City of Gold Hill Surface Water Management Program

September 2013

Final Report

Prepared for:

The City of Gold Hill

Prepared by:

Community Planning Workshop

A Program of the
Community Service Center

UNIVERSITY OF OREGON

Community Planning Workshop

Special Thanks & Acknowledgements

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About the Community Planning Workshop

Community Planning Workshop (CPW) is one of the core programs of the University of Oregon's Community Service Center (CSC) (csc.uoregon.edu). Established in 1977, CPW provides students the opportunity to address planning and public policy problems for clients throughout Oregon. Students work in teams under the direction of faculty and Graduate Teaching Fellows to develop proposals, conduct research, analyze and evaluate alternatives, and make recommendations for possible solutions to planning problems in rural Oregon communities.

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EXECUTIVE SUMMARY

The Rogue River is recognized as a community resource for both wildlife and recreation activities. Communities along the Rogue River have a commitment to maintain and enhance the health of the river through responsible actions and behaviors. The Community Planning Workshop (CPW), through the University of Oregon's Community Service Center, and the City of Gold Hill collaborated to create the following Surface Water Management Program (SWMP) that addresses water quality issues and helps guide the City of Gold Hill to better support water resources.

The intent of this SWMP is to provide Gold Hill with the tools to protect the water as a community resource. The City of Gold Hill borders approximately one mile of the northern bank of the Rogue River. In 2008, the state, county, and city, in accordance with the Environmental Protection Agency guidelines, established a set of actions to protect and maintain water quality in the Rogue River Basin. As a result the City created a Total Maximum Daily Load (TMDL) Implementation Plan in 2010. The SWMP intends to partially address tasks in the City's TMDL plan. More broadly, the program intends to complement the City's land use and water quality objectives along with its strategic goals. The core of the program is a five-year water quality action plan that articulates specific activities and investments the City will make as a part of the program.

The action plan evolved through meetings with the Gold Hill Water Quality Steering Committee and the Department of Environmental Quality (DEQ)-approved Gold Hill TMDL Implementation Matrix. The Gold Hill Surface Water Management Action Item Matrix (Figure S-1) contains goals and strategies that serve as the guiding vision of the program and specific actions designed to meet the previously adopted obligations to the DEQ, protect water quality through Low Impact Development standards that provide flexibility to landowners, and educate the community about water issues.

The Action Item Matrix shows a high-level summary of actions for each goal and strategy. Each action has a primary responsible party who will carry out that action to achieve the desired outcome within the allotted timeframe. The starting point for all timelines begins when the City of Gold Hill formally accepts the SWMP. In other words, an action with a timeline of Month 2 means that the responsible party will complete that action by the end of the second month from which Gold Hill formally accepted the SWMP.

The matrix is not only a quick reference for goals, strategies, actions, and general responsibilities, but also a tool the City will use to monitor progress on the SWMP. Since the City of Gold Hill is the lead agency implementing the program, the Gold Hill City Manager will serve as the program administrator and take the lead on implementing the actions in the SWMP, delegate responsibilities to appropriate staff, monitor progress to the satisfaction of the DEQ, and report to and advise the Council on progress. Using the Action Item Matrix will help the City Manager delegate responsibilities and monitor progress - actions can be marked as In Progress or Completed.

This program cannot succeed without the City Council's support. The City Council will need to dedicate the necessary time and resources so the City Manager can make the execution

of specific actions and implementation of the program possible. The Resource Assistance for Rural Environments placement will provide the staff capacity to implement the program and monitor the success of individual actions.

Aside from monitoring the progress of implementation, the City must determine if the program is effective in protecting riparian areas and thus the river. For example, an effective program will contribute to increased riparian vegetation. To help develop an effective monitoring program, the city will use a three step monitoring process which focuses on plant survival and growth rate measurements, a photo point analysis, and new development assessments.

Figure S-1: Gold Hill Surface Water Management Action Item Matrix

GOALS	STRATEGIES	ACTIONS	In Progress	Completed	Who	Timeline
Goal 1: Lead Community Effort to Improve and Maintain Water Quality and Water Resource Protection.	Strategy 1.1: Lead the community by example in implementing strategies to improve water quality	Action 1.1.1 Adopt LID code amendments.			City Council	Month 2
		Action 1.1.2: Prioritize the use of LID strategies in public projects.			City staff and contractors	Ongoing
		Action 1.1.3: Incorporate an interpretive riparian trail into the Parks Master Plan.			City Manager and staff	Fall 2013-Feruary 2014
	Strategy 1.2: Stay up-to-date on current water quality status, activities, and needs.	Action 1.2.1: Attend and participate in quarterly DEQ TMDL meetings and report back to City Council on important updates and activities.			City Manager and staff	Ongoing/3rd Wednesday of the month, every 3 months
	Strategy 1.3: Establish partnerships to help implement the surface water management program	Action 1.3.1: Identify opportunities to partner with regional organizations and agencies and maintain communication with key contacts at these organizations.			City Manager	Quarterly

GOALS	STRATEGIES	ACTIONS	In Progress	Completed	Who	Timeline
Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.1: Raise awareness of human impacts on water quality and best practices for limiting those impacts	Action 2.1.1: Apply stormwater stencils to sewer drains.			Public Works Department	Month 3
		Action 2.1.2: Distribute educational materials at public and private facilities.			City staff	Begin June 2013
		Action 2.1.3: Launch and maintain informational website on which to provide public access to water quality information.			City Manager and Webmaster	Month 3
	Strategy 2.2: Engage community through interpretative facilities and community events	Action 2.2.1: Create an interpretive riparian trail.			City, JSWCD, and SBWC	Years 3-5
		Action 2.2.2: Integrate water quality information and activities into existing community activities and events.			City staff	Each January or February
		Action 2.2.3: Partner with local schools to incorporate an activity in which youth grow and plant vegetation.			City staff	Based on following year curriculum planning
		Action 2.2.4: Educate and inform residents about hazardous waste impacts, safe removal, and disposal practices.			Public Works Director	Biannual, in accordance with event dates

GOALS	STRATEGIES	ACTIONS	In Progress	Completed	Who	Timeline
Goal 3: Restore, Maintain, and Enhance Riparian Corridor Vegetation to Ensure a Healthy River for Humans and Wildlife.	Strategy 3.1: Preserve and enhance native vegetation on public property	Action 3.1.1: Incorporate the planting and preservation of riparian vegetation into Parks Master Plan for public properties along Rogue River.			City Manager	Fall 2013-Feruary 2014
	Strategy 3.2: Preserve and enhance native riparian vegetation on private property	Action 3.2.1: Collaborate with program partners to provide onsite vegetation consultation or education to property owners.			City and program partners	Year 1 and ongoing
		Action 3.2.2: Partner with local nurseries to tag and advertise native plants.			City staff	Month 3
		Action 3.2.3: Provide native and riparian-friendly plant resources on website.			City staff	Ongoing beginning mid June 2013

CHAPTER ONE: INTRODUCTION

This document presents the City of Gold Hill Surface Water Management Program. The program intends to partially address tasks in the City's *Total Maximum Daily Load* (TMDL) Implementation Plan (2010). More broadly, the program intends to complement the City's land use, and water quality objectives.

The core of the program is a five-year water quality action plan that articulates specific activities and investments the City will make as a part of the program. Finally, the program includes guidance on how the City will monitor and evaluate progress towards the stated surface water management goals.

Rivers and streams provide many important functions for people and wildlife. For a community that has developed around a river like Gold Hill, the waterway has acted as scenic and recreational attraction. Downstream communities in the Rogue Basin rely on the Rogue River as a drinking water source. Another important function of streams is their ability to support a healthy *riparian area*. Riparian areas are those plant communities adjacent to and affected by surface water bodies such as rivers, streams, lakes, and drainage ways. These areas serve a number of useful purposes, including: providing habitat for wildlife, reducing the force and volume of floods, and absorbing *pollutants* before they reach a stream.[12]

Not only is the purpose of this program to improve the lives of people and wildlife, but also to keep the political desires of the community in mind. The community desires a voluntary approach to manage surface water quality issues. This program allows for flexibility in managing the riparian areas in Gold Hill while still providing an adequate amount of protection for the waterways of the city and the residents who live along these waterways.[3]

Background

In December 2008, the Oregon Department of Environmental Quality (DEQ) finalized the development of the Rogue River Basin Total Maximum Daily Load (TMDL), which established *pollution* load limits for water quality impaired waterways within the Basin. The City of Gold Hill is located within the Rogue River Basin and, as a result, assigned a TMDL based on the impairments of the Rogue River. The TMDL includes strategies for the City to follow in improving the condition of the Rogue River.

[1] Commonwealth of Massachusetts. Fact Sheet #1: Functions of Riparian Areas for Flood Control. http://www.mass.gov/dfwele/der/riverways/pdf/riparian_factsheet_1.pdf

[2] American Rivers. Wild Rogue River, Oregon. http://www.americanrivers.org/our-work/protecting-rivers/wild-and-scenic/projects/wild-rogue-river.html

[3] The program includes a set of performance measures that allow monitoring and evaluation of how well the City is meeting stated programmatic objectives. If DEQ determines the program is not adequately addressing the Rogue Basin TMDL, it may require the City take regulatory action to address identified water quality issues.

The DEQ approved Gold Hill's TMDL actions and strategies in December of 2010. In the summer of 2011, the City partnered with the Community Service Center (CSC) at the University of Oregon to explore approaches to addressing the City's TMDL obligation. In December of 2012, the City Council formally moved to participate in a technical assistance project with the CSC's Community Planning Workshop (CPW).

Following that decision, in January 2013, the Council appointed a steering committee to provide guidance on specific actions the city will take to address the TMDL Implementation Plan. CPW facilitated a series of committee meetings to create a Surface Water Management Program (SWMP), which focuses on outreach and engagement with the community, enhancement of riparian areas on city-owned property, and voluntary action by riverfront property owners. The City's intent as articulated in the Surface Water Management Program is to address its TMDL obligations largely through voluntary means, respecting the community's desires of minimal government regulation.

This SWMP is intended as an alternative to the adoption of a riparian ordinance as listed in the Gold Hill TMDL Implementation Plan adopted by the Gold Hill City Council in 2010. The Oregon Department of Environmental Quality is using an "adaptive management" approach that allows Gold Hill to defer the adoption of a riparian ordinance through the 2010-15 implementation period. The SWMP outlines monitoring requirements that the City will need to gather data on to demonstrate progress. If DEQ determines that Gold Hill is making inadequate progress, it may require the city adopt a riparian ordinance.

Purpose

The purpose of the Gold Hill SWMP is to enhance the scenic and natural value of the Rogue River, increase biodiversity and native vegetation, and protect human life and property while recognizing the importance of maintaining private property rights. The City of Gold Hill believes in creating healthy natural systems, increasing public awareness of environmental issues, and adhering to state and federal requirements. The SWMP is a pilot program in partnership with DEQ that will allow Gold Hill to comply with state and federal water policy primarily through education and outreach programs and voluntary action. It also includes development code amendments to mitigate potential water quality impacts from new development. The objectives of the Gold Hill SWMP are to:

1. Engage and inform the community regarding water management issues, with an emphasis on riverfront property owners.

2. Adopt and implement strategies to protect riparian areas within the City's limits.

3. Partner streamside property owners with the city and regional organizations to restore and maintain riparian areas through voluntary measures.

4. Set the City up to be a leader in water quality protection by demonstrating LID and riparian planting on City owned land.

5. Implement *low impact development* (LID) strategies for inclusion in the City's municipal code and educate residents about the benefits of managing stormwater.

The ultimate goal of the program is to improve water quality through the preservation and enhancement of riparian areas within the city as well as through incorporation of LID strategies to mitigate the impacts of *impervious surfaces* and runoff on water quality. The City's dedication to allocate adequate time and resources to further the objectives of this voluntary program will rely on securing local and regional partnerships with organizations and institutions. Support for the SWMP requires creative funding solutions, often facilitated through these partnerships.

Methodology

The SWMP emerged through a collaborative process between the local steering committee, representatives of state and regional agencies, and the Community Planning Workshop (CPW). The steering committee consisted of several members of the Gold Hill City Council, city staff, and residents. Following the appointment of the steering committee by the City Council in January 2013, direct collaboration began in February 2013 with monthly meetings in Gold Hill. To inform the committee process, CPW performed a rapid assessment that involved a review of the City's municipal code, interviews with key stakeholders, and research of the Gold Hill community context.

Through these collaborative sessions, the CPW team drafted the SWMP, including recommendations for incorporating LID strategies into the municipal code. CPW supplemented the feedback received from steering committee members and regional partners with their own research of best practices related to surface water management, existing riparian ordinances, and LID best practices. CPW also consulted the work of previous similar projects in the cities of Turner and Shady Cove. Through four collaborative sessions with the steering committee throughout the winter and spring of 2013, CPW drafted a final set of outreach strategies, LID code amendments, funding and partnership opportunities, and program administration strategies. This report is the outcome of this collaborative, non-regulatory approach to improving water quality through reducing pollution and protecting riparian areas.

Organization of this document

The remainder of this report is organized into four chapters and several appendices.

Chapter Two provides the regulatory framework of the project. The chapter describes the state and federal regulations that necessitated this project as well as the specific regulatory obligations of the City of Gold Hill.

Chapter Three is a brief geographical analysis of the land and natural resources in Gold Hill. For context, the chapter includes a map of the city, including the urban growth boundary, tax lots, and water features. The chapter also provides an analysis of the land that is potentially impacted by water features such as the floodplain, floodway, and the Rogue River itself.

Chapter Four is the most critical piece of this program. It contains the action plan through which the City of Gold Hill will manage its surface water resources. The chapter is broken into broad goals and strategies and provides detailed information about the specific actions the City will take to implement this program.

Chapter Five addresses program implementation including a discussion of the funding, administration, and evaluation aspects of the program. This chapter provides broad information to assist the City of Gold Hill in implementing this Surface Water Management Program.

This report also includes four appendices:

Appendix A contains a copy of the City of Gold Hill's TMDL Implementation Plan, as adopted by the City and approved by the Department of Environmental Quality (DEQ).

Appendix B provides a list of regional organizations that have expressed a willingness to partner with the City of Gold Hill in implementing this program. The appendix includes names and contact information for the organizations as well as a brief description of the potential role of each organization.

Appendix C includes a preliminary summary of available grant funding that may be applicable to many of the actions included in this program.

Appendix D is a glossary to this report and a resource of key terms used in related water quality documents. It contains the definitions of key terms used throughout this report, which are italicized and underlined the first time they are used to indicate that readers can refer to the appendix for a definition.

CHAPTER TWO: REGULATORY FRAMEWORK

This chapter provides an overview of the regulatory framework for the SWMP by describing the state and federal regulations that necessitated this project as well as the specific regulatory obligations of the City of Gold Hill.

Policy Context

The *Clean Water Act* (CWA) of 1972 regulates water quality by requiring the Environmental Protection Agency (EPA) to set water quality standards. To address the standards, states and tribes review, revise, and adopt water quality standards pursuant to the CWA's action-forcing statutes, including the Water Quality Standards Regulation (40 CFR 131). The core component of addressing the standards requires the states and tribes to specify and examine "beneficial uses" of water bodies in their jurisdictions. Examples of beneficial uses include public water supply, fish, wildlife, recreation, agriculture, and industry.[4] In order to protect beneficial uses, the CWA regulates pollution that enters water bodies through point sources (i.e. from a discrete point such as a wastewater pipe) and nonpoint sources (i.e. from diffuse sources such as fertilizer permeating the ground and subsequently entering the water).

Under Section 303(d) of the CWA, states, territories, and authorized tribes must develop lists of "water quality" impaired waters. These impaired waters do not meet water quality standards even after point sources of pollution have installed the minimum required levels of pollution control technology. Jurisdictions rank impaired waterways on their "303(d) list" and develop a plan for these waters. Next, under Section 303(c) of the CWA, the EPA can review, approve, disapprove, and promulgate separate water quality standards.

To bring impaired water bodies into compliance with water quality standards, states define an upper limit – Total Maximum Daily Load (TMDL) – for each pollutant affecting the water body. The upper limit is an amount of pollution that each water body can receive while still meeting water quality standards and maintaining all beneficial uses. The state publishes a TMDL report for each impaired water body, which includes a geographic description, identification of pollutants, applicable standards, source assessment, description of data collected, loading capacity, allocation of loads, and margin of safety.

In December 2008, the Oregon Department of Environmental Quality (DEQ) adopted the Rogue River Basin TMDL. This TMDL established pollution limits to protect human health and salmon and trout in the *watershed*. In the Rogue River Basin, the DEQ identified temperature and bacteria impairments. Therefore, the Rogue River and its tributaries in and around Gold Hill have pollution limits for temperature and bacteria.

[4] Environmental Protection Agency. Water: Water Quality Standards. Designated Uses. http://water.epa.gov/scitech/swguidance/standards/uses.cfm

Gold Hill's Requirements

To meet the requirements of the Rogue River Basin TMDL, Gold Hill, with the help of DEQ, developed a TMDL implementation plan. The implementation plan contains a list of pollutants, proposed treatment strategies, an implementation timeline, staffing and funding needs, reporting requirements, and proposed methods for monitoring and evaluation of progress. The Gold Hill Surface Water Management Program (SWMP) intends to address strategies previously identified in the City's TMDL implementation plan.

Total Maximum Daily Load

A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards and maintain beneficial uses. The TMDL is the sum of the allowable load from current sources, load set aside for future sources, and load set aside to account for uncertainty. Allowable loading from point sources is termed Waste Load Allocations and allowable loading from nonpoint sources is termed Load Allocations. Point and nonpoint sources are discussed later in this section. Allowable loading set aside for future sources is the Reserve Capacity and allowable loading set aside to account for uncertainty is the Margin of Safety. The Margin of Safety may be implicit, as in conservative assumptions used in calculating the loading capacity, Waste Load Allocations, and Loading Allocations. The Margin of Safety may also be explicitly stated as an added separate allocation in the TMDL calculation.

Rogue River Basin TMDL

The Rogue River Basin TMDL[5] applies to all perennial and intermittent streams, rivers, and lakes within the Rogue River Basin. This TMDL excludes areas where TMDLs already exist. The 5,156 square mile Rogue River Basin is located within Jackson, Josephine, Curry, Douglas, and Klamath Counties in Oregon and Siskiyou and Del Norte Counties in California. Watersheds and rivers comprise a system that impacts all communities; actions upstream have consequences for communities downstream. Therefore, DEQ requires all cities to develop a TMDL implementation plan. Each city is treated as a *Designated Management Agency* (DMA) and has 18 months to create an implementation plan starting from the point the TMDL is created as an executive order. Each city's TMDL implementation plan contains management strategies, specific actions, measures of progress/benchmarks, fiscal analysis, and a timeline to reduce pollutants identified in the TMDL within the city limits. In the section of the Rogue River running through Gold Hill, temperature and bacteria are the primary nonpoint source pollutants in the Rogue River Basin TMDL.

Gold Hill's TMDL Implementation Plan

Jurisdictions in the Rogue River Basin, such as Gold Hill, must create implementation plans with specific management measures to mitigate temperature and bacteria pollution. Gold Hill created a Rogue Basin TMDL Implementation Matrix that DEQ approved in December 2010. The management measures to meet the TMDL load and waste load allocations differ depending on the source of the pollutant. For example, one of the management measures in Gold Hill's implementation plan for bacteria is the prevention of contamination from

[5] http://www.deq.state.or.us/wq/tmdls/rogue.htm

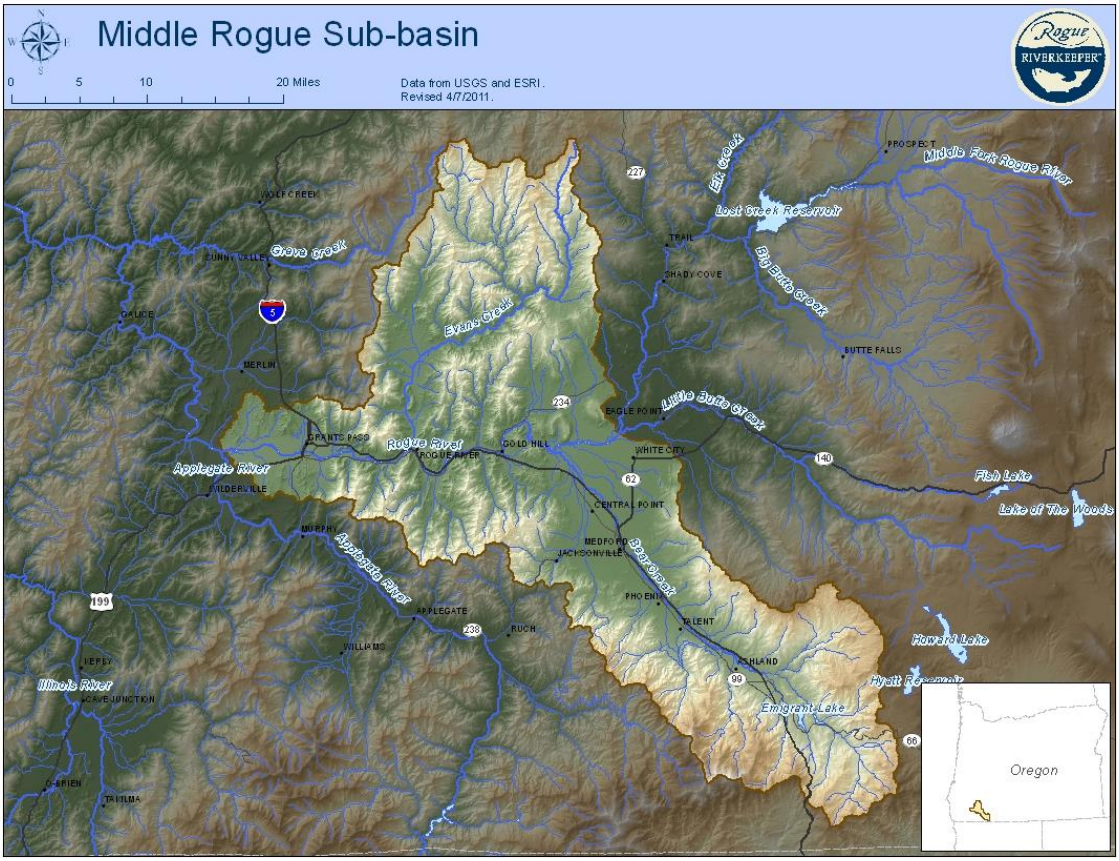
animal waste, which can be accomplished by strategically locating pet waste pick-up stations and educating residents about the importance of picking up waste. An example of one of the measures to mitigate temperature pollution is the preservation of mature trees to provide shade for streams. In Appendix A, a copy of Gold Hill's TMDL implementation plan is accessible; however, below are overarching strategies that Gold Hill has already proposed in their TMDL implementation, and which this SWMP will address:

1. Provide outreach and education to residents on water quality issues such as temperature, bacteria, storm runoff, and invasive plant identification. This could include providing information via the City's website, newsletters, mailings, or brochures.
2. Work with regional partners to develop a strategy for identifying and prioritizing restoration, planting, and protection areas.
3. Adopt riparian regulations or programs to protect existing native vegetation including restoration of riparian buffer and mitigation of potential impacts from new development.

CHAPTER THREE: ANALYSIS OF DEVELOPMENT ALONG GOLD HILL'S FLOODPLAIN

Gold Hill is located in the Middle Rogue Subbasin, a watershed that encompasses 607 square miles in the larger 5,156 square mile Rogue River watershed.[6] Within that is the Seven Basins Watershed (SBW), a 405 square mile watershed. Gold Hill falls within two subwatersheds, the Rogue River/Sams Creek and the Rogue River/Galls Creek, where annual precipitation is about 25 inches a year.[7] The Rogue River is the largest stream in the subwatershed, with many tributaries feeding into it. Gold Hill's southern and eastern boundaries are formed by the Rogue River, which has played a large role in shaping the City (Figure 2-1).

Figure 2.1. Middle Rogue Sub-Basin[8]



[6] Middle Rogue Watershed Assessment, Middle Rogue Watershed Association, June 2001

[7] Seven Basins Watershed Assessment, Environmental Management Services, Inc., February 2004

[8] Rogue Riverkeeper, Middle Rogue Sub-Basin, revised April 2011, http://rogueriverkeeper.org/who-we-are/watershed/middle-rogue

The Rogue River provides the City with valuable recreational amenities, like swimming. Recreational amenities, in conjunction with the scenic value of the river, have enticed residential development along the river's edge. Given the size and capacity of the Rogue – which contains an average flow rate of approximately 2,525 cubic feet per second at Dodge Bridge, near Eagle Point, Oregon – aquatic species also thrive in the Rogue. The Rogue and its tributaries produces the largest amount of salmon and steelhead south of the Columbia River; salmon like Chinook, Coho, and Steelhead utilize the Middle Rogue Watershed for migration, spawning, and rearing. [9]

Due to Gold Hill's location along the Rogue River, both private and public properties within the city are impacted by ***floodplain*** regulations (see Table 2-1 and Map 2-1). Rivers and streams hold a lot of economic and scenic value and, as a result, development along the Rogue has flourished. Sixty-three parcels border the river, 14 of which are publicly-owned. These riverfront properties are highlighted in Map 2-1. Due in part to the steep banks of the Rogue River, the floodplain only affects a small portion of the total land within the city limits – about 54 acres (10%) are located within the 100-year floodplain, which includes the ***floodway***. However, as shown in Table 2-1, the 100-year floodplain impacts a large amount of public riverfront property – about 58% of public riverfront land falls in the floodplain. Private land is less significantly affected. Of all private parcels impacted by the floodplain, only 29% of the total acreage is in the floodplain. Additionally most of the impact comes from properties located in part of the floodway. Within riverfront properties, eight buildings are located in the floodplain and average about 255 feet distance from the Rogue.

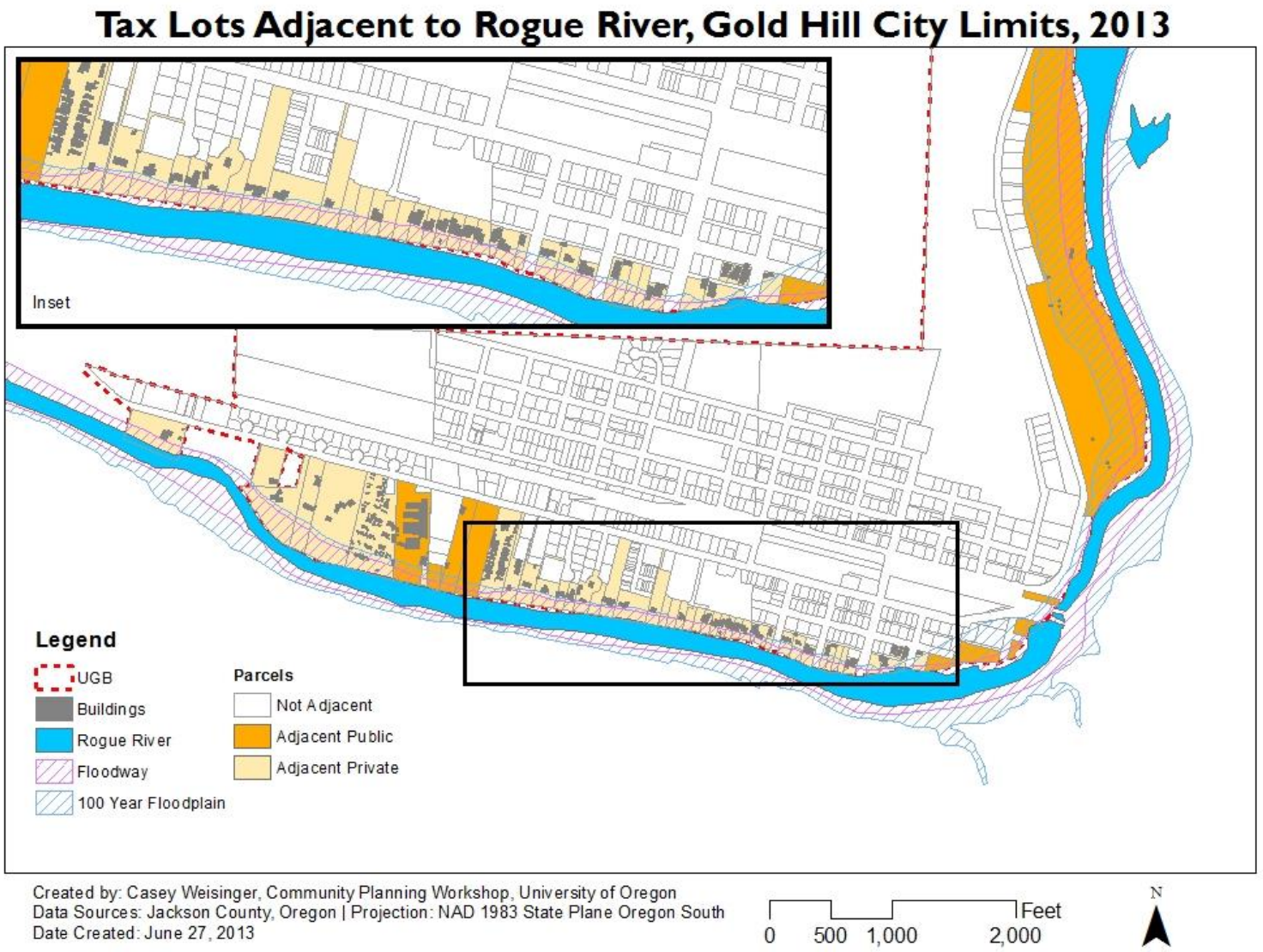
Riverfront properties may also be affected by the presence of riparian vegetation, which provides benefits to water quality, such as slowing the speed of runoff, preventing bank erosion, reducing the temperature of runoff, and filtering pollutants out of runoff before it enters the river. Because of these diverse benefits, it is important to ensure that riverfront landowners have the necessary resources to effectively identify, maintain, preserve, and enhance riparian vegetation if they choose to do so.

Table 2-1. Acres of Public and Private Parcels Impacted by Floodplain

	Lots in Floodplain	Lot Acres located in Floodplain	Lot Acres in Floodway
Public Parcels	70	26	14
Private Parcels	49	3	11
Total	**119**	**29**	**25**

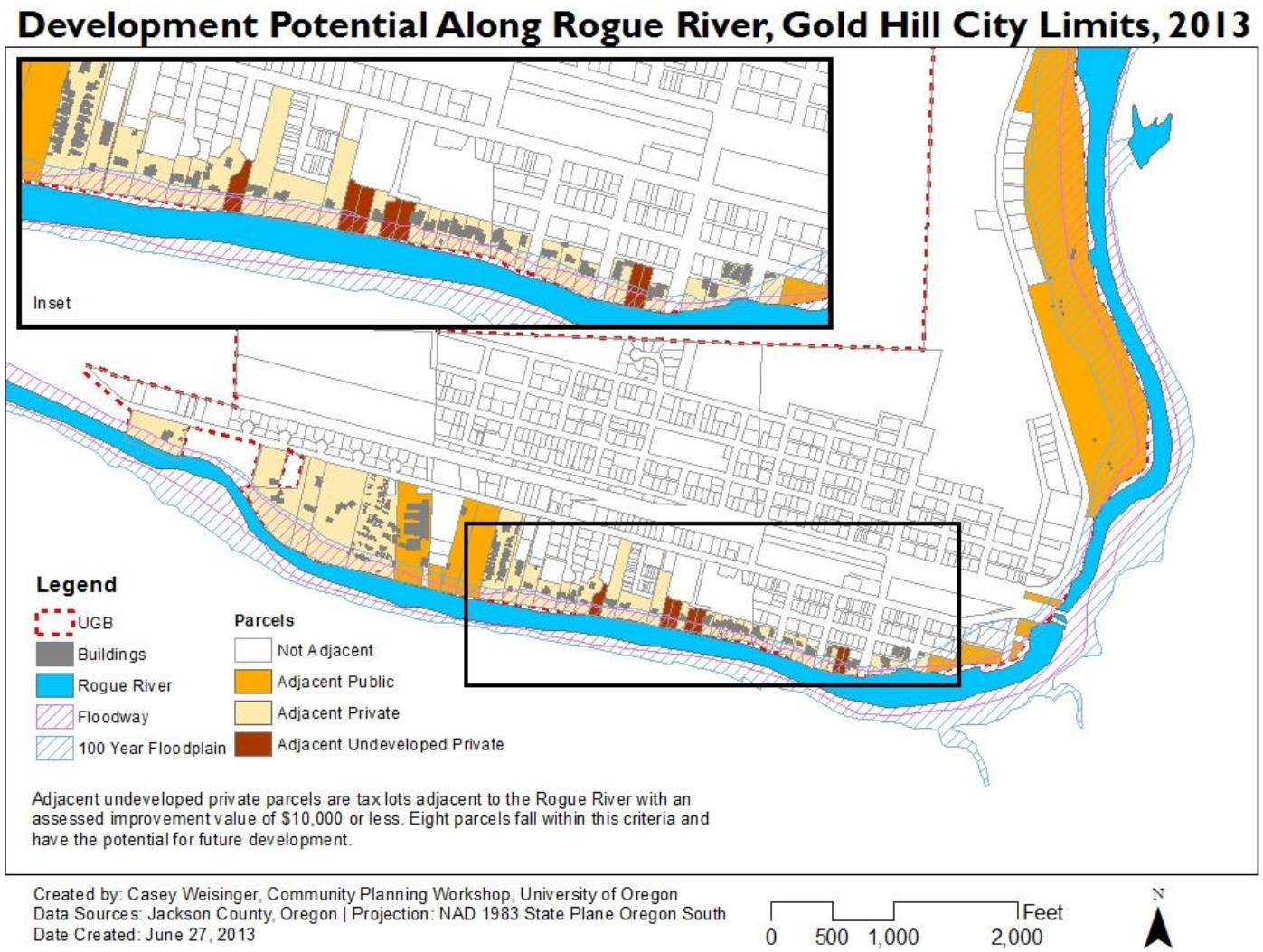
[9] Middle Rogue Watershed Assessment, Middle Rogue Watershed Association, June 2001

Map 2-1. City of Gold Hill Parcels and Water Features Map



Although the City is taking a voluntary management approach to satisfying its TMDL requirements, documenting development capacity provides insight on how a riparian ordinance might affect future development along the Rogue. When riparian ordinances are adopted, existing development is grandfathered in which means only future development from the point of adoption is limited. A city with many undeveloped properties may face greater advantages in protecting water quality using a riparian ordinance than a city with few. Because the City is incorporating riparian protection into is public land, this development capacity analysis only used private properties. Properties $10,000 or less in assessed improvement value were treated as undeveloped. Considering this, only eight properties of the 49 are undeveloped, approximately 16% of all private property (see Map 2-2). Additionally, there are two different sets of properties where two adjacent properties have the same owner. With a small amount of undeveloped land and ample participation, it is promising that this surface water management program may accrue greater benefits in improving water quality than a riparian ordinance.

Map 2-2. Development Capacity Along Rogue River



CHAPTER FOUR: GOLD HILL WATER QUALITY ACTION PLAN

Chapter Four presents a series of goals, strategies, and actions (called the "action plan") to implement the Gold Hill Surface Water Management Program (SWMP) and address specific activities identified in the Gold Hill TMDL Implementation Plan. The action plan includes goals that address the City's water quality obligations under the Rogue Basin TMDL, as discussed in Chapter Two. Many of these goals are voluntary in nature, with some approaches containing an administrative component to ensure the City meets these standards. Each goal consists of a strategy and one or more actions for accomplishing the strategy. Strategy and actions provide increased specification as to how the City intends to accomplish its goals. Under each action will be an explanation that includes:

- what the action proposes to accomplish;
- the partners involved in developing and implementing the action;
- the timeframe in which responsible parties will execute the action; and
- the desired outcome.

The strategies and actions that follow are presented for a five-year schedule and timeframes refer to the adoption of the program as the starting point. The Action Plan assumes the City is the lead organization and will either be responsible for implementation of actions, or of coordinating their implementation.

It is the objective of the City of Gold Hill that through the coordinated success of the strategies listed below the City will increase the sustainability of its natural systems, provide a healthy environment for people and wildlife, and enhance economic stability. Furthermore, the partnerships and funding mechanisms that develop as a result of this program will provide a foundation for cooperative resource management for Gold Hill well into the future.

Goal 1: Lead Community Efforts to Improve and Maintain Water Quality and Water Resource Protection

Water resource protection provides an opportunity for the City to take the lead on water quality issues and help the community learn how to protect water resources. To accomplish this goal, the City can lead by example through incorporating best practices into its operations, remaining informed about water quality status, and maintaining and establishing partnerships. By taking a strong lead, the City can inspire and engage the Gold Hill community around water quality issues.

Goal 1: Lead Community Efforts to Improve and Maintain Water Quality and Water Resource Protection.	Strategy I.I: Lead the community by example in implementing strategies to improve water quality.

Action 1.1.1: Adopt LID code amendments.

Rationale:

Based on CPW's review, the municipal code contains barriers to implementing low impact development (LID) strategies in development and redevelopment projects. The proposed code amendments create flexibility in the code so that future development projects can include water quality protection and the often cost-saving LID strategies.

At a glance:

Who:

- City Council
- Contract Planner
- City Manager

Timeline:

- Month 2

Outcomes:

- Increase flexibility to use LID in code

Funding:

- Staff time

Monitoring:

- Report amendments to DEQ

Who: The Community Planning Workshop (CPW) team developed a list of recommended code amendments to incorporate LID strategies into the existing municipal code. The City Council is responsible for adopting the amendments as recommended by the steering committee.

Because the code amendments are legislative changes to the municipal code, the City is obligated to provide notification to the Department of Land Conservation and Development at least 35 days before the first evidentiary hearing. Moreover, the City is obligated to provide notification to affected property owners of the code amendments consistent with the municipal code and Measure 56. CPW recommends that the City consider a process to inform property owners and residents prior to the hearing. The intent of that step is to minimize confusion among property owners about the nature and intent of the code amendments.

Timeline: CPW presented draft amendments to the committee in June 2013. The committee will present the amendments to the City Council and the Council will conduct hearings on the amendments by month 2. CPW may assist the committee in presenting the amendments to the City Council.

Outcomes: A revised city code will reduce barriers residents and developers may face in implementing LID strategies.

Funding: City funds will pay for staff time and resources.

Monitoring: The City Manager will report to the Oregon Department of Environmental Quality (DEQ) when City Council adopts the proposed amendments.

Goal 1: Lead Community Efforts to Improve and Maintain Water Quality and Water Resource Protection.	Strategy 1.1: Lead the community by example in implementing strategies to improve water quality.

Action 1.1.2: Prioritize the use of LID strategies in public projects.

Rationale:

Incorporating LID strategies into public projects is a great way to inspire private developers and landowners to do the same. Not only could public projects benefit the community by their creation, but they could also serve as an observational or hands-on educational opportunity.

At a glance:

Who:

- City departments
- City staff
- Contractors

Timeline:

- Ongoing

Outcomes:

- Demonstrate support for LID uses

Funding:

- Staff time
- Funding/grants

Monitoring:

- Document each LID project

Who*:* All city departments, staff, and contractors involved in designing and implementing public projects.

Timeline*:* Ongoing.

Outcomes*:* Public projects that improve water quality, build a sense of community, and serve as learning sites. The City will adopt a resolution to prioritize LID design in contract bids for public projects. The new skate park would be an excellent existing project to use as leverage for LID, especially during the second phase of development. The skate park is a high-visibility project and near that site are several areas that tend to collect standing water, which would be appropriate sites for *rain gardens*.

Funding*:* The City will fund the use of LID projects as appropriate. Depending on the type of project or LID strategy incorporated, the City can apply for special grants or other funds see Appendix C for funding sources.

Monitoring*:* The City will document each city project that includes LID and will report those projects to DEQ in the yearly Total Maximum Daily Load (TMDL) review.

Goal 1: Lead Community Efforts to Improve and Maintain Water Quality and Water Resource Protection.	Strategy I.I: Lead the community by example in implementing strategies to improve water quality.

Action 1.1.3: Incorporate an interpretive riparian trail into the Parks Master Plan.

Rationale:

An interpretive and educational riparian trail is a great way to bring the community together and engage them around water quality and river maintenance. This trail would be a great outdoor activity for families and visitors. Action 2.2.1 provides more information about the interpretive trail. As the City is currently developing the Parks Master Plan, the City has an opportunity to include the trail as a priority parks project.

At a glance:

Who:

- City Manager
- Public Works Director

Timeline:

- Fall 2013
- February 2014

Outcomes:

- Set framework to create interpretative riparian trail

Funding:

- Staff time/grants

Monitoring:

- Use Parks Plan monitoring

Who*:* The City Manager will work with the Public Works Director to ensure that the interpretive riparian trail is included in the Parks Master Plan.

Timeline*:* The City projects it will begin the Parks Master Plan in Fall 2013 and will complete it, ready for adoption, by February 2014.

Outcomes*:* Including an interpretive riparian trail in the Parks Master Plan is the first step in making the trail a reality. While there will be many more steps to take before this trail is completed, including it in this planning process will create a path to follow. This action is also the first step in implementing Action 2.2.1***:*** Create an interpretive riparian trail.

Funding*:* City funds will pay for staff time to complete this planning process. The City may also use funding from a planning grant through the Oregon Parks and Recreation Department.

Monitoring*:* The City will monitor this project as part of its usual activities in ensuring that the Parks Master Plan is being realized.

Goal 1: Lead Community Efforts to Improve and Maintain Water Quality and Water Resource Protection.	Strategy 1.2: Stay up-to-date on current water quality status, activities, and needs.

Action 1.2.1: Attend and participate in quarterly DEQ TMDL meetings and report back to City Council on important updates and activities.

Rationale:

Quarterly DEQ TMDL meetings present an opportunity for the City to learn about the status of water quality in Gold Hill and in the larger Rogue River watershed. Learning about water quality and activities will ensure that the steps that the City takes will be informed and important steps toward protecting local water quality. Reporting back to the City Council will enable all City officials to stay current on water quality issues and strategies.

At a glance:

Who:

- City Manager/Staff
- City Council
- DEQ

Timeline:

- Quarterly

Outcomes:

- Stay informed on strategies and issues

Funding:

- Staff time

Monitoring:

- Document attendance

Who*:* The City Manager or designated staff person will attend these meetings. It will be the responsibility of the City Manager to report on these activities to both City Council and Public Works for robust information sharing on water quality issues with staff.

Timeline*:* DEQ TMDL meetings are held on the 3rd Wednesday of the month, every 3 months. The City will communicate with the DEQ to determine the ongoing schedule.

Outcomes*:* The City will remain informed about water quality status and will learn about new strategies other localities are implementing that might work in Gold Hill. In this way, the City will avoid being surprised by new policies related to surface water management and will stay in close contact with partners at the DEQ in case any issues should arise. The City will also have the opportunity to attend informational stormwater meetings.

Funding*:* City funds will pay for staff time and resources to complete this action.

Monitoring*:* The City Manager will ensure that a staff person attends these meetings and presents regular updates to the City Council.

Goal 1: Lead Community Efforts to Improve and Maintain Water Quality and Water Resource Protection.	Strategy 1.3: Establish partnerships to help implement the Surface Water Management Program.

Action 1.3.1: Identify opportunities to partner with regional organizations and agencies and maintain communication with key contacts at these organizations.

Rationale:

The DEQ is the state administrator of the Clean Water Act and related regulations in Oregon. As such, the agency will ultimately determine whether or not Gold Hill is successfully following its TMDL Implementation Plan.

At a glance:

Who:

- City Manager
- DEQ
- SBWC
- Can-Do
- RVCOG
- JSWCD
- Local church groups
- OSU extension

Timeline:

- Quarterly

Outcomes:

- Help execute and support SWMP

Who: The City Manager will designate staff to be the primary contact with regional partners.

The **Oregon Department of Fish and Wildlife** (ODFW) protects and enhances Oregon's fish and wildlife and their habitats for the use and enjoyment by current and future generations. ODFW has done and continues to do extensive testing and monitoring of riverine conditions and species. This department is a natural ally and resource for the City.

The **Seven Basins Watershed Council** is a partner that will provide resources for information, services, and events. The Council provides information on its website,[10] provides on-site assessments through the streamside gardening program, and holds informative events.

Can-Do is a local nonprofit in Gold Hill. Through partnerships, it has brought new projects to the community, including the Gold Hill Skate Park. This organization is a natural partner for demonstration site projects, such as installing rain gardens near the new skate park.

The **Rogue Valley Council of Governments** (RVCOG) is a voluntary association of local governments in Southern Oregon, of which Gold Hill is a member city. RVCOG works with communities in the Rogue River Basin to conserve and enhance watershed health by facilitating implementation of regional strategies and providing technical assistance. RVCOG created a Rogue Basin TMDL Implementation Plan. RVCOG's

[10] http://www.sevenbasins.org/index.htm

actions

Funding:

- Staff time

Monitoring:

- Document partners' help with appropriate actions

experience working with communities and on TMDL implementation plans[11] makes them an excellent resource for education and technical assistance.

The **Jackson Soil and Water Conservation District** (JSWCD) provide scientifically based technical assistance, financial resources, and educational resources to both students and citizens in Jackson County. JSWCD is also an excellent resource for informative publications.[12]

Local church groups are an excellent, preexisting network. The City can tap into this network to disseminate information and get the community motivated to come together around protecting and improving water quality.

Oregon State University Extension (OSU) is Oregon's land-grant university, which means that it is particularly dedicated to agriculture, education and outreach. Through OSU Extension Services, it reaches out to communities across the state. One particularly relevant extension activities is the Water and Watershed Education program, which includes Stormwater Solutions, a project particularly relevant to Gold Hill's TMDL efforts.[13]

***Timeline**:* The City will communicate quarterly with partners to report on updates and events and more frequently if needed.

***Outcomes**:* Partnerships with regional organizations provide many positive outcomes for the City. The following are several of the key outcomes:

- The City can use the quarterly TMDL meetings (see Action 1.2.1) and the required TMDL check-in with DEQ as a way to get counsel and information about water quality issues.
- The City will remain current with all ODFW research and reports that apply to the Rogue River Basin and relate to water quality.
- The City will remain current with the Watershed Council's calendar of events. The City can facilitate communication between residents and the Council (see Goal 3, Action 3.2.2). The City can promote the Council's annual event, See Our Salmon, and consider participating. Finally, the City can coordinate with the Council to host an event like "Kids and Bugs: A Stream Education Program,"[14] as it did in 2005.[15]

[11] http://rvcog.org/MN.asp?pg=NR_Rogue_TMDL

[12] http://www.jswcd.org/Index.asp

[13] http://extension.oregonstate.edu/stormwater/

[14] http://www.sevenbasins.org/kidsnbugs.htm

[15] http://www.sevenbasins.org/kidsnbugs2005.htm

The Watershed Council can be a valuable partner in planning and implementing the interpretive riparian trail.

- A productive partnership with an active, local nonprofit will help the City accomplish SWMP action items. The City can share the SWMP with Can-Do and determine projects of shared interest that would be ripe for partnership.
- The City will remain current with RVCOG information and events that relate to Rogue River water quality. The City can participate in relevant meetings.[16]
- The City will remain current with JSWCD publications that relate to Rogue River water quality. The City can publicize JSWCD events[17] on the website and encourage interested community members to participate.
- The City will maintain a list of church groups that are interested in working with the City around water quality events. When the City advertises events or distributes informational materials, it will provide some advertisements and materials to these groups for broader dissemination.
- The City can advertise OSU Extension services on the website and encourage interested community members to participate in activities, such as Stormwater Solutions projects. The City can use the resources of OSU Extension to complete City demonstration sites, including the interpretive riparian trail (see Action 1.1.3).

***Funding**:* The City will work with partners to determine if funding above and beyond City staff time is necessary for collaborative actions.

***Monitoring**:* When the City completes an action in the SWMP that allows for an opportunity to partner with regional organizations, the SWMP program administrator will document the nature of the partnership for the purpose of reporting progress to the DEQ.

[16] http://rvcog.org/MN.asp?pg=NR_Rogue_Reporting_and_Tracking

[17] http://www.jswcd.org/Calendar.asp

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues

The City will facilitate community learning and participation that leads to community empowerment. It requires the creation of consistent, common, and correct, community understanding and awareness of water quality protection. Vital to this Surface Water Management Plan is the active participation of the community. To ensure the public engages in a positive manner, it is important to raise awareness of water quality issues, educate residents, and guide them with accurate resource information. There are two strategies; one focuses on information dissemination and the second on increasing community engagement.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.I: Raise awareness of human impacts on water quality and best practices for limiting those impacts

Action 2.1.1: Apply stormwater stencils to sewer drains.

Rationale:

Drains on public streets can be a source of illegal dumping. Often people are unaware that stormwater flows directly into the river. Stencils on storm drains help remind people that anything entering the stormwater system is not being treated at a facility.

At a glance:

Who:

- Public Works
- Seven Basins Watershed Council

Timeline:

- Month 3

Outcomes:

- Create awareness of drainage system

Funding:

- Staff time

Monitoring:

- Report marked drains to DEQ

Who*:* The Public Works Department of Gold Hill will obtain the stencil of their choice and use department resources to apply them throughout town. The Seven Basins Watershed Council has offered to partner with the City by allowing Gold Hill to use its stencils.

Timeline*:* The Public Works Department will work with the SBWC to obtain stencils and apply them to storm drains by month 3.

Outcomes*:* Public signage will be scattered throughout the city to educate people about the drainage system that flows into the Rogue River.

Funding*:* City funds will pay for staff time and resources to complete this action.

Monitoring*:* The City will report to DEQ when all drains have been marked with stencils. The public will be surveyed as well to assess effectiveness of messaging.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.I: Raise awareness of human impacts on water quality and best practices for limiting those impacts

Action 2.1.2: Distribute educational materials at public and private facilities.

Rationale:

The issue of surface water management is a complex one, with several different agencies working to meet different legislative objectives. It can often be difficult for the general public to comprehend the necessities of surface water management when the information regarding such issues is not available in a clear and concise manner. Educational flyers and brochures are a great resource to spread consistent information and best management practices for water quality. This is an easy way to distribute material to develop a common knowledge of water quality issues that does require a lot of staff time or funding. For example, the City may partner with a local restaurant to provide children's menus that allow for interactive learning about surface water quality.

At a glance:

Who:

- City Staff
- JSWCD

Timeline:

- Ongoing

Outcomes:

- Create awareness of water quality issues

Funding:

- Staff time/funds

Monitoring:

- Report quantity

Who*:* The City will work with JSWCD to identify and distribute educational materials. Locations for distribution include, but are not limited to: post office, library, museum, restaurants, city hall, river-centered businesses, and schools. JSWCD will arrange for a volunteer or intern to distribute and restock materials. JSWCD and the City will coordinate the ongoing process.

Timeline*:* The City received a box of materials from JSWCD in June 2013. The City will begin to identify distribution locations and distribute materials by month one of this program and will work with JSWCD to keep materials up-to-date and stocked on an ongoing basis.

Outcomes*:* Informational materials on water quality issues, Best Management Practices (BMPs), LID, and vegetation guides will be available at many locations throughout the city.

Funding*:* Partners may donate educational materials, or the City will use existing funds or apply for grant funding to purchase materials. Volunteers will help distribute informational materials as needed. The City will pay for the staff time required to reorder and distribute materials.

Monitoring*:* DEQ will ask the City to verify during their annual report that partnering locations are continually using the materials. The City will ask managers at each location to inform the City when materials are low.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.I: Raise awareness of human impacts on water quality and best practices for limiting those impacts

Action 2.1.3: Launch and maintain informational website on which to provide public access to water quality information.

Rationale:

The Internet is becoming an increasingly popular form of communication for public outreach. Making information available on the City's website will ensure that the majority of residents have access to surface water information at all times. Additionally, the website allows for the distribution of online-only resources which typically provide more detailed and frequently updated information compared to paper materials. The internet is also an invaluable tool for youth outreach and publicizing for water-related events outlined in this chapter.

At a glance:

Who:

- City Staff

Timeline:

- Month 3

Outcomes:

- Increase transparency and awareness

Funding:

- Staff time

Monitoring:

- Checks on website by DEQ

Who*:* As part of the process in developing the Gold Hill SWMP, CPW created and launched a preliminary site for the City (http://goldhillwaterquality.wordpress.com/). The City will transfer the material to the city website.

Timeline*:* The City is in the process of developing a new city website and will incorporate water quality information during this process. The City will make the new website with water quality resources available to the public by month 3.

Outcomes*:* Agendas and meeting minutes from this process will be accessible to the public to encourage transparency. The City will maintain the website updating it with additional information, events, and notices as appropriate. The website will have informational materials regarding the causes and remedies of surface water issues, along with the role of riparian areas in an easy to find location. Included among the informational resources on the City's website will be links to information from other organizations and agencies that pertain to the goals and strategies of this program. Specially, the City's website will have informational materials on water quality issues, BMPs, LID, and vegetation guides.

Funding*:* The City's website budget will cover website maintenance.

Monitoring*:* DEQ can check remotely that website is functioning. The City will contact partners to make sure that new resources link correctly to the website as necessary.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.2: Engage community through interpretive facilities and community events.

Action 2.2.1: Create an interpretive riparian trail.

Rationale:

Interpretive trails are an excellent interactive educational forum for locals and tourists. They add value to parks and educate people about water, vegetation and wildlife. Signage along a trail can be a meaningful gesture by the City to create common knowledge about riparian areas.

At a glance:

Who:

- City Staff
- JSWCD
- SBWC

Timeline:

- Years 3-5

Outcomes:

- Educate residents about riparian areas

Funding:

- Staff time
- Grants/city funds

Monitoring:

- Report to DEQ

Who: The City will partner with JSWCD for technical expertise on design, and recruit local volunteers to join work parties. The Seven Basins Watershed Council can assist the City with recruiting volunteers for work parties.

Timeline: Once the City completes Action 1.1.3: Incorporate an interpretive riparian trail into the Parks Master Plan, the City will plan and establish a riverside trail. The City may partner with JSWCD, SBWC, ODFW, and DEQ, to develop plans for the trail, including evaluating site locations, selecting educational signage, and assisting with necessary trail restorations. A completed interpretive trail should be completed in years 3-5.

Outcomes: The City will have an interpretive trail or trail system that will educate students and residents about native wildlife and vegetation on the Rogue River, along with riparian area information to educate people about the importance of corridor protection.

Funding: As part of its process for prioritizing and drafting actions in the Parks Master Plan, the City will incorporate the interpretive trail and determine how much funding will be necessary and from what sources. The SBWC may be able to assist in securing grant funding.

Monitoring: The City will maintain the trails and signs as they normally would at other City-owned parks. City staff will report to DEQ on the condition and use of the interpretive trail during yearly TMDL review.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.2: Engage community through interpretive facilities and community events.

Action 2.2.2: Integrate water quality information and activities into existing community activities and events.

Rationale:

Because Gold Hill hosts many activities and events throughout the year, there is ample opportunity to use existing events as a platform for riparian education. These events attract many residents and tourists who may be unaware of the impacts riverside activities have upon the health of the watershed. Informational booths can help educate and inspire people to take an active role in the protection and restoration of riparian areas.

At a glance:

Who:

- City Staff
- Appropriate partners

Timeline:

- Annually

Outcomes:

- Promote water quality and riparian management

Funding:

- Volunteer/Staff time

Monitoring:

- Create list of events partners participated in

Who*:* The City will consolidate information on annual events and, in conjunction with partner organizations such as ODFW, JSWCD, Watershed Council, RVCOG and DEQ, coordinate and host riparian education booths at these events.

Timeline*:* City Manager or designated city staff member will be responsible for drafting events calendar in January or February each year and bringing program partners and event coordinators together to integrate riparian education activities or booths into community events 4-8 weeks prior to each event.

Outcomes*:* The City will integrate riparian education into existing events, eliminating the need to create a new, specific event. Existing events include but are not limited to: Gold Dust Days, King of the Rogue, Rat Rods, See Our Salmon, Sand Castle Competition, and Kids' summer camps. The City will promote the opportunity to learn more about water quality and riparian management at these events by listing the events on the program website or creating a simple handout with aggregated event dates and information.

Funding*:* Volunteers, JSWCD, ODFW, SBWC, RVCOG and DEQ will offer staff time and basic resources to host riparian education booths and educate guests at events.

Monitoring*:* The City will be responsible for compiling a yearly list of events where riparian educational booths would be appropriate. The City will report this list to DEQ and the City will be responsible for reporting the names and total number of visitors to the booth. Booths will acquire names through the use of a sign-in sheet, email list, raffle, etc.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.2: Engage community through interpretive facilities and community events.

Action 2.2.3: Partner with local schools to incorporate an activity in which youth grow and plant vegetation.

Rationale:

The steering committee expressed deep interest in involving youth in this program wherever possible. According to the U.S. Census, approximately 25% of Gold Hill is under age 19. Engaging youth in educational opportunities allows them to understand the importance of protecting the river and native vegetation while fostering stewardship of these important resources. An example of how this could work is for the City to provide seeds to a local elementary school, which would have students plant and grow starts, incorporating the effort into its curricula as it sees fit. When the starts are ready, the students can bring them home to plant, plant them on school property, or the school can work with the City to plant them on public property, preferably near the river. The planting component of this action can also help address *Goal 3: Restore, maintain, and enhance riparian corridor vegetation to ensure a healthy river for humans and wildlife.*

At a glance:

Who:

- City Staff
- Patrick Elementary School
- Can-Do

Timeline:

- Curriculum planning
- Seasonally

Outcomes:

- Engage youth in water quality issues

Who*:* The City will communicate with Patrick Elementary School and Can Do to incorporate this activity in existing curricula in the appropriate grade level(s). The City will be responsible for facilitating partnerships with teachers, administration, and Can Do. Patrick Elementary School will be responsible for administering the activity in the classroom. If planting is appropriate, the City will be responsible for identifying areas in which to plant.

Timeline*:* During the curriculum planning for the next school year, the City will partner with Patrick Elementary School administration and teachers to incorporate this activity into the following year's curriculum or so it coincides with appropriate planting seasons.

Outcomes*:* Youth will be directly engaged in protecting water quality. Students can germinate seeds in milk cartons from school lunches. By planting and raising different types of native plants students will learn more about vegetation suitable for riparian areas – what it looks like and how to protect it. Students may share these learning experiences at home, which will provide additional community outreach. More native vegetation will be planted on properties for students who want to bring their vegetation home to plant. The City can use plants from students who do not want to bring home their plant and plant it on public property.

Funding:

- City funds
- Staff time

Monitoring:

- Verify activities occur with teachers
- Teachers report anecdotal information

***Funding**:* City funds will pay for necessary staff time and the seeds to complete this action. The City may reach out to partner nurseries for seed and supply donations or work with the watershed council to develop a planting activity.

***Monitoring**:* The City will communicate with teachers to verify that they utilized this action in their curriculum. Teachers will report anecdotal information to the City about how students responded to the information and the process as well as how many students participated.

Goal 2: Increase Community Engagement and Awareness of Water Quality Issues.	Strategy 2.2: Engage community through interpretive facilities and community events.

Action 2.2.4: Educate and inform residents about hazardous waste impacts and safe removal and disposal practices.

Rationale:

No way to conveniently dispose of hazardous waste exists in Gold Hill. While Medford and Jackson County have greater capacity to collect, handle, and dispose of such materials (in part through partnerships with Southern Oregon Sanitation), it is currently not convenient for Gold Hill residents to ensure hazardous waste is not entering the ecosystem. Gold Hill residents also do not have easily accessible information about proper disposal of hazardous waste.

At a glance:

Who:

- Public Works

Timeline:

- Semiannually

Outcomes:

- Increase awareness of ways to safely dispose of waste

Funding:

- Existing outreach resources (i.e. utility mailings)

Monitoring:

- Document announcements and methods to reach out

Who*:* The Public Works Department will advertise nearby waste disposal dates and locations to Gold Hill residents, such as the Rogue Disposal and Recycling on Table Rock Road in White City, Oregon.

Timeline*:* The Public Works Director will identify and advertise on the City website and through flyers or utility bill mailings, the annual hazardous waste drop-off procedures every six months.

Outcomes*:* Citizens will remove potentially harmful waste from riparian areas, or unsecure locations to avoid any accidental spills affecting the health of the waterway.

Funding*:* The City will utilize existing resources and outreach platforms for this riparian education component.

Monitoring*:* The City Manager will document outreach efforts by saving informational materials and noting the different methods used to educate residents.

Goal 3: Restore, Maintain, and Enhance Riparian Corridor Vegetation to Ensure a Healthy River for Humans and Wildlife

Planting riparian vegetation is an important strategy to improve water quality and reduce potential flood damage and bank erosion. Increasing the amount of riparian vegetation will also help to ensure that wildlife has adequate habitat. Developing riparian restoration projects can be difficult, but establishing partnerships and funding sources can sustain them. In order for this goal to be successful, streamside property owners must be engaged and voluntarily protect the riparian area on their property. The voluntary protection program will provide public leadership in enhancing riparian areas and also recruit streamside property owners to do the same.

Goal 3: Restore, Maintain, and Enhance Riparian Corridor Vegetation to Ensure a Health River for Humans and Wildlife.	Strategy 3.1: Preserve and enhance riparian vegetation on public property.

Action 3.1.1: Incorporate the planting and preservation of riparian vegetation into the Parks Master Plan for public properties along the Rogue River.

Rationale:

By prioritizing the preservation of existing riparian vegetation when planning for parks-related development, the city will protect the valuable functions of public riparian areas and provide an example to private landowners. Additionally, prioritizing riparian areas for the planting of vegetation on public land will help to improve water quality through filtration and shading, and help slow flood waters and provide habitat for wildlife. By taking a leadership role, the City will lead by example and encourage individual landowners to adopt similar preservation and enhancement strategies (see Goal 1, Strategy 1.1).

At a glance:

Who:

- City Manager
- JSWCD
- SBWC

Timeline:

- February 2014

Outcomes:

- Protect riparian vegetation

Funding:

- CIP funds

Monitoring:

- Monitor vegetation

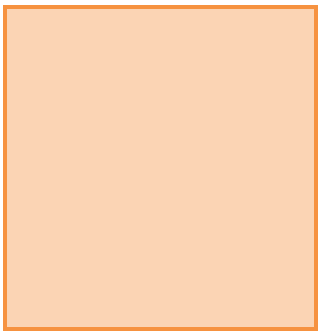
Who*:* The City Manager and appointed staff from the parks department will collaborate with JSWCD to conduct an assessment of sites suitable for planting new riparian vegetation. Some of the assessment work has already been done through the SBWC shade study and planning associated with the streamside gardening program. Once sites are prioritized, the parks department will develop a vegetation management plan through partnering with JSWCD and the SBWC.

Timeline*:* The City will complete site assessments and a vegetation management plan for public properties and incorporate projects into the park's Capital Improvement Plan during the regular planning process. These inclusions should be in the Parks Master Plan when it is completed in February 2014.

Outcomes*:* Protection of riparian vegetation will be incorporated into the parks master plan as a goal and will demonstrate the City's leadership role in enhancing riparian vegetation. The City may notify residents about the plantings by posting notifications on the website and at the post office after each series of plantings; this will alert residents to the City's effort to protect riparian vegetation and the benefits it brings.

Funding*:* Once the protection and/or planting of riparian vegetation is incorporated into the parks master planning process, associated activities and projects will be prioritized in the parks capital improvement plan.

Monitoring*:* DEQ will continue to monitor water quality for temperature and



bacteria load. The City will be responsible for maintenance of new vegetation for five years from the date that the vegetation is planted. Maintenance means ensuring that the vegetation reaches a mature state. The City may meet with local schools during their curriculum planning phase to determine if students could work separately or partner with DEQ or other agencies to participate in monitoring riparian vegetation and water quality.

Goal 3: Restore, Maintain, and Enhance Riparian Corridor Vegetation to Ensure a Health River for Humans and Wildlife.	Strategy 3.2: Preserve and enhance riparian vegetation on private property.

Action 3.2.1: Collaborate with program partners to provide onsite vegetation consultation to property owners.

Rationale:

Property owners are not always aware of their options for planting native or water quality friendly vegetation to create an attractive landscape. They also sometimes worry about regulations that may bar them from removing potentially hazardous vegetation. Lack or removal of vegetation is a major source of temperature impairment, which is an identified pollutant in the Rogue River TMDL. It also increases the rate of overland flow and chance of destabilized stream banks. Using native vegetation to address these issues maintains and improves biodiversity of native species habitats for both plants and wildlife. *Native plants* are also easier to care for since they are adapted to the local environment. Educational consultations with knowledgeable partners may go a long way to helping residents feel more confident maintaining their riparian vegetation.

At a glance:

Who:

- City staff
- Appropriate partners

Timeline:

- Year 1

Outcomes:

- Increase resources for residents to protect the river

Funding:

- Staff time

Monitoring:

- Track consultations

Who: The City will coordinate with partners such as OSU Extension, SBWC, JSWCD, and ODFW to provide consultations to interested property owners. The SBWC streamside gardening workshop could help recruit interested landowners for site visits and planting. The City will advertise the services at a minimum on the program website and especially notify riverfront property owners.

Timeline: The City will work with JSWCD, SBWC, and ODFW to advertise consultations to riverfront property owners by the end of year 1.

Outcomes: Residents will learn about how they can incorporate native plants into their landscapes to create a long-lasting, riparian-friendly environment.

Funding: City funds will pay for staff time required to coordinate with partners and to advertise services on the website. JSWCD will provide 1-hour consultations with residents free of charge. ODFW also provides consultations on a case-by-case basis to landowners with questions about removing vegetation.

Monitoring: The City will work with partners to track the number of consultations performed annually.

Goal 3: Restore, Maintain, and Enhance Riparian Corridor Vegetation to Ensure a Health River for Humans and Wildlife.	Strategy 3.2: Preserve and enhance riparian vegetation on private property.

Action 3.2.1: Partner with local nurseries to tag and advertise native or riparian-friendly plants.

Rationale:

Lack or removal of vegetation is a major source of temperature impairment, which is an identified pollutant in the Rogue River TMDL. It also increases the rate of overland flow and chance of destabilized stream banks. Using native vegetation to address these issues maintains and improves biodiversity of native species habitats for both plants and wildlife. Native plants are also easier to care for since they are adapted to the local environment.

At a glance:

Who:

- City staff
- Nearby nurseries

Timeline:

- Month 3

Outcomes:

- Give resources to residents about native plants

Funding:

- Staff time

Monitoring:

- Track number of nurseries

Who: JSWCD has provided a list of local native nurseries in southern Oregon. Nearby nurseries include, Siskiyou Rare Plant Nursery, Silver Springs Nursery, Inc., and Plant Oregon.[18] The City will also provide information to residents about where to purchase native plants.

Timeline: The City will advertise local nurseries with native plants through the project website by month 3. During this time, local nurseries will tag native plants so that customers can easily identify native plants for sale.

Outcomes: The local nurseries will advertise which native plants are suitable for riparian areas based off of RVCOG's list of native plants for Jackson County riparian corridors.[19] Residents curious about where they can purchase native plants can find partner nurseries and stores listed on the project website.

Funding: City funds will pay for staff time required to meet with local nurseries and to advertise them on the project website. The City will work with nurseries to cover the costs of printing or purchasing plant tags.

Monitoring: The City will track the number of nurseries that have been contacted and whether they are currently or are willing to start tagging native plants.

[18] See: http://www.jswcd.org/page.asp?navid=49

[19] RVCOG list of native plants available at: http://www.rvcog.org/mn.asp?pg=NR_Riparian_Planting.

Goal 3: Restore, Maintain, and Enhance Riparian Corridor Vegetation to Ensure a Health River for Humans and Wildlife.	Strategy 3.2: Preserve and enhance riparian vegetation on private property.

Action 3.2.3: Provide native and riparian-friendly plant resources on website.

Rationale:

The preservation of riparian vegetation is paramount to protecting water quality, preventing flood damage, and providing for wildlife habitat. Residents may not be familiar with the types of native or riparian-friendly vegetation in Jackson County and should have access to resources to effectively identify, protect, and plant different types of native plants. The program website, discussed in *Action 2.1.3: Launch and maintain informational website* provides an excellent opportunity to refer residents to online information already gathered or created by regional organizations and agencies. At a streamside property owner's request, the City may also connect them with OSU Extension services or the Seven Basins Watershed Council for in-depth assistance with riparian area and native vegetation maintenance.

At a glance:

Who:

- CPW
- City Staff

Timeline:

- Ongoing

Outcomes:

Provide resources to residents

Who*:* The CPW student team compiled existing information on native and riparian friendly vegetation on the program website. The information includes ways to protect, identify, plant, and maintain native and riparian-friendly vegetation. The City is responsible for publishing new or additional information on program website.

Timeline*:* Ongoing. As of mid-June 2013, the program website will contain resources on riparian vegetation, but the City will maintain the website as discussed in Action 2.1.3.

Outcomes*:* The website will include RVCOG's list of native plants for Jackson County riparian corridors,[20] Jackson County's A Landowners Guide to Riparian Areas,[21] and OSU extension's Guide to Native Streamside Trees and Shrubs.[22] The website will also link landowners to OSU Extension and Seven Basins Watershed Council consulting and assessment services for riparian

[20] Available at: http://www.rvcog.org/mn.asp?pg=NR_Riparian_Planting.

[21] Available at: http://www.co.jackson.or.us/files/taking_care_of_streams_in_jackson_county.pdf.

[22] Available at: http://extension.oregonstate.edu/sorec/sites/default/files/Guide_to_Native_Streamside_Trees_and_Shrubs.pdf.

Funding:

- Staff time

Monitoring:

- Track inquiries about programs

management and native planting. Finally, the website will link landowners to OSU Extension's A Guide to Riparian Tree Planting in Southwest Oregon.[23] The City will continue to update and add material as necessary.

***Funding**:* City funds will pay for the staff time necessary to complete this action.

***Monitoring**:* The City will coordinate with program partners to track the number of residents who inquire about or participate in programs related to streamside gardening, vegetation consultation, or riparian restoration.

[23] Available at: http://extension.oregonstate.edu/catalog/pdf/em/em8893-e.pdf.

CHAPTER FIVE: PROGRAM ADMINISTRATION

Consistent with the TMDL Implementation Plan, the City of Gold Hill is the lead agency on the implementation of this plan. This means City staff will implement the strategies in the Surface Water Management Program (SWMP) over a five year period as described in Chapter Four. The assigned city staff will oversee specific actions and guarantee that the SWMP achieves demonstrable outcomes.

Regulatory approaches to surface water management require that landowners and developers comply with surface water standards, but in a voluntary-based program such as this one, the desired outcomes can be more difficult to measure. Therefore, it is important to develop an effective monitoring strategy to ensure standards are met. In Chapter Four each of the actions mentioned in the Gold Hill Water Quality Action Plan has a monitoring component. In addition to individual monitoring of each action, the City should also undertake a general monitoring effort to ensure ongoing progress is being made on the SWMP as a whole and that that the objectives of the program are consistently meeting federal and state standards.

Administration

The Gold Hill City Council is ultimately responsible for overseeing the implementation of the SWMP. The City Council will review and adopt code changes and will need to dedicate the necessary time and resources to make the execution of specific actions and implementation of the program possible. The Gold Hill City Manager will take the lead on implementing the actions in the SWMP and monitor progress to the satisfaction of the Department of Environmental Quality (DEQ). The City Manager will act as program administrator and will report to and advise the Council on progress. The program administrator will be responsible for the SWMP as a whole and will ensure that the City accomplishes actions by delegating responsibilities to appropriate staff, such as the Public Works Department, or volunteers, like engaged residents. Once the City Manager delegates responsibilities, these designated staff and volunteers will oversee specific tasks related to implementing individual actions.

Timeframe

The City will implement and execute this program on a five-year timeframe. In the first six months of program implementation, the City will identify and dedicate funding to support the actions of the SWMP and facilitate partnerships with regional organizations and agencies as indicated in the action plan. At the end of the five-year timeframe, the City will adjust and/or adopt a new SWMP based on its monitoring and evaluation.

Roles & Responsibilities

Within the first year of program implementation, the City will delegate roles and responsibilities to ensure progress is made on actions. City staff will assist landowners where needed and will also oversee the ongoing implementation of the SWMP.

The primary responsible parties are the City Council and the City Manager or designated staff. The major responsibilities of each party are described below. For a summary of the

specific action items assigned to each, refer to the action matrix at the beginning of this report.

The **CITY COUNCIL** is the primary responsible body for ensuring continuous progress is made on the program and for reporting progress to the DEQ. The Council will adopt the SWMP as a resolution and the Council will also oversee the incorporation of low impact development (LID) language into the municipal code (Action 1.1.1). The Council will also be responsible for adopting additional actions as they are included in city planning documents, such as a Parks Master Plan. The components of the program cannot be executed without the necessary funding, therefore the Council will also commit to dedicating the necessary monetary resources from the City's budget to this program.

The **CITY MANAGER** will be responsible for administering the program and for reporting progress to the City Council. This includes assigning specific duties to city staff and departments to implement action items. The City has requested a Resource Assistance for Rural Environments (RARE) placement to assist with implementation of the SWMP. The RARE placement would work with the City Manager for a year for the period between September 2013 and August 2014.

Funding

The program will initially be funded through grants and City funds solely dedicated to this program. If the City is successful in acquiring grant funding, it can use the grant to initiate the program but the City cannot rely on grants as the sole source for maintaining it since grants are not a steady long-term source of revenue (see Appendix C for a list of relevant grant funding opportunities). In order to demonstrate that the program is durable and not susceptible to unstable grant funding, the City will allocate City funds to maintain the program.

The City will maintain funding for the program by dedicating staff time, allocating monies from its annual parks budget, and through small grants, as they become available. The Budget Officer proposes to start the 2014-2015 cycle by allocating 2% of the funds budgeted for parks and open space projects as a separate line item for riparian education and restoration.

Partnerships

Partnerships are pivotal to sustaining this program. Local and regional partners will be important for assisting the City by supplying resources and volunteering time to riparian restoration projects and outreach and engagement activities. The City will maintain local and regional partnerships (see Action 1.3.1) by connecting with partners on a quarterly basis through meetings and/or phone conversations and attend quarterly TMDL meetings. State level partners will notify the City of yearly funding opportunities through small grants, which the City will apply for as they become available. Appendix B lists contact information and possible roles of potential partnerships.

Monitoring & Evaluation

This program, and the strategies and actions within it, must provide reasonable assurance to DEQ that water quality is being protected on a level comparable to that of a regulatory

approach (a riparian ordinance). Clear, consistent, and accurate monitoring and evaluation will be integral to DEQ determining level of compliance and provide reliability and accountability for program stakeholders. If an adequate level of protection is not maintained, the City will be required to adopt a riparian ordinance. Therefore, it is the City's responsibility to ensure that all of the program actions are taken in order to realize this program's objectives.

Monitoring Program Implementation

The City must monitor the effectiveness of implementing the program's actions. The City will keep records that demonstrate impact for all action items. This means keeping track of things like the number of trees planted on public lands, how many trees were given out to the public, how many landowners were contacted about on-site consultations, the number of people who sign up for consultations (LID, riparian restoration, etc.), how many public projects incorporated LID, and how many kids participated in growing and planting trees through a class. The City will share this information with program partners at quarterly meetings to encourage transparency and illustrate progress.

Monitoring Program Effectiveness

Aside from monitoring progress on implementing the program, the City must determine if the program is effective in protecting riparian areas and thus the river. For example, an effective program will contribute to increased riparian vegetation. Temperature is one of the primary concerns in the section of the Rogue River near Gold Hill, monitoring what is happening with riparian vegetation under the program will serve as a measure of the program's usefulness to comply with temperature related TMDL requirements. Monitoring also helps provide a list of lessons learned to use in upcoming riparian plantings and maintenance strategies. If vegetation is decreasing under the program, which decreases the shade on the river, then DEQ may require Gold Hill to take regulatory measures. To help develop an effective monitoring program, DEQ provided a list of suggestions which are incorporated into this chapter.

Monitoring program effectiveness is a three-step process:

Step 1: Plant Survival and Growth Rate Measurements

Step 2: Photo Point Analysis

Step 3: New Development Assessments

Step 1: Plant Survival and Growth Rate Measurements

When the City does plantings in or near the riparian area, the City will measure plant survival and growth rates for a subset of these plantings. RVCOG recommends sampling 10 to 25 percent of the original planting area.[24] Using visual inspection or intensive

[24] RVCOG, Bear Creek and Rogue Basin Riparian Planting Plan, December 2010, http://rvcog.org/MN.asp?pg=NR_Riparian_Planting_Plan_TOC

measurements are methods to monitor plant survival.[25] To measure the growth rate, the City should focus on both the height of the plants along with diameters of the stems.

Step 2: Photo Point Analysis

The City will conduct an annual photo point analysis of riparian vegetation. Photo point monitoring is an inexpensive tool to document changes over time that helps to establish conclusions about program effectiveness.[26] The first step in developing an annual photo point analysis is site identification. The DEQ recommended seven areas for photo points that allows for long term monitoring (see Figure 5-1). Point one starts on the far west side; photo points increase numerically moving west to east along the river. If the City chooses other points, DEQ recommends establishing them on public roads and parks on the east and south sides of the river. Multiple methods exist for identifying sites such as using field surveys, identifying willing landowners, determining areas already prone to overgrown invasive species or areas deficient in vegetation, and utilizing aerial photography and maps.[27]

Once the City identifies photo point locations, the next step is to evaluate existing site conditions via photo point analysis on an annual basis. Photo points must remain fixed over time for both location and time of year at five to ten different riparian locations (this includes both public and private lands). Fixed time and locations allows for a more accurate assessment of how riparian vegetation is performing in the area. Three foot wooden stakes can be used to provide relative scale.[28] For each photo point, the City will take three images: upstream, across the river, and downstream (a panorama in lieu of the three photos is possible). For the very first photo point analysis at each point, flagging existing native plants may help with analysis in future years.[29]

In addition to taking three photos at each photo point, the City will also document the monitoring of riparian vegetation by using a table similar to the one presented below in Table 4. RVCOG recommends documenting the health of the riparian area by noting the extent that invasive species have overgrown or diminished in that location. The City will report its findings to DEQ.

[25]Brad Withrow-Robinson, Max Bennett, and Glenn Ahrens, A guide to riparian tree and shrub planting in the Willamette Valley: Steps to Success, http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/24003/em9040.pdf?sequence=1

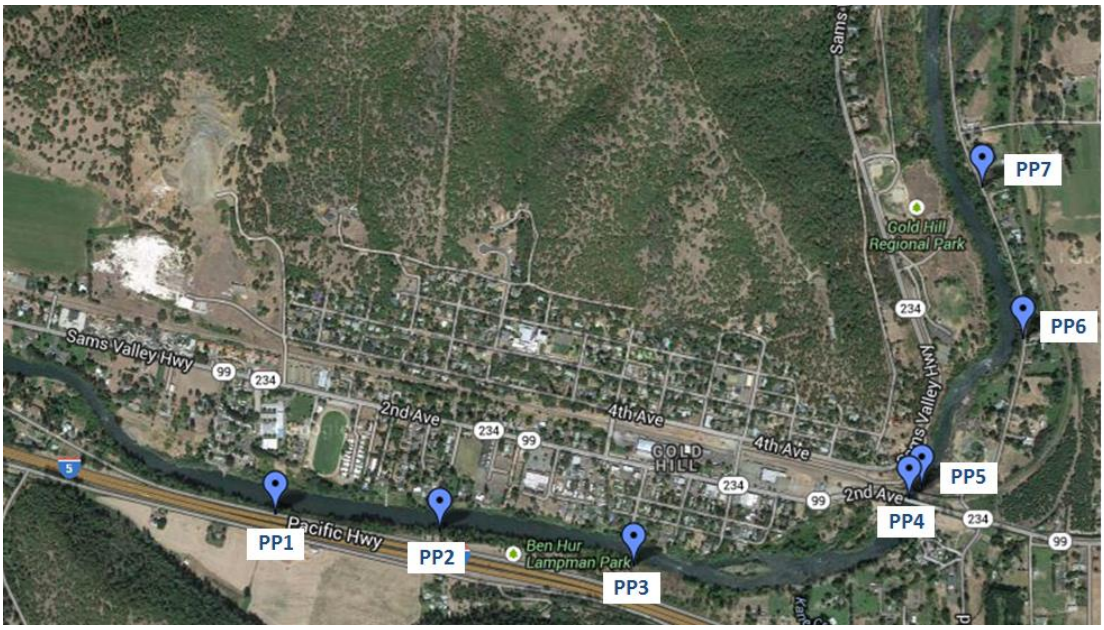
[26]Courtney Shaff, Jean Reiher, Jessica Campbell, OWEB Guide to Photo Point Monitoring, http://www.oregon.gov/OWEB/docs/pubs/photopoint_monitoring_doc_july2007.pdf

[27] RVCOG, Bear Creek and Rogue Basin Riparian Planting Plan, December 2010, http://rvcog.org/MN.asp?pg=NR_Riparian_Planting_Plan_TOC

[28] Ibid

[29] Ibid

Figure 5-1. Recommended Photo Points for Monitoring Riparian Vegetation



Source: Google Maps, DEQ

Step 3: New Development Assessments

The second step for monitoring program effectiveness is assessing new developments' impact on riparian vegetation. A regulatory approach would affect new development more than existing developments; therefore, the City will need to annually estimate loss, degradation, and improvements of riparian vegetation on new permitted properties. When a homeowner or developer applies for a building permit that is when he or she will first be notified about the riparian assessments that will need to take place on the property. The City or partner staff will complete all assessments; one assessment will take place prior to construction and a second assessment one year post construction. The City or partner staff will take photos using the same method as the photo point analysis.

In addition to the three photos, the City will document the monitoring of riparian vegetation by using a table similar to the one presented in Table 5-1. The City will report findings to DEQ. By monitoring the riparian vegetation over this period, the City can evaluate how development has impacted the conditions of riparian vegetation.

Table 5-1. Riparian Vegetation Monitoring

Photo Point	Date	Photographer	Riparian Vegetation: Increase, Decrease, Static?	Comments

Monitoring Costs

Monitoring costs will depend on the extent of assessment and protocol. City staff or partner staff will be conducting the monitoring components for both the program implementation and program effectiveness; therefore the City will not have to allocate a lot of additional resources aside from staff time. Monitoring program effectiveness is a task in itself; the following items that are expected to have the largest monitoring costs are discussed below:

- **Transportation**: The City can use city vehicles or standard procedures for using other vehicles to travel to locations requiring assessments and analysis. The program area only applies to city limits so the amount of driving will be minimal. The distance among the photo points is also feasible for walking.
- **Materials**: The amount of materials required is minimal. Required materials include informational pamphlets that may be distributed to developers or homeowners requesting a new building permit and other educational materials that may be used to notify the public of the photo point analysis or new development assessments. This is a great opportunity to announce informational pamphlets and other educational materials about the program on the project website.
- **Training**: The training for conducting site assessments and photo points can be a quick informational session conducted by DEQ. Informational sessions should include tips and tricks for getting quality photos and documenting the proper information. With proper training and DEQ approval, photo point analysis and new development assessments may be something a RARE participant or intern, when available, can execute.
- **Technician Compensation**: Since the City or partner staff can conduct monitoring components, costs should be minimal in the form of staff time.
- **Equipment**: The City can use a camera and city vehicles to conduct the photo point analysis and new development assessments along with other necessary office supplies (e.g. pen and paper).

Reporting

The City Manager will provide an annual report in written format to both the City Council and DEQ. This will be integrated into the required annual reporting to the DEQ on the TMDL Implementation Plan. The annual report will describe the City's efforts to accomplish the actions in this program and will detail the City's compliance with its TMDL Implementation Plan.

The annual report will include a report of the riparian vegetation monitoring which should include the number of parcels monitored and whether there has been an overall increase or decrease in vegetation, if any change has occurred in riparian vegetation along with plant survival and growth rates for a subset of the plantings.

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APPENDIX

Appendix A: Total Maximum Daily Load Implementation Plan

To meet the requirements of the Rogue River Basin TMDL, Gold Hill, with the help of DEQ, developed a TMDL implementation plan. The implementation plan contains a list of pollutants, proposed treatment strategies (e.g. PE-2 work with local and regional agencies and groups on outreach education), an implementation timeline, staffing and funding needs, reporting requirements, and proposed methods for monitoring and evaluation of progress. The Gold Hill Surface Water Management Program (SWMP) used this TMDL Implementation Matrix as a foundation to address previous strategies to create the action items in Chapter Three.

Rogue Basin TMDL Implementation Matrix - City of Gold Hill [rev 12/03/2010]

BMP or Program	Source What source of this pollutant is being addressed?	Meets Requirements Bacteria	Meets Requirements Temperature	Strategy What is being done, or what will be done to reduce or control pollution from the source?	Specific Actions Specifically, how will this be done?	Measure of Progress/Benchmarks How will successful implementation or completion of this strategy be measured?	Fiscal Analysis	Timeline When will the strategy be completed?	Status/Reporting Summary
OM	1. Existing and future bacteria and temperature levels	X	X	N/A	Conduct background sampling or use DEQ data of bacteria levels upstream/downstream of Gold Hill boundaries	Annual results of downstream sampling points	Contract lab to conduct testing or conduct testing in-house	Use DEQ data or conduct background sampling Year 1 annually thereafter	Worked with DEQ at the City of Gold Hill's intake to allow them to pull samples at the point of entry to the intake. This work session happened on August 8, 2011. I pointed out to the the DEQ representatives that there had been a dredge machine 200 feet above our intake an hour earlier.
PE - 1	1. Bacteria carried to waterways in storm runoff and piped systems	X	X	a. Prevent domestic animal waste and other contaminates from reaching waterways	i. Continue established "doggie poop station" at Sports Park pedestrian walking/bike path Establish at City park next to Library	Check "station" at scheduled intervals (@ least 1/week)	Public Works Staff Time	Program already in place. Consider expansion in Year 2.	Expanded in Year 1 - 12 03 2010 added new dog station Expanded in Year 2 - Jan 2011 - 1st dog station at City park Added another station August 2011 near the cities water intake May 2011, placed porta potties at the Boat Ramp, and Beach Park
					ii. Identify possible "hobby farms" within UGB. Partner for ongoing restoration activity via JackCo. Soils & Water District and 7 Basins Watershed.	Track activity and contacts If hobby farms develop, recommend part-nearing with Jackson Coil and Water materials.	Staff Time	Property location and owner list complete Year 1	No hobby farms identified in Year 1
					iii. Prepare a resource list for the public. Storm water links to include local, educational, and regulatory resources (JackCo Soil & Water)	Post on website. Use as handouts at community events, available at City Hall Planning and Billing departments for public	Staff Time	Update annually	We have contacted RVCOG and acquired some printed material to place in the lobby of City Hall. Additionally, we have provided a message and a link to the Cities web site and directed the viewing public to check it out, and pay special Attention to the TMDL section.
PE-2		X	X	b.Work with local and regional agencies and groups on educational outreach	iv. Add storm water related information to the City's website	Track changes - Update annually	Staff Time & Website design & main. costs	Year 1 Develop master resource list; By Year 2, include info on website and distribute via email, public notices	Year 1 working with 7 Basins Watershed RVCOG, and have had discussion with local developers and DLCD as well as Community Garden volunteers and general public
PE		X	X	b. Public outreach covering bacteria, temperature and other concerns, such as identification mitigation of invasive species	v. Incorporate regional outreach materials re environmental issues along waterways into newsletters, city mailings, brochures handouts for Council, Planning Commission volunteers and general public	Feedback from participants, number of participants, and requests for program presentation, track locations and presentation materials via surveys and responses to broadcast emails	Staff Time and Training on invasive species mitigation and best practices for distributing info to others	Develop program and establish a tentative schedule of presentations, training Year 2	Year 1 Staff has attended RVCOG and 7 Basins. Additionally, the City of Gold Hill will look into working with the local Community College's and Universities to see if there are Student's involved in the Environmental Studies Program. The City of Gold Hill could involve these students' in helping to establish and update programs to educate, and help to identify invasive species within our community.
PI-3		X	X		i. Storm drain markers; signs stencils, etc.	Number of markers installed	To be funded from Street Fund O&M	Year 2 then ongoing thereafter	Type of Storm Drain marker will be chosen and purchase beginning FY 2011-2012 Budget
PI		X	X		ii. Public Review of TMDL Implementation Plan Planning Commission and City Council Public Hearings	Track presentations, events, etc.	Staff Time	Adoption of TMDL Implementation Plan by City Council Year 1	City Council has been updated on issues and progress
ID-1		X	X	c. Prevent human waste (from cross-connections), oil, grease, paint, and other pollutants from entering the storm system	i. Enforce regulations/measures to prohibit illicit discharges; report illegal/failing septic to DEQ; develop/enforce best practices in a master storm water management plan	Internal review, public comment, Council adoption of plan Begin tracking violations and complaints; develop timely storm drain map	Public Notice Staff Time Community Service Officer	Development Year 1- 2 Implementation Year 3 Annual incident report	Year 1 - In process of updating out of date storm drain map Proposing to begin developing detection plan FY 2010-11
PE-3	1. Solar radiation and sediment deposition that results in a change in stream profile		X	a. Retain mature trees, native vegetation, and encourage tree planting and use of native species for bank stabilization	i. Work with 7 Basins Watershed Soils & Conservation to manage invasive species on private lands and protect and/or plant native species in riparian areas where invasive are removed in public areas	Number of trees and shrubs planted annually in public areas. Number of acres of invasive removed.	Staff & Volunteers	Beginning Year 1 then annually thereafter	The Public Works Director will begin making contact with 7 Basins to follow up and through with identifying the best practices for this portion of the program.
				b. Identify and inventory areas to restore, plant, and protect	i. Use open space inventory, watershed assessments, and GIS software/maps to identify areas	Complete inventory and map(s)	Staff & Volunteers	Year 1	Year 1 - Currently working w/NOAA ORI funds to provide plantings for restoration of areas damaged when Gold Hill diversion dam was removed
				c. Prioritize areas for restoration, planting, and protection of riparian areas	i. Conduct meetings with Watershed, Soils & Conservation staff and public	Establishing prioritized list for restoration, planting, and protection in riparian areas	Watershed, Soils & Conservation, Committees, Staff	Year 1 - 2	This program is in the process of being developed. Prior staff working on this portion of the TMDL are no longer here.
					ii. Field check prioritized areas to verify needs for implementation	Summary of field checks completed	RVCOG, Staff, Volunteers	Year 1	Continue RVCOG monitoring through 2013
				d. Restore, protect, and plant areas	Plant native trees and shrubs in public areas along streams and rivers	1 acre of riparian vegetation cleared and planted	Watershed, Soils & Conservation, Committees, Staff	Year 1 then annually	Part of the NOAA/ORI Restoration project at the Gold Hill Sports Park

BMP or Program	Source What source of this pollutant is being addressed?	Meets Requirements		Strategy What is being done, or what will be done to reduce or control pollution from the source?	Specific Actions Specifically, how will this be done?	Measure of Progress/Benchmarks How will successful implementation or completion of this strategy be measured?	Fiscal Analysis	Timeline When will the strategy be completed?	Status/Reporting Summary
		Bacteria	Temperature						
			X	e. Riparian measures/regulations - evaluation; riparian ordinance or equiv. protective measures for existing native vegetation and canopy cover, restoration, streamside gardening on natural ways in City	i. Summarize recommendations	Summary of proposed regulations/measures/programs	City Council, Planning Commission, Staff, Public, Watershed Council	Year 4	
					ii. Draft new measures/regulations, Ord. or equivalent	Complete draft ordinance or equivalent measures/regulations. Enumerate process for adoption and implementation	City Council, Planning Commission, Staff, Public, Volunteers	Year 4-5	
					iii. Enforce new ordinance	Document enforcement actions	Code Enforcement Officer	Year 5	
				f. Require mitigation/restoration of riparian buffer effected by new development	i. Include mitigation/restoration of buffer in regulations; ensure that plan reviews provide for mitigation and restoration; inspect site work and enforce violations	Summary of revisions proposed; Summary of review procedure and program results in annual reports, Summary of inspections and enforcement in annual reports	Staff, Community Service Officer	Year 4-5	This has already occurred in one development's infrastructure involving streamside restoration
CS-1		X	X	a. Prevent erosion and control sediment at construction sites	i. Develop and implement erosion prevention and sediment control program; Develop measures to control construction site runoff	Summary of programs and procedures; Council adopt measures tracking enforcement of construction site storm drain run off	City Council, Planning Commission, Staff, Public	Year 2-3	
CS-2	1. Channel Modification & Widening; Modification & sediment loading		X	a. Evaluate impacts of road building, flood control, gravel extraction and other activities on channels.	i. review maintenance and building practices for road /culvert/bridge building and flood control. Identify areas that may impact channels	Complete list of identified areas. Review and update maintenance programs. Review summary.	Staff Time	Year 1	*1. As the Public Works Director revise plans for future construction and development within the City of Gold Hill he will evaluate the impact any new roads will have with a P.E. and make recommendations as required to meet the TMDL parameters. Additionally, a new set of Construction Standards will be developed to give guidelines and parameters for design. These new Standards will address any known flood plain within the cities footprint. 2. The City of Gold Hill Public Works Department will maintain and clean the storm sewer ditches, catch basins, and cross pipes on an annual basis. as new areas are developed or discovered the staff will make notes on a set of current record drawings to submit for updating.*
					ii. Revise practices as needed to reduce channel modifications and channel disturbance	Summarize changes and revisions	Staff Time	Year 2	
DS-1		X	X	a. Promote the use of methods and practices that reduce urban runoff and impervious surface area Continue to participate in mtgs. training and other activities to obtain recommendations regarding high to low priority measures to facilitate low impact development methods and BMP's.	i. Identify low impact development practices that are being used or will be used to reduce urban runoff and creation of impervious surface area	Summary of best practices in managing low impact development to reduce impervious surface and promote on site or in ground retention of urban runoff	Staff Time	Year 2-3	
					ii. Conduct code review to identify barriers to low impact development methods; Consider code revision to incorporate low impact development practices; Require new construction to minimize impervious surface and treat storm water onsite	List of identified barriers and relevant code sections; Summary of revised code; Summary of requirements: i.e. ensure that Planning Codes require condition to minimize impervious surface and require a written development plan subject to approval by City Engineer and Public Works Director	Staff Time, Costs to developer to engineer storm drain plan and make revisions as may be required to meet building and planning conditions	Year 3-4	
				b. Develop a storm water management plan; Update existing Storm water Master Plan	i. Compile a list of treatment technologies that are effective in reducing bacteria levels in runoff and entourage infiltration.	Completed list of technologies and include information in the developed or updated plan	Staff Time, Potential engineering costs	Year 5	
OM-1	1. Bacteria carried to waterways in storm runoff and piped systems	X		a. Prevent human waste (from cross-connections), oil, grease, paint, and other pollutants from entering the storm system	i. Develop a water quality sensitive O&M program	Compare with other jurisdictions and conduct internal review	Staff Time	Year 1 - Then Ongoing	Have certified cross connection control specialist on staff to assist w/monitoring
OM-2					i. Catch basin and manhole cleaning; storm drain line cleaning; storm drain ditch cleaning	Track number of catch basins cleaned; number of storm drain lines and ditches cleaned	Staff Time; Vactor Truck; Backhoe, Dump Truck; Rented Equipment	Ongoing	This work is presently being accomplished on an annual basis
OM-3					i. Contract for street sweeping from Jackson County	Track progress; internal review	Operation Contracted with Jackson County	Insufficient funding to ensure sweeping every 3 mos.	Function should occur, at least, every 3 months on those asphalt streets with curb & gutter
				a. Prevent sediment at construction sites	i. Develop prevention and sediment control program; Develop measures tyo control construction site runoff	Summary of	City Council, Planning Commission, Staff, Public		*Currently the Public Works Director is in the process of developing Standards and Specifications that will address the storm water issues, including control / containment of sediment and debris on site during construction. Then it will be presented to council.*

BMP or Program	Source What source of this pollutant is being addressed?	Meets Requirements Bacteria	 Temperature	Strategy What is being done, or what will be done to reduce or control pollution from the source?	Specific Actions Specifically, how will this be done?	Measure of Progress/Benchmarks How will successful implementation or completion of this strategy be measured?	Fiscal Analysis	Timeline When will the strategy be completed?	Status/Reporting Summary
MR	1. Monitoring and Reporting	X	X	a. Use the matrix as a template to track the implementation plan and evaluate the effectiveness of the strategies	i. Compile information from completed activities into the matrix to track TMDL implementation activities	Tracking of activities using the matrix and summarize methods of evaluation	Staff Time	Annually	*Public Works Director is performing these tasks as they happen*
				b. Submit annual reports	i. Submit annual reports to DEQ	Completed annual reports submitted to DEQ by September 30 of each year, reporting on implementation actions for the July 1 - June 30 plan year	Staff Time	Annually	*due to a change in staffing this report was delayed getting to DEQ. However, this delay was approved through DEQ staff in advance.*
				c. Adaptive Management Plan	i. Modify plans as needed	Summarize revisions WQ Imp. Plan	Staff Time	Year 5	
RC	1. Regional Water Quality Coordination	X	X	a. Continue participation in the TMDL program	i. The City of Gold Hill as a Designated Management Agency will continue to participate in the TMDL program	Attendance (in person, phone, or video conferencing if available) at quarterly meetings and other meetings as requested	Staff Time	Annually	*The Public Works Director will begin attending these quarterly meetings beginning October 19, 2011. Additionally, the Public Works Director has been in contact with RVCOG to acquire additional information and help*
Fund	1. Funding	X	X	a. Evaluate the cost of program implementation	i. Establish costs of program for the next plan year; identify funding sources as needed including staff time, grant funding, new fees and other resources	List program costs and sources (e.g., staff time, direct funding, grants, etc.)	Staff Time	Annually	*I estimate Staff time to continue to work with this program as a whole will constitute approximately 600 hours @ an average cost of $19.30/hour. Total cost for staff time will be: $11,478.00 dollars. This will include the removal of invasive species, and the cumulative surveys and for riparian areas. The City of Gold Hill will continue to cover this costs as the employees can do most of this work in their daily rounds. Other costs might need to be addressed through Grant monies through RVCOG, or the City may utilize one of their "pay for programs". This will have to be presented to and approved by Council. Other costs associated with this program will be the placement of other dog stations and the placement of the porta potties. These costs have not been completely estimated at this time, but when final billings are received could be updated at this time.*

Six Minimum Control Measures
PE = Public Education
PI = Public Involvement/Participation
ID = Illicit Discharge Detection and Elimination (IDDE)
CS = Construction Site Runoff Control
DS = Development Standards (Post-Construction Runoff Control)
OM = Operations and Maintenance (Pollution Prevention/Good Housekeeping)

Rogue Basin TMDL Implementation Matrix - City of Gold Hill [rev 12/03/2010]

Appendix B: Surface Water Management Program Partners

Name	Mission	Potential Role	Contact
Department of Environmental Quality (DEQ)	DEQ's mission is to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.	DEQ is currently working with Gold Hill on developing and implementing the Surface Water Management Program. DEQ has played a vital role in ensuring that the City and its residents are well informed regarding water quality issues and the need to manage them. Gold Hill will continue to coordinate with the DEQ on managing water quality issues for the foreseeable future.	Name: Heather Tugaw Email: Tugaw.Heather@deq.state.or.us Phone: (541) 776-6091 Name: Bill Meyers Email: Meyers.Bill@deq.state.or.us Phone: (541) 776-6272
Jackson Soil and Water Conservation District (JSWCD)	The Jackson Soil and Water Conservation District a leader in providing scientifically based technical assistance and financial resources in a manner that supports both rural and urban landowner abilities to implement best management practices, enhancing the natural environment while protecting Jackson County's cultural, social, and economic values. They also provide education and resources to both students and citizens in Jackson County, helping ensure conservation of our local resources.	JSWCD offers a cost share program that can help landowners pay for riparian enhancement projects. The City will collaborate closely with the JSWCD in the coming years to provide streamside property owners with materials and knowledge to facilitate riparian enhancement efforts. JSWCD can also provide educational materials at community meetings.	Name: Lori Tella Email: Lori@jswcd.org Phone: (541) 776-4270 ext. 120
Seven Basins Watershed Council	The Seven Basins Watershed Council mission is to bring together diverse interests, to implement programs and projects, to promote education; to maintain and/or improve the social, economic and ecological conditions of the Seven Basins Watershed and its citizens	The council can work with the City to provide riparian resources and outreach materials to streamside property owners. The Watershed Council can help secure grant funding for riparian planting projects and can assist in recruiting volunteers for work days.	Name: Gail Grogan Perrotti Email: gperrotti@earthlink.net Phone: 541-261-7796

Name	Mission	Potential Role	Contact
Rogue Valley Council of Governments (RVCOG)	RVCOG's mission is to act as a catalyst to promote quality of life, effective and efficient services, and leadership in regional communication, cooperation, planning, and action in Southern Oregon.	RVCOG offers resources on native vegetation within the Rogue River Basin. The City can partner with RVCOG to facilitate information dissemination so local residents are aware of how to preserve, enhance, and protect the proper vegetation.	Name: Greg Stabach Email: gstabach@rvcog.org Phone: 541-423-1370
Oregon Department of Fish and Wildlife (ODFW)	ODFW's mission is to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.	ODFW offers the Western Oregon Stream Restoration Program which provides direct technical support to Watershed Councils and private landowners in western Oregon to implement Oregon Plan measures directing the restoration and enhancement of Oregon 's salmonid habitats in the region. This includes projects to increase in-stream habitat complexity by adding large wood or boulders, enhancing riparian areas by protection or planting, and correcting fish passage problems.	Name: David Haight Email: david.r.haight@state.or.us Phone: 541-826-8774, ext 224
Gold Hill Patrick Elementary School			Phone: (541) 494-6840
Rogue Riverkeeper	The mission of Rogue Riverkeeper is to protect and restore water quality and fish populations in the Rogue River Basin and adjacent coastal watersheds through enforcement, advocacy, field work and community action.	Rogue Riverkeepers can provide the City with volunteers for riparian restoration projects.	Name: Forrest English Email: forrest@rogueriverkeeper.org Phone: 541-488-9831
Can-DO			Cheryl Joseph

Appendix C: Potential Funding Sources

Funding Resources

Purpose

The purpose of this handout is to provide funding opportunities that will help sustain Gold Hill's voluntary local surface water management program. Funding can support voluntary restoration and outreach efforts. This is a great way to receive loans and grants. This list provides funding opportunities from federal, state, and private organizations.

Funding Types

Loans

Grants

Funding Providers

Federal

State

Private

Funding Uses

Education/Outreach

Implementation

Restoration

Loans

State Revolving Fund

Clean Water State Revolving Fund (CWSRF)

Through: Department of Environmental Quality (DEQ). The EPA allocates money to each state and the state matches 20%.

Purpose: Help public agencies with water quality improvements.

How it works: The fund provides low-cost loans to cities for planning, design, and construction for water pollution control activities, such as stormwater control. The fund traditionally served municipality wastewater needs but it has now expanded to address non-point source water pollution.

When to apply: Continuously open to new applications. The evaluation committee assigns loans using specific ranking criteria.

For more information: http://www.deq.state.or.us/wq/loans/loans.htm

Grants

DEQ 319 Grants

Through: Section 319 of the Water Quality Act of 1987

Purpose: Help projects that target non-point source pollution in priority watersheds, water bodies, and groundwater.

How it works: DEQ identifies targets, solicits proposals, and assembles a final proposal for the EPA. After grants are awarded, DEQ oversees the implementation and evaluates accomplishments.

When to apply: Reviewed annually.

For more information: http://www.deq.state.or.us/wq/nonpoint/grants.htm

"The Oregon Watershed Enhancement Board is a state agency that provides grants to help Oregonians take care of local streams, rivers, wetlands, and natural areas."

-OWEB

Grants Continued

Governor's Fund for the Environment

Through: National Fish and Wildlife Foundation

Purpose: Benefit Oregon's rivers and streams by funding projects that support the implementation of the Governor's Willamette River Legacy Program.

How it works: Projects must develop and implement strategies to eliminate or reduce pollution; restore and conserve fish wildlife, and plant resources; identify continuing sources of pollution; and improve criminal enforcement of environmental and wildlife protection laws. A committed evaluates proposals based on predetermined criteria. Conservation of state's wild salmon strongholds was a priority for FY 2012.

When to apply: Annually. Typically $300,000 in grants are awarded each year.

For more information: http://www.nfwf.org/Pages/orgovernor/rfp.aspx#.UTFm-TCG0xE

Oregon Watershed Enhancement Board Grants

Through: OWEB

Purpose: Develop projects that focus on watershed restoration, natural resource monitoring, outreach/education, and technical assistance.

How it works: OWEB funds stormwater or LID projects if the applicant can provide demonstrable benefits to watershed health. Education projects (for stormwater) are eligible for OWEB's outreach/education grant program.

When to apply: Subject to change.

For more information: http://www.oregon.gov/oweb/grants/Pages/index.aspx

Oregon Outreach/ Education Grants

Through: OWEB

Purpose: To provide information to increase awareness and understanding of watershed restoration and protection. Additionally, activities must relate directly to efforts to protect or restore native fish or wildlife habitat or water quality.

How it works: Several activities can be included in the proposal as long as activities meet the required criteria. Note that proposals that aim to increase awareness for low-impact development activities and are not associated with efforts to protect, restore, or monitor native fish, wildlife, or water quality are not eligible. Stand-alone proposals, like websites are also not eligible.

When to apply: Subject to change.

For more information: http://www.oregon.gov/oweb/grants/Pages/index.aspx

Grants Continued

Bring Back the Natives Grant Program

Through: NWF. Other federal agencies cooperate such as BLM, FWS, USDAFS, and TU.

Purpose: Fund on-the-ground restoration efforts for native aquatic species to rehabilitate streamside and watershed habitats. Projects should cultivate partnerships among communities, agencies, private landowners, and organizations.

How it works: The NWF distributes funds several months after it awards the grant to the entity. Thirty percent of applicants receive funding and a 2:1 non-federal matched amount is required. For more information on typical amounts of awards see website.

When to apply: Pre-proposal due January, Full proposal due March.

For more information:

https://ofmpub.epa.gov/apex/watershedfunding/f?p=116:2:0::NO::P2_X_PROG_NUM,P2_X_YEAR:2,2013

Community-based Habitat Restoration Partnership Grants

Through: NOAA

Purpose: Foster natural resource stewardship in communities through small-scale and locally drive habitat restoration projects. Projects should incorporate collaboration between diverse partners for the implementation of the restoration projects. Examples include removing exotic vegetation and replanting native species and improving habitat quality of fish.

How it works: About 15-25% of applicants receive funding. For more information on typical award amounts see website.

When to apply: NOAA solicits proposals once every three years during the fall.

For more information:

https://ofmpub.epa.gov/apex/watershedfunding/f?p=116:2:0::NO::P2_X_PROG_NUM,P2_X_YEAR:17,2013

Wildlife Habitat Incentives Program (WHIP)

Through: USDA and Natural Resource Conservation Service (NRCS)

Purpose: Help people develop and improve fish and wildlife habitat on private lands through technical assistance and cost sharing. Using NRCS' habitat development plan, landowner's set goals to improve habitat, review and choose practices and scheduling to implement practices and maintain the habitat.

How it works: It is a continuous sign up process where 56% of applicants receive funding. It is a cost-share assistance program. Individuals already enrolled in other programs with a wildlife focus are not eligible. Additionally, public land is not eligible and applicants must own or have control of the land.

When to apply: Continuous.

For more information:

https://ofmpub.epa.gov/apex/watershedfunding/f?p=116:2:0::NO::P2_X_PROG_NUM,P2_X_YEAR:68,2013

Grants Continued

Land and Water Conservation Fund

Through: National Parks Service (NPS)

Purpose: Aide states and political subdivisions for preparing Statewide Comprehensive Outdoor Recreation Plans (SCORP). This includes acquiring and developing outdoor recreation opportunities for the public.

How it works: Applicants need a non-federal match to cover 50% of the project funding. Projects need to acquire or develop land for outdoor recreation purposes. Some examples of acquiring land are new parks, wildlife areas, and beaches. Projects need to comply with the outdoor recreation goals and objectives in the SCORP. Compliance, partnerships, local needs, and public involvement are part of the criteria the committee uses to award applicants. This may be applicable for potential demonstration sites on public land or low impact development improvements on neighborhood parks.

When to apply: Varies.

For more information: http://www.oregon.gov/oprd/grants/Pages/lwcf.aspx

Community Action for a Renewed Environment (CARE)

Through: EPA

Purpose: Offer communities the opportunity to address the risk of multiple sources of pollution in innovative ways to implement local solutions. Partnerships range from non-profits, businesses, schools, and governments. This competitive grant helps educate and support communities through cooperative agreements every year starting in 2005.

How it works: Eight percent of applicants receive funding. An applicant's funding is spread over a two year timeframe. State governments or their agencies are not eligible to apply but local organizations, schools and governments can.

When to apply: Varies.

For more information:

https://ofmpub.epa.gov/apex/watershedfunding/f?p=116:2:0::NO::P2_X_PROG_NUM,P2_X_YEAR:113,2013

Environmental Education (EE) Grant

Through: EPA

Purpose: Support environmental education that promotes stewardship and develops knowledgeable and responsible students, teachers, and citizens.

How it works: Projects must include design, demonstrate, or disseminate environmental education practices, methods, or techniques.

When to apply: Varies.

For more information: http://www2.epa.gov/education/environmental-education-ee-grants

Grants Continued

Cooperative Watershed Management Program

Through: US Bureau of Reclamation (USBR)

Purpose: Enhance water conservation and alternative uses. Improve water quality and a river's ecological resiliency with the hopes to reduce conflicts over water through the development of watershed groups that develop local solutions to water issues.

How it works: There is not matched amount required for funding must the proposal must fall under the following categories: establishment of a watershed group, expansion of an existing watershed group, and implementation of watershed management projects.

When to apply: Varies.

For more information:

https://ofmpub.epa.gov/apex/watershedfunding/f?p=116:20:::NO::P2_X_PROG_NUM,P2_X_YEAR:127,2013

Fred Meyer Fund

Through: Fred Meyer

Purpose: Promote environmental education and stewardship.

How it works: Associates help select grant recipients in their communities.

When to apply: Varies.

For more information:

http://www.fredmeyer.com/company_information/FM_Community/Pages/fred_meyer_fund.aspx

"Environmental education not only addresses awareness and knowledge but involves information dissemination and requests actions for a particular issue."

-EPA

Appendix D: Definitions

Buffer Strip (Vegetated Filter Strip): A sloping area covered by vegetation that receives runoff to slow stormwater, collect sediment and filter pollutions.

Clean Water Act (CWA): Federal law from 1972 that is the nation's principal legislation to set surface water quality standards. The goal of the CWA is to restore and maintain the biological integrity of that nation's waters. The EPA administers the CWA but everyday regulation is left to state departments. In Oregon, the CWA is administered by the Oregon Department of Environmental Quality (DEQ).

Compost: Decomposed organic material added to soil that increases its capacity to hold water and nourish plants.

Curb-Contained Bioretention: A depression between a right-of-way and sidewalk, covered by vegetation that receives runoff to slow stormwater, collect sediment and filter pollutions.

Designated Management Agency: A federal, state or local governmental agency that has legal authority of a sector or source contributing pollutants, and is identified as such by the Department of Environmental Quality in the TMDL (Oregon Administrative Rules [OAR] 340-042-0030(2)).

Floodplain: Land adjacent to a river that is formed primarily by river sediment and is often subject to flooding.

Floodway: The Federal Emergency Management Agency defines the floodway as the channel where water is likely to be deepest and fastest during a flood event. It is the often narrow area of the floodplain closest to the river that should be kept free of obstructions to allow floodwaters to move rapidly downstream.

Green Infrastructure: An adaptable term used to describe an array of products, technologies, and practices that use natural systems – or engineered systems that mimic natural processes – to enhance overall environmental quality and provide utility services. As a general principal, Green Infrastructure techniques use soils and vegetation to infiltrate, evapotranspirate, and/or recycle stormwater runoff.

Green Roof: Also known as rooftop gardens, green roofs are planted over existing roof structures, and consist of a waterproof, root-safe membrane that is covered by a drainage system, lightweight growing medium, and plants. Green roofs reduce rooftop and building temperatures, filter pollution, lessen pressure on sewer systems, and reduce the heat island effect.

Green Tags: See Renewable Energy Certificates.

Grey Water: Non-drinkable water that can be reused for irrigation, flushing toilets, and other purposes.

Impervious Surface: Any material which reduces and prevents absorption of stormwater into previously undeveloped land. In other words, hard surfaces such as roofs and pavement that prohibits water from soaking into the ground.

In-Curb Planter Vault: A raised, vegetated landscaping application that reduces stormwater runoff. Planters take many forms, including contained boxes and flow-through.

Infiltration (also called stormwater infiltration): The process through which stormwater runoff penetrates into soil from the ground surface.

Invasive Plants: Aggressive plants that crowd out native plants for water, sunlight and nutrients and harm the environment, economy and human health.

Level Spreader: A device that reduces water pollution by mitigating the impact of high-velocity stormwater. This is a level, graded area that slows and spreads concentrated runoff.

Low Impact Development (LID): LID is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID uses methods that preserve natural resources and collect and clean stormwater runoff on site to protect and improve water quality.
Minimize Impervious Surfaces: To reduce the area covered by buildings, roofs, roads, parking lots and sidewalks.

Native Plants: Plants that need little or no fertilizer or care once established, provide wildlife habitat, and occur historically in an area.

Naturescaping: Landscaping with native plants to restore natural systems and attract native insects, birds and wildlife.

Permeable Pavement (also called porous pavement): Surface to walk, drive or park on that reduces stormwater runoff by allowing water to soak into the ground. Examples are permeable pavers, pervious concrete, porous asphalt and gravel.

Pollutant: Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Pollution: Human-made or human-induced alteration of the chemical, physical, biological, and radiological integrity of water.

Predevelopment Hydrology: The combination of runoff, infiltration, and evapotranspiration rates and volumes that typically existed on a site before human-induced land disturbance occurred (e.g., construction of infrastructure on undeveloped land such as meadows or forests).

Rain Chains: A water feature that is used as an alternative to a downspout. Rain chains guide runoff from a roof to either the ground, a cistern, or rain barrel.

Rain Garden: Planted, bowl-shaped area designed to collect and absorb runoff and filter out pollutants.

Rain Garden: A rain garden is a depressed area of the ground planted with vegetation, allowing runoff from impervious surfaces such as parking lots and roofs the opportunity to be collected and infiltrated into the groundwater supply or returned to the atmosphere through evaporation and evapotranspiration.

Rainwater Harvesting (rain barrel): To collect and store rainwater for landscape watering, toilet flushing and other uses.

Riparian Area: The area adjacent to a river, lake, or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem.

Riparian Buffer: A vegetated area near a stream that shades the water, preserves the bank, slows stormwater runoff, and filters pollutants.

Stormwater Runoff: Rainfall and snowmelt that “runs off” instead of seeping into the ground. Runoff carries pollutants to waterways and may degrade streams and cause unnatural flooding.

Swale (also called Bioswale): Long, planted, open channel that carries, slows and absorbs stormwater and filters out pollutants.

Top-of-Bank: The highest point at which the bank meets the grade of the surrounding topography, characterized by an abrupt or noticeable change from a steeper grade to a less steep grade, and, where natural conditions prevail, by a noticeable change from topography or vegetation primarily shaped by the presence and/or movement of the water to topography not primarily shaped by the presence of water. Where there is more than one such break in the grade, the uppermost shall be considered the top of the bank.

Total Maximum Daily Load (TMDL): A written quantitative plan and analysis for attaining and maintaining water quality standards and includes the elements described in OAR 340-042-0040. These elements include a calculation of the maximum amount of a pollutant that a water body can receive and still meet state water quality standards, allocations of portions of that amount to the pollutant sources or sectors, and a Water Quality Management Plan to achieve water quality standards.

Tree Preservation: To preserve and protect trees by fencing, limiting soil compaction, guarding from animal damage and other practices. Trees capture rain, filter pollutants, provide shade and cool air, improve air quality and provide habitat.

Watershed: An area or region drained by a river or river system. A watershed is typically defined by a ridge of land that separates waters flowing to different rivers, basins, or seas.

Xeriscaping (water-wise gardening): To minimize water use by choosing plants appropriate to the site that need little watering.