STORM WATER ILLICIT DISCHARGE DETECTION & ELIMINATION (IDDE) PLAN

TOLONO, ILLINOIS

PREPARED FOR:

VILLAGE OF TOLONO ILLINOIS
510 WEST STRONG STREET
TOLONO ILLINOIS, 61883

PREPARED: FEBRUARY 2021

DONOHUE

Donohue & Associates, Inc.

1605 South State Street, Suite 1C
Champaign, IL 61820
Phone: 217.903.5088

www.donohue-associates.com

TABLE OF CONTENTS

List of Tables

List of Diagram

Appendix

1.0 Introduction

The Village of Tolono Illinois (the Village) a Location Map is provided as **Map 1** in the Appendix, is affected by the National Pollutant Discharge Elimination System (NPDES) Phase II rule, published as final on December 8, 1999. The rule requires regulated operators of municipal separate storm sewer systems (MS4s) to obtain a permit to discharge storm water runoff from their MS4 and establishes conditions they must meet to reduce the impacts of storm water discharges. One of these conditions requires regulated communities to develop an Illicit Discharge Detection and Elimination (IDDE) Program to investigate and eliminate illicit discharges to the MS4. Requirements for the program were outlined in the General NPDES Permit No. ILR40, issued February 10, 2016 for Discharges from Small Municipal Separation Storm Sewer Systems (MS4s), which expires on February 28, 2021, but remains in effect until a revised permit is issued.

A new General Permit was not issued before the preparation of this plan. This plan should be reviewed and updated as necessary to meet the requirements of the new final permit when it is released.

1.1 Purpose

The purpose of this plan is to outline a program to detect and eliminate illicit discharges to the Village of Tolono Illinois (MS4) and waterways to improve storm water quality and meet the Federal Phase II Storm Water requirements. A Catchment and Delineation Map is provided as **Map 2** in the Appendix.

1.2 Illicit Discharges

An illicit discharge is defined as any non-storm water discharge to the MS4 that is not composed entirely of storm water. Common illicit discharges include overflow from failed septic tanks or cesspools, floor drains where regulated contaminants are stored, vehicle wash wastewater, laundry wastewater, and improper disposal of automobile and household products. These illicit discharges may contribute high levels of pollutants, including heavy metals, toxic chemicals, oil and grease, nutrients, viruses, and bacteria to water bodies.

Illicit discharges can enter the municipal system either through direct connections (pipes connected directly to the storm drain) or through indirect routes (through cracked pipes, leaking tanks, overland runoff or dumped by hand into storm drains). Municipal storm water systems are not designed to accept, process, or discharge such illicit sources.

1.3 Exceptions

Non-storm water illicit discharge exceptions are listed below, and should only be addressed if they are identified as significant sources of pollutants:

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising groundwater;
- Uncontaminated groundwater infiltration;
- Uncontaminated pumped groundwater;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensation;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Storm sewer cleaning water
- Individual residential car washing;
- Flows from riparian habitats and wetlands;
- De-chlorinated swimming pool water;
- Street wash water;
- Residential building wash waters without detergents;
- Flows or discharges from firefighting activities flows.
- De-chlorinated water reservoir discharges; and
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred

The above-referenced non-storm water discharges are not expected to be significant contributors of pollutants to the MS4, and are not expected to cause or contribute to water quality standard exceedances.

1.4 Illicit Discharge Detection and Elimination Plan

The Phase II Storm Water rule requires regulated operators of MS4s to develop and implement an illicit discharge detection and elimination program, as outlined below.

The United States Environmental Protection Agency (EPA) recommends the following steps in developing this Illicit Discharge Detection and Elimination (IDDE) Plan:

1. Identify priority problem areas suspected of having illicit discharges;
2. Locate illicit discharge sources;
3. Remove/correct illicit connections; and
4. Document actions taken and evaluate impacts.

This plan addresses these four steps and includes the following components:

1. Mapping and Outfall Inventory – Section 2.0
2. Identification of Illicit Discharges – Section 3.0
3. Elimination of Illicit Discharges – Section 4.0

The data components of this report were developed based on information obtained by the Village of Tolono and Donohue & Associates, Inc.

1.5 Program Responsibility

The IDDE Program shall be the responsibility of the Village Board. The Public Works Department shall be responsible for implementing storm water components. The Village Board shall be responsible for implementing and enforcing required ordinances.

Point of Contact for Illicit Discharges

Public Works Superintendent	Scott Arbuckle
Public Works Department	(217)485-5212

2.0 Mapping and Outfall Inventory

2.1 Mapping

As required under the Small MS4 General Permit, the Village performed storm water system mapping of outfalls during field efforts in 2020 focused on the regulated urbanized area (UA). Future mapping of additional structures will be mapped as they become located or newly installed.

The Village mapped the following conveyance system structures;

- Outfall manholes within the UA
- Outfall culverts within the UA
- System manholes
- Catch basins

These structures serve as key points for beginning illicit discharge detection and elimination activities. A Storm Water System Map is provided as **Map 3** in the Appendix.

As outlined in the MS4 General Permit 2016 the permittee must develop a detailed map that depicts the above information. Note that the Village does not have any interconnections with other MS4s, sanitary sewer or combined sewer. The Village does have Storm Water BMPs in place. Additionally, the Village delineated catchment areas to each outfall based on topography and localized drainage characteristics using “USGS StreamStats”.

(https://streamstats.usgs.gov/ss/)

Public Drinking Water Supply

Community water supplies in the Village are received from Illinois American Water Corporation. There are no active wells in the Village

2.2 Outfall Inventory

As outlined in Section 2.0, the Village has mapping and inventoried all known outfalls within the village limits. As part of the outfall inventory, the following information is provided.

- Unique identifier
- GPS location (latitude and longitude)
- Outlet structure type
- Outlet pipe diameter
- Outlet pipe material construction
- Outlet structure protection
- Surrounding land use and slope
- Receiving waterbody
- Most recent inspection results

Drainage outfalls will be identified with a unique ID to provide a consistent identification method for tracking future observations. Additionally, outfalls not previously mapped can be added according to the existing list of outfalls using the same labeling method. The location of each outfall was recorded with GPS equipment to record latitude and longitude for future location and follow-up.

Outfall pipe characteristics, include type of structure, pipe diameter, material construction (concrete, steel, etc.), and outlet structure protection (headwall, riprap, none, etc.) will also be recorded. Finally, outfall interconnections to nearby catch basins and manholes will also be recorded for mapping purposes.

The surrounding sub-water shed/catchment area was then assessed for the dominant land use, typically residential, and nearby slope. Mapping was then used to determine the receiving waterbody and associated watershed within the Village.

Finally, the outfall inventory documented the most recent inspection results as follows:

- Inspection date;
- Pipe condition (good, cracked, corroded, etc.);
- End-of-pipe deposits (sediment, brush, etc.);
- Depth of sediment, if applicable;
- Surrounding impacts to vegetation;
- Evidence of erosion;
- Maintenance needed or recommended; and

- Any additional comments or notes.

An **Outfall Inventory** spread sheet is provided in the Appendix.

3.0 Identification of Illicit Discharges

This section provides the procedures for the identification of non-storm water discharges entering the storm drain system in the Village. These procedures should be implemented beginning with the High Priority catchments and progress to Low Priority catchment areas.

3.1 Visual Field Inspection

The first step for detecting non-storm water connections in MS4s is to physically observe all discharge points in the field during periods of dry weather.

Inspection Conditions

Visual inspections for illicit discharges must occur during dry weather conditions. Dry weather conditions are defined as a minimum of 24 consecutive hours with less than 0.10 inches of rainfall, however 72 hours is recommended. MS4s are designed to only carry storm water runoff; therefore if a flow exists at a discharge point during the dry weather inspections, it is identified as a potential illicit discharge. Storm water discharges to culverted streams that cannot be easily accessed (i.e., underground discharge locations) should be inspected at the nearest upstream location (e.g., manhole). It may be possible for inspection to take place inside the culverted stream depending on the size of pipes and the inspection crew's safety qualifications for work in confined spaces.

Considerations

Dry weather flow can be continuous or intermittent. Therefore, it is important to accurately document outfall conditions and evaluate whether future inspections are needed based on known water quality problems or impaired water bodies. In cases where there is physical evidence of an intermittent flow or illicit discharge, follow-up inspections should be performed to identify the dry weather flow. Intermittent flows also present an opportunity to involve the public with outfall observations. Volunteer watchers in local areas can inspect outfalls on a more frequent basis and alert the appropriate department when flow is present.

Observations and Interpretation

During inspection of an outfall for the presence of dry weather flow, physical characteristics such as odor, color, sheen, floatables, turbidity, the condition of the outfalls, and surrounding land uses and activities will be observed for further identification and confirmation of illicit discharges. **Table 1** provides some possible sources of illicit discharges based on physical parameters collected during field observations. If an outfall is inaccessible or submerged, personnel should inspect the nearest accessible upstream catch basin or manhole. A sample

Outfall Inspection Checklist is provided in the Appendix to assist in maintaining consistent and detailed records of inspections.

It is possible that some illicit discharges may only occur in wet weather, such as an overflow event from a septic tank. It is sometimes possible to detect these illicit discharges at the storm water outfall, as evident from unusual debris (e.g. toilet paper), stressed vegetation, sheen, etc.

Table 1 – Interpretation of Physical Observation Parameters[1]

Parameter	Observations	What Could It Mean?
Odor	Sewage	Stale sanitary wastewater, especially in pools near fallout
	Sulfur (rotten eggs)	Industries that discharge sulfide compounds or organics (meat packers, canneries, dairies, etc.) Also could be petroleum related "high sulfur" fuels.
	Rancid Sour	Food preparation facilities (restaurants, hotels, etc.)
	Oil & Gas	Petroleum refineries or many facilities associated with vehicle maintenance or petroleum product storage.
Color	Yellow	Chemical plants, textile and tanning plants.
	Brown	Meat packers, printing plants, metal works, stone and concrete, fertilizers, and petroleum, refining facilities.
	Green	Chemical plants, textile facilities.
	Red	Meat packers, metal works.
	Gray	Dairies, sewage.
Turbidity	Cloudy	Sanitary wastewater, concrete or stone operations, fertilizer facilities, automotive dealers.
	Opaque	Food processors, lumber mills, metal operations, pigment plants.
Floatable Matter	Oil Sheen	Petroleum refineries or storage facilities and vehicle service facilities, restaurants.
	Grease	
	Sewage	Sanitary wastewater
Deposits and stains	Sediment	Construction site erosion
	Oily	Sanitary wastewater
Vegetation	Excessive Growth	Food products facilities, fertilizers, farming, agricultural use.
	Inhibited Growth, Stressed Vegetation	High storm water flows, beverage facilities, printing plants, metal product facilities, drug manufacturing, petroleum facilities, vehicle service facilities, and auto dealers.
Damage to Outfall Structures	Concrete Cracking or Spalling	Industrial flows, chemicals.
	Peeling Paint	
	Metal Corrosion	
Source: Pitt R. University of Alabama at Birmingham.		

1. Note that many of these sources may not apply to the Village, however are shown for reference.

3.2 Dry Weather Sampling

Although visual inspection will indicate the presence of dry weather flow, sampling and testing is needed to confirm whether these flows are illicit discharges that need further investigation. Some dry weather flows may be attributed to groundwater infiltration or other allowable non-storm water discharges as outlined in Section 1.2, which could be confirmed through sampling. These tests can help identify contributing pollutants and the extent of water quality impairment at the outfalls. Key chemical parameters that are helpful in identifying the sources of non-storm water discharges are shown in **Table 2**.

Table 2 – Field Survey Parameters and Non-Storm Water Flow Sources[1]

Parameters	Natural Water	Potable Water	Sanitary Sewage	Septage Water	Industrial Water	Wash Water	Rinse Water	Irrigation Water
Fluoride	-	+	+	+	+ / -	+	+	+
Hardness Change	-	+ / -	+	+	+ / -	+	+	-
Surfactants	-	-	+	-	-	+	+	-
Fluorescence	-	-	+	+	-	+	+	-
Potassium	-	-	+	+	-	-	-	-
Ammonia	-	-	+	+	-	-	-	+ / -
Odor	-	-	+	+	+	-	-	-
Color	-	-	-	-	+	-	-	-
Clarity	-	-	+	+	+	+	+ / -	-
Conductivity	-	-	+	+	+	+ / -	+	+
Temperature Change	-	-	+ / -	-	+	+ / -	+ / -	-
pH	-	-	-	-	+	-	-	-

1. Note that many of these sources may not apply to the Village, however are shown for reference.
2. A minus (-) indicates that the parameter has a low value or low potential association with the flow source. A plus (+) indicates a high value or likely associated with the flow source. When both symbols are present (-/+) the parameter may be high or low depending on background readings.

EPA requires sampling fresh water at a minimum for ammonia, chlorine, conductivity, salinity, E.coli, surfactants, and temperature under General NPDES Permit No. ILR40. Additional water quality parameters such as dissolved oxygen (DO), pH, and turbidity may also be sampled to obtain additional representative data. Additional parameters may be used at the Village's discretion such as Volatile Organic Compound (VOC) analysis if non-storm water discharges have a solvent odor or oil and grease analysis if oil or oil sheen are present

The presence of any of these compounds in non-storm water discharges indicates an illicit discharge that needs to be investigated.

It is important to identify threshold concentrations or limits for key parameters to detect illicit connections. Standards and water quality criteria are developed by state and federal agencies for the acceptable limits based on the scientific understanding of the risk to human and ecological health. Acceptable limits of identified key parameters were developed through review of the IEPA water quality standards and EPA's water quality criteria. A list of reference concentrations for the Village's non-storm water discharges is provided in **Table 3**.

Table 3 – Reference Concentrations for Non-Storm Water Discharge

Sampling Parameters	**Reference Concentration for Tolono**	
	Class A Waters	**Class B Waters**
Ammonia[1]	>0.50 mg/L	
Chloride[2]	Acute Standard: 860 mg/L	
	Chronic Standard: 230 mg/L	
Dissolved Oxygen[3]	>6 mg/L	>5 mg/L
E.Coli[4]	<153 colonies/100mL in a single sample	<406 colonies/100mL in a single sample
Fluoride[5]	4 mg/L	
pH[3]	As natural occurs	Between 6.5 to 8.0 unless due to natural causes
Potassium[5]	35 mg/L	
Specific Conductivity[2]	Background Levels, Normal: 0-100 µS/cm	
Surfactants[1]	0.25 mg/L	
Temperature[3]	No numeric standard; as naturally occurs	
TNK	No numeric standard; as naturally occurs[3]	No numeric standard; as naturally occurring, shall contain no nitrogen in such concentrations that would impair any existing or designated uses
	Average: 0.26 - 0.40 mg/L[2]	Average: 0.26 - 0.40 mg/L[2]
Total Phosphorus[6]	0.40 mg/L	
Turbidity[3]	No Turbidity unless naturally occurring	Shall not exceed naturally occurring conditions by more than 10 NTU

These concentrations should be used as a guideline for detecting illicit discharges when field screening dry weather flows or evaluating laboratory data for samples that were collected. Background concentrations should also be considered. Once several outfalls have been sampled, background levels will become more evident with a range of common values. Results greater than the acceptable concentrations should flag a site for investigation; however, results that fall below these concentrations should not be ignored.

As outlined in General NPDES Permit No. ILR40, ammonia greater than or equal to 0.50 mg/L, surfactants greater than or equal to 0.25 mg/L, and either bacterial levels greater than applicable water quality criteria or detectable levels of chlorine shall be considered highly likely to contain illicit discharges. As such, these catchments shall be ranked at the top of High Priority Catchments category for investigation.

As data is collected for dry weather flows throughout town, the results that fall below the acceptable concentrations may be useful for gauging background water quality. The background concentrations can be used to evaluate sites for investigation based on the data statistics (e.g., range, average). For example, if dissolved oxygen results for dry weather flows throughout town show an average of 6.5 mg/L; sites that fall below 5.0 mg/L may warrant further investigation because the results are lower than the background level. This method of data evaluation may reveal potential sources of illicit discharges that may not be large contributors of pollution but create an opportunity to improve water quality if removed.

NPDES Permitted Facilities

Illicit discharge detection efforts in industrial areas of Village should always consider existing dry weather flows that have a NPDES Permit to discharge. These facilities are required to meet numeric effluent standards in accordance with the NPDES provisions and the Clean Water Act. Therefore, these flows do not require additional evaluation under the Village Illicit Discharge Detection and Elimination Plan unless it appears there is a large pollution problem.

The EPA currently has these facilities listed with the NPDES program located in the village limits, see **Table 4**.

Table 4 – Reference NPDES Permittees

NPDES Permittee	
Name	**Address**
Contractor's Concrete Inc.	1073 County RD 900 N Tolono, IL 61880-9747
Mayflower Contract Services	619 S Rte. 45 Tolono, IL 61880
Tolono STP, Village of	South Bourne Street Tolono, IL 61880

The EPA website should be periodically checked to identify new NPDES permittees.

- http://www.epa.gov/enviro/facts/pcs/search.html

3.3 Wet Weather Sampling

Wet weather screening and sampling may be needed for some outfalls where vulnerabilities are identified as discussed under Section 4.4. In these cases, wet weather screening and sampling shall proceed during or after a storm event of sufficient depth or intensity to produce a storm water discharge but only during the spring (March to June) when groundwater levels are relatively high. The purpose of wet weather screening and sampling is to identify illicit discharges that may activate or become evident during wet weather, therefore should be sampled under conditions where storm event intensities are likely to trigger a septic system failure (e.g., heavy rains or rains of long duration rather than first flush). Samples should be analyzed for the same parameters outlined in Section 4.2 for dry weather sampling.

3.4 Catchment Investigation Procedures

In addition to the outfall screening, EPA is expected to require investigation of all catchments to determine the potential for illicit connections. The following procedures shall be followed for catchment investigations and updated as necessary based on the requirements in the final MS4 permit.

1) Review Mapping and Historic Plans and Records – Review relevant mapping and historic plans and records to the extent available, including but not limited to plans related to the construction of the storm drains in the catchment, prior work performed on the storm drain system, municipal data on sanitary sewer system failures or required upgrades, and complaint records related to sanitary sewer system breakouts. This review shall be used to identify areas within the catchment with higher potential for illicit connections and system vulnerabilities that indicate a risk of sanitary sewer system

inputs to the MS4 under wet weather conditions. Identify and record the presence of any specific system vulnerabilities:

Include the results of this evaluation with this IDDE Plan. Where system vulnerabilities are present, the catchment area shall be inspected and sampled under wet weather conditions as outlined in Section 4.3.

2) Identify and Inspect Key Junction Manholes – Identify key junction manholes for dry and wet (where system vulnerabilities are present) weather inspection. A key junction manhole is one that can represent one or more junction manholes in evaluating the presence of potential illicit connections. Thus, a manhole can be excluded from investigation if the same information can be gathered through investigation of other nearby key junction manholes.

3) Isolation and Source Verification – Where manhole investigations or other physical evidence or screening has identified the potential presence of illicit discharges, more detailed investigations must be performed. Follow the procedures outlined in Section 4.5 for source investigation.

3.5 Source Investigation

Once an illicit discharge is identified at an outfall, further investigation is necessary to identify the specific point where the illicit discharge comes from (source). The objective of a source investigation is to trace the path of an illicit discharge from the outfall or manhole to the upstream source.

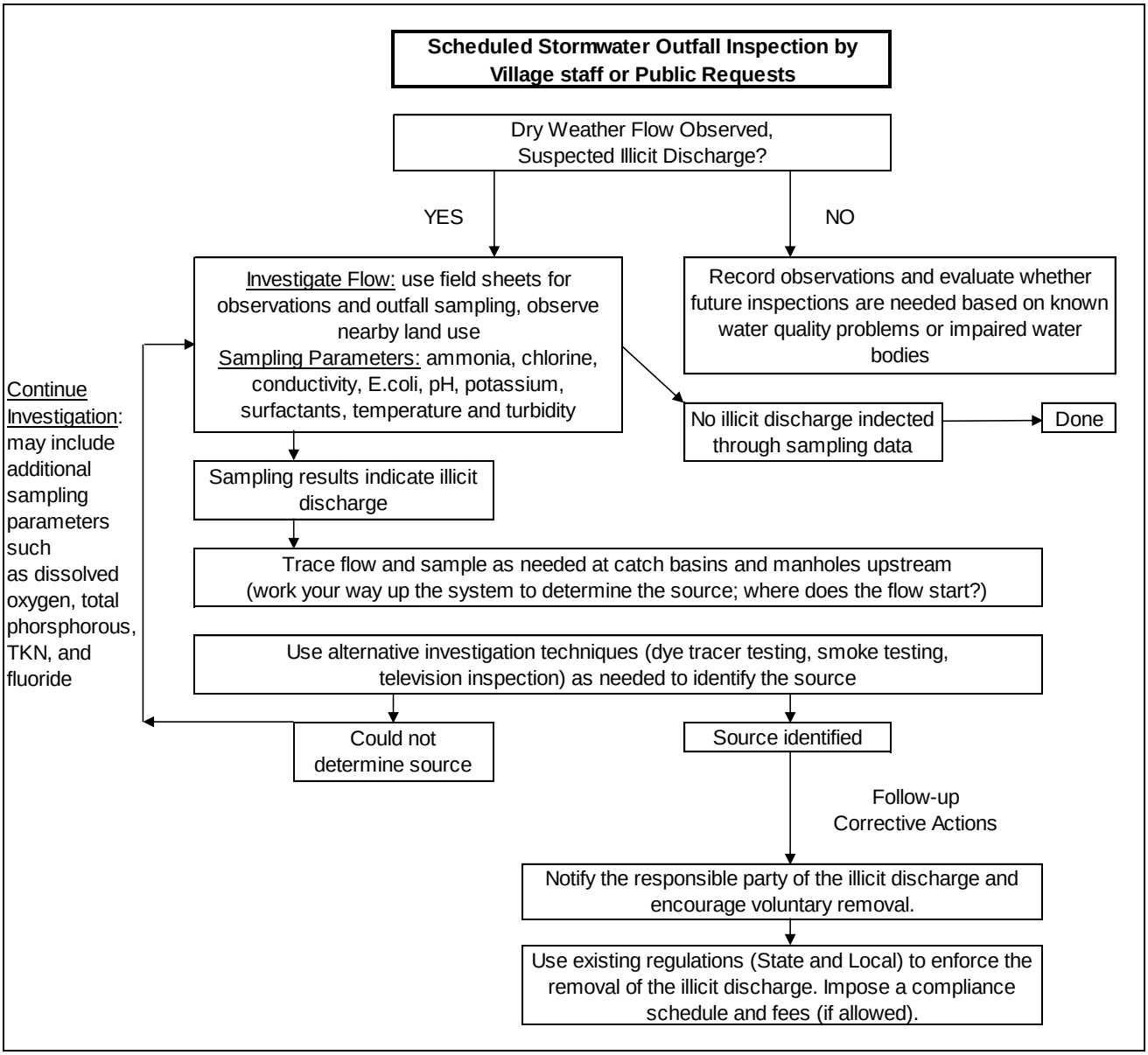
It is important to first identify the drainage network and catchment area contributing to an outfall before evaluating the source of an illicit discharge. The sampling results may give an indication of a possible source and help narrow the search. The procedures used for source investigation will vary depending on field conditions; however, typical procedures should at least begin with historic record evaluations and field surveys before progressing through additional tests or procedures, as outlined below:

- **Field Reviews** – surveying the drainage system and land area that contributes to an outfall is the first and perhaps the quickest and easiest method for identifying the sources of illicit discharges. It is important for field crews to remember to observe the land use and activities surrounding the outfall and the up gradient drainage system to determine if there are any obvious sources that could be causing the illicit discharge. Tracing the drainage system by inspecting manholes and connecting drainage pipes can often lead to the source. A quick survey of nearby land uses and activities may reveal the source immediately (for example a nearby car washing event). Also, field crews can simply follow the non-storm water discharge if it is flowing. However, some cases may require additional methods, as discussed below, if a flow cannot be traced due to blind connections or complicated drainage networks.

- **Dye Tracer Testing** – fluorometric dye can be used to trace flows from unknown pipes to identify illicit connections to the drainage system. Once the dye has been introduced into a drain (e.g., building floor drain) or other suspect pipe to the drainage system, the water in the collection system is monitored for the dye to determine whether an illicit connection is present. It is important to use a fluorometric dye that is non-toxic to humans and aquatic life.
- **Smoke Testing** – smoke testing is another method used to discover and investigate illicit connections. Non-toxic smoke can be injected into the drainage system or into individual unknown connections to the drainage system. In order for the smoke test to be effective, pipes must be plugged to prevent smoke from easily escaping through manholes, catch basins, or daylight areas. For example, a portion of a drainage system could be filled with smoke to determine if there are any sanitary sewer cross connections from nearby residential buildings. If a cross connection exists, smoke will appear from the building's sanitary sewer vent at the roof. The smoke should not affect residents since nearly all sanitary sewer systems have a trap that will prevent smoke from backing up into the house. In many cases smoke testing will only be used once an unknown pipe is identified. The individual pipe can be plugged and filled with smoke while workers look for signs of smoke at nearby buildings or facilities. It is important to notify the public prior to conducting smoke testing to inform them of when the activity will occur and that the smoke is non-toxic and will not affect their building. This notification presents a good opportunity to involve the public as observers during the smoke test and to educate local residents about storm water, allowable non-storm water discharges and illicit discharges. Providing the public with an opportunity to participate in the illicit discharge source investigation will promote IDDE efforts and awareness throughout town.
- **Television Inspection** – remotely guiding television cameras through the drainage system is another way to identify illicit connections. There may be blind connections (i.e., lateral connections to a pipe system with no manhole) to the drainage system that TV inspection can readily identify. Any connections identified during TV inspection that are not shown on the existing Village storm drain map need to be investigated to determine the source. The village can typically hire a company to perform TV inspection.

A comprehensive summary sheet for field crews is provide in **Diagram 1**.

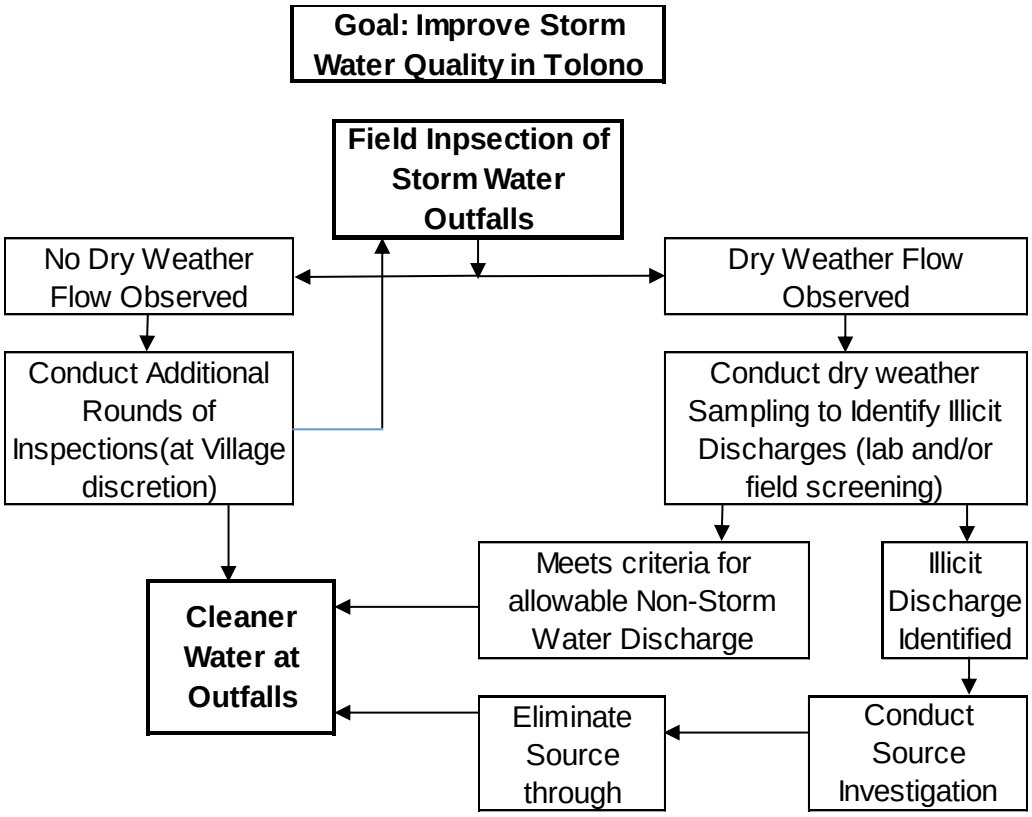
Diagram 1 – Comprehensive Summary Sheet for Field Crews



-

3.6 IDDE Approach

The approach for investigating and eliminating illicit discharges in the Village is summarized in the following Illicit Discharge Detection Elimination Flow Chart - **Diagram 2**.



Note: Recordkeeping is an essential tool for IDDE activities

3.7 Activities and Schedule

As outlined in the flow chart above, there is an ongoing pattern of activities for identifying and eliminating illicit discharges. The timing of some activities may appear obvious; however, a summary of the proposed activities and schedules are provided below to assist the Village in overall planning so that IDDE activities occur in a timely and cost-effective manner. **Table 5** provides a list of recommended IDDE activities and schedules.

Table 5 – Recommended IDDE Activities and Schedule

Activity	Schedule (from effective date of final permit
Dry weather screening and sampling of every MS4 outfall and interconnection (except Excluded and Problem Catchments)	Annual
Complete catchment investigation procedure in 80% of Problem Catchments	3 years
Complete catchment investigation procedure in 100% of Problem Catchments	5 years
Complete catchment investigation procedure in 100% of catchments where information indicates sewer input*	5 years
Complete catchment investigation procedure in 40% of all catchments	5 years
Complete catchment investigation procedure in 100% of all catchments	10 years
Source investigation	As soon as sampling results are obtained and evaluated
Source elimination	As soon as possible through enforcement procedures
Confirmatory outfall or interconnection screening	Within 1 year of removal of all identified illicit discharge and SSO sources
Follow-up screening upon completion of catchment investigation and illicit discharge removal and confirmation (if necessary)	5 years

*Includes outfall/interconnection screening that indicates sewer input based on olfactory/visual evidence or sampling results.

3.8 Recordkeeping

A field inspection log is provided in Appendix A for storm water outfall inspections. These logs begin the IDDE recordkeeping process and much more information will follow such as laboratory data, field notes for source investigations, and correspondence with property owners for source elimination and enforcement.

To ensure an effective and well-maintained IDDE program, the Village should update records annually to address the following topics:

- Summary of findings for field inspections & needs for subsequent rounds;
- Summary of dry weather sampling results & future needs;
- Identified sources & source elimination efforts;
- Illicit discharges eliminated;
- Status of IDDE activities by catchment; and
- Recommendations for future IDDE activities.

3.9 Activities Completed to Date

Storm water system mapping of the entire village is performed concurrently with IDDE inspections. Manholes, catch basins and outfalls were mapped separately in the field. All structure locations were recorded with a Global Positioning System (GPS) unit and incorporated into the GIS base map as shown on **Map 3** Storm Water System Map in the Appendix.

As new outfalls and other structure are located or installed, the base map is periodically updated approximately once a year to reflect changes.

4.0 Elimination of Illicit Discharges

The previous sections provide background information and a program for detecting illicit discharges to the MS4 in the Village. This section focuses on program effectiveness (i.e., elimination of illicit discharges), which is the ultimate result of a successful IDDE program. Program effectiveness or the elimination of illicit discharges can be broken down into two major categories: prevention (pre-occurrence) and removal of illicit discharges (post-occurrence), which are discussed below.

4.1 Prevention

Prevention of illicit discharges is achieved through education, outreach, and advocacy. Education and advocacy programs that are targeted towards identifying where and when possible illicit discharges and connections occur are good long-term prevention activities.

The following activities can be used in the Village to help prevent illicit discharges to the drainage system:

- Educate the public on illicit discharges and the impacts to ecological and human health using existing avenues such as water bill mailers, flyer handouts, newspaper articles, and posting a storm water display during Village events;
- Utilize the Village website by developing and maintaining a dedicated "Storm water Management" page to provide information on upcoming programs, proper waste disposal, and pollution reduction techniques;
- Hold periodic meetings with target audiences to encourage awareness and promote stewardship of the storm drain system, emphasizing the cause and effect relationship between non-storm water inputs to the drainage system and water quality impacts;
- Host periodic public events such as roadside cleanups to allow interested residents the opportunity to participate in the Villages storm water program;
- Establish a storm drain marking program to educate and potentially involve the community to promote illicit discharge prevention;
- Hold bi-annual household hazardous waste collections days to give residents the opportunity to properly dispose of wastes;
- Provide information on spill response and prevention procedures, including identifying and containing spills, reporting procedures, and documentation;
- Utilize the annual IDDE program evaluation results to promote and support the program in the Village;
- Educate the public about the consequences of violations; and/or
- Direct citizens to voice concerns or information regarding illicit discharges to the village officials

4.2 Removing Illicit Discharges

Once an illicit discharge or connection is identified and confirmed, the village will document the following information for its records:

- Location of the discharge and its source;
- Description of the discharge;
- Method of discovery;
- Date of discovery;
- Date of elimination;
- Mitigation or enforcement action (see below); and
- Estimate of the volume of flow removed.

The removal of the illicit discharge can be accomplished through voluntary elimination or legal enforcement, as discussed below.

Voluntary Elimination

The voluntary elimination of illicit discharges is strongly encouraged. Through voluntary elimination, the responsible party of an illicit discharge can be contacted and informed about the incident by telephone. A responsible village official should make this contact after an illicit discharge has been identified and verified. When a responsible party is contacted, the following information should be provided:

- Details on the identification and verification process;
- Information on the actions or types of BMPs that should be implemented to correct the problem; and
- Potential support and incentives that the Village can offer as a result of the voluntary approach.

This approach is the quickest and provides an opportunity for the responsible party to correct the problem in a cost-effective manner, versus a legal enforcement obligation, which is discussed below.

Legal Enforcement

Legal enforcement action is often necessary to completely eliminate illicit discharges in the village, particularly those that have significant cost implications. The Village will drafted an illicit discharge ordinance governing discharges to the municipal storm drain system for prohibition and removal. This ordinance will allow the Village to enforce and effectively remove illicit discharges to comply with the Storm Water Regulations. Generally, enforcement of illicit discharges can be implemented through the following methods which will be incorporated into the ordinance:

- ***Written Order*** – When proof of a discharge and the responsible party are identified, the village may issue a written order outlining the requirements for compliance with local ordinances. If the enforcing person determines that abatement or remediation is required, the order shall establish a deadline that abatement or remediation activities must be completed.
- ***Reimbursement*** – If remediation is not completed by the time outlined in the written order, the village may complete the necessary work and seek reimbursement by the offending party. The violator will then have thirty days to reimburse the village for work incurred, or have a lien placed on the property.
- ***Penalties or Fines*** – Penalties and fines can be issued to the responsible party if the problem has not been corrected as outlined in the written order.
  For example, if remediation is not completed within the timetable established by the written order, the village may assess penalties to accrue for each day the violation continues. The village can use penalties and fines to recover the cost of enforcement, and may establish other appropriate corrective measures.

- ***Civil and/or Criminal Court Actions*** – As a final effort, the village may use civil and/or criminal court actions under the local, state, and federal laws and regulations such as the Clean Water Act, which may result in significant fines levied upon the noncompliant responsible parties.

4.3 Confirmatory Sampling

Within one year of removal, confirmatory sampling will be conducted during dry weather to verify that the illicit discharge has been removed. If confirmatory screening indicates evidence of an additional illicit discharge, the catchment shall be reinvestigated as documented previously.

TOLONO ILLINOIS - STORM WATER ILLICIT DISCHARGE DETECTION & ELIMINATION (IDDE) PLAN

OUTFALL INVENTORY										INSPECTION RESULTS							
MAP ID	LATITUDE	LONGITUDE	OUTLET STRUCTURE TYPE	OUTLET PIPE DIAMETER, (IN)	OUTLET PIPE MATERIAL	OUTLET STRUCTURE PROTECTION	LAND USE	SLOPE	RECEIVING WATERBODY	INSPECTION DATE	PIPE CONDITION	DEPOSITS	SEDIMENT	VEGATATION IMPACTS	EROSION IMPACTS	MAINTENANCE NEEDED	COMMENTS
OUT 100	39.981209	-88.256395	CULVERT				RESIDENTIAL	FLAT	HACKETT BRANCH								
OUT 101	39.980408	-88.256395	CULVERT				RESIDENTIAL	FLAT	HACKETT BRANCH								
OUT 102	39.982587	-88.275332	MANHOLE			N/A	RESIDENTIAL	FLAT	PAGE RUN DITCH								
OUT 103	39.992209	-88.270580	MANHOLE			N/A	RESIDENTIAL	FLAT	PAGE RUN DITCH								
OUT 104	39.994433	-88.258519	CULVERT				RESIDENTIAL	FLAT	HACKETT BRANCH								
OUT 105	39.992744	-88.253270	CULVERT				RESIDENTIAL	FLAT	TRIBUTARY TO EMBARRAS RIVER								
OUT 106	39.992022	-88.254265	CULVERT				RESIDENTIAL	FLAT	TRIBUTARY TO EMBARRAS RIVER								
OUT 107	39.984192	-88.246663	MANHOLE			N/A	RESIDENTIAL	FLAT	TRIBUTARY TO EMBARRAS RIVER								

TOLONO ILLINOIS - STORM WATER ILLICIT DISCHARGE DETECTION & ELIMINATION (IDDE) PLAN

OUTFALL INSPECTION CHECKLIST

OUTFALL ID# _____ **LOCATION AID#** _____

DATE:_____ **TIME:**_____ **WEATHER TODAY:**_____

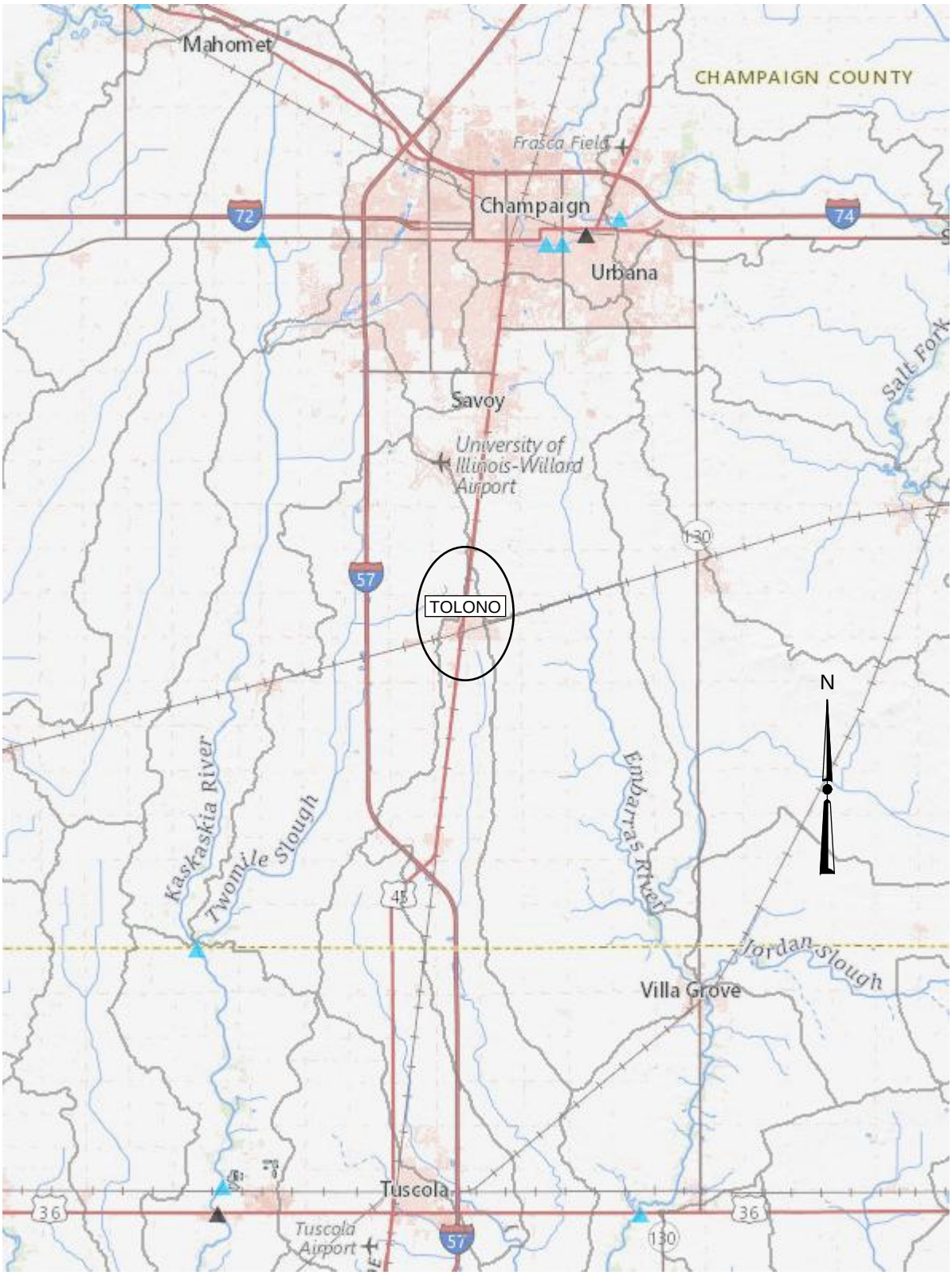
OBSERVER(S):_____ **WEATHER OVER PAST 72 HOURS:**_____

FLOW OBSERVED (CIRCLE): YES NO

	PIPE FLOW DEPTH (INCHES) NOTE: MEASURE FROM PIPE INVERT	CHANNEL, DITCH,OR SWALE FLOW DEPTH (INCHES) NOTE: MEASURE FROM CENTER OF CONVEYANCE	FLOW APPEARANCE / COLOR	FLOW ODOR	FIELD MONITORING DATA (NOTE: FILL IN UNITS FOR EACH PARAMETER)				
					TURBUDITY	TEMPERATURE	pH	CONDUCTIVITY	COMMENTS
1.) FLOW OBSERVATIONS(FILL OUT THIS SECTION ONLY IF FLOW IS OBSERVED	 — DEPTH	 — DEPTH	— CLEAR — CLOUDY/MILKY — DARK (TEA) — SHEEN — SUSPENDED SEDIMENT (OPAQUE) — OTHER *	— NONE — CHEMICAL — PETROLEUM — SEWAGE — OTHER *					
	PIPE MATERIAL	PIPE CONDITION	CHANNEL, DITCH OR SWALE CONDITION	DIAMETER OR WIDTH (SPECIFY DISTANCE UNITS)	SLOPE DEGREES	OUTLET STRUCTURE	GPS COORDINATES	DISCHARGE DIRECTLY TO SURFACE WATER	COMMENTS
2.) STRUCTURE DETAILS (PIPE OR OTHER CONVEYEANCE INFO.)	— CLAY — CONCRETE — CORRUGATED STEEL — PVC — CAST IRON — HDPE — STEEL (DI)	— GOOD — CRACKED — EXPOSED STEEL — CORRODED — OTHER *	— GOOD — CLOGGED — DEBRIS — SCOURED OR ERODED — OTHER *		— FLAT — MODERATE — STEEP	— HEADWALL — RIPRAP — FLARED END — NO OUTLET PROTECTION — OTHER *	LAT._____ LON._____	— YES — NO IF YES, PROVIDE RECEIVING WATER NAME	
	DEPOSITS	SURROUNDING VEGATATION	ERODIBILITY	LAND USE AT OUTFALL	LAND USE UPSTREAM OF OUTFALL	APPEARANCE / COLOR	ODOR	SEDIMENT DEPTH (INCHES) (IF PRESENT)	COMMENTS
3.) OUTFALL OBSERVATIONS (GENERAL CONDITIONS AT OUTFALL)	— NONE — GREASE/OIL — PAPER/TRASH — FOAM — HEAVY SEDIMENT DEPOSITS — OTHER *	— LITTLE OR NO DISTRESS — MODERATE DISTRESS — HIGH DISTRESS	— LITTLE OR NO EROSION — SMALL AREAS OF EROSION — MANY ERODED AREAS	— FOREST — AGRICULTURE — RESIDENTIAL — COMMERCIAL — INDUSTRIAL — WATERBODY — DETENTION POND/BASIN	— FOREST — AGRICULTURE — RESIDENTIAL — COMMERCIAL — INDUSTRIAL	— CLEAR — CLOUDY/MILKY — DARK (TEA) — SHEEN — SUSPENDED SEDIMENT (OPAQUE) — OTHER *	— NONE — CHEMICAL — PETROLEUM — SEWAGE — OTHER *		
	SURFACTANT	AMMONIA CONCENTRATION	E. COLI	OIL & GREASE (IF OIL OR SHEEN IS OBSERVED)	VOCs (IF SOLVENT ODOR IS PRESENT)	ADDITIONAL FIELD COMMENTS AND NOTES			
4.) LABORATORY ANALYSIS (CHECK IF SUBMITTED									

NOTES:
* PROVIDE ADDITIONAL COMMENTS TO DESCRIBE THE OBSERVATIONS MADE FOR THE CATEGORY.
** DISCHARGES DIRECTLY TO SURFACE WATERS ARE DIFINED AS: ANY CONVEYANCE OR DISCERNABLE CONCENTRATED FLOW (I.E., PIPE, SWALE, DITCH) OTHER THAN OVERLAND SHEET FLOW THAT ENTERS A BODY OF WATER

MAP 1



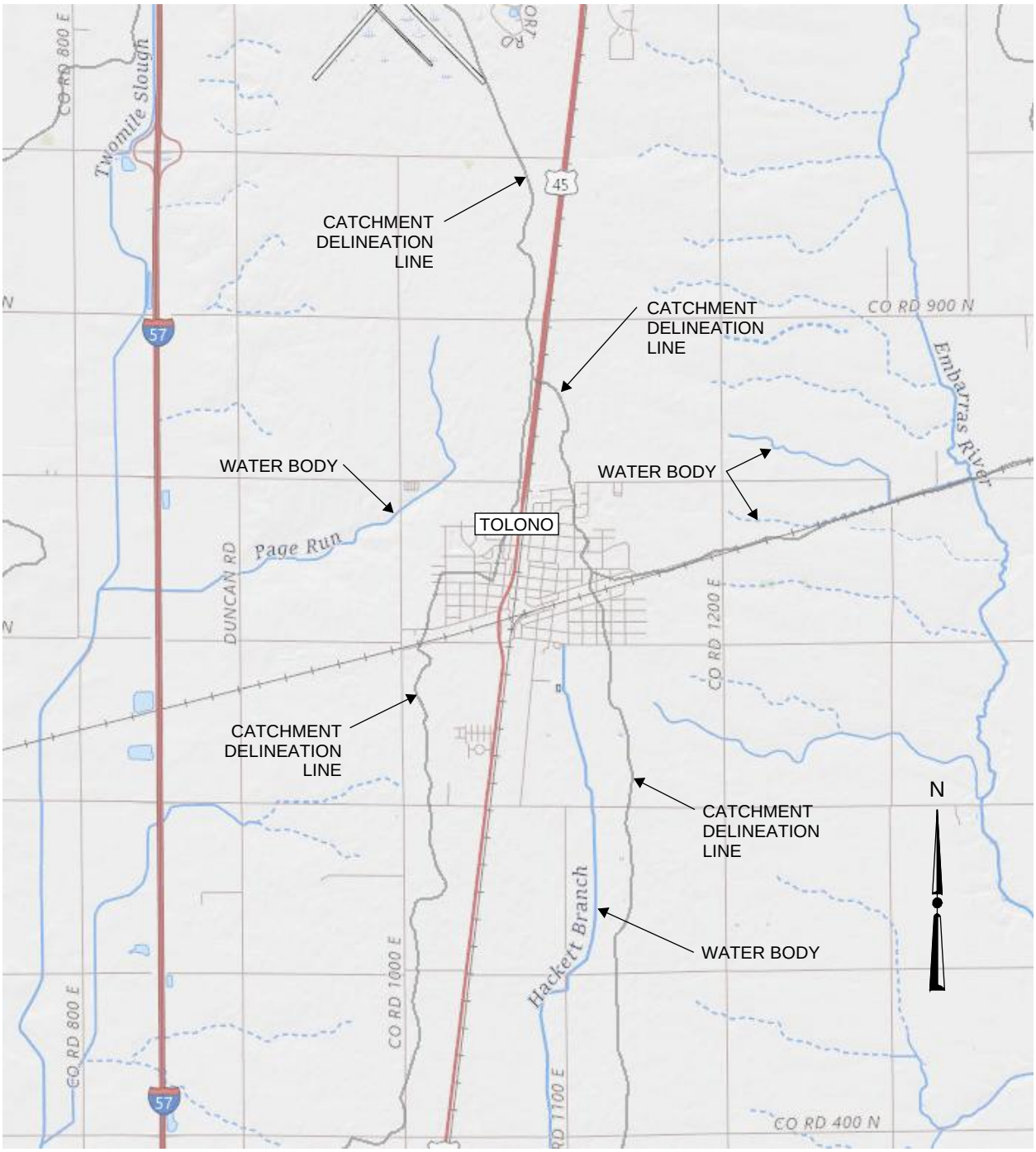
TOLONO ILLINOIS

LOCATION MAP

NOT TO SCALE

Source: USGS Stream Stats

MAP 2

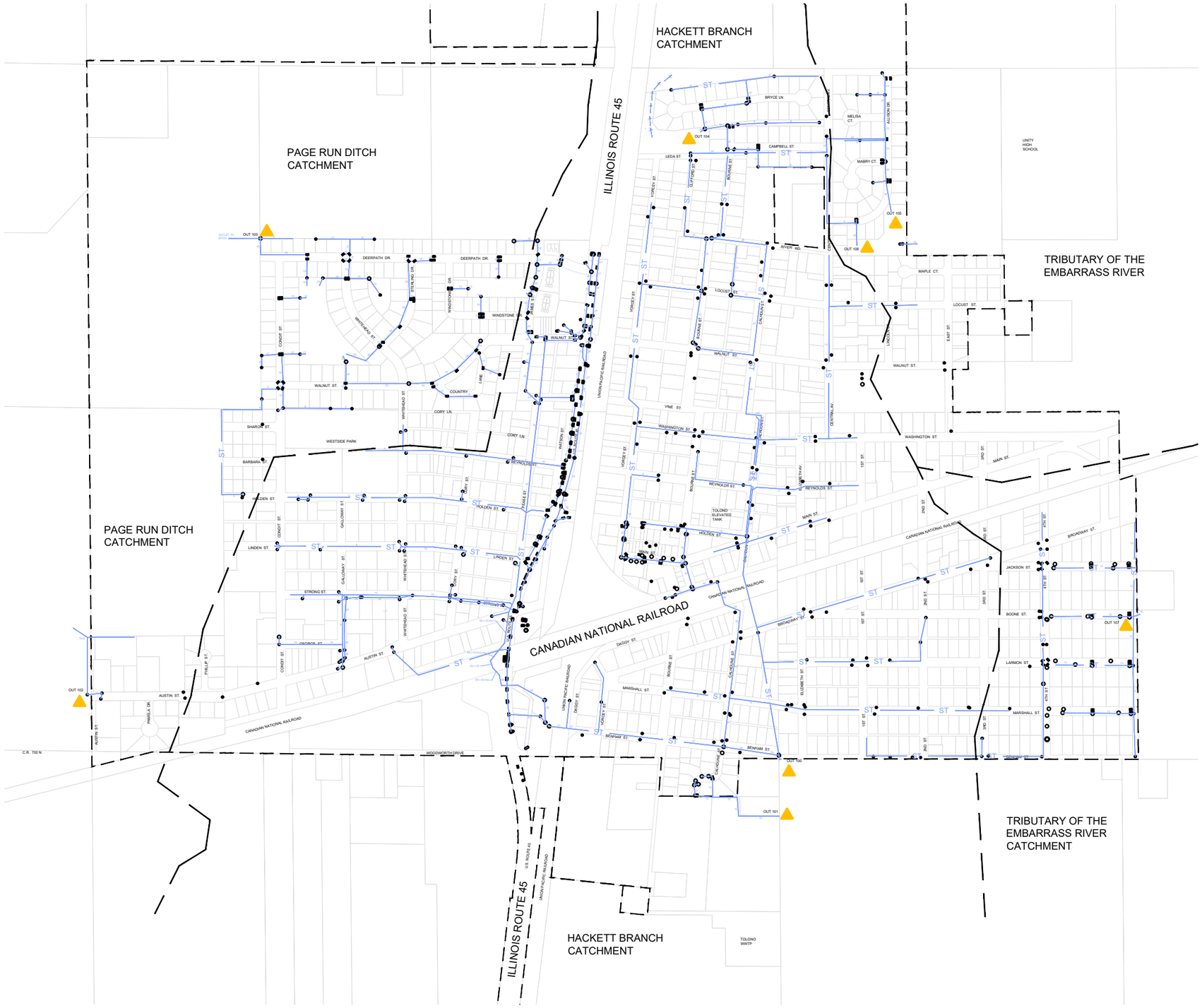


TOLONO ILLINOIS

CATCHMENT AND DELINEATION MAP

NOT TO SCALE

Source: USGS StreamStats



Revision Number	Revision Description	Drawn By	Checked By	Date
1	REVISED WATER SYSTEM WITH GPS LOCATING OF STRUCTURES	JAB		JULY 30, 2020

Designed By	JAB
Drawn By	JAB
Checked By	
Approved By	
Filename	STRM 002CK-1.DWG
Project No.	13531
Project Date	FEB 2021

VILLAGE OF TOLONO
STORM WATER SYSTEM MAP
ILLICIT DISCHARGE DETECTION ELIMINATION PLAN
STORM WATER SYSTEM MAP URBANIZED AREA (UA)

DONOHUE

Sheet No.

Drawing No.

MAP 3