City of Milwaukie
Illicit Discharge and Elimination Program
Standard Operating Procedure

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City of Milwaukie
Illicit Discharge Detection and Elimination Program
Standard Operating Procedure

It is the intent of the City of Milwaukie to enhance its program to detect, remove, and eliminate illicit discharges to its Municipal Separate Storm Sewer System (MS4) in order to further protect the natural environment for the citizenry of Milwaukie. Changes to the City's Municipal Code Title 13.14.025 made in April 2010 enable the City to supplement its ability to prohibit and take legal enforcement actions against illicit discharges to the MS4.

If an illicit discharge to the MS4 is discovered, City of Milwaukie staff will follow an enforcement response plan that effectively eliminates the illicit discharge. Changes in the City of Milwaukie's MS4 permit issued by the Department of Environmental Quality on March 16, 2012 require the City to employ additional investigative procedures when analyzing an alleged illicit discharge. Whether the discharge is found by dry weather field screening, a citizen's phone call, or through routine maintenance duties, the same steps will apply when investigating the incident. This document will present how the City of Milwaukie will pursue illicit discharges.

The following non-stormwater discharges are not considered illicit discharges provided they are determined not to be a significant source of pollutants and are permitted to be discharged to the MS4: waterline flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated groundwater infiltration; uncontaminated pumped groundwater; discharges from potable water sources; start up flushing of groundwater wells; potable groundwater monitoring wells; draining and flushing of municipal potable water storage reservoirs; foundation drains; air conditioning condensate; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; individual residential car washing; charity car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash waters; discharges of treated water from investigation, removal and remedial actions selected or approved by the Department pursuant to Oregon Revised Statue (ORS) Chapter 465; and, discharges or flows from emergency firefighting activities. If a suspected discharge is discovered to result from a source found on the preceding list; it will not be investigated further unless there is evidence of pollutants.

City of Milwaukie staff will perform dry weather inspections of selected, priority stormwater outfalls (Attachment "E") located inside the service area of the City's MS4 shown on map in attachment "C". These inspections will occur during the latter part of the summer season, typically during the month(s) of July and/or August. A dry period of not less than 72 hours will precede all of the inspections to ensure precipitation produced flows have no influence on the findings at the outfall. When the priority outfalls are inspected, staff will document general observations by completing an inspection form (Attachment "D") by noting: presence of flow, turbidity, oil sheen, trash debris or scum, color, odor and any other relevant visual indications of possible illicit discharges. If an outfall is dry with no flow, this too will be noted and the inspection form will be completed with all required findings.

If flow is present, staff will attempt to arrive at an estimated flow for the outfall. This will be accomplished by filling a container of known volume with the flow from the outfall and using a watch and arithmetic, calculate flow in gallons per minute. If the outfall pipe is ponded, or otherwise not above the water surface, staff can use small floatable items (leaves, sticks, etc.) to estimate the velocity of the flow in feet per second. If this is not possible, staff will inspect upstream manholes or other access points to determine flow volumes. Combined with the pipe diameter and depth of flow, these parameters can be calculated into a crude volume of flow.

Also if flow is present at the outfall, staff will collect a volume of water from the outfall flow for field analysis. Field analysis will consist of taking measurements with instruments calibrated earlier in the same day they are used for monitoring outfall discharges. If the sample collected from the outfall measures outside the Pollutant Parameter Action Levels set forth is Attachment “A” for any of the parameters, an upstream investigation will be triggered to determine the source of the pollutant. Staff will follow outfall flows upgradient throughout the stormwater collection system by visually inspecting manholes or other access points. Additional samples and readings may need to be taken from intersecting points to identify the origin of a discharge if there is flow from more than one direction. If there is no definite source visible between two points in the stormwater system, CCTV may be needed to further investigate a possible illicit or cross connection. If an illicit discharge or cross connection is discovered, staff will proceed with eliminating the discharge by following the IDDE Enforcement Response Plan set forth in Attachment “B”.

Attachment A
Pollutant Parameter Action Levels

Indicator monitoring is used to confirm illicit discharges, and provides clues about their source or origin. The following indicators can be used during dry weather outfall inspections to determine whether or not an upstream investigation is warranted.

Milwaukie Pollution Parameter Action Levels

Parameter	**Action Level**	**Rationale**
pH	≤6.4 or ≥8.6	OAR 340-041-0345 water quality std. for Willamette Basin
Temperature	≥20°C	According to Div. 41's biologically based numeric criteria, the 7 day avg. max. temperature of these streams may not exceed 20°C.
Conductivity	≥325 uS/cm	Conductivity is a supplemental measurement that is not conclusive by itself, but may help identity problem outfalls that merit follow-up. If turbidity is high, conductivity may indicate whether the turbidity is due to dissolved substances rather than fine particulates.
Turbidity	15 NTU	Turbidity is a supplemental measurement that is not conclusive by itself, but may help identify problem outfalls that merit follow-up. Turbidity above the action level may indicate whether discharge consists of something other than tap water or groundwater.
Total Chlorine residual	≥0.1 mg/L	Presence of Cl_2 may indicate municipal treated water, a discharge of municipal water, residential car washing, or pool/hot tub water.

References:

City of Gresham
Water Environment Services
Center for Watershed Protection and Pitt R. 2004.
Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments.

Attachment B
IDDE Enforcement Response Plan

If an illicit discharge is discovered during the outfall inspections or during other routine duties, staff will diligently work to find the origin of the discharge. Once discovered, the party responsible for the discharge will be notified of the illicit activity and will be ordered to stop the discharge/activity. City staff will take appropriate action to document and record the source, quantity, material, duration, and receiving stream affected from the spill/discharge. City of Milwaukie spill response protocol will be followed during the initial discovery and investigation of the spill/discharge and proper notifications will be made according to the severity of the spill/discharge.

At the initial contact, the party(ies) responsible for the spill/discharge will be issued a notice to cease and desist the activity, plus be sent via certified mail within five (5) working days of discovery, a Notice of Violation (NOV) letter outlying a required response from the responsible party to rectify the illicit discharge. If an Oregon Emergency Response System notification is warranted, Oregon DEQ will receive a copy of the NOV. If the timeframe set forth in the NOV is not complied with or the illicit discharge(s) do not cease, the City's Code Compliance division will be notified and enforcement actions will escalate against the responsible party.

If the illicit discharge is discovered during the investigation to be originating from a piped source, or is otherwise considered a cross connection, those flows shall be confirmed via dye testing, laboratory analysis, field instruments, closed circuit video or other means to prove a non-stormwater discharge. Once confirmed as an illicit cross connection, the responsible party will be issued a NOV by certified mail that details the needed corrections and a timeline for completion. DEQ will receive a copy of this letter via USPS. Depending upon the complexity of the situation, and if it is determined that the correction of the illicit discharge will take more than fifteen (15) working days, City staff will develop and implement an action plan for the discharger to follow within 20 working days of determining the source of the illicit discharge. The action plan will typically be included with the NOV mailing. The discharger will be responsible with applying for, obtaining, and complying with any and all applicable City, state or federal permits, codes, and/or regulations while making corrections to eliminate the illicit connection.

The City of Milwaukie, using the authority afforded through MMC Chapter 13 Rules and Regulations, may institute any number of enforcement actions listed in Table 1E to effect corrections to an illicit discharge or connection.

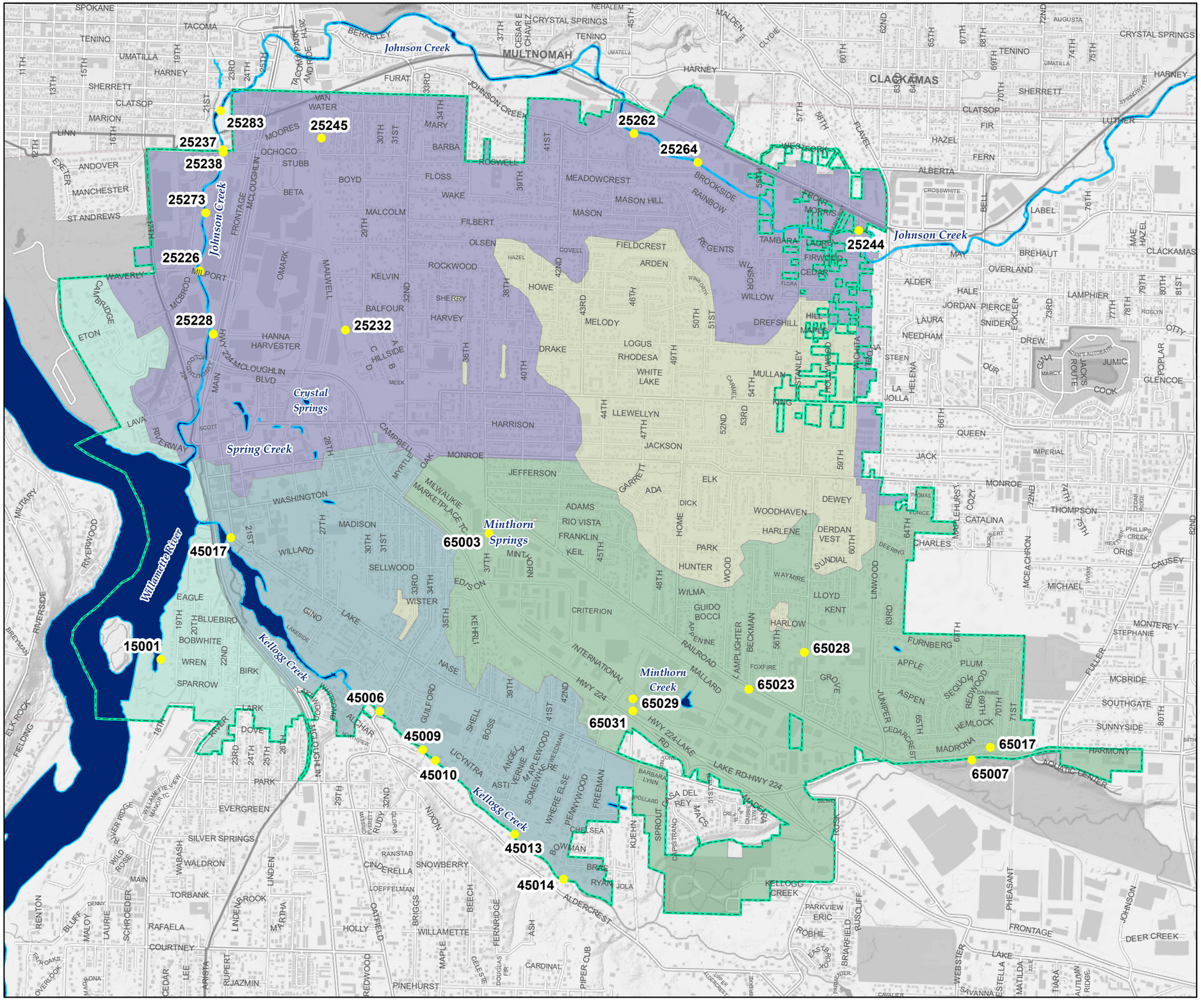
Table 1E: Summary of IDDE-Related Enforcement Tools	
Type of Enforcement Action	**Description**
Written Warning with Voluntary Compliance	• Applies to first time, minor violations
Written Notice of Violation Ordering Compliance	• Should clearly state description of remedial measures necessary, time schedule, penalties assessed if it doesn't happen, and timeframe for appeal
Administrative Penalties	• Daily financial penalty imposed by a responsible department for each day violation remains unfixed
Civil Penalties	• Daily financial penalty imposed by judicial authority for each day violation remains unfixed
Compensatory Action	• In lieu of enforcement proceedings or penalties, impose alternative compensatory action, e.g., storm drain stenciling, spill plan etc.
Criminal Prosecution	• Applies to intentional and flagrant violations of ordinance • Each day discharge continues is typically a separate offense • Can result in fines and imprisonment
Cost of Abatement of the Violation/Property Liens	• Applies when jurisdiction remedies the discharge or conducts cleanup, but may also be used to recoup administrative costs • May constitute a property lien if not paid within certain timeframe
Emergency Cease and Desist Order	• Applies when ordinance continues to be violated • Requires immediate compliance with ordinance by halting operations/ terminating discharges • May be a written or verbal order to remove illicit discharge
Suspension of Water or Sewer Service	• Applied in emergency situations to immediately discontinue discharge to MS4 • May be applied as enforcement measure when property owner does not comply/fix the problem within timely manner
Stop Work Order	• Typically applies to discharges associated with construction activity • No further work can be done until compliance is achieved

CITY OF MILWAUKIE

DWFS
Prioirty Outfalls

- Milwaukie City Limits
- DWFS
- Drywells
- Johnson Creek
- Kellogg Creek
- Scott Creek
- Willamette River

Attachment C
Milwaukie Priority Outfall Locations



Data Sources: City of Milwaukie GIS, Clackamas County GIS, Metro Data Resource Center

Date: Wednesday, September 21, 2022

The information depicted on this map is for general reference only.The City of Milwaukie cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of errors would be appreciated.

GIS Coordinator
City of Milwaukie
6101 SE Johnson Creek Blvd.
Milwaukie, OR 97206
(503) 786-7687

0 0.5 1 Miles

STORMWATER DIVISION
DRY WEATHER FIELD INSPECTION
Field Reconnaissance Data Sheet

Outfall ID # _____ Date:_____

Drainage Basin:_____ Time:_____
Inspector(s)_____

Outfall Description:

☐ Open Channel ☐ Catch Basin ☐ Manhole ☐ Outfall Culvert

Material:

☐Concrete ☐Corrugated Steel ☐Iron ☐Plastic ☐Other

Outfall Size (ID inches)_____

Dominant Drainage Land Uses:

☐RESIDENTIAL ☐COMMERCIAL ☐INDUSTRIAL ☐AGRICULTURAL

OTHER_____

Dry Weather Flow Characteristics:

☐DRY ☐WATER PONDING ☐WATER FLOWING water depth_____in
water velocity_____ fps
flow_____ gpm

Pollutant Parameter	**Action Levels**	**Reading/Time**	**Exceed ALs?**
pH	<6.5 to >8.5	_____	_____
Temperature	>20.0°C	_____	_____
Conductivity	>325 uS/cm	_____	_____
Turbidity	>15 NTU	_____	_____
Chlorine Res	>0.1 mg/L	_____	_____

Visual Observations:

Flow: ☐Trace ☐Trickle ☐Moderate ☐Substantial ☐Steady?_____

Odors: ☐Absent ☐Faint ☐Easily Detected ☐Strong ☐Describe_____

Color: ☐Absent/clear ☐Present ☐Describe_____

Turbidity: ☐Absent/clear ☐Slight ☐Cloudy ☐Opaque

Attachment D

Floatable Solids: ☐Absent ☐Present ☐Describe_____

Pipe Benthic Growth: ☐Absent ☐Present ☐Describe_____

Probability of Illicit Discharge: ☐ Unlikely ☐Potential ☐Obvious

Upgradient Investigation launched? Yes ☐ No ☐

Samples Collected? Yes ☐ No ☐

Collection date/time_____

Other Comments: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Diagram (if needed)

DWFS Prioritization
All Outfalls

Attachment E

Outfall #	Pipe Size in	Land Use	Drainage Basin	Comments
15001	18	Residential	WR	Willamette River
25014	12	Industrial	JC	<90,000ft²
25019	24	Residential	JC	No Access
25210	18	Residential	JC	<90,000ft²
25213	24	Commercial	JC	Piped Stream
25214	36	Commercial	JC	Piped Stream
25219	12	Residential	JC	No Access
25221	12	Commercial	JC	No Access
25225	18	Industrial	JC	>90,000ft²
25226	36	Industrial	JC	Major Outfall
25228	30	Industrial	JC	>90,000ft²
25232	18	Residential	JC	>90,000ft²
25233	15	Industrial	JC	<90,000ft²
25235	10	Industrial	JC	<90,000ft²
25236	18	Industrial	JC	Piped Spring
25237	48	Industrial	JC	Major Outfall
25238	12	Industrial	JC	Industrial Outfall
25244	24	Industrial	JC	>90,000ft²
25245	48	Residential	JC	Major Outfall
25246	12	Industrial	JC	<90,000ft²
25261	8	Residential	JC	<90,000ft²
25262	48	Residential	JC	Major Outfall
25264	21	Industrial	JC	>90,000ft²
25266	12	Residential	JC	<90,000ft²
25267	10	Residential	JC	<90,000ft²
25273	12	Industrial	JC	Industrial Outfall
25274	12	Industrial	JC	Capped Pipe
25275	12	Residential	JC	<90,000ft²
25283	18	Industrial	JC	Industrial Outfall
45006	15	Residential	KC	63Kft²- High Traffic
45007	10	Residential	KC	<90,000ft²
45008	12	Residential	KC	<90,000ft²
45009	24	Residential	KC	>90,000ft²
45010	30	Residential	KC	>90,000ft²
45011	12	Residential	KC	<90,000ft²
45013	21	Residential	KC	>90,000ft²
45014	21	Residential	KC	>90,000ft²
45015	17	Residential	KC	<90,000ft²
45016	18	Commercial	KC	<90,000ft²
45017	21	Commercial	KC	>90,000ft²
65001	12	Commercial	MS	Piped Spring
65002	24	Commercial	MS	Piped Stream
65003	24	Commercial	MS	>90,000ft²
65004	12	Commercial	MS	<90,000ft²

65005	18	Residential	MS	<90,000ft²
65007	32	Residential	MS	>90,000ft²
65011	15	Residential	MS	Submerged Outfall
65012	8	Residential	MS	<90,000ft²
65013	15	Residential	MS	<90,000ft²
65014	10	Residential	MS	<90,000ft²
65015	culvert	Residential	MS	Culvert/Piped Stream
65017	18	Residential	MS	>90,000ft²
65019	12	Industrial	MS	<90,000ft²
65020	12	Residential	MS	<90,000ft²
65021	12	Residential	MS	<90,000ft²
65022	12	Residential	MS	<90,000ft²
65023	24	Residential	MS	>90,000ft²
65027	48	Commercial	MS	Piped Stream
65028	18	Residential	MS	>90,000ft²
65029	54	Industrial	MS	Major Outfall
65031	24	Industrial	MS	Industrial Outfall
65032	48	Industrial	MS	Piped Stream

DWFS Prioritization
Removed Outfalls

Attachment E

Outfall #	Pipe Size in	Land Use	Drainage Basin	Rationale for Removal
25014	12	Industrial	JC	<90,000ft²
25019	24	Residential	JC	No Access
25210	18	Residential	JC	<90,000ft²
25213	24	Commercial	JC	Piped Stream
25214	36	Commercial	JC	Piped Stream
25219	12	Residential	JC	No Access
25221	12	Commercial	JC	No Access
25233	15	Industrial	JC	<90,000ft²
25235	10	Industrial	JC	<90,000ft²
25236	18	Industrial	JC	Piped Spring
25246	12	Industrial	JC	Private Prop- OLCC Parking
25261	8	Residential	JC	<90,000ft²
25266	12	Residential	JC	<90,000ft²
25267	10	Residential	JC	<90,000ft²
25274	12	Industrial	JC	Capped Pipe
25275	12	Residential	JC	<90,000ft²
45007	10	Residential	KC	<90,000ft²
45008	12	Residential	KC	<90,000ft²
45011	12	Residential	KC	<90,000ft²
45015	17	Residential	KC	<90,000ft²
45016	18	Commercial	KC	<90,000ft²
65001	12	Commercial	MS	Piped Spring
65002	24	Commercial	MS	Piped Stream
65004	12	Commercial	MS	<90,000ft²
65005	18	Residential	MS	<90,000ft²
65011	15	Residential	MS	Submerged Outfall
65012	8	Residential	MS	<90,000ft²
65013	15	Residential	MS	<90,000ft²
65014	10	Residential	MS	<90,000ft²
65015	culvert	Residential	MS	Culvert/Piped Stream
65019	12	Industrial	MS	<90,000ft²
65020	12	Residential	MS	<90,000ft²
65021	12	Residential	MS	<90,000ft²
65022	12	Residential	MS	<90,000ft²
65027	48	Commercial	MS	Piped Stream
65032	48	Industrial	MS	Piped Stream
25225	18	Industrial	JC	>90,000 ft²

DWFS Prioritization
Priority Outfalls

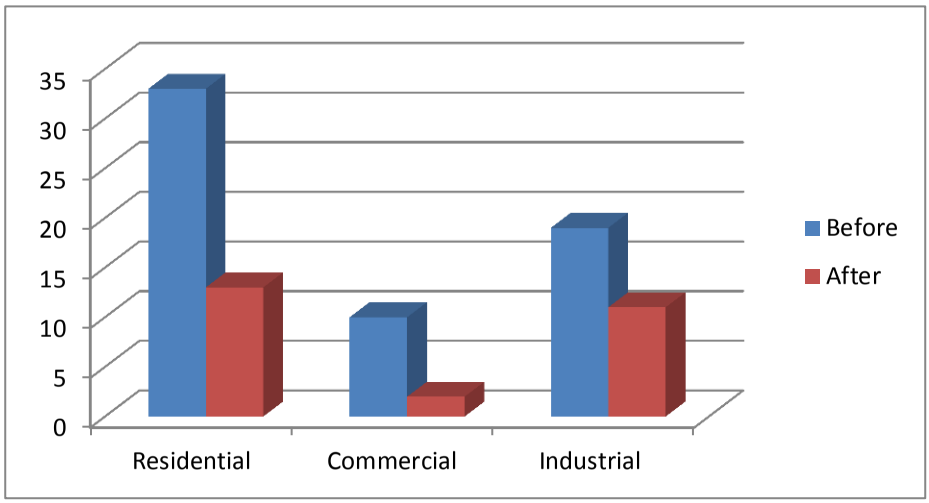
Attachment E

Outfall #	Pipe Size in	Land Use	Drainage Basin	Comments
15001	18	Residential	WR	Willamette River
25226	36	Industrial	JC	Major Outfall
25228	30	Industrial	JC	>90,000ft²
25232	18	Residential	JC	>90,000ft²
25237	48	Industrial	JC	Major Outfall
25238	12	Industrial	JC	Industrial Outfall
25244	24	Industrial	JC	>90,000ft²
25245	48	Residential	JC	Major Outfall
25262	48	Residential	JC	Major Outfall
25264	21	Industrial	JC	>90,000ft²
25273	12	Industrial	JC	Industrial Outfall
25283	18	Industrial	JC	Industrial Outfall
45006	15	Residential	KC	63Kft²- High Traffic
45009	24	Residential	KC	>90,000ft²
45010	30	Residential	KC	>90,000ft²
45013	21	Residential	KC	>90,000ft²
45014	21	Residential	KC	>90,000ft²
45017	21	Commercial	KC	>90,000ft²
65003	24	Commercial	MS	>90,000ft²
65007	32	Residential	MS	>90,000ft²
65017	18	Residential	MS	>90,000ft²
65023	24	Residential	MS	>90,000ft²
65028	18	Residential	MS	>90,000ft²
65029	54	Industrial	MS	Major Outfall
65031	24	Industrial	MS	Industrial Outfall

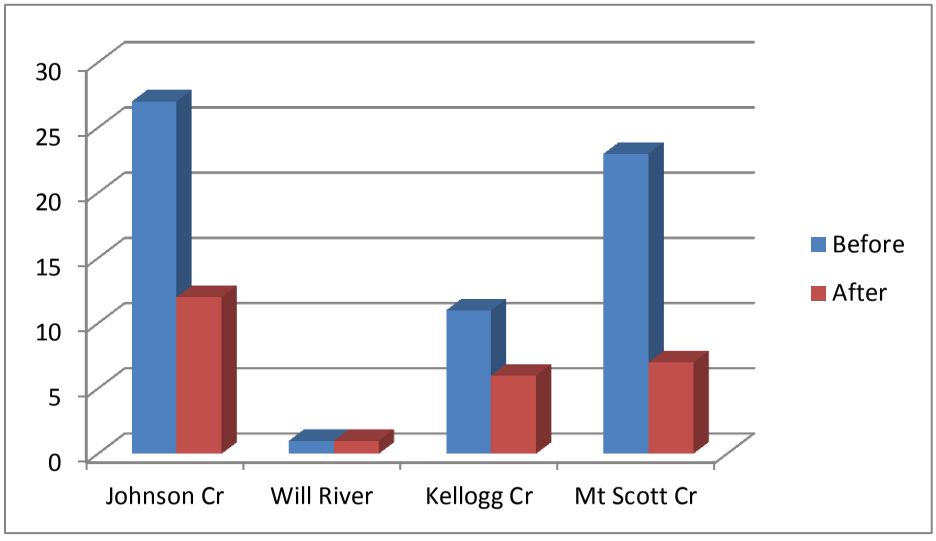
DWFS Prioritization Calculations

Attachment E

Land use	Before	After	Before	After
Residential	33	13	53.20%	50%
Commercial	10	2	16.10%	7.70%
Industrial	19	11	30.60%	42.30%

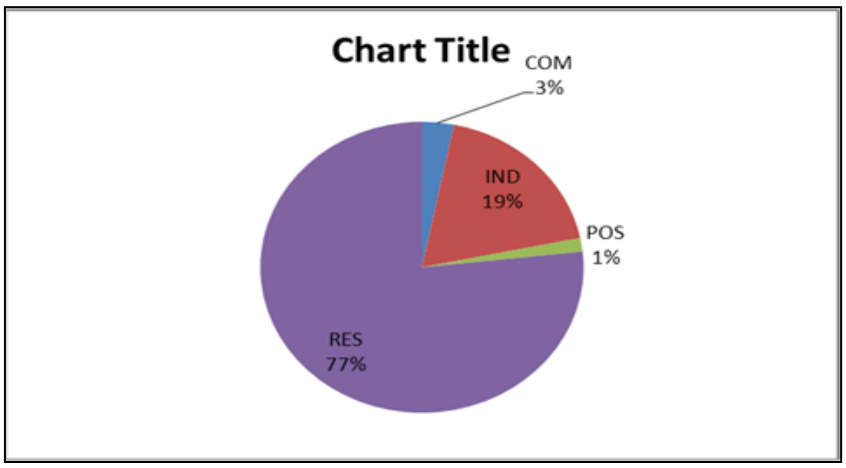


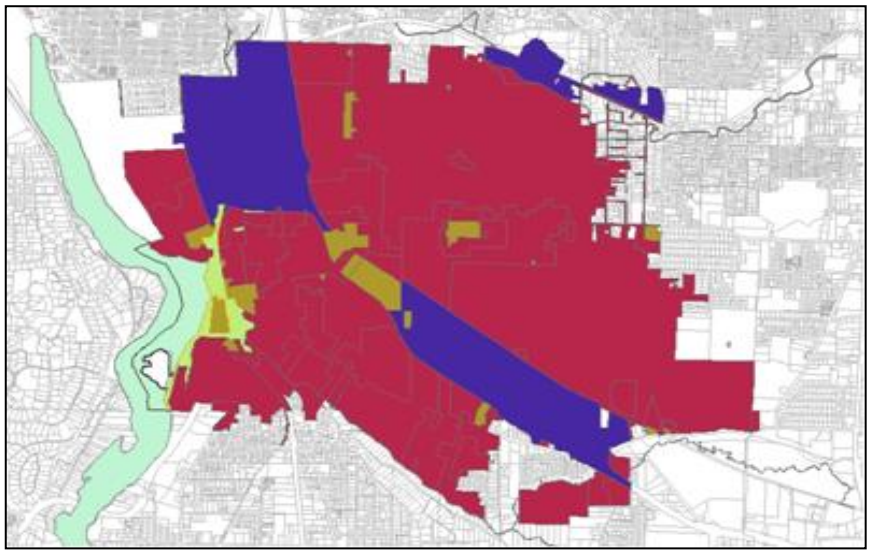
Drainage Basin	Before	After	Before	After
Johnson Cr	27	12	43.50%	46.10%
Will River	1	1	1.60%	3.80%
Kellogg Cr	11	6	17.70%	23.10%
Mt Scott Cr	23	7	37.10%	27.00%



DWFS Prioritization **Attachment E**

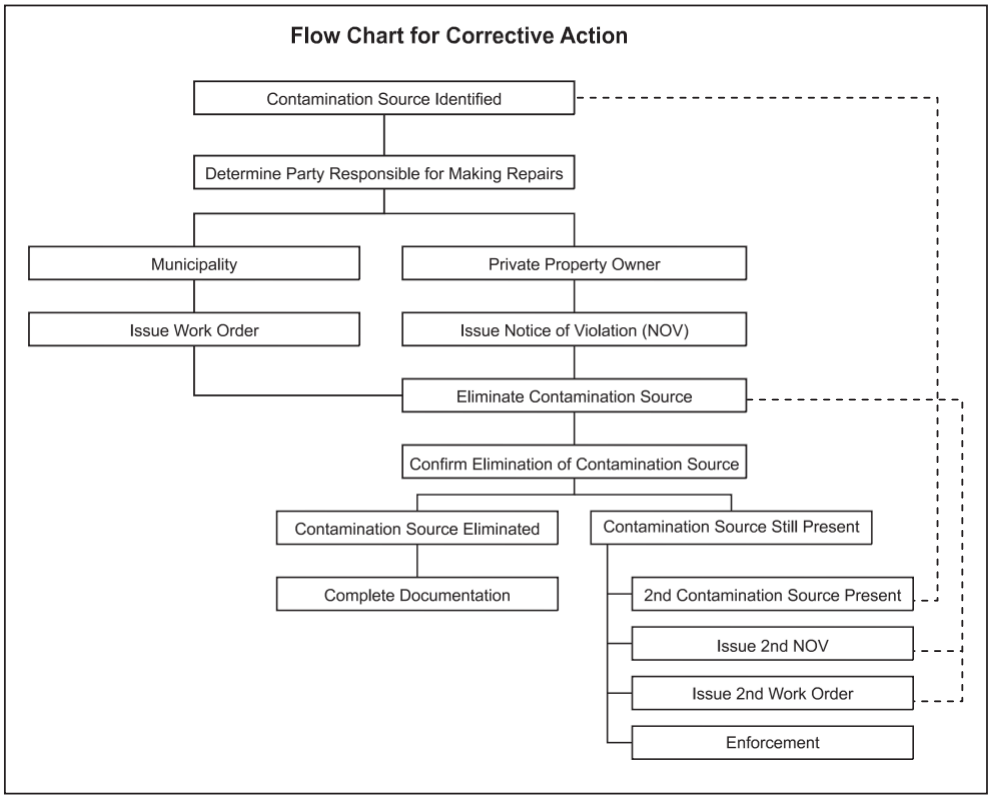
Land Use by Percentage





Attachment F

Enforcement Flow Chart



Process for Removing or Correcting an Illicit Discharge