

City of Keizer, Oregon

ANNUAL REPORT

PERMIT YEAR 2016/2017

WPCF CLASS V STORMWATER PERMIT #103068



December 2017

**Prepared by:
Environmental and Technical Division Staff
City of Keizer, Public Works Department**

**Certification Regarding the City of Keizer
WPCF Annual Report 2016/2017**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



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ACRONYMS AND ABBREVIATIONS

ACWA	Association of Clean Water Agencies
BMPs	Best Management Practices
CCR	Consumer Confidence Report
CFR	Code of Federal Regulations
City	City of Keizer, Oregon
CS	Construction Site Standards
CSPPP	Construction Site Pollution Prevention Plan
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DSL	Oregon Department of State Lands
DS	Development Standards
DWPA	Drinking Water Protection Areas
EPSC	Erosion Prevention Sediment Control
EPA	Environmental Protection Agency
ESU	Equivalent Service Unit
ESA	Endangered Species Act
FTE	Full Time Equivalent
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
LID	Low Impact Development
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
O & M	Operation & Maintenance
ORS	Oregon Revised Statutes
PE	Public Education
Permittee	City of Keizer
PI	Public Involvement and Participation
PY	Permit Year
RR	Record Keeping and Reporting
SDWA	Safe Drinking Water Act
SFR	Single Family Residential
SWAC	Stormwater Advisory Committee
SWMP	Storm Water Management Plan or Program
TMDL	Total Maximum Daily Load
UGB	Urban Growth Boundary
UIC	Underground Injection Control
UICMP	Underground Injection Control Management Plan
USACE	United States Army Corps of Engineers
USGS	United States Geologic Survey
VSF	Vegetated Stormwater Facility
WPCF	Water Pollution Control Facilities (permit)

Section 1 - Introduction

1.1 Background

The federal underground injection control (UIC) program was enacted in 1974, under the Safe Drinking Water Act. According to DEQ, *the UIC program's goal is to protect freshwater aquifers from contamination due to underground injection systems*. The Environmental Protection Agency (EPA) gave DEQ the authority to regulate UICs in Oregon as the agent for EPA in 1984 and again in 1991. DEQ regulates the UIC program under Oregon Administrative Rules Chapter 340, Division 44.

The City of Keizer began formally moving forward with development of a UIC program in 2008/2009 starting with the completion of a comprehensive inventory of UIC devices and their locations within the City. In December 2009, the City applied for a WPCF permit in order to legally operate and manage approximately 86 publicly owned UICs. The City was issued an individual WPCF Permit #103068 on October 24, 2013.

1.2 Annual Report Requirements

In accordance with Schedule B(4) of the Permit, the City of Keizer as the permittee must submit an annual report to DEQ by December 31 of each year starting in 2013. The annual reporting period shall be for the time period of July 1 through June 30. The report must:

1. *Include the results of stormwater monitoring conducted in accordance with the DEQ approved monitoring plan;*
2. *Discuss any Table 1 action level exceedances and actions taken to address the exceedances;*
3. *Describe any actions taken to implement the UICMP, any proposed modifications to the UICMP, and any additional actions taken to manage injection systems to ensure groundwater protection;*
4. *Describe any actions described in the UICMP that you were not able to complete and why;*
5. *Identify any injection systems that you closed, retrofitted, or installed during the year;*
6. *Describe your future known plans to install, modify, convert, or close any underground injection system;*
7. *Identify any changes to the key personnel or areas of responsibility for the permit;*
8. *Identify any newly-discovered underground injection control systems; and*
9. *Provide one hard copy and one electronic copy of the Annual Report*

The Annual Reports for the Phase II permit and the TMDL Implementation Plan were submitted to DEQ in late October 2017. That Annual Report is included as Appendix B in this report. It

should be referenced for public education materials and information that crosses between the existing management strategies.

This document serves as the WPCF Annual Report for year 2016/2017 for the City of Keizer.

1.3 Organizational Structure

The City's operational structure is a City Manager / City Council type organization with Department Heads in Finance, Community Development, Human Resources, City Recorder, Police, and Public Works. The implementation of the WPCF Permit is carried out by the Stormwater Division and Environmental and Technical Division. These groups are under the management of the Public Works Director and respective Division Managers. The Stormwater Division is responsible for maintaining the system, stormwater facilities, and responding to illicit discharge and spill response complaints. The Environmental and Technical Division is responsible for implementing permits, developing operational plans, management plans, systemwide assessment, monitoring, reporting, and data management.

1.4 Responsible Personnel

Table 1.4 provides responsible personnel for implementing the City's UIC program.

Table 1.4 – Responsible Personnel

<i>Key Personnel</i>	<i>Area of Responsibility</i>
Bill Lawyer , Public Works Director P.O. Box 21000 Keizer, OR 97307 (503)390-3700 lawyerb@keizer.org	Department Director Stormwater Budget Inter-Agency Lead Citywide Communication
Elizabeth Sagmiller , Environmental & Technical Division Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3563 sagmillere@keizer.org	Management of Permitted Stormwater Programs Annual Reporting/Regulatory Reporting Operational Plan Development Maintenance/Repair Policy Development Recordkeeping Policy Development Education and Outreach GIS Management Inter-Agency Coordination Post-Construction in New and Re-development UIC Installation Policy UIC Decommission/Retrofits Policy
Kat LaFever , Senior Environmental Program Technician P.O. Box 21000 Keizer, OR 97307 (503)856-3526 lafever@keizer.org	Regulatory Support Systemwide Assessment Monitoring Plan Data Analysis/Recordkeeping

Billy Johnson , Environmental Program Technician P.O. Box 21000 Keizer, OR 97307 (503)856-3424 johnsonb@keizer.org	Stormwater GIS Management/Maintenance Erosion Control Post-Construction New Development Plan Review
Mike Griffin , Stormwater Operations & Streets Division Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3551 griffinm@keizer.org	Implementation of UIC Operations and Maintenance Plan Implementation of Good Housekeeping Plan Implementation of Spill Response Field Manual Implementation of Illicit Discharge and Detection Plan Stormwater System Repairs and Recordkeeping Field Investigation and Response (IDDE, Spills) UIC Maintenance
Matt Reyes , Public Works Project Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3558 reyesm@keizer.org	Project Management for Large Scale Development

1.4 Contents

Section 2 of this document will cover the monitoring findings for 2016/2017. Sections 3 through 9 will describe activities and actions as specified in Schedule B 4(c) and (d) of the permit. Specifically each referenced section will include an accounting of progress on each BMP, any proposed modifications and the rationale for those changes. The text noted in blue in sections 3 through 9 apply specifically to UICs and WPCF permit components. The MS4 Phase II Annual Report for 2016/2017 is attached in Appendix B. This document discusses any cross over activities between the two programs, and any additional actions not referenced in the UICMP. It also includes a section specifically related to the TMDL Implementation Plan. Section 10 will include a discussion of record-keeping activities, and Section 11 will cover new UICs.

1.5 Proposed Modifications

The City of Keizer is a NPDES Phase II permittee. The initial permit was obtained in March 2007 and expired in February 2012. It has been administratively extended since that time.

Over the past several years, DEQ has been working to develop a General Permit for the Phase II agencies. The draft General Permit is nearing issuance, and based on the specifics required in a General Permit, many of the current BMPs for the City will need to be modified. DEQ UIC staff have agreed that when the new permit is issued, the City of Keizer will notify DEQ of any needed BMP changes in the current UICMP.

Section 2 – *Monitoring*

2.1 Overview

The City of Keizer Stormwater Monitoring Plan was approved by DEQ in August 2013. According to that document the City of Keizer will:

- Choose sample sites that represent stormwater inputs (both UIC and MS4)
- Choose sample sites that represent possible pollutant source areas as much as possible (e.g. >1000TPD, Commercial/Industrial drainage, wooden power pole density, etc.)
- Choose sample sites predominantly from the “Response Needed” UICs (those without protectiveness demonstrations based on the Groundwater Protectiveness Demonstration).
NOTE: There were none in this category, as all UICs were found to be protective status.

As discussed in the 2014/2015 Annual Report, Keizer chose new locations for testing after the first two years of sampling. The new sample site locations were approved by DEQ, and are summarized below:

UIC 101- Commercial/Industrial

Keizer has a limited number of sites to choose from in this category. Keizer has very few industrial sites and commercial sites with UICs which tend to be private UICs and/or smaller drainage areas. Because of the limitations in this category staff has decided to keep our current site, UIC 101 as the Commercial/Industrial representative. This site has a relatively large drainage area, with multiple automotive and other industrial shops, the runoff from which is well captured at the existing sampling point.

UIC 25- High Traffic

This UIC was also in our first two year’s sampling, in the MS4 Connected category. UIC 25 actually covers a large area including both residential as well as high traffic categories. The original sample site was well inside the UIC drainage. The new sample location within the UIC is located to capture the drainage from River Road, a major arterial.

UIC 10 – Wooden Power Poles (Penta source)

UIC 10 has not been sampled previously. It encompasses a good source of potential pentachlorophenol with a wooden power pole housed in impervious material, draining directly to the catch basin leading into the UIC.

UIC 36 – Single Family Residential (Major land use category for Keizer)

UIC 36 has not been sampled previously. It is a medium-sized horizontal perforated pipe UIC with the sampling point in the center of the drainage areas.

UIC 21 – Multi-Family Residential

The new site for Multi-Family Residential is an apartment complex with the drainage from the parking area draining directly into a public UIC. The original Multi-Family site was in a duplex area.

UIC 16 – MS4 Connected UIC

The new sample site for this UIC is located in a residential area which has a hybrid UIC-MS4 system. The sampling point is capturing runoff from the UIC portion of the system.

The City completed the fourth sampling year in 2016/2017. In addition, Keizer elected to do additional sampling for Penta at ‘potential source sites (locations where wooden power poles are within a storm catchment near an inlet). Keizer sampled storms on 10/13/16 and 1/18/17. As in previous years, lab results showed extremely low levels of pollutants in our stormwater runoff. Of the 72 total data points from the two required sample events, 26% were total non-detects (19 of 72). For data points where pollutant was detected, the average detection level was below 2% of the ‘Action Level’.

During the January 2017 sample event there was one higher-than-normal result for Penta – 20.5% of Action Level. The result occurred at UIC10 which is the site representing possible Penta source runoff (wooden power pole near impervious). Even though the result was well below action levels, Keizer elected to do additional Penta sampling at multiple potential “source sites” where wooden power pole runoff could result in stormwater runoff on impervious.

See appendix A for lab results for PY4 and the additional Penta sampling.

See Action Levels for Pollutants shown in Table 2.1 below:

Table 2.1 – Table 1 Pollutants from the Approved Monitoring Plan

TABLE 1 POLLUTANTS - Action Levels for Pollutants	
Monitoring Parameter	Action Level at Injection Point (µg/L)
Benzo(a)pyrene	2
Di(2-ethylhexyl)phthalate	300
Pentachlorophenol	10
Lead (Total)	500
Zinc (Total)	50,000
Copper (Total)	1300

Section 3 – Public Education

3.1 Overview

PE-1 Develop a Public Education Plan that addresses regional stormwater issues. Utilize the Mid-Willamette Outreach Group (MWOG) to develop products.

PE-2 Utilize a statistical method to assess public awareness of stormwater issues

PE-3 Utilize the annual consumer confidence report (CCR) to inform the public about stormwater related issues

PE-4 Update the City's website

PE-5 Provide support to the Claggett Creek Watershed Council

PE-U-1 Develop a Brochure for use by Commercial, Retail, or Multi-Family Property Owners and Manager

Table 3.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
PE-1	1. Develop a Public Education Plan that addresses regional stormwater issues. 2. Utilize MWOG to develop outreach products	Develop a plan that refines the focus for outreach on specific audiences with key messages Participate in at least 8 meetings and host 2 events	Partial Y	Some minor activity has occurred on this BMP. The Clean Rivers Coalition is a group we hope to partner with to meet the needs of the new permit The Erosion Control Summit was held on 1/24/17. It continues to be a success. MWOG hosted the Water Festival on 5/9/17 with 119 students and 12 adults from Keizer Elementary
PE-2	Utilize a statistical method to assess public awareness of stormwater issues	This BMP was added to the first revision of the SWMP with the permit renewal package.	N	No action has occurred on this activity.
PE-3	Utilize the annual consumer confidence report (CCR) to inform the public about stormwater related issues		Y	An insert was added to the annual CCR and sent to residents in May 2017

PE-4	Update the City's website		Y	2016/2017 Annual Report was added to the City's website. Staff also began utilizing the website ticker for outreach messages such as healthy lawn care tip, car washing tips, pet waste messaging, and beavers in the watershed
PE-5	Provide support to the Claggett Creek Watershed Council	Attend meetings and activities	Y	Staff regularly attends watershed council meetings and has provided significant support for engaging the members. It appears that the group is close to dissolving
PE-U-1	Develop a brochure for commercial, retail, and multi-family property owners or managers where UICs are used for stormwater management		Y	8 new private UICs serving commercial property were discovered during the private inventory inspection program. 8 Brochures were distributed to owner managers

3.2 Additional Activities for Report Year 2016/2017

Outreach materials are included with the MS4 Phase II Annual Report in Appendix B

PE-U-1 The brochures referenced in this BMP were distributed as a result of the private stormwater inspection program which was continued during the summer of 2017. 8 new private UICs were identified and brochures were mailed to the associated property owners. This activity will continue in 2018.

3.3 Proposed Modifications and Rationale

There are no specific modifications being planned for the existing BMPs at this time.

3.4 Future Activities Planned for 2017/2018

The City is in waiting for DEQ to issue their new MS4 Phase II permit which should result in changes to the Stormwater Program as a whole. Staff will focus on any BMPs that need to be changed and revised

PE-U-1 The private stormwater facility program will commence again in the summer of 2017. Staff anticipates that existing private UICs will be located in the upcoming year.

Section 4 – *Public Involvement*

4.1 Overview

The City selected 2 BMPs to address public involvement in the UICMP. The SWAC has been instrumental in assisting staff with promoting the stormwater program as a whole. Because the committee currently includes 3 members of the City Council, the overall body of elected officials for the City are kept informed on the most pressing stormwater issues.

PI-1 Utilize the SWAC for Annual Program Review

PI-U-1 The SWAC will devote at least 2 of their regular meetings solely to UIC issues

Table 4.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
PI-2	Utilize the SWAC for Annual Program Review	Set meeting specifically dedicated to stormwater management plans	Y	All BMPs were evaluated.
PI-U-1	The SWAC will devote at least 2 of their regular meetings solely to UIC issues		Y/N	The SWAC only met once in February 2017. Staff communicated with the group electronically, keeping them posted on UIC and MS4 issues.

4.2 Additional Activities for Report Year 2016/2017

Staff will add the 2016/2017 WPCF Annual Report to the City's website.

4.3 Proposed Modifications and Rationale

There are no proposed modifications to the public involvement BMPs at this time. Advisory Committee meetings were very limited over the report year. The group is an important part of ongoing public involvement, but during the year much of staff time was devoted to issues with the pending Phase II permit. The group size has recently been decreased and the group has agreed to monthly meetings starting in January 2018

4.4 Future Activities Planned for 2017/2018

Because the status of the new MS4 Phase II permit is unknown at this time, there will be implications from the new permit. Staff would eventually like to see a truly integrated Stormwater Program so managing UICs will part of the overall implementation process.

Section 5 – *Illicit Discharge Detection and Elimination Spill Prevention and Response*

5.1 Overview

The City selected 8 BMPs to address Illicit Discharge Detection and Elimination (IDDE) and Spill Prevention and Response issues within the City of Keizer.

ID-1	Develop Ordinance to Prohibit Illicit Discharges
ID-2	Develop Illicit Discharge Detection and Elimination (IDDE) Plan
ID-3	Train City Employees to Implement IDDE Plan
SP-U-1	Develop a Spill Response Manual
SP-U-2	Conduct Annual Training for Employees that Respond to Spills
SP-U-3	Complete a Spill Prevention and Response Plan
SP-U-4	Coordinate with Emergency Response Agencies
SP-U-5	Install Catchbasin Markers on Newly Installed UICs

Table 5.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
ID-1	Revise the IDDE Plan Ordinance developed	Task Completed in 2013/2014	Y	Implementation of the new plan
ID-2	Develop criteria for high risk areas		Y	Complete
ID-3	Map Potential High Risk Areas in GIS	Develop high Risk Tool Set	Y	Complete. Compiled data will need infrequent maintenance
SP-U-1	Complete the Spill Response Manual	Develop the manual and document completion in Annual Report	Y	The Spill Response Field Manual was developed by Environmental staff in 2013/2014
SP-U-2	Conduct annual training for employees.	Conduct annual training for response to spills. Training to include a recordkeeping and reporting component	Y	21 employees. Training on 5/16/17. Spill Response training on 2/15/17
SP-U-3	Complete the Spill Prevention and Response Plan (SPRP)		Y	The Spill Prevention and Response Plan has been completed

SP-U-4	Coordinate with emergency response agencies for activities which involve UICs		Y	Staff are receiving monthly logs from the Fire Department and a notification process has been developed with the Police Department
SP-U-5	Install catchbasin markers on Newly installed UICs		Y	There were 3 public UICs installed in 2016/2017

5.2 Additional Activities for Report Year 2016/2017

As it applies to ID-2, criteria has been established to help identify areas which may be prone to IDDE incidents. These include land use type, past history of IDDE incidents, hazardous material storage or use.

5.4 Future Activities Planned

No additional activities are planned for the existing BMPs at this time.

5.5 Enforcement Actions

Minimum Control Measure #3 of the Phase II stormwater program requires the City to respond to illicit discharges and water quality issues. The 2016/2017 enforcement actions are included in Appendix C of this report. That table includes a breakdown of incidents that involved the MS4 and incidents that involved UICs.

Section 6 – *Construction Site Stormwater Runoff Control*

6.1 Overview

- CS-1 Conduct EPSC Training for Applicable Staff
- CS-3 Revise the Construction Site Pollution Prevention Plan (CSPPP) and Ordinance
- CS-4 Establish Hotline to Receive Complaints from the Public
- CS-U-1 Add inspection of UICs to the City's Erosion Control Field Inspection SOP

Table 6.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
CS-1	Conduct EPSC Training for Applicable Staff	This training included a brief overview of a typical site and applicable BMPs. Also a review of internal plans	Y	6/15/16 Training for 15 maintenance staff members Topics included erosion process, factors, Keizer program elements, and BMPs for EPSC
CS-3	Revise the Construction Site Pollution Prevention Plan (CSPPP) and Ordinance		Y	The ordinance was revised and adopted by City Council on 12/1/14. Forms were simplified and are available online
CS-4	Establish hotline to receive complaints from the public		Y/N	The City has an after hours phone system which allows the caller to choose an option for streets/stormwater issues. A separate hotline has not been developed
CS-U-1	Add inspection of UICs to the City's Erosion Control Field Inspection SOP		Y	The SOPs were revised to include UICs

6.2 Additional Activities for Report Year 2016/2017

The City's Environmental staff provided the bulk of the training for Public Works personnel in 2016/2017. In addition to regular training, 6 Public Works employees attended the Erosion Control and Stormwater Management Summit hosted by the MWOOG group in January 2017.

Record-Keeping and Plan Management

All new and existing CSPPPs are spatially managed through an ArcMap shapefile which shows the location and status of each permit. All CSPPPs are also managed through an excel spreadsheet and kept up to date with inspection information and status updates.

The City has provided DEQ full documentation of all components of the erosion control program and is seeking inclusion in the 1200-CN permit.

6.3 Proposed Modifications and Rationale

There are no proposed modifications at this time.

6.4 Future Activities Planned for 2017/2018

There are no specific future activities planned for this minimum control measure for 2016/2017 other than any requirements specified in the new MS4 Phase II permit.

Section 7 – *Post-Construction Stormwater Runoff*

7.1 Overview

The City selected 3 BMPs to address Post-Construction Stormwater Runoff

DS-1 Revise Design Standards and Development Code to Include Capture and Treatment for New and Re-Development

DS-2 Implement the Revised Standards and Conduct Plan Review, Inspections, and Enforcement Activities

DS-3 Conduct Training for Implementation of Revised Water Quality Development Standards

Table 7.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
DS-1	Revise Design Standards and Development Code to include capture and treatment for new and re-development		Y	Staff is working with the City Engineer and Community Development Staff for new LID design standards including the use of UICs. 11 meetings were held in 2016/2017
DS-2	Implement the Revised Standards and conduct plan review, inspections, and enforcement activities		N	Staff is conducting plan review and inspections. LID is being required for new commercial and multi-family development. New Design standards are being developed
DS-3	Conduct training for implementation of revised water quality development standards		Y/N	Some training is included in the annual training schedule for all PW personnel

7.2 Additional Activities for Report Year 2016/2017

The City of Keizer is working to develop a comprehensive post-construction program. The existing Design Standards were adopted by City Council resolution and include references to Clean Water Services standards as well as King County, WA. These references, and the ability of the Public Works Director to impose such requirements, has resulted in a substantial increase

in the installation of low impact development elements into new and re-development projects. All projects with the exception of single family infill have LID elements.

The City of Keizer is actively moving forward with implementing suitable Design Standards that will address post-construction standards, however the delay of the MS4 Phase II permit has hampered progress. Permittees do not have a clear path forward for what DEQ will require. The result has been installing and implementing elements of LID, including UICs, but no formal up-to-date design standards are in use. Environmental staff has currently taken on the task of developing such standards.

7.3 Proposed Modifications and Rationale

There are no modifications proposed at this time.

7.4 Future Activities Planned for 2017/2018

Environmental staff is developing standards that reflect a combination of the City of Salem, Clean Water Services, and the Western Oregon LID guide. Public Works staff has been working closely with Community Development staff to make certain that changes to the Development Code are consistent with what is being pulled together for the Design Standards.

Section 8 – Operation and Maintenance

8.1 Overview

The City selected 6 BMPs to address Operation and Maintenance practices in the City of Keizer

- OM-2** Annually Inspect 10% of the City's Publically Owned Infrastructure
- OM-4** Catchbasin Cleaning – Implement a Rotation Program to Include Annual Inspection, Cleaning, and Repair for Catchbasins
- OM-5** Implement Street Sweeping Program
- OM-U-1** Complete the UIC Operations and Maintenance Manual for UICs
- OM-U-2** Implement the Operations and Maintenance Manual as Designed
- OM-U-3** Conduct Employee Training

Table 8.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
OM-2	Video Inspection of Stormwater System	Contracted inspection with a goal of 10% of the system annually	Yes / 12. 3% of the system was inspected	No new UICs were identified through this process. 42,893 ft of pipe was cleaned.
OM-4	Catch basin inspection program	Inspect structures, clean and develop a repair list	Y	2250 catchbasins were inspected and 213 were cleaned. 298 manholes were inspected and 16 were cleaned.
OM-5	Street Sweeping	Contracted activity	Y	1228 cubic yards of material was removed through street sweeping in 2016/2017
OM-U-1	Complete the UIC O & M Manual		Y	The manual was completed in the Spring of 2014
OM-U-2	Implement the O & M manual as designed		Y	Sections of this document are being implemented with other programs
OM-U-3	Conduct employee training		Y	Training occurred on 10/26/16 and 2/15/17

8.2 Additional Activities for Report Year 2016/2017

OM-5 Street sweeping is a contracted activity in Keizer. The following removal totals (in cubic yards) were provided by the City's contractor, Wheat LLC:

Street Sweeping Quarterly Removal Totals – Annual Comparisons

	2014/2015	2015/2016	2016/2017
July-Sept	236	187	182
Oct-Dec	962	678	670
Jan-Mar	220	222	199
April-June	226	197	177
Total	1644	1284	1228

8.3 Proposed Modifications and Rationale

There are no proposed modifications at this time.

8.4 Future Activities Planned for 2017/2018

No additional activities are planned for this section in 2017/2018

Section 9 – *Pollution Prevention in Municipal Operations (Good Housekeeping)*

9.1 Overview

The City selected 2 BMPs to address Good Housekeeping efforts for the City's UICs

GH-U-1 Revise the Existing Good Housekeeping Manual to Include UIC Related Information and BMPs

GH-U-2 Conduct Employee Training

Table 9.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
GH-U-1	Revise the existing Good Housekeeping Manual to include UIC related information and BMPs		Y	The Good Housekeeping Manual was updated in 2013/2014
GH-U-2	Conduct employee training		Y	Training occurred on 10/26/16 and 2/15/17

9.2 Additional Activities for Report Year 2016/2017

There are no additional activities to report

9.3 Proposed Modifications and Rationale

No modifications are proposed at this time

9.4 Future Activities Planned for 2017/2018

No additional activities are planned for 2017/2018

Section 10 – *Record-Keeping and Reporting*

10.1 Overview

The City of Keizer selected 1 BMP to address record-keeping activities

RR-1 Develop an Electronic Stormwater Database to Track Stormwater Program Elements Including Repair and Maintenance Activity.

Table 10.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
RR-1	Develop an electronic stormwater database to track stormwater program elements including repair and maintenance activity		Yes	This BMP is for the most part complete with the exception of ongoing routine updates to the GIS system

10.2 Additional Activities for Report Year 2016/2017

This BMP is complete and ongoing. Staff will look to expand efforts to keep up with technology as well as create efficiencies by accessing more resources. Environmental staff have continued to refine record-keeping efforts for the applicable Divisions. Ongoing GIS management accomplishments are too numerous to list, but an example of the applicable activities are noted in this subsection. The list below captures only a portion of the numerous data management and record-keeping activities undertaken by staff in 2016/2017 for the stormwater program as a whole.

- Outfall inspection results updated
- Catchbasin inspections recorded in the data base
- Grid maps updated on a quarterly basis
- Erosion control permits and status displayed in ArcMap
- Public and private water well data updated in GIS
- Marion County updates included in the system
- City of Salem updates included in the system
- Archived document file added to the Stormwater Drive and index developed
- Infrastructure corrections updated in the GIS system
- Repair work inventoried and prioritized to include backlog work
- Private inspection project has been added to GIS for the 2015/2016 inventory work
- Assets have been reviewed to determine ownership (public or private) and maintenance responsibilities (public or private).

The majority of Public Works field staff are now able to access information from hand held equipment, such as smart phones in the field. The Department has found this a useful tool for collecting and accessing data.

10.3 Proposed Modifications and Rationale

There are no proposed modifications at this time.

10.4 Future Activities Planned for 2017/2018

Staff will continue to refine recordkeeping activities over the 2017/2018 permit term. The draft MS4 Phase II permit currently requires a steep increase in recordkeeping efforts.

Section 11 – *New UICs / UIC Decommissions / Updated Registration Information*

11.1 Overview

The purpose of this section of the WPCF Annual Report is to report on those publically owned UICs that were discovered during the permit year, those that are no longer part of the inventory, or newly installed publicly owned UICs.

For details on the UICs referenced below, please see updated UIC registration spreadsheet included on disk with this report.

11.2 New UICs

There were 3 new publicly owned UICs that were installed during 2016/2017. These UICs are located at Harmony Dr NE, Fillmore St N., and Timothy Ln NE. The new UIC numbers are 119, 120, and 121 respectively.

The three new UICs have been evaluated against the Groundwater Protectiveness Demonstration done by GSI for the City of Keizer in 2013. When depth at deepest point of injection was compared to the depth to seasonal high groundwater, all three new UICs have adequate separation to be fully *protective of groundwater*.

APPENDIX A

APPENDIX A: 2016-17 WPCF UIC SAMPLING RESULTS

ND = Pollutant Not Detected in the Sample

Sample Date	Sample ID	Site Location	Analyte	Result (µg/L)	Action Level (µg/L)	MRL
10/13/2016	PY4_1	UIC 10 - Power Poles	Copper	1.58	1300	0.5
10/13/2016	PY4_1	UIC 10 - Power Poles	Lead	0.632	500	0.1
10/13/2016	PY4_1	UIC 10 - Power Poles	Zinc	310	50000	1
10/13/2016	PY4_1	UIC 10 - Power Poles	Benzo(a)pyrene	0.0	2	0.1
10/13/2016	PY4_1	UIC 10 - Power Poles	Phthalate (DEHP)	0.0	300	1
10/13/2016	PY4_1	UIC 10 - Power Poles	Penta (PCP)	0.46	10	0.2
10/13/2016	PY4_2	UIC 36 - Residential SF	Copper	1.51	1300	0.5
10/13/2016	PY4_2	UIC 36 - Residential SF	Lead	0.378	500	0.1
10/13/2016	PY4_2	UIC 36 - Residential SF	Zinc	77.1	50000	1
10/13/2016	PY4_2	UIC 36 - Residential SF	Benzo(a)pyrene	0.0	2	0.1
10/13/2016	PY4_2	UIC 36 - Residential SF	Phthalate (DEHP)	0.55	300	1
10/13/2016	PY4_2	UIC 36 - Residential SF	Penta (PCP)	0.0	10	0.2
10/13/2016	PY4_3	UIC 101 - Ind/Comm	Copper	52.1	1300	0.5
10/13/2016	PY4_3	UIC 101 - Ind/Comm	Lead	12.1	500	0.1
10/13/2016	PY4_3	UIC 101 - Ind/Comm	Zinc	76.8	50000	1
10/13/2016	PY4_3	UIC 101 - Ind/Comm	Benzo(a)pyrene	0.080	2	0.1
10/13/2016	PY4_3	UIC 101 - Ind/Comm	Phthalate (DEHP)	3.98	300	1
10/13/2016	PY4_3	UIC 101 - Ind/Comm	Penta (PCP)	0.0	10	0.2
10/13/2016	PY4_4	UIC 16 - MS4 Connected	Copper	0.532	1300	0.5
10/13/2016	PY4_4	UIC 16 - MS4 Connected	Lead	0.046	500	0.1
10/13/2016	PY4_4	UIC 16 - MS4 Connected	Zinc	21.6	50000	1
10/13/2016	PY4_4	UIC 16 - MS4 Connected	Benzo(a)pyrene	0.0	2	0.1
10/13/2016	PY4_4	UIC 16 - MS4 Connected	Phthalate (DEHP)	0.0	300	1
10/13/2016	PY4_4	UIC 16 - MS4 Connected	Penta (PCP)	0.0	10	0.2
10/13/2016	PY4_5	UIC 21 - Residential Multi	Copper	6.22	1300	0.5
10/13/2016	PY4_5	UIC 21 - Residential Multi	Lead	1.02	500	0.1
10/13/2016	PY4_5	UIC 21 - Residential Multi	Zinc	42.4	50000	1
10/13/2016	PY4_5	UIC 21 - Residential Multi	Benzo(a)pyrene	0.0	2	0.1
10/13/2016	PY4_5	UIC 21 - Residential Multi	Phthalate (DEHP)	0.81	300	1
10/13/2016	PY4_5	UIC 21 - Residential Multi	Penta (PCP)	0.0	10	0.2
10/13/2016	PY4_6	UIC 25 - High Traffic	Copper	8.58	1300	0.5
10/13/2016	PY4_6	UIC 25 - High Traffic	Lead	1.33	500	0.1
10/13/2016	PY4_6	UIC 25 - High Traffic	Zinc	35.4	50000	1
10/13/2016	PY4_6	UIC 25 - High Traffic	Benzo(a)pyrene	0.0	2	0.1
10/13/2016	PY4_6	UIC 25 - High Traffic	Phthalate (DEHP)	1.71	300	1
10/13/2016	PY4_6	UIC 25 - High Traffic	Penta (PCP)	0.0	10	0.2

Sample Date	Sample ID	Site Location	Analyte	Result (µg/L)	Action Level (µg/L)	MRL
1/18/2017	PY4_7	UIC 10 - Power Poles	Copper	1.76	1300	0.5
1/18/2017	PY4_7	UIC 10 - Power Poles	Lead	1.31	500	0.1
1/18/2017	PY4_7	UIC 10 - Power Poles	Zinc	106	50000	1
1/18/2017	PY4_7	UIC 10 - Power Poles	Benzo(a)pyrene	0.000	2	0.1
1/18/2017	PY4_7	UIC 10 - Power Poles	Phthalate (DEHP)	0.56	300	1
1/18/2017	PY4_7	UIC 10 - Power Poles	Penta (PCP)	2.050	10	0.2
1/18/2017	PY4_8	UIC 36 - Residential SF	Copper	1.190	1300	0.5
1/18/2017	PY4_8	UIC 36 - Residential SF	Lead	0.266	500	0.1
1/18/2017	PY4_8	UIC 36 - Residential SF	Zinc	77.8	50000	1
1/18/2017	PY4_8	UIC 36 - Residential SF	Benzo(a)pyrene	0.000	2	0.1
1/18/2017	PY4_8	UIC 36 - Residential SF	Phthalate (DEHP)	0.760	300	1
1/18/2017	PY4_8	UIC 36 - Residential SF	Penta (PCP)	0.000	10	0.2
1/18/2017	PY4_9	UIC 101 - Ind/Comm	Copper	49.4	1300	0.5
1/18/2017	PY4_9	UIC 101 - Ind/Comm	Lead	23.40	500	0.1
1/18/2017	PY4_9	UIC 101 - Ind/Comm	Zinc	94.6	50000	1
1/18/2017	PY4_9	UIC 101 - Ind/Comm	Benzo(a)pyrene	0.060	2	0.1
1/18/2017	PY4_9	UIC 101 - Ind/Comm	Phthalate (DEHP)	17.60	300	1
1/18/2017	PY4_9	UIC 101 - Ind/Comm	Penta (PCP)	0.470	10	0.2
1/18/2017	PY4_10	UIC 16 - MS4 Connected	Copper	0.861	1300	0.5
1/18/2017	PY4_10	UIC 16 - MS4 Connected	Lead	11.000	500	0.1
1/18/2017	PY4_10	UIC 16 - MS4 Connected	Zinc	51.4	50000	1
1/18/2017	PY4_10	UIC 16 - MS4 Connected	Benzo(a)pyrene	0.000	2	0.1
1/18/2017	PY4_10	UIC 16 - MS4 Connected	Phthalate (DEHP)	0.350	300	1
1/18/2017	PY4_10	UIC 16 - MS4 Connected	Penta (PCP)	0.000	10	0.2
1/18/2017	PY4_11	UIC 21 - Residential Multi	Copper	10.10	1300	0.5
1/18/2017	PY4_11	UIC 21 - Residential Multi	Lead	1.010	500	0.1
1/18/2017	PY4_11	UIC 21 - Residential Multi	Zinc	34.6	50000	1
1/18/2017	PY4_11	UIC 21 - Residential Multi	Benzo(a)pyrene	0.000	2	0.1
1/18/2017	PY4_11	UIC 21 - Residential Multi	Phthalate (DEHP)	0.910	300	1
1/18/2017	PY4_11	UIC 21 - Residential Multi	Penta (PCP)	0.220	10	0.2
1/18/2017	PY4_12	UIC 25 - High Traffic	Copper	7.47	1300	0.5
1/18/2017	PY4_12	UIC 25 - High Traffic	Lead	2.35	500	0.1
1/18/2017	PY4_12	UIC 25 - High Traffic	Zinc	38.1	50000	1
1/18/2017	PY4_12	UIC 25 - High Traffic	Benzo(a)pyrene	0.000	2	0.1
1/18/2017	PY4_12	UIC 25 - High Traffic	Phthalate (DEHP)	3.55	300	1
1/18/2017	PY4_12	UIC 25 - High Traffic	Penta (PCP)	0.250	10	0.2
3/7/2017*	PY4-Penta 01	UIC 10 - CB 444	Penta (PCP)	0.67	10	0.2
3/7/2017	PY4-Penta 02	UIC 10 - CB 454	Penta (PCP)	ND	10	0.2
3/7/2017	PY4-Penta 03	UIC 36 - CB 425	Penta (PCP)	0.22	10	0.2
3/7/2017	PY4-Penta 04	UIC 54 - CB 453	Penta (PCP)	0.19	10	0.2
3/7/2017	PY4-Penta 05	UIC 62 - CB 483	Penta (PCP)	0.49	10	0.2

* Informational Penta Sampling was performed at potential source locations, see BMP write up for details.

APPENDIX B

City of Keizer, Oregon

ANNUAL REPORT

PERMIT YEAR 2016 / 2017

STORMWATER NPDES PERMIT #102904



October 30, 2017

**Prepared by:
Environmental and Technical Division Staff
City of Keizer, Public Works Department**

Certification Regarding the City of Keizer .
NPDES Municipal Stormwater Annual Report 2016 / 2017

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Bill Lawyer
Public Works Director
City of Keizer
930 Chemawa Rd NE
P.O. Box 21000
Keizer, OR 97307-1000



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Table TMDL Implementation Plan Matrix

Attachments

Appendix A – Training Schedule and Outreach/Education Material

Appendix B – Enforcement Action Log

Appendix C – Roof Sampling Log

ACRONYMS AND ABBREVIATIONS

ACWA	Association of Clean Water Agencies
BMPs	Best Management Practices
CCR	Consumer Confidence Report
CFR	Code of Federal Regulations
City	City of Keizer, Oregon
CS	Construction Site Standards
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DSL	Oregon Department of State Lands
DS	Development Standards
DWPA	Drinking Water Protection Areas
EFU	Exclusive Farm Use
EPSC	Erosion Prevention Sediment Control
EPA	Environmental Protection Agency
ESU	Equivalent Service Unit
ESA	Endangered Species Act
FTE	Full Time Equivalent
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
LID	Low Impact Development
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rules
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
O & M	Operation & Maintenance
ORS	Oregon Revised Statutes
PE	Public Education
Permittee	City of Keizer
PI	Public Involvement and Participation
PY	Permit Year
RR	Record Keeping and Reporting
SWAC	Stormwater Advisory Committee
SWMP	Storm Water Management Plan or Program
TMDL	Total Maximum Daily Load
UGB	Urban Growth Boundary
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
VSF	Vegetated Stormwater Facility
WPCF	Water Pollution Control Facilities (permit)

Executive Summary

A substantial amount of time in the 2016/2017 report year was devoted to development and internal review of a Stormwater Quality Treatment Manual. Environmental Division staff have taken the lead on this project and are now going through review with the City's Engineer and Public Works personnel. Staff have every hope that this document will be completed and ready to unveil by the end of the calendar year.

Environmental staff have been actively involved in plan review for new and re-development over the reporting period. This new role has resulted in promotion and implementation of post-construction practices in both public and private development. The City is using Low Impact Development (LID) practices and Underground Injection Control devices (UICs) for stormwater management at this time. The use of UICs is the preferred option for publicly owned development.

The City has continued its private stormwater inventory program. The 2016/17 effort resulted in an inventory of 174 taxlots. This program has been extremely beneficial in helping the City to identify what facilities are on private property and how they are connected to the City's MS4. New private UICs have been identified with notification to DEQ. This year Environmental Division staff have inventoried a large number of multi-family properties which will ultimately identify problematic areas of maintenance and management needs.

Environmental staff have expanded training activities for maintenance personnel this past year. The change has worked very well and the issue of limited training in past years has now been corrected. A training schedule was developed and will be refined for 2017/2018 and beyond.

The City does not have a GIS Division. All higher level data management comes from Environmental staff who have developed a program but are now struggling to keep up with maintenance requirements and their regular duties. Although staff has recommended the City hire a GIS Analyst to take on the GIS needs of other Departments, this has yet to become a reality. For the most part, all Public Works personnel are using GIS on a regular basis as part of their required duties, and as such, are working more efficiently and accurately. We look forward to resolving this issue in the near future.

Unfortunately, the continued delay in issuance of the new Phase II permit has left the City in the position of not being able to properly plan for stormwater needs of the future. DEQ has provided limited communication in regard to the path forward over the past year. The result has been a lack of interest from the community and decision makers on what the future might bring. As always, we look forward to working with DEQ for development of a timely, implementable permit.

Section 1 - Introduction

1.1 Background

The federal Clean Water Act (CWA) was amended in 1987 to include the requirement that stormwater be regulated as a point source discharge under the NPDES program. In 1990, the EPA developed regulations for stormwater discharges that were applicable to entities that own and operate MS4s. The program was employed in two phases with Phase I regulations first being applied to large MS4s with populations of 100,000 or more. Phase II regulations were adopted in 1999 for small MS4s. In Oregon, DEQ has been delegated authority from the EPA for the NPDES program.

As a result of the NPDES Phase II requirements, the City of Keizer established a citizen's Stormwater Task Force to assist in the development of a stormwater management strategy that would meet state and federal regulations, and was suitable for the City of Keizer. The original Stormwater Task Force worked with staff and a consultant to establish the original Stormwater Management Plan (SWMP) and a stormwater utility fee. The initial stormwater fee of \$2.70 per month has been increased several times and the City is currently following a long range financial plan. The fee stands at \$6.31 per month for 1 Equivalent Service Unit (ESU).

After filing an application for an Individual NPDES Permit, the City of Keizer was notified in a letter dated March 12, 2007, that the public review process for the MS4 Phase II individual permit for the City had been completed by the DEQ. NPDES Permit No. 102904 (DEQ File No. 100032) was issued to the City of Keizer, Oregon. The Permit authorizes the discharge of stormwater from all municipal separate storm sewer system outfalls owned and operated by the City. In August 2011 the City of Keizer applied for a permit renewal. The original permit expired on February 28, 2012. A general permit was developed by DEQ in 2015/2016. Although the permit went through the Public Comment period, no significant progress has been occurred. We continue to be uncertain about the future.

1.2 Annual Report Requirements

In accordance with Schedule B(2) of the Permit, the City of Keizer as the permittee must submit an annual report to DEQ by November 1 of each year for the time period of July 1 through June 30. The annual report must contain:

- 1. The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable (MEP) , and the measurable goals for each of the minimum control measures;*

2. *Results of information collected and analyzed, if any, during the reporting period, including evaluation criteria used to assess the success of the program at reducing the discharge of pollutants to the MEP;*
3. *A summary of the stormwater activities the permittee plans to undertake during the next reporting cycle, including a schedule for implementation;*
4. *A description of changes made to the SWMP, including changes to BMPs or measurable goals identified in the SWMP;*
5. *Information on all new additions or removals of annexed areas that result in an expansion or contraction of the MS4's boundaries;*
6. *Notice that the permittee is relying on another government entity to satisfy some of the permittee's permit obligations (if applicable); and*
7. *Number and nature of enforcement actions taken.*

This document serves as the Annual Report for year 2016/2017 for the City of Keizer.

The City of Keizer does not rely on other government entities to satisfy any of the permit obligations. While Keizer owns the sanitary sewer system within the City's UGB, the City of Salem provides maintenance and repair of that system through an Inter-governmental Agreement (IGA). The City of Keizer would also utilize outside agencies in the event of an emergency beyond the City's response capacity. A large scale spill or accident might require a response from the Keizer Fire District, the City of Salem Fire Department or the Salem Public Works Environmental Services group, or the Marion County Fire District. The City also has the option to utilize the State of Oregon Spill Response Contractor. The City of Keizer is a member of the Oregon Water/Wastewater Agency Response Network (ORWARN), and has an Inter-governmental Agreement (IGA) with the Oregon Department of Transportation (ODOT); a Public Works Cooperative Assistance Agreement.

1.3 Organizational Structure and Primary Contacts

The City's operational structure is a City Manager / City Council type structure with Department Directors in Finance, Community Development, Human Resources, City Recorder, Police, and Public Works. The implementation of the Phase II permit is carried out primarily by the Environmental and Technical Division with some annual inspections and repair work being conducted by the Stormwater Division. These groups are under the management of the Public Works Director and respective Division Managers.

1.3 Responsible Personnel

Table 1.3 – Responsible Personnel

<i>Key Personnel</i>	<i>Area of Responsibility</i>
Bill Lawyer , Public Works Director P.O. Box 21000 Keizer, OR 97307 (503)390-3700 lawyerb@keizer.org	Department Director Stormwater Budget Inter-Agency Lead Citywide Communication
Elizabeth Sagmiller , Environmental & Technical Division Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3563 sagmillere@keizer.org	Management of Permitted Stormwater Programs Annual Reporting/Regulatory Reporting Operational Plan Development Maintenance/Repair Policy Development Recordkeeping Policy Development Education and Outreach GIS Management Inter-Agency Coordination Post-Construction in New and Re-development UIC Installation Policy UIC Decommission/Retrofits Policy
Kat LaFever , Senior Environmental Program Technician P.O. Box 21000 Keizer, OR 97307 (503)856-3526 lafever@keizer.org	Regulatory Support Systemwide Assessment Monitoring Plan Data Analysis/Recordkeeping
Billy Johnson , Environmental Program Technician P.O. Box 21000 Keizer, OR 97307 (503)856-3424 johnsonb@keizer.org	Stormwater GIS Management/Maintenance Erosion Control Post-Construction New Development Plan Review
Mike Griffin , Stormwater Operations & Streets Division Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3551 griffinm@keizer.org	Implementation of UIC Operations and Maintenance Plan Implementation of Good Housekeeping Plan Implementation of Spill Response Field Manual Implementation of Illicit Discharge and Detection Plan Stormwater System Repairs and Recordkeeping Field Investigation and Response (IDDE, Spills) UIC Maintenance
Matt Reyes , Public Works Project Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3558 reyesm@keizer.org	Project Management for Large Scale Development

1.4 Contents

Sections 2 through 7 of this report will cover the individual progress and specifications of adherence to the six minimum control measures required through the SWMP, including the Schedule B(2) permit requirements. The referenced control measures are as follows:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention in Municipal Operations

Each of the referenced sections will include reporting on the City's suite of BMPs for the overall stormwater program.

Section 8 of the document covers the record-keeping and reporting efforts undertaken by staff for 2016/2017. Section 9 covers 2016/2017 annexations and expansion of the MS4, and Section 10 addresses progress toward meeting the conditions of Schedule B2(a) of the NPDES permit. Section 11 covers the activities associated with the TMDL Implementation Plan.

Section 2 – Public Education / Outreach

2.1 BMPs

- PE-1 Develop a Public Education Plan that addresses regional stormwater issues. Utilize the Mid-Willamette Outreach Group (MWOOG) to develop products.
- PE-2 Utilize a statistical method to assess public awareness of stormwater issues
- PE-3 Utilize the annual consumer confidence report (CCR) to inform the public about stormwater related issues
- PE-4 Update the City's website
- PE-5 Provide support to the Claggett Creek Watershed Council

Table 2.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
PE-1*	1. Develop a Public Education Plan that addresses regional stormwater issues.	Develop a plan that refines the focus for outreach on specific audiences with key messages	Partial	Some minor activity has occurred on this BMP. The Clean Rivers Coalition is a group we hope to partner with to meet the needs of the new permit
	2. Utilize MWOOG to develop outreach products	Participate in at least 8 meetings and host 2 events	Y	The Erosion Control Summit was held on 1/24/17. It continues to be a success. MWOOG hosted the Water Festival on 5/9/17 with 119 students and 12 adults from Keizer Elementary
PE-2	Utilize a statistical method to assess public awareness of stormwater issues	This BMP was added to the first revision of the SWMP with the permit renewal package.	N	No action has occurred on this activity.
PE-3	Utilize the annual consumer confidence report (CCR) to inform the public about stormwater related issues		Y	An insert was added to the annual CCR and sent to residents in May 2017

PE-4	Update the City's website		Y	2016/2017 Annual Report was added to the City's website. Staff also began utilizing the website ticker for outreach messages such as healthy lawn care tip, car washing tips, pet waste messaging, and beavers in the watershed
PE-5	Provide support to the Claggett Creek Watershed Council	Attend meetings and activities	Y	Staff regularly attends watershed council meetings and has provided significant support for engaging the members. It appears that the group is close to dissolving

* Adaptive Management was applied to this BMP, and approved by DEQ in 2014/2015

2.2 Activities for Report Year 2016/2017

Outreach materials are provided in Attachment A

The City of Keizer did not host a Public Services Fair or Howl-a-Palooza as has been done in previous years. Staffing challenges and work load created roadblocks for some activities, but new outreach activities were added to the annual program.

Water Festival

The MWOG group joined together to host the second regional Water Festival this year. The event was held at the Keizer Civic Center and nearby Claggett Creek Park. This year MWOG hosted students from Keizer Elementary School. Activities included a demonstration from Turtle Ridge Animal Sanctuary, fish dissection from ODFW, soil infiltration, wastewater bingo, salmon relay, beavers and the creek, water quality testing and a vector truck demonstration. The feedback from this event has been highly positive. We hope to see this event become an annual program, and are planning for the 2018 event.

Green Infrastructure Maintenance Training

The City of Keizer started working with Chemeketa Community College staff on partnering on Green Infrastructure Maintenance Training (GIMT) for local landscaping companies, government personnel, and others that might be interested in the field. At present, MWOG

partners and College personnel are developing a 2.5 day training that will be unveiled in early March of 2018.

Mid-Willamette Outreach Group (MWOOG)

The Mid-Willamette Outreach Group first began meeting in 2011. MWOOG is composed from the City of Salem, City of Keizer, Marion County, the Marion Soil and Water Conservation District, the City of Albany, and the City of Corvallis. The group meets on a regular basis and continues to expand activities within the region. The group holds monthly meetings and partnership activities are noted throughout this Section of the report.

Erosion Control Summit – The Erosion Control Summit was held on January 24, 2017. This was the 6th annual event hosted by MWOOG and held at the Keizer Civic Center. There were approximately 120 attendees and feedback from the event shows that participants view the summit as a valuable experience. Speakers included staff from DEQ, the City of Keizer, the City of Salem, Nathan Hardebeck from Northwest Environmental Training Center, and a representative from ACF West. The agenda for the 2017 event is included in Appendix A. The 2018 event is scheduled for January 30, 2018.

General Education Activities

Environmental staff has provided a great deal of significant education and outreach during the past year. The following 2016/ 2017 activities are compiled in chronological order:

1. July 15, 2016 -Training round table with the maintenance staff. Watched the documentary UPRIVER, lots of good discussion on the concepts of river restoration. Target Audience: construction/operations and maintenance staff (the Maintenance Training Schedule is included in Attachment A).
2. August 24, 2016-Watched the movie Mercury Danger with the maintenance staff. Roundtable discussion on spill response, all employees present. Target Audience: construction/operations and maintenance staff
3. August 25, 2016 Boys and Girls Club of Keizer. Presentation on water quality and carnivorous plants, conducting dissection of sarracenia species and looking at the bugs under the usb microscope. 2 work sessions with 8 kids each. Great participation. Target Audience: students and school staff.
4. September 22, 2016. Oregon Code Enforcement Association Conference, Newport Oregon. Presentation on stormwater management and municipal code. Provided general overview of stormwater regulations and pollution prevention, vegetated stormwater facilities (VSFs), and permit requirements. 48 attendees. Target Audience: planners/city personnel, decision makers, department directors and managers.

5. September 27, 2016. Salmon Watch with MWOOG partners. 40 kids from the Early College High School program at Chemeketa Community College. Keizer staff taught the water quality portion, and tested, pH, temperature, dissolved oxygen, nitrates, and phosphates. Target Audience: students and school staff
6. September 30, 2016. Keizer Elementary school annual field trip. Public Works vector truck demonstration, catch basins and water quality presentation, Enviro-scape watershed model demonstration, nature walk, and craft activity. 112 kids and 14 parents and teachers. Target Audience: students, schools staff, and parents.
7. October 5, 2016. Hosted 16 students from Chemeketa Community College for a planting day at the Country Glen mitigation site. We discussed the role of mitigation wetlands, removal fill permits with the Department of State lands and the US Army Corps of Engineers, proper planting techniques and restoration of stream bank and riparian buffers. Planted 14- 1" caliper White Alders and 2-1" caliper Big Leaf Maples. Everyone got a chance to plant and learn, very productive day. Target Audience: elected officials (City Council member present) college students.
8. December 5, 2016. Worked with a Biology class at McNary High School. Staff gave a presentation on stormwater management to protect groundwater and used a groundwater model for demonstration purposed. 17 students present, with lots of good questions about the presentation. Target Audience: high school students
9. January 19, 2017- Gave a presentation to the 7th grade leadership class at Whiteaker Middle School. The topic was Careers in Phytotechnology. 32 students in the class. Target Audience: middle school students, and teachers.
10. January 25, 2017- Presentation to a CESCL certification class on local erosion control program requirements for the City of Keizer. Audience: 40 individuals from the development community.
11. March 28, 2017- Environmental staff have developed a new quarterly newsletter that is distributed to everyone in the organization including the elected officials. 60 newsletters delivered.
12. April 17, 2017- Guest instructor at Chemeketa Community College for Phytotechnology Class. Presentation content was plants and stormwater treatment designs. Covered copper as a pollutant and the use of native plants for stormwater treatment. 22 students. Target Audience: college students
13. April 20, 2017- Chemeketa CWE employer appreciation luncheon. Presented on the role of trees in stormwater management, and trees as a stormwater asset. 35 people present, Target Audience: local business owners, Chemeketa staff and students.

14. April 24, 2017- Guest instructor at Chemeketa Community College for Phytotechnology Class. 22 students Target Audience: college students.
15. April 27th, Yoshikai Science Fair Night. Setup the Carnivorous plants and water quality table, used the usb microscope to dissect stomachs of Sarracenia pitcher plants and discussed the need for clean water, pollution prevention and stormwater runoff and how it can effect plants animals and humans in the environment. 400 students from primarily English as a Second Language / Hispanic origins. Target Audience: minority students, parents, and elementary students
16. June 1, 2017 - Issue #2 of the Environmental / Stormwater Newsletter was distributed
17. June 7, 2017- Naturalist field trip of the Keizer Rapids Park with participation from MWOOG and the Salem Audubon Society. 58 students, instruction on invasive plants, invasive fish, stormwater quality, birds and ecosystem health. Target Audience: students, teachers, and parents from Forest Ridge Elementary School
18. June 8, 2017- Forest Ridge Elementary School, Forest Ridge classroom activity which included creating natural water filters out of sand gravel, and wood chips. Good feedback from the teachers. Activity sheet distributed to 60 students. Target Audience: Elementary students and teachers.

2.3 Appropriateness of the BMP / Effectiveness

PE-1 Development of the Public Education Plan will provide staff a clear path forward for future educational activities. This BMP is appropriate and effective.

The MWOOG group is becoming more efficient and the activities more focused over time. This portion of the BMP is appropriate and effective.

PE-2 Based on the outcome of the Phase II permit, this BMP may need to be revised.

PE-3 Utilizing the City's CCR was a useful way to reach a large portion of Keizer residents.

PE-4 Staff needs to have more time to devote to fine-tuning this BMP. Although material is added to the site, it could be more fully expanded. This BMP is appropriate and effective.

PE-5 Environmental staff continue to participate in Claggett Creek Watershed Council (CCWC) meetings and activities. The Council lacks consistency and membership and is extremely limited. This BMP is appropriate, but should be evaluated from year to year.

2.4 Future Activities Planned for 2017/18

The City will continue to implement an education and outreach program in subsequent years which will be tailored following issuance of new regulations.

Section 3 – *Public Involvement*

3.1 BMPs

- PI-1** Develop Stormwater Program Evaluation Methodology
Utilize the Stormwater Advisory Committee (SWAC) for Program Review and Adaptive Management
- PI-2** Install 125 – 150 Storm Drain Markers Annually
- PI-3** Utilize Community Groups and/or Volunteers to maintain restoration Sites

Table 3.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
PI-1	Develop stormwater program evaluation methodology	BMPs will be evaluated by 1. <u>program implementation</u> , 2. <u>information collected</u> , 3. <u>evaluation</u> , and 4. <u>needs identification</u> . SWAC to review annually	Partial	The BMPs are annually evaluated by staff and were sent out for review and comment by the SWAC. See additional comments in Subsection 3.3
PI-2	Install catch basin markers	Utilize community groups to install catch basin markers	Partial	10/03/16 – 6 Chemeketa Community College students marked 57 catch basins. 4/28/17 – 4 Chemeketa Community College students marked 33 catch basins Total: 90
PI-3	Utilize community groups to maintain restoration sites		Y	10/9/16 – Chemeketa Community College Students planted 16 trees on Labish Ditch. 5/13/17 Claggett Creek Watershed Council conducted the annual invasive plant removal at Keizer Rapids Park with 20 participants

3.2 Additional Activities for Report Year 2016/2017

The City of Keizer worked with Chemeketa Community College during permit year 2016/2017 utilizing a Cooperative Work Experience (CWE) student. The student began working with Keizer in October 2016 and completed his work with a presentation to the Keizer Parks Advisory Board and the Claggett Creek Watershed Council.

Assigned tasks included gathering information about significant trees within the City and then adding that information to GIS. The purpose of the effort was to be able to demonstrate that this information can be used to calculate canopy cover in certain neighborhoods of the City.

The experience as a whole was beneficial for Chemeketa Community College, the student, and the City. Keizer hopes to secure a Chemeketa CWE student to continue your work with trees in the upcoming fiscal year.

3.3 Appropriateness of the BMP / Effectiveness

PI-1 This BMP is appropriate and effective. Using the methodology categories allowed staff to specifically identify tasks that weren't working or needed to be changed. The at-a-glance type format allows for quick identification of BMPs that need to be changed.

The Stormwater Advisory Committee (SWAC) has had very few meetings due primarily to the delay of the MS4 Phase II permit. The group did meet on 2/15/17 to discuss stormwater programs, the Phase II General Permit, and updates on the WPCF permit. While staff has kept them up to date with regulatory changes, it is a challenge to keep them interested when timelines are continually adjusted. The membership has been reduced to only 7 members.

PI-2 The City will need to determine if this activity is useful and effective. While the markers are useful for identification purposes, there has been no determination made as to if they deter illegal dumping. Furthermore, the markers are vandalized and removed around school property. This BMP will continue to be evaluated.

PI-3 The Claggett Creek Watershed Council conducts specific work at Keizer Rapids Park every year. That project has been successful. However, relying on volunteers to take on a more active role is probably not feasible. The City has had no real success with engaging this group to date. For larger restoration efforts, the City will look to more dependable resources in the future.

3.4 Future Activities Planned for 2017/2018

Staff will look to the new permit to provide appropriate BMPS for Public Involvement in the future.

Section 4 – *Illicit Discharge Detection and Elimination*

4.1 BMPs

- ID-1 Revise the IDDE Plan
Conduct Annual Training
- ID-2 Develop Criteria for High Risk Areas
- ID-3 Link Information to GIS and Annually Update
- ID-4 Develop an Inspection and Inventory Plan for Privately Owned Stormwater Facilities
- ID-5 Analyze Inspection Data and Develop a Management Strategy

Table 4.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
ID-1	Revise the original IDDE Plan	Task Completed in 2013/2014	Y	Implementation of the new plan
	Conduct annual training	IDDE/Spill Response	Y	21 employees Training on 5/16/17 Spill Response training on 2/15/17
ID-2	Develop criteria for high risk areas		Y	Complete
ID-3	Link to GIS	Developed High Risk Tool Set	Y	Complete – compiled data will need infrequent maintenance
ID-4	Develop inspection and inventory plan	Inventory is expected to be completed in 2018/2019	Y	174 taxlots were inventoried in 2016/2017
ID-5	Analyze inspection data and develop management strategy		N/A	Management strategy is not expected to occur until all inventory information has been collected

4.2 Additional Activities for Report Year 2016/2017

IDDE Plan Revisions

The IDDE Plan was revised in 2013/2014. The Stormwater Operations and Streets Division Manager is responsible for implementation of the plan. The overall plan has not been reviewed thoroughly in the last 3 years and the Department would benefit from this activity.

Training: Training occurred on May 16, 2017 for 21 employees. The group reviewed the City's Discharge Ordinance, violations of the ordinance, and City crew response. A video from the Center for Watershed Protection was shown to the group. They defined an illicit discharge and covered field screening, detection and prevention. Spill Response training was included and covered clean-up as well as response. This training also included the use of videos.

Outfall Inspections

Outfall inspections were completed in July and August of 2016. A total of 175 outfalls were inspected according to records. The City of Keizer provides annual outfall inspection for all such facilities. Data is collected electronically by maintenance personnel in the field. While inventory may fluctuate slightly from year to year (based on information such as ownership), it is unlikely that the inventory number would change to reflect the addition of 44 outfalls from the previous year which showed 131 were inspected. This process will be reviewed with maintenance personnel to make certain that the data is being collected correctly.

Develop Criteria for High Risk Areas

As it applies to ID-2, criteria has been established to help identify areas which may be prone to IDDE incidents. These include land use type, past history of IDDE incidents, hazardous material storage or use (SARA site locations from Keizer Fire Department database), and traffic levels. SARA site locations are noted in Figure 4.2.1

Fig. 4.2.1 SARA Sites

STATE FIRE MARSHAL REPORT 1 - LOCAL FACILITIES			
=====			
THIS REPORT LISTS ALL FACILITIES SURVEYED IN YOUR LOCAL AREA			
NO = NO HAZARDOUS SUBSTANCES PRESENT			
YES = HAZARDOUS SUBSTANCES PRESENT			
KEIZER FIRE DIST			
<u>Facility</u>	<u>Location Address</u>	<u>City</u>	<u>Facility ID No.</u>
PRECAST INC	1302 CANDLEWOOD DR N	KEIZER	073445
ITY	5390 N RIVER RD	SALEM	117969
ITY	3600 RIVER RD N	KEIZER	090558
ITY	6494 WINDSOR ISLAND RD	KEIZER	090559
	4080 RIVER RD N	KEIZER	103058
RPORATION	3862 RIVER RD N	KEIZER	081635
	2715 TEPPER LN NE	KEIZER	020628

Map High Risk Areas in GIS

This BMP is being implemented as designed. A GIS project was established and data is accessed to evaluate ongoing risk. Compiled data in the GIS project will need infrequent maintenance to remain current.

Private Facility Inspection and Inventory

As was reported last year, the City of Keizer sent a letter to commercial property owners that were selected for inventory during the first year of the inventory. Staff then conducted the inventory, covering 174 taxlots. The remaining commercial property, which was selected for inventory during the third year of the program, were sent notification letters during the spring of 2017.

- 174 tax lots were inventoried during the FY 16/17.
 - 9 private storm drainage facilities were identified that **did not** connect to our MS4 or UIC systems. This includes VSFs, UIC and surface infiltration facilities.
 - 5 private storm drainage systems were discovered that provided water quality treatment and **did** connect to our MS4 and/or UIC system.
 - 81 private storm drainage systems were discovered that provided **no** water quality treatment and **did** connect to our MS4 and/or UIC system.
 - The remaining lots did not have any type of storm drainage system.
- All of the drainage systems identified above were captured via GPS and integrated into our GIS.
- The majority of properties visited were multifamily. A notification letter was sent to 141 multi-family property owners in the spring of 2017.

Spill Prevention and Response

The Spill Prevention and Response program was developed in 2013/2014. Training has occurred for field staff in conjunction with IDDE training. See Table 4.1

Both Public Works and Keizer Fire staff are accustomed to responding to and cleaning up spills as well as reporting and documenting them. We received 57 spill-related incident reports from Keizer Fire, and 32 were logged from Keizer Public Works.

Automotive spills (due to leaks or accidents) are the most frequent reported spill. Sediment from construction track off, stockpiles and landscaping materials are the second-most frequent issue. The most time consuming issues usually relate to food service dumping of wastewater, and swimming pool draining.

Due to increased vigilance on the part of Keizer staff, most incidents were dealt with before any material moved from the original spill location. Keizer has begun using Code Enforcement staff to deal with repeat or uncooperative offenders relating to spills or dumping.

4.3 Appropriateness of the BMP / Effectiveness

ID-1 The revised IDDE Plan is up-to-date, but will need to be reviewed and refined based on new permit requirements. The original ordinance developed in 2009 has been a useful document.

Ongoing training for maintenance personnel is crucial for the success of this BMP.

ID-2 This task is complete and appropriate

ID-3 This task is ongoing and highly appropriate

ID-4 This task is appropriate and the City continues to learn more about the system each year.

4.4 Future Activities Planned for 2017/2018

The City anticipates the new General Phase II permit will provide guidance for future activities when it is issued.

Enforcement actions are listed in Appendix B

Section 5 – Construction Site Stormwater Runoff Control

5.1 BMPs

- CS-1 Conduct Erosion Control Training for Public Works Personnel
- CS-2 Develop and Maintain an inventory of Active Construction Sites that Require a Construction Site Pollution Prevention Plan (CSPPP)
- CS-3 Revise the CSPPP and Erosion Control Ordinance
- CS-4 Develop a Separate Hotline for Erosion Control Complaints from the Public

Table 5.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
CS-1	Conduct erosion control training for Public Works personnel	Annual training for maintenance personnel.	Y	9/28/17 – BMP video, discussed the erosion control permit process and how to handle in house projects via ROW permits.. Training provided for maintenance personnel
CS-2	Develop and maintain an inventory of active CSPPP sites		Y	Staff provided plan review, permit issuance, and inspection on 21 new private development projects, 147 ROW permits, and 5 City of Keizer projects
CS-3	Revise the CSPPP and erosion control ordinance		Y	The ordinance was adopted by City Council on 12/1/14. Forms were simplified and are available online.

CS-4	Develop a separate hotline for erosion control complaints		Partial	The City has an after-hours phone system which allows the caller to choose an option for streets/stormwater issues. A separate hotline has not been developed
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5.2 Additional Activities for Report Year 2016/2017

The City's lead inspectors provided the bulk of the training for Public Works personnel. In addition to the training held on 9/28/17, 6 Public Works employees attended the Erosion Control and Stormwater Management Summit hosted by the MWOG group in January 2017.

Environmental staff added the tracking of right of way permits in 2015/2016 which were modified to include erosion control requirements. This new requirement has been very useful in helping to tighten protection efforts.

Lead inspectors have also partnered with Marion County for internal training activities. A training was held for Marion County facilities staff on 3/21/17. Keizer staff participated in instruction activities.

Record-Keeping and Plan Management

All new and existing CSPPPs are spatially managed through an ArcMap shapefile which shows the location and status of each permit. All CSPPPs are also managed through an excel spreadsheet and kept up to date with inspection information and status updates.

The City has provided DEQ full documentation of all components of the erosion control program and is seeking inclusion in the 1200-CN permit. Forms have been modified and submitted to DEQ for 1200-CN inclusion. The City is still waiting for DEQ on this long overdue item.

Erosion Control Ordinance Revisions

Environmental staff have made revisions to the Erosion Control Ordinance. Those revisions were approved by City Council on December 1, 2014. All City of Keizer projects that disturb over 2000 sq ft are required to have an internal CSPPP developed and implemented. In addition, projects that disturb over 200 sq ft that are adjacent to a waterway must have a CSPPP.

5.3 Appropriateness of the BMP / Effectiveness

CS-1 Annual training for Public Works employees is appropriate.

CS-2 Maintaining an inventory of active CSPPP sites is appropriate and useful.

CS-3 Revision of the erosion control ordinance and associated CSPPP was appropriate and will result in protecting water quality.

CS-4 As was reported last year, the City currently uses a telephone system that allows the public to reach Public Works personnel 24 hours a day. The hotline referenced in BMP CS-4 has not yet been developed. Because of lean staffing resources it is difficult to determine if a hotline would actually make a difference in the response time for City staff. As was noted in last year's report, it may be premature for the City to have a separate hotline at this time. The Spill Response Plan and associated manual has a matrix for staff to utilize in the event of a non-routine event. Furthermore, staff is working with support agencies to make certain that Public Works personnel are contacted in the event of an emergency.

5.4 Future Activities Planned for 2017/2018

CS-1 Annual training is expected to continue for Public Works personnel.

CS-2 No changes are anticipated for this BMP

CS-3 No changes are anticipated for this BMP

CS-4 No changes are anticipated for this BMP

Section 6 – *Post-Construction Stormwater Runoff*

6.1 BMPs

DS-1 Revise Design Standards and Development Code

DS-2 Implement the Revised Water Quality Standards for New and Re-development
Conduct Plan Reviews, Inspections, and Enforcement

DS-3 Conduct Annual Training for Program Components for Public Works Personnel

Table 6.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
DS-1	Develop standards to control runoff from new and re-development		Y	11 meetings held w/ staff, 4 meetings w/ City Engineer and Public Works Director, 1 meeting with Community Development
DS-2	Implement the Revised Water Quality Standards for New and Re-development		Partial	The City is actively requiring portions of the updated information in the new Water Quality Manual
	Conduct plan reviews, inspections, and enforcement for new development		Y	Plan review is ongoing and inspections are ongoing
DS-3	Conduct annual training for program components for Public Works Personnel		Y	3/18/17 Inlet protection training and phytotech introduction to maintenance personnel. 11 people present

6.2 Additional Activities for Report Year 2016/2017

The City has been moving forward with the requirement for Water Quality Treatment standards that was established through code as a reference to outside guidance documents. To move revision of Design Standards and Development Code forward, Environmental staff initiated a program that is working to develop a formal post construction program. This includes developing interim standards as well as identification of goals and standards to work toward preserving vegetation, reducing impervious surface and reducing runoff to surface water. This process

began in March 2016 will continue through 2017. We expect the project to be complete in the first few months of 2018.

While the City currently implements plan review and inspections for water quality facilities being constructed, there is no formally approved document that spells out a process, recordkeeping, or responsibilities.

Training will be an important element of the new Water Quality Manual. Staff have had more opportunities to learn about water quality treatment, infiltration, and properly maintaining facilities over the past several years.

6.3 Appropriateness of the BMP / Effectiveness

DS-1 The BMP as written is appropriate and effective

DS-2 The BMP as written is appropriate and effective

DS-3 The BMP as written is appropriate and effective

6.4 Future Activities Planned for 2017/2018

Staff will continue to move forward with development of revised Design Standards and the requirements specified in the new Phase II permit.

Section 7 – *Pollution Prevention in Municipal Operations (Good Housekeeping)*

7.1 BMPs

OM-1 Utilize Public Works Personnel to Review Existing O & M Manual (a.k.a Good Housekeeping Manual)

OM-2 Inspect 10% of the MS4 Annually (Contracted Activity)

OM-3 Conduct Employee Training

OM-4 Implement the Catchbasin Inspection Program

OM-5 Conduct Street Sweeping

Table 7.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
OM-1	Utilize Public Works personnel to review existing O & M Manual	Revise the manual that was developed in 2011	Y	Complete. The manual was revised in 2014. The manual will again be updated when we have a new permit
OM-2	Video Inspection of Stormwater System	Contracted inspection with a goal of 10% of the system annually	Y	12.3% of the MS4 was inspected and cleaned. Cleaned footage was 42,893 ft
OM-3	Conduct employee training		Y	18 staff members present for training on 11/30/16
OM-4	Catch basin inspection program	Inspect structures, clean and develop a repair list	Y	2250 catchbasins inspected and 213 were cleaned. 298 manholes inspected and 16 cleaned. 17 catchbasin repairs 35.5 cu yds of material removed from cleaning
OM-5	Street Sweeping	This is a contracted activity	Y	1284 cubic yards of material was removed in 2015/2016

7.2 Additional Activities for Report Year 2016/2017

OM-1 The Good Housekeeping Manual was updated in Spring 2014 and now contains pertinent UIC information. The manual includes a regulatory overview, inspection and maintenance

protocol, structure design and function, record keeping and adaptive management, as well as a section on roles and responsibilities.

Maintenance personnel are providing routine 'Shop' inspections and are properly maintaining records of the inspections.

OM-2 The City reached the goal for MS4 TV inspection in 2016/2017 (See Table 7.2). 42,893 feet, which represents 12.3% of the system was inspected and cleaned.

Table 7.2 – Video Inspection Statistics

TOTAL 2016/17 TV SUMMARY		
Total Spent	\$119,229.35	106.0%
Total TV/Cleaned Footage	42,893	12.3% MS4
Average Cost/Foot	\$2.78	Range \$2.13-\$3.65
Breakdown by Cost Type:	Total Cost	Ave Cost/Ft
Base Clean/TV	\$92,449.62	\$2.16
Hydrojet Heavy Clean	\$8,312.50	\$0.19
TV Standby	\$7,315.00	\$0.17
Dump Fees	\$5,282.75	\$0.12
Traffic Control	\$5,869.48	\$0.14

System Repairs

System repairs from previous years TV inspections = 11

Number of repairs completed from TV inspection in 2016/2017 = 7

Number of repairs identified by TV inspection in 2016 /2017 = 18 (Contracted)

In house repairs:

Materials: \$5,190.68

Staff: \$7,056.64

Equipment: \$6,135.00

Total: \$18,382.32

Contracted repairs (CIP):

18 repairs on River Rd.

Total: \$173,395.00

Otter Way Outfall Repair

Total: \$81,788

7.3 Appropriateness of the BMP / Effectiveness

OM-1 The revision of the Good Housekeeping Manual was appropriate. Consistent training will hopefully result in increased usage by Public Works personnel.

OM-2 This BMP is appropriate and effective. Because contract costs for inspection and associated cleaning work vary based on pipe diameter, amount of cleaning required, dump fees, and traffic control it is difficult to estimate the amount of contractual dollars needed each year to reach the 10% goal.

OM-3 Employee training is effective and appropriate.

OM-4 This BMP is effective and appropriate.

OM-5 This BMP is effective and appropriate.

Street Sweeping Quarterly Removal Totals – Annual Comparisons

	2014/2015	2015/2016	2016/2017
July-Sept	236	187	182
Oct-Dec	962	678	670
Jan-Mar	220	222	199
April-June	226	197	177
Total	1644	1284	1228

7.4 Future Activities Planned for 2017/2018

Continue existing BMPs and implement new conditions of the Phase II permit

Roof Sludge Testing

Environmental staff took samples of the sludges that collect in the rock galleries when precipitation events convey water through these features. The water ultimately enters the MS4. The results of that sampling is provided in Appendix C.

Section 8 – *Record-Keeping and Reporting*

8.1 BMPs

RR-1 Develop an Electronic Stormwater Database (ArcGIS) to Specifically Identify Assets in Order to Track Stormwater Program Elements Including Repair and Maintenance Activity

RR-2 Maintain Spatial Information for Private Stormwater Infrastructure. Add Spatial Information for SWMP Program Elements

Table 8.1 – BMP Overview

BMP	Activity	Action	Measureable Goal Met Y/N	Results
RR-1	Develop an electronic stormwater database (ArcGIS)		Y	This BMP is complete
RR-2	Maintain spatial information for private stormwater infrastructure.		Y	All known private connections and structures are now catalogued using a specific code. The program will continue in 2017/2018

8.2 Additional Activities for Report Year 2016/2017

RR-1 – Based on a plan that was developed spring of 2016, Environmental staff performed a migration of GIS data into an updated storage type, based on industry standards for managing utility data. This migration opened the data up to ‘cloud’ storage and expanded accessibility across the agency. Stormwater infrastructure, along with key attribute information is now being stored online with all Public Works staff having 24-hour access to the data. In addition to more access, the new format also allows any edits to the data to be live and instantaneously available to all viewers. Environmental staff will continue to dial in this transition over the next year.

The list below captures only a portion of the numerous data management and record-keeping activities undertaken by Environmental staff:

- Outfall inspection results updated
- Catchbasin and manhole inspections recorded in the database
- Grid maps updated on a quarterly basis
- Erosion control permits and status displayed in ArcMap
- Public and private water well data updated in GIS
- Marion County updates included in the system
- City of Salem updates included in the system

- Archived document file added to the Stormwater Drive and index developed
- Infrastructure corrections updated in the GIS system
- Repair work inventoried and prioritized to include backlog work
- Private inspection project has been added to GIS
- Assets have been reviewed to determine ownership (public or private) and maintenance responsibilities (public or private)

8.3 Appropriateness of the BMP / Effectiveness

RR-1 This BMP is appropriate and effective.

RR-2 This BMP is appropriate and effective.

8.4 Future Activities Planned for 2017/2018

The Environmental and Stormwater Divisions anticipate continuing the private facility inventory and inspection program as described in subsection 4.2. This activity will require adding and correcting information in the GIS system.

Section 9 – *Annexed Area / Expansion of the MS4*

9.1 Overview

No annexation occurred in 2016/2017.

No major annexations are expected in the upcoming report year, but the City is expecting a large expansion in the next 5 to 10 years.

There were no expansions of the MS4 in 2016/2017.

Section 10 – Progress Toward Schedule B2(a)

10.1 Summary

Schedule B2(a) of the NPDES permit states that the permittee must submit an annual report to the Department [DEQ] that will include “*the status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP, and the measurable goals for each of the minimum control measures*” The sections of this report that pertain directly to established BMPs provide status of compliance and assessment of appropriateness. This section of the report addresses the City of Keizer’s goal of reducing discharges to the MEP.

As was discussed in Section 6, the City has been requiring post-construction LID practices in new and re-development through the redesign of a City Water Quality Manual. Although the project is nearing completion, these standards have not been formally adopted at this time. However, the use of vegetated stormwater facilities or UICs are the standard for subdivisions and commercial development within Keizer at this time.

The City’s public education program has grown to cover new elements and partnerships. As is discussed in Section 2, Environmental Division staff have taken on new activities during the 2016/2017 report year. The Water School described in Section 2 is a program that was reinvented after several years of non-implementation by other agencies. MWOOG is planning for the third event to be held in 2018. The successes and continued growth of MWOOG, and the new relationship with Chemeketa Community College has been very useful for all of the agencies involved.

Although communication has improved between Stormwater and Environmental staff, there continues to be a significant gap in the understanding of the need to change practices and activities that are required in regulatory programs. Furthermore, although some progress has been made in seeing the permit as a City responsibility, it is still viewed as primarily a Public Works responsibility. More emphasis should be placed on the importance of this program within the City as a whole.

Environmental staff have taken the lead on refining and adding new programs that will streamline field data collecting activities, record-keeping, and data retrieval activities. The effort to address efficiency and enhance record-keeping activities will serve the City well as we prepare to transition to a new General Permit. An emphasis on accurate recordkeeping needs to become a strong message in the Department.

Section 11 – TMDL Implementation Plan

11.1 Summary

The Environmental and Technical Division Program Manager for the City of Keizer has been closely involved with review of the pending draft Phase II permit. Because the Phase II issuance date is still very uncertain, Keizer will be submitting a revised proposed TMDL Implementation Plan to DEQ In January 2018.

As has been the case with previous reports, this section highlights or targets activities that are in addition to those that are reported at part of MS4 Phase II permit requirements covered by this report.

11.2 Specific Activities

Outreach Efforts

Many of the outreach efforts and projects are described in Section 2 of this document. Environmental staff have made good progress in developing the overall outreach program over the past year.

MWOG

The Mid-Willamette Outreach Group (MWOG) has continued to meet and host programs with consistent messages for the general public. In addition to the annual Erosion Control and Stormwater Management Summit, the group has branched out to partner with Chemeketa Community College for a Green Infrastructure Maintenance Training. This training has been in the developing stages since May 2017 and will be unveiled to the public and local government agencies in March 2018. The purpose of the training is to teach local landscapers how to maintain Green Infrastructure so that it functions as designed.

Water School

Members of MWOG joined together this year to host the second annual Water School at the Keizer Civic Center. 119+ students from Keizer Elementary school enjoyed a day of activities focused around clean water. Students rotated through stations including soil infiltration, wastewater bingo, the salmon relay, beavers in the creek, water quality testing, a vector truck demonstration, and a presentation from the Turtle Ridge Wildlife Sanctuary. MWOG has begun the process of planning for an event in 2018. Feedback from the teachers and students has been very positive.

Heber Property

The City of Keizer is in the process of obtaining a large parcel of land adjacent to Claggett Creek that was previously used for cattle grazing. The lowest portion of the property is wetland or has wetland elements and is suitable for a significant restoration project. The City will be moving

forward with planning for this project in the upcoming months. The parcel is approximately 2500 ft long and 250 ft wide.

School Activities

As is noted in Section 2, Environmental staff has had significant interaction with students over the past report year. Those activities are expected to continue.

The City has again partnered with Chemeketa Community College for the use of a Cooperative Work Experience student. This individual will be assisting the local Rotary and the City with an arboretum project at Keizer Rapids Park. The project will result in planting approximately 80 trees at the park.

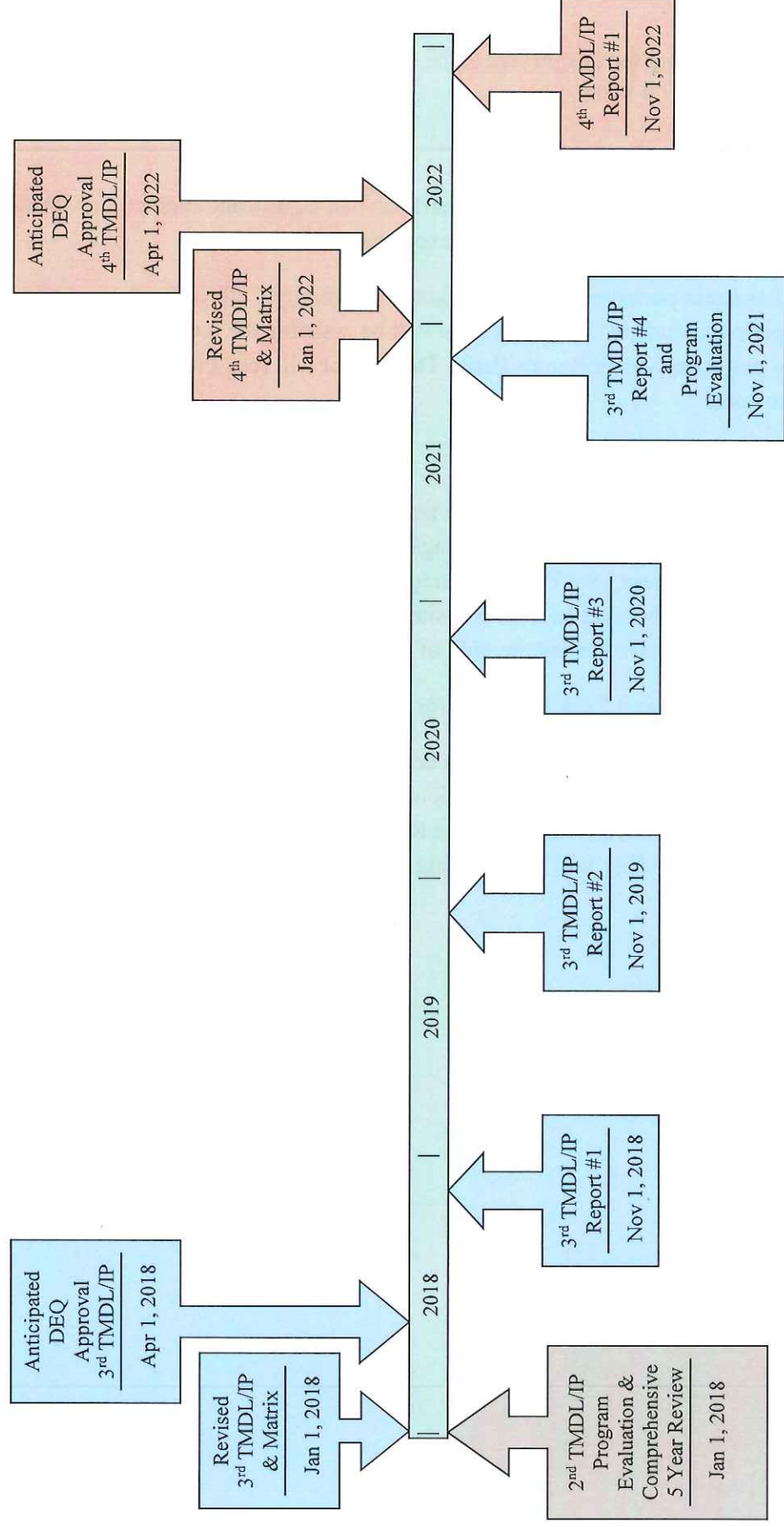
Claggett Creek Watershed Council

Staff has had a difficult time inspiring the watershed council to become more active in the past year. While Keizer staff attends all meetings, the council is now only holding 2 routine public activities during the year. Staff has encouraged the group to become more involved in a story map project that can be used on their website which highlights the Claggett Creek Watershed. Environmental staff have carried the bulk of the weight on this project.

2017/2018 Forecast and Path Forward for the Next 5 Year Term

The TMDL Matrix follows this section as does a proposed timeline for completing the evaluation and comprehensive materials for the previous years. As is noted in the subsequent flow chart, the TMDL Evaluation and Comprehensive Review will be submitted to DEQ on or before January 1, 2018. The City will be providing a proposed 3rd TMDL Implementation Plan at that time as well.

Keizer TMDL Report & Evaluation Schedule



TMDL Implementation Plan Matrix – Report Year 2016/2017

Pollutant: Bacteria									(Six Minimum Control Measures Listed at the End of Each Table)
BMP	Source	Strategy	How	Fiscal Analysis	Measure	Timeline	Milestone	Status	
Shaded BMPs are included in the SWMP	What source of this pollutant is being addressed?	What is being done, or what will be done to reduce or control pollution from the source?	Specifically, how will this be done?		How will successful implementation or completion of this strategy be measured?	When will the strategy be completed?	What intermediate goals will be achieved and by when to know what progress is being made?	For the purpose of the draft Second Matrix, the 'Status' column provides clarification for each BMP. Once approved by DEQ, the Status column will be used for yearly progress details	
PE	1. Bacteria carried to waterways in storm runoff and piped system	a. Prevent domestic animal waste from reaching waterway	i. Stormwater booth at Public Works Week open house or Public Service Fair	Shared funding with MWOG agencies. Promotional items	Utilize CCC to document willingness to adopt new behavior	Annually	Track pledges and event participants	The annual Public Works Fair was not held in 2016/2017, but a similar event was held in October 2017. The Public Works Department held an event that was similar to an open house done in the past. The 2017 event was very successful. A "critters in the creek" booth was set-up, a fishing game which highlighted good vs bad water quality, and 83 pet was containers were given out. Staff assisted the watershed council with a video of Claggett Creek.	
PE			ii. Expand 'doggie' bag program in local parks and high pedestrian areas	Unknown. The first project will be fully funded by the Eagle Scout	Installation of new stations and monitor bags	Annually	Working with scout troops to design new bag stations	No progress occurred on this BMP in 2016/2017. Existing Doggie Pot stations are refilled and serviced by Parks staff.	
PE			iii. Promote Capital Canine Club for Clean Streams (CCC)	Staff time. Shared funding for promotional items	Track pledges and continue to expand program. Number of attendees.	Annually	Participate in 1 regional event per year (such as Howl-a-Palooza)	Capital Canine Club is promoted on the City of Salem website and a link for the site is located on the City of Keizer website. 120 pet waste containers were donated to Marion County Animal Services to be placed in new adoption kits.	
PE			iv. Develop pet waste study for Keizer to use for outreach	Staff time	Track annual progress and information gathered	2016	Planning efforts to commence in 2013	No progress has occurred on this BMP in 2016/2017	
PE			v. Continue guided hikes by Stormwater staff to highlight environmental issues of concern along waterways.	Funded	Track number of participants, school groups, and events	Annually	Work with local teachers and partner with other agencies for participation.	112 students participated in a guided hike activity in Fall 2016. The students were from Keizer Elementary. 58 students from Forest Ridge Elementary toured Keizer Rapids Park on June 7, 2017.	
PE			vi. Utilize City of Salem branding logo for outreach efforts	Funded	Track materials and events	Annually	Use on outreach material	The City did not produce a great deal of handout material in 2016/2017. The logo was used on the City's general stormwater brochure and it is on the City's website. It is also used on any advertising for MWOG events by Marion County and the City of Salem (e.g. the Erosion Control Summit, and the Green Infrastructure Maintenance Training)	
PE-4			vii. Add stormwater-related information to the City's Website	Funded	Track information added or updated	Annually	Review annual updates	Annual reports for 2015/2016 for the NPDES Phase II permit, the WPCF Permit, and the TMDL yearly report were added to the website. Information was also added related to opportunities to participate in Public Education activities. The special events ticker is being used to distribute stormwater and environmental information	
PE		b. Public outreach covering bacteria issues and concerns	viii. Develop traveling display to be used in public settings	Staff time	Track locations and presentation material	Ongoing	Develop display material based on event and location	The display board was used not utilized in 2016/2017	
PI-2			i. Storm drain markers	Funded	Number of markers installed	Annually	100 markers installed annually	A total of 90 storm drain markers were installed by community groups in 2016/2017	
PI			ii. Public Review of TMDL Implementation Plan	Staff time	Document events	Annually		The Stormwater Advisory Committee reviewed all stormwater regulated programs via email this past year. The last meeting was held on 2/15/17	
ID-4		b. Prevent human waste (from cross-connections), oil, grease, paint, and	i. Inspect private facilities to determine condition	Funded	Track annual activities such as notification, inventory, and	2016	Staff will provide notification and program overview to the public in 2014	The private inspection work was continued in 2016/2017. 174 toilets were inventoried	

	other pollutants from entering the storm system		Staff time	inspection			
ID-1		ii. Revise illicit discharges detection and elimination plan	Staff time	Track annual activity	2014/2015	Utilize maintenance personnel to assist with rewrite	The Illicit Discharge Detection and Elimination Plan was updated in 2013/2014. Environmental staff took input on from maintenance personnel on the new document.
ID		iii. Internal training for implementation of the new plan	Staff time	Track training	2014/2015	Utilize maintenance personnel to take a lead role in training Vs 2 - Environmental staff will lead training	This task was taken on by Environmental staff for 2015/2016. This was an effective change in the program. Staff are now receiving regular training in the following areas: Stormwater Operations and Maintenance, Technology and green infrastructure / LID. Emerging Technologies IDDE Spill Prevention and Response Erosion Prevention and Sediment Control UIC Operation and Maintenance Good Housekeeping in Operations and Maintenance and Facilities
ID		iv. Implement the new plan	Staff time	Enforcement actions	Ongoing	Document progress in annual report	An Enforcement Response Plan is in place for the erosion control program
		v. Annual TV inspection of the MS4	Funded	Track annual footage and identify illegal connections and repairs	Annually	10% of MS4 system per year	12.3% Was inspected in 2016/2017. Total footage was 42,893 ft
ERP-1		vi. Develop Enforcement Response Plan	Staff time	Track implementation statistics	Annually	Draft document in 2014	An enforcement response plan has been developed for the erosion control program. The specifications for this BMP may be changed according to the requirements of the new Phase II General Permit

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)

City of Keizer
TMDL Implementation Plan Matrix
Proposed Revised Matrix

Pollutant: Mercury

(Six Minimum Control Measures Listed at the End of Each Table)

BMP	Source	Strategy	How	Fiscal Analysis	Measure	Timeline	Milestone	Status
Shaded BMPs are included in the SWMP	What source of this pollutant is being addressed?	What is being done, or what will be done to reduce or control pollution from the source?	Specifically, how will this be done?		How will successful implementation or completion of this strategy be measured?	When will the strategy be completed?	When intermediate goals will be achieved and by when to know what progress is being made?	
PE-4			i. Add stormwater-related information to the City's Website	Funded	Track information added or updated	Annually	Review annual updates	Annual reports for 2015/2016 for the NPDES Phase II permit, the WPCF Permit, and the TMDL yearly report were added to the website. Information was also added related to opportunities to participate in Public Education activities. The special events ticker is being used to distribute stormwater and environmental information
PE			ii. Utilize City of Salem branding logo for outreach efforts • Clear Choices • Clean Streams	Funded	Track materials and events	Annually	Use on outreach material in 2013/2014	The City did not produce a great deal of handout material in 2016/2017. The logo was used on the City's general stormwater brochure and it is on the City's website. It is also used on any advertising for MWOG events by Marion County and the City of Salem (e.g. the Erosion Control Summit, and the Green Infrastructure Maintenance Training)
PE			iii. Erosion Control Summit	Funded	Track attendees and information presented	Annually	Program developed for January 24, 2017	The Erosion Control Summit and Stormwater Management Summit was held 1/26/16.
PE-3			iv. Utilize the annual Consumer Confidence Report (CCR) to provide citywide outreach	Funded	Track content	Annually	Mailings scheduled for April/May on an annual basis.	The CCR was mailed out in May 2017.
PI-2		a. Public involvement	i. Storm drain markers	Funded	Number of markers installed	Ongoing	Track annual activity starting in 2013	A total of 90 storm drain markers were installed by community groups in 2016/2017
CS-3		b. Keep soil on site. Prevent material from entering catchbasins and waterways	i. Revise the existing erosion control ordinance	Staff time	City Council adoption of amendments	2013/2014	Begin work with City Legal Counsel in 2013	Complete. The ordinance was adopted by Keizer City Council on Dec 1, 2014
CS			ii. Internal training for field staff	Staff time	Record of meeting and content	Ongoing	Training schedule to be developed by staff	A training schedule has been developed by Environmental Staff and covers the following categories: Stormwater Operations and Maintenance, Technology and green infrastructure / LID. IDDE Spill Prevention and Response Erosion Prevention and Sediment Control UTC Operation and Maintenance Good Housekeeping in Operations and Maintenance and Facilities
CS			iii. Plan review, inspections, and enforcement	Staff time	Track staff progress	Ongoing	Develop enforcement response for the program	An enforcement response plan has been developed for the erosion control program
CS-4			iv. Establish hotline to receive complaints from the public	Funded	Develop tracking system	2014	Develop procedure for checking calls and responding	The after-hours phone system is still being utilized. No progress on this BMP
DS-1			v. Revise Design Standards and Development Code	Staff time	City Council adoption of revised documents	2016	Staff anticipates utilizing SWAC for review of this activity	Environmental Staff is currently working on development of revised Stormwater Quality Manual. 11 meetings were held in 2016/17 on this subject and the project is expected to be completed by the first of the year.
DS-3			vi. Internal training for new development standards	Staff time	Completion of training	2016	Develop training schedule	11 employees present for LID maintenance training on 3/18/17

DS-2				Staff time.	Track staff progress	Ongoing	Plan review to be completed when revisions are complete	Plan review and inspections are conducted for sites with water quality features such as swales, or vegetated facilities
OM-1				Staff time		2015	Utilize maintenance personnel for this activity	The Good Housekeeping Manual was revised during permit year 2013/2014. Primary changes addressed UICs and groundwater. Language has been strengthened to require regular inspections and recordkeeping
OM				Staff time	Agenda and instruction content	Ongoing	Assist maintenance personnel with flushing plan	18 employees were involved in O & M training on 11/30/16
OM-4 REVISED				Funded		Ongoing	Annual inspect all catchbasins and clean those with 6" or more of debris.	2250 catchbasins inspected and 213 were cleaned. 298 manholes inspected and 16 denmed.
OM-5				Funded	Track progress	Ongoing	Sweeping on a monthly basis. This program is currently underway.	1228 cubic yards were removed in 2016/2017
ERP-1				Staff time	Track implementation statistics	Annually	Draft document in 2014	An enforcement response plan has been developed for the erosion control program. Staff will evaluate this BMP to determine if individual plans should be developed for individual programs.

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)

City of Keizer
TMDL Implementation Plan Matrix
Proposed Revised Matrix

Pollutant: Temperature

(Six Minimum Control Measures Listed at the End of Each Table)

BMP	Source	Strategy	How	Fiscal Analysis	Measure	Timeline	Milestone	Status
	What source of this pollutant is being addressed?	What is being done, or what will be done to reduce or control pollution from the source?	Specifically, how will this be done?		How will successful implementation or completion of this strategy be measured?	When will the strategy be completed?	What intermediate goals will be achieved and by when to know what progress is being made?	
PE-3	1. Solar radiation and sediment deposition that results in a change in stream profile.	a. Retain mature trees, native vegetation, and encourage tree planting and use of native species for bank stabilization	i. Utilize the annual Consumer Confidence Report (CCR) to provide citywide outreach	Funded	Track content	Annually	Mailings scheduled for April/May on an annual basis.	The CCR was mailed out in May 2017.
PE			ii. Design a stormwater brochure to be handed out at meetings and events	Funded	Track usage and events. Revise annually	Annually	Brochure completed by March of each year.	The City's brochure has not been updated
PE			iii. Develop new restoration projects in the upper reach of Claggett Creek to connect existing sites	Staff time, Materials and equipment	Annual progress	2015	Draft plan developed by 2013	Some work has been done on this BMP staff have met with the Claggett Creek Watershed Council to try and generate interest in developing a watershed restoration map with the hopes of seeing some connectivity in the future. There are some potential opportunities in the next couple of years for some new City owned riparian area along Claggett Creek
PE			iv. Develop a tree preservation ordinance.	Staff time	Document annual progress	2016	Draft plan by 2014	A draft tree preservation ordinance has been developed. Staff have been working to rejuvenate the tree issues with City Directors. There are at least 2 ordinances to be revised and staff will look to that in the future. At present, this has not been viewed favorably by the Department or elected officials
PE		b. Public outreach covering temperature issues and concerns	i. Guided hikes at Keizer Rapids Park.	Staff time	Track events and participation	Annually	At least 1 event in 2013	112 students participated in a guided hike activity in Fall 2016. The students were from Keizer Elementary. 58 students from Forest Ridge Elementary toured Keizer Rapids Park on June 7, 2017.
PE-4			iii. Interpretive signage in parks along waterways and in stormwater infiltration facilities	Staff time / design & construction funded	Number of signs installed and locations	2016	Storm staff will install 2 signs at Keizer Rapids Park in 2013	Interpretive signs have been completed and installed
PE-4			iv. Use website to provide stormwater education	Staff time	Track information and content	Ongoing		Annual reports for 2015/2016 for the NPDES Phase II permit, the WPCF Permit, and the TMDL yearly report were added to the website. Information was also added related to opportunities to participate in Public Education activities. The special events ticker is being used to distribute stormwater and environmental information
PE-5			v. Participate in Claggett Creek Watershed Council meetings and projects	Staff time	Meetings attended and partner projects	Ongoing	Continue to assist with recruitment of members	Staff have attended most meetings in 2016/2017. The group is currently fairly inactive and stay has struggled to keep the group engaged with new projects and activities.
PI-3			v. Utilize volunteer groups for restoration work and maintenance	Staff time	Track events and activities	Annually	At least 1 event per year	16 trees were planted in a mitigation site on Labish Ditch in 2016/2017. In addition, the City is working with the local Rotary club to develop an arboretum at Keizer Rapids Park. The planting is to include 79 trees

CS-3	b. Keep soil on site. Prevent material from entering waterways	i. Revise existing erosion control ordinance.	Staff time	City Council adoption of amendments	2013	Draft language completed by early 2013	Complete. The ordinance was adopted by Kaiser City Council on Dec 1, 2014
DS-1		ii. Revise Design Standards and Development Code to address Post-Construction requirements	Staff time. Public notice is funded	City Council adoption of revised documents	2016	Staff anticipates utilizing SWAC for review of this activity	Environmental Staff is currently working on development of revised Stormwater Quality Manual. 11 meetings were held in 2016/17 on this subject and the project is expected to be completed by the first of the year.
ERP-1		iii. Develop Enforcement Response Plan	Staff time	Track implementation statistics	Annually	Draft document in 2014	An enforcement response plan has been developed for the erosion control program. Staff will evaluate this BMP to determine if individual plans should be developed for individual programs when the new permit is issued

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)

APPENDIX A

Annual Training Schedule:

The City of Keizer will develop a training program for City staff for all minimum control measures, and associated BMPs listed in the SWMP. Training will be held according to the program and implemented annually. Bullets outline month, title of training, content, BMP relation, target audience, location of training content, and Minimum Control Measure.

Post Construction-

- **January-Emerging Technologies for Stormwater Treatment**-Design and operation of new stormwater manufactured treatment technologies. BMP Task: DS-3, Target audience: All Operations and Maintenance staff, Content: [BMP-DS-3](#). *MCM 5 – Post Construction.*
- **February-Stormwater LID Ops and Maintenance-Functions, Design, Installation and Maintenance.** Overview of the operation and maintenance of VSF/LID infrastructure. BMP: DS-3, Target audience: All Operations and Maintenance staff, Facilities, Parks staff, Content: [BMP-DS-3](#). *MCM 5 – Post Construction.*
- **March**-Review of previous trainings-roundtable for issues/ O & M crew feed back?

IDDE-

- **April-Illicit Discharge Detection and Elimination**-This training covers the components of the IDDE plan that was revised July of 2014-Training will be mixed media/videos and power point and walking through the manuals. BMP: ID-1, Target Audience: All Operations and Maintenance staff, Facilities, Parks staff , Content: [ID-1](#) *MCM 3 – Illicit Discharge and Detection Elimination.*

Good Housekeeping-

- **May-Spill Prevention and Response**-This training is an overview of the Spill response field manual and action required. Training will be mixed media/videos and powerpoint and walking through the manuals. Target Audience: All Operations and Maintenance staff, Facilities, Parks staff, BMP: SP-U-2. [SP-U-2](#) *MCM 6 – Erosion Control.*
- **June**- Review of previous trainings-roundtable for issues/ O & M crew feed back, Fill in 6 month training for new hire's if required.
- **July**- Review of previous trainings-roundtable for issues/o&m crew feed back?

- **August**-Review of previous trainings-roundtable for issues/o&m crew feed back?

Erosion Control-

- **September-Erosion Prevention and Sediment Control Training for PW Personnel.**
Cover our CSPPP, Permitting, Field component/installation etc. Training will be mixed media/videos and powerpoint and walking through the manuals. BMP CS-1, Target Audience: All Operations and Maintenance Staff, Parks. [CS-1](#) MCM 6 – *Erosion Control*.

IDDE-

- **October-Underground Injection Control Operations and Maintenance**-This training covers the Manual developed March 2014. Training will be mixed media/videos and powerpoint and walking through the manuals. Target Audience: Stormwater Ops and Maintenance Crews BMP: [OM-U-1](#). MCM 6 – Good Housekeeping

Good Housekeeping

- **November- Good Housekeeping for Operation and Maintenance**-This training is a an overview of the BMP manual for ops and maintenance crews. Powerpoint that hits the key points of the BMP manual that was updated Feb. 2014. BMP: GH-U-2, Specific work sessions for different work groups, i.e. facilities/parks/streets/storm etc. [GH-U-2](#) MCM 6 – *Erosion Control*.?
- **December**-Review of previous trainings-roundtable for issues/ O&M crew feed back. Fill in 6 month training for new hires if required.

CONTINUING EDUCATION

TRAINING FOR SUCCESS

5th ANNUAL

MID-WILLAMETTE EROSION CONTROL AND STORMWATER MANAGEMENT SUMMIT

DEVELOPERS
BUILDERS
CONTRACTORS
ENGINEERS
PLANNERS
MUNICIPAL STAFF & CREWS

PARTICIPANT

CITY OF *Salem*
AT YOUR SERVICE



CLEAR CHOICES

CERTIFICATE OF COMPLETION

The Mid-Willamette Outreach Group hereby confirms
participant

completed _____ hours
of attendance and participation at the training
event held

JANUARY 24, 2017

Special Presentations by:

Matt Graves, Port of Vancouver
Alan Fleming, Kennedy/Jenks Consultants
Tony Gilbertson, Clean Water Services
Katie Holzer, City of Gresham
Ron McPherson, Envirolock West
Ted Hart & Dominic Maze, Sustainable
Stormwater Solutions
Nathan Hardebeck, Clean Water Technologies

M-WOG Staff

Elizabeth Sagmiller
Elizabeth Sagmiller
Environmental & Technical Division Manager
City of Keizer

Keizer Civic Center
930 Chemawa Rd. NE
Keizer, OR 97303

*HBA credits (CES) are issued per requirement as outlined by the Oregon Construction Contractors Board under OAR Division 21 812-021-0000.
Landscape credits (CEH) are issued per requirement as outlined by the Landscape Contractors Board under OAR Division 40 808-040.
Engineer credits (PDH) are issued per requirement as outlined by OSBEELS under OAR Division 820-010-0635.*

Stormwater News

BROUGHT TO YOU BY THE CITY OF KEIZER ENVIRONMENTAL AND TECHNICAL PROGRAM

Volume 1, Issue 2

June 1st, 2017

Art on the Street-Storm Drain Art Contest



Art on catch basins draws attention to the fact that the pollution entering these flows directly to the nearest creek or river.

"The purpose of art is washing the dust of daily life off our souls" Pablo Picasso

If the famous Spanish artist were around today we have no doubt that he would be as excited about the storm drain art contest as we are.

A surprising number of Kelzer residents surveyed a few years ago believed that

the stormwater goes to a treatment plant after it enters the catch basin.

The art contest seeks to educate the public on what really happens when stormwater enters a catch basin. It does not get treated and it flows directly to one of our creeks, the Willamette River or is infiltrated into the ground along with all the pollutants it carries.

The contest has three themes to inspire the work:

1. **"The River Starts Here"**- encouraging positive messaging for behaviors that prevent pollution.
2. **Ecosystem Appreciation** Focus on streams, the Willamette River, wetlands, local wildlife and local

habitats and our regions natural beauty.

3. **Oregon Values**-focus on what Oregon residents appreciate, the natural beauty, outdoor recreation opportunities and clean air and water.

Please spread the word about this fantastic opportunity to add color and interest to our sidewalks, and educate the public about the importance of protecting storm drains from pollution runoff.

You can find more information at:

www.cityofkelzer.org

Did you know:

- THE ARTS AND CULTURE SECTOR IN THE US IS A \$730 BILLION DOLLAR INDUSTRY. THIS REPRESENTS 4.2% OF THE GROSS DOMESTIC PRODUCT.
- IN A NATIONWIDE SURVEY BY AMERICANS FOR THE ARTS IT WAS SHOWN THAT STUDENTS ENGAGED IN ART HAVE HIGHER GPAS, AND STANDARDIZED TEST SCORES AND LOWER DROP OUT RATES.
- 73% IN A NATIONWIDE SURVEY SAID ARTS ARE A "POSITIVE EXPERIENCE IN A TROUBLED WORLD".

How Well Do You Know City Staff?

An Interview with:

Robert Johnson-Parks Division Manager

How long have you worked for the City?
9 1/2 years

What do you like best about your job?
The variety that it offers

AC/DC, Frank Sinatra or Johnny Cash?
It's a toss up between AC/DC and Johnny Cash

If you could max out a credit card at any store and didn't have to pay it off what would you buy?

I'd go shopping at Willie's. (The boat manufacturer) I'd purchase a new 18'x60" drift boat fully loaded with an on board pizza oven. Cuz I like food.

What is the farthest point away from Kelzer Oregon you have been in your life?:
Fiji

What is your favorite outdoor activity?
Fishing, followed shortly by hunting

What is your passion?
The Outdoors.



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Stormwater News



Oregon will be a crowded place come August. It's estimated that over a million people will visit here to witness this event.

Trees are one of the best ways to reduce the temperature effect of hot asphalt and summer temperatures in the city.



Consider planting a tree if your yard has room. Or join an organization like Friends of Trees to participate in restoration projects.

Did you know: that water temperatures greater than 50 degrees can kill salmon eggs in a stream



The toxic effects of lead in the environment have been known for over 2000 years.

Surviving the Solar Eclipse Apocalypse

This series of solar eclipses are known as Solar Saros 145, with a cycle that repeats every 18 years. This series of rotations will produce another eclipse in our latitude in the year 2612 that will last 4 minutes and 45 seconds. Making this a truly once in a lifetime event here in Oregon.

Make sure you get some solar eclipse glasses, because looking at the event without eye protection can cause

solar retinopathy, where eye sight can be seriously damaged.

Probably best to avoid Madras on the weekend of August 19th-21st. It's estimated that between 30,000-60,000 people are going to descend on the town with a population of around 6,500.

City officials predict traffic jams leading into and out of town could offer wait times of more than 12 hours before and after the event.

If you have family coming into town, consider the Keizer rapids park campsites, sponsored by the Keizer parks foundation, camping is available at the park through the weekend. Find more info here:

www.keizereclipse.com

Did you know: Bonnie Tylers 1983 hit "Total Eclipse of the Heart" Sold 6 million copies and got her nominated for a grammy.

Temperature-The Unseen Killer

Thermal pollution is the degradation of water quality by any process that changes the ambient water temperature.

The city has a state mandated **TMDL Implementation Plan** that requires we take steps to reduce the thermal pollution entering our streams and the river. This deadly threat to our water bodies

often goes unnoticed. As we are all enjoying the oncoming of summer, and warmer weather after such a long, cold and wet winter. Fish and other aquatic organisms that rely on cool water can have a tough time.

Rainfall on a hot asphalt parking lot devoid of shade trees can dump hot water into the creek. As people

clear the vegetation along the riparian corridor the lack of shade can spike summer temperatures in Claggett and Labish Creeks.

Planting trees is one of the most effective steps you can take to help the reduce the heat effect from the urban environment. To read more about the **TMDL** plan visit here:

www.keizer.org/Document-Library

Hotspot on Pollution: Lead

The Roman Scholar and Architect Vitruvius wrote this in the year 50 B.C.: "Water conducted through earthen pipes is more wholesome than that through lead; indeed that conveyed in lead must be injurious".

Lead is the most abundant of the heavy metals in the Earth's Crust. Having been used by humans since prehistoric times, the use of lead as jewelry

dates back over 7000 years ago.

Once common in municipal water systems, Lead Solder was banned in drinking water systems in 1986. Old buildings with outdated plumbing can still be a source of lead in drinking water.

The primary source of lead in stormwater runoff is still gasoline, even though leaded

gasoline was phased out in the 1990's, unleaded gasoline still contains about 15 mg/L of lead.

Children are most susceptible to lead exposure because the brain and central nervous systems are developing.

Lead exposure in its worst forms can lead to coma, seizures and death.

Around the region: Phytomining— How it went wrong in Oregon

Phytomining is a process in which plants are used to extract metal ores from soil. Planting specially adapted species on mine tailings or known deposits of metal ore, the plants uptake the precious metals. The plants are then burned in an oxygen controlled environment and the metal ore extracted via electrolysis. Plants have been successfully used to mine gold, copper, aluminum and nickel with this technique.

This plant based technology was used to extract nickel in Southern Oregon's Illinois Valley region. The project went horribly wrong when the company conducting mining disregarded the university researchers who were consulting on the project and let the Yellow Tuft *Allysum* plants escape into the environment.

These plants are now proving to be very invasive and are spreading rapidly throughout the Kalmiopsis Wilderness

area. The Kalmiopsis is a geologically unique area, as the underlying soils are considered ultra-mafic or Serpentine, containing large amounts of Nickel, Chromium and Magnesium. This area is home to many rare and unusual endemic plants.

The escaped Yellow tuft *Allysum* which is native to Turkey is invading botanical areas and can quickly out-compete many of the rare native plants.



Yellow Tuft *Allysum* an escaped invader now threatens botanical areas in Southern Oregon's Kalmiopsis Wilderness. Both *Allysum murale* and *Allysum corsicum* have invaded the biodiverse region.

Infrastructure Highlights-The River Road Storm Repairs Story by Lyle Bell

As you may have noticed there were some very bright lights on River Road during the night time hours throughout the month of May.

Emery and Sons won the contract with a bid of \$160,000. The work included 18 repairs to the storm drainage system along River Road. One of the repairs was to a 24" ADS pipe that was

choked completely up with tree roots.

Some of the older infrastructure in the area was 18" concrete pipe that was failing with cracks and breaks compromising its integrity.

These broken pieces as well as offset joints can lead to localized flooding along stretches when the flow is not

maintained through the storm pipe. In other news the Stormwater department continues to stay busy with in-house repairs, mostly offset joints, cleaning storm laterals, street issues and responding to IDDE complaints.

Keep up the great work guys!



Emery and Sons Construction making night time repairs to the storm system along River Rd.

Education News:

Lot's of goings on in the education world here at the City of Kelzer.

The **Kelzer Water Festival** was a great success! We had 128 4th graders out from Kelzer Elementary to learn about the water cycle, water conservation, salmon life cycle, stormwater pollution prevention and riparian habitats.

Wednesday June 7th, the kids from **Forest Ridge Elementary**

school are coming for an educational field trip to Kelzer rapids park, they will learn about the role of the forest ecosystem in providing clean water and air. A member of the Salem Audubon society will teach about the bird species that use the park.

July 13th, **BLAST Camp** (Bringing Law Enforcement and Students Together) a free day camp for kids entering 3rd-6th grade. Rep-

resentatives from many public agencies provide activities related to health, safety, and responsibility. Public Works will be pitching in to help provide some environmental education.

August 2nd, **Claggett Creek Day Camp** will feature fun activities and events for kids from 3rd grade to 6th. Refreshments, educational activities and demonstrations by Kelzer PW at Claggett Creek Park.



4th Graders from Kelzer Elementary learn about the role of Beavers in maintaining a healthy riparian ecosystem. Beavers are active in the Claggett and Labish systems and provide enormous ecosystem benefits.



Pride, Spirit and Volunteerism

CITY OF KEIZER

City of Kelzer
930 Chemawa Rd. NE
Kelzer, OR 97303

503-856-3444
akimoffm@kelzer.org

**We are on the web
at:
www.keizer.org**

The Environmental & Technical Division is responsible for implementing the City's regulatory programs and meeting compliance strategies of stormwater permits. These programs are primarily focused on protecting water quality in local waterways and groundwater. Protection of these resources are required through the federal Clean Water Act and Safe Drinking Water Act.

The City's 3 mandated programs are as follows:

1. **The National Pollutant Discharge Elimination System (NPDES) Phase II permit.** This permit allows the City to discharge stormwater to local waterways through implementation and compliance with a Stormwater Management Plan.

2. **The Wastewater Pollution Control Facilities (WPCF) permit.** This permit allows the City to manage stormwater by injection into the ground through implementation and compliance with a Underground Injection Control Management Plan.

3. **The Total Maximum Daily Load (TMDL) Implementation Plan.** This plan manages the discharge of stormwater that flows overland directly to waterways.

Putting the Civic Center Roof to the Test By Kat Lafever

- The trace metals **Chromium** and **Lead** were HIGH compared to UIC sediment sampling (2600 times and 1600 times respectively)
- Zinc levels in the sediment liquid were 12 times higher than would be permitted in stormwater by DEQ for UIC stormwater injection
- Diesel, gasoline and lube oil all were detected in the roof runoff sediments
- Benzopyrene and Mercury levels were Non-Detects. Both these are pollutants of concern and regulated by the DEQ

Walking around the Keizer Civic Center, an eagle-eyed stormwater sleuth might notice decorative water features along the walls; features that only flow when it rains. These 'rain fountains' are an artistic way to direct rainwater from the roof to the planted stormwater treatment areas around the building. These planted treatment areas are one of the features that allow our Civic Center to be LEED Certified (a certification awarded for environmentally protective design).

When Environmental & Technical Division staff learned that Facilities personnel were planning to clean

out sediment from the runoff channels leading from the building, they came up with an idea. Environmental staff gathered some of that sediment for testing to determine what level of pollutants were coming from the roof and any substances deposited on it.



Sediment testing was performed for all pollutants currently required by the

City's **WPCF Stormwater Permit** (for our stormwater underground injection control (UIC) systems), as well as for metals and petroleum products.

The good news is, runoff from the Keizer Civic Center roof doesn't all run directly to the piped system as most roof drainage systems do. Instead, it is directed through the vegetated area first, where plants and soils can capture, treat and partially infiltrate the runoff before being taken to the piped system and ultimately to the river. In a nutshell, our landscape was designed to help treat stormwater and it is doing just that by treating contaminated stormwater from the roof!

Did you know that in October of 2016 the City of Keizer received over 7 inches of rain?

That much precipitation equates to 3 billion gallons of water according to the USGS rain calculator. The City's Stormwater Division manages this water to prevent flooding, and minimize pollution runoff downstream. The City of Keizer has nearly 70 miles of publicly owned stormwater pipe within the community. Some of that pipe is solid and discharges stormwater to local waterways, and some is perforated and discharges stormwater into the soil. Some of Keizer's newest neighborhoods have recently had Vegetated Stormwater Facilities (VSF's) installed that filter and treat the runoff to remove common pollutants such as oil, brake dust, and other pollutants. The planters along the new roundabout at Chemawa and Verda are one such design.

These VSF's collect and capture stormwater runoff from streets and sidewalks. VSF's reduce stormwater flow to creeks and streams, reduce pollutants, and refresh groundwater supplies. Water that would traditionally flow straight to the creek or river untreated, now has a chance to infiltrate into the ground and recharge our drinking water aquifers.

Dirt in the Street

With spring approaching you'll likely see more building and landscaping projects happening around town. A friendly reminder from your stormwater department; dirt running off of construction and landscaping projects can make its way into our storm drain system, where it can clog drainage pipes, and settle in streams which may result in flooding issues. This sediment laden water can also cause turbid runoff in our creeks and streams which is very harmful to fish and other aquatic organisms.

Do you have a project planned that will disturb soil?

Check with the City of Keizer Public Works Department to find useful information about how to keep loose soil on the project site, and determine if you need a permit for your project. 503-856-3444



Trees in the City Environment

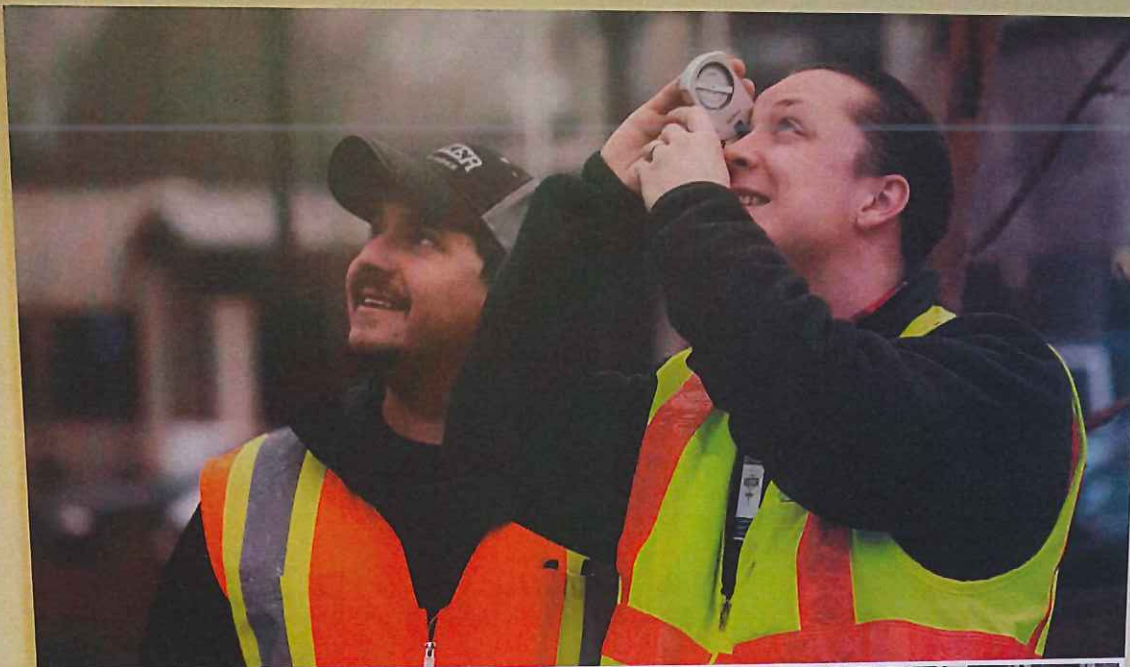
Trees are a vital, long-term and low cost component to maintaining Keizer's clean water. One mature tree with a 25-foot diameter canopy and associated soil can manage the 1-inch rainfall from 2,400 square feet of impervious surface; remember the 3 billion gallons of rain we talked about earlier? Every tree helps the city manage the stormwater runoff in as natural a way as possible. Trees provide many benefits in an urban setting, the reduction in cooling costs in the summer being a huge one! Trees cool the city by up to 10°F by shading our homes and streets and releasing water vapor into the air through their leaves. It's also a proven fact that your home is worth more with trees on it, a recent study in Portland found that homes with street trees sold for \$8,870 more, on average, and 1.7 days more quickly than properties without trees. This study that was produced by the U.S. Forest Service's Pacific Northwest Research Station also found that because of the increase in property values the benefits of street trees significantly outweigh the maintenance costs.

If you see someone in a reflective vest measuring trees in your neighborhood that is a Chemeketa Community College intern conducting tree assessments in the right-of-way. The intern has been cataloging and measuring trees in neighborhoods and parks to help the city make sound, science based management decisions regarding our urban trees.

Make a difference in the Community

Are you looking for an opportunity to make a difference in the community, network with your neighbors, and get a little exercise? Consider joining the Claggett Creek Watershed Council. The watershed council is a regional group of volunteers from Keizer, Salem, and Marion County. This past year the Watershed Council participated in many local projects to improve the environmental quality along the streams and waterways in Keizer. They worked with the Chemeketa Horticulture Program to plant trees along local waterways, removed invasive plants and hosted fun family friendly educational events for all to attend. To learn more about this energetic group of volunteers call (503) 930-7481 or visit the website at: <http://claggettccwc.org/>





Horticulture

"Arthur's experience at the City will allow him to add valuable work experience to his resume that will be viewed in a positive light by future employers. In addition, Arthur now has the experience of working with a local government and had been introduced to a blend of science and regulatory conditions that will serve him well in the future."

—City of Keizer, Environmental & Technical Division



COOPERATIVE WORK EXPERIENCE

503.399.5028

Chemeketa
Community College



City of Keizer, Environmental & Technical Division
1000 Commercial Street, Suite 100
Keizer, Oregon 97138
Phone: 503.399.5028

Mid-Willamette Outreach Group

*City of Salem, City of Keizer, City of Albany, City of Corvallis,
Marion SWCD, MC Environmental Services,*

Mission:

To increase public awareness about the important connection between people, land use, and water resources in Mid-Willamette Valley and invoke behavior changes that promote healthy streams and healthy communities.



We are an inter-agency partnership that exercises a collaborative approach to regional water quality outreach in order to

- provide consistent, reliable information to the citizens in the region
- maximize resources in an effective manner using non-competing messages
- promote a watershed approach to water quality management
- comply with federal and state laws; regulations and policies governing water quality



Core Values:

- Respect for all individuals regardless of race, language, literacy, culture, gender, age, sex, income or beliefs.
- Recognition of every one's individual strength, capabilities, quality and dignity.
- Honest and open communication among members and agencies.
- Strict adherence to obey all laws; including copyrights, trademarks, patented materials, etc.

Goals:

- Increase public awareness of stormwater runoff and encourage behaviors that will reduce non-point source pollution in local streams, lakes and groundwater.
- Increase the public's awareness of the connection between water resource protection and personal quality of life, recreational opportunities, scenic amenities, community value, property value, and public health.
- Distribute educational materials and messages to the community, conduct outreach activities, and evaluate the efficacy of our efforts through surveys, polls, analytical metrics, narrative tools, etc.

APPENDIX B

2016/17 - IDDE REPORTING SUMMARY TABLES

PUBLIC WORKS IDDE – Total Combined PW Incidents

Automotive	15
Chemical	1
Construction	1
Food/Grease	1
Sediment	8
Sanitary Sewer	2
Vegetation	2
Waterwaste	2
Total Incidents	32

MS4 Incidents by Type

Automotive	14
Chemical	1
Construction	1
Food/Grease	1
Sediment	7
Sanitary Sewer	2
Vegetation	2
Waterwaste	2
Total Incidents	30

UIC Incidents by Type

Automotive	1
Chemical	0
Construction	0
Food/Grease	0
Sediment	1
Sanitary Sewer	0
Vegetation	0
Waterwaste	0
Total Incidents	2

KEIZER FIRE IDDE – Total Fire Incidents by Type

Automotive Spill	54
Chemical Spill	1
Motor Vehicle Fire	1
Portable Building Fire	0
Biohazard Fluid	1
Total Incidents	57

KEIZER PUBLIC WORKS IDDE INCIDENT REPORTING TABLE

Date	Location	Type	Description	Action	Follow-Up
7/8/2016	4865 Shoreline Dr	MS4 Sediment	Staff noticed a large pile of dirt in the driveway that was not covered. No rain and none of the dirt had left the pile.	Staff spoke with the homeowner who said that he is going to cover the pile with a tarp and anchor it down.	No further issues.
7/11/2016	3862 River Rd	MS4 Automotive	Oil spill from car accident. Approximately 3 gallons of oil had leaked onto the road.	Dry conditions, absorbents applied and removed.	No further issues.
8/12/2016	609 Manbrin Dr	MS4 Chemical	A citizen reported a spill after viewing a neighbor working on a motorbike. The spill was discovered upon further investigation to be mercury.	Keizer Fire first on scene, then City of Salem Spill Response and Keizer PW called. A small amount of mercury may have reached catch basin. OERS was notified and EPA took over cleanup efforts.	The EPA took over the clean up effort in conjunction with NRC and their contractors. Cleanup and remediation took place over several days until no detected mercury fumes remaining.
8/19/2016	6020 Windsor Island Rd	MS4 Automotive	Antifreeze spill from a car accident. Staff responded to clean up of about 15 gallons of antifreeze.	Dry conditions, absorbents applied and removed.	No further issues.
8/22/2016	803 Weeks Dr.	MS4 Waterwaste	Staff were assisting Laurel Park Apts locating private storm pipes entering the city system. Discovered swimming pool cross connection (water bubbled out of their catch basins when they drain the pool).	Staff explained that they can not drain the pool to the storm system, it must only go to the sanitary sewer system.	Letter sent to manager and owner stating the pool must be disconnected from the storm system and directed to sewer. After a second letter was sent, the incident was handed over to Code Enforcement. If work not underway by July, fines may be levied. In process.
9/14/2016	4352 Thorman	MS4 Waterwaste	Staff saw a hose in the street discharging a water, discovered an owner draining a small pool.	Staff directed owner to stop it immediately and direct to sanitary sewer.	No further issues.
9/29/2016	6395 Keizer Station Blvd	MS4 Sanitary Sewer	Citizen reported possible sewer spill. Staff responded and found a cleanout with a slow overflow to commercial parking lot.	Keizer PW and Salem Environmental Services responded, and plugged line to public system. Owner had the spill area and private storm system cleaned. Salem ES cleaned the ROW pipes. Spill reported to OERS, given the case number 2016-2364	Keizer staff inspected structures next day after all connection checks, replumbing and cleaning was complete. No evidence of further issues.
10/10/2016	4384 River Rd.	MS4 Automotive	Car accident led to fluids leaking onto the road; oil and antifreeze discharged.	Absorbant was used to clean up the spilled material; none reached storm system.	No further issues.
10/10/2016	4919 13th Av N	MS4 Sediment	Staff noted large pile of rock was in the street next to the curb.	Staff directed contractor to bio bag any nearby catchbasins and clean up the rock ASAP. The owner placed bio bags and confirmed the rock would be cleaned up soon.	No further issues.

KEIZER PUBLIC WORKS IDDE INCIDENT REPORTING TABLE

Date	Location	Type	Description	Action	Follow-Up
10/10/2016	1302 Candlewood Dr Ne Keizer, Or 97303	UIC - Sediment	Staff observed muddy/cement tracks leaving the driveway at Advantage Precast heading West on Candlewood for a couple hundred of feet.	Staff spoke with the owner to clean it up. Owner said he would and that he was planning to build a truck tire wash station.	This property/business is currently under a Pre-Enforcement Notice from the Oregon DEQ for sediment and concrete wash water runoff issues from the site.
10/27/2016	1008 Taurus Loop NE	UIC - Automotive	Staff observed car parking in same area on street, leaking oil spots near a catchbasin.	Staff left a door hanger stating the importance of getting the leak fixed, and meantime putting absorbant or a catchpan underneath.	No further issues.
10/27/2016	2133 Northtree Dr	MS4 Automotive	Staff observed an oil slick coming from a truck parked on the road. None appeared to have reached the storm drain.	Staff came and cleaned the area with simple green.	No further issues.
11/7/2016	6375 River Rd NE	MS4 Sanitary Sewer	Staff observed a sewer manhole leaking water onto the road. The sewage was flowing down the street into two catchbasins. Sewage also running out of the private sewer cleanout at a mini-mart nearby.	Staff dispatched City of Salem, then placed bio bags around the catch basins and put out traffic diversion/signs. Salem vacuumed and got the 8" sewer line unplugged. Keizer dispatched street sweeping company to clean streets.	Keizer staff worked with Salem on OERS report (incident #2016-2698). Salem put out a Public Notice, and had signs posted along creek until E. coli samples of upstream and downstream were clear.
11/16/2016	4655 Shoreline	MS4 Sediment	Staff observed a driveway replacement contractor tracked mud on the street. There was a biobag in front of the catch basin.	Staff left a doorhanger explaining the need to clean up the dirt from the road.	No further issues.
11/24/2016	3925 Brooks Av	MS4 Automotive	The owner of the rental discovered a past tenant had left about a quart of used oil in an oil pan on the side of the house. The rain had overflowed it down the driveway into the storm drain.	Staff responded and spoke with the owner of the rental. The oil residue was entirely gone due to the heavy rains.	No further issues.
12/14/2016	4960 Chemawa Rd	MS4 Automotive	Staff observed oil drips in the roadway. Found it ended at a van broken down (with cat litter under the motor catching the oil drips).	Staff cleaned up the oil and absorbant.	No further issues.
1/18/2017	1387 Marigold	MS4 Automotive	Citizen called to report neighbor's car with a gas leak.	Staff responded and discovered the cars fuel line had become disconnected. Spoke with the owner about not starting the car until it was fixed. Staff cleaned up the spill.	No further issues.
1/30/2017	4570 Thorman Av	MS4 Sediment	New gravel driveway had minor track off.	Staff told landscaper working there to have muddy end of driveway graveled by the weekend.	Staff checked in next day, 1/4" minus installed. No further issues.
1/30/2017	978 Ventura	MS4 Sediment	Staff observed car parked in dirt area to the right of the driveway that it was tracking mud onto the street.	Staff talked to the owner and explained the need to clean up the mud and not to park in the yard.	Staff went by the address a few days later and found that the residue had been cleaned up. No further issues
2/7/2017	4990 Chemawa Rd NE	MS4 Automotive	Car hit a tree and was leaking gas, oil, antifreeze onto the roadway.	PW Staff and Keizer Fire deployed absorbant granules and pads to stop and soak up the fluids.	No further issues.

KEIZER PUBLIC WORKS IDDE INCIDENT REPORTING TABLE

Date	Location	Type	Description	Action	Follow-Up
2/7/2017	1220 Hidden Creek	MS4 Sediment	Staff observed an uncovered pile of dirt releasing sediment down the driveway from rain.	Staff spoke with the homeowner who said they will cover the pile with a tarp and place some bio bags in front of the pile.	Staff follow up showed the pile had been covered and secured. No further issues.
3/7/2017	Cherry and Candlewood	MS4 Automotive	Staff observed a large oil sheen on the road. No vehicles around to explain the spill. None had reached the catch basins or swale.	Staff stopped and cleaned up the spill.	No further issues.
3/9/2017	Chemawa Rd and McCleod Ln	MS4 Automotive	Staff responded to a call from dispatch about a three car accident at this intersection. Several quarts of oil leaked from one of the cars.	Staff cleaned the spill with oil pads, absorbant, and simple green.	
3/23/2017	608 Chemawa Rd NE	MS4 Automotive	A two car accident led to battery acid leaked on the ground, about 6 ounces. None of the acid made it to the catch basin or manhole.	Staff applied clean absorbant and removed the spill.	
3/23/2017	3990 Cherry Av	MS4 Automotive	A car accident resulted in approximately 3 quarts of oil spilled onto the road. None reached the storm system.	Staff cleaned up the oil with absorbant.	
4/4/2017	5870 River Rd	MS4 Automotive	Car accident resulted in antifreeze leaked onto the road. No fluids reached the storm system.	Staff responded and cleaned up the spill.	
4/18/2017	4970 Delight St.	MS4 Vegetation	Staff observed a large pile of barkdust blocking part of the street. No material had made it to a near by catch basin.	Staff left a door hanger asking the owner to remove the pile from the street.	Later inspection showed the pile had been moved and the residue cleaned up. No further issues.
5/11/2017	1294 Moneda	MS4 Construction	Staff observed saw cutters leaving concrete slurry after a sewer repair. Some had run down the gutter nearly reaching the catch basin.	Staff spoke with homeowner and asked homeowner sweep up the dried debris and remove it.	No further issues.
5/16/2017	6638 Stonemason	MS4 Vegetation	Staff observed pile of barkdust in the street in front of a house. The barkdust had not migrated to the catch basin.	Staff left a door hanger that explained that the pile needed to be covered and preferably moved as soon as possible.	No further issues.
5/16/2017	5179 River Rd	MS4 Automotive	Staff was called to an accident where transmission oil had leaked near a catch basin. Staff responded and stopped the oil from reaching the catch basin.	Staff cleaned up the spill and removed storm materials. No contaminants entered storm system.	
5/17/2017	4999 13th Av N	MS4 Sediment	Staff observed recently tilled yard which had caused significant soil from the yard onto the sidewalk.	Staff left a door hanger requesting the sediment be removed from the sidewalk and road.	No further issues.
6/5/2017	4842 River Rd	MS4 Food/Grease	Staff observed (during yearly catchbasin inspection) many inches of greasy food-smelling material in bottom.	Office staff found this site had had two previous issues with this in years past. Will coordinate with Code Enforcement for resolution.	Code Enforcement sent Notice of Infraction on 6/13/17. Other catchbasins were inspected and found to have sediment issues. Will contact owners of the commercial properties and have the catchbasins cleaned. In process.

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
7/1/2016	Biofluids	River Road N at Chemawa Road NE	Police requested to clean blood from the roadway
7/7/2016	Automotive Spill	River Road N at Dearborn Avenue N	Removed 1/4 qt. anti-freeze from the roadway with ultrasorb. No threat to stormdrains.
7/7/2016	Automotive Spill	3862 River Road N	Removed 1/2 qt. anti-freeze and oil from the roadway with ultrasorb. No threat to stormdrains.
7/11/2016	Automotive Spill	River Road N at Sam Orcutt Way NE	Anti-freeze and oil down, contacted KPW who responded and cleaned up spill. KZF kept fluid from reaching stormdrains.
7/15/2016	Automotive Spill	Lockhaven Drive NE at Verda Lane NE	KPW already on scene and removed fluids from the roadway.
7/16/2016	Automotive Spill	Chemawa Road N at Chetalis Drive N	Removed 1/2 qt. anti-freeze from roadway with ultrasorb. No threat to stormdrains.
8/3/2016	Automotive Spill	Weeks Drive N at River Road N	Small amount of anti-freeze cleaned up with ultrasorb, no threat to storm drains.
8/10/2016	Automotive Spill	694 Manbrin Drive N	Cleaned up antifreeze spill, no threat to storm drains.
8/12/2016	Chemical Spill	581 Manbrin Drive NE	Mercury Spill, mitigated by Federal EPA. Keizer Public Works on scene and SFD HazMat 13.
8/15/2016	Automotive Spill	Lockhaven Drive NE at Verda Lane NE	Small amount of anti-freeze cleaned up with ultrasorb. No threat to storm drains.
8/18/2016	Automotive Spill	McLeod Lane NE at Chemawa Road NE	Approx. 1 gallon of anti-freeze on roadway, spill cleaned up. No threat to storm drains
8/19/2016	Automotive Spill	6020 Windsor Island Road N	Anti-freeze spill from an MVA, Keizer Public Works assisted with fluid clean-up
8/19/2016	Automotive Spill	Cherry Avenue NE at Candlewood NE	Less than one gallon of anti-freeze on roadway, cleaned spill. No threat to storm drains
8/25/2016	Automotive Spill	5450 River Road N	Small amount of anti-freeze cleaned up with ultrasorb. No threat to storm drains.
8/28/2016	Automotive Spill	4198 River Road N	Cleaned up antifreeze spill, no threat to storm drains.
8/28/2016	Automotive Spill	5550 Kalmia Drive NE	Cleaned up antifreeze spill, no threat to storm drains.
10/7/2016	Automotive Spill	4384 River Road N	Spill handled/cleaned up by KPW
10/18/2016	Automotive Spill	4510 River Road N	MVA with small amount of anti-freeze, no threat to storm drains

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
10/18/2016	Automotive Spill	661 Chemawa Road NE	MVA with small amount of anti-freeze, no threat to storm drains
10/20/2016	Automotive Spill	River Road at Lockhaven Drive	MVA with small amount of anti-freeze, no threat to storm drains
10/25/2016	Automotive Spill	3830 River Road N	MVA with small amount of anti-freeze, no threat to storm drains
10/26/2016	Automotive Spill	McLeod Lane at Chemawa Road	Two car minor MVA with one injury/transport. Spill cleaned from the roadway, no threat to storm drains
10/27/2016	Automotive Spill	1954 Allendale Way NE	MVA with small amount of anti-freeze, no threat to storm drains
10/29/2016	Automotive Spill	River Road at Manbrin Drive	Roll-over MVA with injury. KPW took care of spills with KZP assistance
10/31/2016	Automotive Spill	812 Lockhaven Drive NE	MVA with Oil and radiator fluid on roadway. Cleaned up using absorbent, no threat to storm drains
11/1/2016	Automotive Spill	River Road N at Manbrin Drive NE	Roll over MVA w/approx 5 gallons of gas in roadway. KPW on scene to assist w/ cleanup. No threat to storm drains.
11/7/2016	Automotive Spill	Lockhaven Drive N at Newberg Drive N	Two car MVA w/ fluids down. Cleaned from roadway with Ultrasorb. No threat to storm drains.
11/14/2016	Automotive Spill	River Road N at Sunset Avenue N	Fluids down from a non-injury MVA, KPW on scene managing spill.
11/15/2016	Automotive Spill	Lockhaven Drive NE at Chemawa Road NE	Two car MVA, fluid spill contained with Ultrasorb and pads, no threat to storm drains.
12/16/2016	Automotive Spill	River Rd N at Meadowridge St NE	Approx. 1/2 gallon of antifreeze cleaned from the roadway with ultrasorb. No threat to storm drains.
12/23/2016	Automotive Spill	Chemawa Rd NE at Keizer Station Blvd NE	Less than one gallon of coolant down, cleaned with ultrasorb, no threat to storm drains.
1/2/2017	Automotive Spill	River Road N at James Street N	Fluid and debris clean up with ultrasorb, no threat to storm drains.
1/7/2017	Automotive Spill	Lockhaven Drive NE at 14th Avenue NE	Radiator fluid down, removed with ultrasorb and pads. No threat to storm drains.
1/16/2017	Automotive Spill	Lockhaven Drive NE at 14th Avenue NE	3 car MVA with antifreeze down, cleaned with ultrasorb and pads. No threat to storm drains.
1/27/2017	Automotive Spill	3700 River Road N	Approx one quart of antifreeze on ground, cleaned with ultrasorb. No threat to storm drains.
1/29/2017	Automotive Spill	700 Chemawa Road NE	Fluids down and into storm drain (gas, oil, transmission), diverted and dyked. Removed with ultrasorb and pads, KPW notified and assisted.

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
2/14/2017	Automotive Spill	Chemawa Rd NE at Stadium Dr NE	1 quart of transmission oil on roadway, removed with ultrasorb. No threat to storm drains.
3/1/2017	Automotive Spill	Wheatland Rd N at New Terrace Dr N	Radiator spill removed with Ultrasorb and pads. No threat to storm drains.
3/7/2017	Automotive Spill	Chemawa Rd NE at McLeod Ln NE	Debris and fluid sheen cleaned by KZF. No fluid into storm drains or waterways.
3/13/2017	Automotive Spill	Chemawa Rd NE at River Rd N	Approx 1 gallon of antifreeze down, removed by KZF. No threat to storm drains.
3/16/2017	Automotive Spill	River Rd N at Manzanita St NE	Fluids down handled by Keizer Public Works
3/27/2017	Automotive Spill	1605 Lockhaven Dr NE	Fluids removed with absorbant. No threat to storm drains.
4/4/2017	Automotive Spill	Chelan St NE at Verda Ct NE	Small amount of fluid from vehicle, cleaned with absorbant. No threat to storm drains.
4/9/2017	Automotive Spill	Chemawa Rd NE at Stadium Dr NE	Fluids from both vehicles in roadway, removed with absorbant and pads. No threat to storm drains.
4/12/2017	Automotive Spill	Cherry Ave NE at Ring St NE	Approx 1 quart of oil removed from roadway with absorbant. No threat to storm drains.
4/14/2017	Automotive Spill	River Rd N at Garland Way N	Fluid leaking from rear of vehicle (not gasoline), removed with absorbant pads. No threat to storm drains.
4/30/2017	Automotive Spill	4765 River Rd N	1 gal. of antifreeze and small amount of motor oil down with oil. Removed with absorbant and pads. No threat to storm drains.
5/6/2017	Motor Vehicle Fire	1095 Clearview Avenue NE	Vehicle fire, extinguished PTA. Cleaned up approx. 1 gallon of gasoline with ultrasorb. No threat to storm drains
5/12/2017	Automotive Spill	6375 Ulali Drive NE	Vehicle into a building w/approx 1 gallon of antifreeze down. Cleaned up with ultrasorb. No threat to storm drains.
5/19/2017	Automotive Spill	Chemawa Road NE at Stadium Drive NE	2 vehicle MVA w/small amount of fluids down from one vehicle, cleaned up with ultrasorb. No threat to storm drains.
5/19/2017	Automotive Spill	Marino Drive N at Rowan Avenue N	Small fluid spill removed from roadway with ultrasorb. No threat to storm drains.
5/31/2017	Automotive Spill	River Road N at Garland Way N	Called by KZP for small fluid spill, cleaned up from roadway and parking lot with ultrasorb. No threat to storm drains.
6/2/2017	Automotive Spill	Manbrin Dr N at Rivercrest Dr N	Non injury MVA, 1 quart of antifreeze cleaned with ultrasorb. No threat to storm drains.
6/10/2017	Automotive Spill	Chemawa Road N at Delight St N	Approx. 1 cup of fluid from veh reached storm drain. Called off-duty Keizer Public Works but they did not respond to the page out.

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
6/12/2017	Automotive Spill	Ridgetop Dr NE at Northern Hts Lp NE	Significant coolant and oil spill in roadway cleaned up with pads and ultrasorb. No threat to storm drains or waterways.
6/21/2017	Automotive Spill	River Rd N at Lockhaven Dr N	Small amount of grease in roadway, cleaned up with ultrasorb. No threat to storm drains.
6/27/2017	Automotive Spill	River Rd N at Sam Orcutt Way NE	Small amount of fluids on roadway, cleaned up with ultrasorb. No threat to storm drains.

APPENDIX C

APPENDIX C: MS4 CIVIC CENTER ROOF SEDIMENT SAMPLING RESULTS

The City of Keizer elected to send a sample of runoff-generated sediment from the Keizer Civic Center metal roof for testing of pollutant levels. Results are below:

Sample Date	Sample ID	Site Location	Analyte	Result	Units	MRL
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Diesel Range	55.3	mg/Kg-dry	50
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Lube Oil Range	1130	mg/Kg-dry	100
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Gasoline	94.7	mg/Kg-dry	8.91
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Cadmium	ND	mg/L	3.1
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Chromium	24.9	mg/L	15.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Copper	48.8	mg/L	3.1
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Lead	64.2	mg/L	15.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Nickle	19.2	mg/L	1.55
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Zinc	606	mg/L	15.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Arsenic	ND	mg/L	0.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Barium	ND	mg/L	0.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Cadmium	ND	mg/L	0.1
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Chromium	ND	mg/L	0.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Lead	ND	mg/L	0.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Selenium	ND	mg/L	0.5
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Silver	ND	mg/L	0.1
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Mercury	ND	mg/L	0.0002
4/5/2017	Civic Roof Sed 2017	Keizer Civic Roof	Benzopyrene	ND	mg/Kg-dry	0.202
		= SPLP EXTRACTION				
		= TCLP EXTRACTION				
		ND = NON DETECT				

APPENDIX C

2016/17 - IDDE REPORTING SUMMARY TABLES

PUBLIC WORKS IDDE – Total Combined PW Incidents

Automotive	15
Chemical	1
Construction	1
Food/Grease	1
Sediment	8
Sanitary Sewer	2
Vegetation	2
Waterwaste	2
Total Incidents	32

MS4 Incidents by Type

Automotive	14
Chemical	1
Construction	1
Food/Grease	1
Sediment	7
Sanitary Sewer	2
Vegetation	2
Waterwaste	2
Total Incidents	30

UIC Incidents by Type

Automotive	1
Chemical	0
Construction	0
Food/Grease	0
Sediment	1
Sanitary Sewer	0
Vegetation	0
Waterwaste	0
Total Incidents	2

KEIZER FIRE IDDE – Total Fire Incidents by Type

Automotive Spill	54
Chemical Spill	1
Motor Vehicle Fire	1
Portable Building Fire	0
Biohazard Fluid	1
Total Incidents	57

KEIZER PUBLIC WORKS IDDE INCIDENT REPORTING TABLE

Date	Location	Type	Description	Action	Follow-Up
7/8/2016	4865 Shoreline Dr	MS4 Sediment	Staff noticed a large pile of dirt in the driveway that was not covered. No rain and none of the dirt had left the pile.	Staff spoke with the homeowner who said that he is going to cover the pile with a tarp and anchor it down.	No further issues.
7/11/2016	3862 River Rd	MS4 Automotive	Oil spill from car accident. Approximately 3 gallons of oil had leaked onto the road.	Dry conditions, absorbents applied and removed.	No further issues.
8/12/2016	609 Manbrin Dr	MS4 Chemical	A citizen reported a spill after viewing a neighbor working on a motorbike. The spill was discovered upon further investigation to be mercury.	Keizer Fire first on scene, then City of Salem Spill Response and Keizer PW called. A small amount of mercury may have reached catch basin. OERS was notified and EPA took over cleanup efforts.	The EPA took over the clean up effort in conjunction with NRC and their contractors. Cleanup and remediation took place over several days until no detected mercury fumes remaining.
8/19/2016	6020 Windsor Island Rd	MS4 Automotive	Antifreeze spill from a car accident. Staff responded to clean up of about 15 gallons of antifreeze.	Dry conditions, absorbents applied and removed.	No further issues.
8/22/2016	803 Weeks Dr.	MS4 Waterwaste	Staff were assisting Laurel Park Apts locating private storm pipes entering the city system. Discovered swimming pool cross connection (water bubbled out of their catch basins when they drain the pool).	Staff explained that they can not drain the pool to the storm system, it must only go to the sanitary sewer system.	Letter sent to manager and owner stating the pool must be disconnected from the storm system and directed to sewer. After a second letter was sent, the incident was handed over to Code Enforcement. If work not underway by July, fines may be levied. In process.
9/14/2016	4352 Thorman	MS4 Waterwaste	Staff saw a hose in the street discharging a water, discovered an owner draining a small pool.	Staff directed owner to stop it immediately and direct to sanitary sewer.	No further issues.
9/29/2016	6395 Keizer Station Blvd	MS4 Sanitary Sewer	Citizen reported possible sewer spill. Staff responded and found a cleanout with a slow overflow to commercial parking lot.	Keizer PW and Salem Environmental Services responded, and plugged line to public system. Owner had the spill area and private storm system cleaned. Salem ES cleaned the ROW pipes. Spill reported to OERS, given the case number 2016-2364	Keizer staff inspected structures next day after all connection checks, replumbing and cleaning was complete. No evidence of further issues.
10/10/2016	4384 River Rd.	MS4 Automotive	Car accident led to fluids leaking onto the road; oil and antifreeze discharged.	Absorbant was used to clean up the spilled material; none reached storm system.	No further issues.
10/10/2016	4919 13th Av N	MS4 Sediment	Staff noted large pile of rock was in the street next to the curb.	Staff directed contractor to bio bag any nearby catchbasins and clean up the rock ASAP. The owner placed bio bags and confirmed the rock would be cleaned up soon.	No further issues.

KEIZER PUBLIC WORKS IDDE INCIDENT REPORTING TABLE

Date	Location	Type	Description	Action	Follow-Up
10/10/2016	1302 Candlewood Dr Ne Keizer, Or 97303	UIC - Sediment	Staff observed muddy/cement tracks leaving the driveway at Advantage Precast heading West on Candlewood for a couple hundred of feet.	Staff spoke with the owner to clean it up. Owner said he would and that he was planning to build a truck tire wash station.	This property/business is currently under a Pre-Enforcement Notice from the Oregon DEQ for sediment and concrete wash water runoff issues from the site.
10/27/2016	1008 Taurus Loop NE	UIC - Automotive	Staff observed car parking in same area on street, leaking oil spots near a catchbasin.	Staff left a door hanger stating the importance of getting the leak fixed, and meantime putting absorbant or a catchpan underneath.	No further issues.
10/27/2016	2133 Northtree Dr	MS4 Automotive	Staff observed an oil slick coming from a truck parked on the road. None appeared to have reached the storm drain.	Staff came and cleaned the area with simple green.	No further issues.
11/7/2016	6375 River Rd NE	MS4 Sanitary Sewer	Staff observed a sewer manhole leaking water onto the road. The sewage was flowing down the street into two catchbasins. Sewage also running out of the private sewer cleanout at a mini-mart nearby.	Staff dispatched City of Salem, then placed bio bags around the catch basins and put out traffic diversion/signs. Salem vacuumed and got the 8" sewer line unplugged. Keizer dispatched street sweeping company to clean streets.	Keizer staff worked with Salem on OERS report (incident #2016-2698). Salem put out a Public Notice, and had signs posted along creek until E. coli samples of upstream and downstream were clear.
11/16/2016	4635 Shoreline	MS4 Sediment	Staff observed a driveway replacement contractor tracked mud on the street. There was a biobag in front of the catch basin.	Staff left a doorhanger explaining the need to clean up the dirt from the road.	No further issues.
11/24/2016	3925 Brooks Av	MS4 Automotive	The owner of the rental discovered a past tenant had left about a quart of used oil in an oil pan on the side of the house. The rain had overflowed it down the driveway into the storm drain.	Staff responded and spoke with the owner of the rental. The oil residue was entirely gone due to the heavy rains.	No further issues.
12/14/2016	4960 Chemawa Rd	MS4 Automotive	Staff observed oil drips in the roadway. Found it ended at a van broken down (with cat litter under the motor catching the oil drips).	Staff cleaned up the oil and absorbant.	No further issues.
1/18/2017	1387 Marigold	MS4 Automotive	Citizen called to report neighbor's car with a gas leak.	Staff responded and discovered the cars fuel line had become disconnected. Spoke with the owner about not starting the car until it was fixed. Staff cleaned up the spill.	No further issues.
1/30/2017	4570 Thorman Av	MS4 Sediment	New gravel driveway had minor track off.	Staff told landscaper working there to have muddy end of driveway graveled by the weekend.	Staff checked in next day, 1/4" minus installed. No further issues.
1/30/2017	978 Ventura	MS4 Sediment	Staff observed car parked in dirt area to the right of the driveway that it was tracking mud onto the street.	Staff talked to the owner and explained the need to clean up the mud and not to park in the yard.	Staff went by the address a few days later and found that the residue had been cleaned up. No further issues
2/7/2017	4990 Chemawa Rd NE	MS4 Automotive	Car hit a tree and was leaking gas, oil, antifreeze onto the roadway.	PW Staff and Keizer Fire deployed absorbant granules and pads to stop and soak up the fluids.	No further issues.

KEIZER PUBLIC WORKS IDDE INCIDENT REPORTING TABLE

Date	Location	Type	Description	Action	Follow-Up
2/7/2017	1220 Hidden Creek	MS4 Sediment	Staff observed an uncovered pile of dirt releasing sediment down the driveway from rain.	Staff spoke with the homeowner who said they will cover the pile with a tarp and place some bio bags in front of the pile.	Staff follow up showed the pile had been covered and secured. No further issues.
3/7/2017	Cherry and Candlewood	MS4 Automotive	Staff observed a large oil sheen on the road. No vehicles around to explain the spill. None had reached the catch basins or swale.	Staff stopped and cleaned up the spill.	No further issues.
3/9/2017	Chemawa Rd and McCleod Ln	MS4 Automotive	Staff responded to a call from dispatch about a three car accident at this intersection. Several quarts of oil leaked from one of the cars.	Staff cleaned the spill with oil pads, absorbant, and simple green.	
3/23/2017	608 Chemawa Rd NE	MS4 Automotive	A two car accident led to battery acid leaked on the ground, about 6 ounces. None of the acid made it to the catch basin or manhole.	Staff applied clean absorbant and removed the spill.	
3/23/2017	3990 Cherry Av	MS4 Automotive	A car accident resulted in approximately 3 quarts of oil spilled onto the road. None reached the storm system.	Staff cleaned up the oil with absorbant.	
4/4/2017	5870 River Rd	MS4 Automotive	Car accident resulted in antifreeze leaked onto the road. No fluids reached the storm system.	Staff responded and cleaned up the spill.	
4/18/2017	4970 Delight St.	MS4 Vegetation	Staff observed a large pile of barkdust blocking part of the street. No material had made it to a near by catch basin.	Staff left a door hanger asking the owner to remove the pile from the street.	Later inspection showed the pile had been moved and the residue cleaned up. No further issues.
5/11/2017	1294 Moneda	MS4 Construction	Staff observed saw cutters leaving concrete slurry after a sewer repair. Some had run down the gutter nearly reaching the catch basin.	Staff spoke with homeowner and asked homeowner sweep up the dried debris and remove it.	No further issues.
5/16/2017	6638 Stonemason	MS4 Vegetation	Staff observed pile of barkdust in the street in front of a house. The barkdust had not migrated to the catch basin.	Staff left a door hanger that explained that the pile needed to be covered and preferably moved as soon as possible.	No further issues.
5/16/2017	5179 River Rd	MS4 Automotive	Staff was called to an accident where transmission oil had leaked near a catch basin. Staff responded and stopped the oil from reaching the catch basin.	Staff cleaned up the spill and removed materials. No contaminants entered storm system.	
5/17/2017	4999 13th Av N	MS4 Sediment	Staff observed recently tilled yard which had caused significant soil from the yard onto the sidewalk.	Staff left a door hanger requesting the sediment be removed from the sidewalk and road.	No further issues.
6/5/2017	4842 River Rd	MS4 Food/Grease	Staff observed (during yearly catchbasin inspection) many inches of greasy food-smelling material in bottom.	Office staff found this site had had two previous issues with this in years past. Will coordinate with Code Enforcement for resolution.	Code Enforcement sent Notice of Infraction on 6/13/17. Other catchbasins were inspected and found to have sediment issues. Will contact owners of the commercial properties and have the catchbasins cleaned. In process.

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
7/1/2016	Biofluids	River Road N at Chemawa Road NE	Police requested to clean blood from the roadway
7/7/2016	Automotive Spill	River Road N at Dearborn Avenue N	Removed 1/4 qt. anti-freeze from the roadway with ultrasorb. No threat to stormdrains.
7/7/2016	Automotive Spill	3862 River Road N	Removed 1/2 qt. anti-freeze and oil from the roadway with ultrasorb. No threat to stormdrains.
7/11/2016	Automotive Spill	River Road N at Sam Orcutt Way NE	Anti-freeze and oil down, contacted KPW who responded and cleaned up spill. KZF kept fluid from reaching stormdrains.
7/15/2016	Automotive Spill	Lockhaven Drive NE at Verda Lane NE	KPW already on scene and removed fluids from the roadway.
7/16/2016	Automotive Spill	Chemawa Road N at Chehalis Drive N	Removed 1/2 qt. anti-freeze from roadway with ultrasorb. No threat to stormdrains.
8/3/2016	Automotive Spill	Weeks Drive N at River Road N	Small amount of anti-freezed cleaned up with ultrasorb, no threat to storm drains.
8/10/2016	Automotive Spill	694 Manbrin Drive N	Cleaned up antifreeze spill, no threat to storm drains.
8/12/2016	Chemical Spill	581 Manbrin Drive NE	Mercury Spill, mitigated by Federal EPA. Keizer Public Works on scene and SFD HazMat 13.
8/15/2016	Automotive Spill	Lockhaven Drive NE at Verda Lane NE	Small amount of anti-freeze cleaned up with ultrasorb. No threat to storm drains.
8/18/2016	Automotive Spill	McLeod Lane NE at Chemawa Road NE	Approx. 1 gallon of anti-freeze on roadway, spill cleaned up. No threat to storm drains
8/19/2016	Automotive Spill	6020 Windsor Island Road N	Anti-freeze spill from an MVA, Keizer Public Works assisted with fluid clean-up
8/19/2016	Automotive Spill	Cherry Avenue NE at Candlewood NE	Less than one gallon of anti-freeze on roadway, cleaned spill. No threat to storm drains
8/25/2016	Automotive Spill	5450 River Road N	Small amount of anti-freezed cleaned up with ultrasorb. No threat to storm drains.
8/28/2016	Automotive Spill	4198 River Road N	Cleaned up antifreeze spill, no threat to storm drains.
8/28/2016	Automotive Spill	5550 Kalmia Drive NE	Cleaned up antifreeze spill, no threat to storm drains.
10/7/2016	Automotive Spill	4384 River Road N	Spill handled/cleaned up by KPW
10/18/2016	Automotive Spill	4510 River Road N	MVA with small amount of anti-freeze, no threat to storm drains

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
10/18/2016	Automotive Spill	661 Chemawa Road NE	MVA with small amount of anti-freeze, no threat to storm drains
10/20/2016	Automotive Spill	River Road at Lockhaven Drive	MVA with small amount of anti-freeze, no threat to storm drains
10/25/2016	Automotive Spill	3830 River Road N	MVA with small amount of anti-freeze, no threat to storm drains
10/26/2016	Automotive Spill	McLeod Lane at Chemawa Road	Two car minor MVA with one injury/transport. Spill cleaned from the roadway, no threat to storm drains
10/27/2016	Automotive Spill	1954 Allendale Way NE	MVA with small amount of anti-freeze, no threat to storm drains
10/29/2016	Automotive Spill	River Road at Manbrin Drive	Roll-over MVA with injury. KPW took care of spills with KZP assistance
10/31/2016	Automotive Spill	812 Lockhaven Drive NE	MVA with Oil and radiator fluid on roadway. Cleaned up using absorbent, no threat to storm drains
11/1/2016	Automotive Spill	River Road N at Manbrin Drive NE	Roll over MVA w/approx 5 gallons of gas in roadway. KPW on scene to assist w/ cleanup. No threat to storm drains.
11/7/2016	Automotive Spill	Lockhaven Drive N at Newberg Drive N	Two car MVA w/ fluids down. Cleaned from roadway with Ultrasorb. No threat to storm drains.
11/14/2016	Automotive Spill	River Road N at Sunset Avenue N	Fluids down from a non-injury MVA, KPW on scene managing spill.
11/15/2016	Automotive Spill	Lockhaven Drive NE at Chemawa Road NE	Two car MVA, fluid spill contained with Ultrasorb and pads, no threat to storm drains.
12/16/2016	Automotive Spill	River Rd N at Meadowridge St NE	Approx. 1/2 gallon of antifreeze cleaned from the roadway with ultrasorb. No threat to storm drains.
12/23/2016	Automotive Spill	Chemawa Rd NE at Keizer Station Blvd NE	Less than one gallon of coolant down, cleaned with ultrasorb, no threat to storm drains.
1/2/2017	Automotive Spill	River Road N at James Street N	Fluid and debris clean up with ultrasorb, no threat to storm drains.
1/7/2017	Automotive Spill	Lockhaven Drive NE at 14th Avenue NE	Radiator fluid down, removed with ultrasorb and pads. No threat to storm drains.
1/16/2017	Automotive Spill	Lockhaven Drive NE at 14th Avenue NE	3 car MVA with antifreeze down, cleaned with ultrasorb and pads. No threat to storm drains.
1/27/2017	Automotive Spill	3700 River Road N	Approx one quart of antifreeze on ground, cleaned with ultrasorb. No threat to storm drains.
1/29/2017	Automotive Spill	700 Chemawa Road NE	Fluids down and into storm drain (gas, oil, transmission), diverted and dyked. Removed with ultrasorb and pads, KPW notified and assisted.

KEIZER FIRE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
2/14/2017	Automotive Spill	Chemawa Rd NE at Stadium Dr NE	1 quart of transmission oil on roadway, removed with ultrasorb. No threat to storm drains.
3/1/2017	Automotive Spill	Wheatland Rd N at New Terrace Dr N	Radiator spill removed with Ultrasorb and pads. No threat to storm drains.
3/7/2017	Automotive Spill	Chemawa Rd NE at McLeod Ln NE	Debris and fluid sheen cleaned by KZF. No fluid into storm drains or waterways.
3/13/2017	Automotive Spill	Chemawa Rd NE at River Rd N	Approx 1 gallon of antifreeze down, removed by KZF. No threat to storm drains.
3/16/2017	Automotive Spill	River Rd N at Manzanita St NE	Fluids down handled by Keizer Public Works
3/27/2017	Automotive Spill	1605 Lockhaven Dr NE	Fluids removed with absorbant. No threat to storm drains.
4/4/2017	Automotive Spill	Chelan St NE at Verda Ct NE	Small amount of fluid from vehicle, cleaned with absorbant. No threat to storm drains.
4/9/2017	Automotive Spill	Chemawa Rd NE at Stadium Dr NE	Fluids from both vehicles in roadway, removed with absorbant and pads. No threat to storm drains.
4/12/2017	Automotive Spill	Cherry Ave NE at Ring St NE	Approx 1 quart of oil removed from roadway with absorbant. No threat to storm drains.
4/14/2017	Automotive Spill	River Rd N at Garland Way N	Fluid leaking from rear of vehicle (not gasoline), removed with absorbant pads. No threat to storm drains.
4/30/2017	Automotive Spill	4765 River Rd N	1 gal. of antifreeze and small amount of motor oil down with oil. Removed with absorbant and pads. No threat to storm drains.
5/6/2017	Motor Vehicle Fire	1095 Clearview Avenue NE	Vehicle fire, extinguished PTA. Cleaned up approx. 1 gallon of gasoline with ultrasorb. No threat to storm drains
5/12/2017	Automotive Spill	6375 Ulali Drive NE	Vehicle into a building w/approx 1 gallon of antifreeze down. Cleaned up with ultrasorb. No threat to storm drains.
5/19/2017	Automotive Spill	Chemawa Road NE at Stadium Drive NE	2 vehicle MVA w/small amount of fluids down from one vehicle, cleaned up with ultrasorb. No threat to storm drains.
5/19/2017	Automotive Spill	Marino Drive N at Rowan Avenue N	Small fluid spill removed from roadway with ultrasorb. No threat to storm drains.
5/31/2017	Automotive Spill	River Road N at Garland Way N	Called by KZF for small fluid spill, cleaned up from roadway and parking lot with ultrasorb. No threat to storm drains.
6/2/2017	Automotive Spill	Manbrin Dr N at Rivercrest Dr N	Non injury MVA, 1 quart of antifreeze cleaned with ultrasorb. No threat to storm drains.
6/10/2017	Automotive Spill	Chemawa Road N at Delight St N	Approx. 1 cup of fluid from veh reached storm drain. Called off-duty Keizer Public Works but they did not respond to the page out.

KEIZER FIRE IDDE INCIDENT REPORTING TABLE

Incident Date	Type	Incident Address	Description
6/12/2017	Automotive Spill	Ridgetop Dr NE at Northern Hts Lp NE	Significant coolant and oil spill in roadway cleaned up with pads and ultrasorb. No threat to storm drains or waterways.
6/21/2017	Automotive Spill	River Rd N at Lockhaven Dr N	Small amount of grease in roadway, cleaned up with ultrasorb. No threat to storm drains.
6/27/2017	Automotive Spill	River Rd N at Sam Orcutt Way NE	Small amount of fluids on roadway, cleaned up with ultrasorb. No threat to storm drains.