ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM PLAN

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Developed for the City of Millersburg

by

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Acronyms and Abbreviations

ACWA	Association of Clean Water Agencies
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CWP	Center for Watershed Protection
DEQ	Oregon Department of Environmental Quality
EPA	Environmental Protection Agency
GIS	Geographic Information System
ID	GIS Numeric Identifier
IDDE	Illicit Discharge Detection and Elimination
IGA	Intergovernmental Agreement
HHW	Household Hazardous Waste
MH	Manhole
MMC	Millersburg Municipal Code
MS4	Municipal Separate Storm Sewer System
NRC	National Response Center
ORS	Oregon Revised Statutes
SOPs	Standard Operating Procedures
SWMP	Stormwater Management Program
TMDL	Total Maximum Daily Load

Plan Revisions

Date	Revisions
11/20/2023	Updated Table of Contents, renamed Appendices, updated based on comments.

1 INTRODUCTION

On June 1, 2021, the Oregon Department of Environmental Quality (DEQ) issued a Phase II Municipal Separate Storm Sewer System (MS4) General Permit1 to the City of Millersburg (the City). An MS4 is the storm sewer system that is owned and maintained by the City through which runoff from precipitation and snow melt events flow, eventually discharging into waters of the state. The City's MS4 discharges to the Willamette Basin through Crooks Creek and Crooks Creek Tributary. Through implementation of the programs described in the Permit, the City's MS4 discharges are essentially void of pollutants.

The City is in the process of satisfying the significant requirements that are outlined in the Phase II MS4 General Permit, including development of a Stormwater Management Program (SWMP) document, which describes the programs that are, or will be, implemented under six different minimum control measures, as required by DEQ. More information concerning the Phase II MS4 General Permit minimum control measures can be found in the SWMP document.

One of the six control measures outlined in the Phase II MS4 General Permit is the Illicit Discharge Detection and Elimination (IDDE) minimum control measure, which requires the City to address and effectively remove illicit and illegal discharges through regulatory mechanisms, effective response to spill situations, and appropriate enforcement.

The Illicit Discharge Detection and Elimination Program Plan (IDDE Plan) was developed to describe the programs implemented that satisfy the requirements of the IDDE minimum control measure with the goal of protecting receiving waterbodies from pollutant levels that degrade water quality and threaten aquatic life, wildlife, and human health. The IDDE Plan describes how to identify, locate, and correct untreated discharges, including but not limited to heavy metals, toxics, oil and grease, solvents, nutrients, and pathogens. The IDDE Plan describes investigation techniques used to track illicit discharges entering the MS4 either through direct connections such as wastewater piping connected to storm drains, or through indirect connections and management practices, such as spills or illegal dumping.

2 STORM SEWER SYSTEM MAP

A storm sewer system map is necessary to identify the path a spill may take in the MS4 prior to discharging to area waterbodies or to track upstream potential sources of illicit connections or illegal discharges should an outfall inspection indicate an illicit discharge could exist.

[1] Phase I MS4 permittees are communities with populations over 100,000. Phase II permits are issued for those entities with populations less than 100,000.

The City's storm sewer system map is digital and managed in a Geographic Information System (GIS). On July 28, 2020, the City entered into a 10-year Intergovernmental Agreement (IGA) with the City of Albany to map Millersburg's stormwater infrastructure and include the data in Albany's GIS. The IGA is included as **IDDE Appendix B-1**.

The map and digital inventory can be found at:
https://albanyoregon.maps.arcgis.com/apps/webappviewer/index.html?id=aa510a25010f4febb4d27d58728b3f80

The GIS map includes:

- Inventory and location of outfalls
- Conveyance system including pipes and ditches
- Structural stormwater control locations, including infiltration and treatment

Although not included in GIS, the City has developed separately the remaining storm system map requirements identified in the Phase II MS4 General Permit:

- Drainage basin delineation
- Location and characteristics of ongoing dry weather flows

Each asset on the digital map has a numeric identifier that can be found in the respective metadata, which is described in Section 2.1 of this Program Plan.

The Phase II MS4 General Permit requires that chronic illicit discharges also be part of a digital inventory. When a chronic illicit discharges is identified by the City, it will be added to the digital inventory.

2.1 Digital Mapping Standards

The City of Albany manages the MS4 data in GIS, which can be accessed by the public on their website. Waterways and canals, roadways, city boundaries and more can be found on the base map if chosen. Potable water, sanitary sewer, and storm sewer are mapped as Public Infrastructure.

Metadata that is available for each storm pipe include:

- ID(Numeric identifier)
- Type
- Lining Method
- Rahab Material
- Rehab As Built
- Date Replaced
- Material
- As Built
- Date Installed
- Project Name
- Diameter
- Marker Balls[2]
- Pipe Length
- Design Flow
- Upstream ID
- Downstream ID
- Up Elev
- Dwn Elev
- Up Depth
- DwnDepth
- Service Status
- Address
- Location

[2] Marker Balls are used to positively locate underground utilities with certainty. Some are equipped with a unique identification number.

- Description
- Maint Area
- Width
- City
- Jurisdiction

Metadata that is available for each storm manhole:

- ID(Numeric identifier)
- Type
- Rehab As Built
- Date Replaced
- As Built
- Date Installed
- MH Depth
- Lid Diameter
- Barrel Diam
- Drop MH
- Service Status
- Address
- Location
- Description
- Z Coord
- Metered
- MH Subtype
- Maint Area
- City
- Jurisdiction

Metadata that is available for each storm inlet:

- ID(Numeric identifier)
- Type
- Curb Marker
- Depth
- Grate Type
- Mainline ID
- Date Installed
- Service Status
- Address
- Location Description
- Location Type
- As Built
- Project Name
- Maint Area
- Z Coord
- Width
- Length
- Inv Out Base
- Trapped
- LIDType
- OutfallID
- OutfallSubID
- City
- Jurisdiction

Metadata that is available for each outfall:

- ID(Numeric identifier)
- Type
- Date Installed
- Date Replaced
- Rehab AsBuilt
- Service Status
- Address
- Location Description
- Original As Built
- Project Name
- Maint Area
- Z Coord
- City
- Jurisdiction

Metadata that is available for each Storm Detention Basin:

- ID(Numeric identifier)
- Description
- Type
- Capacity
- Date Installed
- Service Status
- Address
- Location Description
- As Built
- Project Name
- Maint Area
- City
- Jurisdiction
- Width
- Depth

Note: Information may not be available for all metadata items listed for each asset.

In GIS, the City's public storm sewer system is represented as pink; dark maroon storm assets demark County ownership and maintenance; and orange storm assets demark privately maintained systems.

2.2 Digital Mapping Update Procedures

The GIS storm sewer system mapping must be updated as the system is maintained, modified or new construction occurs. The City's IGA with the City of Albany includes initial development of the City's storm sewer system map and any updates for 10 years.

As stated in the IGA, under Ongoing Data Updates, "When new stormwater system assets are installed, Millersburg provides Albany with as-built drawings for system connections, improvements, pipe replacements or expansions, and other stormwater system improvements within 60 days after completion of the project." The IGA also commits Albany to update maintenance activities and conduct stormwater system analysis upon request.

The City provides Albany with a completed map update form and record drawings for each new project that is constructed. From the digital information, Albany updates the GIS storm sewer system map.

Albany provides an estimated budget for mapping services each year, no later than February 1st. Licensing costs, staff, and equipment are included in the estimate.

Private storm sewer systems have not been a priority for the City's storm sewer mapping. The City will be working to ensure all private connections to the City's MS4 are mapped.

3 ILLICIT AND ALLOWABLE DISCHARGES

Millersburg Municipal Code (MMC) Title 12, Chapter 12.12, provides the City's authority to prohibit non-stormwater discharges to the MS4 and conduct enforcement on illicit discharges, if necessary. The MMC also lists exemptions, which are non-stormwater flows that do not substantially contribute pollutants to the MS4.

MMC Section 12.01.040 defines an illegal discharge and illicit connection as:

> "***Illegal discharge***" *means any direct or indirect pollutant-bearing discharge to the municipal storm water system, receiving waters, or waters of the State, except as exempted by MMC 12.12.010.*
>
> "***Illicit connection***" *is defined as either of the following:*
>
> *(a) Any drain or conveyance, whether on the surface or subsurface, that allows an illegal discharge to enter the storm water system including, but not limited to, any conveyances that allow any nonstorm water discharge including sewage, process wastewater, and wash water to enter the storm water system and any connections to the storm water system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by a government agency; or*

(b) Any drain or conveyance connected from a commercial or industrial land use to the storm water system that has not been documented in drawings, maps, or equivalent records and approved by the City.

3.1 Illicit Discharges

The City's MMC Section 12.12.010(1) defines the range of illicit discharges that are illegal, including, but not limited to the following:

A. Septic, sewage, and dumping or disposal of liquid or materials other than stormwater into the MS4;

B. Discharges of washwater resulting from the hosing or cleaning of gas stations, auto repair garages, or other types of automotive services facilities;

C. Discharges resulting from the cleaning, repair, or maintenance of any types of equipment, machinery, or facility, including motor vehicles, cement-related equipment, and port-a-potty servicing, etc;

D. Discharges of washwater from mobile operation, such as mobile automobile or truck washing, steam cleaning, power washing, and carpet cleaning, etc.;

E. Discharges of washwater from the cleaning or hosing of impervious surfaces in municipal, industrial, commercial, or residential areas (including parking lots, streets, sidewalks, driveways, patios, plazas, work yards, outdoor eating or drinking areas, etc.) where detergents are used and spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed);

F. Discharges of runoff from material storage areas, which contain chemicals, fuels, grease, oil, or other hazardous materials from material storage areas;

G. Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;

H. Discharges of sediment, unhardened concrete, pet waste, vegetation clippings, or other landscape or construction-related wastes;

I. Discharges of trash, paints, stains, resins, or other household hazardous wastes; and

J. Discharges of food-related wastes (grease, restaurant kitchen mat and trash bin washwater, etc.)

K. Any liquids, solids, or gases that by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the operation of the municipal storm water system.

L. Any solid or viscous substances that may cause obstruction to the flow in the storm water system, such as but not limited to: grease, garbage, sand, straw, grass clippings, rags, plastics, or mud.

M. Any discharge having a pH less than six or greater than 10, unless the divergence from these limits can be proven to occur from rainfall pH.

N. Any discharge containing toxic pollutants.

O. Pollutants that result in the presence of toxic gases, vapors, or fumes within the storm water system that may cause acute worker health or safety problems.

P. Any substance that may cause the City to violate its storm system permits, or that may cause the City to violate instream water quality standards set by the State of Oregon.

Q. Any substance that causes or may cause visible discoloration of the receiving waters such as but not limited to dyes and inks, except as described in subsection (2)(b) of this section.

R. Any discharge having a temperature that may inhibit biological activity in the receiving waters or cause the City to violate instream water quality standards set by the State of Oregon, or that could harm the storm water system.

S. Any discharge containing oxygen demanding pollutants that may elevate the oxygen demand within the municipal storm water system or waters of the State.

T. Any hauled waste, septage, or discharge from cleaning tanks including those from mobile cleaning services.

U. Any refuse, rubbish, garbage, litter, or other discarded or abandoned objects.

Items A. through J. are listed specifically as illegal discharges in the Phase II MS4 General Permit under Schedule A 3.c.iii. The remaining discharges have been added by the City to include those contaminants they consider important pollutants to control due to its diverse industrial and business community or because the pollutant may cause the City to be in violation of its Total Maximum Daily Load (TMDL) for the Willamette Basin. Additional information on the TMDL can be found in Section 5 of the City's SWMP document.

3.2 Exemptions

MMC Section 12.12.010(2) defines several exemptions to what is considered an illegal non-stormwater discharge as these sources were found not to be a significant source of contamination:

a) Water line flushing with dechlorination.

b) Landscape irrigation.

c) Diverted stream flows.

d) Uncontaminated groundwater infiltration.

e) Rising groundwaters.

f) Uncontaminated pumped groundwater.

g) Potable water sources (including potable groundwater monitoring wells and draining and flushing of municipal potable water storage reservoirs).

h) Startup flushing of groundwater wells.

i) Foundation, footing, and crawl space drains (where flows are not contaminated).

j) Uncontaminated air conditioning or compressor condensate.

k) Irrigation water.

l) Springs.

m) Lawn watering.

n) Individual residential car washing.

o) Charity car washing; provided, that chemicals, soaps, detergents, steam, or heated water are not used. Washing is restricted to the outside of the vehicle, no engines, transmissions, or undercarriages.

p) Flows from riparian habitats or wetlands.

q) Dechlorinated swimming pool discharges including hot tubs (heated water must be cooled for at least 12 hours prior to discharge).

r) Fire hydrant flushing.

s) Street and pavement washwaters (provided, that chemicals, soaps, detergents, steam, or heated water are not used).

t) Routine external building wash-down (provided, that chemicals, soaps, detergents, steam, or heated water are not used).

u) Water associated with dye testing, provided verbal notification is made to the City prior to the start of the test.

v) Discharges of treated water from investigation, removal, and remedial actions selected or approved by DEQ pursuant to Oregon Revised Statutes (ORS) Chapter 465.

w) Discharges from firefighting or other emergency actions by a public utility, the City, or any other governmental agency necessary to protect public health and safety.

Exemptions (a) through (v) are consistent with the Phase II MS4 General Permit Schedule A 1.d.iii. Exemption (w) is allowed by Schedule A 1.d.ii. of the Permit.

Should any of these allowable non-stormwater discharges become a significant source of pollutants, the City may prohibit that discharge or require implementation of appropriate control measures to reduce pollutants associated with the source before discharge to the MS4. MMC Section 12.01.090 provides the authority to require best

management practices (BMPs), also known as control measures, "…for any activity, operation, or facility which may cause or contribute to the introduction of pollutants…".

4 PUBLIC EDUCATION AND PUBLIC INVOLVEMENT

The City supports a variety of efforts designed to educate the public about what constitutes an illicit discharge or spill, and what can be done to prevent or control contamination of stormwater. The public also has several opportunities to be involved and comment on City policies, procedures, and code.

4.1 City Council

City Council is updated monthly by the Linn County Sheriff's Department located in Albany, and quarterly by Albany's Fire Department on emergency responses conducted in the City. City Council meets the second Tuesday of each month at 6:30 p.m. City Council meeting agendas and agenda packets are provided online.

At City Council meetings, opportunities exist for public comment on any new or revised MMC considered by City Council. Each regular meeting provides two opportunities to comment. Citizens may join City Council in their chambers for regular meetings or virtually using AspenUC.[3] Participants who attend virtually can "raise a hand" to speak and are unmuted by the meeting organizer when it is their turn to speak. City Council regular meetings are recorded, with a link to each meeting on the City's website.

4.2 Website

The City's webpage "Storm Water" describes why it is important to protect water quality (https://www.millersburgoregon.gov/publicworks/page/storm-water). The City's SWMP implementation, the SWMP document, Annual Reports, contact information, and educational materials can be found on this webpage, which is updated at least annually.

The City's website has a webpage that members of the public can report a problem or complaint, including drainage/stormwater, trash/debris, water, sewer and others (https://www.millersburgoregon.gov/code/webform/report-problem-or-concern).

Complaints are then distributed to those who can respond with appropriate expertise and timeliness. Every page on the City's website also contains a telephone number to reach the City during normal business operations.

MMC and Engineering Standards, which describe how the City manages stormwater and improves surface water quality, can be found on their website. The City also has an

[3] Go to https://www.millersburgoregon.gov/meetings and click on the link "View Details" for the meeting preference. The link will direct the user to a page with meeting access information.

Erosion Prevention and Sediment Control webpage that provides permitting information for the development community.

4.3 Brochures and Outreach

The City has developed two stormwater flyers for the following audiences:

1) Residential and Businesses
2) Industries

The residential and businesses flyer describes what stormwater runoff is and how to keep it clean. It also describes how limiting runoff in the first place improves water quality of receiving waterbodies and reduces rising temperatures in those waterbodies.

The industrial flyer describes stormwater runoff and six types of activities that have the potential to contribute pollutants in stormwater, which include:

- Loading and Unloading Operations
- Outdoor Storage
- Outdoor Process Activities
- Dust or Particulate Generating Processes
- Illicit Connections and Non-Stormwater Discharges
- Waste Management

The flyer describes methods to prevent stormwater from contacting work areas that might contain pollutants. Finally, it identifies certain permits that industries may need to obtain from the City for a variety of activities that could contaminate stormwater runoff.

4.4 Association of Clean Water Agencies

The City is a member of the Oregon Association of Clean Water Agencies (ACWA), which "provides high value, science-based practical services to its membership through education, regulatory advocacy, and partnerships for the development of proactive solutions resulting in water resources management that is environmentally, financially and organizationally sustainable."[4] ACWA is a non-profit organization that serves Oregon's wastewater and stormwater management agencies and their consultants.

A Spill Prevention Toolkit is available for all members, which includes posters, flyers, radio and television scripts, and press releases. Brochures are available in both English and Spanish for landscaping, spill response, pressure washing, food service, and recreational vehicles. The City is a member of ACWA and will be accessing these additional resources.

4.5 Household Hazardous Waste Management for Residents

Household hazardous chemicals can be found in almost every garage and household. It is considered a waste if it is no longer useful, the chemical has passed its expiration

[4] https://oracwa.org/

date, or a dwelling is cleaned out and proper management of these chemicals is needed. Knowing where to safely dispose or recycle household hazardous waste (HHW) is extremely important to deter residents from disposing chemicals in an unsafe manner, such as in the trash, sanitary sewer, or even in the storm system where area waterbodies would be adversely affected.

HHW management for City residents is provided by the local waste management provider, Republic Services. Republic Services hosts annual collection events for residents to collect and dispose or recycle their HHW in a safe and controlled manner.

4.6 Adopt-A-Road

The City supports an Adopt-A-Road program where the Friends of Millersburg clean trash from Old Salem Road approximately every other month. The City provides trash pickup devices and reflective vests. The Adopt-A-Road program also fulfills a requirement for the City's TMDL for the Willamette Basin. More information on the TMDL can be found in Section 5 of the SWMP document.

4.7 Pet Waste

The City provides pet waste bag stations at Millersburg City Park and nearby Acorn Park. City staff replenish bags and properly dispose of pet waste collected in trash cans. MMC Section 12.12.010(1) defines the range of illicit discharges that are illegal, including "discharges of sediment, unhardened concrete, pet waste, vegetation clippings, or other landscape or construction-related wastes." The City promotes compliance with this provision through the enforcement authority in MMC Section 12.80.

4.8 Spill Reporting

The City maintains a website to report a "Problem or Concern", and a 24-hour answering service for after-hours calls. Citizens can register a complaint 24 hours a day, 7 days a week. Once received, the concern is routed to the appropriate staff to address. Because the City has very few staff, all telephone calls are routed through their main number at 458-233-6300. More information on the City's website can be found in Section 4.2 of this IDDE Plan.

5 ILLICIT DISCHARGE DETECTION

Illicit discharges can occur as a result of accidental releases, plumbing connection errors, or washouts and improper disposal practices. Identifying areas where illicit discharges could occur provides an opportunity for the City to address them in a timely manner.

The following activities support the City's program to address illicit discharges:

1) Outfall Reconnaissance
2) Identification of Priority Areas
3) Citizen Complaints
4) City Staff Observations
5) Emergency Responders

5.1 Outfall Reconnaissance

Outfall reconnaissance is the physical observation of outfall discharges during wet and dry weather. Routine inspection of stormwater pipes discharging into streams, lakes, and ditches in the City helps to identify issues that might exist. The City has inventoried 9 outfalls into Crooks Creek or Crooks Creek tributaries.

Outfall reconnaissance can take place in dry or wet weather. Wet weather occurs from October 1st through April 30th. Wet-weather inspections can show where erosion might be occurring during precipitation events or identify areas where stormwater is prevented from flowing uninhibited to its designed destination.

More problematic from a water quality perspective are dry weather flows, when at least 72 hours has passed with no precipitation. Outfalls that flow in dry weather may indicate that a source exists other than stormwater runoff and these flows may require additional investigation. The City's Dry Weather Screening Program is detailed in Section 6 of this IDDE Plan and includes procedures to assess the potential source of dry weather flows and initiate common investigative techniques to further define the composition of the flow.

Outfall reconnaissance also provides information on the structural integrity of the outfall and if other factors such as litter, wildlife, or debris are affecting the performance of the storm sewer system at the outfall. Remediation of any problems identified should be addressed prior to wet weather if possible.

5.2 Identification of Priority Locations

Priority locations are outfalls that are located "downstream of any source of suspected illegal or illicit activity or location as identified by the permit registrant."[5] These locations can be identified using a land use map or can be defined as areas where citizen complaints are more prevalent.

Land use can significantly affect potential contaminants that may discharge to the MS4 and eventually to area waterbodies. Agricultural uses, animal feedlots, industrial yards, business parks, and heavy commercial areas can all become significant sources of pollutants to the MS4. The City's Land Use Map has been included as **IDDE Appendix B-2**.

Citizen complaints may identify priority locations. Residents can be a great tool in notifying the City of spills, dumping, trash issues and more if they are aware of what constitutes a problem. The City has received very few resident complaints. Should the number of citizen complaints increase, especially with enhanced public education and outreach, additional priority locations may be identified.

[5] Schedule A 3.c.vi.(C) of the Phase II MS4 General Permit.

Priority locations must be inspected more often than those outfalls in nonpriority areas. Of the 20% of outfalls that must be inspected each year, a portion of those inspected must be at priority locations.[6]

The City has yet to identify priority locations in the MS4 because the outfalls inspected do not have dry weather flow. Industrial storm systems, in general, drain directly to ditches, Crooks Creek or Crooks Creek tributaries, railroad right of way, or the County's MS4.

5.3 City Staff Observations

Training of municipal staff to recognize and appropriately respond to illicit discharges observed during typical duties is important to the success of illicit discharge detection. Some staff spend a significant amount of their workday in the field. Training them to identify suspected illicit discharges, report general information about the discharge, and respond to illicit discharges observed can result in a quick resolution of issues. Knowledge of potential sources and types of operations or behaviors that can result in an illicit discharge and information on the location of priority locations must also be included in City staff training.

When City staff detect illicit discharges or suspected illegal connections, they communicate the issue to their supervisor who then communicates with the City Engineer. Glove box Emergency Response Cards that describe who to call should an illicit discharge or a spill be discovered are provided in City vehicles and can be found in **IDDE Appendix B-3.** A limited number of spill kits are also available for field staff.

The City contracts with a firm to clean storm sewer pipes and catch basins, and conduct storm sewer system inspections, from inlets to outfalls. While conducting inspections, if evidence of potential illicit connection or illegal discharges is encountered, the City Engineer must be notified. For example, should food waste be found in an inlet, a cross connection may have occurred, and further investigations must be conducted to determine its source.

5.4 Emergency Responders

When emergency responders are dispatched to a site where a spill has occurred, they need to know who to contact in the City for assistance, if needed. Typical traffic accidents are normally cleaned up on the street using absorbent. However, larger, more complex spills may occur on City rights of way. Cleanup of these spills can be complex and additional resources may be needed. In these situations, emergency responders may need to contact an environmental response company to clean up the spill and contact the City to determine whether the MS4 was affected. Never should a spill be hosed into a roadside ditch or the MS4.

The City has entered into an IGA with the City of Albany for fire protection services, specifically to staff the recently constructed fire station. Firefighters domiciled in the new

[6] The City is required to conduct outfall reconnaissance of at least 25% of its outfalls by February 28, 2024. The 20% annual threshold must be met after the 2024 compliance date.

fire station have City contact information should the MS4 be affected by an emergency or spill.

For discharges that are a threat to human health, welfare, or the environment, the Fire Department must respond immediately, and the City must respond within 24 hours of receiving knowledge of the threat. All discharges that may endanger human health or the environment must be reported to the Oregon Emergency Response System (800-452-0311).

6 DRY WEATHER SCREENING

Dry weather screening is designed to identify outfalls from the City's MS4 that have flow after a period of at least 72 hours without precipitation. Although all outfalls are inspected, those outfalls with flow during dry weather require additional attention because the source of the flow must be identified.

The City has inventoried 9 outfalls. Information about each outfall, such as size of pipe, composition of pipe, area it drains, and outfall properties such as a curb cut, flared end section, or the presence of rip rap are important to identifying the outfall in the field. Locating these outfalls during inspections requires that they be visible and not obscured by vegetation.

All City outfalls must be inspected in dry weather within the Phase II MS4 General Permit term ending in 2024. City inspectors locate outfalls and confirm the inventory information of each. The absence of dry weather flows must be noted. If dry weather flows are present, general observations about the discharge must be conducted.

General observations of dry weather flows include the visual presence of the following parameters:

- Flow
- Turbidity
- Oil sheen
- Trash/debris/floatables
- Foam/suds
- Excessive algae
- Scum
- Color
- Odor
- Condition of conveyance system or outfall
- Other relevant observations related to the potential presence of non-stormwater or illicit discharges.

A sample Field Outfall Inspection Form can be found in **IDDE Appendix B-4**.[7]

Dry weather flows that contain any of the above properties may need additional field analysis. A field analysis might include sampling for pollutant parameters that are likely to

[7] Center for Watershed Protection (CWP) Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, October 2004

be found based upon the suspected source of discharge to identify the cause of the suspected illicit discharge. The Center for Watershed Protection (CWP) developed pollutant parameters to be considered as part of the field screening[8]. The CWP on-site analytics are described in more detail in **IDDE Appendix B-5**.

Pollutant parameter action levels and dry weather screening procedures are included in **IDDE Appendix B-6**.

7 TRACING THE SOURCE OF AN ILLICIT DISCHARGE

According to the CWP[9], four types of illicit discharge investigations can be utilized to track down individual sources:

- Storm drain network investigations
- Drainage area investigations
- On-site investigations
- Septic system investigations

The storm drain network investigations identify where the dry weather flow could have originated by using the mapped watershed that flows to the outfall. The dry weather flow is then traced up the watershed though visual observations of flow in the storm pipe at manholes. A Drainage Basin map of the City that was obtained from the City of Millersburg Stormwater Master Plan dated January 2019, is included in **IDDE Appendix B-7**. Working progressively up the trunk line to assess the origination of the flow can eliminate a large portion of the storm sewer network and isolate a section of pipe where the flow could originate.

Drainage area investigations involve looking at the area that drains to the outfall, parcel by parcel. This investigatory method applies well to situations where there is a suspicion of where the dry weather flow originates and sampling and analysis point to a certain type of land use or generating site. Once suspected sites are identified, visual observations of flow in the storm pipes though manholes can be conducted near these sources.

On-site investigations can be conducted once the dry weather flow has been isolated to a specific section of storm sewer. The storm sewer system can be televised to identify the specific source area of dry weather flow, whether it be an illicit connection or infiltration of groundwater into the storm pipe. If an illicit connection is suspected, dye testing can confirm the source is from a specific indoor plumbing system or drain.

[8] Center for Watershed Protection (CWP) Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, October 2004
[9] Center for Watershed Protection (CWP) Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, October 2004

Septic system investigations can be more problematic because potential breakthroughs of septic systems may be difficult to isolate. An on-site investigation into the point of entry to the MS4 using televised technology can isolate a specific septic system. Then the City will work with Linn County to inspect tanks and drain fields, and conduct additional investigations as needed.

If the source of dry weather flow appears to originate at an industrial yard, the City will work with that company to inspect the business and identify the potential source of flow. Once detected, the City must determine the steps required to eliminate the discharge and the timeframe for project completion.

8 REMOVING THE SOURCE OF DISCHARGE

Once the source of the illicit discharge has been identified, steps must be taken to eliminate it in the most timely and effective method possible. The City must use the right mix of compliance assistance and enforcement to address illicit connections, which in some cases can be very costly to remedy.

8.1 Response Timeframes

The Phase II MS4 General Permit requires that response and the associated investigations of illicit discharges must at minimum, use the following timelines[10]:

1. Initial Investigation or Evaluation
   Conduct an initial investigation or evaluation within an average of five working days or refer the complaint to the appropriate agency.
2. Ongoing Illicit Discharges
   If the elimination of the illicit discharge will take more than 15 working days due to technical, logistical, or other reasonable issues, the permit registrant must within 20 working days of identifying the source, initiate procedures to eliminate the illicit discharge.

   Upon confirmation of an illicit connection, the permit registrant must use the enforcement procedures in a documented effort to eliminate the illicit connection within six months to the extent allowable under state law. All known illicit connections to the MS4 must be eliminated.
3. Ongoing Illicit Discharges involving Capital Improvements
   If the elimination of the illicit discharge involves the repair or replacement of the permit registrant's wastewater or storm sewer conveyance systems, the permit registrant must remove the source of the illicit discharge within three years of the date of its identification unless the permit registrant receives approval from DEQ

[10] Schedule A 3.c.v of the Phase II MS4 General Permit

for a different timeframe that is based on project-specific information and documentation of best efforts to meet the three-year timeframe.

8.2 Responsibility for Remedies

Financial responsibility for eliminating an illicit or illegal discharge typically falls on the landowner. The responsible party must have the means to correct the problem. In domestic situations where a plumber has incorrectly connected the sanitary sewer from the home to an underdrain, responsibility for the remedy could fall on the homeowner, the contractor, or even the City who inspected the connection. Negotiations to determine responsibility and financial culpability must be conducted prior to moving forward. In instances where a much larger issue exists at an industrial yard, the process to eliminate the illicit discharge may require design engineering and could take several months. In these cases, short-term fixes may be required to reroute the illicit discharges to an appropriate disposal location.

Escalating enforcement may be required if the responsible party does not address the discharge in a timely manner. Enforcement escalation authority is outlined in the MMC Title 12 Chapter 12.80 and further defined in Section 11 of this IDDE Program Plan.

9 RESPONDING TO A SPILL / DISCHARGE

Spills or illegal discharges can occur as a result of accidents, or in some cases the discharge might be purposeful with the discharger simply not knowing that the materials could negatively affect waterways and the environment. Often discharges are intermittent and temporary. Some spills, accidents, or illegal discharges are reported to the City immediately, so a response can occur. Others spills, accidents, or discharges are not reported and are found after-the-fact.

Table 1 identifies the four major steps that must be conducted immediately if a spill is encountered.

Table 1. Spill Response

Spill Response:
1. *Stop the leading edge of the spill – make a dirt berm, divert the spill, use a spill kit pillow, pad, or boom.*
2. Stop the source of the spill
3. If the material is hazardous or too large to contain, call for help.
4. If safe, clean up the spilled material and properly dispose.

The City implements a robust response program to address spills, with the intensity needed to respond to emergency situations, and an educational component to help residents and businesses understand why spills, accidents, or illegal discharges are a problem.

Four questions should be asked to determine the most effective spill response:

1. Is the spill an emergency?
   - Will the spill reach waterways or a storm drain? Is the material hazardous?
   - Is it a one-time discharge, intermittent or continual?

2. Did the spill occur during business hours?
   - Are there resources available to help or to manage the spill?

3. Is a responsible party available to clean up the spill or discharge?

4. Who needs to know about the spill?

Is the spill an emergency?

An emergency is a situation in which either the material is a hazardous substance that requires special handling, or the amount of material being released is more than what can be managed with the resources onsite. In either case, additional resources must be deployed or potential environmental, ecological, or human health harm could result should the material not be contained right away.

An assessment of whether the material spilled is hazardous must be conducted. Do you know what the material is? Any hazardous materials requiring special handling or explosive materials encountered must be responded to by Fire Department personnel, who have received the appropriate training to safely manage the situation.

The Fire Department and Linn County Sheriff's Office respond to automobile accidents. The Fire Department will apply absorbent for any fluids on the road. Tow truck drivers are responsible for cleaning up any automotive debris and absorbent before leaving the site. Large accidents are evaluated on a case-by-case basis and may require a street sweeper be dispatched to clean the streets or a contractor be dispatched to clean out storm inlets or pipes.

Did the spill occur during business hours?

If the spill occurs during regular business hours, more resources may be available than if the spill occurs after business hours. During business hours, the City can provide maps, spill response materials, or even an environmental response contractor to clean up the spill quickly.

If the spill occurs after business hours, then decisions on what resources are needed to address the spill must be made.

- If the material is hazardous or the situation is an emergency, the Fire Department must be contacted.

- If the material is not hazardous, mobilize resources to stop the source, determine how far the spill traveled and place control measures at the leading edge of the spill. Clean up the spill or contract additional resources.
- If the material is not hazardous and not an emergency, no precipitation is forecasted, and there is no potential for it to reach a storm drain or waterbody, it may be possible to address the spill the following day with City resources.

Is the responsible party available to clean up the spill or discharge?
In some cases, the person responsible for the spill or washout is available and admits to generating the spill. Once the spill is contained, the respondent should approach the responsible party to provide educational materials and inform them that the spill must be cleaned up. If the responsible party is available and physically or financially able to clean up the spill, they should be given the opportunity to do so. Explain that the spill will be cleaned up, even if the City needs to contract with an environmental response company and the cost reimbursed by the responsible party through court proceedings.

If the responsible party refuses to clean up the spill and there is a potential for the material to reach a storm drain or waterway, document the spill with photos and notes, clean up the spill, recording time and materials utilized, or contract with an environmental response company to clean up the spill. Document the site with photos and notes after the cleanup is conducted. Documentation will be used to recoup cleanup costs through court proceedings.

Who needs to know about the spill?
All spills should be documented, but large spills must be reported to outside agencies like the Oregon Emergency Response System and National Response Center (NRC).

Upon knowledge of a spill or threat of a spill that meets any of the criteria below, report the spill to the Oregon Emergency Response System at 1-800-452-0311.

- Any amount of oil to waters of the state;
- Oil spills on land in excess of 42 gallons;
- Hazardous materials and reportable quantities that are equal to the Code of Federal Regulations, 40 CFR Part 302.

DEQ recommends that personnel:

- Move away or upwind from the spill if you detect an odor and are unsure if it is safe.
- Avoid contact with liquids or fumes.
- Keep non-emergency people out of the area.
- Control and contain the spill.
- Clean up what you can immediately.

- Remove cleanup materials to an approved facility (such as a solid or hazardous waste landfill or recycling facility.) Save your receipts for documentation.
- Continue with long-term cleanup measures.
- File a completed Spill Release Report Form with DEQ[11]

Some oil or hazardous material spills will require a separate notification to the NRC, 1-800-424-8802. Oil spills that result in a visible sheen to navigable waters, such as the Willamette River, must be reported to the NRC. The Environmental Protection Agency (EPA) also has a list of several hundred chemicals that are considered "extremely hazardous substances, based upon their acute lethal toxicity". Any release of these chemicals must be reported.[12]

10 EXCEEDANCE OF WATER QUALITY STANDARDS

The City is also subject to DEQ's Willamette Valley TMDL requirements for temperature, bacteria, and mercury that began in September 2006, years before the Phase II MS4 General Permit was issued to the City. More information on the TMDL can be found in Section 5 of the SWMP Document.

Compliance with the Phase II MS4 General permit is considered compliance with water quality standards. However, should the City identify a discharge from its MS4 that exceeds water quality standards, the City must implement the following guidelines to address the discharge and notify DEQ:[13]

i. Within 48 hours of becoming aware of or being notified of the exceedance, the City will begin investigating the cause of the exceedance;

ii. Within 30 days of becoming aware of the exceedance, the City will notify DEQ in writing of the exceedance; and

iii. Within 60 days of becoming aware of or being notified of the exceedance, the City will submit a report to DEQ that documents the following:
   a. The results of the investigation, including the date the exceedance was discovered or the date the City was notified by DEQ;

[11] As taken from DEQ Fact Sheet, "What to Do When You've Had a Spill", undated.
[12] https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release#oil%20spills
[13] The following measures were taken from Schedule A 1.b. of the Phase II MS4 General Permit

b. A description of the conditions that are known or suspected to have caused or contributed to the exceedance; and
c. Corrective actions taken or planned, including the date corrective action was completed or is expected to be completed.

DEQ may require a timeline and enforceable milestones for completion of the corrective action plan. The details of all corrective actions implemented associated with item iii above must be included in the subsequent annual report.

If the exceedance is due to an illicit discharge and the City confirms the required response has occurred, the corrective actions listed above are not required, though the details of the illicit discharge and response must be included in the subsequent annual report.

If the exceedance is already being addressed by action associated with implementation of a TMDL, the City will submit a report to DEQ with the next annual report that documents the following:

a. The results of the investigation, including the date the exceedance was discovered;
b. A description of the conditions that are known or suspected to have caused or contributed to the exceedance; and
c. The TMDL applicable requirements that are being implemented.

11 COMPLIANCE AND ENFORCEMENT

The Phase II MS4 General Permit requires the City to implement and enforce a program that effectively prohibits non-stormwater discharges into its MS4. Any discharge/connection without permission is an illegal encroachment on the City's MS4 and is required to cease immediately.

When an illicit connection is discovered, the City Engineer or designee will notify the alleged illegal connector/discharger of the observed illicit connection/discharge and provide a timeframe for remedying the situation. Should a spill or other discharge occur, the City inspector or spill respondent will address the source of the illegal discharge or spill and request immediate cleanup. In all cases, should a discharger fail to respond in a timely manner, the City will use the following progressive enforcement policies, escalating the response.

11.1 Enforcement Escalation of Illicit Connections

Inspectors document outfall reconnaissance information on a Field Outfall Inspection Form. When an outfall inspection or inspection of the City's MS4 identifies an illegal connection/discharge to the City's MS4 system, the inspector shall submit the completed Form to the City Engineer for follow-up. The Field Outfall Inspection Form can be found in **IDDE Appendix B-4**.

Verbal Warning

If the source of the connection is evident, the City will contact the connector/discharger directly by phone or in person to discuss the discharge. The communication will include requesting any permits or other authorizations and providing a follow up. If the discharge is permitted or authorized (documentation is required), no further action is required. If the discharge is not authorized, a Plan to remove the discharge from the MS4 must be submitted to the City within 7 days. The Plan must include work to be conducted to remove the illicit connection or discharge, a timeframe for completion of the project, and any intermediate rerouting of the discharge while system fixes are made.

Written Warning

If a Plan to remediate the situation has not been submitted to the City for review within 48 hours, the City Engineer will issue a "Cease and Desist Notice" letter to the property owner. The letter will request that the connection/discharge be ceased or removed immediately.

Should the property owner immediately submit a Plan to remediate the situation, the City will consider this action in good faith and negotiations will ensue to ensure corrections are made. If at any point the property owner defaults on the agreed upon measures or schedule in the Plan, a verbal and then written warning may be issued. The City can at any time consider extending timelines for extenuating circumstances.

Once the Plan has been fulfilled, a follow-up inspection will be performed by the City to ensure compliance. If the connection/discharge has not been corrected, the incident will be referred internally to the City Engineer for further review.

City Removal of Connection/Discharge

The City may remove the illegal connection/discharge if it has not been corrected. If the City removes the illegal connection/discharge, the responsible party will be charged for the costs to repair/abate the illicit discharge as well as administration fees. The responsible party could also be subject to civil action for damages.

11.2 Enforcement Escalation of Spills and Illegal Discharges

When the City responds to a spill or illegal discharge/washout and the source of the discharge is evident, the respondent will contact the responsible party in person to discuss the discharge. The respondent will provide options for the responsible party to clean up the spill and properly dispose of materials used within a specific timeframe.

Verbal Warning

If the responsible party fails to clean up the spill in the specified timeframe, the City will provide a verbal warning that notifies the responsible party of their responsibility to address the discharge, or an environmental response company will be dispatched to

conduct the cleanup and the responsible party will be charged for that expense plus administrative fees.

Written Warning

Should the cleanup not be conducted by the responsible party, the written warning is a letter requesting that the responsible party reimburse the City for the cost of the cleanup that was conducted by either City staff or an environmental response company. The letter will issue an invoice to the responsible party with a due date for that payment. Should the responsible party not pay the invoice, the City will initiate court proceedings, placing a lien on the property. If the responsible party is a renter, the City will issue the same enforcement escalation to the landowner as the entity responsible for the property.

11.3 Enforcement Escalation of Septic System Discharges

Septic system discharges may require additional planning to address. First, the system must be evaluated to determine whether it is operating according to design. Then the septic field must be evaluated to determine if it is large enough or needs to be expanded. Finally, an assessment of whether the property can be connected to the City's sanitary sewer system should be made.

Verbal Warning

If the source of the septic failure is evident, the observer/inspector will contact the property owner directly by phone or in person to discuss the discharge. The communication will include any County inspections that have been conducted or other regulatory follow up. The City will request a Plan to effectively remove the discharge from the MS4 that must be submitted to the City within 7 days. The Plan must include work to be conducted to remedy the malfunctioning septic system, a timeframe for completion of the project, and any intermediate rerouting of the discharge while system fixes are made.

Written Warning

If a Plan to remediate the situation has not been submitted to the City for review within 48 hours , the City Engineer will issue a "Cease and Desist Notice" letter to the property owner. The letter will request that the connection/discharge be ceased or removed immediately.

Should the property owner immediately submit a Plan to remediate the situation, the City will consider this action in good faith and negotiations will ensue to ensure corrections are made. If at any point the property owner defaults upon agreed upon measures or schedule in the Plan, a verbal and then written warning may be issued. The City can at any time consider extending timelines for extenuating circumstances.

Once the Plan has been fulfilled, a follow up inspection will be performed by the City to ensure compliance. If the connection/discharge has not been corrected, the incident will be referred internally to the City Engineer for further review.

City Removal of Connection/Discharge

The City may conduct any other remedies authorized under MMC Title 12 Section 12.80, including removing the discharge, with the responsible party being charged for the costs to repair/abate the illicit discharge as well as administration fees. Linn County may also pursue all their legal authority in partnership with the City.

12 TRACKING ILLICIT DISCHARGES

The Phase II MS4 General Permit requires that all illicit connections, spills, and illegal discharges to which the City responds be documented and tracked. Tracking allows the City to make decisions on where future potential exists for illegal discharges to occur. For example, should one neighborhood routinely be washing materials in the gutter, negatively affecting catch basins and rain gardens, that neighborhood can be targeted for additional public education and outreach or community meetings. Without tracking these discharges, the program cannot strive to continually improve.

The City tracks all complaints, illicit connections, illegal discharges, and spills in a spreadsheet that contains the following information:

1. Date the complaint was received and, if available, the name of the person reporting the spill and contact information.
2. Location of the spill or discharge.
3. Name of staff responding to the complaint.
4. Date the investigation was initiated.
5. The outcome of the staff investigation.
6. Corrective action(s) taken to eliminate the illicit discharge.
7. The responsible party for the corrective action(s).
8. The status of enforcement procedure(s), when necessary.
9. The date the corrective action(s) was completed and staff who evaluated final compliance.

No chronic illegal discharges are known at this time. Should chronic discharges become known, they will be added to the City's digital mapping inventory.

13 IDDE TRAINING PROGRAM

The Phase II MS4 General Permit requires the City to train staff who will conduct:

- Dry weather screening.
- Follow-up activities to dry weather flows.
- Negotiations and enforcement actions against dischargers.
- Routine field operations that may observe illegal discharges.

Each position to be trained may require different training than the others.

Dry Weather Screening

Staff conducting dry weather screening must know where outfalls are located and be familiar with the City's MS4, especially drainage basins to specific outfalls. Should dry weather flows be encountered, the type of flow and any characteristics of the flow must be documented using the Field Outfall Inspection Form that can be found in **IDDE Appendix B-4**.

Follow-up Activities to Dry Weather Flows

Investigations into dry weather flows should be conducted immediately because some dry weather flows may be intermittent. Additional field analysis may be required to determine if the source of the flow is industrial, wastewater, potable water, or another type of discharge. Training must be conducted on these field sampling techniques, including when to sample the discharge for laboratory analysis, which laboratory should be used, and the parameters that will be analyzed.

Tracing the discharge upstream must be implemented promptly. The City must document which type of investigation was used to trace the discharge, as described in Section 7.0 of this IDDE Plan. Staff knowledgeable about the City's MS4 system and trained on how to trace a discharge must be available to conduct investigations.

Negotiations and Enforcement Actions Against Dischargers

Areas of environmental law can be difficult to navigate. The City's robust MMC provides adequate authority to negotiate and enforce against dischargers, even to the point that the City can conduct the cleanup and request reimbursement from the responsible party. Having legal staff trained to support the City Engineer in these enforcement actions will ensure that the City uses all its enforcement authority to address illegal and illicit discharges.

Working with Linn County Health and the Linn County Sheriff's Office to share training on the importance of addressing illegal and illicit discharges in partnership with the City of Albany Fire personnel will ensure cooperative partnerships with supporting entities to comprehensively enforce the code.

Routine Field Operations that May Observe Illegal Discharges

IDDE training for field staff should include how to recognize and appropriately respond to illicit discharges, spills or illegal discharges observed during typical duties. The training should address how suspected illicit discharges will be reported, information on the sources and types of operations or behaviors that can result in an illicit discharge, and information on the location of priority areas, if any.

All staff working in the City's IDDE Program will receive training at least once in the Phase II MS4 General Permit Term, which for the City is between June 1, 2021, through June 30, 2024. Within 30 days of new assignments, staff will receive orientation and training in the IDDE Program.

Training may consist of in-person presentations, videos, fact sheets, attendance to conferences, webinars, or any other possible training venue that describes the elements in this IDDE Plan. A Training Roster is provided in **IDDE Appendix B-8** that documents who received training, who conducted the training, and what topics were covered. Training records will be maintained by the City Engineer.

This IDDE Plan will be made available to all City staff, City management, and City Council members to provide information and knowledge of the Phase II MS4 General Permit requirements concerning the IDDE Program.

APPENDICES

IDDE Appendix B-1:

City of Millersburg and City of Albany Stormwater Mapping IGA

COPY

ALBANY AND MILLERSBURG INTERGOVERNMENTAL AGREEMENT FOR MAINTENANCE OF MILLERSBURG'S STORMWATER INFRASTRUCTURE DATA AND STORMWATER LOCATION SERVICES

THIS AGREEMENT is made and entered into this 10 day of June 2020, by and between the City of Albany, a municipal corporation of the State of Oregon (Albany) and the City of Millersburg, a municipal corporation of the State of Oregon (Millersburg). The respective Council or designated representative of each City is referred to as "party" or "parties" in this Agreement. This Agreement defines the relationship between and the respective responsibilities of Albany and Millersburg regarding the maintenance of Millersburg's stormwater infrastructure data.

W I T N E S S E T H:

WHEREAS, Millersburg owns a network of public stormwater infrastructure, collectively referred to as the "Millersburg stormwater system"; and

WHEREAS, Millersburg desires to have the geospatial and mapping data, and infrastructure asset information for its stormwater system maintained electronically; and

WHEREAS, Albany stores, maintains, and utilizes similar information on its own stormwater assets.

NOW, THEREFORE, the parties agree that data regarding Millersburg's stormwater system will be maintained by Albany in accordance with the following terms and conditions:

1. Maintenance of Stormwater System Data.

(a) **Initial Data:** Millersburg will provide Albany with stormwater system data known to date upon execution of this Agreement. Albany shall enter and maintain data on the stormwater system pipes, manholes, culverts, catch basins, inlets, and other components within Albany's Geographic Information System (GIS) and Computerized Maintenance Management System (CMMS) programs using the data made available by Millersburg. When necessary, Albany will coordinate with Millersburg to adapt the original data to meet National Association of Sewer Service Companies (NASSCO) standards, software and data normalization requirements.

(b) **Ongoing Data Updates:** When new stormwater system assets are installed, Millersburg will provide Albany with as-built record drawings for system connections, improvements, pipe replacements or expansions, and other stormwater system improvements within 60 days after completion of the project. Albany will update GIS/CMMS programs using these as-builts. In the case of stormwater system updates that occur outside of new construction, Millersburg will provide as complete a record as possible of the stormwater assets to be added to the database. Millersburg will provide all maintenance event data to Albany to be recorded in the CMMS. Televised pipeline inspections and manhole inspections shall be in accordance with NASSCO standards and compatible for import into the Albany CUES Granite inspection software system.

(c) **Stormwater System Analysis:** Albany agrees to provide Millersburg reports or other data regarding their stormwater system upon request, including basic system maps. Mapped data will be available on the public GIS portal. Albany does not agree to perform complex mapping services or system data analysis without prior discussion with Millersburg regarding the time and costs of such a project.

(d) **System Locates (One-call System):** Albany shall respond to requests for stormwater facility location markings based upon Albany GIS mapping of the Millersburg stormwater system and in compliance with OAR Chapter 952, Division 001. Albany's ability to provide this service is dependent on timely receipt from Millersburg of accurate as-built drawings of Millersburg stormwater facilities.

2. Budgets, Costs, and Billing.

(a) **Total Fiscal Year Stormwater Data Management Budget:** Albany will prepare and deliver to Millersburg a budget for the next fiscal year's costs associated with maintenance of Millersburg's stormwater data no later than February 1 of each year. Annual costs will include a proportionate share of

the software license fees and costs developed as an estimate of Albany's staff and equipment time that is likely to be spent on Millersburg's stormwater system. Millersburg staff may request a meeting with Albany staff to discuss budget details.

(b) **Quarterly Billing**: Millersburg will be billed quarterly by Albany in a combined invoice that includes charges for services described above and charges other services Albany provides to Millersburg unrelated to this Agreement. Payments are due within 30 business days after receipt. Late payments shall bear interest at nine (9) percent per annum.

Each quarterly billing will include one-quarter of the annual share of the actual software license fees as described above; and charges based on actual staff and equipment hours spent on Millersburg stormwater locates and on maintaining, manipulating, entering, updating, or otherwise working with the Millersburg stormwater system data.

3. **Other Terms and Conditions**. The following terms and conditions apply to this Agreement:

(a) **Term and Termination.** This Agreement begins upon execution and will remain in effect for a 10-year period unless amended or terminated as provided herein. At the end of the 10-year period, this Agreement automatically extends for succeeding 5-year terms subject to the terms herein.

(i) Amendment. This Agreement may be amended by mutual written agreement, signed by authorized representatives of each party.

(ii) Termination for Breach. Failure to make a payment when due or other material breach of this Agreement shall be cause for the non-defaulting party to terminate this Agreement. In the event of an election to terminate, the non-defaulting party shall give notice and a 30-day period for the defaulting party to cure the breach. If cure cannot be accomplished within 30 days but is diligently begun, the non-defaulting party may grant additional cure time.

(iii) Migration of Data. Upon termination of this Agreement, the parties will develop a mutually agreed upon plan to migrate the Millersburg stormwater system data to a recipient designated by Millersburg. Data will be provided in an agreed-upon standard format at the time of termination. In the absence of such an agreed upon plan, the parties shall initiate Dispute Resolution as provided in Section (d) below.

(b) **Withdrawal.** Either party may elect to withdraw from this Agreement by giving written notice of its intent to withdraw to the other party and stating a date for withdrawal that shall not be less than one year from the date of notice.

(c) **Indemnification.** Millersburg agrees to defend, indemnify, and hold Albany harmless from and against any and all liability, fines, penalties, claims, demands or lawsuits brought by any governmental entity or third party under any theory of law relating to or resulting in any manner from the actions, omissions, or responsibilities of Millersburg arising out of maintenance of the Millersburg stormwater system data or failure to comply with the terms of this Agreement. Likewise, Albany agrees to defend, indemnify, and hold Millersburg harmless from and against any and all liability, fines, penalties, claims, demands, or lawsuits brought by any governmental entity or third party under any theory of law relating to or resulting in any manner from the actions, omissions, or responsibilities of Albany arising out of the maintenance Millersburg stormwater system data or failure to comply with the terms of this Agreement.

(d) **Dispute Resolution.** If a dispute arises between the parties regarding breach of this Agreement or interpretation or implementation of any term of this Agreement, the parties shall first attempt to resolve the dispute by negotiation, followed by mediation. In the absence of an agreement between the parties, either party may apply to the presiding judge of the Linn County Circuit Court for the appointment of suitable mediator(s) or arbitrator(s), and the persons so appointed shall establish the rules of procedure. If mediation is unsuccessful, the dispute shall be resolved through binding arbitration that shall take place in Linn County, and the prevailing party shall be entitled to such reasonable attorney's fees and costs as may be awarded by the arbitrator.

(e) **References.** References in this Agreement referring to statutes, laws, rules, ordinances, or code sections mean as they may be updated from time to time.

(f) **Notices.** Any notice herein required or permitted to be given shall be given in writing, shall be effective when actually received, and may be given by hand delivery or by United States mail, first class postage prepaid, addressed to the parties as follows:

If to Albany:
City Manager
City of Albany
P.O. Box 490
Albany, OR 97321

If to Millersburg:
City Manager
City of Millersburg
4222 NE Old Salem Road
Albany, OR 97321

(g) **Parties Bound.** This Agreement shall be binding on and inure to the benefit of Albany and Millersburg and their respective successors and permitted assigns. No party may assign the rights and obligations provided by this Agreement without the other party's prior written consent.

(h) **Enforceability by Third Parties.** This Agreement is expressly not intended for any third party's benefit and is expressly not enforceable by any third party.

(i) **Entire Agreement.** This Agreement, including all attached exhibits, each of which are incorporated into this Agreement by reference, contains the entire Agreement between the parties, and unless otherwise provided in this Agreement, no modification or waiver of any of the provisions, or any future representation, promise or addition shall be binding unless made in writing and signed by both parties.

(j) **Severability.** If a court of competent jurisdiction determines that any of this Agreement's provisions are invalid or otherwise unenforceable, all of the Agreement's remaining provisions shall remain in full force and effect.

(k) **Attorney Fees; Consequential Damages.** In the event action is instituted to enforce any term of this Agreement, the prevailing party shall be entitled to recover from the losing party reasonable attorney fees and expenses incurred in such action as set by the arbitrator or trial court and, in the event of appeal, as set by the appellate court. In no event shall any party to this Agreement be liable for punitive damages except to the extent such damages are awarded to or recoverable by a third party unrelated to the party seeking recovery.

(l) **Execution in Counterparts.** This Agreement may be executed in multiple counterparts, all of which shall constitute one and the same Agreement. Fax and pdf signatures will be valid for all purposes of this Agreement.

(m) **Choice of Law.** This Agreement, and any dispute arising from the relationship between the parties to this Agreement, shall be governed by Oregon law, venue being in Linn County Circuit Court, Oregon.

(n) **Interpretation.** When used in this Agreement, the words "will" and "shall" have the same meaning and the word "or" is not exclusive.

(o) **Waiver.** Failure of either party at any time to require performance of any provision of this Agreement shall not limit the party's right to enforce the provision, nor shall any waiver of any breach of any provision constitute a waiver of the provision unless the waiver is in writing and signed by the waiving party. The waiver by a party of a provision shall not constitute or be deemed to be a waiver of any other provision, nor shall it constitute or be deemed to be a waiver of any subsequent breach of the same or any other provision.

IN WITNESS WHEREOF the parties have caused this document to be executed pursuant to the authority of the respective City Councils by the City Manager of Albany, and the City Manager of Millersburg.

CITY OF MILLERSBURG:

DATED this 28 day of July 2020.

Kevin Kreitman, City Manager

ATTEST:

Kim Wollenburg, City Recorder

APPROVED AS TO FORM:

Forrest Reid, Millersburg City Attorney

CITY OF ALBANY:

DATED this 22nd day of July 2020.

Peter Troedsson, City Manager

ATTEST:

Mary Dibble, City Clerk

APPROVED AS TO FORM:

Sean Kidd, Albany City Attorney

CITY OF MILLERSBURG:

DATED this 28 day of July 2020.

Kevin Kreitman, City Manager

ATTEST:

Kim Wollenburg, City Recorder

APPROVED AS TO FORM:

Forrest Reid, Millersburg City Attorney

CITY OF ALBANY:

DATED this 22nd day of July 2020.

Peter Troedsson, City Manager

ATTEST:

Mary Dibble, City Clerk

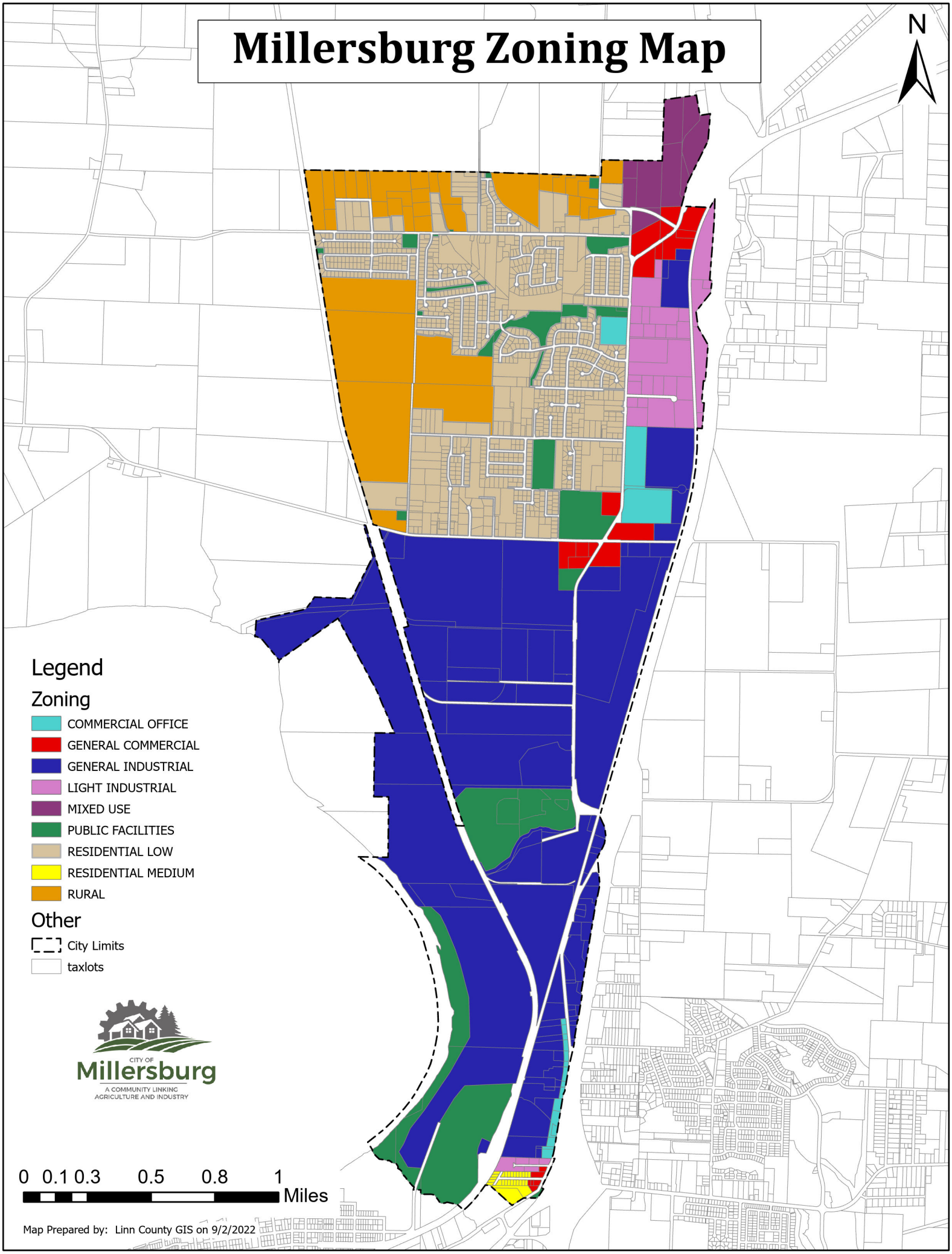
APPROVED AS TO FORM:

Sean Kidd, Albany City Attorney

IDDE Appendix B-2:

City of Millersburg Land Use Map

Millersburg Zoning Map



IDDE Appendix B-3:

Emergency Response Card

CITY OF MILLERSBURG
EMERGENCY RESPONSE INFORMATION

Use this reference when encountering illegal discharges.

1) Is the discharge composition identified?
   Is it hazardous? Call 911.

2) Is the discharge containable with berms?
   If too large to contain, call City Hall.
   If after business hours, call 911.

3) Did the discharge enter the storm drain?
   Can the catch basin be cleaned?
   If in the storm pipe, call contractor vac truck.

CONTACTS

Fire Department
911 or non-emergency at 541-917-7700

City of Millersburg
458-233-6300

Millersburg City Engineer
458-233-6302

Millersburg Maintenance
541-602-1582

Contract Vac Service
DWC
541-979-8328 (24/7)

CITY OF MILLERSBURG
EMERGENCY RESPONSE INFORMATION (cont.)

Other considerations….

1) Is precipitation predicted?
   If raining, the discharge may enter the storm pipe so response must be immediate.
2) Is a responsible party present?
   If the party responsible for the discharge is present, they should conduct or pay for the cleanup with the City ensuring cleanup is complete.
3) Will the discharge affect the City's right of way or storm drain?
   If the discharge is fully contained on a private property, City Hall will advise the property owner that the discharge must be addressed immediately before it effects public infrastructure.

IDDE Appendix B-4:

Field Outfall Inspection Form

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.): Last 24 hours: Last 48 hours:		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	

Land Use in Drainage Area (Check all that apply):

☐ Industrial
☐ Ultra-Urban Residential
☐ Suburban Residential
☐ Commercial
☐ Open Space
☐ Institutional
Other: _____
Known Industries: _____

Notes (e.g., origin of outfall, if known):

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☐ **Closed Pipe**	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Eliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ **In-Stream**	**(applicable when collecting samples)**				
Flow Present?	☐ Yes ☐ No	***If No, Skip to Section 5***			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☐Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐Flow #2	Flow depth		In	Tape measure
	Flow width	_____' _____"	Ft, In	Tape measure
	Measured length	_____' _____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ 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 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes	☐ No	
2. If yes, collected from:	☐ Flow	☐ Pool	
3. Intermittent flow trap set?	☐ Yes	☐ No	If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

IDDE Appendix B-5:

Pollutant Parameters Onsite Analysis

Ammonia

Ammonia is a good indicator of sewage, since its concentration is much higher there than in groundwater or tap water. High ammonia concentrations may also indicate liquid wastes from some industrial sites. Ammonia is relatively simple and safe to analyze. Some challenges include the tendency for ammonia to volatilize (i.e., turn into a gas and become non-conservative) and its potential generation from non-human sources, such as pets or wildlife.

Boron

Boron is an element present in the compound borax, which is often found in detergent and soap formulations. Consequently, boron is a good potential indicator for both laundry wash water and sewage. Preliminary research from Alabama supports this contention, particularly when it is combined with other detergent indicators, such as surfactants (Pitt, IDDE Project Support Material). Boron may not be a useful indicator everywhere in the country since it may be found at elevated levels in groundwater in some regions and is a common ingredient in water softeners products. Program mangers should collect data on boron concentrations in local tap water and groundwater sources to confirm whether it will be an effective indicator of illicit discharges.

Chlorine

Chlorine is used throughout the country to disinfect tap water, except where private wells provide the water supply. Chlorine concentrations in tap water tend to be significantly higher than most other discharge types. Unfortunately, chlorine is extremely volatile, and even moderate levels of organic materials can cause chlorine levels to drop below detection levels. Because chlorine is non-conservative, it is not a reliable indicator, although if very high chlorine levels are measured, it is a strong indication of a water line break, swimming pool discharge, or industrial discharge from a chlorine bleaching process.

Color

Color is a numeric computation of the color observed in a water quality sample, as measured in cobalt-platinum units (APHA, 1998). Both industrial liquid wastes and sewage tend to have elevated color values. Unfortunately, some "clean" flow types can also have high color values. Field testing by Pitt (IDDE Project Support Material) found high color values associated for all contaminated flows, but also many uncontaminated flows, which yielded numerous false positives. Overall, color may be a good first screen for problem outfalls, but needs to be supplemented by other indicator parameters.

Conductivity

Conductivity, or specific conductance, is a measure of how easily electricity can flow through a water sample. Conductivity is often strongly correlated with the total amount of dissolved material in water, known as Total Dissolved Solids. The utility of conductivity as an indicator depends on whether concentrations are elevated in "natural" or clean waters. In particular, conductivity is a poor indicator of illicit discharge in estuarine waters or in northern regions where deicing salts are used (both have high conductivity readings).

Field testing in Alabama suggests that conductivity has limited value to detect sewage or wash water (Pitt, IDDE Project Support Material). Conductivity has some

value in detecting industrial discharges that can exhibit extremely high conductivity readings. Conductivity is extremely easy to measure with field probes, so it has the potential to be a useful supplemental indicator in subwatersheds that are dominated by industrial land uses.

Detergents

Most illicit discharges have elevated concentration of detergents. Sewage and washwater discharges contain detergents used to clean clothes or dishes, whereas liquid wastes contain detergents from industrial or commercial cleansers. The nearly universal presence of detergents in illicit discharges, combined with their absence in natural waters or tap water, makes them an excellent indicator. Research has revealed three indicator parameters that measure the level of detergent or its components-- surfactants, fluorescence, and surface tension (Pitt, IDDE Project Support Material). Surfactants have been the most widely applied and transferable of the three indicators. Fluorescence and surface tension show promise, but only limited field testing has been performed on these more experimental parameters. Methods and laboratory protocols for each of the three detergent indicator parameters are reviewed in Appendix F2.

E. coli, Enterococci and Total Coliform

Each of these bacteria is found at very high concentrations in sewage compared to other flow types, and is a good indicator of sewage or septage discharges, unless pet or wildlife sources exist in the subwatershed. Overall, bacteria are good supplemental indicators and can be used to find "problem" streams or outfalls that exceed public health standards. Relatively simple analytical methods are now available to test for bacteria indicators, although they still suffer from two monitoring constraints. The first is the relatively long analysis time (18-24 hours) to get results, and the second is that the waste produced by the tests may be classified as a biohazard and require special disposal techniques.

Fluorescence

Laundry detergents are highly fluorescent because optical brighteners are added to the formula to produce "brighter whites." Optical brighteners are the reason that white clothes appear to have a bluish color when placed under a fluorescent light. Fluorescence is a very sensitive indicator of the presence of detergents in discharges, using a fluorometer to measure fluorescence at specific wavelengths of light. Since no chemicals are needed for testing, fluorometers have minimal safety and waste disposal concerns.

Some technical concerns do limit the utility of fluorescence as an indicator of illicit discharges. The concerns include the presence of fluorescence in non-illicit flow types such as irrigation water, the considerable variation of fluorescence between different detergent brands, and the lack of a readily standard or benchmark concentration for optical brighteners. For example, Pitt (IDDE Project Support Material) measured fluorescence in mg/L of Tide™ brand detergent, and found the degree of fluorescence varied regionally, temporally, and between specific detergent formulations.

Given these current limitations, fluorescence is best combined with other detergent indicators such as surfactants. Appendix F3 should be consulted for more detailed information on analytical methods and experimental field testing using fluorescence as an indicator parameter.

Fluoride

Fluoride is added to drinking water supplies in most communities to improve dental health, and normally found at a concentration of two parts per million in tapwater. Consequently, fluoride is an excellent conservative indicator of tap water discharges or leaks from water supply pipes that end up in the storm drain. Fluoride is obviously not a good indicator in communities that do not fluoridate drinking water, or where individual wells provide drinking water. One key constraint is that the reagent used in the recommended analytical method for fluoride is considered a hazardous waste, and must be disposed of properly.

Hardness

Hardness measures the positive ions dissolved in water and primarily include magnesium and calcium in natural waters, but are sometimes influenced by other metals. Field testing by Pitt (IDDE Project Support Material) suggests that hardness has limited value as an indicator parameter, except when values are extremely high or low (which may signal the presence of some liquid wastes). Hardness may be applicable in communities where hardness levels are elevated in groundwater due to karst or limestone terrain. In these regions, hardness can help distinguish natural groundwater flows present in outfalls from tap water and other flow types.

pH

Most discharge flow types are neutral, having a pH value around 7, although groundwater concentrations can be somewhat variable. pH is a reasonably good indicator for liquid wastes from industries, which can have very high or low pH (ranging from 3 to 12). The pH of residential wash water tends to be rather basic (pH of 8 or 9). The pH of a discharge is very simple to monitor in the field with low cost test strips or probes. Although pH data is often not conclusive by itself, it can identify problem outfalls that merit follow-up investigations using more effective indicators.

Potassium

Potassium is found at relatively high concentrations in sewage, and extremely high concentrations in many industrial process waters. Consequently, potassium can act as a good first screen for industrial wastes, and can also be used in combination with ammonia to distinguish wash waters from sanitary wastes. (See Chapter 12). Simple field probes can detect potassium at relatively high concentrations (5 mg/L), whereas more complex colorimetric tests are needed to detect potassium concentrations lower than 5 mg/L.

Surface Tension

Surfactants remove dirt particles by reducing the surface tension of the bubbles formed in laundry water when it is agitated. Reduced surface tension makes dirt particles less likely to settle on a solid surface (e.g., clothes or dishes) and become suspended instead on the water's surface. The visible manifestation of reduced surface tension is the formation of foam or bubbles on the water surface. Pitt (IDDE Project Support Material) tested a very simple procedure to measure surface tension that quantifies the formation of foam and bubbles in sample bottles. Initial laboratory tests suggest that surface tension is a good indicator of surfactants, but only when they are present at relatively high concentrations. Section F3 provides a more detailed description of the surface tension measurement procedure.

Surfactants

Surfactants are the active ingredient in most commercial detergents, and are typically measured as Methyl Blue Active Substances (or MBAS). They are a synthetic replacement for soap, which builds up deposits on clothing over time. Since surfactants are not found in nature, but are always present in detergents, they are excellent indicators of sewage and wash waters. The presence of surfactants in cleansers, emulsifiers and lubricants also makes them an excellent indicator of industrial or commercial liquid wastes. In fact, research by Pitt (IDDE Project Support Material) found that detergents were an excellent indicator of "contaminated" discharges in Alabama (i.e., discharges that were not tap water or groundwater). Several analytical methods are available to monitor surfactants. Unfortunately, the reagents used involve toluene, chloroform, or benzene, each of which is considered hazardous waste with a potential human health risk. The most common analysis method uses chloroform as a reagent, and is recommended because it is relatively safer when compared to other reagents.

Turbidity

Turbidity is a quantitative measure of cloudiness in water, and is normally measured with a simple field probe. While turbidity itself cannot always distinguish between contaminated flow types, it is a potentially useful screening indicator to determine if the discharge is contaminated (i.e., not composed of tap water or groundwater).

Research Indicators

In recent years, researchers have explored a series of other indicators to identify illicit discharges, including fecal steroids (such as coprostanol), caffeine, specific fragrances associated with detergents and stable isotopes of oxygen. Each of these research indicators is profiled in Pitt (IDDE Project Support Material) and summarized below in Table F1. Most research indicators require sophisticated equipment and specific expertise that limit their utility as a general indicator, given the high sampling cost and long turn-around times needed. To date, field tests of research indicators have yielded mixed results, and they are currently thought to be more appropriate for special research projects than for routine outfall testing. While they are not discussed further in this manual, future research and testing may improve their utility as indicators of illicit discharges.

IDDE Appendix B-6:

Pollutant Parameter Action Levels and Rationale

POLLUTANT PARAMETER ACTION LEVELS AND RATIONALE
CITY OF MILLERSBURG

October 2023

Pollutant Parameter Action Levels, sometimes referred to as Indicator Monitoring, provide guidelines that specify when indicator parameters must be monitored to identify potential pollutant sources discharging from an outfall into waters of the state.

In satisfaction of the Municipal Separate Storm Sewer System (MS4) Phase II General Permit requirements, permitted entities must conduct routine inspection of outfalls that discharge into waters of the state from their MS4 during dry weather, which is at least 72 hours after a storm event. It is anticipated that during dry periods, outfall discharges may not necessarily originate from stormwater runoff. The implementation of a plan to investigate the possible source of flows when dry weather discharges are encountered can result in identifying illicit discharges into the storm sewer system. Some examples of illicit discharges include wash water, wastewater, industrial flows, among others.

According to the City of Millersburg MS4 Phase II General Permit, the City of Millersburg must have conducted dry weather screening of at least 25% of known outfalls that discharge into waters of the state during periods of dry weather by February 29, 2024.

The City of Millersburg's Stormwater Management Program (SWMP) contains the City's Illicit Discharge Detection and Elimination (IDDE) Plan as Appendix C. The IDDE Plan describes how the City must respond to illicit and illegal discharges when they are observed.

- Section 5.1 of the IDDE Plan describes Outfall Reconnaissance.
- Section 6 of the IDDE Plan describes Dry Weather Screening.
- Appendix D of the IDDE Plan contains a sample Field Outfall Inspection Form.

This Pollutant Parameter Action Level is Appendix E of the IDDE Plan.

Dry Weather Screening

Dry weather screening is conducted to identify outfalls that have dry weather flows and to conduct certain analysis to determine possible sources of that flow.

Understanding the MS4 system and the drainage area that discharges into any specific outfall is important information to have available when attempting to identify the source of dry weather flows. Is the storm sewer system conveying stormwater from industrial, commercial, residential areas, or a combination of all three? What industrial activities occur within that drainage basin? Is there a parameter that could isolate a certain activity upstream? Pollutant parameter action levels provide instruction on how

to conduct sample analysis of a discharge that can further assist the City in determining where a dry weather discharge originates.

Listed below are typically found pollutants and their associated sources:

Potential septic pollutants
- Ammonia
- Biochemical Oxygen Demand
- Total phosphorus
- Temperature
- E. coli

Potential residential pollutants
- Trash
- Detergents
- Oil

Potential industrial pollutants
- pH
- Turbidity
- Temperature
- Detergents as surfactants
- Total suspended solids
- Hardness
- Potassium
- Oil

Potential potable water pollutants
- Total chlorine
- Fluoride

Dry Weather Flows Toolkit

When conducting dry weather screening, the inspector should possess a toolkit so dry weather discharges observed can be investigated and sources identified quickly. Identification of potential sources can become complicated if the appropriate tools are not available during the inspection. Table 1 describes the tools to be available when conducting dry weather screening to determine the presence of certain pollutants.

In all cases, a Field Inspection Form should be completed for every outfall inspection. If a dry weather discharge is observed, initial observation may result in a variety of subsequent investigations. In addition to the tools mentioned in Table 1, consideration of the type of pollutant that may be discharged could require additional personal protective equipment (PPE) to be worn when collecting samples. Make safe determinations on PPE prior to inspecting outfalls.

Table 1. Toolkit for Outfall Inspections

Tool	Purpose	Required	Considerations
Field Outfall Inspection Form	Describe the outfall and discharge if present.	Form may be in electronic form or paper form.	Electronic data gathering can have outfall description and information available prior to inspection.
Latex gloves	Wear latex gloves when collecting samples.	Use disposable gloves to prevent cross contamination.	Change gloves with each sample collection.
Cooler	To store samples collected	Must contain Blue Ice packs	Laboratory may provide a cooler.
Permanent Marker	To label samples	Waterproof is recommended.	Always have a backup.
Labeling tape or preprinted labels	To place on sample bottles	Date, time, location, parameter, and initials of sampler.	Often, laboratories provide coolers, sample bottles, and preprinted labels.
One-liter polyethylene plastic sample bottles.	To collect samples of discharges.	Sample bottles should be sanitized before and after each use.	Consider keeping several dozen bottles available.
A dipper, a measuring cup at the end of a long pole.	Used to collect samples from outfalls hard to reach.	Measuring cups should be sanitized before and after each use.	
Bacteria analysis sample bottles, if necessary.	Used to collect total coliform or E. coli samples.	Pre-cleaned 120 ml sample bottles.	Samples for bacteria must be processed and incubate for at least 24 hours.
Additional Tools			
Temperature Measuring Devices	Measure the temperature of the discharge.	Must be calibrated.	Meters with pH probes often measure temperature.
pH Probe	Measures how acidic or basic the water is, with 7 being neutral pH.	Meters must be calibrated using buffer solutions.	May use pH strips, but a meter is highly recommended.
Conductivity Meter	Measures conductivity, salinity, and total dissolved solids.	Must be calibrated prior to use.	

Tool	Purpose	Required	Considerations
Turbidimeter	Indicates the level of turbidity in the sample.	Must be calibrated	To document approximate turbidities, may use various measured turbidity standards.
Visual Ammonia Testing Kits	Indicates level of ammonia in the sample.	May also use a laboratory.	Could indicate sewage.
Photometer	Indicates the level of Fluoride in the sample.	May also use a laboratory.	Presence of fluoride may indicate a drinking water source.

Dry Weather Flows: Level 1 Observations

When inspecting outfalls for dry weather flows, begin with the Field Outfall Inspection Form. Provide descriptive field information that is pertinent to the outfall. Should electronics, such as an iPad, be used to collect data, ensure that the outfall information is uploaded prior to the inspection, including outfall number, location of the outfall, size of pipe, pipe composition, and any historical data from previous inspections.

The following should be noted during every dry weather screening inspection:

- **Condition of the conveyance system or outfall** as can be observed. Indicate whether repairs may be needed.
- **Any other relevant observations** of the immediate area that might indicate previous illicit discharges such as dead vegetation, abnormal color in the soil or vegetation at the banks of the waterway near the outfall.

Once the outfall has been identified and the condition of the outfall is recorded, the following parameters should be observed:

- **Flow** as measured in gallons per minute (gpm).
- **Oil sheen** as observed floating on the water once the flow has discharged into the water body.
- **Trash/debris/floatables** should be noted and a description of the potential source of the debris, such as industrial, commercial, or residential.
- **Foam or suds** should be noted and an estimate of the percentage of potential pollutant with 5% being slight occurrence to 95% being fully engulfed in the discharge. Samples can be collected to analyze for surfactants that cause suds and can be used to determine whether

the source might be industrial or residential. Note, any concentrations above 50% should be investigated immediately by tracking the discharge up the pipe until a source is determined.

- **Excessive algae** as observed in the discharge. The presence of excessive algae can be determined by the change in color in the discharge from transparent to green.
- **Scum** as observed in the discharge. Scum is generally white or beige in color, with some dissolved and some floating on the water after discharge. It can make noticeable changes in the color of the water body at the discharge point.
- **Color** as observed in the discharge. Be as specific as possible in the color of the discharge as that could significantly impact identification of a potential source of the discharge.
- **Odors** in a discharge could identify a potential source of the discharge, whether it be sewage, agricultural, industrial, or domestic waste.

If a dry weather discharge appears to be a clean discharge without pollutants, the possibility that the discharge is illicit is low. However, identification of its source should still be conducted, if possible, by working up pipe from the outfall. Groundwater seepage can contribute to discharges; however, groundwater influx can be difficult to identify. All identified dry weather sources and any subsequent investigations should be documented.

Should any of the above-listed parameters be observed during a routine dry weather screening inspection, a potential pollutant in the discharge might be possible and additional investigation may be required. Additional investigative techniques are described below.

Dry Weather Screening Level II Investigations

Any of the parameter observations identified in the previous section may indicate that a problem exists upstream of the outfall and additional investigations are warranted. An inspector should have additional monitoring capabilities in their tool kit to further identify potential pollutants in the discharge.

- **pH** of the discharge as measured by a pH Meter.
- **Conductivity** of the discharge as measured by a Conductivity Meter.
- **Turbidity** of the discharge as measured by a Turbidimeter. Pre-measured turbidity standards could be used to estimate turbidity levels.
- **Ammonia** concentrations of the discharge as measured by Spectrophotometer or Colorimeter.
- **Fluoride** concentrations in dry weather flows as measured by a Photometer.

- **Oil** as sampled and analyzed by a laboratory for total petroleum hydrocarbons.

Table 2 details the type of parameters, methods to determine concentrations, and typical stormwater concentrations. Any measurements of these parameters that exceed the typical stormwater concentrations may require further investigation.

Table 2. Benchmark Concentrations to Identify Sources of Discharges

Indicator Parameter	Benchmark Concentration	Notes
pH	≤ 5	High pH values may be industrial but could also point to residential wash waters.
Conductivity	≥ 2,000 µS/cm	May be useful in distinguishing between industrial sources.
Turbidity	≥ 1,000 NTU	May identify specific industrial sources or construction discharges.
Ammonia	Sewage: > 1 mg/L Industrial: ≥ 50 mg/L	Concentrations higher than 50 mg/L may identify a few industrial discharges.
Fluoride	> 0.60 mg/L	May indicate a potable water source when fluoride is added to the treatment process.
Oil	Any Sheen	Take a sample to a local laboratory and analyze for Total Petroleum Hydrocarbons.

Dry Weather Screening Level III Investigations

Dry weather screening level II investigations should be conducted when initial observations of the discharge make it suspect of an illicit discharge and further investigation finds that the easily obtained measurements of the flow are outside normal parameters. Level III Investigations typically include laboratory analysis of the discharge to further define the contents of the dry weather flow.

Analysis that may be considered to further describe the potential pollutants in a dry weather discharge may include the following:

Pollutant Parameter	Potential Sources	Additional considerations
Ammonia	Sewage, wash water, industrial	Tendency to volatilize
Boron	Sewage, wash water	Boron (component in Borax) combined with surfactants is a good indicator.

Pollutant Parameter	Potential Sources	Additional considerations
Chlorine	Industrial or commercial liquid waste, waterline break, swimming pool discharge	Tendency to volatilize
Detergents	Sewage, wash water, industrial or commercial liquid waste	Excellent indicator of an illicit discharge. Surfactants, fluorescence, and surface tension indicate presence of detergents
E. coli	Sewage or wildlife / pet waste	Clean storm pipes and retest. If still high, investigate an illegal connection or sewer infiltration.
Fluorescence	Sewage, wash water	Laundry detergents are highly fluorescent. Additional field test with unbleached cotton placed in the flow. If the cotton fluoresces under a black light, detergents may be present.
Potassium	Sewage, industrial or commercial liquid wastes	Found in sewage in high concentrations, and even higher concentrations in industrial waste.
Surface Tension	Sewage, wash water, industrial or commercial liquid waste	Only effective when surfactants are available in relatively high concentrations.
Surfactants	Sewage, wash water, industrial or commercial liquid waste	Excellent indicator of an illicit discharge. Surfactants, fluorescence, and surface tension indicate the presence of detergents. Reagents used by laboratory to analyze for surfactants produce hazardous waste.

In most cases, only a small subset of indicator parameters (e.g., three to five) is required to adequately characterize an illicit discharge.

Documentation of Investigations

Once a dry weather flow has been observed, all subsequent investigations should be documented, including any investigations up the pipe to locate the source, observations, sampling, analysis, and follow up. Should the source be identified as potential illicit or illegal discharge into the City's MS4, enforcement may be required. Refer to Section 11 of the IDDE Manual to follow the compliance and enforcement methods developed.

Staff Training

Staff at the City of Millersburg who will be responsible for dry weather screening and subsequent follow-up must be trained in the methods described in the Pollutant Parameter Action Levels. Documentation of all training including who attended, the material presented, and any testing that was conducted must be retained as part of the MS4 Phase II General Permit requirements.

REFERENCES

Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004.

IDDE Appendix B-7:

City of Millersburg Drainage Basin Map

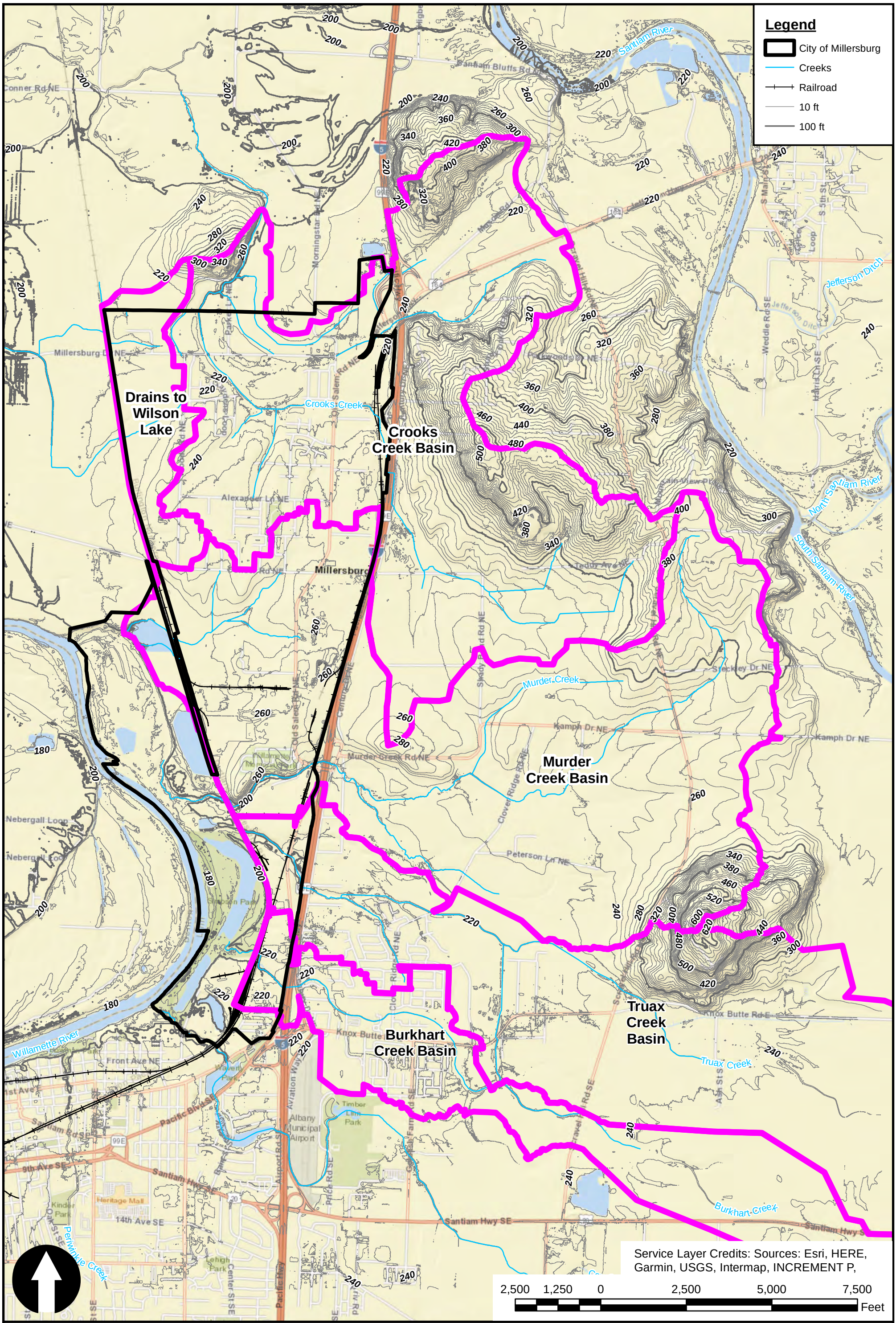


FIGURE 2-2 TOPOGRAPHIC MAP

CITY OF MILLERSBURG STORMWATER MASTER PLAN
MILLERSBURG, OREGON

Cardno

Millersburg
A COMMUNITY LINKING AGRICULTURE AND INDUSTRY

IDDE Appendix B-8:

City of Millersburg Training Roster

CITY OF MILLERSBURG TRAINING ROSTER

Completion of the Training Roster is required to show that staff responsible for management of the City's Park Maintenance Yard receive training at least once a year. New employees must be trained within 30 days of hire. Topics should include spill response, materials/equipment handling procedures, fertilizer and pesticide management, and good housekeeping strategies.

Name	Date	Topics Covered		