



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

Subj: Inspection Report
Clean Water Act - National Pollutant Discharge Elimination
System ("NPDES")
Connecticut Department of Transportation

From: Andrew Spejewski, Enforcement Officer
Spejewski,
Andrew
Digitally signed by Spejewski,
Andrew
Date: 2022.07.07 10:52:29 -04'00'

Thru: Jack Melcher

To: File

I. Facility Information

- A. Facility Name:* Connecticut Department of Transportation
- B. Facility Location:* 2800 Berlin Turnpike
Newington, CT 06131
- C. Facility Contacts:* Jason Coite
Jason.Coite@ct.gov
- D. NPDES ID No(s):* CTR040001

II. Background Information

- A. Date(s) of inspection:* May 17, 2022
- B. Weather Conditions:* [N/A]
- C. US EPA Representative(s):*
Andrew Spejewski
Jack Melcher
- D. State/Local Representative(s):*
Chris Stone, Connecticut Department of Energy and Environmental Protection
("CT DEEP")
Nicole Kibbe, CT DEEP

E. Federally Enforceable Requirements Covered During the Inspection: The Connecticut General Permit for the Discharge of Stormwater from Department of Transportation Separate Storm Sewer Systems (“MS4 Permit”)

F. Previous Enforcement Actions: No federal actions; no state actions known over MS4 issues.

III. Type and Purpose of Inspection

MS4 Audit

IV. Facility Description

The Connecticut Department of Transportation (“CT DOT” or “DOT”) is the state department managing most transportation infrastructure. See below for more details.

V. Inspection

Note: This report only covers statements during the on-site audit (and follow-up video call); it does not cover documents provided by DOT as part of the audit process or publicly available documents, though both are used as part of EPA’s evaluation of DOT compliance.

Audit process:

EPA contacted DOT to arrange the audit on April 25. At that time EPA requested documents in advance of the audit, and DOT provided documents before the audit.

The audit took place on two days. A full day was in person at the CT DOT offices on May 17, and a one-hour follow-up video call took place on May 20.

May 17, the EPA and DEEP inspectors arrived at the DOT offices at 9:00 AM and met the DOT team.

Present from DOT were:

Jason Coite
Denise Young
Viola Gerveni
Adam Fox
Christine Xenelis
Kevin Carifa
Jeremy Willcox
Daniel Imig

At that meeting EPA inspectors explained the purpose of the audit and presented their credentials.

The group then discussed the CT DOT MS4 program, with a break for lunch, until about 4:00 PM.

During the discussion, DOT showed slides from a prepared presentation, and at times displayed on the screen the DOT system map and various documents

DOT displayed a slide presentation with slides on each of the topics in the agenda. DOT also was able to display on the screen the DOT system map and several files associated with projects.

On May 20 at 11:00, a follow-up video call was held. The same team was present. EPA asked some follow-up questions and gave a closing statement to DOT (detailed below).

Audit:

Except where noted otherwise, the following statements are paraphrased statements by DOT personnel during the May 17 meeting.

DOT General:

DOT owns and operates all state roads, even through downtown areas, but municipalities maintain sidewalks. There are no formal agreements for other entities (e.g. municipalities) to maintain DOT roads or vice versa; there are some agreements for municipalities to maintain parking lots. DOT staff said that University of Connecticut may maintain some roads going through the campus, but there is no formal agreement.

DOT is working on language for agreements regarding town stormwater controls that may affect DOT roads or drainage and vice versa.

DOT explained they have 33 ‘facilities’ not covered by the industrial stormwater or commercial stormwater permits issued by CT DEEP. These facilities included office buildings, small rest areas, a material testing lab and other facilities.

Large rest stops/service plazas have CT commercial stormwater permits; the permittees are the plaza operator companies not DOT.

DOT does not operate any ports: they operate two ferries, but they are very small two-car ferries across the Connecticut River without much infrastructure (more like a small boat launch ramp).

DOT owns rails and some rail facilities but they are generally operated by the railroad operator (e.g. Metro North or Amtrack), and the operator would get permit coverage if necessary. DOT does include stormwater controls when doing construction for rail.

Bike paths are owned and maintained by DEEP, not DOT. Airports have been a separate authority since at least 2015.

EPA said that they had seen several different estimates of total lane miles for DOT, and asked what was most correct. DOT said they thought the Transportation Asset Management Plan, available on-line, would be the most accurate. DOT was unable to immediately confirm what was meant by a line on DOT's website identifying 56 miles of NHS roads in the 'town roads' category; they speculated that it had to do with technicalities in federal definitions of NHS roads

MS4 Program

The SWMP has not been significantly updated. Any changes would be signed by Jason Coite.

Mr. Coite manages Dan Imig, who is the main MS4 coordinator.

DOT has added two goals to the Department's main overall Performance Measures: total DCIA (Directly Connected Impervious Area), and percentage of the system mapped.

Education:

DOT participates in training for municipal staff conducted by the University of Connecticut's Non-point Education for Municipal Officials ("NEMO") program. DOT provides technical information to UConn through the "Technology Transfer ("T2") Center at UConn. For example, DOT has provided information on its "Green Snow" program for environmentally friendly snow and ice management.

DOT sees promoting their mapping schema (i.e., a system for organizing mapping data) as part of education. See discussion of mapping for Illicit Discharge Detection and Elimination, below.

DOT has prepared brochures on stormwater management for distribution at public meetings. Public meetings are primarily held regarding DOT construction projects.

Illicit Discharge Detection and Elimination [IDDE]

Map

DOT is taking a town-by-town approach to mapping its MS4 infrastructure. DOT has prioritized mapping in towns that are subject to the CT Small MS4 permit. DOT maps all of its MS4 infrastructure in each town, without regards to what is an MS4 area and what is not.

DOT has a database of construction (and as-built) plans and is in the process of digitizing them. Field verification is necessary to close some gaps in the plans.

DOT believes they have a good schema for their MS4 mapping, and have been trying to encourage municipalities to adopt the schema (in part working through a UConn program). Unfortunately, not many towns have adopted the schema yet, possibly because they had already started their own mapping.

Some condition data is on in the GIS map; but it is not available on the publicly available version.

DOT does take town data, but often has to redo it to some extent.

DOT has inspected pipes for condition; they began even before the mapping project.

DOT has created a layer for catchment mapping, but there are not many catchments mapped at this point. One challenge associated with catchment mapping is acquiring data on the locations of curbs.

DOT has a layer of structural Best Management Practices (“BMPs”) with 398 structures. In addition, DOT has a layer of “potential BMPs” with structures that are approved, but not yet constructed.

EPA asked about emergency services access to mapping (e.g. in case of spills). DOT pointed out that the map is available on-line, but most emergency services may not be aware of that. Typically, the town coordinates on spills and other responses, though on major highways DEEP may respond to a spill. In either case DOT maintenance staff would be contacted and could provide information on drainage.

Screening/Investigation

DOT explained they create lists of outfalls to screen, and have consultants do the screening. If wastewater indicators are found, DOT notifies the town to coordinate a response.

Two instances where illicit discharges were eliminated were discussed:

In West Hartford, DOT contacted the town which agreed to investigate the issue. During the audit, DOT displayed their map, and showed that this outfall came up on a ‘hotspot’ layer of the map.

In Haddam, the investigation was spurred not by sampling but by a complaint to DEEP, which was passed on to DOT. In this case, DOT went to the local Health Department to force removal.

DOT explained their view of legal authority to disconnect illicit discharges: For new connections, there is a process of Drainage Connection Concurrence. For existing connections, DOT believes that DEEP or the state Attorney General are the appropriate entities to enforcement against dischargers who do not have a permit from DEEP.

EPA asked about the list of ‘problem catchments’ and how it went from 17 in the Year 1 Annual Report to three in Year 2 Annual Report. Mr. Stone of CT DEEP explained that the Permit defined ‘problem catchments’ as catchments identified at the beginning of the permit term, and that catchments should not be added to the list, even if new evidence shows a problem. DOT said they will do investigations even if the outfall might not meet strict criteria for a ‘problem outfall’.

DOT explained the catchment investigation in Derby; they performed screening at one key junction manhole but did not observe indicators of wastewater.

DOT said they are trying other methods before any more full catchment investigations. DOT stressed that their roads are typically larger than town roads and are more expensive (for traffic control, etc.) to investigate. DOT said they had a shortage of maintenance personnel which made it more difficult.

EPA noted that the permit requires investigating all catchments with issues within two years. EPA suggested DOT track progress towards that goal in the MS4 annual report.

DOT said that for the goal of 40% of catchments investigated, they believed it meant 40% of non-excluded catchments, and only including designated MS4 areas.

Construction

There are 69 active construction projects, but probably only half have enough disturbed earth to trigger the construction stormwater permit.

There are five construction districts for DOT: one for each of the four maintenance districts and a separate district that does vertical construction statewide. There is one Environmental Coordinator per district. In addition, the central Office of Environmental Planning provides oversight of the districts.

Construction plans are reviewed for erosion controls by the Office of Environmental Planning, which participates in planning meetings, along with the Design and Construction groups. Contracts include funding for replacing erosion controls.

Contracts specify that DOT may correct deficiencies themselves after 24 hours, with the contractor paying the cost. DOT has a contract with a company to be available for spill control and erosion control (though it has not been used in several years, if ever, for erosion control).

For most projects, DOT's District Engineer is the permittee for the construction stormwater permit; except design-build projects (which are rare, approximately three times per year). In design-build contracts, obtaining permit coverage is required for the contractor.

Operator site inspections under the construction stormwater permit are usually done by district eEnvironmental Coordinators or consultants.

Files on projects are typically available at the district offices, not the central DOT office.

Inspections by Environmental Coordinators are tracked on a spreadsheet which lists the date of last inspection (but does not track each one). They try to get to sites about once a week. Office of Environmental Planning perform occasional additional inspections.

An inspector checklist is available on the DOT website.

Deficiencies would be dealt with by district Environmental Coordinators. They can issue non-compliance notices, but it's rare to reach that point; usually issues are dealt with informally, through talking to the contractor. Often, district Environmental Coordinators will email contractors before storms to remind them to ensure controls are in good shape.

EPA asked if DOT had any lessons learned from overseeing construction. DOT responded that adequate erosion controls on access roads were now a point of emphasis.

Post-Construction:

DOT explained their "MS4 Project Design" tracking worksheets. The worksheet has separate tracking and calculations for Directly Connected Impervious Area ("DCIA") reduction and for Water Quality Volume goals. Impervious Area is considered disconnected if 100% of the CT-standard Water Quality Volume is retained, and DCIA totals are tracked for overall DOT goals. Separately, for each project, the Water Quality Volume retention goal is calculated (based on total impervious area and whether it is new or re-construction), and the amount of volume retained is calculated based on actual stormwater controls in place. For controls that do not retain 100% of the Water Quality Volume, DOT has created a system of partial credits ("DCIA Disconnection Credit" on the second page of the Worksheet) based on the type of control. DOT created this system on their own initiative based on their own engineering judgement.

DOT was able to display on the conference room screen plans for several projects with MS4 Project Design worksheets.

Maintenance:

DOT does not think there are any structural controls that do not fall into one of the two categories that the permit gives maintenance requirements for (Part 6.a.5.E includes maintenance requirements for "retention or detention ponds" and for "stormwater treatment structures or measures")

DOT has an inventory of structural controls for all mapped areas, and an inventory of some controls in other areas.

DOT is currently working to implement a new Maintenance Management System to track all maintenance of stormwater controls. This will require upgrading infrastructure (e.g. better internet access at maintenance facilities). DOT anticipates that the new MMS will integrate with the GIS map.

Some inspections and maintenance are being done, but are not documented state-wide. DOT does not currently have sufficient staff to maintain all BMPs, but are considering hiring contractors to perform maintenance.

Housekeeping

DOT has a program to educate its 2,000 employees on stormwater management.

DOT maintains lawns in-house (including at the HQ building). Fertilizers are not used, except very occasionally to establish new trees or similar situations.

Pesticides are done by licensed contractors – typically herbicides under guard rails, or to control invasive species at construction sites.

Several highway service areas have pet waste plans.

Sweeping: A draft optimization plan was begun several years ago, but has not been completed.

DOT believes most areas are swept about once per year.

Currently sweeping is tracked only using a linear reference system (i.e., mile X to mile Y), not in the GIS. Sweeping is currently done in-house, but DOT is preparing contracts to sweep interstates. DOT is planning to include a requirement to report the amount of sweepings removed. DOT said they have requested additional staff for sweeping needs, but have not had it approved by the state Office of Policy and Management.

A contractor is used to vacuum some areas of pervious pavement at train stations.

Catchbasin cleaning is tracked on a local level, only by number cleaned in a general area. There is no tracking of amount removed.

Road sweepings and catchbasin sediment is generally only used for cover, as the sand grains are too rounded for most uses.

At the May 20 call, DOT explained the status of their retrofit program: They plan to use the Stochastic Empirical Loading Dilution Model (“SELDLM”) model now being developed to drive their retrofit program to ensure the maximum benefit (and align with impaired waters requirements). DOT now has a draft United States Geologic Service report from the project. One percent of DOT DCIA is about 100 acres. No retrofits are currently planned and DOT expects to do some in the second permit term (i.e. after 2024).

Salt (Ice/snow removal):

DOT uses its own equipment for salting (contractors only do plowing). Spreaders are calibrated yearly.

Sodium chloride brine is usually applied before the storm. Salt trucks have magnesium chloride rock salt is mixed with water in the truck to create a brine for use during storms.

Brine is preferred by DOT because it prevents salt being wasted due to bounce and scatter.

No sand is used for winter management.

Total usage is tracked for each route (trucks are weighed as they are loaded); excessive use will lead to retraining for the operator.

DOT is planning an in-truck system that adjusts spreading rate in real time for each truck, based on air temp, road temp, etc.

Loading is mostly done under cover. Washing is done at maintenance yards in enclosed bays.

Closing Conference

At the video call, EPA gave a brief closing statement:

EPA said that DOT's team appeared knowledgeable and with adequate resources at HQ, that the team appeared to be considering all parts of the permit, that their map appeared to have a very good schema, and that DOT's effort to create a system for internally giving partial credits for DCIA treatment in the MS4 Planning Worksheets was impressive.

EPA urged DOT to discuss with DEEP how they should be accounting for DCIA disconnection, to ensure DOT is accounting for DCIA disconnection appropriately.

EPA then noted that while action is being taken, there are many deadlines that have been missed (or that DOT may miss in the future), including implementing a maintenance plan for stormwater controls, retrofitting/impaired waters program, catchment investigations, and sweeping and catchbasin cleaning.

EPA suggested that DOT begin considering what future dates they thought DOT could meet for the various permit requirements.

EPA thanked DOT staff for their effort and cooperation, and ended the audit.

Unless otherwise noted, this report describes conditions at the facility/property as observed by EPA inspector(s), and/or through records provided to and/or information reported to EPA inspector(s) by facility representatives and as understood by the inspector(s). This report may not capture all operations or activities ongoing at the time of the inspection. This report does not make final determinations on potential areas of concern. Nothing in this report affects EPA's authorities under federal statutes and regulations to pursue further investigation or action.