

NEBRASKA



Good Life. Great Journey.

DEPARTMENT OF TRANSPORTATION

NPDES Municipal Separate Storm Sewer System – Illicit Discharge Detection and Elimination Plan

MARCH 2024

CONTENTS

CONTENTS	i
TABLES	ii
FIGURES	ii
ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN ABBREVIATIONS	iii
1.0 Introduction	1
1.1 Illicit Discharge Detection and Elimination Requirements.....	1
1.2 MS4 Permit Requirements	1
1.3 Definitions	1
1.4 What is an Allowable Non-Stormwater Discharge?	2
1.5 IDDE Plan Public Involvement	3
1.6 Program Evaluation.....	4
2.0 Compliance Oversight Framework	5
2.1 Adequate Statutory Authority.....	5
2.2 Designation of Owner and Operator for State Highway System.....	6
2.3 Authorization for Access and Inspection.....	8
2.4 Enforcement Tools	9
2.5 Regulated Documentation	11
2.6 Illicit Discharge Detection and Elimination Training Requirement	13
3.0 MS4 Outfall Mapping Requirements	14
3.1 Overview	14
3.2 Mapping MS4 Outfall Locations	16
3.3 Mapping Stormwater Discharge Point Locations.....	18
3.4 Outfall Mapping Procedures	21
4.0 MS4 Outfall Dry Weather SCREENING	23
4.1 MS4 Outfall Dry Weather SCREENING Criteria and Frequency.....	23
4.2 Dry Weather Monitoring Field Resources and Procedures.....	24
5.0 Illicit Discharge Response Procedures	29
5.1 Documentation	29
5.2 Response Staff and Qualifications.....	29
5.3 Notification	30
5.4 Equipment.....	31
5.5 Tracing.....	32
5.6 Compliance Oversight Procedures	33
ATTACHMENT	
Attachment A: Education & Training	

TABLES

Table 1.	IDDE Plan Tracking Tools
Table 2.	Authority to Control Contributions of Pollutants to the Highway System
Table 3.	Adjacent Jurisdictions with Municipal Maintenance Agreements
Table 4.	IDDE Plan Enforcement Tools
Table 5.	IDDE Record Documentation

FIGURES

Figure 1.	Illicit Discharge Sources
Figure 2.	IDDE Enforcement Flowchart – Connections
Figure 3.	IDDE Enforcement Flowchart – Dumping and Spills
Figure 4.	MS4 Outfall and Stormwater Discharge Point Decision Flowchart
Figure 5.	Example MS4 Outfall Location Map
Figure 6.	Example of State Highway Intersection with Water of the State
Figure 7.	Examples of Surface MS4 Outfall Discharges to Waters of the State
Figure 8.	Examples of Elevated MS4 Outfall discharges to Waters of the State
Figure 9.	Example MS4 Discharge Point Location Map
Figure 10.	Example of Discharge Points from NDOT to Adjacent Jurisdictions
Figure 11.	Example of Dry Weather Screening Locations
Figure 12.	Compliance Oversight Escalation Procedures Flowchart – NDOT is not RP
Figure 13.	Compliance Oversight Escalation Procedures Flowchart – NDOT is RP

ILLCIT DISCHARGE DETECTION AND ELIMINATION PLAN ABBREVIATIONS

CARS	Condition Acquisition Reporting System
CTAG	Compliance Technical Advisory Group
DIRK	District Incident Reporting Knowledgebase
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
MS4	Municipal Separate Storm Sewer System
MCM	Minimum Control Measure
NDEE	Nebraska Department of Environment and Energy
NDOT	Nebraska Department of Transportation
NPDES	National Pollutant Discharge Elimination System
OEP	Operations Environmental Program
PCE	Physical Characteristics Evaluations
POTW	Public Owned Treatment Works
RDC	Roadside Development and Compliance Unit
RP	Responsible Party
SWMP	Stormwater Management Plan
UA	Urban Area
USGS	United States Geological Survey

1.0 INTRODUCTION

1.1 ILLICIT DISCHARGE DETECTION AND ELIMINATION REQUIREMENTS

The Nebraska Department of Transportation (NDOT) manages this Illicit Discharge Detection and Elimination (IDDE) Plan. Information provided in this IDDE Plan describes efforts to comply with specific requirements of the Municipal Separate Storm Sewer System (MS4) discharge Permit. NDOT complies with the MS4 Permit by implementing the procedures described in this Plan and actively protects water quality by detecting and eliminating illicit discharges on an ongoing basis.

1.2 MS4 PERMIT REQUIREMENTS

The MS4 Permit issued to NDOT includes three requirements that make up the IDDE Minimum Control Measure (MCM). The three types of requirements include implementing an IDDE Program to detect, investigate and eliminate non-stormwater discharges into the MS4, support methods for the public to report non-stormwater discharges and spills, and provide illicit discharge education and training. The MS4 Permit requires NDOT to document written procedures for implementing the IDDE program, which this IDDE Plan specifically satisfies.

1.3 DEFINITIONS

Allowable Non-Stormwater Discharge: Occasional or incidental discharges into the regulated MS4 that are not made up entirely of stormwater and are not identified as significant contributors of pollutants to the MS4.

Connection: An illicit discharge source that conveys continuous or intermittent non-stormwater discharges through pipes or channels into the storm drain system operated by NDOT. Connections do not include unconcentrated sheet flow.

Dumping: An illicit discharge source that represents a conscious and intentional deposit of wastes and other prohibited non-stormwater discharges into the storm drain system operated by NDOT. Dumping does not include the incidental (i.e. occurring by chance in connection with drainage) deposit of trash and other debris along the state highway system.

Illicit Discharge: A non-stormwater pollution source generated either by connection, dumping or spilling into a Municipal Separate Storm Sewer. Illicit Discharge does not include allowable non-stormwater discharges pursuant to a National Pollutant Discharge Elimination System (NPDES) permit and this IDDE Plan.

Municipal Separate Storm Sewer: A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- ▶ Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity;
- ▶ Designed or used for collecting or conveying stormwater;
- ▶ Which is not a combined sewer;
- ▶ Which is not part of a Publicly Owned Treatment Works (POTW);
- ▶ Referred to as regulated when a NPDES Permit has been issued for the system by the NDEE; and
- ▶ Referred to as Phase II MS4 when the conditions of NDEE Title 119 apply.

Operator: A person or entity designated by the owner who has day to day operational control and/or the ability to modify project plans and specifications related to a facility.

Owner: A person or party possessing the title of the land on which the activities will occur; or if the activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the activity.

Outfall: A point source at the point where a facility and/or MS4 discharges to waters of the State. This does not include open conveyances connecting to MS4s, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the State and are used to convey waters of the State.

Point Source: Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Responsible Party: The parties responsible for (in whole or in part) the presence of illicit discharge at a site.

Spill: An illicit discharge source that represents an accidental release of liquid or solid non-stormwater discharges into the storm drain system operated by NDOT.

State Designated Waters: Stream segments, lakes, and wetlands for protection of waters of the State that have been assigned use classifications for aquatic life, water supply sources, recreation, aesthetics, key species, and/or state resource waters, as identified in Nebraska State Statute Title 117: Nebraska Surface Water Quality Standards.

Storm Water (stormwater): Storm water runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Discharge Point: Physical interconnection between two operators of the same Municipal Separate Storm Sewer where stormwater is conveyed between the jurisdictions.

Waste: Any material appearing in a place or in a context not associated with that materials function or origin.

Waters of the State: All waters within the jurisdiction of the state including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, water courses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulation of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering on the state.

1.4 WHAT IS AN ALLOWABLE NON-STORMWATER DISCHARGE?

The stormwater drainage system is designed to convey stormwater, but some discharges may occur within the Municipal Separate Storm Sewer that are not made up entirely of stormwater. These are only allowable if they do not demonstrate significant contribution of pollutants.

The following categories of non-stormwater discharges or flows (i.e., illicit discharges) are allowable and shall be addressed only if they are identified as significant contributors of pollutants to a MS4:

- ▶ Discharges from firefighting activities
- ▶ Fire hydrant flushings
- ▶ Potable water, including water line flushings
- ▶ Water used to control dust
- ▶ Water used to wash vehicles where detergents are not used

- ▶ Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids
- ▶ Irrigation drainage
- ▶ Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling
- ▶ Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed)
- ▶ Routine external building washdown that does not use detergents
- ▶ Uncontaminated groundwater or spring water
- ▶ Foundation or footing drains where flows are not contaminated with process materials
- ▶ Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown or drains)

1.5 IDDE PLAN PUBLIC INVOLVEMENT

The IDDE Program Target Audience for reviewing NDOT procedures includes internal staff and stakeholders responsible for implementing the IDDE Plan. The initial IDDE Plan was developed by the Compliance Technical Advisory Group (CTAG) in 2008 and updated by staff as implementation of the IDDE Plan took place. In 2017, a NDOT working group was involved in a process of evaluating implementation details of the IDDE Plan. Specifically, improvement was needed to define the types of illicit discharges that occur around the State, how notifications are routed and how incident documentation procedures occur. This public involvement process also included working meetings with implementation stakeholders including additional NDOT District staff, Nebraska Department of Environment and Energy and the NDOT Communications Center who coordinates with Nebraska State Patrol on roadway incidents. This public involvement process was useful for updating this IDDE Plan. Additionally, the general public can access this IDDE Plan by download from the NDOT website or by requesting a copy. Notifications from the general public about potential illicit discharges are rarely directed to NDOT, but Section 5.0 outlines common procedures that direct how NDOT manages notifications to comply with this IDDE Plan.

1.6 PROGRAM EVALUATION

The IDDE Program is evaluated annually. Implementation details described in this IDDE Plan support the measurable goals, assignments and frequencies of activities required in the SWMP. Measurable goals are compared against annual performance to assess the effectiveness of protecting water quality from illicit discharges to the Maximum Extent Practicable. Evaluation of performance requires NDOT to coordinate implementation of the IDDE Plan and use of multiple tracking tools listed in Table 1 below. If review of the IDDE Program identifies a needed modification, the Target Audience is engaged in a review process prior to finalizing a new version of the IDDE Plan.

TABLE 1. IDDE PLAN TRACKING TOOLS

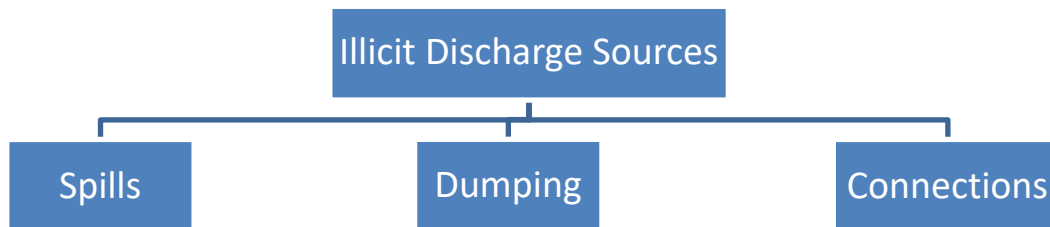
Tracking Method:	Tracking Purpose:
ArcGIS	<ul style="list-style-type: none"> • MS4 Outfall Characterizations • MS4 Outfall Images • Waters of the State • MS4 Boundaries • MS4 Dry Weather Screening Locations • MS4 Outfall Dry Weather Screening Data • Current MS4 Outfall Maps required by MS4 Permit Part 3.4.2.1.2
ArcGIS Field Maps	<ul style="list-style-type: none"> • MS4 Outfall Mapping Data Collection • MS4 Outfall Dry Weather Screening Data Collection
DIRK	<ul style="list-style-type: none"> • Illicit Discharge Incidents and Notifications
Server Files	<ul style="list-style-type: none"> • Incident record documents by incident reference number. • Supplemental MS4 compliance documentation not included within DIRK.

2.0 COMPLIANCE OVERSIGHT FRAMEWORK

2.1 ADEQUATE STATUTORY AUTHORITY

The Department is responsible, where assigned by state statute, for prohibiting non-stormwater discharges into the Municipal Separate Storm Sewer. Assignment of responsibility is determined by functional classification. Where responsibility is assigned to NDOT, the MS4 Permit requires relevant regulatory mechanisms supported by Adequate Statutory Authority to control pollutant discharges into and from the MS4 permitted area. Figure 1 illustrates that Spills, Dumping and Connections are the regulated sources of Illicit Discharges NDOT applies statutory authority over.

FIGURE 1. ILLICIT DISCHARGE SOURCES



The State of Nebraska maintains **39-1359** which prohibits non-stormwater discharges to rights-of-way acquired by the Department. The authority, as applied, prevents and/or regulates physical or functional encroachments, structures, or uses of the State Highway System right-of-way. Table 2 describes statutory authority the State of Nebraska maintains to further enable compliance oversight procedures for Illicit Discharge sources.

TABLE 2. AUTHORITY TO CONTROL CONTRIBUTIONS OF POLLUTANTS TO THE HIGHWAY SYSTEM

Enforcement Target:	Legal Authority:
Connections	<p><u>State Statute</u></p> <p>39-1360: No person may use the drainage facilities of a highway for private purposes without first obtaining the written consent of the department.</p> <p>39-1361: No person, firm, or corporation may dig up, cross, or otherwise use any portion of the state highway system for laying or relaying pipelines, ditches, flumes, pipes, sewers, railways, or any other similar purpose without obtaining a written permit from the department and agreeing to comply with such reasonable regulations as the department shall prescribe.</p>

(Continued next page)

Dumping and Spills	<p><u>State Statute</u></p> <p>39-310: Any person who deposits any wood, stone, or other kind of material on any part of any lawful public road in this state, inside of the ditches of such road, or outside of the ditches but so near thereto as to cause the banks thereof to break into the same, causes the accumulation of rubbish, or causes any kind of obstruction, shall be guilty of (1) a Class III misdemeanor for the first offense, (2) a Class II misdemeanor for the second offense, and (3) a Class I misdemeanor for the third or subsequent offense.</p> <p>39-311(2): Any person who deposits or permits to be deposited upon any highway any destructive or injurious material shall immediately remove such or cause it to be removed.</p>
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2.1.1. NDOT AUTHORITY TO CONTROL CONNECTIONS

Adding to, modifying and using connections - including storm drainages - along the State Highway System is controlled by the Department. The Department has the authority to regulate, and if necessary, prohibit any Responsible Party from the use of highway drainage facilities for private purposes without first obtaining written consent (**39-1360**). Any connection discharging pollutants to the State Highway System is considered an encroachment for a private purpose that can be prohibited. The Department has the authority to issue a permit with an agreement from the permittee to comply with such “reasonable regulations” the Department feels necessary for such encroachments (**39-1361**). When no encroachment permit exists, the encroachment is deemed a violation of statute and may be removed. As such, the Department maintains Adequate Statutory Authority to control all illicit discharges from connections to the State Highway System.

2.1.2. NDOT AUTHORITY TO CONTROL DUMPING AND SPILLS

An illicit discharge may occur when pollutants are dumped or spilled onto the drainage system or into a storm drain along the State Highway System. Spills are the most common source of illicit discharge encountered by NDOT. The State Highway System is also occasionally used for dumping of materials. The Department maintains authority to prohibit the use of the State Highway System for littering on any part of a roadway, in drainage ditches, or on the banks of drainage ditches (**39-310**). Further, the person responsible for depositing any destructive or injurious material is responsible for having it removed (**39-311(2)**). State statutes make no functional distinction between materials that are intentionally dumped and materials that are accidentally spilled. As such, the Department maintains the same Adequate Statutory Authority to illicit discharges from dumping and spilling pollutants along the State Highway System.

2.2 DESIGNATION OF OWNER AND OPERATOR FOR STATE HIGHWAY SYSTEM

The State Highway System was established by Nebraska Law (**39-1301**). It is intended to serve as a part of an integrated system of all Nebraska roads and streets, which together provide safe and efficient highway transportation throughout the state.

Nebraska legislators recognized that cooperation between the State and other governmental entities, “with lines of authority definitely fixed” (**39-1301**), would be essential to developing an integrated system of public roadways connecting the State Highway System with Nebraska County roads and Municipal streets. As a result, a **Functional**

Classification System (39-2101) was established for the State of Nebraska to assign **jurisdictional responsibilities** for public roads in Nebraska amongst the Nebraska Department of Transportation, the counties, and the municipalities. This functional classification system establishes the Operator of every constructed highway segment, and as a result, establishes the responsibilities for all operation and maintenance of these segments within MS4 boundaries. **NDOT does not share jurisdictional responsibility for implementation of MS4 permit obligations with adjacent Operators/jurisdictional authorities;** instead, by operation of law, each is responsible for implementation of, and compliance with its own permits and plans. No additional agreement, memorandum of understanding or inter-governmental coordination is required to monitor, delineate, accept or assign responsibilities with regard to these maintenance costs and responsibilities. Further, it is important to read this IDDE Plan in the context of highway maintenance, jurisdictional responsibility, and in particular NDOT’s maintenance responsibilities under Nebraska Law.

2.2.1. MAINTENANCE RESPONSIBILITY OF STATE HIGHWAYS DEFINED

The term “maintenance” is broadly defined by Nebraska Law (39-101.6) as, “the act, operation, or continuous process of repair, reconstruction, or preservation of the whole or any part of any highway, including surface, shoulders, roadsides, traffic control devices, structures, waterways, and drainage facilities, for the purpose of keeping it at or near or improving upon its original standard of usefulness and safety.” Regulatory requirements listed in the MS4 Permit for NDOT to implement an Illicit Discharge Detection and Elimination Plan are unrelated to keeping or improving “usefulness and safety” of the highway. Therefore, under Nebraska Law, implementation of such MS4 Permit requirements falls outside the State’s statutory duties as applied to the term “maintenance.” NDOT does not accept a general duty of “maintenance” under the MS4 Permit or Stormwater Management Plan.

2.2.2. MAINTENANCE AND OPERATION OF STATE HIGHWAYS ASSIGNED

Determinations of jurisdictional responsibility begin with Nebraska’s Functional Classification System. This System divides highways into two broad categories (39-2102): Rural Highways (39-2103) and Municipal Streets (39-2104). Rural highways consist of all public highways and roads outside the limits of any incorporated municipality and municipal streets consist of all public streets within the limits of any incorporated municipality. Municipal Streets are further divided into six functional classifications (39-2104): Interstate, Expressway (including Freeways), Major Arterial, Other Arterial, Collector, and Local. Jurisdictional responsibility for maintenance and operation for the two major categories of functional classifications is defined by law (39-2105), as clarified by 39-1339 (explained below). Current maps of the highways that are maintained by NDOT within NDEE-designated Municipal Separate Storm Sewers are attached to the Good Housekeeping Pollution Prevention Plan.

- Outside of the limits of any incorporated municipality, NDOT has jurisdictional responsibility for the maintenance and operation of rural state highways classified as interstate, expressways (including freeways), and major arterials and their municipal extensions, and for connecting links between the interstate and the nearest existing state highway system in rural areas. NDOT is not responsible for that portion of any municipal extension (connecting link) which exceeds the design of the rural state highway leading into the municipality. (For example, a two-lane rural state highway, such as Highway 6 in Lincoln, transitioning near city limit into four lanes for purposes of meeting local transportation needs, then transitioning back into a two-lane rural state highway.)
- Within corporate limits, NDOT has jurisdictional responsibility for maintenance and operation of state highways EXCEPT FOR all: streets classified as
 - Other arterial,
 - Collector, and

- Local; as well as
- Any expressway which are of a purely local nature,
- That portion of municipal extensions of rural expressways, and
- Major arterials which exceeds the design of the rural state highway, such as Highway 6 in Lincoln, transitioning into such systems (connecting links),
- Furthermore, with regard to the “maintenance” responsibilities of connecting links (39-1339), including approach or exit roads, and separation structures over freeways (39-1372), Nebraska Law (39-1339) limits NDOT’s maintenance obligation to “surface maintenance of the traveled way”. The following responsibilities for surface maintenance are specifically excluded from NDOT’s jurisdictional responsibilities for maintenance:
 - NDOT shall have no responsibility for the maintenance of appurtenances, which include, but are not limited to “sidewalks, storm sewers, guardrails, handrails, steps, curb or grate inlets, driveways, fire plugs, or retaining walls”. (39-1339(4))
 - Appurtenances, and specifically storm sewers and curb or grate inlets as defined by 39-1339(4), meet the definition of “Municipal Separate Storm Sewer” drainage systems or facilities (NDEE Title 119 Chapter 1, Section 070).

2.3 AUTHORIZATION FOR ACCESS AND INSPECTION

When an illicit discharge is flowing from a connection that drains into the right-of-way from an adjacent jurisdiction, the Department notifies local authorities to investigate illicit discharges originating from outside the right-of-way. The Department is not the source of the illicit discharge and does not maintain authority to access the adjacent property to investigate the source.

When an illicit discharge is flowing from a connection that drains out of the right-of-way into an adjacent jurisdiction, the Department maintains authority (39-1338) to make channel changes, control erosion, and provide stream protection or any other control measures beyond the highway right-of-way limits wherever it is deemed necessary in order to protect the highways and drainage facilities from damage. The Department also maintains the authority to enter upon private or public property for the above purposes.

2.4 ENFORCEMENT TOOLS

The Department relies upon a variety of long-established tools to enforce the illicit discharge elimination requirements of the MS4 Permit. Enforcement tools are summarized in Table 4 and are explained in the following sections.

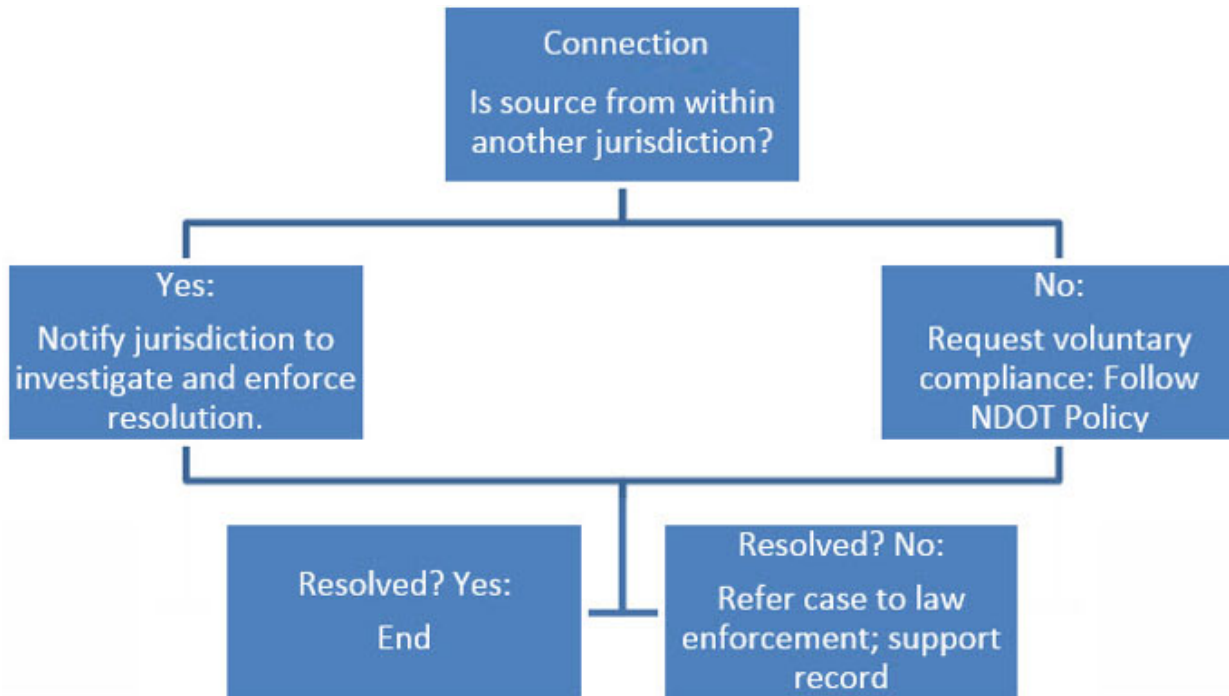
TABLE 4. IDDE PLAN ENFORCEMENT TOOLS

Enforcement Target:	Enforcement Tools:
Connections	<ul style="list-style-type: none"> • Policy for Removing or Permitting Physical or Functional Encroachments, Structures or Uses of State Highway Right of Way (2/2001) • Permit for Encroachment (NDOT26 7/17) • Permit to Occupy Right-of-Way (NDOT19 7/17) • Nebraska State Statute 39-1362: Cross or dig up highway; violations; penalty • Nebraska State Statute 81-2005(3): State patrol; powers and duties enumerated
Dumping and Spills	<ul style="list-style-type: none"> • Policy for Removing or Permitting Physical or Functional Encroachments, Structures or Uses of State Highway Right of Way (2/2001) • Permit for Encroachment (NDOT26 7/17) • Permit to Occupy Right-of-Way (NDOT19 7/17) • Nebraska State Statute 39-310: Depositing materials on roads or ditches; penalties • Nebraska State Statute 39-311(5) & (6): Rubbish on highways; prohibited; signs; enforcement; violation; penalties • Nebraska State Statute 28-523: Littering of public and private property; penalty • Nebraska State Statute 81-2005(3): State patrol; powers and duties enumerated.

2.4.1 NDOT ENFORCEMENT - ILLICIT DISCHARGES FROM CONNECTIONS

Illicit Discharges from connections to the State Highway System may be enforced as a violation of either the encroachment permit or right-of-way permit requirements. These decisions illustrated in Figure 2 are dependent on the unique situations encountered, but are documented in detail within the on-line NDOT *Policy for Removing or Permitting Physical or Functional Encroachments, Structures or Uses of State Highway Right-of-Way*, the *Permit for Encroachment*, and the *Permit to Occupy Right-of-Way*. When requested, based on failure to satisfy the conditions of an encroachment or right-of-way permit, enforcement may be provided by the Nebraska State Patrol to make arrests for misdemeanors or felonies ([81-2005\(3\)](#)).

FIGURE 2. IDDE ENFORCEMENT FLOWCHART – CONNECTIONS

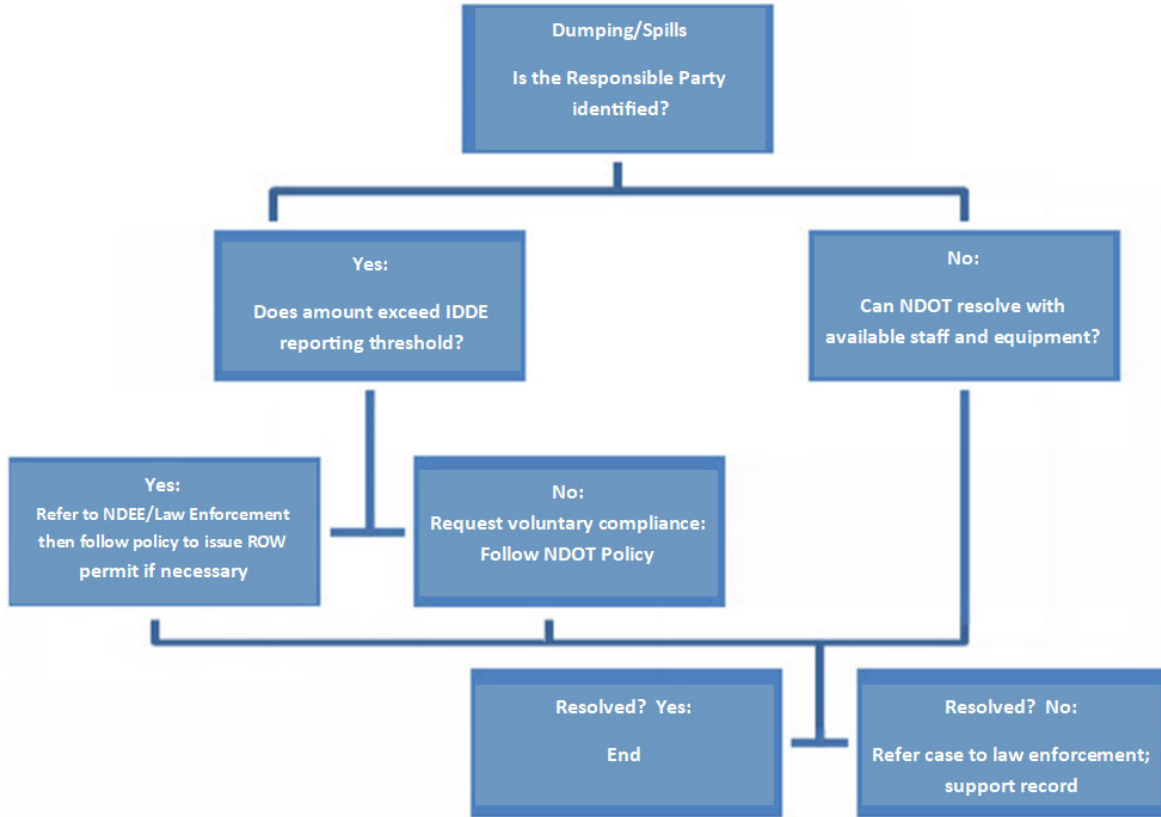


An encroachment exists when an object or structure that has not been permitted above, below, or on the surface of the State Highway Right-of-Way. Construction of new pipes and channels to the State Highway Right-of-Way without approval is possible, but highly unusual. Adjacent jurisdictions and property owners responsible for constructed pipes and channels that convey non-stormwater discharges are responsible for removing the encroachments as required by state statutes and/or the terms of their MS4 permit. An identified illicit discharge would meet the criteria of causing unreasonable hazards to the use of the right-of-way for highway purposes (39-1361) and is a violation of the encroachment permit requirements. Enforcement of encroachments follows procedures appropriate for Immediate Hazards, Non-immediate Hazards and Legal Assistance. The Policy specifies enforcement sequence of procedures, but when the notice to remove an encroachment is ignored, the illicit discharge is considered a violation of an encroachment permit requirements and NDOT supports the State of Nebraska’s authority to enforce the incident as a Class III misdemeanor for every day that such a violation continues after written notification is issued (39-1362).

2.4.2 NDOT ENFORCEMENT - DUMPING AND SPILLS

State Statutes relating to litter (28-523) and rubbish (39-311) are applied by the Department to cover any source of dumped or spilled material in the form of Waste as illustrated in Figure 3. Intentionally dumping or accidentally spilling waste on the State Highway System is enforceable by parties other than the NDOT. NDOT supports enforcement by the appropriate level of law enforcement as authority and responsibility is assigned through state statute. In general, the offense of depositing materials on roads or ditches (i.e. littering) is managed at the appropriate level of law enforcement. NDOT can support responses and work with local law enforcement to document when a resolution was accomplished. When NDOT is the Responsible Party of a spilled or dumped material, the incident is handled with escalation procedures described in Section 5.6 of this IDDE Plan.

FIGURE 3. IDDE ENFORCEMENT FLOWCHART – DUMPING AND SPILLS



Intentionally dumping and failure to resolve accidental spills are classified as a misdemeanor offense and punishment escalates with subsequent offenses (39-310, 39-311(6)). The Nebraska State Patrol may make arrests according to violations relating to misdemeanors or felonies when requested (81-2005(3)). More commonly though, the Nebraska State Patrol officers, conservation officers, sheriffs, deputy sheriffs, and other law enforcement officers conduct their assigned duty to provide enforcement for any violation of throwing or depositing materials onto the State Highway System (39-311(5)). This includes requiring a person (39-311(3)) who removes a wrecked or damaged vehicle from a highway to remove any injurious substance deposited on the highway. Because this enforcement authority is assigned by state statute, no other enforcement responsibility is required of NDOT.

When a highway emergency exists such as a traffic accident or significant spill that affects the highway and/or right-of-way, a right-of-way permit may be issued to the identified Responsible Party. The permit may contain performance guarantees and all restrictions and specific instructions NDOT requires for considering the illicit discharge and its impact resolved satisfactorily. When NDEE is involved with response to the incident, NDOT includes regulatory restrictions and specific instructions from NDEE in the right-of-way permit, when appropriate. NDOT supports the State of Nebraska’s authority to enforce the incident as a Class III misdemeanor (39-1362).

2.5 REGULATED DOCUMENTATION

Compliance oversight for the Illicit Discharge Detection and Elimination Plan is tracked in a manner that allows NDOT to capture illicit discharge documentation required by the MS4 Permit.

2.5.1 DOCUMENTATION MAINTENANCE

Compliance oversight documentation is required by the MS4 Permit. When the illicit discharge reporting threshold is reached, DIRK is used to capture required information and support this IDDE Plan. All efforts are made to include documentation of the information listed in Table 5 with the DIRK record. Additional supporting documentation about an incident is maintained in electronic files on the NDOT server. Incident records on the server are labeled by incident number to correspond to the DIRK incident number for ease of reference.

TABLE 5. IDDE RECORD DOCUMENTATION

Required Information:	Description of Information Recorded:
Name of stakeholders	A list of names of representatives involved with the illicit discharge.
Description of source	A brief summary of the source contributing to the illicit discharge.
Description of potential violations	A description of the violation as an unauthorized connection, discharge, spill or dumping.
Schedule to return incident to compliance	Estimated date illicit discharge will be resolved, or compliance escalation will be followed (see Figures 12 and 13 for Compliance Escalation Procedures Flowcharts).
Escalation procedures required	Coordination efforts if the schedule to return to compliance was not satisfied.
Accompanying documentation of compliance record	Documentation is generally retained in the DIRK database, but additional incident files may be saved and available upon request from NDOT. A brief summary of other documentation available is retained with the incident file.
Referrals made to adjacent jurisdiction	A brief summary of coordination efforts with the adjacent jurisdiction in the case an illicit discharge entered their storm sewer system.
Date illicit discharge record was resolved	Date that the illicit discharge was removed and no longer considered to be a threat to the environment.

2.5.2 IDDE REPORTING THRESHOLD FOR DOCUMENTATION

NDOT has established an IDDE reporting threshold of incidents that require documentation. All incidents that constitute an illicit discharge exceeding 25 gallons or 100 pounds, or are an immediate threat to human health or the environment must have an Illicit Discharge incident created in DIRK. An illicit discharge of less than these amounts are addressed as part of the Good Housekeeping Pollution Prevention Plan and Highway Environmental Maintenance Policies included in the Operations Environmental Procedures Manual.

2.6 ILLICIT DISCHARGE DETECTION AND ELIMINATION TRAINING REQUIREMENT

NDOT has developed Operations Environmental Program training that consists of three modules. Module three addresses illicit discharge detection and elimination procedures. Staff listed below are required to complete the training module in 2018 or their first year of employment and renew the training every three years. On-line training provides consistent messaging, distribution, ease of access and improved ability to track completion for compliance requirements. Staff required to complete the training module for Illicit Discharge Detection and Elimination include:

- District Operations Staff
- District Construction Staff
- Operations Division Staff
- RDC Unit Staff

3.0 MS4 OUTFALL MAPPING REQUIREMENTS

3.1 OVERVIEW

A current MS4 Outfall Map is required to be maintained by NDOT. The system of conveyances that make up a Municipal Separate Storm Sewer and transport stormwater may discharge pollutants into waters of the State at MS4 Outfall locations. The purpose of mapping MS4 Outfall locations is to facilitate the geographic information needed to complete dry-weather inspections, investigate pollution sources and protect receiving waters. NDOT maps Waters of the State, MS4 Outfalls, and Stormwater Discharge Points. This section provides an explanation of the definitions used to characterize the storm sewer system map and use of these records.

3.1.1 MUNICIPAL SEPARATE STORM SEWERS

A Municipal Separate Storm Sewer is regulated by an MS4 Permit when it serves an urban area that meets a specific population or growth threshold established by NDEE. The definition of a Municipal Separate Storm Sewer is established in NDEE Title 119 by reference to 40 CFR 122.26(b)(8) as “a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains).” This system of conveyances is regulated to control the discharge of stormwater pollution. NDOT operates portions of these systems of conveyances where highway segments transect adjacent jurisdictions of the same Municipal Separate Storm Sewer. NDOT conducts MS4 Outfall mapping where stormwater conveyances discharge into Waters of the State within these boundaries.

3.1.2 WATERS OF THE STATE

Waters of the State is a broad and inclusive definition relevant to issuing non-point source stormwater discharge permits like an MS4 permit. State statute (81-1502) defines Waters of the State, “means all waters within the jurisdiction of this state including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulation of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.” By designating a regulated Municipal Separate Storm Sewer, NDEE establishes the drainage systems as Waters of the State which may be regulated by MS4 permits. Flow within the drainage system is considered flow within the same Waters of the State; the Municipal Separate Storm Sewer.

Municipal Separate Storm Sewers are not included on National Hydrography Dataset streams or included in the state designated waters of Title 117, but are regulated as Waters of the State. To establish where MS4 Outfall locations may exist, NDOT recognizes the following Waters of the State layers in context of the MS4 Permit requirement to map MS4 Outfalls:

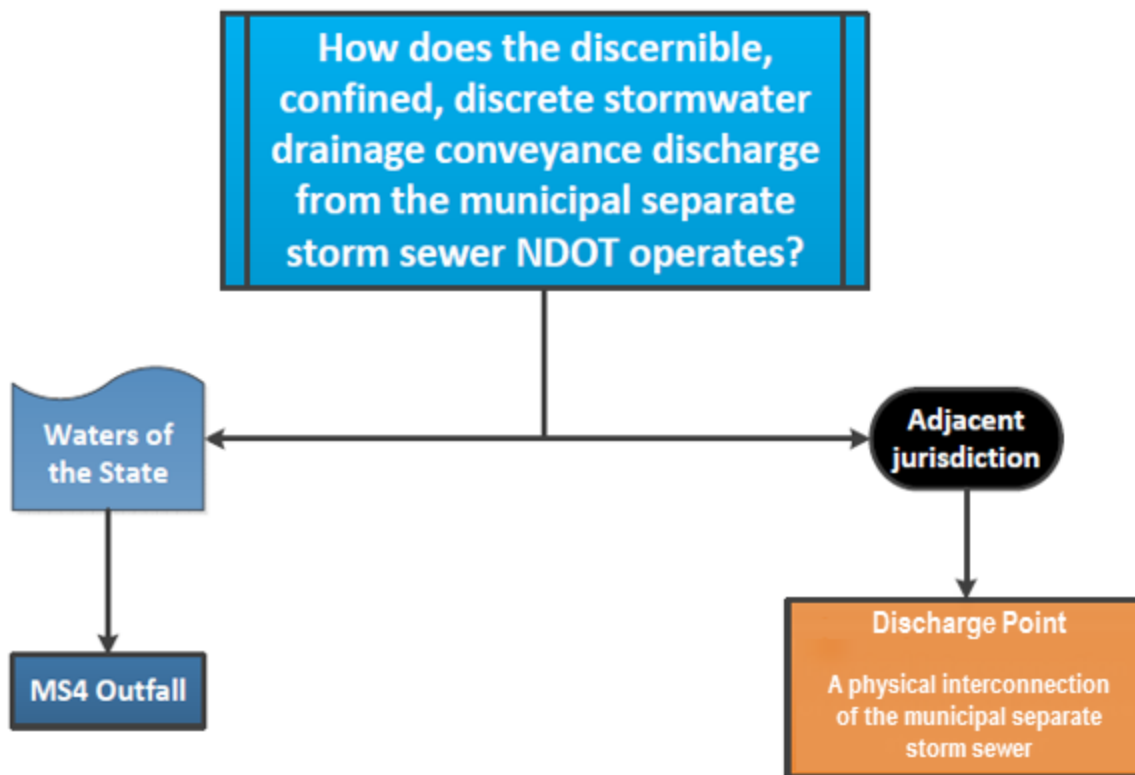
- **Municipal Separate Storm Sewers:** Establishes locations where NDOT municipal stormwater runoff intersects and discharges into Waters of the State.
- **USGS National Hydrograph Dataset or “Blue Lines”:** Establishes locations where state highways intersect and discharge into Waters of the State.
- **NDEE Title 117 State Designated Waters:** Establishes locations where state highways intersect and discharge into Waters of the State.

3.1.3 MS4 OUTFALLS AND STORMWATER DISCHARGE POINTS

Outfalls are specifically defined as a, “point source” at the point where a facility or municipal separate storm sewer discharges to Waters of the State and does not include open conveyances connecting to Municipal Separate Storm Sewer, or pipes, tunnels or other conveyances which connect segments of the same stream or other Waters of the State and are used to convey waters of the State.” This definition establishes that all stormwater conveyances within a Municipal Separate Storm Sewer represent one Water of the State and, as a result, an MS4 Outfall exists at locations where NDOT stormwater runoff intersects and discharges into Waters of the State.

Physical interconnections between jurisdictions managing a regulated Municipal Separate Storm Sewer exist. These locations are referred to by NDOT as Stormwater Discharge Points. They are part of the system of stormwater conveyances not meeting the criteria of an MS4 Outfall. Further, storm drain inlets located upstream of an MS4 Outfall or Stormwater Discharge Point are also considered part of the Municipal Separate Storm Sewer and are not MS4 Outfalls or Stormwater Discharge Points. Additional information regarding mapping locations of MS4 Outfalls and Discharge Points is provided below.

FIGURE 4. MS4 OUTFALL AND STORMWATER DISCHARGE POINT DECISION FLOWCHART



3.2 MAPPING MS4 OUTFALL LOCATIONS

MS4 Outfalls meet specific location criteria. All surfaces, inlets, pipes, channels and other components of the stormwater drainage system within the boundary of a Municipal Separate Storm Sewer are regulated by NDEE. Where these stormwater drainages discharge into a Water of the State, NDOT maps the location as an MS4 Outfall. This section describes criteria for creating MS4 Outfall map locations.

FIGURE 5. EXAMPLE MS4 OUTFALL LOCATION MAP



3.2.1 LOCATING WATERS OF THE STATE

There are two sources of information used to determine where municipal stormwater discharges are received by Waters of the State. First, NDOT utilizes the USGS National Hydrography Dataset; a digital geospatial dataset that maps the surface water of the United States and are a part of The National Map. The NHD represents the nation's drainage networks and related features, including rivers, streams, canals, lakes, ponds, glaciers, coastlines, dams, and stream gages. The NHD High Resolution, at 1:24,000 scale or better, is the most up-to-date and detailed

hydrography dataset for the nation. The second geospatial dataset used comes from NDEE¹ and represents all designated receiving Waters of the State listed in Title 117. Between these two datasets, NDOT maintains a comprehensive record for Waters of the State that receive stormwater discharges.

It is important to note that NDOT does not require a Water of the State to have flowing water during a given year or for the duration of any year. If the location is recognized in the geodatabase from USGS or NDEE, it is mapped as Waters of the State. A few definitions from USGS describe the flow characteristics of different waters of the state that NDOT has mapped. Perennial Streams contain water throughout the year, except for infrequent periods of severe drought. Intermittent streams contain water for only part of the year, but more than just after rainstorms and at snowmelt. Ephemeral streams contain water only in direct response to precipitation and receive little or no water from springs or long-continued supply from melting snow or other sources. Ephemeral channels are at all times above the water table.

FIGURE 6. EXAMPLE OF STATE HIGHWAY INTERSECTION WITH WATER OF THE STATE

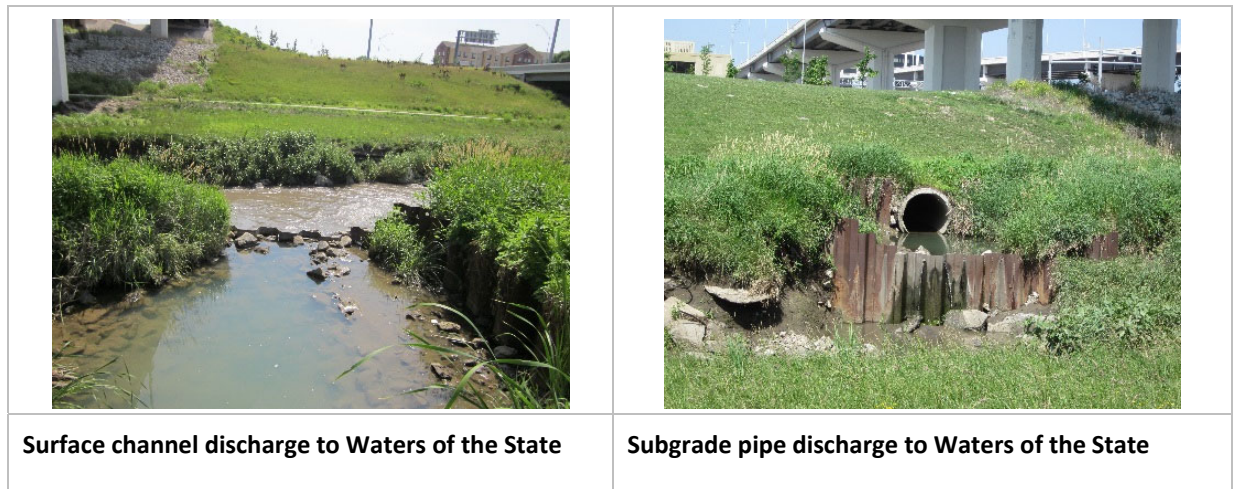


3.2.2 SURFACE AND UNDERGROUND PIPE DISCHARGES TO WATERS OF THE STATE

Along state highways, concentrated flow paths exist and convey stormwater to where roadways and bridges intersect mapped Waters of the State. At these intersections, stormwater flows into Waters of the State from pipes or channels, both of which, represent an MS4 Outfall. Each concentrated flow path that discharges to a Water of the State, from the conveyance along the left side, right side, median, or access ramps, is represented as an MS4 Outfall. A single intersection between the state highway and Waters of the State will commonly have four or more MS4 Outfalls depending on the complexity of the highway segment.

¹ <http://dee.ne.gov/publica.nsf/PubsForm.xsp?documentId=CB567E3E89A9E07086258A16004B1A4D&action=openDocument>

FIGURE 7. EXAMPLES OF SURFACE MS4 OUTFALL DISCHARGES TO WATERS OF THE STATE



Some locations exist where bridges convey stormwater from the bridge deck through open rail, scupper drains or downspouts from the bridge directly into Waters of the State. In these situations, since the conveyance is fully contained within the bridge structure, the entire bridge structure is mapped as the MS4 Outfall. This does not include bridges that convey stormwater away from the bridge to a roadway connection that discharge into Waters of the State. In bridge connection situations, the bridge is mapped as one MS4 Outfall.

FIGURE 8. EXAMPLES OF ELEVATED MS4 OUTFALL DISCHARGES TO WATERS OF THE STATE



3.3 MAPPING STORMWATER DISCHARGE POINT LOCATIONS

Stormwater Discharge Points meet specific location criteria. All surfaces, inlets, pipes, channels and other components of the system that drains stormwater within the boundary of an MS4 are regulated by NDEE. Where these stormwater drainages flow through a physical interconnection between two regulated jurisdictions, NDOT maps the location as a Stormwater Discharge Point. This section describes how Stormwater Discharge Points are located and managed.

3.3.1 LOCATING ADJACENT OWNERS AND OPERATORS OF THE MUNICIPAL SEPARATE STORM SEWER

Jurisdictions, Communities and portions of some Counties, adjacent to the State Highway System are designated as owners and operators of the Municipal Separate Storm Sewer by NDEE. Stormwater flows into the NDOT right-of-way from these jurisdictions. Stormwater also flows from the NDOT right-of-way into these jurisdictions. A map of all regulated jurisdictions is maintained in the Good Housekeeping Pollution Prevention Plan. There are three possible scenarios for locating Stormwater Discharge Points.

NDOT recognizes the corporate limits of each regulated jurisdiction as the boundary of a Municipal Separate Storm Sewer. Because the corporate limits of each jurisdiction changes periodically through the process of urban growth, corporate limits boundaries used by NDOT are updated at least once every five (5) years. NDOT also recognizes Urban Area (UA) boundaries that cover designated portions of a MS4 permitted County as the boundary of the Municipal Separate Storm Sewer. The UA boundary is created every decade by US Census Bureau and made available as a shapefile. Where the UA boundary extends beyond the corporate limits of a regulated community, the MS4 permitted County portion of the Urban Area is recognized as the boundary of a municipal separate storm sewer. Finally, it is possible for NDEE to apply a different standard for assigning a Municipal Separate Storm Sewer boundary. If this occurs, NDEE will provide NDOT with the justification and limits of the boundary. Finally, if a jurisdiction does not have an MS4 permit, NDOT does not implement this IDDE Plan within the jurisdiction or portion of the jurisdiction.

3.3.2 SURFACE AND UNDERGROUND PIPE DRAINAGES TO ADJACENT JURISDICTIONS

Along highways, concentrated flows occur where roadways, channels, storm drain pipes, and culverts connect to receiving stormwater drainage systems of the adjacent jurisdiction. These highway right-of-way corridors establish the boundary of where Stormwater Discharge Points may be located. Each concentrated flow path, channel or pipe, that discharges into an adjacent jurisdiction from the conveyance along the left side, right side, median, or access ramp is represented as a Stormwater Discharge Point. In some instances, documentation of Stormwater Discharge Points may be limited to the last accessible point, above or below ground, where stormwater is conveyed between NDOT and an adjacent jurisdiction.

FIGURE 9. EXAMPLE MS4 DISCHARGE POINT LOCATION MAP



Visual survey can typically identify above ground Stormwater Discharge Points. When needed, GIS data available from other jurisdictions can be used to identify the last underground stormwater infrastructure access point (i.e. inlet, manhole, other) that is mapped as the Stormwater Discharge Point. Field investigation can also be conducted where available data is not current or accessible.

FIGURE 10. EXAMPLES OF DISCHARGE POINTS BETWEEN JURISDICTIONS



3.4 OUTFALL MAPPING PROCEDURES

NDOT maintains record of MS4 Outfall locations. This section describes the mapping procedures NDOT implements to generate MS4 Outfall maps required by the MS4 Permit.

3.4.1 DESKTOP ANALYSIS

NDOT maintains current aerial base maps of the State. NDOT also maintains current State Highway System maps with mile markers and highway classification information. Waters of the State are imported into the Outfall Mapping geodatabase as well. Information from USGS and NDEE about each segment is maintained with these layers. Urban Area and Municipal Limit boundary maps are also maintained by NDOT. These layers are used to review and update the locations for MS4 Outfalls and Stormwater Discharge Points.

State highways and Waters of the State that are outside of Urban Area and Corporate limit MS4 Permit boundaries are removed from the desktop analysis. All remaining highway segments that are assigned to NDOT for operation by state statute are retained for further desktop analysis. Within the MS4 Permit boundaries, the geodatabase layers are used to locate each intersection between a state highway and Waters of the State. These intersections represent the locations for potential MS4 Outfalls.

A desktop scan of aerial imagery at each intersection between a state highway and Waters of the State can typically locate all potential MS4 Outfalls. Where existing points have not been mapped, new points are added during the desktop analysis for field verification. The intersections with Waters of the State are readily identifiable, but the flow patterns on the surface and below the ground may require field verification.

Surface drainage and some piped Stormwater Discharge Points can also be located by a desktop scan of aerial imagery. Channel flows between NDOT and other jurisdictions are included on the outfall map and are mapped as Stormwater Discharge Points. Some jurisdictions also maintain online GIS data for the public that can be used to review manhole and storm sewer pipe connections. In areas of the Municipal Separate Storm Sewer that discharge through underground pipes, desktop analysis is used with available data to locate the last inlet or manhole point accessible by NDOT prior to stormwater flows entering the adjacent jurisdiction.

3.4.3 FIELD VERIFICATION OF NEW MS4 OUTFALL LOCATIONS

New MS4 Outfalls and Stormwater Discharge Points may be added during periodic desktop analysis when MS4 boundaries are updated, after new highway alignments are constructed or during routine dry weather screening events. As field technology improvements are made, greater opportunity exists to capture and adjust MS4 Outfall location information in the field. For new MS4 Outfall locations, the following physical characteristics are confirmed and updated during the initial MS4 Outfall mapping event:

- **ID:** OF-Highway-RP, DP-Highway-RP
- **Highway:** Number
- **RP:** Number to two significant digits
- **Receiving Water:** Waters of the State Name

- **Watershed:** Watershed Name
- **Adjacent Jurisdiction:** City or County Name
- **Asset:** MS4 Outfall, Stormwater Discharge Point
- **Conveyance:** Pipe, Channel, Bridge, Manhole, Inlet, Other
- **Justification:** Right, Left, Centerline
- **Alignment:** Mainline, Ramp
- **Photo:** image .jpg

4.0 MS4 OUTFALL DRY WEATHER SCREENING

Dry weather screening is conducted on a routine basis to determine if illicit discharges are occurring or may have occurred. Discharges from stormwater conveyances during dry weather periods and evidence of previous polluted discharges are evaluated to determine if further investigation, communication, and possible enforcement action are needed. The following section describes the efforts made by NDOT to conduct Dry Weather Screening at MS4 Outfall locations.

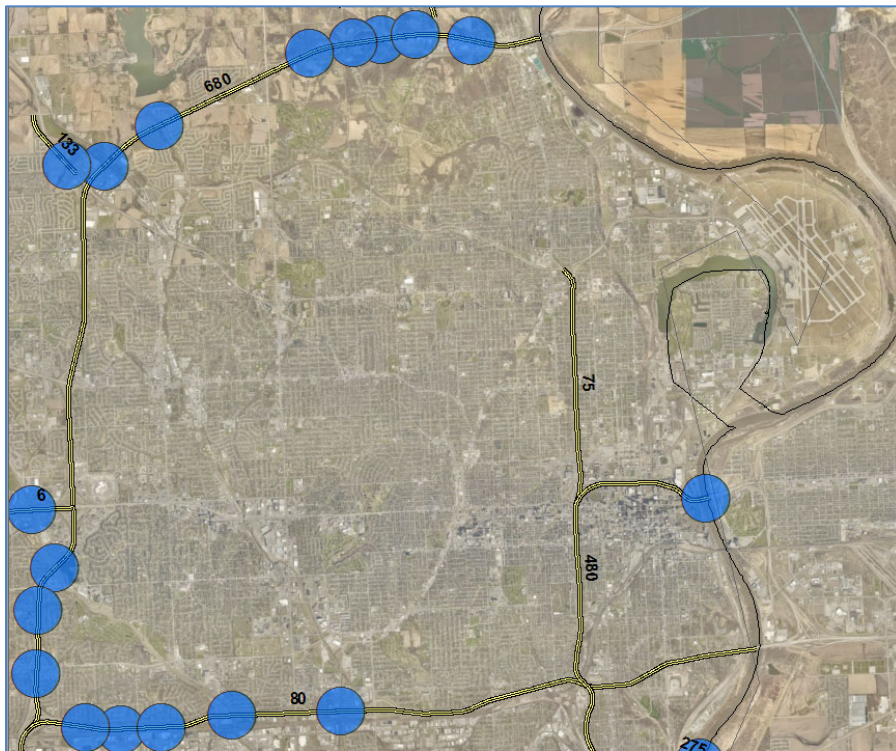
4.1 MS4 OUTFALL DRY WEATHER SCREENING CRITERIA AND FREQUENCY

The MS4 boundary of NDOT generally transects adjacent jurisdictions linearly and where roadways intersect Waters of the State, NDOT establishes Dry Weather Screening locations. Each MS4 Outfall is assigned to a Dry Weather Screening location where annual Dry Weather Screening is conducted by NDOT field staff. This section defines the criteria for Dry Weather Screening locations and the frequencies for visual monitoring.

4.1.1 DRY WEATHER SCREENING LOCATIONS

A Dry Weather Screening location is designated within an MS4 boundary anywhere a state highway intersects with Waters of the State. These locations are present in many configurations and may have multiple MS4 Outfalls present within them. Identifying Dry Weather Screening locations simply allows NDOT to group all MS4 Outfalls that discharge to the same Waters of the State at a common highway intersection where a Dry Weather inspection will occur.

FIGURE 11. EXAMPLE OF DRY WEATHER SCREENING LOCATIONS



4.1.2 CRITERIA

NDOT conducts Dry Weather Screening at every MS4 Outfall location. Each MS4 Outfall Point maintains a record for each Dry Weather Screening event and any associated findings related to the visual monitoring event.

4.1.3 FREQUENCY

Dry Weather Screening represents a scheduled activity conducted to investigate the presence or evidence of any illicit discharge reaching Waters of the State. All MS4 Outfalls receive Dry Weather Screening annually. NDOT does not conduct Dry Weather Screening for Stormwater Discharge Points.

4.2 DRY WEATHER MONITORING FIELD RESOURCES AND PROCEDURES

Field staff and resources are prepared in advance of Dry Weather Screening activities. Field resources and procedures are described in this section.

4.2.1 FIELD STAFF AND QUALIFICATIONS

Dry Weather Screening is typically completed with two field staff. Participating staff will review this IDDE Plan and complete the on-line IDDE training available to NDOT staff who may come in contact with illicit discharges prior to conducting dry weather screening. Currently, RDC unit staff conduct all scheduled Dry Weather Screening activities.

4.2.2 FIELD SAFETY

MS4 Outfall Dry Weather Screening is completed by individuals knowledgeable of this NDOT IDDE Plan who are equipped with proper safety procedures and equipment. NDOT ensures field staff are aware of and willing to follow approved field safety precautions prior to conducting Dry Weather Monitoring activities. Basic Personal Protective Equipment (PPE) is available to any individual in the field during outfall data collection may include:

- ▶ First Aid Kit
- ▶ Hard hat
- ▶ Work boots or steel-toe work boots
- ▶ Safety glasses
- ▶ Reflective vest
- ▶ Rain gear
- ▶ Nitrile gloves

Safety is always the highest priority for field staff when working along highways and no Dry Weather Monitoring data will be collected in a manner that could result in personal injury or create a hazard for personnel. The following safety resources are encouraged for staff conducting Dry Weather Monitoring along the state highway system:

- ▶ Cellular phone
- ▶ “Highway Illicit Discharge Procedure”, known as the Green Card
- ▶ Flashing Vehicle Beacon

4.2.3 FIELD EQUIPMENT AND RESOURCES FOR DATA COLLECTION

Equipment and resources listed below are recommended for use when conducting Dry Weather Monitoring:

- ▶ Tablet or Smart Phone (charged) with ArcGIS Field Maps Application loaded (or similar field network connected geo-application)
- ▶ Paper NDOT Outfall Data Sheet (may be available through digital link) for back up documentation if electronic devices are not functioning
- ▶ Camera Device
- ▶ Maps/aerial photos (hard copies if network access is not planned to be available)
- ▶ Other data resources such as record drawings and field surveys may be helpful in some circumstances.

4.2.4 DESKTOP DATA PREPARATION

RDC Unit staff gathers or directs the gathering of all available information about the Dry Weather Monitoring Locations such as MS4 Outfall maps, previous MS4 Outfall inspections and findings data. Staff download aerial photography and relevant shapefiles onto devices with network connected field applications that are taken into the field. Data collection device should have all Dry Weather Monitoring locations, MS4 Outfalls, state highways and Waters of the State loaded from NDOT's ArcGIS Field Maps app for the area to be inspected. If network connection is anticipated to be inconsistent or unavailable, the paper maps and inspection forms will be prepared. The typical desktop data preparation sequence includes:

1. **Print map(s) of Dry Weather Monitoring locations from ArcMap** Print map(s) from ArcGIS Field Maps including Dry Weather Monitoring locations, reference data such as streets, mile markers, streams, watersheds, and aerial photography. The maps may be printed off and used to help verify MS4 Outfall locations in the field. Ensure map extent cover all Dry Weather Monitoring locations to be inspected.

Tip: If there are several aerial sheets printed, number them in case they get out of order.

2. **Sync geodatabase layers to network connected web application.**

Geodatabase layers will allow field staff to view and edit existing files (layers). Previous digital inspection records and findings associated with inspections should be available if possible. New inspections are initiated from Dry Weather Monitoring locations for associated MS4 Outfalls.

Paper records should always be available for drafting Dry Weather Monitoring inspection information in case network connectivity is not available. Final records are transferred into the geodatabase once network connectivity is restored or back in the office and field documents are then discarded.

3. **Charge equipment (camera, phone, tablet, other) batteries.**

Whenever possible, keep spare batteries and/or car chargers for all equipment to be used in the field if needed.

4.2.5 DRY WEATHER MONITORING INDICATORS

Illicit discharges can be detected based on visual assessments during scheduled Dry Weather Monitoring events or as part of routine observations of the roadside environment. NDOT relies on the Physical Characteristics Examination (PCE) indicators commonly used by NDEE in NDPES discharge permits to determine if potential illicit discharges have or are occurring at MS4 Outfalls. The PCE procedure involves qualitative observations for characteristics of indicators listed below. PCE observations are made *in situ*. PCE results are used as indicators of potential illicit discharges which are anticipated to flow from adjacent jurisdictions in most cases. The PCE indicators include:

- ▶ Dry Weather Flow
- ▶ Turbidity
- ▶ Color
- ▶ Odor
- ▶ Petroleum or Hydrocarbons
- ▶ Oil sheen or Film
- ▶ Foam or Foaming Below Discharge
- ▶ Floating Solids
- ▶ Off-Gassing

4.2.6 DRY WEATHER MONITORING FIELD DATA COLLECTION

Dry Weather Monitoring activities characterize potential illicit discharges and update MS4 Outfall records. A field inspection team records all information for Dry Weather Monitoring activities on an annual basis and updates records in NDOT's MS4 Outfall geodatabase. Each Dry Weather Monitoring location is screened for physical and visual indicators of illicit discharges from each MS4 Outfall associated with that location. The typical field data collection sequences include:

1. Conduct Inspections at Dry Weather Monitoring Locations.

- a. Maintain safety at all times when parking vehicles and navigating around Dry Weather Monitoring Locations to inspect MS4 Outfalls.
- b. Confirm accuracy of all MS4 Outfall records associated with the Dry Weather Monitoring location and edit MS4 Outfall records if necessary (see Add or Edit MS4 Outfall Records below) prior to recording inspection.
- c. Conduct a visual inspection for dry weather flows by completing the steps below:
 - i. Observe the point of discharge, or
 - ii. Observe the next accessible point up the storm drain system prior to entering a Water of the State.
 - iii. Determine if there is a dry weather flow:
 1. If yes, complete PCE indicators
 - a. If positive for PCE indicators record description of illicit discharge and capture image(s). Follow Illicit Discharge Response Procedures.
 2. If no indicators, no further documentation is needed

2. Add or Edit MS4 Outfall Records

- a. To add new MS4 Outfall records in the field, use the network connected web application to locate the Dry Weather Monitoring location it is associated with. All new MS4 Outfalls must be associated with a Dry Weather Monitoring location.
 - i. Click the function to create a new MS4 Outfall record.
 - ii. Input all required values including the geo-location for the new MS4 Outfall record.
 - iii. Save the new record.
- b. To edit existing MS4 Outfall records in the field, use the network connected web application to locate the MS4 Outfall.
 - i. Click the function to edit an existing MS4 Outfall record.
 - ii. Edit any values including the geo-location for the existing MS4 Outfall record that need to be updated.
 - iii. Save the existing record.
- c. When the network connected web application is unavailable, use a digital camera to take picture(s) of MS4 Outfalls and the Dry Weather Monitoring inspection findings. It will be necessary to correlate the digital photos to the hard copy datasheets for accurate entry into the database. The Outfall Mapping inventory table printed in the office should provide space to record photo #'s at each MS4 Outfall location. Typically, photo names will be "dsc0123...0124" and so on when viewed in the camera.
- d. Maintain consistency and be as thorough as possible when recording information to the database and/or data sheets.

4.2.7 DRY WEATHER WATER QUALITY SAMPLING

It is uncommon for PCE field screening activities to identify a potential illicit discharge of an unknown substance that does not originate from an adjacent jurisdiction. If an illicit discharge of unknown substance originates from NDOT property, additional water quality sampling may be needed to identify type of non-stormwater pollutants before the discharge can be eliminated. The Highway Environmental Biologist will contact a professional contractor who can conduct water quality sampling to identify the non-stormwater pollutant. Water quality sampling results may verify if a flow is an illicit discharge and what threat is posed to water quality.

Field measurements that are recommended for determining the presence of a potential illicit discharge may include, but are not limited to, temperature, pH, turbidity, conductivity, hardness, ammonia, chlorine, color, copper, surfactants, phenols, E. coli, fluoride, total organic carbon, and dissolved oxygen. NDOT can use the guidance available from other sources, such as the US Environmental Protection Agency (EPA), to direct discharge sampling of potential illicit discharges. Contractors must demonstrate the capability to conduct discharge sampling according to approved EPA sampling and analytical methods (40 Code of Federal Regulations Part 136). The NDOT Waste Manual contains a list of qualified contractors.

4.2.8 IN-OFFICE PROCEDURES FOLLOWING FIELD WORK

Field data collection is post-processed in the office following Dry Weather Monitoring activities. The typical in-office procedures following field work include:

1. **Verify inspection record data has synced to the geodatabase**

Dry Weather Monitoring inspection records captured in the field sync to the database. Each inspection record should be checked by the participating field staff to confirm completeness and accuracy. One inspection record should be completed for each of the Dry Weather Monitoring locations visited during field work.

2. **Input paper records and digital images into the geodatabase**

The MS4 Outfall geodatabase is the only location for storing permanent records of MS4 Outfalls. No paper copies or separate storage files are retained. Participating field staff input data collected and temporary records are disposed.

5.0 ILLICIT DISCHARGE RESPONSE PROCEDURES

Illicit discharges are prohibited in the storm drain system. Responding to them requires a flexible approach to documentation, staffing, notifications, equipment, tracing and removal. Procedures are greatly influenced by type of illicit discharge, severity of the impact, and the potential of the discharge or the remediation to affect the traveling public. This section presents response procedures used for resolving illicit discharges.

5.1 DOCUMENTATION

NDOT maintains a web-enabled database called District Incident Reporting Knowledgebase (DIRK). This database captures communication from investigated sources about highway incidents. Following an illicit discharge incident, DIRK is used to document the incident details and track progress made toward resolving the issue. District and Headquarters staff have access to DIRK which supports the need to coordinate resources and notification requirements of the IDDE Plan.

District staff are prompted in DIRK to record essential information about each new incident record. The Environmental Specialist from RDC Unit reviews illicit discharge records in DIRK and can supplement the record with additional information, if necessary.

District staff may identify small quantity spills and dumped material during maintenance of the highway and right-of-way. Spills and dumped materials may be cleaned up and removed without additional documentation unless the quantity exceeds the IDDE Plan reporting threshold. Staff are instructed to document all incidents that constitute illicit discharge exceeding 25 gallons or 100 pounds, or are an immediate threat to human health or the environment. District staff may record documentation for smaller quantities but response procedures to these incidents is addressed by good housekeeping and pollution prevention policies for maintenance of incidental trash and debris instead of the IDDE Plan.

NDOT is included in communication about responses to highway incidents led by Nebraska State Patrol. Information is submitted to NDOT through the Highway Condition Reporting System (HCRS) as part of coordination needed with the District involved. NDOT is also included in communication about responses to highway incidents reported to Nebraska Department of Environment and Energy. Information is submitted directly to RDC Unit staff from HCRS and NDEE and may be used to supplement or complete a DIRK report with required documentation listed in Section 2.5 of this IDDE Plan.

5.2 RESPONSE STAFF AND QUALIFICATIONS

NDOT provides qualified staff responsible for managing the highway environment. These existing roles and responsibilities support the required documentation, communication and responses needed to resolve illicit discharges. Staff who may, as part of their day to day responsibilities, come in contact or be notified of an illicit discharge are required to complete NDOT Illicit Discharge Detection and Elimination training (Operations Environmental Program – Module 3). The following section describes staff roles and responsibilities related to the IDDE Plan.

5.2.1 FACILITY

Staff from each maintenance facility are responsible for directing personnel and resources necessary to maintain assigned highway segments. When an illicit discharge occurs along an assigned highway segment, maintenance facility staff will be responsible for documenting or supporting the incident response. Specific facility staff responsibilities related to the IDDE Plan include:

- **Supervisor:** Direct staff and equipment to support illicit discharge response. Responsible for documentation of illicit discharges in DIRK and maintaining communication with Highway Environmental Biologist (RDC Unit) until the illicit discharge is resolved.
- **Superintendent:** Support the facility supervisor with additional staff and equipment requests from adjacent facilities when needed, support communication with District or Headquarters, and oversee response efforts as the situation requires.
- **Maintenance Crew:** Operate equipment and materials as instructed in support of resolving illicit discharges along the highway environment.

5.2.2 DISTRICT

Staff from each District are responsible for supporting facility personnel with resource requests and permit requirements for right-of-way activities. Specific District staff responsibilities related to the IDDE Plan include:

- **District Operation and Maintenance Manager:** Provides general oversight of all District Operations activities.
- **District Permit Officer:** Manages District ROW access permitting process.
- **District Environmental Coordinator:** Serves as an environmental liaison between Headquarters and the District Office.

5.2.3 HEADQUARTERS

- **Environmental Specialist (RDC Unit):** Responsible for coordinating Operations Environmental Programs statewide.
- **HCRS Dispatch Operator:** Communicate highway incidents reported to Nebraska State Patrol to the Highway Environmental Biologist (RDC Unit).
- **Highway Operations Division Manager:** Provides general statewide oversight and consistency across all Districts for interpretation and enforcement of policies and procedures.

5.3 NOTIFICATION

NDOT receives notification of spills or incidences of dumped material when they have occurred along the State Highway System. In some cases, such as traffic accidents involving spilled vehicle fluids, NDOT may not be notified that an illicit discharge has occurred until after emergency responders have resolved the incident. Notification can come from various sources including, but not limited to, NDOT personnel, Nebraska State Patrol, environmental resource agencies, the public, and/or city or county officials. Notification procedures enable appropriate individuals to make a timely response, protect public safety and water resources, and comply with environmental regulations

for reporting incidents of illicit discharge. Information provided in this section addresses how reported information is delivered to the appropriate response personnel.

- **NDOT Personnel:** Facility, District and Headquarters Staff may generate a DIRK report to initiate automated email notifications of illicit discharge incidents internally. Additional automated email notifications about the status of a DIRK record are also distributed internally as the incident records are updated. Formal records of notification are captured or copied into the DIRK incident record. If an incident represents an immediate threat to human health or the environment, NDOT staff are instructed to follow the Highway Illicit Discharge Procedures (Green Card), as well as report the discharge to NDEE immediately by calling 402-471-4220.
- **Nebraska State Patrol:** In most cases the public notification of spills will be directed to Nebraska State Patrol. Nebraska State Patrol will immediately respond to the incident and will notify the HCRC at NDOT Headquarters and NDEE. Headquarters will then forward a notification to District staff responsible for supporting response and the Highway Environmental Biologist at RDC Unit.
- **Nebraska Department of Environment and Energy:** NDEE is the primary state agency responsible for managing spill response statewide. Public notification of spills may be directed to NDEE. NDEE will contact the NDOT Highway Environmental Biologist with RDC Unit. The NDOT Highway Environmental Biologist will then coordinate with Facility and/or District staff responsible for supporting response and documentation in DIRK. In addition, the Biologist will assist with any questions about the response, will coordinate with regulatory agencies as required, and will review documentation.
- **General Public:** Information on the NDOT website directs the public to report environmental concerns to NDEE or State Patrol. NDOT does not provide emergency response to highway incidents. In the event notification comes through the NDOT website for reporting Highway Concerns (<http://www.dot.nebraska.gov/contact-us/>) or the main directory number (402-471-4567), staff from the Communication Division forward emergency information to Nebraska State Patrol. If the situation is not an emergency, Communication Division submits the information to the appropriate Manager within NDOT.
- **Adjacent MS4 Jurisdictions:** Any notification described above or identification of illicit discharge by NDOT staff within the NDOT MS4 boundary which originates from an adjacent MS4 Jurisdiction is reported to the City Engineer or Public Works Director for the adjacent jurisdiction within 48 hours.

5.4 EQUIPMENT

NDOT provides varying support of equipment needed to resolve illicit discharges. If NDOT is the Responsible Party, staff direct resources to immediately contain the source of the Illicit Discharge and work with emergency responders, if necessary, to remove the discharged material. NDOT is not the Responsible Party in most cases. A description of common support and equipment provided is described in this section.

- **Accident Spills:** When illicit discharges constitute vehicle accident spill situations for the traveling public and/or the environment, local emergency responders provide equipment needed to resolve the incident. Vehicle accident spills may be contained on the highway or flow into the storm drain system. Examples include transported fuels, oils, sand, corn mash and similar bulk substances. NDOT does not direct the actions of emergency responders or tow truck operators but does support emergency response if requested with available equipment and vehicles. NDOT equipment that may be utilized to support emergency responders and adjacent jurisdictions includes skid loaders, sweepers, and traffic barriers.
- **Accident Leaks:** Smaller illicit discharges are caused when vehicle accidents occur and some vehicle fluids are leaked onto highway surfaces. The amount of liquids involved in these events does not meet the minimum DIRK reporting threshold of 25 gallons. NDOT does not direct the actions of responsible parties or tow truck operators for removing spilled and dumped materials. First responders to the incident direct responsible

parties to contain and remove all spilled vehicle fluids from the accident site. These actions are necessary to protect the traveling public and stormwater quality. NDOT staff does not provide equipment support to these types of illicit discharges when the Responsible Party is identified. When the Responsible Party is not identified and if requested by emergency responders, NDOT may provide equipment to support containing or removing the illicit discharge includes skid loaders, sweepers, and traffic barriers.

- **Connections:** If NDOT identifies an illicit discharge from any connection, no equipment is deployed to support removal efforts which is solely the responsibility of the Responsible Party. If an unpermitted connection is impacting the traveling public, traffic management support is provided by NDOT.
- **Other Illicit Discharges with No Identified Responsible Party:** For other illicit discharges where no Responsible Party is identified, NDOT will notify NDEE and local emergency responders to support efforts if the incident exceeds illicit discharge reporting thresholds and presents an immediate threat to human health or the environment. If the incident does not present an immediate threat to human health or the environment and is less than threshold quantity, maintenance facility staff utilize available equipment and vehicles such as skid loaders, sweepers, and traffic barriers to remove dumped or spilled materials.

5.5 TRACING

The linear orientation of MS4 boundary maintained by NDOT allows staff to trace potential illicit discharges to the source efficiently. Illicit discharges are only generated from three sources described in this section.

- **Spills on the Highway:** A common type of illicit discharge found in the NDOT stormwater drainage system involves spills. Vehicles transporting liquids and materials can have accidents that deposit various amounts of liquid and solid material into the storm drain system and can discharge to Waters of the State. Spills related to vehicle accidents do not need to be traced further as emergency responders isolate and respond to the traffic incident. It is also possible that liquid or solid materials were spilled on the highway or right-of-way without a traffic accident. If the Responsible Party leaves the scene and the material cannot be effectively traced to the Responsible Party, NDOT does not continue to trace the source, but directs efforts to communication and support with emergency response agencies or removes the material for disposal. NDOT maintains a copy of the Highway Illicit Discharge Procedures (Green Card) in maintenance vehicles. This card directs staff what procedures to follow, contact information and safety precautions when a spill occurs on the highway.
 - o Gather accurate and thorough information. The incident may require follow-up actions such as verifying that the Responsible Party has notified NDEE, spill cleanup, restitution for property damage, legal action, etc.
 - o The Responsible Party must report the spill to NDEE if needed and clean up after the spill. NDOT does not need to advise the Responsible Party of their obligations. They will follow their own protocols.
- **Dumping Material in the Right-of-Way:** Another form of illicit discharge found in the NDOT stormwater drainage system involves intentional dumping of materials. If the Responsible Party leaves the scene and the material cannot be effectively traced to the Responsible Party, NDOT does not continue to trace the source further, but directs efforts to communication and support with emergency response agencies or removes the material for disposal. Locations that receive dumped materials are investigated again within one year of removing the illicit discharge to verify dumping material is no longer occurring. NDOT may consider corrective actions at locations used for frequent dumping to try and discourage amount or frequency of dumped material. No corrective actions are required, but traffic barriers and posted signs are possible options to discourage dumping at frequently used sites.
- **Connection:** When NDOT identifies evidence of a flowing non-stormwater discharge from a connection to highway right-of-way, staff traces the source to the point where stormwater flows from the adjacent jurisdiction or permit holder. Once the Responsible Party or adjacent jurisdiction has been notified of the

violation, no additional tracing is conducted by NDOT staff. If an illicit discharge originates from highway right-of-way and flows through a connection to the adjacent jurisdiction no additional tracing is needed and procedures for removing illicit discharges are followed.

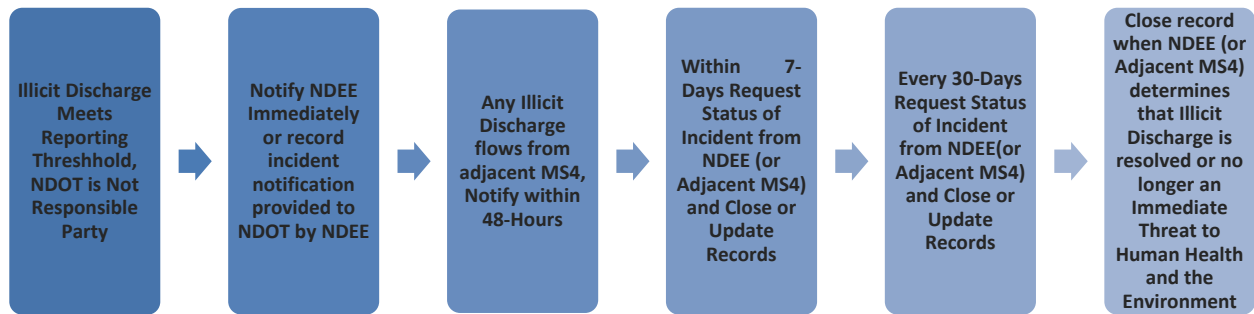
5.6 COMPLIANCE OVERSIGHT PROCEDURES

This section provides a summary of the compliance oversight procedures used to ensure that identified illicit discharges are resolved. NDOT leverages the combination of internal staff, law enforcement authorities, and environmental agencies to implement these compliance oversight procedures. **In all situations, if the discharge constitutes an immediate threat to human health and the environment or exceeds either 25 gallons of liquid or 100 pounds of material, notification is provided to NDEE immediately by calling 402-471-4220.** Compliance oversight escalation procedures are facilitated for discharges exceeding the minimum reporting threshold caused by NDOT or another Responsible Party. In most cases, NDOT is not the Responsible Party who is required to resolve to the illicit discharge.

When NDOT is not the Responsible Party, compliance oversight escalation procedures involve communicating with NDEE and/or an adjacent MS4 to document the status of the corrective action.

- Immediately, notify NDEE and law enforcement if an illicit discharge has occurred that exceeds the reporting threshold. Commonly, Nebraska Highway Patrol is aware of an accident/spill along the highway and coordinates with NDEE who then notifies NDOT that an Illicit Discharge has occurred. NDEE or law enforcement work with the Responsible Party to resolve the illicit discharge. NDOT staff supports responders if requested, but in many cases NDOT is notified after the illicit discharge has already been resolved and no compliance oversight escalation is necessary. Any confirmed illicit discharge of any quantity that originate from an adjacent MS4 jurisdiction is communicated to the adjacent MS4 Public Works Director or City Engineer within 48 hours.
- Within seven (7) days from the incident, the RDC Unit Head or their assigned representative contact NDEE and/or the adjacent MS4 representative to inquire if the illicit discharge record can be closed out or if resolution is still pending and update records. For instances that exceed the reporting threshold, NDOT will not close the record until NDEE is satisfied that the immediate threat to human health and the environment caused by the illicit discharge has been resolved or is no longer a threat.
- Every 30 days from the incident, the RDC Unit Head or their assigned representative contact NDEE and/or the adjacent MS4 representative to inquire if the illicit discharge record can be closed out or if resolution is still pending and update records. Because NDOT is not the Responsible Party for the incident that exceeded the reporting threshold, NDEE must make the determination that the Illicit Discharge is no longer an immediate threat to human health and the environment.

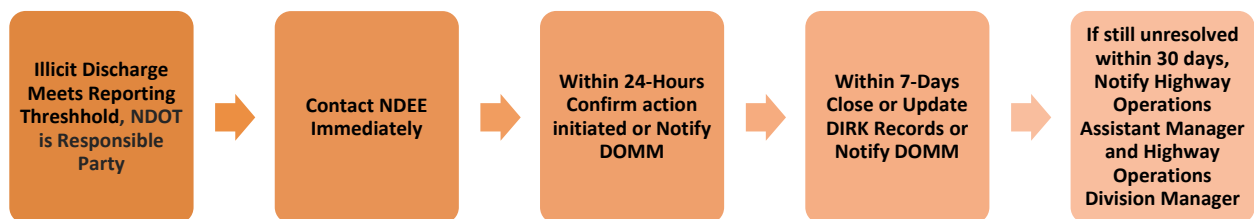
FIGURE 12. COMPLIANCE OVERSIGHT ESCALATION PROCEDURES FLOWCHART – NDOT NOT RP



When NDOT is the Responsible Party, compliance oversight escalation procedures involve an escalating sequence of communication used to deploy staff and equipment needed to help resolve the corrective action.

- Immediately, notify NDEE an illicit discharge has occurred that exceeds the reporting threshold. NDOT staff requests support from emergency responders if necessary to contain or control an illicit discharge. It is uncommon that NDOT will not be first to know of an illicit discharge when they are the Responsible Party.
- Within 24 hours of NDOT identifying, or being notified of, an illicit discharge, facility or District staff confirm in DIRK that action has been initiated to control and/or contain the identified source of illicit discharge. If action is not initiated, the DOMM is notified by facility staff, RDC Unit Head, or their assigned representative, that immediate response is required or outside assistance is required.
- Within seven (7) days, the DIRK record is closed out or updated if the illicit discharged material has been contained or removed and NDEE is notified that the immediate threat to human health and the environment caused by the illicit discharge has been resolved. If the discharged material is not contained or removed, the DOMM is notified by facility staff, RDC Unit Head, or their assigned representative, that immediate response is required or outside assistance is required.
- Within 30 days, the DIRK record is closed out or updated if the illicit discharged material has been contained or removed and NDEE is notified that the immediate threat to human health and the environment caused by the illicit discharge has been resolved. If the discharged material is not contained or removed, the Highway Operations Assistant Division Manager and Highway Operations Division Manager are notified by facility staff, RDC Unit Head, or their assigned representative, that response is required or outside assistance is required.

FIGURE 13. COMPLIANCE OVERSIGHT ESCALATION PROCEDURES FLOWCHART – NDOT IS RP





ATTACHMENT A – IDDE EDUCATION & TRAINING

As part of its Illicit Discharge Detection and Elimination (IDDE) Program, NDOT has created an online, on-demand educational offering for responding to spills, dumping and connections of illicit discharges in the highway environment. Completion of this training module will equip Construction and Operations staff with the information they will need to properly observe, respond and report illicit discharges within NDOT property or right-of-way.

Operations Environmental Program Training Part 3 - Illicit Discharge Detection and Elimination

Target Audience: District Operations Staff,
 Operations Division Staff,
 District Construction, and
 Roadside Development and Compliance Unit

Course Length: 30 Minutes

Delivery Method: Online/On Demand

Required Frequency: Within 30 days of employment, every 3 years recurring

Learning Objectives:	<ol style="list-style-type: none"> 1. Ensure environmental protection and stewardship in the roadway environment 2. Provide the resources and information necessary to ensure NDOT employee safety 3. Establish procedures for rapid incident response 4. Provide instruction for proper internal and external incident reporting and documentation.
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Course Highlights	<ol style="list-style-type: none">1. Description of an Illicit Discharge2. Overview of Illicit Discharge Types3. Spills (Accidental) Initial Oversight and Response4. Spill Incident Reporting – Internal and External5. Illegal Dumping Procedures and Reporting6. Observing Illicit Connections in the Right-of-Way
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