Annual Facility Inspection Report
NPDES Discharges from Municipal Separate Storm Systems (MS4)

Illinois Tollway
NPDES Permit No. ILR400494
Reporting Period: March 2021 to March 2022

Table of Contents

I. Introduction

The Illinois State Toll Highway Authority (Tollway) remains in compliance with the General National Pollutant Discharge Elimination System (NPDES) ILR40 Permit conditions, under the NPDES Permit for Discharge from Small Municipal Separate Storm Sewer Systems (MS4's), Permit Number ILR400494. An annual review of the Stormwater Management Program was completed as required by the ILR40 Permit. This report accounts for stormwater management activities completed towards the fulfillment of the requirements of the Tollway's MS4 permit during the March 2021 to March 2022 reporting period.

II. Special Conditions

A. Total Maximum Daily Loads

The ILR40 permit requires the Tollway to review its Stormwater Management Program to determine if a Total Maximum Daily Load (TMDL) or Watershed Management Plan includes requirements for control of stormwater discharges from Tollway construction or operations. A summary of these receiving waters and their regulatory implications to the Tollway is provided in Appendix A.

B. State Chloride Standards

The DuPage River Salt Creek Workgroup (DRSCW) is a watershed group formed in 2005 to coordinate water quality management activities for the East & West Branches of the DuPage River and Salt Creek. This group is working to improve water quality for several parameters, including chlorides, of which the Tollway is a contributor. The Tollway is an active participant in this watershed group, is part of the DRSCW chloride sub-committee, and regularly attends their meetings. Additionally, the Tollway is an active member of the Metropolitan Water Reclamation District's Chicago Areas Waterways workgroup, whose goal is to reduce chloride loadings to the waterways within the Chicago area.

The application of deicing salt is the most significant water quality concern for the Tollway. Numerous methods to reduce the use of chlorides, while maintaining acceptable road safety and operations, have been explored. The Tollway approaches chloride reduction from two directions: improving the efficiency of Tollway deicing operations and assisting local agencies/communities along Tollway facility corridors to reduce their salt use. Chloride reduction strategies include utilizing new technologies and approaches in salt distribution, and education to increase deicing operators' awareness of environmental impacts of salt, and the importance to reduce the amount used while maintaining safe roadway conditions.

The Tollway continues to improve deicing efficiency through implementation of equipment and practices recommended to the Tollway by Wilfred Nixon, PhD of the University of Iowa, as detailed in previous MS4 Annual Reports:

- The Tollway continues to assess and refine chloride application rates during winter storm events. The standard application rate setting for Tollway salt spreader is 300 pounds per lane mile for dry salt, and rates as low as 100 pounds per lane mile are used where possible, such as locations of lower traffic speeds.

- The Tollway is utilizing three brine production and vehicle application systems to help reduce rock salt application rates required to maintain safe operation conditions. Pre-wetting of rock salt with a brine solution decreases bounce of salt particles, resulting in a more efficient distribution to the pavement. This efficiency can result up to a 25% reduction on salt application rates compared to dry salt, while maintaining a safe level of service. Prior to the 2016-2017 winter season, the Tollway purchased two mobile brine making systems, liquid brine storage tanks for almost all Maintenance Facilities, and truck mounted brine tanks and applicators to furnish the ability to pre-wet rock salt. In 2021 the Tollway installed a stationary, high volume, automatic brine making system at the new M-8 Maintenance Facility in Aurora. This state-of-the-art facility serves as a pilot program to guide similar installations at other Maintenance Facilities.

- The Tollway is leveraging the use of brine solutions to provide greater ability to effectively manage the roadway system under adverse conditions for which standard management practices are not effective, such as but not limited, to sub 15° Fahrenheit air and pavement temperatures. This also reduces the amount of sodium chloride needed.

- Annual training is provided to Tollway Maintenance Facility staff regarding the effective use of brine and other mixtures, such as Beet Heet® and liquid chloride, to reduce the overall chloride distribution rates. Tollway Maintenance Facilities have representative employees present at training events, such as the Illinois Tollway Chloride Reduction Planning workshop held November 1, and November 3, 2021, and the APWA Snow Fighters workshop held October 14, 2021. Snow Meetings that are held at each Maintenance facility in advance of the snow season.

- Maintenance Driver education: During the winter, maintenance Drivers are the people ultimately responsible for the distribution of salt along the Tollway. Tollway environmental staff engage the Maintenance Driver crews at Education meetings, held at each maintenance facility, to discuss the effect salt has on the environment, why the Tollway is committed to reducing salt, and that this can be achieved while maintaining a safe roadway for users. This education aims to empower drivers to act responsibly by understanding they can have a direct effect on the environment.

- One component in the Winter Maintenance Program is receiving accurate and timely identification of approaching storms. The Tollway maintains a contract with a professional meteorological service (Weather Command), to provide the Tollway with

location-specific weather predictions and conditions for use throughout the Tollway roadway system. The information provided by the weather forecast service provides staff with Tollway specific forecasts that can help provide more effective pre-planning of winter operations system-wide.

- The Tollway has installed 19 Roadway Weather Information Systems (RWIS) within its system, primary on bridge approaches and bridge decks, to help assess winter pavement conditions in real-time for strategic deicing. The RWIS will also alert in adverse weather conditions like heavy rain, wind, slippery roads, fog, freezing rain and other severe weather conditions. The RWIS system is able to analyze the road surface condition, the amount of snow, water, freezing rain and precipitation events. For 2022, Illinois Tollway ITS Maintenance will provide preventative maintenance to the 19 RWIS sites to keep the RWIS infrastructure to perfect operating conditions.

  In 2018, the Tollway changed the installation method from a single lace tower to a two-pole installation. The modularity of the new RWIS installation makes the system flexible and scalable and is available with several atmospheric and road surface sensor options. The new RWIS system measures the following conditions:

  - Air temperature/relative humidity
  - Precipitation and visibility sensor
  - Road surface state and road surface temperature
  - Subsurface temperature (embedded in the shoulder not in bridge approach or deck)
  - Wind speed/direction sensor

  As part of the installation, there will be two pairs of road surface sensors: one pair deployed for monitoring the bridge deck pavement condition per direction of traffic and one pair of laser temperature sensors installed on each pole to adequately monitor the bridge approach and bridge deck road temperature condition.

  The new temperature sensor technology precludes the need for drilling holes required to embed the two temperature sensors and install conduit in the bridge structure from the two temperature sensors to the RWIS cabinet. This eliminates potential issues with the integrity of the pavement and complicated maintenance associated with the embedded sensor installation. Moreover, the new installation will provide more accurate and reliable data to reduce chloride use through strategic application.

- The Tollway entered into a Memorandum of Understanding (MOU) with the DuPage River Salt Creek Workgroup to implement a broader chloride offset program, by also partnering with local agencies, to improve their efficiency and reduce chloride use. Per the MOU, the Tollway is entering into intergovernmental agreements (IGAs) with communities adjacent to Tollway corridors who have expressed an interest in the program. The communities who participate in the chloride offset program receive funds

from the Tollway to assist in the purchase and implementation of new equipment and processes to reduce their chloride use. Current IGAs are with the Villages of Bensenville and Wood Dale for water quality permits for the EOWA corridor.
The Village of Bensenville used Tollway funds to upgrade its winter maintenance operations to be more salt efficient. Average salt application rates went from 300 lbs/mile to 200 lbs/mile + 25 gallons of pre-wet per mile; a savings of 14.2% per mile.

The Village of Wood Dale used Tollway funds to upgrade its winter maintenance operations to be more salt efficient. Average salt application rates went from 375 lbs/mile to approximately 300-350 lbs/mile + 3 gallons of pre-wet per mile; a savings of 6-18% per mile.

III. Stormwater Management Programs

The Tollway has achieved the March 2021 to March 2022 reporting year goals for developing, implementing, and enforcing a Stormwater Management Program to reduce the discharge of pollutants to the maximum extent practical. The Tollway's progress for each of its minimum control measures is described below.

A. Public Education and Outreach

The Tollway does not have a traditional public education or outreach program as described in General NPDES Permit No. ILR40, Part IV.B.1 as the Tollway is a transportation agency and not a municipality with a resident population. However, the Tollway does provide information to the public and industry professionals to educate them about stormwater issues, as well as policies and procedures being used to reduce pollutants in stormwater runoff, as discussed below.

2021-2022 Compliance with Permit Conditions:

a. Tollway Website (BMP No. A.6)

The Tollway website contains an "Environment" web page accessible to the public (www.tollway.com/en/sustainability/stormwater-management) to share information with the public regarding Tollway stormwater quality initiatives and related topics. Current topics include the *Landscape Master Plan*, green construction and sustainability initiatives, and wetland mitigation and restoration activities. The website is also used to inform the public on the Stormwater Management Program by providing access to current and previous MS4 Annual Reports and NPDES documentation [Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SWPPP) documents] for active construction projects. The 2020 MS4 Annual Report has been uploaded to the website, and NPDES documentation continues to be updated on an ongoing basis as projects are completed and new projects begin.

The website is also a mechanism for communicating the Tollway's continuous efforts to update policies, manuals, and specifications, including those for protection and management of stormwater. These resources are continuously updated to address new permit requirements and stormwater improvement practices. In order for Tollway contractors and consultants to perform planning, environmental studies, roadway design, construction, and maintenance activities for Tollway assets, these groups must be kept current with changes and revisions to policies and procedures to help reduce pollutants in stormwater runoff and protect environmental resources. In March 2022, the Tollway's *Erosion Control and Landscape Manual* was updated, as well as the erosion control standards in the Tollway Supplemental Specifications. Links to current versions of the Tollway manuals and Supplemental Specifications are available for use and reference by the public on the Tollway website. The Tollway website also contains a "Projects in Your Community" page to share information for major capital improvement projects. One such project that the Tollway began in 2016 (and substantially complete in 2025) is to rebuild the Central Tri-State (I-294) to provide congestion relief and reconstruct dated infrastructure to meet current and future transportation demands. This process includes outreach efforts with customers, communities, businesses and partners to identify regional improvements and continue to refine the design details. As the Tollway moves forward with construction, updates on important issue areas and key project elements will continue to be posted to this page. The website is being used to highlight key policy areas, including stormwater management. Information provided for the project on the web page includes a *Stormwater and Drainage Memorandum,* which outlines the corridor-wide plans to improve stormwater quality and reduce flooding, concept drainage reports, and concept design drawings.

The Tollway has procedures for receiving and considering information submitted by the public. Comments that are received via the Tollway's website are handled by the Communications Department. The Communications Department determines which Tollway department should respond, and the comments are forwarded accordingly. If a telephone call or email is received, it is directed to the Executive Director or Chief Engineer. Any communications that are related to stormwater, green infrastructure, or similar topics are directed to and handled by the Environmental Unit.

The Tollway website provides a valuable, accessible resource for design and construction consultants and the general public to learn about Tollway stormwater initiatives, including steps being taken to reduce pollutants in stormwater runoff. The website provides a central location to convey stormwater program content and information to the public.

b. Water Quality Demonstration Projects (BMP No. A.6)

The Tollway developed a bioswale pilot program to minimize the volume of stormwater runoff and pollutants from its roadways. Intense post-construction monitoring occurred from August 2010 through December 2015, the results of which were detailed in previous MS4 Annual Reports. Although the north Tri-state bioswale demonstration project is complete, the Tollway continues to monitor the condition of bioswales and basins on I390 and I-90 including 137 bioswales in region M-6.

Reports of the above ongoing bioswale monitoring are available to the public by contacting the Tollway Environmental Unit at environment@getipass.com or (630) 241-6800 ext. 4872.

c. Presentations and Seminars (BMP No. A.6)

The Tollway provided and/or participated in several presentations and seminars during the annual reporting period on various stormwater quality topics as follows:

- August 4 & 5, 2021: IL Tollway Manager & Supervisor Drainage & Landscape Training
- April 22, 2021: Pollution Prevention for MS4 Communities webinar: IL Tollway
- Pollution Prevention Facility Salt Storage (Presenter)
- April 10-15, 2021: ACEC/IL Tollway Design & Construction Practice Workshops
- November 1 and 3, 2021: Salt Survey and Training
- November 1, 2021: IL Tollway Chloride Reduction Planning Workshop
- April 29, 2021: DuPage County Stormwater Pollution Prevention Training– Public Works Spill Prevention & Response
- April 28, 2021 DuPage County Stormwater Pollution Prevention Training – Village of Wilmette, IL. Landscape Waste Handling – Leaf Collection Program
- April 29, 2021: DuPage County Stormwater Pollution Prevention Training – Pollution Prevention – Vehicle & Equipment Washing
- DuPage County Stormwater Pollution Prevention Training – Public Works Facility Materials & Waste Handling
- December 3, 2021: DRSCW Laboratory Methods for Measuring Total Chlorine Residual (TRC) to Meet the 0.038 mg/L Compliance Limit
- September 30 & October 5 and 7, 2021: Chloride Reduction Workshop – Public Roads
- September 30 & October 7, 2021: Chloride Reduction Workshop – Parking Lots & Sidewalks

- Watershed Meetings:
    - February 23, 2022: DRSCW Annual Meeting

B. Public Involvement/Participation

The Tollway does not have a traditional public involvement/participation program as described in General NPDES Permit No. ILR40, Part IV.B.1 as the Tollway is a transportation agency and not a municipality with a resident population. However, the Tollway uses various public involvement and participation strategies to effectively improve stormwater quality.

2021-2022 Compliance with Permit Conditions:

a. Public Hearings (BMP No. B.4)

The Tollway periodically holds public hearings, generally for National Environmental Policy Act (NEPA) studies, large-scale projects, toll increase proposals, and bond proposals. When a public hearing is held related to engineering studies or construction, a water quality improvement / erosion and sediment control component is incorporated into the presentation. The water quality component of the public hearing is required for NEPA studies and large-scale Tollway projects, but not for toll increase proposals or bond proposals. No public meetings were conducted between March 2021 and March 2022.

A summary of the public meetings during the reporting period for the above planned construction programs is provided in Appendix C.

b. Program Involvement (BMP No. B.6)

1. The Tollway has developed and maintains numerous manuals to support implementation of the Stormwater Management Program, notably the Tollway's *Environmental Studies Manual*, the *Erosion Control & Landscape Manual*, *Drainage Design Manual*, and *Construction Manager's Manual*. All of these documents contain coordination and check points that involve the review of plans and ensure the implementation of practices for stormwater protection. These documents also ensure program involvement occurs from concept to final design, and through the construction and post-construction processes.

2. Upon request, the Tollway provides NPDES documents and records to local and federal regulatory agencies. Documentation of all such requests are maintained in the Tollway's Web-Based Program Management System (e-Builder). No such requests were made during the March 2021 to March 2022 reporting period.

3. The Tollway maintains regular communication and coordination with regulatory agencies with regard to active and anticipated environmental permits. These are generally limited

to U.S. Army Corps of Engineers (USACE) permits under Section 404 of the Clean Water Act (CWA) and IEPA certifications under Section 401 of the CWA. The Tollway initiates coordination early in the planning stage, as soon as the potential for resource impacts is identified. Documentation of all permitting correspondence and coordination meetings is also maintained in the e-Builder filing system.

In July 2018, the Tollway executed a 4-year agreement with the USACE, under Section 214 of the Water Resources Development Act (WRDA). The agreement was signed to facilitate permitting due to the number of programmed projects that will require authorization from the USACE for impacts to "Waters of the United States" pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. The agreement expires in July 2022, however, discussions are underway for an extension.

4. The Tollway is a member of the DuPage River Salt Creek Workgroup and participates in its meetings and activities. The Workgroup has a robust public education and outreach program on stormwater impacts. Appendix B itemizes the workgroup activities that took place during the March 2021 to March 2022 reporting period.

5. The Tollway continues to implement a sustainability program called INVEST (Infrastructure Voluntary Evaluation Sustainability Tool), originally developed by the Federal Highway Administration (FHWA), which has been modified and expanded by the Tollway for its use. This program assesses and promotes the use of sustainable practices as part of Tollway planning, project design and construction, and operations and maintenance, by scoring individual components and awarding achievement levels. The scores and achievement levels inform the Tollway where it is doing well and where improvements can be made. The Tollway requires the use of INVEST for any *Move Capital Program* project that exceeds $10 million in construction costs. INVEST includes a stormwater component that promotes sustainable stormwater management for both quantity and quality.

   In 2018 and 2019, all projects with a construction cost of over $10 million were evaluated for sustainability using INVEST. Projects were able to receive points for not having a release during a 50-year storm simulation, or for having a 2/3 Allowable Release Rate. One project under construction performed particularly well receiving 5 out of the 6 points available under the stormwater criteria. This project, the construction of a new interchange at IL 23 and I-90, is designed to manage the runoff volume for a 50-year, 30-minute rainfall and has a zero-release rate for a fifty-year storm.

6. The Tollway website contains a “Projects in Your Community” web page (https://www.tollway.com/outreach/projects-in-your-community) to solicit input from communities, businesses, elected officials, and environmental and transportation organizations, for planned capital improvements. The web page includes various outreach resources such as past public meeting presentations, notices of open houses, and

other public meetings, and e-mail links for the public to submit comments and questions. Current projects on the web page include the Central Tri-State (I-294) Reconstruction, the Elgin-O'Hare Western Access Project, and the U.S. Route 20 Interchange Improvement Study. The content of the web page is updated on a regular basis.

7. Tollway construction specifications, design manuals, and policies are continuously updated to address new permit requirements or stormwater quality improvement practices. The process for updating these documents involves portions of public including the Road Builders Association and American Council of Engineering Companies (ACEC-IL) on proposed updates and changes. A formal comment period for the March 2021 to March 2022 reporting period was held in January 2021. The input received, including revisions related to stormwater quality, was considered and incorporated into the 2022 revisions as appropriate. A record of the comments that were received and their dispositions was provided to the industry groups solicited for input. A copy of this record is available to the general public by contacting the Tollway Environmental Unit at environment@getipass.com or (630) 241-6800 ext. 4872.

8. Annually, the ACEC-IL hosts the Tollway Design & Construction Practices Workshop. The workshop is attended primarily by design and construction engineers that are involved with Tollway projects, although any member of the public may attend through a paid registration. Attendees review the updates to the Tollway design and construction standards and are encouraged to bring ideas on how the Tollway can improve and innovate. The 2021 annual workshop was held in May, in a virtual meeting format. Copies of all presentations, including stormwater related subjects (Environmental, Erosion Control, Drainage, and Landscape), will be made available to the attendees through ACEC-IL. Copies of the presentations will be available to the general public by contacting the Tollway Environmental Unit at environment@getipass.com or (630) 241-6800 ext. 4872.

C. Illicit Discharge Detection and Elimination

The Tollway is continuing its approach for long-term surveillance of outfalls and stormwater conveyances, to identify and eliminate illicit discharges. A summary of the illicit discharges that occurred within the Tollway MS4 area during the March 2021 to March 2022 reporting period is provided in Appendix D. The Tollway conducts two different types of inspections which include illicit discharge detection as follows:

- The Tollway conducts an Annual Inspection Program for roadways, structures, facilities, and safety appurtenances. As part of this program, the entire Tollway system has its pavement, right-of-way, drainage, lighting, intelligent transportation system (ITS), bridges, culverts, and safety appurtenances inspected each year. Inspections are conducted by trained inspectors and include an examination of ditches and embankments for signs of erosion, drainage structures for structural integrity, and conditions of stormwater management ponds. When potential concerns are noted, they are

documented, assessed, discussed among staff, and possible solutions are presented for response by the respective Tollway Maintenance Manager, with a level of priority assigned. Additional details on this inspection program were provided in the 2021 MS4 Permit application. During these routine inspections, the inspectors are also required to report the presence of any indicators of potential illicit discharges.

- The Tollway's roadway system has been subdivided into five sections for the purpose of inspecting stormwater outfalls for potential illicit discharges. Each year, one of the sections has every outfall to Waters of the U.S. within its boundaries inspected. In addition, designated sensitive outfalls (determined based on stream impairments, TMDLs, watershed plans, sensitive adjacent ecosystems, and adjacent threatened or endangered species) throughout the entire Tollway MS4 area, are each inspected annually. The inspections are performed to identify any evidence of illicit discharges, as well as note existing conditions of the outfall and stormwater quality as it enters and exits the Tollway right-of-way. The inspections look for unusual colors, odors, turbidity, trash/debris, sheens, biological oddities, and other similar indicators of illicit discharges.

In addition to the above, the Tollway currently has twelve (12) Maintenance Facilities located throughout the Tollway system. Staff from the Maintenance Facilities are responsible for mowing, snow removal, maintenance of the roadway and adjacent right-of-way, and patrolling the system daily for defects that may adversely affect the structure of the road, adjacent property, the environment, or public safety. As part of their daily work activities, Maintenance Facility staff have been trained in the identification of illicit discharges.

The Tollway has developed a protocol and trained appropriate staff for the reporting of illicit discharges that occur within the Tollway right-of-way. The individual who notes a suspected illicit discharge completes an Illicit Discharge Notification Form, and the Tollway's Environmental Unit is advised of the issue. The Environmental Unit then conducts further investigation to determine the source and nature of the discharge, and determines if the suspected discharge has left Tollway right-of-way or has been discharged to Waters of the U.S. If it is determined that an illicit discharge has occurred which may endanger human health or the environment, the IEPA is notified verbally within 24 hours and a written 5-Day Report is submitted (unless waived by the IEPA). Illicit discharges are also reported to the IEPA in the MS4 Annual Report.

If it is determined that an illicit discharge has occurred within the Tollway right-of-way, or an area needs further inspections in order to determine if an illicit discharge has occurred, the incident/location is logged into a database that tracks "Special Issues". Each incident/location is given a log number, details of the incident are logged into the database, and a Tollway staff member is assigned responsibility for the incident. Recommended actions, such as follow-up inspections and any other appropriate response actions, are recorded in the database. After the source of any illicit discharge is identified and remedial actions are implemented to eliminate the discharge and prevent further occurrences, the database is updated, and the incident is closed. In

this manner, the Tollway can ensure that illicit discharges are responded to, and that appropriate corrective action is taken.

The Tollway complies with the ILR40 Permit Standard Conditions (Attachment H of the permit) to respond verbally within 24 hours of identifying an illicit discharge and submittal of any required written 5-Day Reports. The 24-hour verbal notice and 5-Day Report are provided after a suspected illicit discharge is investigated, and the Tollway has determined that an actual illicit discharge has occurred.

If it is determined that the illicit discharge within the Tollway right-of-way was caused by an entity other than the Tollway, corrective action is implemented by the responsible party. If the response by the responsible party is inadequate, the Tollway will request one of its approved contractors to respond at the responsible party's expense, including a potential fine for failure to institute appropriate corrective action.

2021- 2022 Compliance with Permit Conditions:

a. Update Storm Sewer System Mapping (BMP No. C.1)

A comprehensive map of the entire Tollway stormwater management system was completed during the five-year period of the original March 2003 General Permit No. ILR400494. Stream crossings, outfalls, ditches/swales, and flow direction were identified on those maps. Remapping of the systemwide stormwater maps began in 2010 with the Tollway having completed most of the re-mapping by 2015. Subsequently, mapping of the stormwater system for the new Elgin-O'Hare Tollway, from mileposts 6.0 to 15.8, commenced and was completed in 2017, following construction of this section. Sewer system mapping will continue over the coming years as the remaining section of the Elgin-O'Hare (IL-390) and I-490 Tollway is completed.

The Tollway's systemwide storm sewer mapping has one-fifth of its system re-evaluated on a yearly basis to determine if stormwater management information is still current. This occurs as part of the Tollway's Annual NPDES Outfall Inspection Program. In addition, the Tollway examines those projects that have occurred since the previous review to determine which segments of the roadway have had significant construction; areas with significant construction are re-mapped. Using both of these methods, the systemwide storm sewer maps are maintained and regularly updated.

The Tollway's asset management system includes all Tollway outfalls, all Waters of the U.S., impaired waters, watershed plans areas, sensitive adjacent land uses (wetlands, high quality aquatic resources, Natural Areas Inventory sites, and threatened or endangered species), watershed boundaries, and other pertinent information that allows for appropriate decision making regarding stormwater management. This database continues to be developed and will eventually include all Tollway stormwater management components (detention ponds, culverts, drainage components, etc.) which will enable the Tollway to more efficiently manage its stormwater management system.

b. Illicit Discharge Inspections and Visual Dry-Weather Screening (BMP No. C.3)

The Tollway conducts annual inspections on the roadway system, including pavement, right-of-way, drainage, structures, lighting and ITS, and safety appurtenances. During these inspections, the inspectors are required to report the presence of any indicators of potential illicit discharges. The routine roadway system inspections, completed during the March 2021 to March 2022 reporting period, did not identify any evidence of illicit discharges. Similarly, the annual outfall inspections, completed during the March 2021 to March 2022 reporting period, did not identify any potential illicit discharges.

Although the routine inspections did not identify any illicit discharges that originated within the Tollway MS4 area, on October 1, 2021 a brown liquid observed near a downspout area at the new M-8 facility was investigated but determined to be water from a fire suppression line. Another spill occurred on April 9, 2021 involving diesel fuel. The fuel was contained within the Tollway property and was stabilized with oil dry. Booms were installed in the ditch line and subsequently removed by a hired contractor. A third spill occurred on July 23, 2021 when approximately 250 gallons of diesel fuel spilled following collision of two semi trucks. The fuels was contained in a ditch line and contaminated soil removed. A summary of the illicit discharges that occurred within the Tollway MS4 area during the March 2021 to March 2022 reporting period is provided in Appendix D.

D. Construction Site Stormwater Runoff Control

The Tollway's *Drainage Design Manual* and the *Erosion Control Landscape Manual* are integral to the construction site stormwater runoff control process. These manuals stipulate state-of-the-art procedures for erosion and sediment control and drainage design. They incorporate elements of the *Urban Manual* and provide checklists to be used during project design plan preparation. In addition, the Tollway has developed and maintains additional manuals to support implementation of the Stormwater Management Program, including the *Drainage Design Manual* and *Construction Manager's Manual*. All of these documents contain coordination and checkpoints that involve the review of plans and ensure the implementation of practices for stormwater protection. These documents also ensure that program involvement occurs from concept to final design and throughout the construction and post-construction processes. Refer to Appendix E for a list of construction projects which were completed during the March 2021 to March 2022 reporting period and a NOT was filed with the IEPA.

Erosion and Sediment Control Plans (ESCPs) are reviewed during the various design stages of construction projects. The plans are reviewed by members of the design team, including review and approval by a Licensed Professional Engineer. These plans are also reviewed during development by Tollway staff, the Tollway's General Engineering Consultant (GEC), as well as qualified Independent Soil and Erosion Sediment Control (SESC) Inspectors prior to construction.

The Tollway has a policy that requires erosion and sediment control be discussed with the Contractors on several occasions prior to construction. The Pre-Bid Meeting includes a discussion on the requirements as well as two Pre-Construction Meetings, one of which is solely dedicated to the review of the project SWPPP. Pre-Construction Meetings are required according to the *Construction Manager's Manual* and the *Erosion Control and Landscape Manual*. The Erosion Control Pre-Construction Meeting is required to be attended by the Design Engineer, the Construction Manager (CM), a member of the Tollway Environmental Unit, the Contractor's Erosion and Sediment Control Manager (ESCM), and the Contractor's Erosion/Landscape Subcontractor. Staging, construction techniques, sediment and erosion control methods and installation, inspections, maintenance, and project documentation are among the items that are reviewed and discussed at each Erosion Control Pre-Construction Meeting.

All Tollway construction projects that disturb one acre of land or more are required to develop a project-specific SWPPP. The SWPPP is contained within the Tollway's Special Provision (S.P.) 111 of the construction documents. The requirements of S.P. 111 include the identification of potential sources of stormwater pollutants, description of pollutant mitigation, operational activities, physical controls, and a description of pollutant monitoring that will be used to prevent the discharge of pollutants into the Waters of the U.S. for the duration of a construction project.

In addition to the NPDES Permit No. ILR10 and ILR40 requirements, the Tollway's *Drainage Design Manual* and the *Erosion Control and Landscape Manual* require the SWPPP to address concrete fines from construction projects, utilizing recycled concrete, and also requires the Contractor's ESCM to have successfully completed an approved sediment and erosion control training course. Additionally, the Tollway's *Erosion Control and Landscape Manual* includes requirements that natural buffers be maintained around surface waters, soil compaction be minimized, and topsoil be preserved unless infeasible.

All construction work is subject to regular erosion and sediment control inspections. This is accomplished through the CM's designated Erosion and Sediment Control Site Representative (ESCSR). The CM's designated ESCSR confirms that the SWPPP is being adhered to and performs erosion and sediment control inspections as required by General NPDES Permit No. ILR10. In addition, the Tollway retains the services of a third-party consultant to aid the Environmental Unit staff in monitoring compliance of large projects and projects with a Section 404 permit issued by the USACE. The primary objectives of the independent inspection program are to:

- Ensure conformance of the inspection and record-keeping program implemented by the Tollway CM with the ILR10 permit conditions;

- Ensure the proper and timely installation and maintenance of the controls specified in the ESCP and SWPPP, including any amendments;

- Ensure the effectiveness of the SWPPP and ESCP in controlling erosion and stormwater pollution, including off-site discharges; and

- Provide recommendations to address identified deficiencies and potential non-compliance issues.

Documentation of erosion and sediment control inspections on a weekly basis, as well as following 0.5-inch precipitation events, are required by the ESCSR. These inspections are documented on a Tollway-specific form (A-38 Form). If the inspections identify any erosion and sediment control deficiencies, the Contractor is instructed to make repairs and a timeframe for resolution is specified. If repairs are not satisfactorily made, a non-conformance report is issued to the Contractor. Non-compliance with the SWPPP can include penalties as described in Tollway Supplemental Specification Article 280.02(b) which can range from $200 to $25,000 per 24-hour period, depending on severity. Additionally, the Tollway Supplemental Specification Article 280.02(b) includes fines of $25,000 per 24-hour period, should the Contractor not respond to requests from regulatory agencies.

If any inspection identifies the release of pollutants from the project to Waters of the U.S., either due to a rainfall event that exceeds the erosion and sediment control design capacity, or due to improperly installed/maintained erosion and sediment controls, the Contractor is required to initiate immediate corrective action. In addition, an Incidence of Non-Compliance (ION) report is prepared and submitted to the IEPA.

The Tollway requires all NPDES documentation be maintained in the e-Builder filing system. This system also makes all project-specific stormwater documents available to all assigned project staff.

Once construction of a project is complete, a final inspection occurs to determine that all "punch list" items have been satisfactorily addressed (including any items related to drainage, erosion control, and landscaping) and that the project has been completed to the satisfaction of the Tollway.

Article 104.06 of the Tollway Supplemental Specifications describes the removal and disposal of waste materials from construction sites, including the restoration of the work area. The right-of-way, stream channels and banks within the right-of-way or affected by the work at drainage structures, borrow pits, other structures, and all areas occupied by the Contractor in connection with the work are required to be cleaned of all rubbish, excess materials, false work, temporary paving, temporary structures, and equipment. If at any time an unknown hazardous waste product is discovered, the Contractor must control access to the site, take immediate steps to prevent migration of waste off-site, and have the material removed by a licensed contractor.

2020-2021 Compliance with Permit Conditions:

a. Regulatory Control Program (BMP No. D.1)

1. All projects under construction during the March 2021 to March 2022 reporting period with one acre or more disturbed area have the required NPDES documentation based on an audit of the e-Builder filing system.

2. All projects with ILR10 permit coverage have a Notice of Termination (NOT) filed post-construction following attaining a minimum 70 percent uniform vegetative cover over the area of disturbance. Refer to Appendix E for a list of construction projects which were completed during the March 2021 to March 2022 reporting period and an NOT was filed with the IEPA.

3. Copies of NOI and SWPPP documents for current Tollway construction projects are provided on the Tollway's website and are available as recorded through the on-line NPDES eReporting Tool (NeT).

4. A copy of this Annual NPDES Report will be placed on the Tollway website.

b. *Erosion and Sediment Control BMPs (BMP No. D.2)*

1. The Tollway has updated its *Erosion Control and Landscape Manual* and Erosion and Sediment Control Standard Drawings. The updated manual and standard drawings were issued in March 2022.

2. For each construction project with greater than one acre of land disturbing activities, inspections of erosion and sediment control Best Management Practices (BMPs) by the CM and Contractor are required on a weekly basis as well as after a 0.5" rainfall event. An audit was conducted on the Tollway's e-Builder filing system for the March 2021 to March 2022 reporting period. Regular inspections were demonstrated by the filed A-38 Forms. When an erosion or sediment control BMP requires maintenance or replacement, the Contractor is advised to take corrective action. The BMP maintenance needs and timeframe for repairs are identified on the A-38 Forms. An audit of the filed A-38 Forms for the period from March 2021 to March 2022 confirmed the implementation of required BMP maintenance activities.

3. The Tollway continues to utilize a team of qualified Independent SESC Inspectors to inspect the various construction projects for erosion and sediment control and NPDES requirements. A kick-off meeting/training session with the Independent SESC Inspection team was conducted in March 2022 to review the key changes to the ILR10 permit conditions, the March2021 *Erosion Control and Landscape Manual*, and to discuss the procedures for implementation of the inspection program. Refer to Appendix E for a

record of Independent SESC Inspector assignments for the March 1 to March 2022 reporting period.

c. Other Waste Control Programs (BMP No. D.3)

1. Waste removal and restoration of the work area upon completion of the work is ensured through the completion of final inspection and development of Punch Lists. Refer to Appendix E for projects during the March 2021 to March 2022 reporting period that were finalized and have punch lists documenting that restoration has occurred.

d. Site Plan Review Procedures (BMP No. D.4)

1. A review of Erosion and Sediment Control Plans on e-Builder for projects active during the March 2021 to March 2022 reporting period indicates each plan was approved by a Licensed Professional Engineer. Documentation of plan reviews completed by Tollway staff and the Tollway's General Engineering Consultant are filed in e-Builder.

2. A review of e-Builder determined that Pre-Construction and Erosion Control Pre-Construction Meetings discussing NPDES requirements were conducted for projects resulting in one acre or more of disturbance. Refer to Appendix E for a record of meetings that occurred during the March 2021 to March 2022 reporting period.

e. Site Inspection/Enforcement Procedures (BMP No. D.6)

1. Inspection of construction sites, and proper documentation of erosion and sediment control items, are required on a weekly basis, as well as after a 0.5" rainfall event. The A-38 Form is required to be completed for each inspection and filed within the Tollway's electronic project files (e-Builder). Review of inspection records confirm the completion of weekly and precipitation inspections. When any erosion and sediment control failures or maintenance needs are noted, the Contractor is advised to take corrective action. Follow-up inspections are performed to confirm that corrective actions were taken. In instances when erosion and sediment control failures or maintenance issues are not addressed, a non-conformance report is issued which may include an assessment of fines against the Contractor. Refer to Appendix E for a record of compliance with inspection requirements for the March 2021 to March 2022 reporting period.

   There were nineteen (19) IONs issued on construction projects during the March 2020 to March 2021 reporting period. Corrective actions were taken on all erosion/sediment control failures and reports of the incidents were submitted to the IEPA. Refer to Tollway Environmental for a record of projects where an ION had occurred and was reported to IEPA.
2. A final inspection following all construction projects is required to confirm that all prior punch list items have been satisfactorily addressed, and that the project is acceptable to the Tollway. This inspection confirms that temporary erosion and sediment control

BMPs have been removed, the project area is not experiencing any erosion, and all construction waste has been removed. Refer to Appendix E for a record of contracts which were completed during the March 2021 to March 2022 reporting period, and have completed punch lists.

E. Post-Construction Stormwater Management

The Tollway implements structural and non-structural BMPs for post-construction projects to reduce the discharge of pollutants and the volume and velocity of stormwater flow to the maximum extent practicable.

The Tollway's primary method for post-construction control is through the required use of the *Drainage Design Criteria Manual*, the *Erosion Control and Landscape Manual,* and the Annual Inspection Program. These manuals require a drainage design that improves water quality and reduces the volume and velocity of stormwater flow.

The Tollway's *Drainage Design Criteria Manual* and the *Erosion Control and Landscape Manual* have been amended to instruct design engineers to design stormwater plans that ensure natural features are preserved, including natural storage and infiltration characteristics, preserve existing natural streams, convey stormwater in open vegetated channels, and construct structures that provide both quantity and quality control (in order of preference).

As part of the Annual Inspection Program, all drainage structures and stormwater management components are inspected, recommendations for needed repairs or maintenance are made, priorities are set for each non-conforming item, and work orders are generated for repairs. This process is facilitated through the use of an asset management software program. This software program records documentation of existing conditions through the use of drop-down menus, stores photographs taken, provides standard repair methods through drop down menus and provides for notes. Upon completion of the inspections, the software generates a report which is forwarded to the appropriate entities for the development of work orders for the Maintenance Facilities or for generating contract documents.

The Tollway's roadway design criteria require that the 50-year storm event not exceed stormwater elevations less than three feet below the edge of pavement, and that the edge of pavement will not be overtopped for a 500-year storm event. These criteria are more stringent than those followed by other transportation agencies. These criteria also provide an additional factor of safety with respect to potential increases in precipitation due to climate change.

Other stormwater components that accommodate climate change are the Tollway's design for detention basins and storm sewers. Tollway detention basins are designed to have a minimum of two feet of freeboard to the top of berm, making the basins amendable to allowing additional detention storage with a minor adjustment to the overflow and outlet control structures. Storm sewers are designed to accommodate a 50-year storm event, as compared to the regional standard

of a 5 or 10-year storm event. Thus, additional conveyance provided beyond the regional standard is already accommodated, providing a design factor of safety with respect to potential climate change impacts.

The rainfall data used by the Tollway is contained within Bulletin 70, which was published in 1989. Since then, the National Ocean and Atmospheric Administration has published Atlas 14, which in general has reduced the 100-year rainfall rate in this region as compared to Bulletin 70. The Tollway continues to utilize Bulletin 70 for precipitation data, as it is more conservative resulting in more stormwater storage that can accommodate climate change, as compared to using Atlas 14.

The Tollway has developed and implemented a program to minimize the volume of stormwater runoff and pollutants from its roadways. This program is composed of multiple components, including the bioswale program, the chloride reduction program, and annual training.

As discussed in Section II.B of this report, State Chloride Standards, the Tollway collects weather data via a contracted professional meteorological service, pavement sensors, and weather sensors on bridges to determine the level of deicing needed, which may vary across the system, in order to effectively control roadway conditions while minimizing the use of chlorides. The Tollway has a regularly scheduled system-wide roadway surface sweeping program for pollution control, as well as aesthetics.

2021- 2022 Compliance with Permit Conditions:

a. Regulatory Control Program (BMP No. E.2)

1. The March 2021 to March 2022 Annual Outfall Inspection Program identified no illicit discharges at the inspected outfalls.

b. Long Term O & M Procedures (BMP No. E.3)

1. The Tollway continues to implement its roadway sweeping and drainage system cleaning program. Solids removed from the roadway by Tollway maintenance staff are stored at the respective maintenance facility and properly disposed off-site by an outside contractor. The roadway sweepings are disposed of on a regular basis, depending on the quantity of accumulated material. Catch basins and other drainage system components are subject to periodic cleaning by outside contractors. Material removed from the cleaning operations are properly disposed of off-site.

2. The Tollway continually reviews its application rate of rock salt with respect to roadway conditions and storm severity. In general, an average application rate setting of 300 pounds per lane mile is used, but rates ranging between 100-500 pounds per lane mile are also used depending on the severity and duration of the storm, and traffic and road conditions.

3. The Tollway has two mobile brine making systems and liquid storage tanks at each Maintenance Facility that provide all maintenance yards the ability to pre-wet rock salt prior to use. Pre-wetting reduces the bounce (and therefore scatter) of rock salt that can reduce the amount of rock salt needed to effectively treat the road surface by up to 25%. Pre-wetting also 'jump starts' the dissolving of rock salt, which results in more rapid deicing and is used when temperatures are below 20-15 degrees (F) to break up snow/ice.

4. The Tollway also utilizes a liquid brine solution to provide greater ability to manage the roadway system under adverse conditions for which standard management practices are not effective, such as but not limited to, sub 15° Fahrenheit air and pavement temperatures, which reduces reliance on rock salt.

5. The Tollway has contracted with a professional meteorological service, Weather Command, a private forecasting company that provides the Tollway with location specific predictions and conditions. Accurate weather information helps maintenance personnel better prepare a plan for deicing activities for each pending storm event. Pavement sensors strategically located along the 294 miles of the Tollway monitor pavement conditions in real time to better facilitate more efficient and targeted application of deicing substances.

6. The Tollway conducted a study to determine the effectiveness of bioswales to minimize the volume of stormwater runoff and pollutants from public highways. The bioswale program is discussed in detail under BMP No. B.1. Based on this five-year study, it is known that bioswales reduce turbidity (a measure of TDS) by 35 to 76 percent, specific conductivity (a measure of TTS and chlorides) by 23 to 97 percent, up to 30 percent of the stormwater by volume, and up to 71 percent reduction in roadway metals of interest. Based on this study, the Tollway has developed standard drawings for bioswales and is preferentially installing them where possible. Bioswales have been installed as part of the ongoing construction of the Elgin-O'Hare Tollway (IL-390), and are also being considering in the planning and design for the new I-490 project.

7. Annual training for Tollway employees, in particular those employees that work at the Maintenance Facilities and are responsible for maintaining the roadways, began in 2016. The training program includes topics related to stormwater pollution reduction, operations of storage yards, deicing material handling and use, proper disposal of street cleaning debris, proper storage of erodible material, green infrastructure (primarily the maintenance and repairs of bioswales and wetland detention ponds), aquatic habitat, management of pesticides and fertilizers, erosion and sediment control, ditch maintenance, etc. Representatives from each maintenance section attended the annual winter meetings in October 2021 to obtain training on the use of materials for deicing. Additionally, the Maintenance Section Manager and/or Supervisor who participated in the 2021 Annual Maintenance Facility SWPPP Inspections were provided with real-time

training on stormwater pollution reduction, operations of storage yards, deicing material handling, storage and disposal of street cleaning debris, and storage of erodible material.

8. The Tollway's policy for material and runoff control at fueling stations and storage facilities requires that all Maintenance Facilities have absorbent materials (Oil Dry®) on-site and available during all shifts for any spills that may occur. Additionally, the Tollway Help Trucks, which help drivers who have requested roadside assistance, have sand, No Flash® (for gasoline spills), BioSolve® (for diesel spills), and absorbing pillows.

c. Pre-Construction Review of BMP Designs (BMP No. E.4)

1. A review of e-Builder determined that Pre-Construction and Erosion Control Pre-Construction Meetings discussing NPDES requirements were conducted for projects that would result in one acre or more of disturbance. Refer to Appendix E for a record of meetings that occurred during the March 2021 to March 2022 reporting period.

2. The rehabilitation of the central portion of the Tri-State Tollway (I-294) is currently under construction, and several advanced contracts began construction in 2022. The early design efforts are utilizing the Tollway's INVEST program to generate design items that enhance sustainability. Among other initiatives, the Central Tri-State Program is incorporating stormwater storage that can accommodate increased stormwater volume that may occur as a result of climate change. In particular, the Central Tri-State Program is designing stormwater storage for 100-year storm events, which exceed current regional stormwater storage design requirements.

3. Permanent stormwater BMPs have been incorporated into the recently completed widening of the Jane Addams Memorial Tollway (I-90) and the on-going construction of the Elgin-O'Hare Tollway (IL-390). Because the reconstruction/construction of these facilities results in an increase in the amount of impervious surface in their respective watersheds, the Tollway is constructing extensive stormwater management features to improve water quality prior to discharging it to downstream waterways by maximizing stormwater filtering and infiltration. The intent, to the extent possible, is to pass all stormwater through at least one BMP prior to discharging from the Tollway right-of-way. In most cases, stormwater will pass through several BMPs, aligned as a treatment train, to capture pollutants and promote infiltration of runoff.

d. Site Inspections During Construction (BMP No. E.5)

1. During the March 2021 to March 2022 reporting period, erosion and sediment control inspections were conducted at all construction projects that disturbed one acre or more of land. Documentation has been filed in the Tollway's electronic files (e-Builder). Refer to Appendix E for a record of construction projects with completed A-38 Forms.

2. Post Construction Inspections (BMP No. E.6)

1. A punch list is prepared near the end of a construction project listing work not conforming to contract specifications that the Contractor must complete prior to final payment. A final inspection occurs to determine that all punch list items have been satisfactorily addressed (including any items related to drainage, erosion control, and landscaping) and that the project has been completed to the satisfaction of the Tollway. Refer to Appendix E for a list of construction projects which were completed during the March 2021 to March 2022 reporting period and have had completed punch lists and NOTs filed with the IEPA.

F. Pollution Prevention/Good Housekeeping

The ILR40 Permit requires annual training for operations and maintenance staff and contractors as discussed in General NPDES Permit No. ILR40, Part IV.5. Maintenance Facility staff are trained annually, as well as contractors, in conjunction with the annual updates of the Tollway's *Erosion Control and Landscape Manual* and Erosion and Sediment Control Standard Drawings. Additionally, Maintenance Facility staff are provided with annual training on various pollution prevention and good housekeeping topics.

The Tollway Maintenance Facilities minimize the discharge of pollutants to stormwater in a variety of ways. Vehicle washing currently occurs within the maintenance buildings, with wash water discharged to sanitary sewers. New Tollway Maintenance Facilities are being designed with stand-alone vehicle washing buildings. Erodible material stockpiles, such as street sweepings or asphalt grindings, are managed outdoors, but in a manner that minimizes the material entering the storm sewers. These stockpiles are inspected annually as part of the SWPPP inspections to confirm that material is not being released to outside of the right-of-way, or to Waters of the U.S. Deicing material is stored in a permanent structure, and other chemicals, herbicides, and pesticides are stored inside the Maintenance Facilities. All flammable or reactive chemicals are stored in a metal fire safe locker. The annual SWPPP inspections undertaken at each Maintenance Facility confirm that these chemicals are stored appropriately.

As recommended by the IEPA in 2010, a stormwater pollution prevention plan (SWPPP) for the Tollway's Maintenance Facilities was prepared in 2012 in general accordance with the requirements of the IEPA National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Industrial Activities, Permit No. ILR00. Per the SWPPP, inspections occur annually, reports are generated, and recommendations for corrective actions made.

The SWPPP established a Pollution Prevention Team, an inventory of potential pollutants with an assessment of risk of exposure to stormwater, a set of preventive maintenance and mitigative measures for controlling pollution via stormwater, elimination of any non-stormwater discharges into the stormwater system, an employee training program, and an inspection and record-keeping

process. In compliance with the SWPPP, the Tollway's Maintenance Facilities are formally inspected annually by the Tollway GEC, accompanied by the Facility Manager for each facility. The annual comprehensive site inspection and evaluation is performed during dry weather to evaluate the effectiveness and adequacy of the requirements contained within the SWPPP. Inspections verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate and that the BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained.

2021- 2022 Compliance with Permit Conditions:

a. Employee Training Program (BMP No. F.1)

1. Tollway employees charged with pesticide spraying are licensed for proper rate and location applications. The Tollway maintains NPDES Permit No. ILG870228 for the application of pesticides. The Tollway's use of pesticides remains below the threshold that requires recordkeeping and annual reporting related to the pesticide permit.

2. The Tollway updated its *Erosion Control and Landscape Manual* and *Drainage Design Manual* in March 2022. In support of these releases, the Tollway conducted a training session in August 2022 for Tollway employees, Design Engineers, and Construction Managers who work on Tollway projects. This training session also highlighted the latest BMP technologies supported by the Tollway.

   Representatives from each maintenance section attended the annual winter meetings in October 2021 to obtain training on the use of materials for deicing. In addition, the Maintenance Section Manager and/or Supervisor who participated in the 2021 Annual Maintenance Facility SWPPP Inspections completed in June 2021 were provided with real-time training on stormwater pollution reduction, operations of storage yards, deicing material handling, storage and disposal of street cleaning debris, and storage of erodible material.

b. Inspection and Maintenance Program

1. The Tollway continues to implement its annual inspection and maintenance program for its maintenance facilities in accordance with the Maintenance Facility SWPPP. The annual inspections of the Tollway Maintenance Facilities occurred during the reporting period in June 2021. Reports were generated and recommendations for corrective measures or other actions were provided to the Maintenance Facilities. A summary report, including individual reports for each facility, can be found in Appendix F.

2. In addition to the above annual inspections, routine inspections are conducted by facility personnel on a daily basis during their regular work duties.

c. Municipal Operations Storm Water Control

1. The Tollway continues to implement its annual inspection and maintenance program for its maintenance facilities in accordance with the Maintenance Facility SWPPP. The annual inspections of the Tollway Maintenance Facilities occurred during the reporting period in June 2021. Reports were generated and recommendations for corrective measures or other actions were provided to the Maintenance Facilities. A summary report, including individual reports for each facility, can be found in Appendix F.

2. All construction projects that began during the March 2021 to March 2022 reporting period have been reviewed for conformance with the stormwater control regulations required by the Tollway's *Drainage Design Manual*.

3. The Tollway is continuing a program to reduce the use of chlorides system-wide, based on recommendations made by Dr. Wilfred Nixon. Refer to Section II.B for a complete description.

4. The Tollway had undertaken a study to determine the effectiveness of treating stormwater from roadway runoff through the use of bioswales (Refer to Section III.A). Results indicate that bioswales can be very effective at treating stormwater runoff, and the Tollway developed standards for bioswale construction. These standards are being used for the ongoing construction of the Elgin-O'Hare Tollway (IL-390) and are being incorporated into designs for the new I-490 Tollway.

5. The Tollway is continuing to implement the provision of its *Waste Management Manual* which was updated in 2016. New practices and procedures include: vehicle wash water is not allowed to infiltrate into the ground, salt storage occurs only in permanent structures, salt loading/unloading is performed to minimize the potential contact with stormwater, salt loading areas are located away from storm drains to the furthest extent possible, and spilled salt is returned to the salt dome in a timely manner.

6. The Tollway is continuing construction of the Elgin-O'Hare Tollway (IL-390), which will provide transportation improvements in the vicinity of O'Hare International Airport. In order to reduce chloride loads to the Des Plaines River drainage basin, IGAs have been developed to assist the surrounding communities in reducing the amount of de-icing salt that is used. Refer to Section II.B for a complete description.

7. The Tollway is a member of the DuPage River Salt Creek Workgroup (DRSCW) and participates in its meetings and activities. The DRSCW has a robust chloride reduction program in which the Tollway participates. Refer to Appendix B which itemizes activities that took place during the March 2021 to March 2022 reporting year.

d. Municipal Operations Waste Control

1. The Tollway Maintenance Facilities inspections include assessment of waste handling and management practices to identify conditions or practices that could potentially result

in impacts to stormwater or result in an illicit discharge. The inspections also include assessment of drainage ditches and stormwater outlets for evidence of illicit discharges, including those which may be the result of improper waste management practices. The annual inspections of the Tollway's Maintenance Facilities occurred in June. Reports were generated and recommendations for corrective measures or other actions, including those pertaining to waste control, were provided to the Maintenance Facilities. A summary report, including individual reports for each facility, can be found in Appendix F.

2. Hazardous and other regulated wastes and materials are removed from Maintenance Facilities by private contractors authorized and licensed to handle and dispose of such materials, including, but not limited to, used motor oil, paints, cleaning solvents, used antifreeze, and used batteries. Waste management policies remain in place, with waste materials removed from Maintenance Facilities on a regular basis, generally once every 30 to 60 days.

IV. Monitoring, Recordkeeping, and Reporting

A. Monitoring

The Tollway has developed a monitoring program that assesses the effectiveness of its BMPs while not creating an unnecessary burden on its manpower and cost. Because the Tollway's system covers 294 miles, an annual inspection of every outfall is impractical. Thus, the Tollway has divided its system into fifths, with one-fifth of the system inspected every year. Utilizing this method, the entire Tollway system is inspected every five years.

The Tollway has identified seven (7) percent of its outfalls are determined to be sensitive; these outfalls are inspected annually. The sensitive outfalls were identified through a process where all of the Tollway's outfalls were mapped in an asset management system along with parameters that would indicate the sensitivity of an outfall. These sensitivity parameters included impaired waters, waters with TMDLs, waters with approved watershed plans, waters adjacent to Natural Areas Inventory or Nature Preserve sites, waters adjacent to county forest preserve units, waters adjacent to National Wetland Inventory wetlands, and waters identified as Biologically Significant or given a rating of A or B for diversity or integrity. Using the asset management system, each sensitivity parameter was given a score of 1 and sensitivity parameters were added together to identify outfalls with the highest scores. For simplicity's sake, each sensitivity parameter was given equal importance in determining the sensitive outfalls, although some adjustments of the sensitivity parameter score were made based on distance from the Tollway right-of-way.

In addition to the two outfall inspection programs discussed above, the Tollway has also conducted an evaluation of the effectiveness of its BMPs. By supplementing its monitoring program with effectiveness evaluations, the Tollway is confident that its monitoring program is an accurate evaluation of the effectiveness of its BMPs.

1. Evaluation of the Effectiveness of BMPs Based on Research

The BMPs utilized by the Tollway for stormwater management have been determined to be effective based on monitoring and scientific studies, including the Tollway's bioswale study (discussed in the section discussing General NPDES Permit No. ILR40, Part IV.B.1). Additionally, the design criteria contained in the Tollway's *Erosion Control and Landscape Manual*, the Tollway's *Drainage Design Manual,* and the *Urban Manual,* which are required for Tollway projects, are based on rigorous testing requirements and have been inspected and determined to be effective under actual field and operational conditions.

The Tollway utilizes three primary BMPs to maintain water quality - naturalized detention ponds, vegetated roadside ditches, and bioswales. These BMPs provide water quality improvements by slowing runoff to facilitate the settlement of sediments, promote infiltration, filter pollutants, and allow for vegetative uptake of pollutants. The Tollway's stormwater basins and bioswales have been inventoried and incorporated into the Tollway's asset management

system. Additional bioswales are being incorporated into construction of the Elgin- O'Hare Tollway (IL-390) and new I-490 Tollway, and these locations will be included in the inventory upon completion of their construction.

Stormwater pollutants most often associated with highways include TSS, TDS, chlorides, and heavy metals (particularly chromium, copper, lead, nickel, and zinc). The Tollway has researched the ability of its BMPs to reduce impacts from roadways related to these parameters in its stormwater runoff. The table below summarizes this research.

Evaluation of BMPs Estimated Effectiveness (Based on Published Research)

BMP	Pollutant	Effectiveness	Resource
Vegetated Channels/ Ditches	TSS	Removal effectiveness of vegetated medians and filter strips for suspended solids is 65 to 70 percent	Barrett, Michael E., Patrick Walsh, Joseph Walsh, Randall Charbeneau (1998). *Performance of Vegetative Controls for Treating Highway Runoff* (Online) Available at: http://ascelibrary.org/doi/pdf/10.1061/(ASCE)0733-9372(1998)124:11(1121)
	Heavy metals and TSS	Retained in soil within ditches, proportional to amount of TSS is removed. Average TSS removed is 72 percent. Heavy metals removals: copper up to 60 percent, lead up to 90 percent, zinc up to 50 percent	Kearfott, Pamela J., Michael Barrett, Joseph Malina, Jr. (2005) *Stormwater Quality Documentation of Roadside Shoulders Borrow Ditches* (Online) Available at: http://www.texaslid.org/pdfs/Barrett2005_Ditches.pdf
	TSS, metals, hydrocarbons (oil & grease)	Removal efficiency of TSS up to 80 percent; metals, hydrocarbons, oil & grease adsorb to TSS and are removed with TSS	State of Oregon Department of Environmental Quality (2001). *Best Management Practices for Stormwater Discharges Associated with Industrial Activities*

Vegetated Detention Basins		Treats first flush	Pennsylvania Environmental Council (2005). *Improving Stormwater Detention Basins for Better Stormwater Management* (Online) Available at: https://wrrc.arizona.edu/sites/wrrc.arizona.edu/files/Improving%20Stormwater%20Detention%20Basins%20for%20Better%20Stormwater%20Management.pdf
	Heavy metals	Vegetated detention basins remove heavy metals	Hares, R.J., N.I. Ward (1999). *Comparison of the heavy metal content of motorway stormwater following discharge into wet biofiltration and dry detention ponds along the London Orbital (M25) motorway*. Science of the Total Environment, Volume 235, Issue 1-3
	Solids	Detention basins effective at the removal of solids	Ferrara, Raymond, A.M. Asce, and Patrick Witkowski (1983), *Stormwater Quality Characteristics in Detention Basins.* Journal of Environmental Engineering, Volume 109, Issue 2
	TSS	Detention ponds effective at removing pollutants associated with particles but not dissolved	Pettersson, Thomas (1998). *Water quality improvement in a small stormwater detention pond*. Water Science and Technology, Volume 38, Issue 10
	Copper, lead, TSS	Copper and lead removed at 43 to 85 percent efficiency	Revitt, D.M., R.B.E. Shutes, R.H. Jones, M. Forshaw, B. Winter (2004). *The performances of vegetative treatment systems for highway runoff during dry and wet conditions*. Science of the Total Environment, Volumes 334-335
Bioswales	TSS, metals, hydrocarbon	Removal efficiencies: TSS: 83 to 92 percent Lead: 67 percent	State of Oregon Department of Environmental Quality (2001). *Best Management Practices for*

	s (oil & grease)	Copper: 46 percent Zinc and aluminum: 63 percent Oil/grease: 75 percent	*Stormwater Discharges Associated with Industrial Activities*
	TSS	26 to 77 percent efficiency at removing TSS	Groves, William, Phillip Hammer, Karinne Knutsen, Sheila Ryan, Robert Schlipf (1999). Analysis of Bioswale Efficiency for Treating Surface Runoff. (Online) Available at: http://www.bren.ucsb.edu/research/finaldocs/1999/bioswale.pdf
	Turbidity	Turbidity reduced from 35 to 76 percent	Ackerman, Jessica, Colleen Long, Jame Miner, Keith Carr, Kathleen Bryant, Eric Plankell. (2016) *Reductions in Turbidity and Specific Conductivity in Runoff Treated by Bioswales Along I-294 in Northern Cook County,* , State Geological Survey, Prairie Research Institute, University of , Champaign,
	Specific Conductivity (indicative of chlorides)	Specific conductivity reduced 23 to 97 percent	Ackerman, et al (2016)
	Specific Conductivity	Specific conductivity strongly correlated to TSS and chlorides	Ackerman, et al (2016)
	Roadway metals of interest (chromium, copper, lead, nickel, and zinc)	Metals of interest reductions of 71 percent	Plankell, Eric, James Miner (2016) *Total Recoverable Metals in Bioswale Soils Along I-294 in Northern Cook County,* , State Geological Survey, Prairie Research Institute, University of , Champaign,
	Total Metals	Total roadway metals reduced 59 to 81 percent	Plankell, et al (2016)

	TSS	TSS reduced by 63 to 70 percent	Miner, James, Kathleen Bryant, Keith Carr, Jessica Ackerman, Eric Plankell, Colleen Long (2016) *Using Bioswales to Improve the Quality of Roadway Runoff from I-294 in Northern Cook County, ,* State Geological Survey, Prairie Research Institute, University of , Champaign,
	TDS	TDS reduced by 30 to 50 percent	Miner, et al (2016)
	Chloride	Chloride reduced by 33 to 52 percent	Miner, et al (2016)
	Nitrate	Nitrate reduced by 25 percent	Miner, et al (2016)

2. Monitoring the Effectiveness of BMPs

As discussed in the Introduction, the Tollway's inspection program for the protection of stormwater quality and identification of illicit discharges has three key components. These components consist of annual outfall inspections conducted on one-fifth of the Tollway system and all sensitive outfalls, its annual inspection program, and regular inspections by the Tollway Maintenance Staff. Because the Tollway is considered a small MS4, the outfall inspections consist of visual observations of stormwater for color, odor, foam, oil sheens, or other obvious indicators of illicit discharges. The results of the Tollway monitoring program are discussed in Section III of this report.

B. Recordkeeping

The Tollway keeps records of all NPDES documentation, including the MS4 NOI, ILR10 NOIs, SWPPPs, A-38 Forms, IONs, illicit discharges, NOTs, and MS4 Annual Reports for a minimum of five years. The SWPPPs, ILR10 NOI documents, and MS4 Annual Reports are located on the Tollways website. Other NPDES documents are available to the public upon request.

C. Reporting

This document constitutes the March 2021 to March 2022 MS4 Annual Report. A copy of this report will be maintained on the Tollway's website for a period of five years.

D. Stormwater Inspection Activities Planned for 2022

The annual inspection program will be conducted in 2022. These inspections will encompass detection/elimination of illicit discharges including dry-weather screening, identification of water quality issues, erosion and sediment control issues, illegal dumping, and drainage system maintenance issues.

The Tollway will conduct inspections of the stormwater outfalls for detection of non-stormwater discharges and illicit discharges to Waters of the U.S. The inspections will include the annual inspection of the most sensitive outfalls in the system (see Part V, Section A), and one-fifth of the system to ensure that each outfall is inspected at least once during the NPDES MS4 permit cycle. Outfall inspections for 2022 will consist of:

- The most sensitive of the Tollway's outfalls (7 percent of the system)
- One-fifth of the Tollway system.

Annual inspections will occur for all of the Maintenance Facilities and Salt Domes for compliance with the Facility SWPPP.

Construction activities planned for 2022 are summarized in Appendix G. All construction projects that disturb one acre of land or more will be subject to erosion and sediment control inspections in accordance with the ILR10 permit.

The Tollway will continue to update its drainage system mapping as reconstruction and rehabilitation projects are completed, and remaining sections of the Elgin-O'Hare Tollway and the new I-490 are completed.

E. Results of Information Collected and Analyzed

The March 2021 to March 2022 Annual Outfall Inspection Program identified one outfall was observed to have black and red deposits on the concrete slope wall south of M-14 facility. A follow-up inspection was completed and no other physical or sensory indicators of an illicit discharge were observed. Discussions were held with maintenance managers to make sure spills (and absorbent materials) around the fuel kiosk were sufficiently stabilized and cleaned. Particular attention will be paid to this location during the 2022 inspections performed by GEC inspectors.

The Annual Inspection Program did not identify any evidence of illicit discharges.

Erosion and Sediment Control standards, specifications and special provisions were included in all applicable construction contracts.

Storm Water Pollution Prevention Plans and Erosion and Sediment Control Plans were included in all applicable contracts.

Erosion Control Preconstruction Meetings were conducted for all contracts covered by an ILR10 NPDES permit.

Notice of Intent (NOI) forms, Weekly and Post-Precipitation Inspection Reports (A-38 forms), Incidence of Non-Compliance (ION) documents, Notice of Termination (NOT) forms, and Post Construction Punch List documents are filed on the Tollway's e-Builder filing system for all contracts covered by an NPDES permit.

F. Changes to Best Management Practices or Measurable Goals

There were no changes to Best Management Practices or Measurable Goals during the March 2021 to March 2022 reporting period.

G. Reliance on Another Governmental Entity to Satisfy Permit Obligations

The Tollway does not rely on any other government agency to satisfy any of the Tollway's permit obligations under General Permit No. ILR40.