Illicit Discharge Detection and Elimination Standard Operating Procedure

Prepared for
City of West Linn, Oregon
November 1, 2012
Updated September 2023

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Section 1

Introduction and Background

The City of West Linn's reissued municipal separate storm sewer (MS4) National Pollutant Discharge Elimination System (NPDES) permit (effective date: October 1, 2021) includes specific requirements and provisions related to implementation of their Illicit Discharge Detection, Enforcement, and Response (IDDE) program. Illicit discharges are, by definition, in Schedule D.4 of the City's MS4 NPDES permit: "*any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater except discharges authorized under Section A.4.a.xii (of the permit), discharges permitted by an NPDES permit or other state or federal permit, or otherwise authorized by the Department*."

The City has been implementing their IDDE program since receipt of their initial Phase I MS4 NPDES permit in 1995. Program activities have historically included code and ordinance development and implementation (to prohibit and enforce against illicit discharges) and dry weather field screening activities to identify occurrences and sources of potential illicit discharges.

This Standard Operating Procedures (SOP) document is intended to summarize implementation of the IDDE program, focusing on the dry weather field screening monitoring activities required to be conducted as part of the program. This SOP includes the rationale and strategy for selection of high priority dry weather screening locations, dry weather field screening inspection activities, pollutant parameter action levels, and code and enforcement authority. Additionally, this SOP includes a field inspection form (Appendix A) to aid in the documentation and collection of information.

1.1 Permit Language and Requirements

As described in Schedule A.3.c.ii-v of the City's MS4 NPDES permit, the IDDE program must:

1. *Continue to prohibit non-stormwater discharges into the MS4 (except those conditionally allowed by Schedule A.1.d) through enforcement of an ordinance or other regulatory mechanism, to the extent allowable under state law.*
2. *Continue to implement their enforcement and response procedures as developed under the previous permit.*
3. *Implement a program to detect and eliminate illicit discharges….*
4. *Continue to implement a Dry Weather Screening Program at priority MS4 locations.*

The City has been conducting such activities as outlined in this SOP since the previous NPDES MS4 permit term.

Recent (2023) updates to this SOP include updates to the prioritization criteria for dry weather field screening locations, as well as updated locations in accordance with provisions of the current NPDES MS4 permit. Such updates are required to be included in the 2022-23 NPDES MS4 annual report and reflected in the SWMP Document (or associated MS4 Document Library).

1.2 Dry Weather Field Screening Monitoring Objectives

Dry weather field screening activities (and dry weather outfall monitoring) comprise a major element of the City's IDDE program. Dry weather field screening involves the inspection of select outfalls during dry weather conditions to determine if discharge is occurring. If discharge is occurring, the next steps are to identify the source of the discharge, determine whether the discharge is allowable,

and eliminate the discharge if it is unallowable or anticipated to add pollutants to the MS4. Source identification and discharge characterization generally involves:

1. Visual observations and characterization.
2. Field analysis (on-site analysis for select field parameters).
3. Field tracking, or upstream system investigation to try and identify the pollutant source.
4. Laboratory analysis (sample collection for off-site analysis).

Implementation of dry weather field screening also addresses objectives of the City's monitoring program. Specifically, in addition to the dry weather field screening requirements, the following monitoring objectives per Schedule B.1.a of the permit may be addressed:

1. Evaluate the source(s) of and means for reducing the pollutants of concern applicable to the co-permittees' permit area, including the 2018/2020 303(d) listed pollutants, as applicable;
2. Evaluate the effectiveness of Best Management Practices (BMPs) in order to help determine BMP implementation priorities;

Implementation of an effective dry weather field screening program may allow the City to identify periodic or ongoing sources of observable pollutant discharge. Additionally, it may inform how well the City's overall stormwater program implementation is being conducted, specifically elements such as public education and program enforcement.

1.3 Code and Enforcement Authority

The City of West Linn's Municipal Code (WLMC) prohibits against illicit discharges to the storm system per code section 4.063, 4.075, and 5.400-5.565. Per WLMC section 4.063(1), "*it is unlawful to discharge or cause to be discharged directly or indirectly into the City storm sewer system and/or a surface water body, any of the following:*

- *Any discharge having a visible sheen;*
- *Any discharge having a pH of less than 6.0 Standard Units (S.U.) or greater than 9.0 (S.U.);*
- *Any discharge that contains toxic chemicals in toxic concentrations;*
- *Any discharge that contains visible floating solids;*
- *Any discharge which causes or may cause damage to the City's storm sewer system;*
- *Any discharge which causes interference in the City's storm sewer system;*
- *Any discharge which causes or may cause a nuisance or hazard to the City's system, City personnel, or the receiving waters."*

Enforcement provisions are outlined in the WLMC section 4.062(3) which states that "*no portions of (WLMC) section 4.000 to 4.090 or statement herein or subsequent interpretations or policies shall relieve any property owner of assessments levied against real property for a local improvement project or for abating conditions on the property that violate any provisions of this code*." Typical enforcement measures for illicit discharges to surface waters are not described in the code, but per WLMC section 4.075 (Enforcement), "*in addition to other lawful remedies, the City Manager may enforce the collection of charges required by Sections 4.005 to 4.090 by withholding delivery of water to any improved premises where the storm drain utility charges are delinquent or unpaid*."

Section 2

Priority Dry Weather Field Screening Locations and Selection

In accordance with receipt of the City of West Linn's first MS4 NPDES permit in 1995, the City first identified field screening locations according to major outfalls (greater than or equal to 36 inches in diameter) and priority minor outfalls (greater than or equal to 12 inches in diameter that drain industrial zoned areas).

Since 1995, field screening locations have been slightly adjusted according to accessibility, ownership, and the history of observed flow or discharges, but generally the same number of outfalls and locations have continued to be monitored.

For the City of West Linn, historical field screening locations were established to reflect discharge to many of the individual receiving waters within the City. Dry weather field screening activities have generally not resulted in the identification of illicit discharges. Historic complaints were limited to observations of small amounts of trash in the receiving water.

A majority of the City's historic and previous field screening locations included significant levels of baseflow associated with springs, groundwater, and stream flow, which has prompted the City to review and update their high priority sites to identify high priority field screening sites. In establishing high priority locations, the City considers the following criteria:

1. Regular baseflow conditions.
2. Locations with observed flow/historic complaints over the past 5 years.
3. Locations with upstream industry (or other high pollutant sources).
4. Locations with upstream development potential (such that there is the additional potential for new cross connections or pollutant sources).
5. Locations with upstream wastewater permits/pretreatment activities.
6. Locations with aging infrastructure.
7. Site accessibility.

The City reviewed their 2012 dry weather field screening locations to identify those high priority locations with which to continue their dry weather field screening program for the 2021-2026. Unique to this update, the significant presence of baseflow conditions in the previous dry weather field screening Locations #2 and #5 have limited the ability of the City to definitively evaluate whether additional flow contributions from illicit discharges are occurring.

Each new field screening location was evaluated in conjunction with the criteria (Table 1). The City's high priority screening locations are shown on Figure 1 (map). Photographs/mapping of high priority field screening locations are provided in Appendix B.

Table 2-1. West Linn High Priority Field Screening Locations

High priority screening site number[a]	Historic/ previous screening site number[b]	Location Description	Diameter, inches	Receiving Water	Assessment Criteria							Notes
					Regular Baseflow Conditions	Historical complaints	Upstream Commercial (high pollutant) sources	Upstream Development Potential	Upstream WW permits/ pretreatment	Aging Infrastructure	Accessible?	
Site 1	HP-1	Behind 2295 Brandon Place	18	Tualatin River				X			X	
	HP-2	13th Street at I-205 (near 2150 13th Street)	48	Willamette River (Bernert Creek)	X		X				X	Discontinued site in 2023, due to baseflow
Site 2		2200 16th Street	12	Willamette River (Bernert Creek)						X	X	New location (2023)
Site 3	HP-3	Between 4103 and 4081 Imperial Drive	18	Willamette River (Tanner Creek)							X	
Site 4	HP-4	Trail near 1565 Hollowell	40	Willamette River (McLean Creek)			X			X	X	
	HP-5	Century Drive at Lowry (2250 Tompkins)	12		X						X	Discontinued site in 2023, due to baseflow
Site 5		2030 Dillow Drive	18	Willamette River (Barlow Creek)						X	X	New location (2023)

Table 2-1. West Linn High Priority Field Screening Locations

High priority screening site number[a]	Historic/ previous screening site number[b]	Location Description	Diameter, inches	Receiving Water	Assessment Criteria							Notes
					Regular Baseflow Conditions	Historical complaints	Upstream Commercial (high pollutant) sources	Upstream Development Potential	Upstream WW permits/ pretreatment	Aging Infrastructure	Accessible?	
Site 6	HP-6	19625 Old River Drive	12	Willamette River (Robin Creek)			X				X	

Notes:

[a] Site number refers to Figure 1.

[b] Historic dry weather field screening number per the 2012 IDDE SOP.

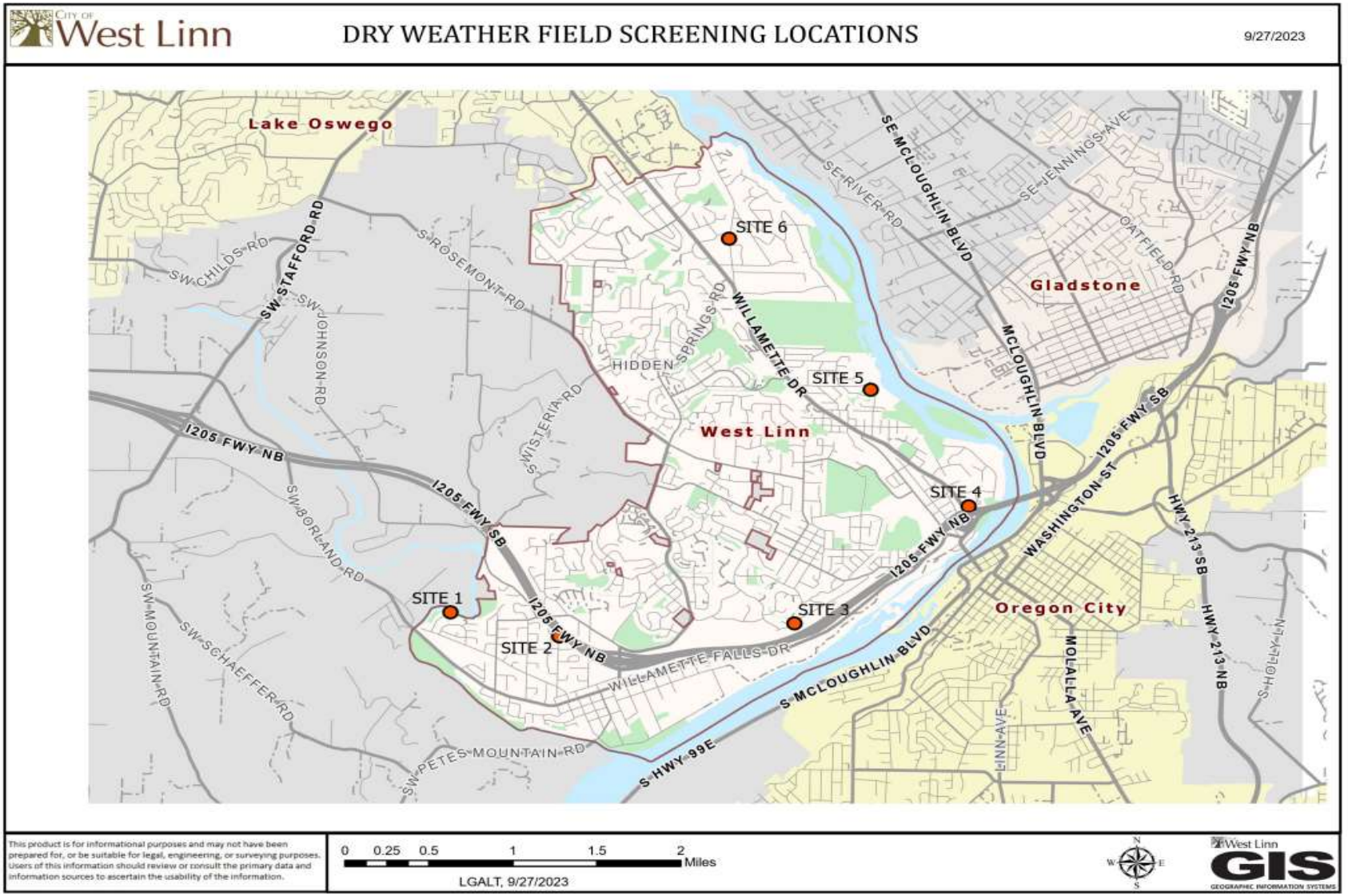


Figure 2-1. High priority dry weather field screening locations

Section 3

Standard Operating Procedure

3.1 Inspection Criteria

3.1.1 Weather

Dry weather screening will be conducted during dry summer months and following a 72-hour minimum antecedent dry period. Typical months for sampling are July, August, or September.

3.1.2 Frequency/Duration

Dry weather screening will be conducted once annually at high priority field screening locations as shown in Section 2.

Given the screening will be conducted at a frequency of once annually, preliminary identification of illicit discharges would most likely be reflective of flows of a continuous nature associated with cross connections. Intermittent spills or discharges from dumping activities that occur more randomly would be more difficult to catch with a field screening program.

3.1.3 Reported Complaints

The identification of intermittent spills or dumping would be more likely as a result of complaints received from the public or problems noted through routine City maintenance activities.

The City maintains a system for documenting reported complaints or noted problems and will investigate these potential illicit discharge activities using the same procedures provided in this document for problems identified through dry weather field screening.

3.2 Responsible Parties

The dry weather field screening activities will be conducted by a two-person crew directed by the City's Environmental Services Program Manager. The Environmental Services Program Manager will coordinate with the Engineering Division to assess proper weather conditions for field screening, and if applicable, ensuring the proper collection of samples for delivery to a lab for lab analysis. Any laboratory analysis of field samples will be conducted by a certified laboratory.

3.3 Safety Measures and Concerns

Field teams conducting dry weather screening and other field work should be properly trained and aware of potential safety hazards. Regular training for field personnel is essential for safe field practices. It is important for personnel to understand all potential hazards before entering any location. Screening of outfalls should always be conducted in groups of two at a minimum. Visual inspection of the outfall should be conducted before attempting any sample collection. If sample collection appears hazardous, a sample should not be collected and problems should be reported to the fire department. Proper lab gloves should be worn during the collection of samples. Basic safety equipment should also include appropriate protective clothing, field boots, visibility vests, cell phones, and first aid kits.

In some cases, follow-up tracking of flows may be conducted to identify the source of a flow. For tracking activities, safety equipment may also need to include flashlights, traffic cones, manhole cover lifters, air quality monitors, hardhats, safety glasses, or steel-toed boots. Field crews will need confined space entry training if entering manholes is conducted. Confined space training will ensure that crews conduct appropriate air quality monitoring to ensure awareness of flammable gases if present. At least one crew member must stay outside of the manhole at all times for emergency rescue situations.

3.4 Pollutant Parameter Action Levels

Pollutant parameter action levels were developed and are required initially in order to screen observed discharges to determine whether further investigation and lab analysis is needed.

The pollutant parameter action levels include both visual analyses and field analyses as described below. These pollutant parameter action levels are also listed on the field data sheet provided in Appendix A.

Table 3-1. Pollutant Parameter Action Levels Action Levels

Pollutant Parameter	Potential Indicator of Illicit Discharge	Severity of Observation	Action Levels
Visual Analyses			
Odor	An odor may be noticeable at the site which may be generally rancid or sour, or it may be more clearly identifiable as sewage or a petroleum related source.	#1-faint #2-easily detected #3-noticeable from a distance	• Two or more of these observations have a severity of #1 or greater, or, • One or more of these observations have a severity of #3.
Color	A color may be present in the discharge. Different colors can indicate different sources. An example would be the lime green color associated with anti-freeze. Examples of other colors associated with specific sources of pollutants are provided in the photos attached to the field data sheet in Appendix A.	#1-faint colors in sample bottle #2-clearly visible in sample bottle #3-clearly visible in outfall flow	
Turbidity	Turbidity can indicate particulates such as sediment in the water and may range from looking slightly cloudy to completely opaque.	#1-slight cloudiness #2-cloudy #3-opaque	
Floatables (other than trash)	Some floatables such as toilet paper are indicators of illicit sanitary sewer connections. Other floatables could include petroleum sheens or soap suds.	#1-few/slight; origin not obvious #2-some; indications of origin (e.g., possible suds or oil sheen) #3-some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)	
Field Analyses			
pH	pH can be a good indicator of liquid wastes from industries, which can have very high or low pH.	NA	Outside of range from 6.5 to 8.5
Conductivity	Conductivity can be strongly related with the total amount of dissolved material in water. Conductivity can have some value in detecting industrial discharges that have very high conductivity readings.	NA	Exceeds 500 µS/cm

3.4.1 Visual Analysis

During dry weather field screening, if flow is detected, flow will be evaluated per the visual pollutant parameters defined above. The field crew will report results of the visual inspection of the field data sheet (Appendix A). The visual inspection effort will also include reporting on the severity of each visual parameter. The field data sheet includes three levels of severity for each visual parameter: #1 being the lowest severity, and #3 being the highest severity. These visual observations are recorded on the field data sheet.

Depending on severity, the visual parameters may trigger further investigation (see Section 3.6) and collection of a sample for laboratory analysis (see Section 3.5.2). Specifically, if any there is one or more visual observations with a severity level of #3 or if there are two or more visual observations with a severity of #1 or greater, then further investigation and sampling would be required.

3.4.2 Field Analysis

Field analyses for pH and conductivity will also be conducted if flow is observed. Regardless of the results of the visual analyses, further investigation (tracking of the source of flow) and collection of a sample for laboratory analysis will be conducted if either the pH or conductivity results trigger the parameter's action level. For pH, this would include flow with a pH outside of the range from 6.5 to 8.5. This pH range is based on Oregon in-stream water quality standards. For conductivity, this would include flows with a conductivity level that exceeds 500 µS/cm. This conductivity concentration is based on the City of Portland's IDDE program and its review of data which showed that local natural waters should have a conductivity concentration that is below this amount.

3.5 Dry Weather Field Screening Activities

3.5.1 Inspection

Each high priority outfall location will be investigated as part of the dry weather field screening efforts, and field data sheets will be completed for each outfall.

Inspections include both visual analysis and field analysis for pH and conductivity as described in Section 3.4, if flow is occurring at the outfall. Photographic examples are provided with the field data sheet to assist in the interpretation of visual observations and defining severity. At the conclusion of the inspection, a determination will be made as to whether pollutant parameter action levels were exceeded and whether further investigation and sampling is required.

3.5.2 Sampling

During dry weather field screening activities, there may be a need to conduct further investigation (source tracking) and take samples for laboratory analysis. Therefore, prior to dry weather field screening activities, all necessary sample bottles will be decontaminated and prepared for sampling. If flow is present and exceeds defined pollutant parameter action levels (Section 3.4), sample bottles will be properly labeled and a sample will be collected for laboratory analysis. Field personnel will wear gloves while collecting samples. Bottles will be stored in a cooler with ice and delivered to the certified lab for analysis.

Laboratory analysis may consist of bacteria, metals, nutrients, hydrocarbons, or other analyses deemed appropriate based on the observations and suspected sources from field screening. Analytical results may either be used to support further identification of the source of flow, or to provide any back up documentation that may be necessary for enforcement activities.

3.6 Source Identification Investigations

3.6.1 Tracking

If an illicit discharge is indicated based on exceedances of the pollutant parameter action levels, then the source of discharge will be investigated following sample collection activities. Source identification tracking starts at the outfall location and moves upstream. GIS mapping of the stormwater system and information on contributing tax lots should be prepared in advance and used by field personnel to identify a potential source(s) upstream. Easy-to-access locations, such as manholes or catch basins, can be used to track flow. Typically, tracking at manholes/catchbasins should occur at an interval of approximately every quarter mile or until no more flow is observed. If no flow is observed, then tracking should work backwards toward the original location to narrow down the location of the source of the discharge.

If field investigations do not result in identification of the source of the illicit discharge, alternative investigative techniques will be considered depending on significance of the flow and lab sample results, such as dye testing, or closed circuit television.

Timelines for responding to reports of illicit discharges are outlined in Schedule A.3.c.iv.B and generally reflect the following:

1. Discharges, including spills, which constitute a threat to human health, welfare, and the environment must be responded to within 24 hours or as soon as possible after becoming aware.
2. All other reports of illicit discharges must be responded to within an average of two working days and no greater than four working days.
3. Conduct an initial investigation or evaluation within five working days (this would include the source identification tracking efforts following exceedances of pollutant parameter action levels)
4. If elimination of the illicit discharge will take more than 15 days due to technical, logistical, or other reasonable issues, the co-permittee must, within 20 working days of source identification, develop and begin implementation of an action plan to eliminate the illicit discharge in an expeditious manner.

3.6.2 Enforcement

The City of West Linn may implement provisions of the WLMC in conducting enforcement activities related to illicit discharges. Generally, a verbal warning is given (if a responsible party is identified) to immediately stop discharging. Code enforcement and/or the Public Works Director will be called to notify and assist in stopping and removing the illicit discharge.

Depending on the nature of the discharge, clean up measures may be conducted by the responsible party or City. If the City conducts cleanup efforts, an additional administrative fee may be assessed in addition to the cost of any cleanup effort. Follow up inspections and monitoring of the site/source will be conducted by the City.

Samples collected at the time of the observed illicit discharge will inform remediation/clean up efforts and be used to establish any additional fees, fines, or penalties.

3.7 Data Management and Adaptive Management

Records of field screening activities and maps of outfalls will be maintained by the City. If changes to the outfall inventory are noted, maps will be corrected within 6 months of identifying the change. Dry weather field screening results will be reported to DEQ annually with the NPDES MS4 Annual Report. Results of field screening activities will also be reviewed as part of the permit renewal process. If, after five years, results consistently show no activity related to illicit discharges, the City will reconsider and potentially make changes to priority screening locations.

Appendix A: Dry Weather Field Screening Inspection Form

Field Data Sheet

SECTION 1: General Information

Inspector(s):	Outfall ID/location:	Watershed area:
Date:	Time:	
Ambient temperature:	Rainfall in last 72 hours? (Y/N)	
Photo Nos:	GPS points:	

Upstream/Surrounding land use:

☐ Industrial ☐ Residential ☐ Commercial ☐ Parks/Open Space ☐ Institutional ☐ Other

SECTION 2: Outfall Description

Type	Material	Shape	Number	Submerged	Dimensions (inches)
Closed pipe	☐ RCP ☐ PVC ☐ CMP ☐ HDPE ☐ Other _____	☐ Circular ☐ Box ☐ Elliptical ☐ Other _____	☐ Single ☐ Double ☐ Other _____	☐ No ☐ Partially _____ % ☐ Fully _____ %	Diameter or dimensions (in x in): _____ _____
Open drainage	☐ Concrete ☐ Rip-rap ☐ Earthen ☐ Other _____	☐ Trapezoid ☐ Parabolic ☐ Other _____			Depth: _____ Width: _____ Bottom width: _____

Flow present? ☐ Yes ☐ No *(If no flow is present, go to Section 5)*

SECTION 3: Flow Indicators

Magnitude: ☐ Substantial ☐ Moderate ☐ Trickle

Odor		Color		Turbidity	Floatables (Not trash)	
Description:	*Severity:*	*Description:*	*Severity:*	*Severity:*	*Description:*	*Severity:*
☐ none ☐ sewage ☐ sulfide ☐ rancid/sour ☐ petroleum/gas ☐ other _____	☐ 1- faint ☐ 2- easily detected ☐ 3- noticeable from a distance	☐ clear ☐ brown ☐ gray ☐ yellow ☐ green ☐ red ☐ other _____	☐ 1- faint colors in sample bottle ☐ 2- clearly visible in sample bottle ☐ 3- clearly visible in outfall flow	☐ 1- slight cloudiness ☐ 2- cloudy ☐ 3- opaque	☐ sewage (toilet paper) ☐ petroleum (oil sheen) ☐ suds ☐ other _____	☐ 1- few/slight; origin not obvious ☐ 2- some; indications of origin (e.g. possible suds or oil sheen) ☐ 3- some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

SECTION 4: Field Testing Results for Flowing Outfalls

pH	Conductivity
Outside of range 6.5-8.5? ☐ Yes ☐ No	Exceeds concentration? >500 µS/cm ☐ Yes ☐ No

SECTION 5: Physical Indicators For Both Flowing and Non-Flowing Outfalls

Outfall damage	Deposits/stains	Abnormal vegetation	Poor pool quality	Pipe benthic growth
☐ no	☐ no	☐ no	☐ no	☐ no
☐ cracking or chipping	☐ oily	☐ excessive	☐ colors	☐ brown
☐ peeling paint	☐ flow line	☐ inhibited	☐ suds	☐ orange
☐ corrosion	☐ paint		☐ odors	☐ green
☐ other _____	☐ other _____		☐ oil sheen	☐ other _____
			☐ trash/ debris	
			☐ excessive algae	
			☐ other _____	
Comments:	Comments:	Comments:	Comments:	Comments:

SECTION 6: Probability of Illicit Discharge (proceed to Section 7 and 8 if discharge is identified as potential, suspect, or obvious)

☐ Unlikely ☐ Potential (presence of two or more indicators and/or pH or conductivity readings outside of range) ☐ Suspect (one or more indicators with a severity of #3) ☐ Obvious

SECTION 7: Data Collection

Sample taken for Lab? ☐ Yes ☐ No If yes, sample collected from: ☐ Flow in pipe/channel ☐ Pool/waterbody below outfall

SECTION 8: Tracking and Source Investigation Results

Describe any observations and results of the source tracking investigation effort and any additional issues/comments (e.g., repair or maintenance required, etc):

Visual Indicators of Illicit Discharges[1]

Color and Turbidity

Slight Turbidity
Turbidity: 1
(Difficult to interpret this observation;
May be natural or an illicit discharge)

Color: Brown; Severity: 2
Turbidity Severity: 2

Highly Turbid Discharge
Color: Brown; Severity: 3
Turbidity Severity: 3

Sewage Discharge
Color: 3
Turbidity: 3

Paint
Color: White; Severity: 3
Turbidity: 3

Industrial Discharge
Color: Green; Severity: 3
Turbidity Severity: 3

[1] As adapted from the Center for Watershed Protection's Illicit Discharge Detection and Elimination Guidance Manual (October 2004).

Visual Indicators of Illicit Discharges (continued)

Suds or Foam

Natural Foam
Note: Suds only associated with high flows at the "drop off"
Do not record.

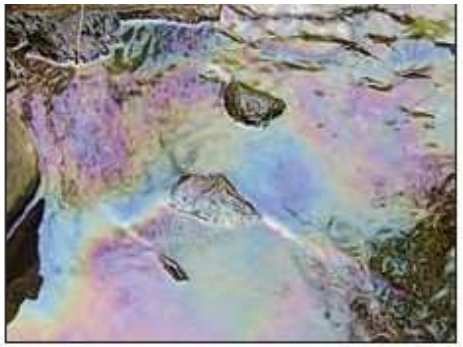
Low Severity Suds
Rating: 1
Note: Suds do not appear to travel; very thin foam layer

High severity suds
Rating: 3
Sewage

Oil Sheens

Low Severity Oil Sheen
Rating: 1

Moderate Severity Oil Sheen
Rating: 2



High Severity Oil Film
Rating: 3

Visual Indicators of Illicit Discharges (continued)

Algal and Bacterial Mats

Algal mats on lakes indicate eutrophication. Several sources can cause this problem. Investigate potential illicit sources.

Illicit discharges or excessive nutrient application can lead to extreme algal growth on stream beds.

The drainage to this outfall most likely has a high nutrient concentration. The cause may be an illicit discharge, but may be excessive use of lawn chemicals.

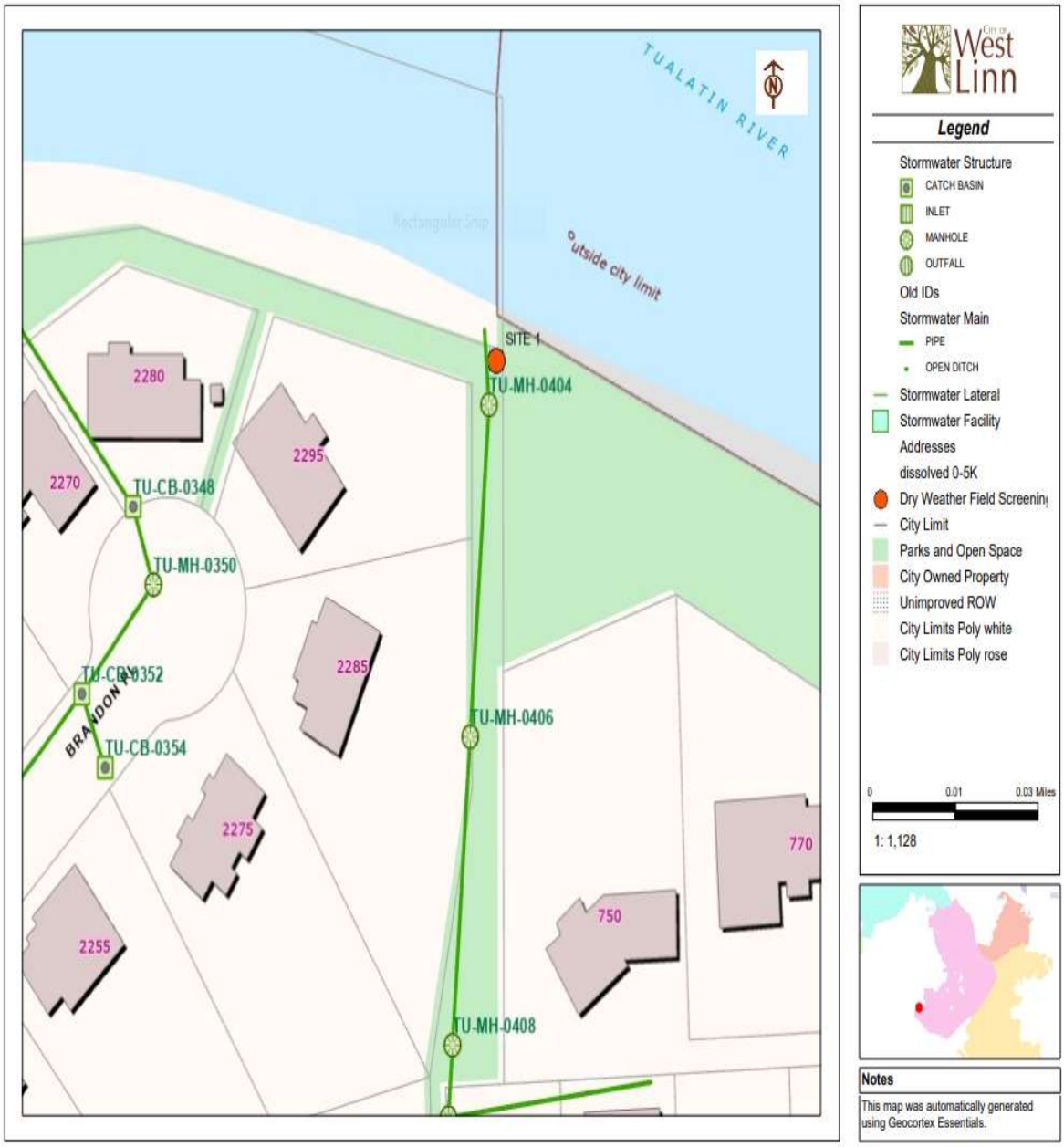
Bacterial growth at this outfall indicates nutrient enrichment and a likely sewage source.

This bright red bacterial growth often indicates high manganese and iron concentrations. Surprisingly, it is not typically associated with illicit discharges.

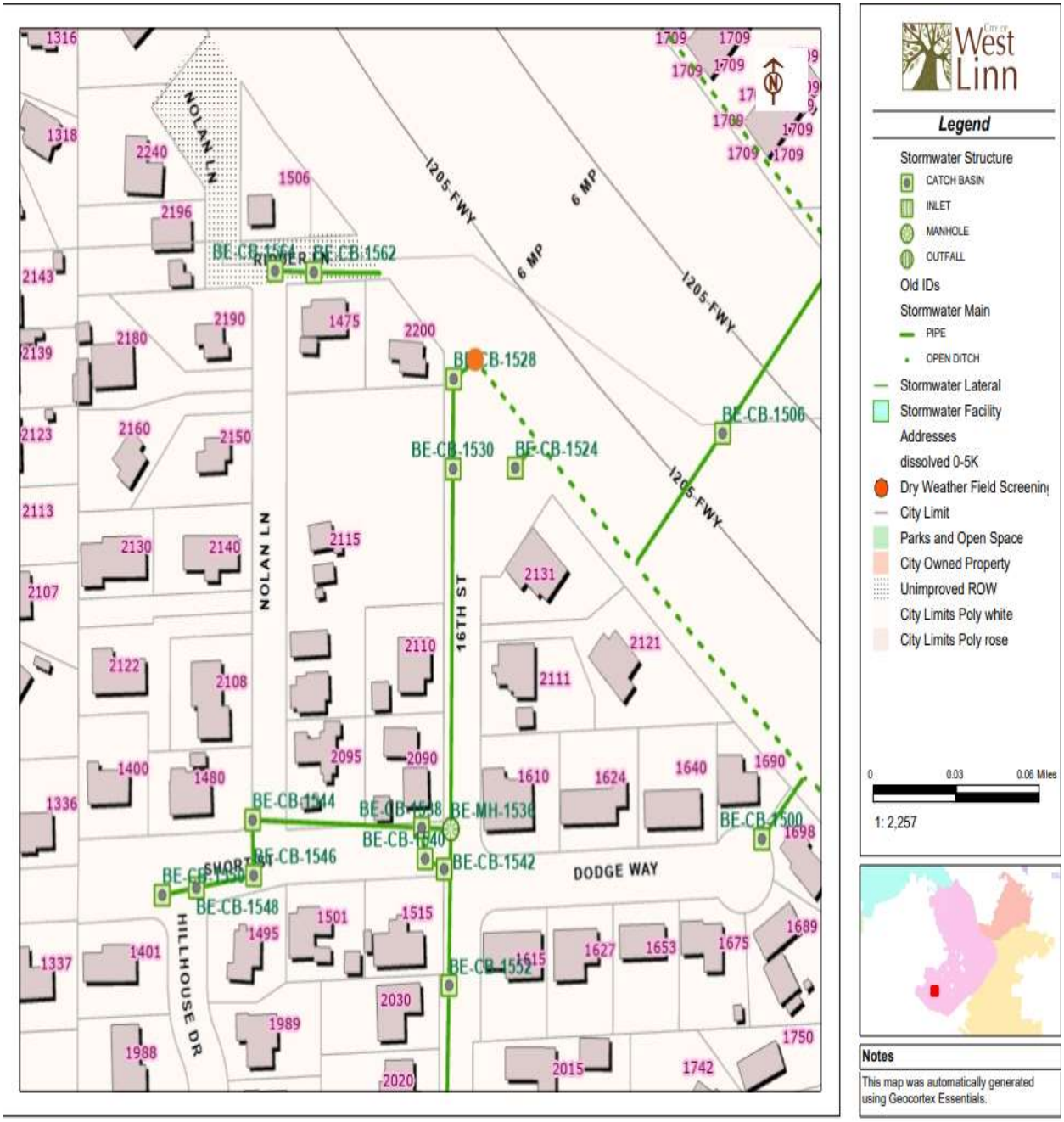
Sporalitis filamentous bacteria, also known as “sewage fungus” can be used to track down sanitary sewer leaks.

Appendix B: High Priority Site Mapping

Site 1


TUALATIN RIVER
outside city limit
SITE 1
TU-MH-0404
2280
2295
2270
TU-CB-0348
TU-MH-0350
2285
TU-CB-0352
BRANDON WAY
TU-MH-0406
TU-CB-0354
2275
770
750
2255
TU-MH-0408
West Linn
Legend
Stormwater Structure
CATCH BASIN
INLET
MANHOLE
OUTFALL
Old IDs
Stormwater Main
PIPE
OPEN DITCH
Stormwater Lateral
Stormwater Facility
Addresses
dissolved 0-5K
Dry Weather Field Screenin
City Limit
Parks and Open Space
City Owned Property
Unimproved ROW
City Limits Poly white
City Limits Poly rose
0
0.01
0.03 Miles
1: 1,128
Notes
This map was automatically generated using Geocortex Essentials.

Site 2


NOLAN LN
16TH ST
HILLHOUSE DR
SHORT ST
DODGE WAY
I205 FWY
6 MP
BE-CB-1562
BE-CB-1528
BE-CB-1530
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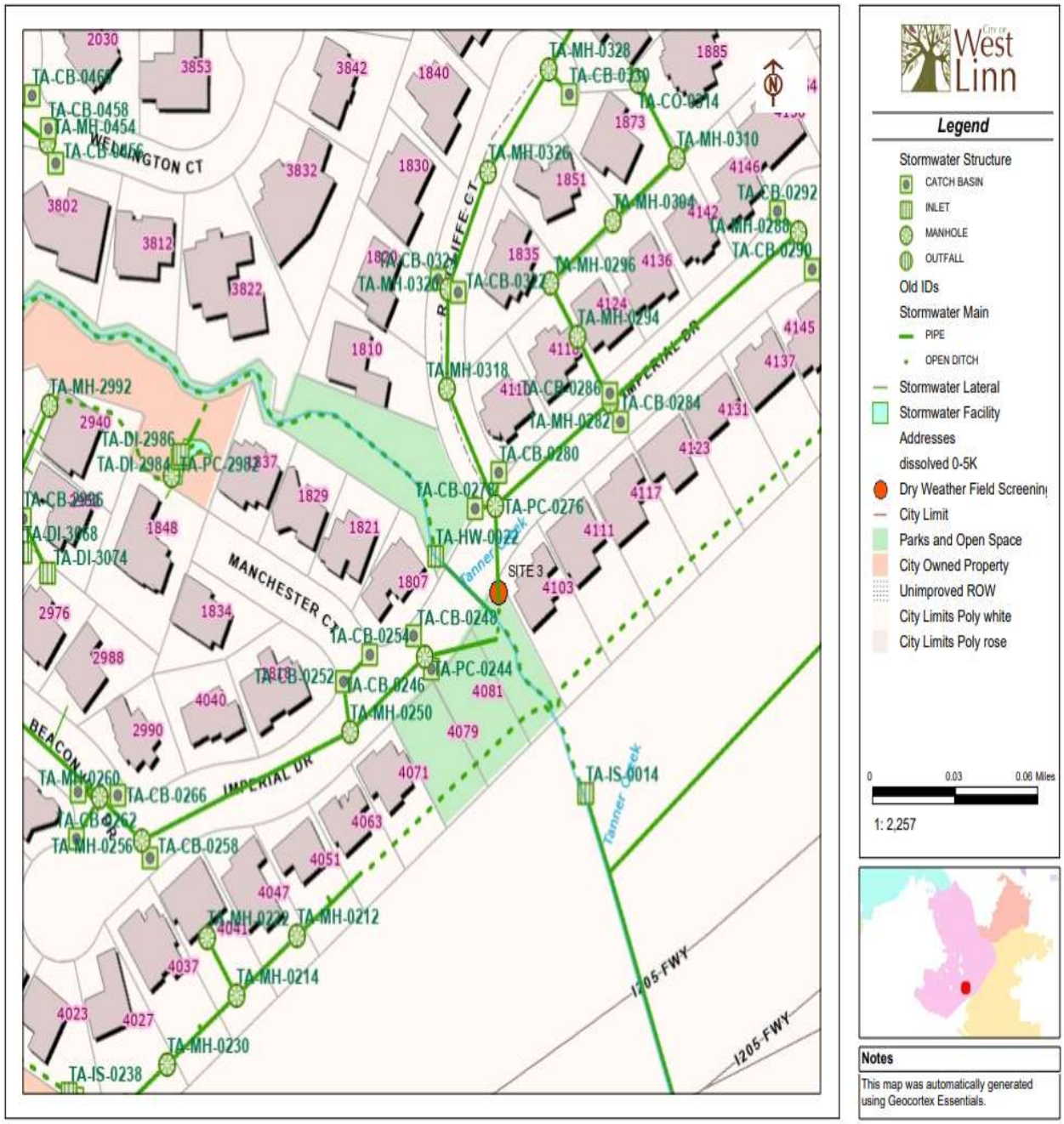
BE-CB-1506
BE-CB-1544
BE-CB-1538
BE-MH-1536
BE-CB-1540
BE-CB-1546
BE-CB-1542
BE-CB-1550
BE-CB-1548
BE-CB-1552
BE-CB-1500
West Linn
Legend
Stormwater Structure
CATCH BASIN
INLET
MANHOLE
OUTFALL
Old IDs
Stormwater Main
PIPE
OPEN DITCH
Stormwater Lateral
Stormwater Facility
Addresses
dissolved 0-5K
Dry Weather Field Screenin
City Limit
Parks and Open Space
City Owned Property
Unimproved ROW
City Limits Poly white
City Limits Poly rose
0
0.03
0.06 Miles
1: 2,257
Notes
This map was automatically generated using Geocortex Essentials.

Site 3


SITE 3
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TA-CB-0330
TA-CO-0014
TA-MH-0310
TA-MH-0326
TA-MH-0304
TA-CB-0292
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TA-CB-0290
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TA-CB-0322
TA-MH-0320
TA-MH-0294
TA-MH-0318
TA-CB-0286
TA-CB-0284
TA-MH-0282
TA-CB-0280
TA-CB-0278
TA-PC-0276
TA-HW-0022
TA-CB-0248
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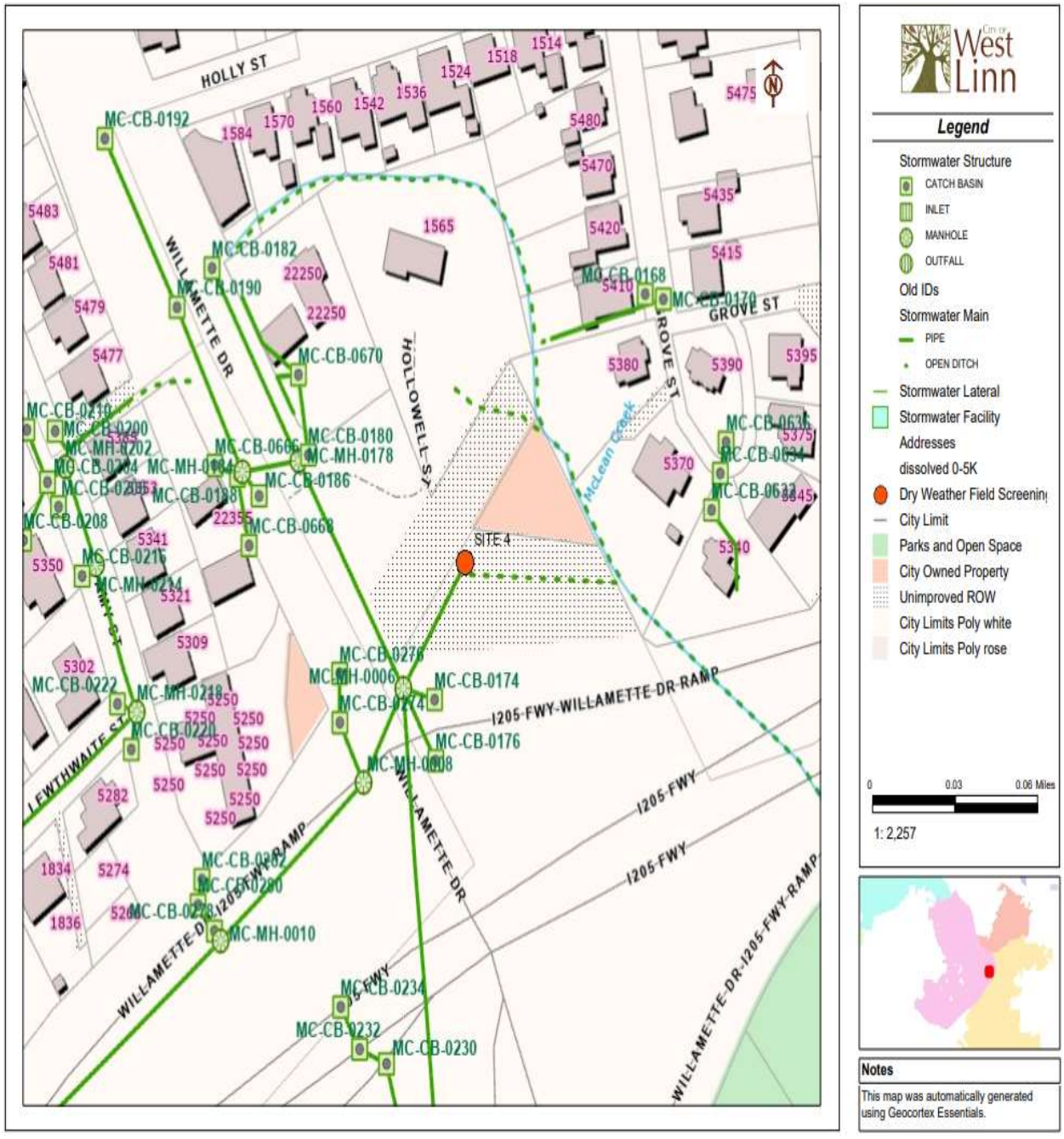
TA-DI-2986
TA-DI-2984
TA-PC-2982
TA-DI-3068
TA-DI-3074
TA-CB-0458
TA-MH-0454
TA-CB-0456
MANCHESTER CT
REACON CT
IMPERIAL DR
RADCLIFFE CT
WEDGINGTON CT
Tanner Creek
I205 FWY
I205 FWY

City of West Linn
Legend
Stormwater Structure
CATCH BASIN
INLET
MANHOLE
OUTFALL
Old IDs
Stormwater Main
PIPE
OPEN DITCH
Stormwater Lateral
Stormwater Facility
Addresses
dissolved 0-5K
Dry Weather Field Screenin
City Limit
Parks and Open Space
City Owned Property
Unimproved ROW
City Limits Poly white
City Limits Poly rose
0
0.03
0.06 Miles
1: 2,257
Notes
This map was automatically generated using Geocortex Essentials.

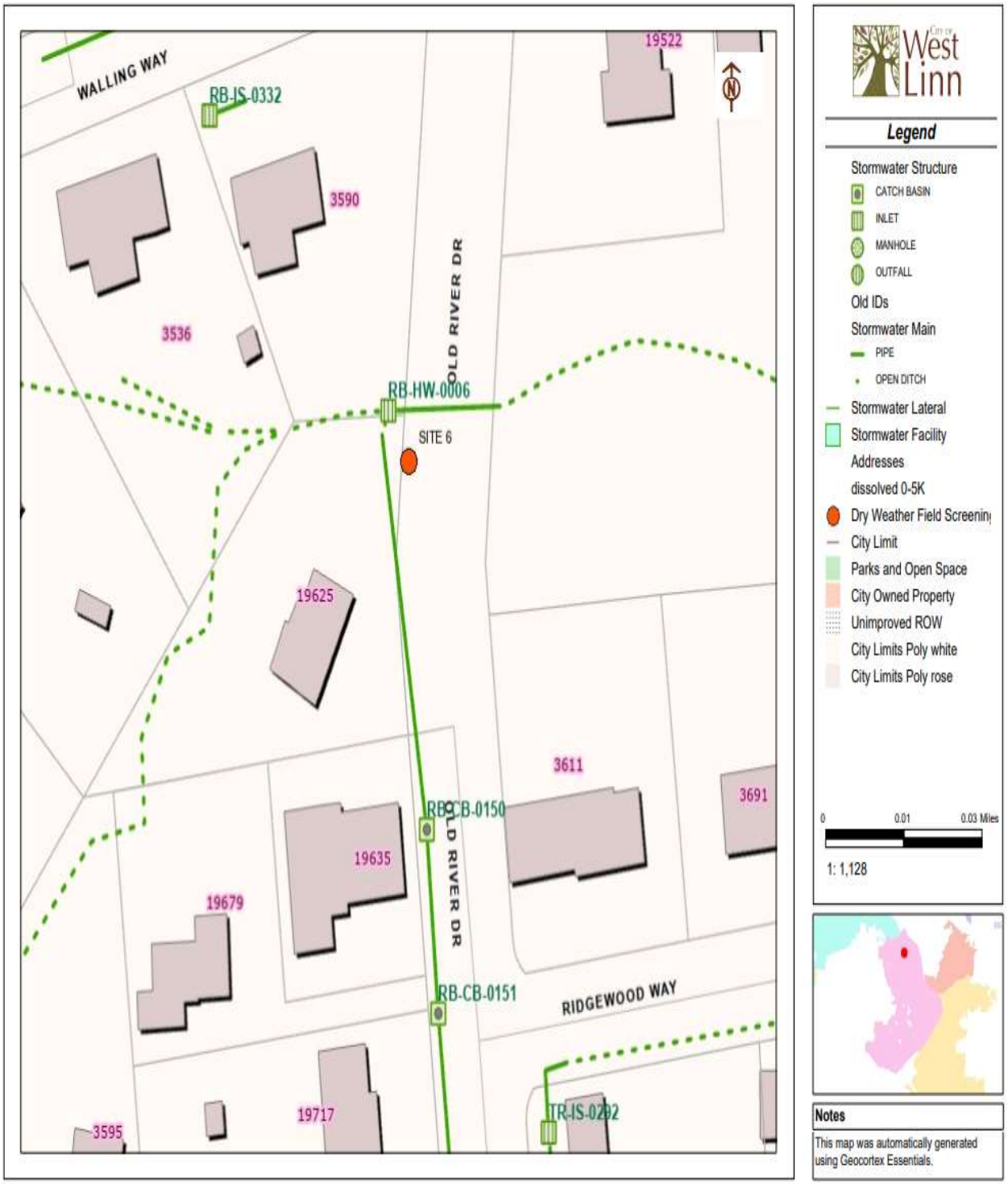
Site 4


HOLLY ST
MC-CB-0192
1584
1570
1560
1542
1536
1524
1518
1514
5475
5480
5470
5435
5420
5415
5410
MC-CB-0168
MC-CB-0170
GROVE ST
5483
5481
5479
5477
1565
MC-CB-0182
22250
MC-CB-0190
WILLAMETTE DR
MC-CB-0670
HOLLOWELL ST
5380
5390
5395
5375
5370
5345
5340
MC-CB-0180
MC-MH-0178
MC-CB-0666
MC-MH-0184
MC-CB-0186
MC-CB-0188
22355
MC-CB-0668
SITE 4
McLean Creek
5341
5350
MC-CB-0215
MC-MH-0214
5321
5309
5302
MC-CB-0222
MC-MH-0218
MC-CB-0220
5250
5282
LEWTHWAITE ST
MC-CB-0216
MC-MH-0006
MC-CB-0174
I205-FWY-WILLAMETTE-DR-RAMP
MC-CB-0176
MC-MH-0008
WILLAMETTE DR
I205-FWY
1834
5274
1836
MC-CB-0202
MC-CB-0200
MC-CB-0228
MC-MH-0010
WILLAMETTE-DR-I205-FWY-RAMP
MC-CB-0234
MC-CB-0232
MC-CB-0230
West Linn
Legend
Stormwater Structure
CATCH BASIN
INLET
MANHOLE
OUTFALL
Old IDs
Stormwater Main
PIPE
OPEN DITCH
Stormwater Lateral
Stormwater Facility
Addresses
dissolved 0-5K
Dry Weather Field Screenin
City Limit
Parks and Open Space
City Owned Property
Unimproved ROW
City Limits Poly white
City Limits Poly rose
0
0.03
0.06 Miles
1: 2,257
Notes
This map was automatically generated using Geocortex Essentials.

Site 5


MAPLE TER
WR-IS-0494
WR-CB-0492
WR-MH-0486
WR-MH-0484
WR-MH-0482
WR-CB-0496
WR-IS-0501
WR-IS-0499
WR-IS-0505
WR-CB-0503
DILLOW DR
BA-CB-0180
BA-CB-0178
BA-CB-0182
BA-CB-0184
FAILING ST
WR-CB-0497
BA-HW-0006
BA-CB-0220
BA-CB-0222
BA-CB-0214
BA-MH-0086
BA-MH-0092
BA-CB-0090
BA-HW-0014
BA-CB-0218
BA-CB-0094
BA-IS-0096
BA-CB-0100
FAILING ST
Legend
Stormwater Structure
CATCH BASIN
INLET
MANHOLE
OUTFALL
Old IDs
Stormwater Main
PIPE
OPEN DITCH
Stormwater Lateral
Stormwater Facility
Addresses
dissolved 0-5K
Dry Weather Field Screenin
City Limit
Parks and Open Space
City Owned Property
Unimproved ROW
City Limits Poly white
City Limits Poly rose
0
0.03
0.06 Miles
1: 2,257
Notes
This map was automatically generated using Geocortex Essentials.

Site 6


WALLING WAY
RB-IS-0332
19522
3590
3536
RB-HW-0006
SITE 6
19625
3611
3691
RB-CB-0150
19635
19679
RB-CB-0151
RIDGEWOOD WAY
19717
TR-IS-0282
3595
West Linn
Legend
Stormwater Structure
CATCH BASIN
INLET
MANHOLE
OUTFALL
Old IDs
Stormwater Main
PIPE
OPEN DITCH
Stormwater Lateral
Stormwater Facility
Addresses
dissolved 0-5K
Dry Weather Field Screenin
City Limit
Parks and Open Space
City Owned Property
Unimproved ROW
City Limits Poly white
City Limits Poly rose
0
0.01
0.03 Miles
1: 1,128
Notes
This map was automatically generated using Geocortex Essentials.