

2020

*City of Columbus
Illicit Discharge Detection and
Elimination (IDDE) Manual*

MCM #3



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Introduction

The Nebraska Department of Environmental Quality (NDEQ) under direction of the Environmental Protection Agency (EPA) required permit application under the National Pollutant Discharge Elimination System (NPDES) program for Small Municipal Separate Systems in the state of Nebraska (MS4). The NPDES regulations provide the regulatory requirements for the State of Nebraska Stormwater permitting programs. In maintaining compliance with the NPDES permit the City of Columbus is maintaining and improving its IDDE Program. As a part of the NPDES permit requirements, an Illicit Discharge Detection and Elimination (IDDE) program has been developed and is currently in operation within the Public Works Department. In an effort to continually improve programs developed under the City of Columbus's Stormwater Management Program, this manual is assembled to provide specific direction and layout to the IDDE Program operations and goals. The goal of this manual is to provide a clear understanding of the process, operating procedures, record keeping, and enforcement procedures and reporting. In addition, individuals new to the program will be able to follow the program easily and clearly.

Chapter 1

The City of Columbus's Program Rational Statement

The City of Columbus's IDDE program has continued to be developed as a comprehensive program that will cover all permit requirements. The goal for this program is to provide a clear and easy guidance on pollution control and allow the City of Columbus to have enforceable authority in the removal of pollutant sources. Overall, providing a cleaner healthier and safer community for the citizens we serve. The following rational system will provide a further descriptive look into the specific rational requirements of the permit.

The City of Columbus storm sewer mapping program has been a continual process that has proven to be a resource that requires continual monitoring. Prior to the NPDES program development the City of Columbus Engineering Department had begun general mapping of the storm sewer system by means of compiling all available as-builts and record drawings for all past projects. This left many gaps in the system layout and a somewhat spotty overall map. Following this a data collection guide was developed for use with a GPS system. The collections were done by the staff in the Engineering Department. There were also consultants brought in on certain high traffic areas and in some of the problem areas. At this point the mapping program is being added to when the projects are completed. Future additions to the storm sewer system will be added to the database using GPS. The specific collection and processes will be explained later in the document under Chapter 6, Columbus's MS4 Mapping Program.

Chapter 1

The City of Columbus's Program Rational Statement

In the early stages of development there was a clear means of enforcing the IDDE program would be needed. Consideration was given to all of the existing ordinances pertaining to illicit discharge within the City of Columbus codes. Many of these ordinances applied to the overall goal of eliminating and/or removing pollutant discharge into the MS4. This ordinance was developed specific to the goals of the IDDE Program and then, on December 17th of 2017 the City of Columbus passed a new ordinance, Ordinance 07-28 to prohibit Illicit Discharge. One of the major components of this ordinance was the ability to enforce the program. The City of Columbus felt that the ordinance addressed all of the permit requirements and expectations at that time under the NPDES program. A copy of this ordinance maybe found in Title V Public Works Environmental Services Section 53.08.

As part of the IDDE program, multiple programs had to be developed and directed to the location, tracking and removal of illicit discharges. The goal of this manual is to further explain and layout all of these programs. To date our best resource for finding illicit discharges has been knowledge from our Street Sweepers and Street Crews. Their experience with the systems has allowed us to remove any cross connections. Secondly, our Stormwater Hotline and web site has provided many reports of minor illegal dumping issues that can be addressed on a case by case basis.

Chapter 1

The City of Columbus's Program Rational Statement

The training programs will continue to have focus on many of the areas of pollution prevention. In the past specific businesses have been directly targeted due to their potential to cause pollutant discharges. An example of some of these are the food industry, auto repair shops, auto body shops and lawn care providers. In addition the program has distributed fliers, and produced radio PSA's, taught at environmental education events and TV commercials targeting the harmful effects of illicit discharges. The goal to reach a majority of the City of Columbus audience has been the focus of the education programs. Public employees will continue with annual training on the Stormwater programs as a whole, along with reducing pollutant discharge from our own operations. The education portion of this program is discussed in detail under Chapter 16: Educational Activities within this document.

This program will be managed by the Public Works Director and the Engineering Project Manager. At such a time the responsibility to oversee a specific BMP is transferred to another entity, this document will be updated with the specifics. The evaluation of the overall program will be on a continual basis. If the need arises for changes to any part of the program it will be evaluated for its benefit. However, the program will be evaluated as a whole at least once a permit term as needed.

Chapter 2

City of Columbus IDDE Program Overview

The purpose of the Illicit Discharge Detection and Elimination Program is to identify and eliminate any discharge to a Municipal Separate Storm Sewer System (MS4) that is not composed entirely Stormwater except discharges specifically authorized by an Industrial Stormwater Discharge Permit and allowable non-stormwater discharges.

As one of the requirements of the permit, the City of Columbus shall continue to implement an ongoing program to detect and remove (or advise the discharger to obtain a separate Industrial Permit) illicit discharges and improperly disposed of materials into the storm sewer.

The City of Columbus began the development of the IDDE programs with a broad scope in mind. Since discharges from a MS4 often include wastes and wastewater from non-Storm water sources, illicit discharges enter the MS4 through either direct connections (e.g. infiltration into the storm sewer from cracked sanitary systems), spills, paint or used oil dumped directly into a drain. The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria to waters of the state. The bigger picture goal of the City of Columbus's IDDE program is to provide a cleaner, healthier environment for its citizens and surrounding communities.

Chapter 2

City of Columbus IDDE Program Overview

That is the reason for parts of the program are developed with a broad range of contributing factors in mind. The City of Columbus is currently not looking for a specific pollutant, rather we are scouring the system for any large contributors that may be in the storm sewer system. It is possible that over time it will become clear what some of the pollutants that are more common within the city. At that, time the City of Columbus will tailor the education, inspection and testing programs to reduce those types of pollutants in the storm water system. Now that the City of Columbus programs have been established, we feel this approach will work well to provide a cleaner, healthier and safer environment for all.

This manual was developed to provide direct overview of how the programs are intended to be operated. Sections of the manual will provide operation procedures, tracking procedures, investigation procedures, complaint response procedures, reporting procedures and record keeping procedures. With an overall goal that anyone needing to learn about the elements of the City of Columbus IDDE programs will be able to do so by simply picking up one manual to find any answers about the program.

Chapter 3

NDEQ MS4 Permit Requirements

NDEQ MS4 Permit Requirements

2. Illicit Discharge Detection and Elimination

a. Illicit Discharge Detection and Elimination Program

- d) The permittee must develop (or maintain), implement, and enforce an Illicit Discharge Detection and Elimination (IDDE) Program to detect, investigate, and eliminate non-storm water discharges, including illegal dumping, into its system for the MS4. The IDDE Program must include or address the following:
 - a) The permittee must, as part of the IDDE program, develop an enforcement plan or mechanism following the requirements of **Parts 111. A and B** of this permit.
 - b) A storm sewer map showing the location of all outfalls and the names and location of all waters of the state that receive discharges from those outfalls. If the MS4 connects to another MS4, the outfall drainage areas can be limited to those that drain only to the permittee's system. Connections and interactions to other MS4's must be delineated.
 - c) Outfall field screening procedures and priority locations to investigate for detecting illicit discharges;
 - (i) The permittee must document written dry weather field screening and analytical monitoring procedures which are to be used at a number of outfall locations specified in the SWMP each year to detect discharges to the MS4;
 - (ii) The screening procedures must identify the minimum staff, equipment, and discharge evaluation process used by the permittee; and
 - (iii) The permittee must document the basis for its selection of each priority location and maintain a current list of all priority locations identified in the system.
 - d) Procedures, staff, and equipment required for investigating and tracing the source of all identified illicit discharge;
 - (i) The permittee must report immediately the occurrence of any dry weather flows believed to be an immediate threat to human health or the environment to NDEQ by calling (402) 471-2186 or (402) 471-4545 after business hours, weekends, and holidays; and
 - (ii) The permittee must document all investigations to track at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.
 - e) Procedures for removing the source of the discharge using the Enforcement Response Plan in **Part III.B:**
 - (i) Once the Source of the illicit discharge has been determined, the permittee must take immediate action so the responsible party of the problem can be notified, and require the responsible party to conduct all necessary corrective actions to eliminate the non-stormwater discharge as soon as practicable;
 - (ii) The permittee must document all interactions with potentially responsible parties as well as follow-up investigations to confirm illicit discharges have been removed.
 - f) The following categories of non-stormwater discharges or flows (i.e., illicit discharges) shall be addressed only if they are identified as significant contributors of pollutants to your MS4: routine water line flushing, landscape irrigation, diverted stream.

Chapter 3

NDEQ MS4 Permit Requirements

flows, rising ground waters, uncontaminated ground water infiltration (as defined in 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, de chlorinated swimming pool discharges, and street wash water (discharges from emergency firefighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters of the State of Nebraska.)

- (i) The permittee may also provide a list of other similar occasional and incidental non-stormwater discharges that will not be addressed as illicit discharges (These incidental discharges are similar to those listed above in Part IV.B.2.e). These non-storm water discharges must not be reasonably expected to be significant sources of pollutants to the MS4, because of either the nature of the discharges or conditions you have established for allowing these discharges to your MS4.
 - (ii) You must document in your SWMP any local controls or conditions placed on additional exempt non-stormwater discharges. You must include a provision prohibiting any individual non-stormwater discharges that is determined to be contributing significant amounts of pollutants to your MS4.
- 2) If illicit connections or illicit discharges are observed related to an adjacent MS4 operator's municipal storm sewer system then the permittee must notify the other operator within 48 hours of discovery or as soon as practicable.
 - 3) If another operator notifies the permittee of an illegal connection or illicit discharge to the MS4 then the permittee must follow requirements specified in **Part IV.B.2.a.1.bd**.
 - 4) Written procedures for implementing the IDDE Program, including those components described in **Part IV.B.2.a.1.bd** must be incorporated into the SWMP document.
- b. Public Reporting of Non-Stormwater Discharges and Spills
- 1) The permittee must promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s.
 - 2) The permittee must develop a written spill/dumping response procedure, and a flow chart or phone tree, or similar list for internal use, that shows the procedures for responding to notification regarding illicit discharges, the various responsible agencies and their contacts, and who would be involved in illicit discharge incidence response, even if it is a different entity than the permittee.
 - 3) The permittee must conduct inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party to achieve and maintain compliance.
- c. Illicit Discharge Education and Training
- 1) The permittee must develop and implement a training program for all municipal field staff, which, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. Training program documents must be available for review by the permitting authority.
 - 2) The SWMP must identify the frequency or implement a strategy for training staff identified in Part IV.B.2.c.1 above on the identification of an illicit discharge or connection. The permittee must document and maintain records of the training provided and the staff attended.

Chapter 4

Prohibiting Illicit Discharges

As the NPDES permit specifies, a municipal ordinance or other regulatory mechanism must be created to comply with Phase II regulations and must include a prohibition of illicit discharges and have an enforcement mechanism. Note that it is also essential for the city to establish legal authority to inspect properties suspected of releasing contaminated discharges into the MS4. The City of Columbus has created and adopted an ordinance that will prohibit illicit discharges to the storm water system. As well as enforce the elimination of any illicit discharge that may occur, prohibiting Illicit Discharges within the City of Columbus will be done in multiple ways. The program will focus on three sectors of the community; neighborhoods, likely generating sites and municipal operations. The actions to prevent illicit discharges from these areas are being addressed by a number of programs and through the legal regulatory mechanisms provided in the document as an ordinance.

Neighborhood Focus Areas

Public Education, flyers, TV commercials, promoted at public events Storm Drain Stamps and distribution of educational flyers, Public Reporting Hotline and E Mail. Other activities are Street Sweeping and Storm Sewer System Cleaning, used oil, paint, batteries, etc. There are recycling stations throughout the city as well as recycled oil stations at the Central Maintenance Facility and Transfer Station and at various Auto Parts stores and Dealerships.

Chapter 4 *Prohibiting Illicit Discharges*

Generating Sites

Commercial, industrial, and institutional, Public Education and Outreach; Spill Response; Site inspections to Reported Pollution Issues.

Municipal Operations

Annual Stormwater Training; Storm Sewer and Storm Drain Cleaning; Street Sweeping; Hot Spot Evaluations; Provide Recycling Services to the citizens.

Work within the Right of Way

The City of Columbus requires that all individuals that will perform excavation work within the Right of Way obtain a permission to do so. Along with permission inspections will be completed in association with some of the activities. These activities may include curb cuts, sidewalks, and most importantly connections to the storm sewer system. Any allowable connections will be inspected to insure they are not bringing an illicit discharge into the system along with the proper connection procedures. The City of Columbus IDDE Ordinance can be found in [Appendix "A"](#) as well as the Engineering Department at the City Offices.

Although this is a rare occurrence, when these do happen the Engineering Project Manager must be contacted if the connection will be difficult to locate in the future. At that time it will be located using GPS collections and entered into the GIS system.

Chapter 5
Location of Priority Areas

Identifying Priority Areas

The City of Columbus staff has developed priority areas that are considered to be likely sources of illicit discharges. The following guidelines are considered while identifying priority areas for the city.

❖ ***Commercial/Industrial areas.***

These areas have been found in some communities IDDE programs to (a) have significant numbers of illicit connections and/or (b) have discharges with a high potential to affect water quality. Specific business sections can be prioritized (e.g. businesses subject to waste water pretreatment rules, businesses falling under certain Standard Industrial Classification (SIC) Codes, or business sectors with a record of enforcement actions). A large portion of the cities industrial areas are contained within one common drainage area. However, other smaller commercial/industrial areas may be candidates for a priority area.

❖ ***Older areas of the City***

Older development may predicate more stringent construction codes and may have deteriorating sanitary sewer and/or storm sewer infrastructure that can lead to infiltration problems.

Chapter 5

Location of Priority Areas

Identifying Priority Areas (continued)

❖ **Areas where there have been repeated complaints.**

Areas where illegal dumping or apparently contaminated discharges have been reported are obvious priority targets. The City of Columbus Web Site has and will continue to assist with evaluating areas where repeated complaints occur.

❖ **Locations identified from public complaint or areas staff knows to have frequent illicit discharge issues.**

The locations of high levels of particular contaminants (e.g. bacteria) can help to target priority outfalls. Good resources for this information are the periodic water quality assessment reports (305(b) reports) and lists of impaired water (303(d) lists) that the CWA requires each state to prepare and submit to the EPA. As a part of the individuals that operate the storm sewer cleaning. Street sweepers and are constantly working throughout the community have a vast knowledge of the possible areas illicit discharges are likely to occur, these areas will be evaluated.

Chapter 5
Location of Priority Areas

*Priority areas identified by the City of
Columbus*

Using the guidelines provided, the City of Columbus staff identified and classified the following priority areas within the cities Phase II Permit boundaries as follows;

- ❖ Commercial/Industrial area.*
- ❖ Downtown Commercial areas.*
- ❖ Residential areas that can be located on the City Zoning Map on the City of Columbus web site (www.columbusne.us).*

Chapter 6
Municipal Separate Storm Sewer System Mapping

Introduction to MS4

As part of the NPDES Phase II MS4 permit, permittees are required to develop, if not already completed, a storm sewer system map showing the location of all outfalls and the names and location of all waters that receive discharges from those outfalls. The map is to be used to assist permittees in completing the Illicit Discharge Detection and Elimination minimum control measure as outlined by the Environmental Protection Agency (EPA) and the Nebraska Department of Environmental Quality (NDEQ).

Permittees need to identify the locations of storm sewer pipes, culverts, inlets, outfalls, ditches and swales. Some areas already have outfalls recorded that are used for storm water conveyance operations.

As part of the City of Columbus IDDE program, we have modified all of the different datasets that have been created into a GIS format. The main objective of the program is to ensure that all future mapping efforts complete the mapping database and do so with similar features. This objective is an ongoing one that requires all as-built to be scanned within a year of completion by the Engineering Department to get the as-built in proper fashion.

Chapter 6

Municipal Separate Storm Sewer System Mapping

Data Collection

The City of Columbus IDDE program has consolidated all the information that has been gathered by the City of Columbus staff and other entities. This included outfall points, inlets, and storm sewer pipes. The consolidation process was not an attempt to convert the data to a single database, but instead be an activity in housing the different databases into one master geodatabase. The creation of the map was a collaborative process utilizing all available knowledge. Once the map was completed it is maintained by the City of Columbus and utilized in the illicit discharge monitoring program. The City of Columbus maintains the outfall location database and continued maintenance of the storm sewer atlases. The City of Columbus will take receipt of new projects utilizing the storm sewer conveyance systems and incorporate them from converted CAD drawing to Geodatabase files and then add them into the program.

Outfall Map Creation

A Drainage Basin map is currently being used to identify areas. Utilizing the Storm Sewer Map, contour lines, a street map and previous drainage studies. It is presently in AutoCAD format but will be converted into a GIS map by the Engineering Department.

Chapter 6

Municipal Separate Storm Sewer System Mapping

Outfall Map Creation

The following section will outline the procedures the City of Columbus will follow in creating, maintaining, sharing and updating their outfall database. It will provide recommended procedures as to how the permittees and the City of Columbus will coordinate database maintenance. In addition to outlining the plan for managing the outfall database, this will outline the recommended standards when creating, maintaining, sharing and updating storm sewer maps.

Outfall Database

The City of Columbus will house and maintain an NPDES outfall database. The database will be in an ESRI geodatabase format and include all know outfalls throughout the City of Columbus. The database is tied to the City of Columbus Computerized Maintenance Management System (CMMS) Lucity database. The database consists of a point feature class with each point representing a location where the storm water discharges into a waterway, retention facility or a pond.

Data Collection

The City of Columbus uses a variety of attributes/codes for each inlet, storm sewer manholes, ditches and outfall locations. Some of this was done in the office utilizing GIS as well.

Chapter 6

Municipal Separate Storm Sewer System Mapping

Numbering System

Currently, new features are added to the system in a sequential order. The numbering system was broken into numbering groups to specify the differences between (e.g. manholes, inlets, and gravity mains). The inlets are in the number group 5000, the outfall structures are 7000, storm sewer manholes are in the 1000 group and the gravity mains are in the 10000 group. Even with possibility of the city growing and adding more to the groups we feel that there will not be a need to redo the numbering system.

Storm Sewer Map

In addition to knowing the locations of all known outfalls, a storm sewer map is necessary to locate the source of an illicit discharge more efficiently. If the associated pipe network upstream of an outfall is not known, it will become very costly to locate the offending violator. The storm sewer map will help determine the extent of the discharge and the possible source of the discharge. This map has become a critical piece of the program once an illicit discharge is detected. This storm sewer map will be updated a few different ways.

Chapter 6

Municipal Separate Storm Sewer System Mapping

Storm Sewer Map (continued)

There are a few copies of the storm sewer map handed out to employees in the Public Works and Utilities Departments. Each year the Engineering Department collects all the physical maps throughout the different departments and incorporates any remarks of corrections that are needed to be made. Also, the City of Columbus Engineering Project Manager deals extensively with the Storm Sewer Map and collects amendments that are found and gives them to the Engineering Department.

In order to cost effectively trace illicit discharges, the City of Columbus requires as-built or all new construction be added to the database as soon as possible. The City of Columbus will store the storm sewer data that is received from the contractor or developer and after scanning into the program it will be stored along with all of the other maps. The consolidation of all storm sewer maps will be a great help in locating the illicit discharges.

Record Keeping and File Management Features Collect Internally Using GPS.

At any point that an area of the city is collected using GPS, the GPS is brought back to the Engineering Department where the data collector is downloaded and the information is added to the appropriate file. It is vital to the program that these processes be followed and kept current in order to keep an accurate record of any additions or deletions to the storm sewer systems maps.

Chapter 6

Municipal Separate Storm Sewer System Mapping

City of Columbus Storm Water Collection Outline

The Purpose and Scope of the Project

The purpose of this project is to provide geospatial data collection of The City of Columbus's Storm Water's system and its features.

The engineer must utilize the existing GIS horizontal coordinate system, Nebraska State Plane (NAD83) and vertical datum of NAVD88. The storm water system features must be captured using a GPS system and the level of the accuracy should be within 0.05 feet both horizontal and vertical. The crews that are collecting the data need to be familiar with storm sewer systems and be made aware of any cross connection possibilities. The project will also consist of a large amount of system observations and tracking of some unknown system locations.

Data Collection

The Storm Water System that was surveyed and will be continuously surveyed will include the following:

- ❖ *Inlets (Center of the throat opening on the top of the lid)*
- ❖ *Junction Boxes/Storm Sewer Manholes (center of the lid)*
- ❖ *Outfall Structures:*
 - *FES (Flow line of pipe & end of FES)*
 - *End of pipe (Flow line or top of pipe and note size and location shot)*
 - *Conveyance Structure (drainage canals, culverts, detention cells).*

Chapter 6

Municipal Separate Storm Sewer System Mapping

Data that was collected at the time of the survey:

- ❖ *Inlets and Junction Box/Storm Sewer Manhole*
 - *Rim elevations*
 - *Flowline elevation of the structure*
 - *Flow line of pipes (if pipes are above the floor of the structure)*
 - *Outfall direction and size of pipe*
 - *Number of Inflows*
 - *Type of material that the structure is constructed of.*

- ❖ *Outfalls*
 - *Flow line elevation where possible*
 - *Description of where or what it will drain into (river, ditch, lake, detention cell etc.)*
 - *Type of Outfall (FES, pipe only, Box Culvert, or ditch)*

- ❖ *Discharge Status (at the time of the survey)*
 - *Discharge Present (Y or N)*
 - *Odor Present (Y or N)*
 - *Illegal Cross Connection Suspected (Y or N)*

- ❖ *Other Conveyance Structures*
 - *Drainage Canal (estimated top, centerline and or flow line if possible)*
 - *Box Culverts (beginning and end, flow line and type of material used to construct.*

Current Storm Sewer Outfalls and Receiving Waters Map

The City of Columbus website (www.columbusne.us) has a link to our Engineering Department and Engineering Project Manager. At this location there is a link designed for Storm Water which identifies Outfalls, Ends of pipe Inlets and Storm Sewer Manholes, as well as all other Storm Water related information.

Chapter 7
IDDE Program Visual Inspection of the MS4
(Outfall Screening)

Outfall Reconnaissance Inventory

(ORI)

The Standard Operating Procedures of this section of the program The City of Columbus has chosen to use Chapter 11 of the Illicit Discharge Detection and Elimination Guide which was produced by the Center for Watershed Protection in October of 2004. Sections of this chapter will be used unless indicated omitted as provided within this document. The Center for Watershed Protections manual can be referred to for needed equipment, procedures and for field sheets. Chapter 11 can be found in the Engineering Project Managers Office.

Currently, seventy-three major outfalls and one hundred twenty minor outfalls have been identified and evaluated using the investigation formwork and process presented in Chapter 11 of the IDDE manual.

City of Columbus Watershed Map

In order to assure that all outfalls are mapped and evaluated for illicit discharges full stream walks are carried out every spring and fall. The City of Columbus has several watersheds that the storm water is discharged into. The Map is a part of the City of Columbus CMMS Lucity Data Base.

Chapter 7
IDDE Program Visual Inspection of the MS4
(Outfall Screening)

Summarized Procedures for Conducting the ORI

- ❖ *Gather all needed equipment to conduct the ORI.*
- ❖ *Check the last ID number that was used in the IDDE or ORI database.*
 - *This number will run sequentially for identifying outfalls.*
- ❖ *Send out a press release informing the community when this will be taking place and for approx. how long.*
- ❖ *Begin the survey at a designated location and record the beginning point with a GPS.*
- ❖ *Carefully walk upstream looking for any contributing outfalls.*
- ❖ *Once an outfall is located mark the location with the GPS.*
- ❖ *Complete the ORI field sheet for the outfall.*
- ❖ *Photograph the outfall and record photo number.*
- ❖ *If there is an obvious illicit discharge attempt to track it immediately.*
- ❖ *If no discharge is present continue the ORI upstream and repeat collection at each outfall.*
- ❖ *Once you have reached the designated segment end pint record its location with the GPS.*

- ❖ *Return to the office and record any data need to be recorded. Then transfer file to the Engineering Department.*

Chapter 7
IDDE Program Visual Inspection of the MS4
(Outfall Screening)

Summarized Procedures for Conducting the ORI

- ❖ *Download all outfall pictures into their proper location.*
- ❖ *Charge GPS unit*
- ❖ *Clean and store all other equipment.*
- ❖ *Schedule any needed tracking events or follow-up inspections.*

The ORI is done annually usually in late summer or early spring.

Using the Guidance Manual Chapter 11

The information presented in Chapter 11 of the IDDE guidance manual can be used as a complete reference for the ORI operations. Not only with this section to provide guidance on identifying discharges, but it will provide important information on using stream and ORI data to categorize IDDE problems. All of the process that may be needed for an illicit discharge investigation are explained in detail within this chapter.

Chapter 7
IDDE Program Visual Inspection of the MS4
(Outfall Screening)

Dry Weather Monitoring

Dry Weather Monitoring of streams is used to locate areas in sub watersheds where illicit discharges may be present and where human and aquatic health risks are higher. To provide this information, the City of Columbus monitors its outfalls off 36" or greater annually during dry weather conditions to track water quality and to document changes in water quality over a period of time.

*The City of Columbus has a list of major and minor outfalls that are monitored which can be found in **Appendix "C"**.*

*The tracking sheets used for this Dry Weather Monitoring Program can be found in **Appendix "A"**, it is the same form used for the Outfall Reconnaissance Inventory (ORI). These data sheets are kept for at least one year for comparison on a year to year basis. Our current frequency is to inspect at 50% of all major outfalls and 33% of all minor outfalls each year.*

Chapter 7

IDDE Program Visual Inspection of the MS4 (Outfall Screening)

There are certain parameters in use to determine a major and or minor outfall.

❖ ***Diameter of pipe;***

- *A pipe that has an opening of 36" I.D. or greater is considered a major outfall. This includes box culverts and multi-pipe outfalls. Pipes less than 36" which do not drain into a major outfall drainage area and meet the other criteria are considered minor outfalls.*

❖ ***Size of drainage area;***

- *An outfall that is at the end of a network of pipes, draining a substantial area is considered an outfall.*

❖ ***Type of area being drained;***

- *Minor parking lot drainage and culverts under an approach are not considered outfalls. Pipes that drain locations with no obvious pollutant activities are not considered outfalls.*

Ideally, when performing Dry Weather Monitoring, there are no sources of water to create discharges in the stream. The time chosen should be during a dry period, with no melt-off of snow, and no sprinkler systems providing run off into the storm sewer system. If there is a flow from the outfall, it is traced back to identify the source. If the source is identified as being illicit (with samples proving illicit material) proper action will be taken to rectify the problem.

Chapter 8
Tracing an Illicit Discharge Source
Standard Operating Procedure

Using the guidance manual Chapter 13

Once an illicit discharge is found, a combination of methods may be used to isolate the specific source. Investigation procedures done by the City of Columbus will follow the procedures as written in Chapter 13 of the Illicit Discharge Detection and Elimination Guide which was produced by the Center for Watershed Protection in October of 2004.

Chapter 9

Illicit Discharge Reporting and Response

The following procedures identify actions and internal reporting responsibilities to be taken by city employees in the event of an illicit discharge in the City of Columbus Storm Sewer System.

Reporting of Illicit Discharge

When a City employee encounters an illicit discharge;

- a) They should be prepared to observe and report the following information:*
 - a. Location of the incident.*
 - b. Observe and size-up incident from a safe distance.*
 - c. Try to recognize suspicious activities in the area.*
 - d. Possibly note names and contact information of persons involved in the incident.*
 - e. Type of material. If the type of material cannot be safely identified, keep a safe distance from suspected illicit discharge and avoid any contact.*

When a citizen reports a suspected illicit discharge, some general questions should be asked about it such as the location and visual characters of the incident. Then the City of Columbus personnel will further investigate the incident to determine what actions are to be taken.

Chapter 9

Illicit Discharge Reporting and Response

b) Call the City of Columbus Illicit discharge Hotline to report the incident. That number is 402-562-4220 or if it is known to be a Hazardous Material call the Columbus Fire Department 911.

1. The hotline person will fill out an initial tracking form with some basic information provided by the person reporting. This information will include any observation data from Step “a”.

Incident Routing and Response

After the incident is reported to the hotline and all of the information is taken from the person. It then will be forwarded to the appropriate personnel for further action based on the questions answered by the citizen who called in.

If the material is contained within the storm drain or waterway it is categorized as an illicit discharge. Similarly, if material spilled on the roadway is spreading from the roadway surface into the storm drain, then it is an illicit discharge. Further questions need to be asked to assess the type of illicit discharge and identify appropriate actions to be taken.

- 1. Is the illicit discharge a known hazardous material?*
- 2. Is the illicit discharge a known non-hazardous material?*
- 3. Is the illicit discharge unknown and cannot be safely identified?*

Chapter 9
Illicit Discharge Reporting and Response

Material in the Storm drain

If the material is in the storm sewer and a known hazardous material then;

- 1. The incident will be reported immediately to the Columbus Fire Department, call 911 immediately The City of Columbus Fire Department has a Hazmat Spill Response Team.*
- 2. The Engineering Project Manager or the Public Works Director will fully document the illicit discharge with the tracking form. The Engineering Project Manager will report the incident if required, to the proper officials within 24 hours and submit a written notification to the NDEQ within 30 days. The NDEQ will report releases of petroleum products and certain hazardous substances listed under the Federal Clean Water Act (40 CFR 116) to the National Response Center immediately (24 hour hotline 1-800-424-8802).*
- 3. The city in conjunction with state officials will notify downstream entities of the illicit discharge and will take further follow-up action and, if necessary, enforcement action against offending parties.*

Chapter 9

Illicit Discharge Reporting and Response

Indicator Parameters to Identify Illicit Discharges

At least fifteen different indicator parameters can confirm the presence or origin of an illicit discharge. In most cases, however, only a small subset of indicator parameters (e.g. three to five) is required to adequately characterize an illicit discharge. The City of Columbus believes that a good combination of these indicators, based on our local conditions and discharge types, would be Chlorine, Detergents, pH and Surfactants.

Chapter 10
Removing the Source of an Illicit Discharge

Introduction

Because there are various sources of illicit discharges to the storm sewer system, there are different kinds of actions the city may have to take to remove those sources and prevent future illicit discharges. This chapter groups those actions into three categories:

- 1) Compliance assistance and enforcement for illegal connections to homes and businesses.*
- 2) Proper construction and maintenance of MS4's*
- 3) Responding to and preventing illegal dumping.*

Compliance Assistance and Enforcement for Illegal Connections to Homes and Businesses.

There is a range of ways in which the City of Columbus may wish to handle the removal of illegal connections between homes or businesses and the storm sewer system. Enforcement measures are spelled out in the required IDDE enforcement mechanism (see Chapter 4), but the city will use judgement about what mix of compliance assistance and enforcement actions is appropriate in a given situation. Typically, the city responds to the discovery of an illegal connection a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Chapter 10

Removing the Source of an Illicit Discharge

Voluntary Compliance

Often, home or business owners are not aware of the existence of illegal connections between their buildings and the storm sewer systems. In these cases, providing the responsible party with information about the connection, environmental consequences, the applicable regulations, and how to remedy it may be enough to secure voluntary compliance. The cost of removing the connection and reconnecting it to the sanitary sewer system can be an obstacle.

Enforcement

Based upon the findings of the Public Works Official it may be necessary to proceed with the following IDDE enforcement steps through the City of Columbus Code Enforcement Department as defined by the City of Columbus Municipal Code:

- ❖ If the discharge of dumping has been deemed a threat to Public Health, Safety and/or Welfare, and/or poses a threat to public property based upon an investigation by the Public Works Department, the violation may be abated immediately without prior notification. The City of Columbus maintains the right to recoup any costs associated with the abatement of the violation.*

Chapter 10

Removing the Source of an Illicit Discharge

- ❖ *Otherwise, a Notice of Violations (NOV) will be personally served to the property owner, contractor and/or any parties responsible for creating the violations; and/or the property may be posted giving 24 hours or sooner to abate the violation. If there is no compliance within the time given, the City of Columbus may abate this violation at the expense of the property owner, contractor or parties creating the violation. A summons to Municipal Court or criminal charges may also be issued.*
- ❖ *If the discharge or dumping is not a threat to Public Health, Safety and Welfare or there is no threat to public properties a Notice Violation (NOV) shall be sent certified mail to all of the responsible parties. The Code Enforcement Department will then follow the procedures as defined in the City of Columbus Municipal Code and Code Enforcement standard procedures.*

In addition, the City of Columbus may seek enforcement action from the Platte County, State or Federal Authorities if the violation impacts other resources or the violation source is outside the city boundaries or zoning jurisdiction.

Chapter 10

Removing the Source of an Illicit Discharge

Proper Construction and Maintenance of MS4's

Some illicit discharge problems may be the responsibility of the City of Columbus sanitary sewer utility department. These problems include cross connections between the sanitary sewer system and infiltration into damaged or deteriorating storm sewer pipes.

Cross connections between a sanitary sewer and the cities MS4 may exist by mistake, because of deterioration over time, or as a part of the design in an antiquated system. Complete and accurate maps of the sanitary sewer and storm sewer systems can help identify these cross connections and prevent them during any new construction that takes place.

Contamination can infiltrate into a cracked or leaking MS4 from leaking sanitary sewer pipes or contaminated groundwater. To help prevent this, both MS4's and sanitary sewer systems should be inspected periodically and maintained properly to keep them in good condition.

Chapter 10

Removing the Source of an Illicit Discharge

Preventing and Responding to Illegal Dumping

It is often difficult to identify and locate the individual(s) responsible for illegal dumping so The City of Columbus will focus on education, prevention, and enforcement to the extent if needed.

The following key strategies can and will be used to prevent illegal dumping.

❖ *Site maintenance and controls*

Measures should be taken to clean up all areas where illegal dumping has occurred. Also there should be controls in place such as signs and/or access restrictions should be used appropriately to prevent further dumping.

❖ *Community outreach and involvement*

Outreach is a vital process in the prevention of illegal dumping prevention program and may include the following components:

- *Educating businesses, town, and Special District employees, as well as the general public about the environmental and legal consequences of illegally disposing of waste into the storm sewer system.*
- *Providing and publicizing ways for citizens to properly dispose of waste.*

- *Providing opportunities for citizens to get involved in preventing and reporting illegal dumping.*

Chapter 10

Removing the Source of an Illicit Discharge

❖ **Targeted enforcement**

This includes the city prohibition against illegal dumping backed up by law enforcement.

❖ **Program measurement**

Tracking and evaluating methods can be used to measure the results of illegal dumping prevention efforts and determine whether goals are being met or not.

Some specific methods that the City of Columbus might use to implement these strategies include the following:

❖ **Site maintenance and controls**

- *Storm drain stenciling program*
- *Spill response plans for hazardous waste spills is to notify the City of Columbus Fire Department, 911.*

❖ **Community Outreach and Involvement**

- *The Storm Water Hotline 402-562-4220.*
- *Pollution Prevention web sites (Nebraska H2O, EPA, NDEQ and the City of Columbus).*
- *Outreach to business sectors that handle hazardous material and/or have a history of illegal dumping problems. The outreach should include some of the following information. Information on Best Management Practices for spill prevention and proper waste disposal.*

Chapter 10

Removing the Source of an Illicit Discharge

❖ Community Outreach and Involvement

- *Printed outreach materials for the public*
- *Publicizing of waste disposal options including used motor oil, anit freeze and hazardous household products.*

❖ Targeted Enforcement

- *An illegal dumping regulatory mechanism.*
- *Surveillance of know illegal dumping locations.*
- *Continued training of City employees on identifying and reporting illegal dumping.*

❖ Program Measurement

- *Tracking of incident locations and costs associated with (e.g. clean up, facility compliance, fines and complaints).*

Chapter 11

City of Columbus Recordkeeping Process

In the event of a reported Illicit Discharge by either a citizen or a city employee the following process must be used to keep records complete and accurate. All of The City of Columbus employees charged with tracking Illicit Discharge reports and/or investigation will be required to enter the information into CMMS Lucity Data Base and notify the proper personnel. All the records will either be entered into the CMMS Lucity Data Base or scanned and attached to the appropriate inlet, structure or outfall.

Some common illicit discharge reports are classified as ones that are received and usually require a letter sent to the responsible party that notifies them not to continue the practice. These type of incidents are commonly resolved with first contact.

- ❖ Grass blown into the street.*
- ❖ Residential landscaping or minor yard repair runoff.*
- ❖ Minor leaks on parked vehicles.*

*Paper form copies of the incident should be kept in a separate file until such time the incident is resolved and **up to three years**. Scanned copies of the incident can be stored indefinitely.*

Chapter 12 Evaluation of the IDDE Program

Introduction

The NDEQ recommends that the IDDE component include procedures for program evaluation and assessment. The program evaluation is the time to step back and look at what has been done determine what worked, and what did not, and make any adjustments to planned future actions as appropriate in the City of Columbus. This final component of the IDDE Manual outlines how the City of Columbus will go about the evaluation process.

Evaluation Strategy

Evaluation procedures will include documentation of actions taken to locate and eliminate illicit discharges. Such documentation may include numbers of outfalls screened, complaints taken and investigated feet of storm sewers videotaped (if any), numbers of discharges eliminated, and number of dye or smoke tests conducted (if any). Note that this component of the IDDE Manual fits in with the overall Phase II requirements for identifying measurable goals for each BMP and reporting on progress toward achieving those goals. Determining the impact of these actions is more of a challenge, but it is an important part of the overall process because the NDEQ allows for adjustments to the Storm Water Management Program (SWMP) over the life of the permit. Assessment of what worked and what did not will provide information needed to make these adjustments to the City of Columbus IDDE program.

Chapter 12

Evaluation of the IDDE Program

Some of the steps for assessing the effectiveness of the cities IDDE strategies include:

- ❖ Evaluate the number of possible illicit discharges that were detected using different detection methods, to help determine which detection methods are most effective.*
- ❖ Evaluate the number of discharges and/or quantity of discharges eliminated using different possible enforcement and compliance measures.*
- ❖ Program evaluation will also, include procedures for considering efficiency and feasibility. Some questions to answer are:*
 - How much staff time and expense did it take to achieve a given result?*
 - Were practical difficulties encountered with this approach?*
 - What were they and how much of a problem did each present?*

The strategies listed above are only suggestions. The City of Columbus is allowed a great deal of flexibility in determining what procedures it will use for program evaluation and assessment, the procedures that will be most helpful in providing the information needed to move forward with the IDDE Program.

Chapter 13

Annual Reporting

The City of Columbus will report on an annual basis in the Annual Report, the number of inspections performed by the city for possible illicit discharges and whether an illicit discharge was confirmed.

The City of Columbus will provide, in the annual report, a narrative status of the mapping effort and the number of outfalls mapped. The city will also report any changes to the protocols for ongoing field screening, mapping and the reason for the changes.

The number of illicit discharges reported and the actions taken. Specifically, the City of Columbus will report the number of instances when possible illicit discharges were found to be actual illicit discharges. The non-illicit discharges will be characterized as permitted discharge, irrigation return flow and storm water.

The number and type of enforcement actions required will also be included in the annual report.

The number of educational activities undertaken to promote public reporting of illicit discharges and improper disposal and to promote proper management and disposal of toxic material will be included in the Annual Report.

Chapter 14

Educational Activities

The City of Columbus has developed an Educational Program as a component of its MS4 Permit. Our communications and education effort will seek to create awareness of the various MS4 programs which will include Illicit Discharge program. The educational program outreach effort targets appropriate opportunities, such as business specific flyers, internal employee training and other various means. The City of Columbus Illicit Discharge educational program is targeted primarily toward employees. As the program develops further, we will look at ways to reach out to a bigger group. The general public is being reached through distribution of educational materials. The extent of the program will depend upon available resources.

Educational Activities for Illicit Discharges and Reporting Procedures

The City of Columbus Illicit Discharge Program addresses the requirements of the MS4 Permit. The program includes:

- ❖ Informing Public employees, businesses and the general public of the hazards associated with illegal discharges and improper disposal of waste.*

Chapter 14
Educational Activities
Evaluation Strategy

These program communications cover information about:

- ❖ *Defining what is an illicit discharge.*
- ❖ *What distinguishes an illicit discharge?*
- ❖ *Identifying the telltale signs of an illicit discharge.*
- ❖ *Warning against dumping used motor vehicle fluids and toxic materials into storm drains.*
- ❖ *Encouraging reporting of potential illicit discharges via the hotline and web site.*
- ❖ *Explaining what should be noted when reporting a potential discharge, including:*
 - *Location where potential discharge is observed.*
 - *Description of the suspected illicit discharge.*
 - *Any other site specific relevant information.*

Various communication tools have been and will continue to be used to increase awareness and understanding of the need for reporting potential illicit discharges.

Chapter 14
Educational Activities

*Educational Activities to Promote
Proper Management and Disposal of
Toxic Materials.*

The City of Columbus program to promote proper management and disposal of toxic material addresses the requirement of the MS4 Permit. This program focuses on educating employees on their proper procedures to reduce pollutants and ways to identify areas that we can reduce the probability for illicit discharges from our operation.

To address these items the program consists of:

- ❖ Communications- The initial promotional effort will be the development and distribution of educational materials at events.*
- ❖ Facility Runoff Control Plans: The development of preliminary runoff control plans have been completed at all of our facilities to help determine which sites need this.*

Chapter 15

Promotion of Pollution Runoff Controls Procedures at Maintenance Facilities (FRCP)

The employee education program to promote proper management and disposal of toxic Materials is also accomplished in conjunction with the developing of the Facility Runoff Control Plan (FRCP). These plans are developed with the facility manager of each site. The plans describe procedures used to prevent and reduce pollutants in storm water runoff through assorted measures, which includes properly disposing of toxic materials and used motor vehicle fluids. The plans are site specific and identify potential pollutants, and recommended control measures. Where applicable the frequencies of the control measures are specified along with a schedule of implementation for BMP's. The FRCP plan is in itself a communication tool to guide activities.

Communication Tools

The program includes the development and dissemination of the tools listed on the following page.

Chapter 15

Promotion of Pollution Runoff Controls Procedures at Maintenance Facilities (FRCP)

Training Videos

The videos will be specific to the training of all employees on the proper way to conduct everyday activities related to their job in order to reduce the probability of contributing to pollution. These videos may also outline spill response procedures and reporting procedures. A large focus is put on all employees being able to identify areas within their job description that need to be altered procedures that will assist in the overall goal of eliminating pollution from our operations.

Internet & Web Sites

The City of Columbus web site presents information related to the MS4 Permit and water quality. Information is included under the Storm Water section of the web site and more material is also located on the Nebraska H2O web site www.nebraskah20.org. Their site includes general information about water quality, as well as information about Illicit Discharges. Technical bulletins are also posted on their web site.

Chapter 15

Promotion of Pollution Runoff Controls Procedures at Maintenance Facilities (FRCP)

Facebook

The City of Columbus puts posts on its Facebook page about BMP's for homeowners and businesses alike to use.

Future Communication

As the Illicit Discharge program develops additional education materials and efforts will increase. Some of the efforts would include (Flyers/bulletins, training of both city and community on Illicit Discharge). Another way that is a bit more cost effective is to share these topics into regularly scheduled safety meetings.

Example of a Typical Education and Distribution Schedule

- | | |
|--------------------------------------|----------------------|
| ❖ <i>Employee Training Videos</i> | <i>Annually</i> |
| ❖ <i>Employee Training Bulletin</i> | <i>Semi-Annually</i> |
| ❖ <i>TV promotions</i> | <i>Quarterly</i> |
| ❖ <i>Business Specific Mailers</i> | <i>As Needed</i> |
| ❖ <i>Individual Specific Mailers</i> | <i>As Needed</i> |

Appendix "A"

Appendix A
ORDINANCE NO. 18-31

AN ORDINANCE OF THE CITY OF COLUMBUS, NEBRASKA, TO AMEND CHAPTER 53 OF TITLE V OF ORDINANCE NO. 05-47 (COLUMBUS CITY CODE) BY AMENDING SECTIONS 53.01 THROUGH 53.24, STORMWATER POLLUTION, BY ADDING DEFINITIONS; BY AMENDING THE PROVISIONS RELATING TO CONFLICTS, HOLD HARMLESS PROVISIONS, DISCHARGE AND ILLEGAL DISCHARGES, STREAM BANK PROTECTION, WRITTEN NOTICE REQUIREMENTS, NOTICE OF REACTION OF SPILLS AND NOTICE OF VIOLATION PROVISIONS; REPEALING ALL ORDINANCES OR PORTIONS THEREOF IN CONFLICT HEREWITH; PROVIDING FOR AN EFFECTIVE DATE; AND PROVIDING FOR THE PUBLICATION OF THIS ORDINANCE IN PAMPHLET FORM.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF COLUMBUS, NEBRASKA:

Section 1. That Chapter 53 of Title V of Ordinance No. 05-47 (Columbus City Code) is hereby amended by amending Sections 53.01 through 53.24, Stormwater Pollution, as follows:

53.01 DEFINITIONS.

For the purposes of this chapter the following definitions shall apply unless the context clearly indicates or requires a different meaning.

ACCIDENTAL DISCHARGE. A discharge prohibited by this chapter which occurs by chance and without planning or thought prior to occurrence.

AUTHORIZED ENFORCEMENT AGENCY. Employees or ~~designees~~ of the City of Columbus designated to enforce this Article.

BEST MANAGEMENT PRACTICES (BMPs). Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving water, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

CLEAN WATER ACT. The federal Water Pollution Control Act (33 U.S.C 1251 et seq.), and subsequent amendments thereto.

Appendix A

CONSTRUCTION ACTIVITY. Activities subject to the National Pollutant Elimination System (NPDES) construction permits. Currently these include construction projects resulting in land disturbance of one acre or more. Such activities include, but are not limited to, clearing and grubbing, grading, excavation and demolition.

HAZARDOUS MATERIALS. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration or physical, chemical or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

ILLEGAL DISCHARGE. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in §53.08.

ILLICIT CONNECTIONS. Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-storm water discharge including sewage, process wastewater and wash water to enter the storm drain system and connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted or approved by an authorized enforcement agency or any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

INDUSTRIAL ACTIVITY. Activities subject to NPDES industrial permits as defined 40 CRF, Section 122.26

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4). The storm water sewer system and appurtenances, including established natural drain-ways and ditches used to transport and handle the flow of storm water.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER DISCHARGE PERMIT. A permit issued by EPA [or by a State under authority delegated pursuant to 33USC 1342(B)] that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group or general area-wide basis.

NON-STORM WATER DISCHARGE. Any discharge to the storm drain system that is not composed entirely of storm water.

PERSON. Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

Appendix A

POLLUTANT. Anything which causes or contributes to pollution. **POLLUTANTS** may include, but are not limited to: soils; paints, varnishes and solvents; oils and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter or other discarded or abandoned objects, military supplies and inventories, so the same may cause or contribute to pollution; floatables; pesticides, herbicides and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind. Pollutants lead to the human-made or human-induced alteration of the chemical, physical, biological or radiological integrity of an aquatic ecosystem.

PREMISES. Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking areas.

STORM DRAINAGE SYSTEM. Publicly -owned facilities by which stormwater is collected and/ or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human -made or altered drainage channels, reservoirs, and other drainage structures.

STORMWATER. Any surface flow, runoff, and drainage consisting entirely of uncontaminated water from any form of natural precipitation, and resulting from such precipitation.

WASTEWATER. Any water or other liquid, other than uncontaminated stormwater, discharged from a facility.

53.02 PURPOSE AND INTENT.

The purpose of this chapter is to protect the public health, safety, environment and general welfare through the regulation of non-storm water discharges to the City of Columbus municipal separate storm sewer system to the maximum extent practicable as required by Federal and State law. This chapter establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements on the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this chapter are:

- (A) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by storm water discharges by any user.
- (B) To prohibit illicit connection and discharges to the municipal separate storm sewer system.
- (C) To prevent non-storm water discharges, generated as a result of spills, inappropriate dumping or disposal, to the municipal separate storm sewer system.

Appendix A

(D) To establish legal authority to carry out all inspections, surveillance, monitoring and enforcement procedures necessary to ensure compliance with this chapter.

53.03 APPLICABILITY.

This chapter shall apply to all water generated on any developed and undeveloped lands entering the municipal separate storm sewer system unless explicitly exempted.

53.04 COMPATIBILITY WITH OTHER REGULATIONS.

This chapter is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this chapter are in addition to the requirements of any other ordinance, rule, regulation or other provision of law. Where this chapter is in conflict with any other provisions of law, the provision which is more restrictive or imposes higher protective standards for human health or the environment shall control.

53.05 RESPONSIBILITY FOR ADMINISTRATION.

The City Engineer shall administer, implement and enforce the provisions of this chapter. The City Engineer may delegate enforcement powers to any employee of the City.

53.06 SEVERABILITY.

The provisions of this chapter are hereby declared to be severable. If any provision, clause, sentence or paragraph of this chapter or the application thereof to any person, establishment or circumstance shall be held invalid, such invalidity shall not affect the other provisions or application of this chapter.

53.07 ULTIMATE RESPONSIBILITY.

The standards set forth herein and promulgated pursuant to this chapter are minimum standards; therefore, this chapter is not to be interpreted as meaning that compliance by any person will ensure that there will be no contamination, pollution nor unauthorized discharge of pollutants into waters of the United States caused by said person. The owner shall indemnify and hold harmless the City of Columbus and its agents, officers, and employees for any and all claims, damages, losses, or expenses, including reasonable attorney fees, that arise out of or allegedly arise out of the design, construction, or maintenance of the systems and facilities described in this agreement that are not due to negligence or omission on the part of the City, its agents, officers, and employees.

Appendix A

53.08 PROHIBITION OF ILLEGAL DISCHARGES.

No person shall discharge or cause to be discharged into the municipal separate storm sewer system or watercourses any materials other than storm water, including, but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standard. The commencement, conduct or continuance of any illegal discharge to the municipal separate storm drain system is prohibited except as follows:

(A) The following discharges are exempt from discharge prohibitions established by this chapter: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains (not including active groundwater de-watering system), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if de-chlorinated, typically less than one part per million of chlorine), firefighting activities and any other water source not containing pollutants.

(B) Discharges specified in writing by the City Engineer as being necessary to protect public health and safety.

(C) Dye testing is an allowable discharge, but requires a written notification to the City Engineer prior to the time of test.

(D) The prohibition shall not apply to any non-storm water discharge permitted under a NPDES permit, waiver or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the municipal separate storm sewer system.

53.09 PROHIBITION OF ILLICIT CONNECTIONS.

The construction, connection, use, maintenance or continued existence of any illegal connection to the municipal separate storm sewer system is prohibited.

(A) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(B) A person is considered to be in violation of this chapter if the person connects a line conveying pollutants to the municipal separate storm sewer system or allows such a connection to continue.

Appendix A

53.10 INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City of Columbus prior to or as a condition of a

Subdivision map, site plan, building permit, or development or improvement plan; upon inspection of the facility; during any enforcement proceeding or action; or for any other reasonable cause.

53.11 REQUIREMENTS TO PREVENT, CONTROL AND REDUCE STORM WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.

The City will adopt requirements identifying best management practices for any activity, operation or facility which may cause or contribute to pollution or contamination of storm water, the municipal separate storm sewer system or waters of the State of Nebraska or the United States of America. The owner or operator of a commercial or industrial establishment shall provide, at the expense of the owner or operator, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal separate storm sewer system or water courses through the use of these structural and non-structural best management practices to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with the industrial provisions of this section is required. These best management practices shall be part of a storm water pollution prevention plan as necessary for compliance with requirements of the NPDES permit.

53.115 REQUIREMENT TO ELIMINATE ILLEGAL DISCHARGES.

The City of Columbus may require by written notice that a person responsible for an illegal discharge immediately, or by a specified date, discontinue the discharge, regardless of whether or not the connection or discharges to it had been established or approved prior to the effective date of this Article; and, if necessary, take measures to eliminate the source of the discharge to prevent the occurrence of future illegal discharges.

Appendix A

53.12 WATERCOURSE PROTECTION/STREAM BANK PROTECTION.

(1) Watercourse Protection. No person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, left, or maintained, in or upon any public or private property, driveway, parking area, street, alley, sidewalk, component of the storm drain system, or water of the United States, any refuse, rubbish, garbage, litter, or other discarded or abandoned objects, articles, excessive sediment, and accumulations, so that the same may cause or contribute to pollution. Wastes deposited in streets in proper covered waste receptacles for the purpose of collection are exempted from this prohibition. All waste containers must be solid and able to retain all accumulated liquids. The discharge of accumulated liquids onto paved surfaces is prohibited. Waste receptacles shall be equipped with covers to prevent rainwater accumulation.

(2) Stream Bank Protection. Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation and other obstacles that would pollute, contaminate or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse so that such structures will not become a hazard to the use, function or physical integrity of the watercourse. The owner or lessee shall not remove healthy bank vegetation beyond that actual necessary for maintenance, nor remove said vegetation in such a manner as to increase the vulnerability of the watercourse to erosion. The property owner shall be responsible for maintaining and stabilizing that portion of the watercourse that is within their property lines in order to protect against erosion and degradation of the water course originating or contributed from their property.

53.13 SUSPENSION OF MS4 ACCESS.

(A) Suspension due to illicit discharges in emergency situations. The City may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment or to the health or welfare of persons, or to the MS4 or waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or waters of the State of Nebraska or the United States of America or to minimize danger to persons or property.

(B) Suspension due to the detection of illicit discharge. Any person discharging to the MS4 in violation of this chapter may have his or her MS4 access terminated if such termination would abate or reduce an illicit discharge. The City will notify a violator of the proposed termination of its MS4 access. The violator may petition the City Administrator for reconsideration and hearing. A person commits an offense if that person reinstates MS4 access to premises terminated pursuant to this section, without prior written approval of the City Engineer.

Appendix A

53.14 ACCESS AND INSPECTION OF PROPERTIES AND FACILITIES.

The City Engineer or designee may enter and inspect properties and facilities at reasonable times as often as may be necessary to determine compliance with this chapter.

(A) Employees of the City may enter and inspect facilities subject to regulations under this chapter as often as may be necessary to determine compliance with this chapter.

(B) Facility operators shall allow authorized employees of the City ready access to all parts of the premises for the purposes of inspection, sampling examination and copying of records that must be kept under the conditions of a NPDES permit to discharge storm water and performance of any additional duties as defined by state and federal law.

(C) The City may set up on any permitted facility such devices as are necessary in the opinion of the City Engineer to conduct monitoring and/or sampling of the facility's storm water discharge.

(D) The City may require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure accuracy.

(E) The temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(F) Unreasonable delays in allowing the City access to a permitted facility is a violation of a storm water discharge permit and of this chapter. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this chapter.

(G) If the representatives of the City have been refused access to any part of the premises from which storm water is discharged, the City may seek issuance of a search warrant from any court of competent jurisdiction.

53.145 REQUIREMENT TO MONITOR AND ANALYZE.

The City of Columbus may require by written notice of requirement that any person engaged in any activity and/ or owning or operating any facility which may cause or contribute to stormwater pollution, illegal discharges, and/or non-stormwater discharges to the storm drain system or waters of the United States, to undertake at said person's expense such monitoring and analyses and furnish such reports to the City of Columbus as deemed necessary to determine compliance with this Chapter.

Appendix A

53.15 NOTIFICATION OF ACCIDENTAL DISCHARGES AND SPILLS.

(A) Notwithstanding other requirements of the law, as soon as any person responsible for a facility, activity or operation, or responsible for emergency response for a facility, activity or operation has information of any known or suspected release of pollutants or non-storm water discharges from that facility or operation which are resulting or may result in illicit discharges or pollutants discharging into the City of Columbus' separate storm sewer system, waters of the State of Nebraska, or the waters of the United States of America, said person shall take all necessary steps to ensure the discovery, containment and cleanup of such release so as to minimize the effects of the discharge.

(B) Said person shall notify the City Engineer or designee of the City Engineer within 24 hours of the nature, quantity and time of occurrence of the discharge. Notifications that are not in writing shall be confirmed by written notice addressed and mailed to the City Engineer or designee within three business days of the telephone call or personal notification. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the action taken to prevent its recurrence. Such records shall be retained for at least three years. Said person shall also take immediate steps to ensure no recurrence of the discharge or spill.

(C) In the event of such a release of hazardous materials, emergency response agencies and/or other appropriate agencies shall be immediately notified.

(D) Failure to provide notification of a release as provided above is a violation of this chapter.

Appendix A

53.16 NOTICE OF VIOLATION.

Whenever the City finds that a person has violated a prohibition or failed to meet a requirement of this chapter, the City Engineer may order compliance by written notice of violation to the responsible person. Such notice shall be sent via regular U.S. mail or via hand delivery to the owner of the property.

(A) The notice shall include:

(1) The name and address of the alleged violator;

(2) The address when available or a description of the building, structure or land upon which the violation is occurring or has occurred;

(3) A statement specifying the nature of the violation;

(4) A description of the remedial action;

(5) A statement of the penalty or penalties that shall or may be assessed against the person or persons to whom the notice of violation is direct; and

(6) A statement that the determination of violation may be appealed to the City Administrator by filing a vitiate notice of appeal within 30 days of service of notice of violation.

(B) In the event of a violation, the City may require:

(1) The performance of monitoring, analyses and reporting;

(2) The elimination of illicit discharges and illegal connections;

(3) That violating discharges, practices or operations shall cease and desist;

(4) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;

(5) Payment of costs to cover administrative and abatement costs;

(6) The implementation of pollution prevention practices; and

(7) Such other action as may be reasonably necessary to accomplish the purposes of this chapter.

If abatement of a violation and/ or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by the City or a contractor designated by the Director of Public

Works and the expense thereof shall be charged to the violator pursuant to Section 9-1567 of this Chapter.

Appendix A

53.17 APPEAL OF NOTICE OF VIOLATION.

Any person receiving a Notice of Violation may appeal the determination of the City of Columbus. The notice of appeal shall be in writing and shall be delivered to the City Clerk within 30 days from the date of the Notice of Violation. Hearing on the appeal before the City Administrator shall take place within 15 days from the date of receipt of the notice of appeal. The pendency of an appeal shall not relieve the responsible person from complying with the requirements of the Notice of Violation, unless the City Engineer otherwise consents in writing.

53.18 ENFORCEMENT MEASURES AFTER APPEAL.

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within 15 days of the decision of the City Administrator, then representatives of the City may enter upon the subject private property and are authorized to take any measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the City of Columbus or designated City contractor to enter upon the premises for the purposes set forth above.

53.19 COST OF ABATEMENT OF THE VIOLATION.

Within 30 days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest with the City Clerk objecting to the assessment or to the amount of the assessment within 30 days of such notice. If the amount due is not paid within 30 days after receipt of the notice or if an appeal is taken within 30 days after a decision on said appeal, the assessment may be collected pursuant to law.

53.20 INJUNCTIVE RELIEF.

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this chapter. If a person has violated or continues to violate the provisions of the chapter, the City may petition for a preliminary or permanent injunction restraining the person from activities that would create further violations or compelling the person to perform abatement or remediation of the violation.

53.21 ALTERNATIVE ACTIONS UPON VIOLATION.

In lieu of enforcement proceedings, penalties and remedies authorized by this chapter, the City may impose upon a violator alternative compensatory action, such as storm drain stenciling, attendance at compliance workshops, waterway cleanup or other community service work.

Appendix A

53.22 VIOLATIONS DEEMED A PUBLIC NUISANCE.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of the chapter is a threat to public health, safety and welfare and is declared and deemed a nuisance and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin or otherwise compel the cessation of such nuisance may be taken by the City.

53.23 CRIMINAL PROSECUTION.

(A) Any person who has violated or continues to violate this chapter shall be liable for criminal prosecution to the fullest extent of the law and shall be subject to a criminal penalty of \$1,000 per violation per day for each day deemed to be in violation.

(B) The City may recover all attorney fees, court costs and other expenses associated with enforcement of this chapter, including sampling and monitoring expenses.

53.24 REMEDIES NOT EXCLUSIVE.

The remedies listed in this chapter are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the City to seek cumulative remedies.

Section 2. That all ordinances and resolutions or parts thereof in conflict herewith be and the same are hereby repealed.

Section 3. That this ordinance shall become effective immediately upon and be in full force and effect after its passage, adoption and publication as provided by law. Publication shall be in pamphlet form as authorized by § 16-405 of Nebraska Revised Statutes with distribution to be made by making copies available to the public upon request at the City office.

Appendix A

INTRODUCED BY COUNCIL

PASSED AND ADOPTED
THIS

MEMBER: *Ken Skilling*
S 4 DAY OF September, 2018.

ATTEST:

Janelle Kline
CITY CLERK

APPROVED AS TO FORM:

Ernest J. ...
CITY ATTORNEY

Jim Bally
MAYOR



Appendix A

Illicit Discharge Detection and Elimination

Sewer Dye Testing and Call List

Sewer dye testing is used to study the flow or migration of water from one area to another. An example of this would be to verify and/or identify discharge locations of storm sewer lines, check for cross connections of sanitary sewers, check for illicit discharge and check for integrity of sewer lines. Because of the brilliant colors used they often cause concern to the general public when they show up. Sewer dyes used by the City of Columbus employees and contractors shall be non-toxic and biodegradable. A current MSDS sheet should be readily available during its use. Sewer dye comes in tablets, liquids, powders, and wax. It also comes in many florescent/brilliant colors including red, green, yellow, and blue. Sewer dyes shall be used in accordance to the manufactures instructions.

The following people will be notified by telephone prior to the dying of the pipeline, catch basin, manhole, roof drains etc.

- 1) Emergency Management Coordinator 402-564-1206.*
- 2) City of Columbus Police Department 402-564-3201.*
- 3) City of Columbus Fire Department 402-564-8127.*
- 4) City of Columbus Utility Department 402-562-4253.*
- 5) City of Columbus Waste Water Treatment Plant Superintendent 402-562-4250.*
- 6) City of Columbus Transportation /Street Department 402-562-4253.*

Appendix A
Illicit Discharge Detection and Elimination
Sewer Dye Testing Protocol

The following information should be relayed.

- (A) Date of test.*
- (B) Start time of the testing.*
- (C) Approximate length of testing time.*
- (D) Location(s) of testing.*
- (E) Reasons for testing.*
- (F) Color of Dye being used.*
- (G) Anticipated Surface Water or System to be affected.*
- (H) On-site Persons Contact Information.*

When notified, these people will be able to respond to concerned citizens calls in regard to the testing being done. They will be able to say that it is routine testing taking place and although it is colorful it will pose no harm to the environment.

Any conclusions drawn from storm sewer dye testing can be viewed at City Hall in the Engineering Department.

Appendix "B"

Dry Weather Monitoring Checklist



City of Columbus
Outfall Reconnaissance Inventory (ORI)

1 DATE OF INSPECTION _____

2 FACILITY NAME AND ADDRESS _____

2a. OUTFALL NUMBER _____

3 DATE OF LAST RAIN EVENT _____

4 INSPECTOR NAME _____

5 TYPE OF OUTFALL _____

6 IS THERE VISIBLE FLOW FROM THE PIPE? YES NO

IF YES, CHECK ALL THAT APPLY, IF NO, GO TO # 7

COLORED WATER (DESCRIBE): _____

ODOR* (DESCRIBE): _____

MURKY _____

FLOATING OBJECTS (DESCRIBE): _____

SCUM

OILY SHEEN

SLUDGE PRESENT

CLEAR WATER

STAINS ON CONVEYENCE

NOTABLE DIFFERENCE IN PLANT LIFE SURROUNDING CONVEYENCE

SUDS OTHER: _____

7 IS THERE STANDING WATER PRESENT? YES NO

IF YES, CHECK ALL THAT APPLY, IF NO, GO TO # 8

COLORED WATER (DESCRIBE): _____

ODOR* (DESCRIBE): _____

MURKY _____

FLOATING OBJECTS (DESCRIBE): _____

SCUM

OILY SHEEN

SLUDGE PRESENT

CLEAR WATER

STAINS ON CONVEYENCE

NOTABLE DIFFERENCE IN PLANT LIFE SURROUNDING CONVEYENCE

SUDS OTHER: _____

8 FROM THE INSPECTION LOCATIONS, CAN YOU SEE ANY UNUSUAL PIPING OR DITCHES THAT DRAIN TO THE STORM WATER CONVEYENCE? YES NO

9 IS THERE OVERLAND FLOW VISIBLE FORM THE DISCHARGE LOCATION? YES NO

10 ARE THERE DEAD ANIMALS PRESENT? YES NO

SIGNATURE of INSPECTOR: _____

Appendix “C”

Outfall Structures 36" or Larger

<i>Outfall #</i>	<i>Point Number</i>	<i>Northing</i>	<i>Easting</i>	<i>Flowline Elevation</i>	<i>Pipe/Opening Size</i>
<i>SWD 3301</i>	<i>3576</i>	<i>603510.15</i>	<i>2354121.05</i>	<i>1452.85</i>	<i>48" RCP</i>
<i>SWD 3302</i>	<i>3575</i>	<i>603510.09</i>	<i>2354129.80</i>	<i>1452.80</i>	<i>48" RCP</i>
<i>SWD 3303</i>	<i>3574</i>	<i>603510.09</i>	<i>2354140.65</i>	<i>1452.79</i>	<i>48" RCP</i>
<i>SWD 3304</i>	<i>2935</i>	<i>603573.35</i>	<i>2356032.53</i>	<i>1451.14</i>	<i>48" RCP</i>
<i>SWD 3305</i>	<i>2934</i>	<i>603573.28</i>	<i>2356042.75</i>	<i>1451.17</i>	<i>48" RCP</i>
<i>SWD 3306</i>	<i>3570</i>	<i>603653.51</i>	<i>2356094.17</i>	<i>1451.37</i>	<i>42" CMP</i>
<i>SWD 3307</i>	<i>3571</i>	<i>603653.82</i>	<i>2356104.15</i>	<i>1451.32</i>	<i>42" CMP</i>
<i>SWD 3402</i>	<i>610</i>	<i>603615.29</i>	<i>2357534.70</i>	<i>1450.16</i>	<i>36" RCP</i>
<i>SWD 3405</i>	<i>605</i>	<i>603641.66</i>	<i>2358765.86</i>	<i>1445.16</i>	<i>66" RCP</i>
<i>SWD 3409</i>	<i>599</i>	<i>603734.69</i>	<i>2361347.34</i>	<i>1450.39</i>	<i>7'X5' Box</i>
<i>SWD 3410</i>	<i>3601</i>	<i>603813.53</i>	<i>2361401.88</i>	<i>1447.54</i>	<i>36" CMP</i>
<i>SWD 3417</i>	<i>521</i>	<i>602059.82</i>	<i>2356999.75</i>	<i>1453.15</i>	<i>36" RCP</i>
<i>SWD 3419</i>	<i>546</i>	<i>602097.45</i>	<i>2357720.84</i>	<i>1450.18</i>	<i>48" CMP</i>
<i>SWD 3420</i>	<i>397</i>	<i>603576.96</i>	<i>2356184.58</i>	<i>1447.65</i>	<i>66" RCP</i>
<i>SWD 3502</i>	<i>3609</i>	<i>603768.77</i>	<i>2362453.63</i>	<i>1445.21</i>	<i>36" RCP</i>
<i>SWD 3503</i>	<i>3610</i>	<i>603767.17</i>	<i>2362462.49</i>	<i>1445.16</i>	<i>36" RCP</i>
<i>SWD 3504</i>	<i>3611</i>	<i>603765.13</i>	<i>2362471.06</i>	<i>1445.16</i>	<i>36" RCP</i>
<i>SWD 3506</i>	<i>3613</i>	<i>604151.39</i>	<i>2363448.81</i>	<i>1444.89</i>	<i>48" RCP</i>
<i>SWD 3507</i>	<i>3614</i>	<i>604150.89</i>	<i>2363454.38</i>	<i>1444.68</i>	<i>48" RCP</i>
<i>SWD 3508</i>	<i>3615</i>	<i>604407.38</i>	<i>2363467.59</i>	<i>1444.35</i>	<i>36" CMP</i>
<i>SWD 3509</i>	<i>3616</i>	<i>604438.69</i>	<i>2363439.31</i>	<i>1443.03</i>	<i>36" CMP</i>
<i>SWD 3510</i>	<i>3634</i>	<i>604462.83</i>	<i>2363377.35</i>	<i>1442.92</i>	<i>36" CMP</i>
<i>SWD 3511</i>	<i>3635</i>	<i>604469.38</i>	<i>2363384.45</i>	<i>1442.84</i>	<i>36" CMP</i>
<i>SWD 3601</i>	<i>3660</i>	<i>605107.18</i>	<i>2367158.64</i>	<i>1437.25</i>	<i>60" RCP</i>
<i>SWD 3602</i>	<i>3659</i>	<i>605114.20</i>	<i>2367164.20</i>	<i>1437.23</i>	<i>60" RCP</i>
<i>SWD 3603</i>	<i>3658</i>	<i>605112.45</i>	<i>2367197.12</i>	<i>1441.90</i>	<i>36" CMP</i>
<i>SWD 3607</i>	<i>3644</i>	<i>604044.48</i>	<i>2368571.13</i>	<i>1435.51</i>	<i>60" RCP</i>
<i>SWD 3608</i>	<i>3645</i>	<i>604039.55</i>	<i>2368576.88</i>	<i>1435.50</i>	<i>60" RCP</i>
<i>SWD 3609</i>	<i>3646</i>	<i>604034.68</i>	<i>2368582.43</i>	<i>1435.46</i>	<i>60" RCP</i>
<i>SWD 4502</i>	<i>3755</i>	<i>599618.71</i>	<i>2366180.44</i>	<i>1436.29</i>	<i>40" RCP</i>

Outfall Structures 36" or Larger

<i>Outfall #</i>	<i>Point Number</i>	<i>Northing</i>	<i>Easting</i>	<i>Flowline Elevation</i>	<i>Pipe Size</i>
<i>SWD 4503</i>	<i>3753</i>	<i>599817.05</i>	<i>2366350.75</i>	<i>1438.40</i>	<i>Ground/Ditch</i>
<i>SWD 4504</i>	<i>3754</i>	<i>598728.85</i>	<i>2366088.09</i>	<i>1435.67</i>	<i>36" RCP</i>
<i>SWD 5301</i>	<i>3745</i>	<i>595365.65</i>	<i>2353003.58</i>	<i>1447.80</i>	<i>60" RCP</i>
<i>SWD 5302</i>	<i>3746</i>	<i>595360.98</i>	<i>2353010.46</i>	<i>1447.72</i>	<i>60" RCP</i>
<i>SWD 5303</i>	<i>3739</i>	<i>592150.41</i>	<i>2356442.74</i>	<i>1442.44</i>	<i>48" RCP</i>
<i>SWD 5304</i>	<i>3738</i>	<i>591550.19</i>	<i>2356496.89</i>	<i>1442.39</i>	<i>48" RCP</i>
<i>SWD 5404</i>	<i>3737</i>	<i>591664.10</i>	<i>2357773.84</i>	<i>1443.95</i>	<i>45"x73" Arch</i>
<i>SWD 5405</i>	<i>3736</i>	<i>591655.37</i>	<i>2359156.58</i>	<i>1441.80</i>	<i>36" CMP</i>
<i>SWD 5501</i>	<i>3734</i>	<i>591461.46</i>	<i>2361747.26</i>	<i>1437.21</i>	<i>48" RCP</i>
<i>SWD 5602</i>	<i>3765</i>	<i>594369.29</i>	<i>2370014.73</i>	<i>1432.47</i>	<i>36" CMP</i>
<i>SWD 5702</i>	<i>3680</i>	<i>595480.78</i>	<i>2374871.80</i>	<i>1427.31</i>	<i>36" RCP</i>
<i>SWD 6407</i>	<i>3728</i>	<i>587697.47</i>	<i>2357638.79</i>	<i>1438.00</i>	<i>36" CMP</i>
<i>SWD 6411</i>	<i>3729</i>	<i>587565.86</i>	<i>2357537.90</i>	<i>1436.88</i>	<i>36" CMP</i>
<i>SWD 6413</i>	<i>3748</i>	<i>589123.64</i>	<i>2360137.04</i>	<i>1437.21</i>	<i>48" CMP</i>
<i>SWD 6420</i>	<i>3706</i>	<i>588254.26</i>	<i>2361824.64</i>	<i>1437.88</i>	<i>5'x5' Box</i>
<i>SWD 6421</i>	<i>3705</i>	<i>588270.41</i>	<i>2361864.48</i>	<i>1438.18</i>	<i>6'x4' Twin Box</i>
<i>SWD 6505</i>	<i>3695</i>	<i>588675.98</i>	<i>2365263.31</i>	<i>1432.76</i>	<i>4'x7.5' Box Culvert</i>
<i>SWD 6507</i>	<i>3693</i>	<i>587702.88</i>	<i>2365170.15</i>	<i>1436.03</i>	<i>5'x5' Twin Box</i>
<i>SWD 6508</i>	<i>3691</i>	<i>587446.82</i>	<i>2365926.97</i>	<i>1434.93</i>	<i>42" CMP</i>
<i>SWD 6509</i>	<i>3689</i>	<i>587629.53</i>	<i>2365985.30</i>	<i>1433.51</i>	<i>5'x5' Twin Box</i>
<i>SWD 6510</i>	<i>3704</i>	<i>588274.37</i>	<i>2362024.55</i>	<i>1437.52</i>	<i>60" cmp</i>
<i>SWD 6601</i>	<i>3686</i>	<i>587651.98</i>	<i>2368447.68</i>	<i>1429.80</i>	<i>40"RCP</i>
<i>SWD 6602</i>	<i>3685</i>	<i>587655.95</i>	<i>2368453.57</i>	<i>1430.08</i>	<i>36" RCP</i>
<i>SWD 6604</i>	<i>3687</i>	<i>585726.78</i>	<i>2368504.43</i>	<i>1431.94</i>	<i>5'X8' Box</i>
<i>SWD 6701</i>	<i>3767</i>	<i>585892.59</i>	<i>2372556.01</i>	<i>1430.20</i>	<i>4'x5' Box</i>

Outfall Structures 35" or Smaller

Outfall #	Point Number	Northing	Easting	Flowline Elevation	Pipe Size
SWD 3201	3583	603424.42	2350663.63	1457.23	30" RCP
SWD 3202	3584	603427.91	2350684.64	1456.74	30" RCP
SWD 3203	3585	603428.37	2350692.26	1456.71	30" RCP
SWD 3308	2920	601901.77	2354557.57	1451.94	18" RCP
SWD 3401	3573	603656.70	2356173.22	1451.76	24" CMP
SWD 3403	608	603647.06	2358555.39	1449.53	24" RCP
SWD 3404	606	603649.39	2358754.85	1446.96	24" CMP
SWD 3406	604	603673.49	2359434.12	1449.21	24" RCP
SWD 3407	603	603692.16	2360109.84	1448.61	24" RCP
SWD 3408	601	603726.31	2361009.30	1447.12	24" RCP
SWD 3413	540	602220.35	2356491.88	1454.26	15" RCP
SWD 3414	535	602228.97	2356890.86	1454.26	15" RCP
SWD 3415	532	602243.48	2357373.39	1452.55	15" RCP
SWD 3416	515	602013.39	2356487.36	1453.94	30" RCP
SWD 3421	525	602087.74	2357379.78	1454.79	24" RCP
SWD 3501	3603	603814.00	2361454.53	1447.04	24" CMP
SWD 3505	3612	603863.63	2362987.08	1447.15	18" RCP
SWD 3512	3631	604823.45	2365323.06	1450.27	18" RCP
SWD 3513	3637	604993.27	2366613.21	1440.61	30" CMP
SWD 3514	3617	604662.93	2364321.65	1543.74	18" RCP
SWD 3515	3624	604867.94	2364906.81	1451.85	18" RCP
SWD 3516	3770	601714.59	2362617.37	1444.73	12" RCP
SWD 3517	3771	601726.65	2362593.96	1444.40	12" RCP
SWD 3604	3640	604846.13	2367455.11	1440.10	30" CMP
SWD 3605	3656	604685.69	2367753.12	1439.53	30" CMP
SWD 3606	3643	604250.76	2368220.60	1443.82	12" CMP
SWD 3610	3647	603849.80	2368844.10	1443.34	24" RCP
SWD 3611	3654	604029.94	2369326.29	1437.46	30" CMP
SWD 3612	3648	604021.53	2370860.44	1442.64	18" RCP
SWD 3613	3652	604148.82	2370987.71	1436.32	30" CMP
SWD 3614	3649	603916.27	2371404.48	1441.45	18" RCP
SWD 3615	3650	603739.92	2371700.37	1440.29	18" RCP

Outfall Structures 35" or Smaller

<i>Outfall #</i>	<i>Point Number</i>	<i>Northing</i>	<i>Easting</i>	<i>Flowline Elevation</i>	<i>Pipe Size</i>
<i>SWD 3616</i>	<i>3639</i>	<i>604966.81</i>	<i>2367181.31</i>	<i>1444.40</i>	<i>12" CMP</i>
<i>SWD 3617</i>	<i>3663</i>	<i>603570.60</i>	<i>2371912.64</i>	<i>1437.55</i>	<i>24" RCP</i>
<i>SWD 4301</i>	<i>506</i>	<i>598202.68</i>	<i>2354176.50</i>	<i>1457.05</i>	<i>18" RCP</i>
<i>SWD 4302</i>	<i>3281</i>	<i>596509.11</i>	<i>2356272.45</i>	<i>1455.75</i>	<i>30" RCP</i>
<i>SWD 4304</i>	<i>3773</i>	<i>597730.96</i>	<i>2355252.58</i>	<i>1455.24</i>	<i>12" PVC</i>
<i>SWD 4401</i>	<i>3772</i>	<i>599653.05</i>	<i>2359229.32</i>	<i>1452.42</i>	<i>24" RCP</i>
<i>SWD 4501</i>	<i>3756</i>	<i>599279.80</i>	<i>2364970.91</i>	<i>1441.45</i>	<i>12" RCP</i>
<i>SWD 4601</i>	<i>3752</i>	<i>596997.67</i>	<i>2367223.97</i>	<i>1438.13</i>	<i>15" CMP</i>
<i>SWD 4602</i>	<i>2470</i>	<i>598001.89</i>	<i>2371419.13</i>	<i>1433.13</i>	<i>15" CMP</i>
<i>SWD 4603</i>	<i>2469</i>	<i>598355.34</i>	<i>2371660.78</i>	<i>1433.30</i>	<i>24" RCP</i>
<i>SWD 4701</i>	<i>3669</i>	<i>596219.35</i>	<i>2377216.61</i>	<i>1428.26</i>	<i>12" RCP</i>
<i>SWD 4702</i>	<i>3757</i>	<i>598120.73</i>	<i>2378972.91</i>	<i>1427.31</i>	<i>18" RCP</i>
<i>SWD 5401</i>	<i>3741</i>	<i>594292.05</i>	<i>2357740.70</i>	<i>1450.13</i>	<i>24" RCP</i>
<i>SWD 5402</i>	<i>3742</i>	<i>594293.38</i>	<i>2357737.61</i>	<i>1450.30</i>	<i>24" RCP</i>
<i>SWD 5403</i>	<i>3740</i>	<i>592868.55</i>	<i>2357863.16</i>	<i>1448.77</i>	<i>12" CMP</i>
<i>SWD 5406</i>	<i>3735</i>	<i>591708.91</i>	<i>2360159.44</i>	<i>1440.17</i>	<i>24" RCP</i>
<i>SWD 5407</i>	<i>3722</i>	<i>590322.30</i>	<i>2356633.87</i>	<i>1438.21</i>	<i>15" RCP</i>
<i>SWD 5408</i>	<i>3716</i>	<i>590872.97</i>	<i>2358696.57</i>	<i>1438.84</i>	<i>15" RCP</i>
<i>SWD 5409</i>	<i>3743</i>	<i>593603.66</i>	<i>2357300.29</i>	<i>1452.02</i>	<i>18" HDPE</i>
<i>SWD 5410</i>	<i>3416</i>	<i>595159.97</i>	<i>2357789.50</i>	<i>1452.63</i>	<i>24" RCP</i>
<i>SWD 5502</i>	<i>3750</i>	<i>594075.20</i>	<i>2366685.05</i>	<i>1439.28</i>	<i>12" CMP</i>
<i>SWD 5503</i>	<i>3749</i>	<i>594053.61</i>	<i>2366726.08</i>	<i>1439.47</i>	<i>12" CMP</i>
<i>SWD 5504</i>	<i>3751</i>	<i>594073.99</i>	<i>2366754.34</i>	<i>1439.32</i>	<i>12" CMP</i>
<i>SWD 5603</i>	<i>3764</i>	<i>594380.74</i>	<i>2370243.40</i>	<i>1432.01</i>	<i>18" RCP</i>
<i>SWD 5604</i>	<i>3762</i>	<i>594498.26</i>	<i>2370969.04</i>	<i>1430.97</i>	<i>18" RCP</i>
<i>SWD 5605</i>	<i>3763</i>	<i>594500.66</i>	<i>2370973.79</i>	<i>1432.60</i>	<i>24" RCP</i>
<i>SWD 5606</i>	<i>3768</i>	<i>592426.48</i>	<i>2367861.24</i>	<i>1437.44</i>	<i>15"RCP</i>
<i>SWD 5701</i>	<i>3682</i>	<i>595461.59</i>	<i>2374842.01</i>	<i>1427.37</i>	<i>24" RCP</i>
<i>SWD 5703</i>	<i>3681</i>	<i>595459.63</i>	<i>2374879.92</i>	<i>1427.77</i>	<i>18" RCP</i>
<i>SWD 5704</i>	<i>3671</i>	<i>596049.15</i>	<i>2377157.98</i>	<i>1428.40</i>	<i>18" RCP</i>

Outfall Structures 35" or Smaller

<i>Outfall #</i>	<i>Point Number</i>	<i>Northing</i>	<i>Easting</i>	<i>Flowline Elevation</i>	<i>Pipe Size</i>
<i>SWD 6410</i>	<i>3730</i>	<i>587717.10</i>	<i>2358519.18</i>	<i>1439.41</i>	<i>15" RCP</i>
<i>SWD 6411</i>	<i>3729</i>	<i>587565.86</i>	<i>2357537.90</i>	<i>1439.88</i>	<i>12" RCP</i>
<i>SWD 6412</i>	<i>3711</i>	<i>589134.33</i>	<i>2360131.44</i>	<i>1437.93</i>	<i>24" RCP</i>
<i>SWD 6415</i>	<i>3712</i>	<i>589388.82</i>	<i>2360781.77</i>	<i>1437.49</i>	<i>12" RCP</i>
<i>SWD 6416</i>	<i>3713</i>	<i>589404.11</i>	<i>2361125.51</i>	<i>1437.01</i>	<i>12" RCP</i>
<i>SWD 6417</i>	<i>3715</i>	<i>589305.53</i>	<i>2361624.14</i>	<i>1435.36</i>	<i>18" HDPE</i>
<i>SWD 6418</i>	<i>3709</i>	<i>588594.17</i>	<i>2360281.57</i>	<i>1437.72</i>	<i>30" CMP</i>
<i>SWD 6419</i>	<i>3707</i>	<i>588491.26</i>	<i>2360928.22</i>	<i>1435.53</i>	<i>15" RCP</i>
<i>SWD 6501</i>	<i>3702</i>	<i>589521.41</i>	<i>2362827.01</i>	<i>1448.97</i>	<i>24" RCP</i>
<i>SWD 6502</i>	<i>3701</i>	<i>589067.08</i>	<i>2364250.21</i>	<i>1432.97</i>	<i>30" RCP</i>
<i>SWD 6504</i>	<i>3695</i>	<i>588666.95</i>	<i>2365251.18</i>	<i>1432.76</i>	<i>30" CMP</i>
<i>SWD 6603</i>	<i>3684</i>	<i>587653.60</i>	<i>2368460.72</i>	<i>1431.37</i>	<i>15" RCP</i>