to drywells (19% public, 81% private).

Comprehensive Plan

Cleaner, Safer, Healthier Environment

Adoption of the Comprehensive Stormwater Management Plan (CSWMP) in November 1993 ushered in a new vision for managing the City of Eugene's stormwater program. In addition to protecting the community from flooding problems, CSWMP expanded the program to include protection of stormwater water quality and related natural resources.

Basin Planning

Bringing CSWMP into Focus

Basin Planning is one of many action items for implementing CSWMP. The basin planning process includes assessing existing conditions, identifying stormwater system problems and opportunities, and recommending management strategies for implementing several CSWMP policies. Each of the City's seven drainage basins offers unique conditions and opportunities for implementing capital projects and development standards. Basin planning, therefore, is a refinement of CSWMP's broader policy direction and represents what is feasible and practical to implement at the stormwater system level.

Other Activities

In addition to Basin Planning, many other city and county activities are conducted to enhance water quality, protect stormwater-related natural resources, and prevent flooding. A few examples include:

- Erosion control for construction activities
- Education and outreach
- Stormwater system maintenance
- Street sweeping
- Volunteer programs
- Vegetation management

Green Infrastructure

Green Infrastructure uses the beneficial flood control and water quality treatment characteristics of the natural landscapes to help meet stormwater management objectives. When linked with the constructed system, the two work together to form a coordinated drainage system of streams, ponds, streets, and pipes.

Why This Strategy?

Flood Control

- Capital projects are the most cost-effective solutions for correcting existing problems and are designed to address the incremental effects of new development.
- Low impact development practices are effective at reducing runoff volumes and minimizing problems associated with increased flows from new development.
- Flows from decommissioning of public drywells (see Water Quality below) will be accomodated through decommissioning capital projects to match current drywell functions.

Water Quality

- *Pollution associated with new development:* Development standards are effective for addressing pollutants at their source. Implementing low impact development practices further enhances effectiveness.
- *Pollution associated with existing development:* Capital projects to retrofit the stormwater system in high pollutant source areas are effective in improving the current water quality condition.
- *Problems associated with public drywells*: Capital projects to replace or retrofit public drywells are the most effective solutions for meeting federal water quality regulations. Both the City and County registered their drywells with DEQ and have applied for a permit to manage the drywells until they can be authorized or decommissioned.
- *Gaps in water quality protections for certain waterways*: Water quality waterway protections to address gaps will result in a *system* of protected waterways.

Stormwater-Related Natural Resources

- Capital projects are the most viable method for addressing negative effects of high runoff volumes associated with existing developed areas.
- Relying on Goal 5 natural resource protections is an effective way to protect certain waterways for multiple benefits including natural resources and water quality benefits.
- Stream corridor acquisition can be used to protect a limited number of high-priority waterways.

More Information

Visit the City's website at **www.eugene-or.gov/pw** (follow the links to stormwater).
Contact Therese Walch, Water Resources Manager, at (541) 682-5549.

EUGENE

The Management Strategy

Flood Control

Issue:
Some areas do not meet existing drainage system conveyance standards.

Desired Outcome:
Flood protection needs are met basin-wide.

Actions: Capital Projects – see map (red dots)
- System improvements to enhance capacity: A1 tributary south of Irving Rd; Willamette Overflow upstream of Division Ave.
- Culvert replacements to improve capacity: various locations.
- Public drywell decommissioning projects (see Water Quality) will be designed to convey the 5-year storm to match existing drywell functions.

Stormwater Related Natural Resources

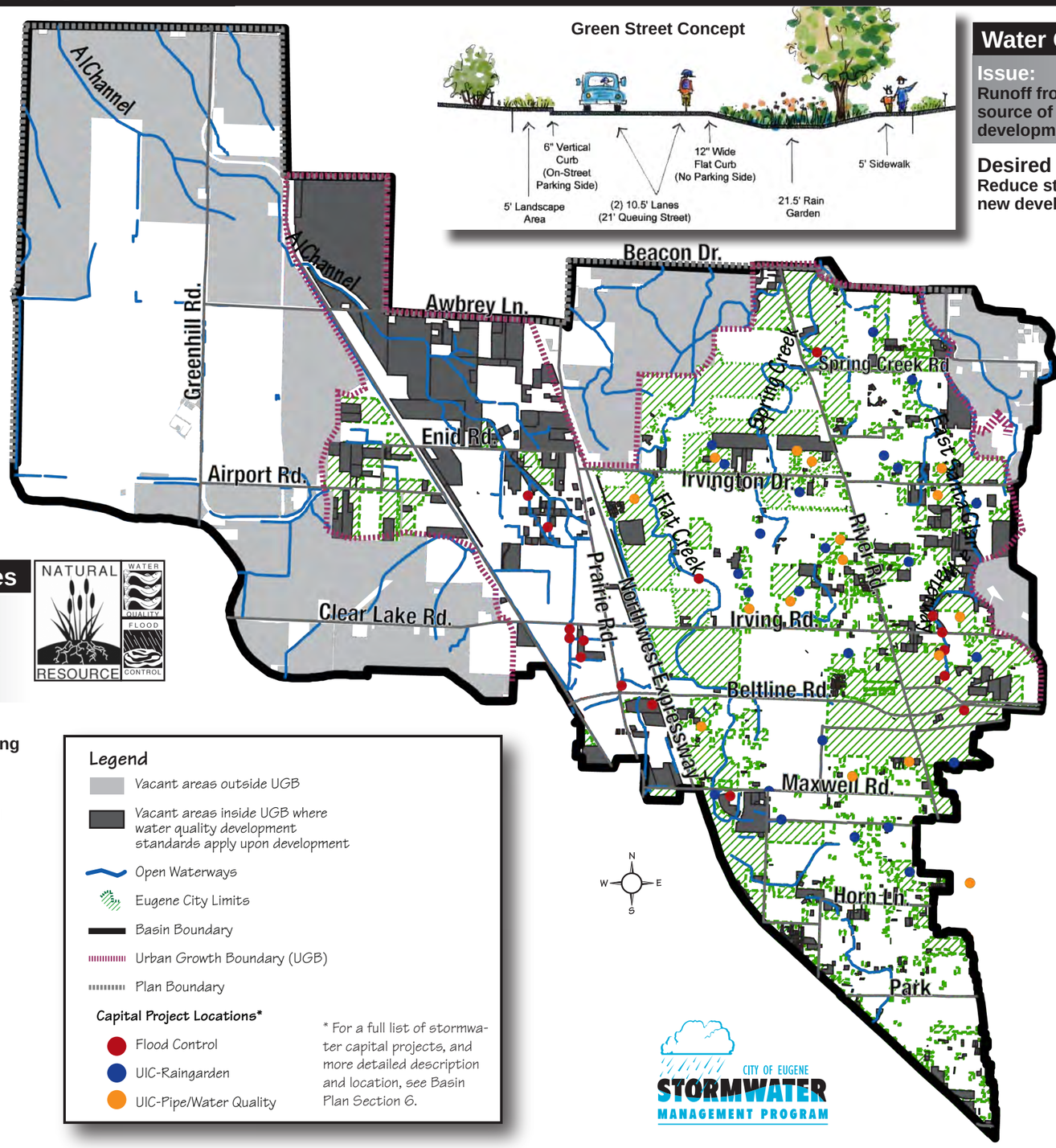
Issue:
Natural resources functions and values of streams, ponds, wetlands and waterways are important to the overall health of a watershed and would be at risk without adequate protection.

Desired Outcomes:
Maintain and improve the extent and quality of existing stormwater-related natural resources.

Actions: Capital Projects
- Yearly City budget category – Streambank stabilization and outfall stabilization projects.

Development Standards:
- Support implementation of Goal 5 natural resource protections.

Acquisition:
- Acquire stream corridors according to the City's *Stream Corridor Acquisition Study.*



Water Quality

Issue:
Runoff from existing development is a significant source of pollutants; Runoff from future development will increase pollutant discharges.

Desired Outcome:
Reduce stormwater pollution from existing land uses and from new development.

Actions: Capital Projects
- Yearly City budget category – Water quality facilities in high source areas.
- Yearly City budget category – Retrofit tip-ups.
- Yearly City budget categories – Outfall stabilization/stream bank stabilization.

Development Standards:
- New and significant development projects in Eugene are required to treat all runoff from City's water quality design storm.
- Increase City's implementation of low impact development practices through administrative adjustments, integration of LID practices with other initiatives, land use code amendments, and other program enhancements.

Green Street Concepts
- Develop green street alternatives, for use in local street improvements or for new City local streets that utilize rain gardens to manage stormwater runoff from rights-of-way.

Issue: Some existing public drywells have inadequate separation to seasonal high groundwater.

Desired Outcomes: Replace or retrofit existing public drywells consistent with Safe Drinking Water Act requirements.

Actions: Capital Projects–see map (blue & gold dots)
- Decommission/Retrofit Public Drywells (33 "UIC Cluster" projects, to be implemented in partnership with Lane County) utilizing rain gardens or piped systems with pre-treatment facilities.
- DEQ has authority for private drywell systems.

Issue: Gaps in protections exist for waterways that are tributary to those listed by the Oregon DEQ as "water quality impaired."

Desired Outcomes: Water quality functions on specific waterways of interest to water quality are protected by preventing piping/filling and further encroachment.

Actions: Development Standards
- Fill the gaps in waterway protections on specific waterway segments currently not protected by Goal 5 natural resource protections.

City of Eugene
Stormwater Retrofit Plan

Appendix C

Basin Plan Capital Projects List

Table 5-1*
Capital Project Implementation Schedule Years 2001 – 2005

Capital Project Identification	Total Cost	Funding Source and Allocation		
		SDCs	User Fees	Federal Priority Funds
AM 06A – Kinney Park Water Quality Facility	$486,800	$360,232 [74%]	$126,568 [26%]	$0
AM 09 – Frederick Court Pipe Daylight	$118,300	$54,418 [46%]	$63,882 [54%]	$0
AM 11 – Hilyard Street Pipe Improvements	$290,200	$66,746 [23%]	$223,454 [77%]	$0
AM 100 – Upper Amazon Creek Restoration	$3,300,000	$0	$1,155,00 [35%]	$2,145,000 [65%]
BD 11A – Green Hill Tributary Improvements	$940,600	$319,804 [34%]	$620,796 [66%]	$0
BD 15 – Roosevelt Channel Culvert	$135,900	$43,488 [32%]	$92,412 [68%]	$0
BD 100 – Royal Node Infrastructure	$1,400,000	$1,400,000 [100%]	$0	$0
LH 06C – Riverview/Aug. Piped Bypass System	$541,600	$444,112 [82%]	$97,488 [18%]	$0
LH 07 – Riverview/ Augusta Minor Pipe System	$59,400	$0	$59,400 [100%]	$0
LH 08 – Riverview/ Augusta Drainage Plan	$48,000	$0	$48,000 [100%]	$0
LH 09 – Augusta/I-5 Water Quality Facility	$1,245,600	$0	$1,245,600 [100%]	$0
WK 07 – River Point Pond Outlet Channel	$373,300	$153,053 [41%]	$220,247 [59%]	$0
WK 100 – Delta Ponds Habitat Enhancement	$2,330,600	$0	$815,710 [35%]	$1,514,890 [65%]
WR 06 – Polk Street Water Quality Facilities	$500,000	$0	$500,000 [100%]	$0
WR 100 – Willamette River Bank Restoration	$1,050,000	$0	$367,500 [35%]	$682,500 [65%]
WR 101 – Eugene Millrace Restoration	$3,550,000	$0	$1,242,500 [35%]	$2,307,500 [65%]
WC 3C3 – Willow Creek W. Branch Culvert	$82,200	$0	$82,200 [100%]	$0
Subtotal	**$16,452,500**	**$2,841,853 [17%]**	**$6,960,757 [42%]**	**$6,649,890 [41%]**
Yearly Capital Program Line Items Citywide (amounts shown are totals for 2001-2005):				
- WQ High Source Areas	$750,000	$0	$750,000 [100%]	$0
- Outfall Stabilization	$625,000	$0	$625,000 [100%]	$0
- Streambank Stabilization	$750,000	$187,500 [25%]	$562,500 [75%]	$0
- Retrofit Tip-ups	$625,000	$0	$625,000[100%]	$0
- General Rehabilitation	$2,000,000	$0	$2,000,000 [100%]	$0
- Stream Acquisition	$2,481,000	$0	$2,481,000 [100%]	$0
- Services for New Dev.	$500,000	$500,000 [100%]	$0	$0
Subtotal	**$7,731,000**	**$687,500 [9%]**	**$7,043,500 [91%]**	**$0**
Total	**$24,183,500**	**$3,529,253 [15%]**	**$14,004,257 [58%]**	**$6,649,890 [27%]**

* This table does not include the three projects identified for early implementation in the River Road Santa Clara basin.

Table 5-2
Implementation Schedule Years 2006 - 2010

Capital Project Identification	Total Cost	Funding Source and Allocation		
		SDCs	User Fees	Federal Priority Funds
AM 12 – Pine View Water Quality Facility	$309,100	$0	$309,100 [100%]	$0
AM 15D – N. Laurelwood Water Quality Facility	$445,600	$0	$445,600 [100%]	$0
AM 15E – S. Laurelwood Water Quality Facility	$371,400	$0	$371,400 [100%]	$0
AM 17 – Jackson Street Pipe Improvements	$77,400	$19,350 [25%]	$58,050 [75%]	$0
AM 101 – Central Amazon Creek Restoration	$3,504,000	$0	$1,226,400 [35%]	$2,277,600 [65%]
BD 08 – Retrofit Empire Park Pond	$385,000	$77,000 [20%]	$308,000 [80%]	$0
WK 08A – Gilham Rd System Culvert Replacement	$27,000	$27,000 [100%]	$0	$0
WK 08B – Gilham Rd Water Quality Facility	$653,800	$65,380 [10%]	$588,420 [90%]	$0
WK 13 – Ayers Pond Outfall Retrofit	$774,000	$0	$774,000 [100%]	$0
Subtotal	**$6,547,300**	**$188,730 [3%]**	**$4,080,970 [62%]**	**$2,277,600 [35%]**
Yearly Capital Program Line Items Citywide (amounts shown are totals 2006-2010):				
- WQ High Source Areas	$750,000	$0	$750,000 [100%]	$0
- Outfall Stabilization	$625,000	$0	$625,000 [100%]	$0
- Streambank Stabilization	$750,000	$187,500 [25%]	$562,500 [75%]	$0
- Retrofit Tip-ups	$625,000	$0	$625,000 [100%]	$0
- General Rehabilitation	$2,000,000	$0	$2,000,000 [100%]	$0
- Stream Acquisition	$750,000	$0	$750,000 [100%]	$0
- Services for New Dev.	$500,000	$500,000 [100%]	$0	$0
Subtotal	**$6,000,000**	**$687,500 [11%]**	**$5,312,500 [89%]**	**$0**
Total	**$12,547,300**	**$876,230 [7%]**	**$9,393,470 [75%]**	**$2,277,600 [18%]**

Table 5-3
Implementation Schedule Years 2011 - 2035

Capital Project Identification	Total Cost	Funding Source and Allocation			General Timing
		SDCs	User Fees	Federal Priority	
AM 08B – Mt. Cavalry Pipe Improvements	$763,200	$183,168 [24%]	$580,032 [76%]	$0	FY31-FY35
AM 08D – Mt. Cavalry Water Quality Facility	$469,600	$0	$469,600 [100%]	$0	FY26-FY30
AM 13 – 43rd Avenue Pipe Improvements	$2,155,500	$689,760 [32%]	$1,465,740 [68%]	$0	FY31-FY35
AM 14 – Morse Ranch Park Pipe Improvements	$1,054,500	$115,995 [11%]	$938,505 [89%]	$0	FY21-FY25
AM 15B – Laurelwood Flood Control/Pipe Imp	$2,008,400	$301,260 [15%]	$1,707,140 [85%]	$0	FY26-FY30
AM 27B – Windsor Circle Pipe Improvements	$919,000	$588,160 [64%]	$330,840 [36%]	$0	FY26-FY30
AM 27C –West Hawkins Water Quality Facility	$625,300	$506,493 [81%]	$118,807 [19%]	$0	FY21-FY25
AM 29 –Sam R. Street Water Quality Facility	$486,400	$0	$486,400 [100%]	$0	FY31-FY35
AM 30 –Interior Street Water Quality Facility	$328,200	$0	$328,200 [100%]	$0	FY21-FY25
BD 06 – Increase Pipe Sizes Along Bell Avenue	$794,600	$365,516 [46%]	$429,084 [54%]	$0	FY21-FY25
BD 11C – Greenhill Trib. Water Quality Facility	$748,800	$224,640 [30%]	$524,160 [70%]	$0	FY26-FY30
WC 3C4 – East Branch Culvert/Channel/Retrofit	$69,400	$0	$69,400 [100%]	$0	FY16-FY20
WC 08 – Realign/Restore Willow Creek Mainstem	$920,200	$0	$322,070 [35%]	$598,130 [65%]	FY21-FY25
WK 11A – Wetland Protection Coburg/Co Farm Rds	$225,600	$63,168 [28%]	$162,432 [72%]	$0	FY31-FY35
WK 16A – Modify Ascot Park Open Waterway	$72,200	$47,652 [66%]	$24,548 [34%]	$0	FY16-FY20
Subtotal	$11,640,900	$3,085,812 [27%]	$7,956,958 [68%]	$598,130 [5%]	
Yearly Capital Program Line Items Citywide (amounts shown are totals 2011-2035):					
- WQ High Source Areas	$3,750,000	$0	$3,750,000 [100%]	$0	Annual
- Outfall Stabilization	$3,125,000	$0	$3,125,000 [100%]	$0	Annual
- Streambank Stabilization	$3,750,000	$937,500 [25%]	$2,812,500 [75%]	$0	Annual
- Retrofit Tip-ups	$1,875,000	$0	$1,875,000 [100%]	$0	Annual
- General Rehabilitation	$10,000,000	$0	$10,000,000 [100%]	$0	Annual
- Stream Acquisition	$2,359,000	$0	$2,359,000 [100%]	$0	Annual
- LID Facilities w/ Street Projects	$5,796,700	$5,796,000[100%]	$0	$0	Annual
- LID Facilities w/ Drywell Elim.	$2,283,200	$2,005,800[88%]	$277,400 [12%]	$0	Annual
- Services for New Dev.	$2,500,000	$2,500,000 [100%]	$0	$0	Annual
Subtotal	$35,438,900	$11,239,300 [32%]	$24,198,900 [68%]	$0	
Total	$47,079,800	$14,325,112 [31%]	$32,155,858[68%]	$598,130 [1%]	
Grand Total Years 2001 - 2035	$83,810,600	$18,730,595 [22%]	$55,553,585 [66%]	$9,525,620 [12%]	

Exhibit A to Administrative Order No. 58-14-03

City of Eugene
Stormwater Retrofit Plan

Appendix D

Stormwater Capital Project Prioritization Criteria

City of Eugene

Stormwater CIP Selection Matrix Criteria

Last Updated April 9, 2013

The following list includes weighting factors and descriptions of how to weight projects for each criterion. This standardized method is to be used for prioritizing stormwater capital improvement projects. Once the prioritization of projects has been completed for each CIP cycle, the second phase of project selection would occur. This phase is outlined at the end of this document.

1st Phase of Selection

Note: Scoring included below reflects the two end points and mid-point of the possible range of scores within each category. Individual project scores can be anywhere within this range.

1. Project resolves a safety, health or security issue to citizens and staff of the City of Eugene.

**Does the project resolve a safety, health or security issue (ie. Risk to life or property)?*

0=No, but there are other reasons to pursue it.
10=Minimal risk, under the right circumstances this could be a problem
20=This is a Dangerous situation and needs attention quickly.

2. Project is a result of regulations, codes, law or other mandate.

**Is the City of Eugene required to resolve an issue or address a problem?*

0=No there are not regulatory requirements involved
10=The City of Eugene would likely face a compliance issue if not addressed.
20=The City of Eugene has been directed to comply by the regulatory entity

3. Project provides a long term solution to an on going maintenance or public complaint issue.

**Will this project resolve an on going maintenance issue?*

0 = No it will not or none have been identified
8 = Yes, however the maintenance issue is minor and other criteria dictate the project need.
16 = This project resolves a specific maintenance problem once and for all.

4. **Project meets multiple objectives consistent with program policy, the Comprehensive Stormwater Management Plan (CSWMP):**
    - **Water Quality**
    - **Safety / Capacity**
    - **Natural Resources**
    - **Quality infrastructure**
    - **Education**

**Does project include multiple objectives identified in CSWMP?*
Provide 2 pts for each objective listed in CSWMP (P.1-1)
Provide additional 2 pts if 3 objectives are met or 4 pts if 4 or 5 are met.
Total possible = 14 pts

5. **Project protects and restores natural watershed functions.**

**Does project protect and restore natural watershed functions?*
0 = No protection or restoration of natural watershed function is planned
7 = Protection or restoration will be implemented however structural infrastructure is necessary.
14 = This project restores and protects the natural function of the watershed.

Examples of watershed function. (could be points per function)
- *Detention*
- *Infiltration*
- *Filtration*
- *Habitat*
- *Sediment transport and deposition*

6. **Project takes advantage of an opportunity that otherwise might not exist. (Examples: One time funding, leverage another project timeline or funding)**

**Do opportunities exist that will help implement this project or help fund it that might not otherwise make it desirable.*
0= No opportunities seem to push this project forward
6=There are opportunities that will help this project be successful
12=This project should take advantage of this opportunity or it may not happen

7. **Project improves efficiency of maintenance activities.**

**Will this project improve efficiency of maintenance activities?*
0 = No operational change will occur
6 = This will improve maintenance activity efficiencies some.
12 = This will greatly improve efficiencies or even remove needed maintenance activities.

8. Project addresses TMDL (bacteria, temperature and mercury TMDLs applicable city-wide; turbidity and dissolved oxygen TMDLs applicable in the Amazon basin and Bethel-Danebo Basin, A3 sub-basin).

**Will this project reduce or remove elements of TMDL applicable within the project's watershed.*

0= No reduction of TMDL is planned
3= Some reduction of TMDL has been identified
6= The focus of this project is to reduce or remove TMDL influence.
+1= Additionally - One point per applicable TMDL element being focused on.

9. Project is identified in an approved work plan, master plan or adopted study.

0= The project is not in an approved plan or study
2= The project is suggested in an approved plan or study
5=The project is required by an approved plan or study

10. Project expands the effectiveness of City facilities to meet projected impacts of growth and development.

**Does this project address projected impacts of growth and development?*

0 = Project does not address any impacts to our community as a result of growth or development
2= Project expands facility to meet one or minimally two impacts of growth and development
5= Project expands facility to resolve impacts to new development in all areas

Impacts could include:

- *Capacity*
- *Water quality*
- *Natural resources*
- *Safety*

2nd Phase of Selection

The following items should be considered before final prioritization of projects. Resolutions or suggestions to each of these should be forwarded on with project. Based on current level of funding available and the following guidelines, projects will be selected for inclusion to the 2 year CIP list.

- *Identify impacts of the project that would delay or become cost prohibitive.*
- *The project resolves an issue in an environmentally responsible way.*
- *Appropriate solutions are selected to minimize impacts.*
- *Project selection shall be evenly distributed throughout the City of Eugene.*
- *Appropriate funding shall be available for any project identified.*
- *A distribution of project types is evenly chosen.*

City of Eugene
Stormwater Retrofit Plan

Appendix E

Stormwater Management Manual, Table of Contents

Chapter 1.0

STORMWATER MANAGEMENT IN EUGENE

This chapter outlines the City of Eugene's stormwater management requirements.

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Chapter 2.0

SELECTING, DESIGNING, CONSTRUCTING AND LANDSCAPING STORMWATER MANAGEMENT FACILITIES

This chapter provides procedures for selecting and designing stormwater facilities that provide stormwater flood control, quality, and flow control. It includes:

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City of Eugene
Stormwater Retrofit Plan

Appendix F

Stormwater CIP, Fiscal Year 2014-2019

Stormwater

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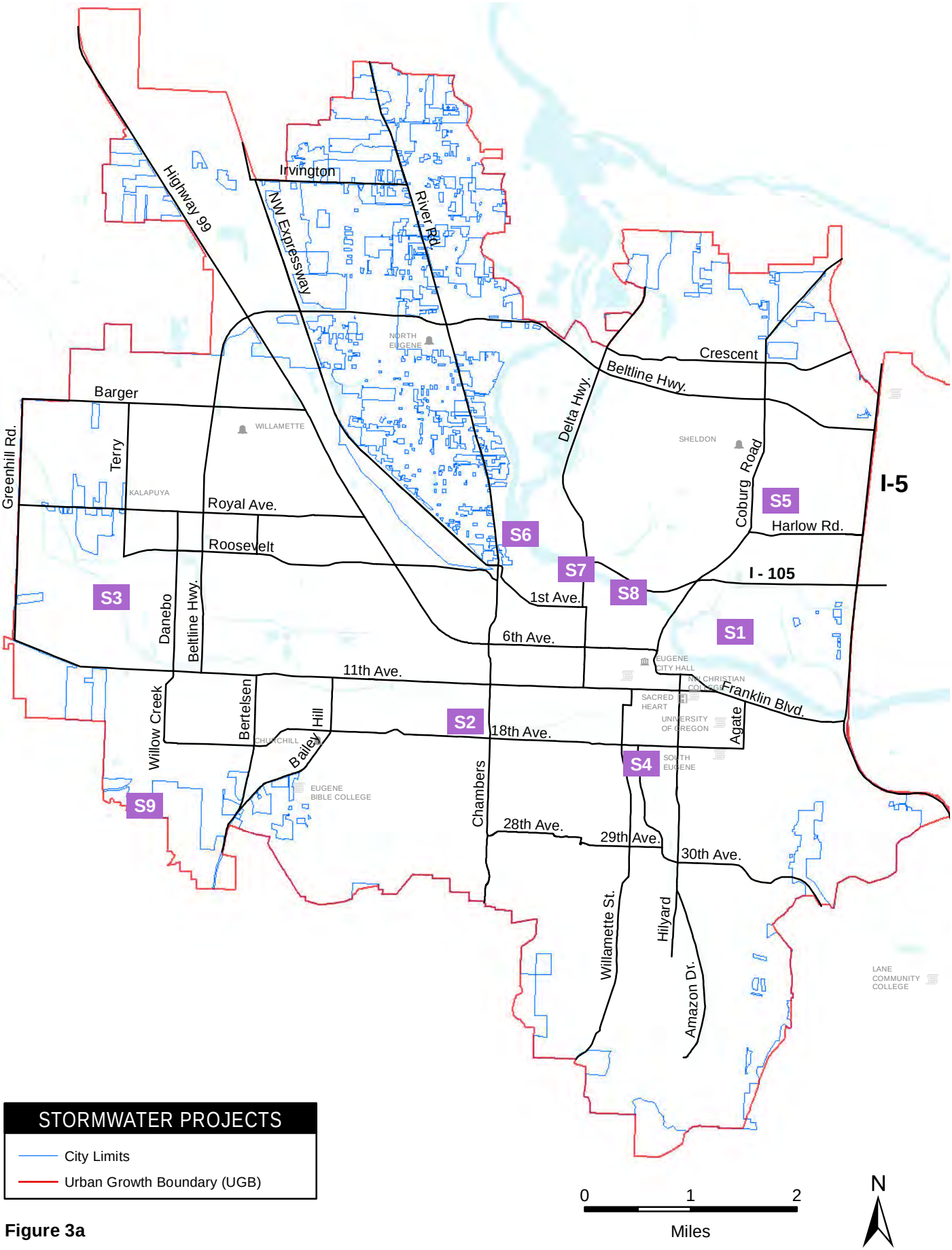

Irvington
Highway 99
NW Expressway
River Rd.
NORTH EUGENE
Crescent
Beltline Hwy.
Delta Hwy.
Barger
WILLAMETTE
SHELDON
Greenhill Rd.
Terry
KALAPUYA
Royal Ave.
Coburg Road
I-5
S5
Harlow Rd.
S6
Roosevelt
S7
I - 105
S8
S3
Danebo
Beltline Hwy.
1st Ave.
S1
6th Ave.
EUGENE CITY HALL
11th Ave.
NW CHRISTIAN COLLEGE
Franklin Blvd.
SACRED HEART
UNIVERSITY OF OREGON
Agate
Willow Creek
Bertelsen
Hill
S2
18th Ave.
CHURCHILL
Bailey
S4
SOUTH EUGENE
EUGENE BIBLE COLLEGE
S9
Chambers
28th Ave.
29th Ave.
30th Ave.
Willamette St.
Hilyard
Amazon Dr.
LANE COMMUNITY COLLEGE
STORMWATER PROJECTS
City Limits
Urban Growth Boundary (UGB)
0
1
2
Miles
N

Figure 3a

STORMWATER PROJECTS

Site-specific CIP projects shown in funding tables for 2014-2019 as $50,000 or more

S1 Alton Baker Canoe Canal Renovation

S2 Amazon Bank Stabilization - Chambers to Garfield

S3 Amazon Bank Stabilization - Danebo Ave to Royal Ave

S4 Amazon Creek - 24th Ave to Fairgrounds

S5 Ascot Park Open Waterway Modification

S6 Willamette River Bank Stabilization at Autzen Bridge

S7 Willamette River Bank Stabilization at Owen Rose Garden

S8 Willamette River Bank Stabilization at Skinner Butte Park

S9 Willow Creek West Branch Culvert/Channel

Figure 3b

Stormwater

Overview

The City's stormwater capital program reflects the goals of the Comprehensive Stormwater Management Plan (CSWMP), the City's compliance with federal clean water regulations including its National Pollutant Discharge Elimination System (NPDES) stormwater permit and the Willamette Basin Total Maximum Daily Load (TMDL), and the City's compliance with the federal and state groundwater protection regulations pertaining to drywells.

The goals of the capital improvements include the following:

1. Protect the community from excessive flood damage.
2. Meet the requirements of the Clean Water Act for managing non-point source pollution and the Safe Drinking Water Act for protecting groundwater quality.
3. Incorporate the multiple objectives outlined in the CSWMP into capital projects: flood protection, water quality protection and enhancement, and related natural resource protection.
4. Integrate stream corridors into the City's green infrastructure system through a combination of acquisition, restoration, and rehabilitation.
5. Participate in the ongoing management and implementation of the wetland mitigation bank program.
6. Preserve the effectiveness of the stormwater system through an ongoing operations and maintenance program and system rehabilitation/retrofits.

Capital improvement priorities reflect a set of guiding principles consistent with CSWMP goals and objectives, as well as additional considerations such as the opportunity to leverage local funds and coordination with other City and County transportation and parks capital improvement needs. Priority capital improvements for FY14 through FY19 are specifically identified in this CIP.

Project Categories

Stormwater projects fall into one of the following five categories:

1. **Restoration** - These projects are designed to meet the multiple objectives and goals of CSWMP and to re-establish and enhance natural systems where appropriate.

2. **Stormwater Rehabilitation and Improvements** - These projects preserve the investment in the existing stormwater system, rehabilitate existing open waterways, outfalls and tip-ups, retrofit the existing stormwater system to improve water quality, and address localized system improvements. A significant new project in this category is the retrofit or elimination of some public drywells which is prompted by new Department of Environmental Quality (DEQ) requirements.

3. **Stream Corridor Acquisition** - These projects address property acquisitions for priority stream corridors, related maintenance access needs, or acquisitions that may be associated with development proposals.

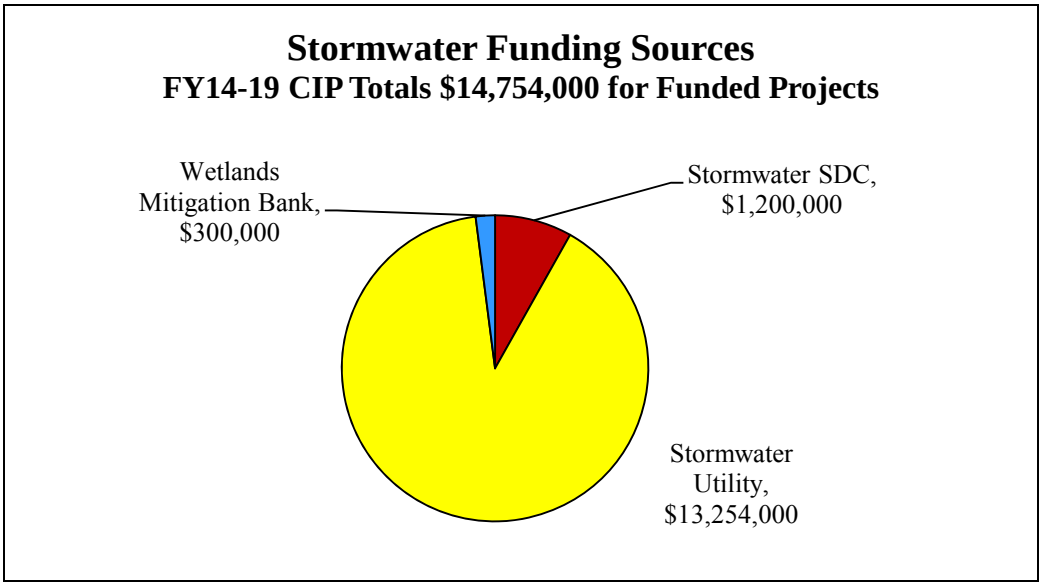
4. **Upgrades & Capacity Enhancement** - These projects include modification, improvement, or expansion of existing facilities and they enhance water quality and natural resources.

5. **New Capital Facilities** - This category contains projects which result in construction of a new facility or system.

Funding

Stormwater projects including system rehabilitation and improvements, capacity enhancements, waterway restoration, drywell elimination and stream corridor acquisitions are funded primarily through stormwater user fees and systems development charges.

Wetland restoration projects are designed to meet multiple objectives included in the CSWMP and to reestablish natural systems where appropriate. The primary revenue sources for wetland restoration are the wetlands mitigation banks. The City manages the West Eugene Wetlands and Coyote Prairie wetland mitigation banks to restore, construct and maintain wetlands to replace those wetlands permitted to be developed. As part of the development process, private developers have the option to purchase replacement wetlands through the banks.



Stormwater

Funding Secured & Funding Identified

in thousands of dollars (e.g. 1,000 = $1 million)

Subcategory	Project_Title	Funding	2014	2015	2016	2017	2018	2019	Total
Restoration	Amazon Bank Stabilization - Danebo Ave. to Royal Ave.	Funding Secured	200						200
	Wetland Mitigation Bank Capital Projects	Funding Secured	50	50	50	50	50	50	300
Restoration Total			250	50	50	50	50	50	500
Site and Facility Improvements	Alton Baker Canoe Canal Renovation	Funding Secured	50	150					200
Site and Facility Improvements Total			50	150					200
Stormwater Rehabilitation and Improvements	Amazon Bank Stabilization - Chambers to Garfield	Funding Secured	150						150
	Amazon Creek-24th to Fairgrounds - Rehabilitation and Restoration	Funding Secured	200	300	300	200			1,000
	Drywell Elimination Program	Funding Identified	1,000	1,000	1,000	1,000	1,000	1,000	6,000
	General Stormwater Rehabilitation	Funding Secured	250	350	400	300	400	400	2,100
	Streambank and Outfall Stabilization	Funding Secured	200	250	250	250	250	250	1,450
	Water Quality Facilities - High Source Areas	Funding Secured	100	100	150	250	300	300	1,200
	Willamette River Basin Water Quality Facilities	Funding Secured	100	100	150	250	300	300	1,200
Stormwater Rehabilitation and Improvements Total			2,000	2,100	2,250	2,250	2,250	2,250	13,100
Stream Corridor Acquisition	Stream Corridor Acquisition	Funding Identified	9	9	9	9	9	9	54
		Funding Secured	150	150	150	150	150	150	900
Stream Corridor Acquisition Total			159	159	159	159	159	159	954
Total			2,459	2,459	2,459	2,459	2,459	2,459	14,754

Stormwater **Funding Secured**

Restoration

Amazon Bank Stabilization - Danebo Ave. to Royal Ave.

Project Description: Stream bank failures have occurred and require restoration. Project will stabilize banks and improve habitat and water quality.

Project Status: ***In Progress*** This project was previously included in FY12-17 CIP. The amount included in FY14-19 CIP reflects partial funding for design and permitting. Construction portion of this project is currently unfunded.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

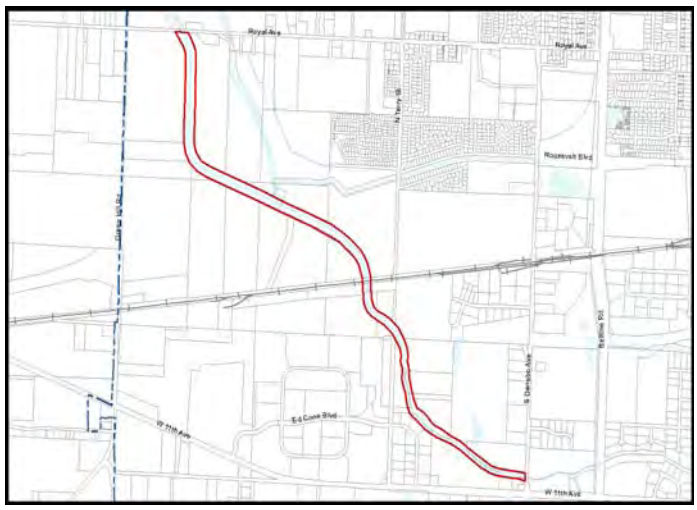
Metro Waterways Study

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$200	$0	$0	$0	$0	$0	**$200**
Total	$200	$0	$0	$0	$0	$0	**$200**

Neighborhood:
Ward: Multiple Wards



Project location

Stormwater **Funding Secured**

Restoration

Wetland Mitigation Bank Capital Projects

Project Description: Enhancement and restoration of wetlands in West Eugene on various sites. Mitigation work in advance of development will result in certified credits to be sold to developers.

Project Status: ***In Progress*** This is an ongoing capital project. Funds are budgeted annually and are applied to specific capital projects as they are identified and developed. Funded at $150,000 per year in capital budgets prior to FY11. Due to decreased demand for mitigation credits, annual funding was reduced starting with the FY11 capital budget and in FY12-17 CIP to $50,000.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Wetlands Mitigation Bank	$50	$50	$50	$50	$50	$50	**$300**
Total	$50	$50	$50	$50	$50	$50	**$300**

Neighborhood:
Ward: Ward 8

Coyote Prairie is one of the mitigation sites within the West Eugene Wetlands Mitigation Bank.

Stormwater **Funding Secured**

Site and Facility Improvements

Alton Baker Canoe Canal Renovation

Project Description: Funding would allow complete restoration of canoe canal, ponds, and development of related park facilities. Improvements will address natural resources enhancements, recreation improvements, and safety needs. More specifically, improvements would include: (a) improving conditions for paddling in the canoe canal (e.g., less required portages); (b) increasing shading of the canoe canal to reduce water temperatures; (c) reducing bacteria in the canoe canal to improve water quality; (d) enhancing habitat conditions for spring Chinook salmon, (e) improving boating access and providing path improvements, and (f) renovating landscaping. The project will be planned, permitted, and engineered through 2013. The project will be implemented in phases beginning in 2014. This project has high potential for garnering state and federal grants for the natural resources enhancements.

Project Status: ***Not Started*** This project was included in previous CIP and MYFP documents.

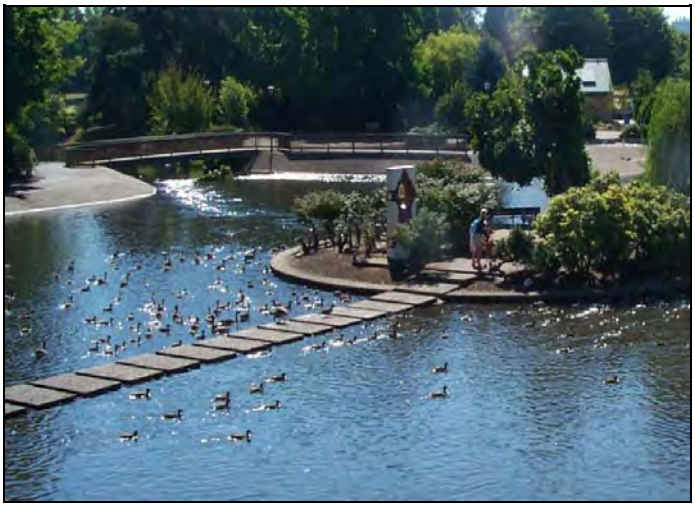
Specific Plans/Policies Related to this Project

PROS Project and Priority Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$50	$150	$0	$0	$0	$0	**$200**
Total	$50	$150	$0	$0	$0	$0	**$200**

Neighborhood:
Ward: Ward 4



Large numbers of geese and ducks create water quality issues (e.g., high bacteria loads) in Alton Baker Canoe Canal.

Amazon Bank Stabilization - Chambers to Garfield

Project Description: Repair slope failures and improve maintenance access. Project will also provide significant improvements to habitat and water quality. This work will follow the 2012 project to relocate and reconstruct the bike path along this reach. Restoration will include laying back and stabilizing Amazon Creek banks and naturalization of the water way.

Project Status: ***In Progress*** This project was previously included in FY08-13, FY10-15 and FY12-17 CIP.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Metro Waterways Study

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$150	$0	$0	$0	$0	$0	**$150**
Total	$150	$0	$0	$0	$0	$0	**$150**

Neighborhood: Far West
Ward: Ward 1

Project location

Amazon Creek-24th to Fairgrounds - Rehabilitation and Restoration

Project Description: This reach of Amazon Creek is lined with concrete. The infrastructure is now showing signs of fatigue and stress due to old age. An initial investigation and analysis of the structural integrity of the channel lining was performed in 2012 in order to prioritize and address specific immediate threats of failure as well as identify opportunities and options that improve this reach with regard to capacity, water quality, natural resources, neighborhood livability and private property. From this analysis, a plan of action will be implemented through the CIP to provide improvements and restoration to Amazon Creek.

Project Status: ***In Progress*** This project was previously included in FY12-17 CIP.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Metro Waterways Study

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$200	$300	$300	$200	$0	$0	**$1,000**
Total	$200	$300	$300	$200	$0	$0	**$1,000**

Neighborhood:
Ward: Multiple Wards

Typical concrete lined section of Amazon Creek

Drywell Elimination Program

Project Description: Drywell removal will be a required condition of permit with Oregon Department of Environmental Quality (DEQ). Many underground injection control facilities (UIC's) are located in the River Road, Santa Clara and Willakenzie basins. This is a new program to fund capital improvement projects to remove UIC's and replace them with either piped systems or infiltration systems such as rain-gardens.

Project Status: ***In Progress*** This project was included in the FY12-17 CIP in response to new Department of Environmental Quality (DEQ) requirements to remove stormwater drywells.

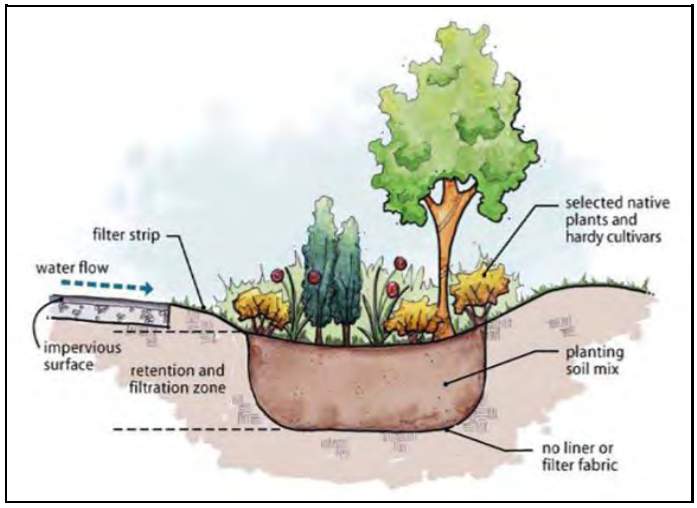
Specific Plans/Policies Related to this Project

City of Eugene Underground Injection Controls Water Pollution Control Facility (WPCF) Permit

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$6,000**
Total	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$6,000**

Neighborhood:
Ward: Multiple Wards



Stormwater retention and filtration

General Stormwater Rehabilitation

Project Description: Rehabilitate, reconstruct and install stormwater system where needed due to various problems, such as deterioration due to age, poor materials, localized flooding, and/or systems limitations. Where feasible, natural systems are used to address existing problems in conformance with the Comprehensive Stormwater Management Plan.

Project Status: ***In Progress*** This is an ongoing program to rehabilitate damage and deficiencies in the existing stormwater system.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater SDC	$100	$100	$100	$100	$100	$100	**$600**
Stormwater Utility - Capital	$150	$250	$300	$200	$300	$300	**$1,500**
Total	$250	$350	$400	$300	$400	$400	**$2,100**

Neighborhood:
Ward: Citywide

Installing stormwater pipe

Streambank and Outfall Stabilization

Project Description: Implement streambank stabilization projects to repair streambanks, restore habitat and to help streams adjust to increased runoff volumes while limiting negative impacts associated with downcutting, sedimentation, and erosion. Where appropriate, use bioengineering techniques to stabilize streambanks and improve habitat and water quality functions.

Project Status: ***In Progress*** This is an ongoing program. Funds are budgeted under this program and then are transferred to specific capital projects as they are identified and developed.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater SDC	$100	$100	$100	$100	$100	$100	**$600**
Stormwater Utility - Capital	$100	$150	$150	$150	$150	$150	**$850**
Total	$200	$250	$250	$250	$250	$250	**$1,450**

Neighborhood:
Ward: Citywide

Streambank stabilization work.

Water Quality Facilities - High Source Areas

Project Description: Improve water quality in developed, high pollutant source areas by installing structural water quality facilities to address pollutants of concern.

Project Status: ***In Progress*** This project funds an ongoing program to install stormwater quality facilities.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$100	$100	$150	$250	$300	$300	**$1,200**
Total	$100	$100	$150	$250	$300	$300	**$1,200**

Neighborhood: Citywide
Ward: Citywide

Spill response on the Willamette River

Willamette River Basin Water Quality Facilities

Project Description: Study and prioritize high pollutant source areas within this developed downtown area which drains directly to the Willamette River. Retrofit the municipal stormwater system by constructing treatment devices that remove pollutants in stormwater runoff prior to outfall of the stormwater to the Willamette River.

Project Status: ***In Progress*** This project was previously included in FY08-13, FY10-15 and FY12-17 CIP. Funding from previous CIP's has been used to build two stormwater quality projects in the basin. The funding in this CIP continues funding for additional projects to improve stormwater quality in this basin.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$100	$100	$150	$250	$300	$300	**$1,200**
Total	$100	$100	$150	$250	$300	$300	**$1,200**

Neighborhood:
Ward: Multiple Wards

Willamette River outfall at Polk Street

Stream Corridor Acquisition

Project Description: Acquire fee title or easements along waterways for waterway protection and restoration.

Project Status: ***In Progress*** This is an ongoing project. Funds are budgeted under this project and then are transferred to specific capital projects as they are identified and developed. Funded at $150,000 in FY11, FY12 and FY13 capital budgets.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Council Specific Direction

PROS Project and Priority Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

Fund	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$150	$150	$150	$150	$150	$150	**$900**
Total	$150	$150	$150	$150	$150	$150	**$900**

Preserve Maintain	$9	$9	$9	$9	$9	$9

Neighborhood: Citywide
Ward: Citywide

Stream Corridor Site

Stormwater — Funding Not Identified

in thousands of dollars (e.g. 1,000 = $1 million)

Subcategory	Project_Title	Funding	2014	2015	2016	2017	2018	2019	Total
Restoration	Metro Waterway Restoration Projects	Funding Not Identified			700	700	1,000	500	2,900
Restoration Total					700	700	1,000	500	2,900
Site and Facility Improvements	Alton Baker Canoe Canal Renovation	Funding Not Identified				2,500	2,500		5,000
Site and Facility Improvements Total						2,500	2,500		5,000
Stormwater Rehabilitation and Improvements	Ascot Park Open Waterway Modification	Funding Not Identified			200	200	200		600
	General Stormwater Rehabilitation	Funding Not Identified	750	650	600	700	600	600	3,900
	River Road and Santa Clara Stormwater Improvements	Funding Not Identified			300	300	300	300	1,200
	Water Quality Facilities - High Source Areas	Funding Not Identified	100	100					200
	Willamette River Bank Stabilization at Autzen Bridge	Funding Not Identified						400	400
	Willamette River Bank Stabilization at Owen Rose Garden	Funding Not Identified						600	600
	Willow Creek West Branch Culvert/Channel	Funding Not Identified			250				250
Stormwater Rehabilitation and Improvements Total			850	750	1,350	1,200	1,100	2,550	7,800
Upgrades and Capacity Enhancement	Services for New Development - Stormwater	Funding Not Identified			20	20	100	100	240
Upgrades and Capacity Enhancement Total					20	20	100	100	240
Total			**850**	**750**	**2,070**	**4,420**	**4,700**	**3,150**	**15,940**

Stormwater **Funding Not Identified**

Restoration

Metro Waterway Restoration Projects

Project Description: The U.S. Army Corps of Engineers, in partnership with metro region agencies, have undertaken a feasibility study to identify metro area waterway problems, opportunities and recommended projects. Once the feasibility phase is approved, the projects would be refined and the City and the Corps will sign a Project Cooperation Agreement to construct these projects that have been mutually agreed upon. Potential Eugene projects include restoration of portions of Amazon Creek. Funding represents city match of federal funds at 35%.

Project Status: ***Not Started*** This project was included in FY08-13, FY10-15 and FY12-17 CIP.

Specific Plans/Policies Related to this Project

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Metro Waterways Study

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$700	$700	$1,000	$500	**$2,900**
Total	$0	$0	$700	$700	$1,000	$500	**$2,900**

Neighborhood: Multiple Neighborhoods
Ward: Multiple Wards

An urban waterway

Alton Baker Canoe Canal Renovation

Project Description: Funding would allow complete restoration of canoe canal, ponds, and development of related park facilities. Improvements will address natural resources enhancements, recreation improvements, and safety needs. More specifically, improvements would include: (a) improving conditions for paddling in the canoe canal (e.g., less required portages); (b) increasing shading of the canoe canal to reduce water temperatures; (c) reducing bacteria in the canoe canal to improve water quality; (d) enhancing habitat conditions for spring Chinook salmon, (e) improving boating access and providing path improvements, and (f) renovating landscaping. The project will be planned, permitted, and engineered through 2013. The project will be implemented in phases beginning in 2014. This project has high potential for garnering state and federal grants for the natural resources enhancements.

Project Status: ***Not Started*** This project was included in previous CIP and MYFP documents.

Specific Plans/Policies Related to this Project

PROS Project and Priority Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Grants	$0	$0	$0	$1,000	$1,000	$0	**$2,000**
General	$0	$0	$0	$500	$500	$0	**$1,000**
Stormwater Utility - Capital	$0	$0	$0	$1,000	$1,000	$0	**$2,000**
Total	$0	$0	$0	$2,500	$2,500	$0	**$5,000**

Neighborhood:
Ward: Ward 4

Large numbers of geese and ducks create water quality issues (e.g., high bacteria loads) in Alton Baker Canoe Canal.

Stormwater

Funding Not Identified

Stormwater Rehabilitation and Improvements

Ascot Park Open Waterway Modification

Project Description: This capital project consists of improvements to segments of the open waterway through Ascot Park to remove sediment and regrade the waterway slope to improve the hydraulic capacity. The work also includes removing and replacing a 42" pipe to improve flow characteristics.

Project Status: ***Not Started*** This project was previously included in FY12-17 CIP.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$200	$200	$200	$0	**$600**
Total	$0	$0	$200	$200	$200	$0	**$600**

Neighborhood: Harlow
Ward: Ward 4

Ascot Park Stormwater Project Area

Stormwater

Funding Not Identified

Stormwater Rehabilitation and Improvements

General Stormwater Rehabilitation

Project Description: Rehabilitate, reconstruct and install stormwater system where needed due to various problems, such as deterioration due to age, poor materials, localized flooding, and/or systems limitations. Where feasible, natural systems are used to address existing problems in conformance with the Comprehensive Stormwater Management Plan.

Project Status: ***In Progress*** This is an ongoing program to rehabilitate damage and deficiencies in the existing stormwater system.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$750	$650	$600	$700	$600	$600	**$3,900**
Total	$750	$650	$600	$700	$600	$600	**$3,900**

Neighborhood:
Ward: Citywide

Installing stormwater pipe

River Road and Santa Clara Stormwater Improvements

Project Description: This program will fund stormwater improvements identified within the Stormwater Master Plan for the River Road and Santa Clara basins. These projects do not include Underground Injection Control (UIC) de-commissioning as that is identified as a separate CIP project. These projects focus on flood capacity, stormwater quality and/or waterway restoration issues.

Project Status: ***Not Started*** Included in FY09-14 and FY10-15 MYFP and in the FY12-17 CIP.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$300	$300	$300	$300	**$1,200**
Total	$0	$0	$300	$300	$300	$300	**$1,200**

Neighborhood:
Ward: Multiple Wards

Stormwater quality manhole construction

Stormwater **Funding Not Identified**

Upgrades and Capacity Enhancement

Services for New Development - Stormwater

Project Description: Capacity enhancements for new developments as needed. Funded through system development charges revenues as they become available. Funded at $100,000 in FY06 through FY09 capital budgets. Funding for this project will begin again in FY16 if funds are available.

Project Status: ***In Progress*** This is an ongoing program to fund new stormwater infrastructure. Funds are budgeted under this project and later transferred to specific capital projects as they are identified and developed.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

SDC City Code and Methodologies

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater SDC	$0	$0	$20	$20	$100	$100	**$240**
Total	$0	$0	$20	$20	$100	$100	**$240**

Neighborhood:
Ward: Citywide

Stormwater line construction underway

Water Quality Facilities - High Source Areas

Project Description: Improve water quality in developed, high pollutant source areas by installing structural water quality facilities to address pollutants of concern.

Project Status: ***In Progress*** This project funds an ongoing program to install stormwater quality facilities.

Specific Plans/Policies Related to this Project

City of Eugene NPDES Municipal Stormwater Permit & Stormwater Management Plan

City of Eugene Willamette Basin Total Maximum Daily Load (TMDL) Implementation Plan

Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater SDC	$100	$100	$0	$0	$0	$0	**$200**
Total	$100	$100	$0	$0	$0	$0	**$200**

Neighborhood: Citywide
Ward: Citywide

Spill response on the Willamette River

Willamette River Bank Stabilization at Autzen Bridge

Project Description: Based on a 2012 study, sites along the Willamette River are identified and prioritized by risk for safety and potential damage. These funds would be used to design and construct projects to restore the banks of the Willamette in the highest priority areas.

Project Status: ***Not Started*** Included in the FY12-17 CIP with funding not identified for FY14-19.

Specific Plans/Policies Related to this Project

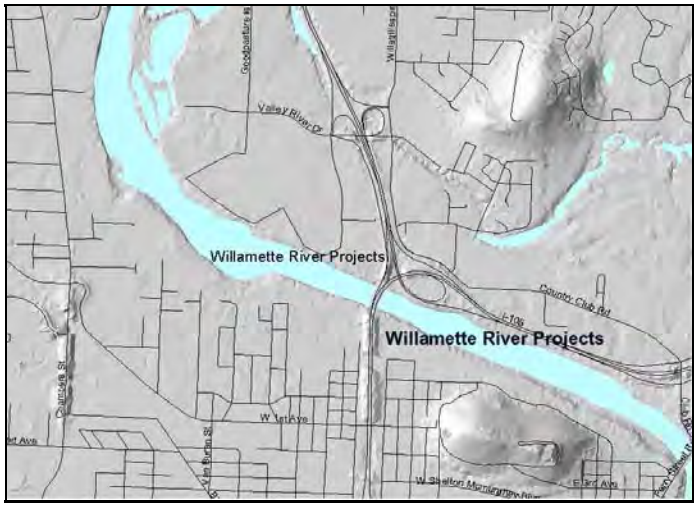
Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$0	$0	$0	$400	**$400**
Total	$0	$0	$0	$0	$0	$400	**$400**

Neighborhood: Multiple Neighborhoods
Ward: Ward 3



Area of bank stabilization projects.

Willamette River Bank Stabilization at Owen Rose Garden

Project Description: Willamette River Bank stabilization at the Owen Rose Garden to repair and restore a failed and failing river bank.

Project Status: ***Not Started*** New project in FY14-19 CIP.

Specific Plans/Policies Related to this Project

Comprehensive Stormwater Management Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$0	$0	$0	$600	**$600**
Total	$0	$0	$0	$0	$0	$600	**$600**

Neighborhood: Whiteaker
Ward: Ward 7

Failing concrete stacked retaining wall adjacent to the Owen Rose Garden.

Stormwater

Funding Not Identified

Stormwater Rehabilitation and Improvements

Willamette River Stabilization at Skinner Butte Park

Project Description: Stabilize and repair failed and failing Willamette River Bank in Skinner Butte Park.

Project Status: ***Not Started*** New project in FY14-19 CIP.

Specific Plans/Policies Related to this Project

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$0	$0	$0	$650	**$650**
Total	$0	$0	$0	$0	$0	$650	**$650**

Neighborhood: Whiteaker
Ward: Ward 7

Skinners Butte Park river bank failure March 2012

Stormwater

Funding Not Identified

Stormwater Rehabilitation and Improvements

Willow Creek West Branch Culvert/Channel

Project Description: Replace culverts along west branch of Willow Creek to provide for flood capacity and fish and animal passage.

Project Status: ***Not Started*** This project was previously included in FY06-11 and FY12-17 CIP.

Specific Plans/Policies Related to this Project

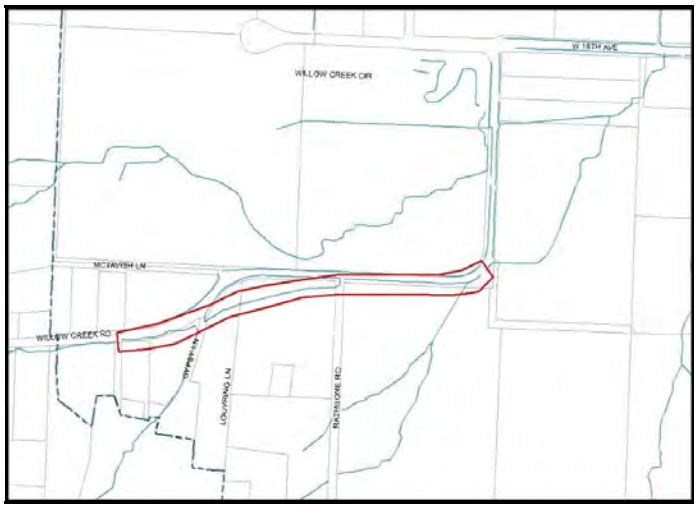
Comprehensive Stormwater Management Plan

Stormwater Basin Master Plan

Capital Costs ($ in thousands)

	2014	2015	2016	2017	2018	2019	Total
Stormwater Utility - Capital	$0	$0	$250	$0	$0	$0	**$250**
Total	$0	$0	$250	$0	$0	$0	**$250**

Neighborhood:
Ward: Multiple Wards

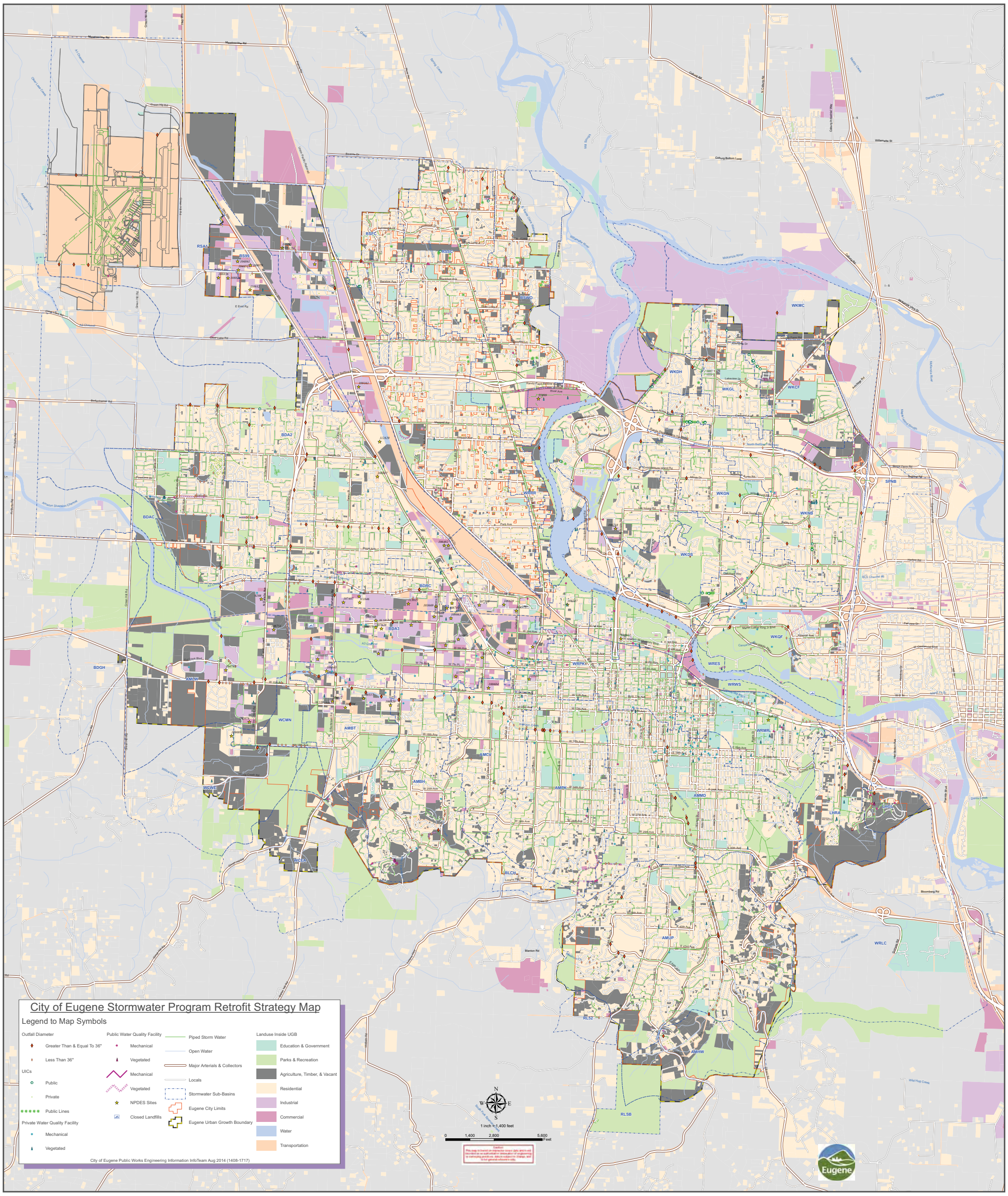


Map of project area

City of Eugene
Stormwater Retrofit Plan

Appendix G

Stormwater Retrofit Strategy Map, 2014


City of Eugene Stormwater Program Retrofit Strategy Map
Legend to Map Symbols
Outfall Diameter
Greater Than & Equal To 36"
Less Than 36"
UICs
Public
Private
Public Lines
Private Water Quality Facility
Mechanical
Vegetated
Public Water Quality Facility
Mechanical
Vegetated
Mechanical
Vegetated
NPDES Sites
Closed Landfills
Piped Storm Water
Open Water
Major Arterials & Collectors
Locals
Stormwater Sub-Basins
Eugene City Limits
Eugene Urban Growth Boundary
Landuse Inside UGB
Education & Government
Parks & Recreation
Agriculture, Timber, & Vacant
Residential
Industrial
Commercial
Water
Transportation
City of Eugene Public Works Engineering Information InfoTeam Aug 2014 (1408-1717)
N
W
E
S
1 inch = 1,400 feet
0
1,400
2,800
5,600
Feet
Eugene