



DEPARTMENT OF THE NAVY
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT 06349-5000

5090
Ser N45/96
26 Mar 2024

From: Commanding Officer, Naval Submarine Base New London
To: Central Permit Processing Unit
State of Connecticut
Department of Energy & Environmental Protection
79 Elm Street
Hartford CT 06106-5127

SUBJECT: MS4 ANNUAL REPORT TRANSMITTAL FORM

The Naval Submarine Base New London (SUBASENLON) is submitting the enclosed Annual Report Transmittal Form for Permit No. GSM000117 in accordance with the General Permit to Discharge Stormwater from Small Municipal Separate Storm Sewer Systems (MS4).

The required payment of \$375.00 for a federal institution/agency MS4 Annual Report review will be sent separately, upon receipt of invoice.

If you have any questions or require additional information, please contact Nicole Hester, SUBASENLON Stormwater Program Manager, at (860) 694-5191.

Sincerely,

A handwritten signature in black ink, appearing to read "C. KOPROSKI", with a long horizontal flourish extending to the right.

C. KOPROSKI
By direction



Connecticut Department of
 Energy & Environmental Protection
 Bureau of Materials Management & Compliance Assurance
 Water Permitting & Enforcement Division

MS4 Annual Report Transmittal Form

For the General Permit to Discharge Stormwater
 from Small Municipal Separate Storm Sewer
 Systems (MS4)

Print or type unless otherwise noted. Please submit this
 completed transmittal form, fee, and the MS4 Annual Report as
 indicated at the end of this form.

CPPU USE ONLY	
App #:	_____
Doc #:	_____
Check #:	_____
Program: Stormwater Permits	

Part I: Annual Report General Information

1. Reporting Period (Calendar Year): <u>2023</u>	
2. Provide the registration number for the existing general permit registration: <u>GSM000117</u>	
3. Registrant Type (check one):	Fees
<input type="checkbox"/> state institution/agency	\$375.00 [713]
<input checked="" type="checkbox"/> federal institution/agency	\$375.00 [713]
<input type="checkbox"/> municipality	\$187.50 [713]
4. Municipality name or Municipality name where institution is located: <u>Groton</u>	
The annual report will not be processed without the fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection (DEEP) or by such other method as the commissioner may allow.	

Part II: Registrant Information

1. Registrant (Name of Municipality or State or Federal Institution/Agency): <u>NAVAL SUBMARINE BASE NEW LONDON</u>	
Mailing Address: <u>Route 12 & Crystal Lake Road</u>	
City/Town: <u>Groton</u>	State: <u>CT</u> Zip Code: <u>06345</u>
Business Phone: <u>860-694-5191</u>	ext.:
Contact Person: <u>Nicole Hester</u>	Phone: <u>860-694-5191</u> ext.
*E-mail: <u>nicole.r.hester.civ@us.navy.mil</u>	
*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.	

Part II: Registrant Information (continued)

2. Billing contact, if different than the registrant.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

3. Primary contact for departmental correspondence and inquiries, if different than the registrant.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

*E-mail:

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.

4. Engineer(s) or other consultant(s) employed or retained to assist in preparing the annual report.

Check here if additional sheets are necessary, and label and attach them to this sheet.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Service Provided:

5. Check here if there are adjacent towns or other entities with which implementation of the Stormwater Management Plan is coordinated for a portion of the subject MS4. If so, provide the names of such towns or entities: _____

Part III: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the annual report must sign this part. [If the registrant is the preparer, please mark N/A in the spaces provided for the preparer.]

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.



I certify that this annual report transmittal is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that the following public notice requirements have been met.

Annual Report Availability: At least forty-five (45) days prior to submission of each Annual Report to DEEP, pursuant to Section 4(d)(3) of the MS4 General Permit, each permittee shall make available for public review and comment a draft copy of the complete Annual Report. Comments on the Annual Report may be made to the permittee and are *not* submitted to DEEP. Reasonable efforts to inform the public of this document shall be undertaken by the permittee. Such draft copies shall be made available electronically on the permittee's website for public inspection and copying, consistent with the federal and state Freedom of Information Acts, and shall be made available, at a minimum, at one of the following locations: the permittee's main office or other designated municipal or institution office, a local library or other central publicly available location. Following submission of the Annual Report to DEEP, a copy of the final report shall be made available for public inspection during regular business hours.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I also certify that the signature of the registrant, or a duly authorized representative, being submitted herewith complies with section 22a-430-3(b)(2)(B) of the Regulations of Connecticut State Agencies.

	<u>7-26-2024</u>
Signature of Chief Elected official or Principal Executive Officer	Date
Christopher Koproski	Installation Environmental Program Director
Printed Name of Chief Elected official or Principal Executive Officer	Title (if applicable)
	<u>3-20-2024</u>
Signature of Preparer (if different than above)	Date
Nicole Hester	Stormwater Program Manager
Printed Name of Preparer	Title (if applicable)

Note: Please submit 1) this completed Transmittal Form and the Fee to:

CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

2) a copy of this completed Transmittal Form and the Annual Report electronically to the following email address: DEEP.StormwaterStaff@ct.gov.

Refer to www.ct.gov/deep/municipalstormwater for information on Annual Report Templates or other additional information concerning the MS4 General Permit.

In the event that electronic submission is not available or possible, please contact the Stormwater Section at 860-424-3025.

Final
MS4 General Permit
SUBASE New London 2023 Annual Report
New MS4 Permittee
Permit Number GSM 000117
January 1, 2023 – December 31, 2023

Primary MS4 Contact: Nicole Hester, Media Manager, 860-694-5191, nicole.r.hester.civ@us.navy.mil

This report documents SUBASE New London's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2023 to December 31, 2023.

Part I: Summary of Minimum Control Measure Activities

1. Public Education and Outreach (Section 6 (a)(1) / page 19)

1.1 BMP Summary

BMP	Activities in current reporting period	Sources Used (If Applicable)	Method of Distribution	Audience and number of people reached	Measurable goal	Department / Person Responsible	Additional details
1-1 Implement public education and outreach	MS4-related "communication documents" were authored by EV and hosted on the Navy Environmental Compliance, Assessment, Training and Tracking System (ECATTS). Additionally, Command Duty Officer and newly-arrived base indoc sessions are regularly held throughout the year.		In person and online		Notices posted within required timeline(s), attendance at events, general awareness in meetings.	Environmental Division (EV) / Nicole Hester	Many materials, especially the MS4 ECATTS module, were aided by material available through NEMO / UConn CLEAR.
1-2 Address education / outreach for pollutants of concern	Maintained the listing of Stormwater pollutants of concern in the publicly-available SWMP. Current base training modules address both Basic and Comprehensive Stormwater issues, the new MS4 module referenced above, and additional training modules for Spill Prevention. Created document for Fall Leaf Clean-up to be distributed via command channels and social media.		Command channels and social media		N/A	Environmental Division (EV) / Nicole Hester Environmental Division (EV) / Wes Dowden	Bulky waste was moved to a new location just behind the commissary. This increased the ability to organize the space better, and supply a place for the operator to keep warm and dry.
1-3 Final Stormwater Management Plan Publicly available	Pen & Ink Updates		online		N/A	EV/Nicole Hester	N/A
1-4 Comply with public notice requirements for Annual Reports	Post notice(s) including 31 Jan notice of pending report, 15 Feb DRAFT report release and Final NLT 1 April		Online		Posted by due date	EV/Public Affairs Office (PAO)	Postings confirmed by PAO on CNIC and base Facebook page.

1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.

2024 Earth Day activities and the annual Community "Navy Day" and we will continue to use ECATTS for outreach with links to UConn's Center for Land Use education and Research (CLEAR) recorded MS4 topic webinars. Continuing to investigate securing informational signs for base stormwater features, along with a "pamphlet" that will be tied to MS4 training material for incoming Division-level leaders throughout the base on MS4 responsibilities. Work with Thames River Basin Partnership and attend meetings.

1.3 Details of activities implemented to educate the community on stormwater

Program Element/Activity	Audience (and number of people reached)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
Environmental Compliance Assessment Training and Tracking System -- Base training website	Base wide / ~1,000	Comprehensive Stormwater topics	Bacteria, Metals, Phosphorous	EV
PWD Division Director meetings (pamphlet to follow in Spring)	7 (senior PWD leaders)	Interdepartmental responsibility plan	N/A	PWD Divisions
Facebook post on MS4 status	Base wide / ~12,000	MS4 report status	N/A	EV/Public Affairs Office
Supplemental Stormwater Training	PWD Facilities / 25	General MS4 topics info sheet for workers without computer access	Debris / Catch Basin info	EV/Facilities Management Division (FMD)
Trip report reviews, (including Web-based class)	EV-specific / PWD Leadership/40	EV Program compliance	Red Hill presentation prepared and sent to Leadership	EV
Building Manager Training	PWD EV / Facilities/ 60	Leaf accumulation areas for pick-up	Debris/Bacteria/Pest Management & Birds/Cultural Resources/Stormwater/ /Drinking Water/ Vehicle Maintenance/ Air/Tanks	FMD
Site Compliance briefs/Quarterly EV review boards	Various / 12	Good Housekeeping, other EV issues	N/A	EV and all tenant commands
Indoc training at SUB School	Varies 80 – 150 weekly	EV program	Debris/Catch Basin/Stormwater/ Wastewater/ Drinking Water/Vehicle Maintenance/Air/Tanks	EV
Facebook post on Fall Leaf Clean-up	Base wide and Social Media/~12,000	Proper leaf clean-up and disposal	Debris/Catch Basin	EV
Environmental Operations Committee	23	Audit and EMS update; Declaration of Performance Review	N/A	EV
Facility Response Team Training	Port Operations/16	Spill Response Training	fuel	LRS Gryphon JV

2. Public Involvement/Participation (Section 6(a)(2) / page 21)

2.2 Describe any Public Involvement/Participation activities planned for the next year, if applicable.

Earth Day activities, enhanced EV training events including Command Duty Officer orientation, continuing EV participation on Zone Inspections throughout the base, and participation in Pre-construction meetings. Expanded use of base Environmental Training website (ECATTS) with the indoctrination training began in 2020, ongoing updates. Create more one page documents for Stormwater education. Revision to MS4 guidelines, and education of Public Works staff once CT DEEP revises the MS4.

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan to public	Yes	Ongoing	Online Notice posted
Availability of Annual Report announced to public	Yes	FINAL: 1 Apr 2023	Hardcopy on Stormwater Media Manager's desk in bldg. 439 rm 104; also posted to SUBASE New London CNIC site.
On Base & Off Base Fall Leaf Clean-up	Yes	5 Dec 2023	Online notice posted 5 Dec 2023 via Facebook.

3. Illicit Discharge Detection and Elimination (IDDE) (Section 6(a)(3) and Appendix B / page 22)

3.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-1 Develop written IDDE program	Complete	Developed Plan, complete on 1 May 2017	Completed plan	Environmental / Chris Koproski	Jul 1, 2019	1 Mar 2017	N/A

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Complete	Repeated Dry-weather flow assessment of all outfalls in summer 2019	N/A	Environmental / Chris Koproski	Jul 1, 2020	1 Aug 2020	No adds or modifications have been necessary.
3-3 Implement citizen reporting program	Complete	54 reported Spill events reported on SUBASE in 2020	24/7 on call contact available	Environmental / Chris Koproski	Jul 1, 2017	Jul 1, 2017	Utilized established 24 hr Environmental Duty Officer hotline at 860-215-1384. Also provided Stormwater Program Manager phone contact.
3-4 Establish legal authority to prohibit illicit discharges	Complete	Incorporated prohibition in base Environmental Instruction	Signed base Instruction, 5090.7B	Environmental / Chris Koproski	Jul 1, 2019	Aug 8, 2017	Authority to implement and administer the IDDE Program formalized by SUBASENLON Instruction (SUBASENLONINST 5090.7B)
3-5 Develop record keeping system for IDDE tracking	Complete	Used tracking tool to record results of Drainage Area dry-weather inspections and sampling results for High-priority and Problem rated areas.	N/A	Environmental / Chris Koproski	Jul 1, 2017	1 May 2017	IDDE Program Progress Spreadsheet Tracking tool has been updated and modified slightly
3-6 Address IDDE in areas with pollutants of concern	Ongoing	Investigated potential illicit discharges at Bldg 106 and Bldg 439	N/A	Environmental / Nicole Hester	Not specified	Various	Sampling at Bldgs 106 & 439 to verify repairs/remediation efforts have eliminated IDDE concerns
3-7 Address Catch Basin cleaning residue capture and disposal	Ongoing	Working towards an efficient process for catch basin cleaning residue disposal. Issues with disposal of wastewater hampering current efforts.	Schedule attainment for catch basin cleanings	Public Works Utilities EV / Nicole Hester	FY 2024	Ongoing	Funding has been approved, and efforts to purchase equipment needed is in process.

3.2 Describe any IDDE activities planned for the next year, if applicable.

Complete the 5-year test (from the resolution dates) for the two areas identified at the beginning of the permit (Bldg. 439 and 106). Also, an IDDE review team is part of a contracted Site Compliance Evaluation expected in April 2024. Pier extension / replacement activities will also be closely monitored, as will the DLA fuel farm upgrades.

3.4 Provide a record of illicit discharges occurring during the reporting period and SSOs occurring July 2012 through end of reporting period using the following table.

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Illicit Discharges occurring during the reporting period						
Pier 12 SUBASE New London	1/4/2023	Water	20 gallons Lube Oil	SUBASE Fire Department and Port OPS responded to an oil sheen seen at Pier 12. It was stated the sheen had come from waste oil/lube oil coming from the SUB. Extra boom was used to block the opposite sides pier as the original boom around Newport News's SUB was not put entirely around and up against the pier. Oil pads and extra boom were used for cleanup.	Oil pads and extra boom applied.	N/A
B173	4/13/2023	Groundwater	<10 gallons diesel fuel	SBFD responded to a vehicle leak at half mile trail from B484 where an 18 wheeler delivery truck was at the time. Fuel leak was due to a broken fuel line from Gate 2-7 to B173, approximately 1/4-1/2 mile long.	Speedy Dry applied and bagged. Properly disposed of.	N/A
SSOs occurring July 2012 through end of reporting period						
Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Bldg 120, base swimming pool	2/9/2018	Pavement	25 gallons	Pool and PWD personnel noted backup / PWD	Toilet paper clogged the sanitary pipes occasionally used for pool backwash operations, rerouted flow and cleared—new stand-alone discharge pipe being installed.	N/A
Scorpion avenue near Bldg 148	2/14/2018	Surface water	100+ gallons	Rock Lake and groundwater in collapsed pipe / PWD	Abandoned sewer line flooded with groundwater, PWD removed top plug and filled in remaining manholes and piping from previously-abandoned buildings.	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Pier 10 near USS Providence	3/28/2018	Pavement / Water	<100 gallons total, ~10 gallons in water	Pump pressure burst pipe / Submarine	Kitchen gray water operation. PWD instructed to continue hose inspections reminded shipboard personnel to cover drains during transfer operations. Possible cooking oil led to ~20 x 50ft sheen, boomed in. NRC# 1207852, DEEP Case 2018-#01479 Complete 3/29/18.	N/A
"Tunnel" between Bldgs. 87 and 76.	5/23/2018	Pavement / Storm drain	50 gallons	Lift Station 75 pump malfunction / PWD	Used alternate forced main at the lift station until piping can be excavated/inspected/repared, storm drain cleaned. Repaired Force Main 6/22/18.	N/A
Pier 10 South, USS Providence	6/8/2018	Surface water	<100 gallons	Broken pipe under pier / PWD	Sailors heard rush of air as they began pump operation, immediately shut down, pipe repaired. Complete 6/21/18.	N/A
Pier 31 North	6/13/2018	Pier / Water	<10 gallons	Riser valve not sealing / PWD	Work order placed, aft and bow valves blew out residual material. Complete 7/24/18.	N/A
Amberjack Rd opposite Pier 31	7/10/2018	Pavement	<10 gallons	Temp blockage / PWD	Liquid seen running out past sewer manhole and into pavement, collected in low point/depression in road, PWD personnel looked under manhole and nearby lift station, no elevated levels seen, suspect temporary blockage cleared on its own. Complete 7/10/18.	N/A
Lift Station #75 near gate 4	9/28/2018	Pavement	50 gallons	Leak at elbow, possible leak further up line / PWD	Shut down lift station and repaired the elbow, will continue to use alternate line until they can excavate further up for inspection and permanent repair. Complete 11/27/18.	N/A
Pier 12	12/20/2018	Surface water	Unk. Previous day operation had 1000 gallons pumped w/100 of that as sewage.	Probable under-pier pipe break suspected when oncoming crew said they smelled sewer odor / PWD	Secured side pump, used opposite pier side pump while repairs made. Pipefitters recommended direct to sanitary pump, break confirmed, repairs made. Repaired sewer line 1/25/19.	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Near Bldg 157 lift station, near Pier 31	1/7/2019	Pavement	100 gallons	Suspected grease from nearby lift station caused backup to occur	Contractor expected on site to remove grease and jet the line. Utilities jetted line and cleared blockage on 1/7/19. Contractor removed grease from lift stations at Pier 31 and B157 on 1/8/19.	N/A
Bldg 592 mech room	2/25/2019	Pavement/sewers	8000 gallons potable / 50 gallons SSO	Large 8-10" pipe broke in lower mech room, filled room with ~4 ft of water, and burst out covering pavement and entering storm drains, but sanitary drain flow caused a sanitary manhole downstream to overflow about 50 gallons to pavement	Notified Groton of "slug" of potable water coming their way, PWD to drop Lime along edge of road near sanitary sewer overflow. PWD completed pipe repairs on 6/14/19.	N/A
Pier 6 South	2/26/2019	Pavement	2.5 gallons	Suspect USS Minnesota submarine sanitary transfer, as they had just completed an operation when a guard noticed puddles in the road	Notified the ship on 6 North to hold off any transfers until inspection took place, since the under-pier piping is shared. Utilities returned Pier 6 sewer line to normal operation on 3/1/19.	N/A
Pier 6 South	2/28/2019	Pavement	5 gallons	USS Minnesota transfer, may have over-pressurized the line to cause spill	Dye tested the line and determined a small blockage, jet-vac used to clear it followed by a 2 nd dye test with good results. UTILITIES returned Pier 6 sewer line to normal operation on 3/1/19.	N/A
Argonaut Rd in front of Bldg 87	8/5/2019	Pavement	5 gallons	Suspect a crushed pipe	UTILITIES has stopped flow to pipeline, will excavate to repair after calling a utility pipe review. UTILITIES completed repairs on 12/19/19.	N/A
Pier 17, West riser	10/7/2019	Pier (concrete)	10 gallons	Valve on riser leaked	System locked and tagged out. UTILITIES replaced CHT valve on 10/24/19.	N/A
USS Indiana	10/12/2019	Surface water	1 gallon	Hose leak	Pump power turned off, use of faulty hose discontinued and replacement hose ordered. UTILITIES changed out hose on 10/12/19.	N/A

Location (lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Pier 32	11/14/2019	Surface water	<100 gallons	Hose leak after being partially in water and forming a trap overnight, which then froze	NSSF rep verified hose issue and PWD will supply new ones on 11/14. UTILITIES changed out hose on 11/14/19.	N/A
Pier 8	1/3/2020	Surface water	0.5 gallons	Hose sprayed at start of pumping from USS Toledo	Stopped pumping. Resecured the hose.	N/A
Pier 15	6/18/2020	Surface water	875 gallons	Sewage entered the Thames River during pumping operations. This was due to a ruptured Sewer Pipe. There was visual foam and particulates in the River.	The pumping was stopped upon noticing the spill. No recovery, but area was already boomed. UTILITIES completed repairs 8/28/20.	N/A
Outside Bldg 107	7/14/2020	MS4	5 gallons	Sewer blockage caused raw sewage to come up thru manhole, about 30 gallons, maybe 5 went into a nearby storm drain.	Speedy dri around storm drain. Cover removed and piece of poly used to cover hole and then grate put back on waiting UTILITIES repair. UTILITIES cleared blockage 7/14/20.	N/A
Pier 17S	7/27/2020	Surface water	50 gallons	USS San Juan Aft offload operations for bilge water	End of pumping operations, no recovery, area boomed in	N/A
USS San Juan - Pier 12	1/22/2021	Surface water	5 gallons	Connection Failed. Personnel closed valve immediately after observation.	No action taken as current dissipated sewage	N/A
Pier 17 South, USS Vermont	2/28/2021	Pier/Possibly surface water	3 gallons	USS Vermont was unloading CHT (Collection, Holding, and Transfer) and a hose ruptured during operation causing CHT to spill on Pier 17 South. One nearby storm drain was affected by the spill and a small but unknown quantity of CHT entered the storm drain.	Unloading operation was shut down by USS Vermont.	N/A
Pier 12 South	6/22/2021	PIER	1 gallon	A pin hole leak was discovered in the 6" hose while off-loading sewage from the Subs CHT (Collection, Holding, and Transfer) tank. Operation was stopped immediately and a new hose brought in to complete the operation.	Stopped off-loading operation immediately	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Pier 12	7/16/2021	Surface water	0.1 gallon	UEM reported that CHT hoses left on pier were not drained.	None, nature of drip was to result in release to river under pier and not to a pier surface area (at which a containment method could be used).	N/A
Pier 6 south side	8/30/2021	Pier/Possibly surface water	2 gallons	USS Indiana reported leak from hose connection on pier used to transfer sewage from their tanks to base sewer system. Cause was improper splicing of hose.	Fire Dept. responded. New hose ordered.	N/A
Pier 31	9/8/2021	Pier/possibly surface water	1 gallon	USS Newport News reported small amount of water from riser on south side of pier. Boat crew noticed valve for riser was not fully closed and the end cap was missing. Boat crew fully closed valve, added pipe cap and resumed pumping.	N/A	N/A
Pier 105 - Under Pier	10/1/2021	Surface water	Unknown	USS South Dakota observed leak/odor. Release of sewage directly to Thames River, quantity unknown. High tide prevented immediate investigation & repair.	Sewage CHT transfer discontinued & later routed directly to tanker trailer.	N/A
North of Pier 32 on Lower Corridor Road	10/2/2021	Storm drain system	50 gallons	USS Delaware at Pier 32. KTR oversight for pump bypass by CHT due to ongoing project. Bypass pump failed and approximately 50 gallons of sewage entered storm drainage system.	Sanitary sewer discharge from submarine was stopped. Spill contained with filter sock and the pump was manually started and controlled.	N/A
Pier 12 North	12/6/2021	Surface water	10 gallons	A leak in the sanitary line that runs under pier 12 North was noticed by the unit pumping. No sheen noted.	UEM repaired pipe on 12/7	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Pier 17	2/3/2022	Pier, but possible release to river via pier drainage areas	<1 gallon	PWD provided a new hose after the hose being used to flush potable water at Pier 17 ruptured due to a blockage in the sanitary line. PWD took the riser out of service. It is possible a small amount of sewage was released to the Thames River, but PWD employees stated there was no visual indication of a release, and no smell was detected.	Riser was taken out of service until the blockage could be cleared (needed to be done at low tide). A tanker was staged at Pier 17 until repair was completed.	N/A
410 Tang Avenue	5/24/2022	Pavement	30 gallons	SBFD called to a sewer main blockage at 410 Tang Avenue where Public Works noticed the leaking pipe. Roughly 30 gallons with no solids were present.	Navy PW utility personnel used water jet equipment to remove blockage in sanitary pipeline, stop bypass and restore flow. Areas affected in parking lot were cleaned up.	N/A
Pier 31	9/19/2022	Surface Water	1 cup	SBFD responded to a call of a ruptured pipe leaking raw sewage. The line was shut off immediately upon rupture and another pipe was used instead. About a gallon got out onto the pier and roughly a cup or less got into the Thames River. There were no cleanup actions possible by the time SBFD arrived on scene.	N/A	N/A

3.5 Briefly describe the method used to track illicit discharge reports, responses to those reports, and who was responsible for tracking this information.

The majority of illicit discharges onboard SUBASE are the result of hazardous material and sanitary sewer spills and releases. All releases are reported to DEEP and tracked via an in-house Microsoft Access database, and a hard-copy binder maintained at the office telecommunications area. Also, the Q-ALERT system is now used for reporting all sewer spills to DEEP, and all Illicit discharges identified during inspections or investigations are tracked via the base Environmental Management System database.

3.6 Provide a summary of actions taken to address septic failures using the table below.

Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known
N/A-No active septic systems aboard SUBASENLON.	N/A	N/A

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	56 (actual)
Estimated or actual number of interconnections	0
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	100%
Outfall assessment and priority ranking	100%
Dry weather screening of all High and Low priority outfalls complete	100%
Catchment investigations complete (System traced from Outfall back)	56 Dry weather 56 Wet weather
Estimated percentage of MS4 catchment area investigated	100% Dry weather 100% Wet weather

3.8 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often is it given (minimum once per year).

SUBASENLON has current Stormwater and Spill Response training modules on the Navy ECATTS training website available to the entire community, including visiting agencies and contractors. Dedicated/consolidated IDDE modules are available, with content covering the Purpose and Scope of the IDDE Program, the Definition of an Illicit Discharge, Recognizing Illicit Discharges, Reporting, and Preventing Future Instances. Each Spring, personnel are identified and contacted for training, along with their supervisors. When new personnel come onboard, training is conducted out of cycle, as soon as possible (typically w/in 90 days). New training for Stormwater Quality Manual and Soil Erosion and Sediment Control Guidelines provided to all Public Works personnel.

4. Construction Site Runoff Control (Section 6(a)(4) / page 25)

4.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Date completed or projected completion date	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit	Ongoing	All construction contracts include requirements to follow CT regulations, including the 2002 Soil erosion and Sediment control Measure chart.	N/A	Public Works Facilities Engineering & Acquisition Division / Christopher Shukis	N/A	Implemented with permit start-date; all projects since the 2020 official date are MS4 compliant. Briefed departments on the updated Soil Erosion and Sediment Control Guidelines.
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Ongoing	Included in SWMP	N/A	Environmental / Nicole Hester	Ongoing	All construction contracts require interdepartmental review prior to award. This review includes National Environmental Policy Act (NEPA) documentation statements specifically targeting LID and stormwater requirements.
4-3 Review site plans for stormwater quality concerns	Ongoing	Active review of contracts awarded, conduct site inspections as available.	100% of contracts and applicable Task Orders are reviewed.	Environmental / Nicole Hester	N/A	Site work Induction Board has an EV representative who attends and focuses plans and projects with Stormwater concerns.
4-4 Conduct site inspections	Ongoing	Active contracts and activities.	MS4 compliance.	Facilities Engineering & Acquisition Division / Christopher Shukis	N/A	Inspections are a current responsibility / activity for Facilities Engineering & Acquisition Division, the Construction Manager also

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Date completed or projected completion date	Additional details
						sends out a list of active construction projects to EV for oversight inspections.
4-5 Implement procedure to allow public comment on site development	Ongoing	Signage with contact information is posted at construction activities.	Signs posted.	Facilities Eng & Acquisition Division / Christopher Shukis	N/A	Verified with independent audit during August 2019.
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Ongoing	Included with construction contract specifications.	Construction permit, if required.	Facilities Engineering & Acquisition Division / Christopher Shukis	N/A	The required Environmental Management Plan for contractors includes the Stormwater Pollution Control Plan, required by the CT DEEP Construction General Permit.
4-7 Develop stormwater compliance checklist	Completed	N/A	MS4 Compliance.	EV/ Chris Koproski	Jul 1, 2020	Created forms based on Industrial Permit inspection sheets.

Extra space for describing above BMP activities, if needed:

BMP	
4-2/4-3	National Environmental Policy Act (NEPA) process is also used to meet these BMP requirements, from planning through design and final inspections.

4.2 Describe any Construction Site Runoff Control activities planned for the next year, if applicable.

P1102 Weapons Compound Project – in the NDAA and scheduled for an FY24 award. The weapons compound project will include and construction of new stormwater treatment and detention ponds. The current land use will stay the same but some of the structures need to be demolished, and new buildings constructed in their place.

5. Post-construction Stormwater Management (Section 6(a)(5) / page 27)

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Date completed or projected completion date	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Complete	N/A	MS4 compliance.	PWD Project Management and Engineering / Scot Deledda Senior Design Manager	1 Mar 2017	Legal authority to implement and enforce the Post-Construction Stormwater Management Program is established by inclusion of the Navy LID Policy standards, the DoD EISA Section 438 Policy standards, and the MS4 General Permit LID standards in SUBASENLON's standard construction specifications.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	Enacted in March 2017 in anticipation of MS4 permit.	Meet Navy LID Policy standards, MS4 standards, and DoD EISA Section 438 Policy standards.	Environmental / Nicole Hester, Facilities Maintenance Director / Scot Deledda (updates due to activities)	N/A	Pre-MS4 requirements are the same as current MS4 activities.
5-3 Identify retention and detention ponds in priority areas	Ongoing	N/A	MS4 compliance.	Environmental / Nicole Hester	March, 2017	Updated as needed.
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Ongoing	N/A	MS4 compliance.	Facilities Sustainment Branch Head / Danny Johnson, Production Division Director / Andy Shetland	Jul, 2020	Continued catch basin cleaning program, Service Contracts will add larger structures into upcoming contract.
5-5 DCIA mapping	Ongoing	Completed in March, 2017 in anticipation of MS4 permit.	N/A	Environmental /Chris Koproski (initial Mapping), Nicole Hester, Facilities Maintenance Director/ Scot Deledda (updates due to activities)	March 2017 for initial effort, ongoing for updates.	Updated as needed.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Date completed or projected completion date	Additional details
5-6 Address post-construction issues in areas with pollutants of concern	Ongoing	Retention of Water quality volume, limits of disturbance, and CT Stormwater Quality Manual excerpts briefed to Stakeholders	Contact with all Division and Branch Heads.	Environmental / Nicole Hester	N/A	Due to impaired status of the Thames River, this program applies throughout SUBASENLON. New Stormwater Quality Manual, and increase to retention volume shared with all departments.

Extra space for describing above BMP activities, if needed:

BMP	
ID sustainable means of maintaining detention ponds	Rain gardens fall under base recurring service contracts for mowing/trimming/debris removal.

5.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.

<p>The Weapons Storage Area recapitalization will be the main focus for immediate post-construction activities. There is also a schedule for certain other areas (for example, the Central Base Parking's sand filter beds) that will require management activities (mostly inspections) this year.</p>

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	198.70 acres
DCIA disconnected (redevelopment plus retrofits)	0.01 acres this year / 5.98 acres total
Retrofits completed	No retrofits affecting DCIA
DCIA disconnected	~0% this report year / 3% total since 2012
Estimated cost of retrofits	No retrofit actions this calendar year
Detention or retention ponds identified	10 total

5.4 Briefly describe the method to be used to determine baseline DCIA.

GIS/GRX data supplemented with field measurements by a contracted team, the product was first available in 2017 and updated each year based off raw data provided from PWD program managers, including EV.

6. Pollution Prevention/Good Housekeeping (Section 6(a)(6) / page 31)

6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program	Ongoing	Expand ECATTs training modules to include MS4 aspects. Updated training sheet for members without ready access to computers. Industrial Stormwater team members have in-person training 2x year to augment/replace ECATTs on-line training modules.	100% of target audience trained	Environmental / Nicole Hester	Jul 1, 2024	N/A	Administrator function within ECATTs allows training to be tracked. Most of the associated data is already on ECATTs in the form of Stormwater and spill response modules.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-2 Implement MS4 property and operations maintenance	Ongoing		Property and operations maintenance BMPs were legacy actions implemented under existing SUBASENLON Industrial permit.	PWD Facilities Management Division Director	Jul 1, 2024	N/A	SUBASENLON will fully implement the Property and Operations Maintenance Program
6-3 Implement coordination with interconnected MS4s	Ongoing	Previous exchange of contact details with Town of Groton MS4 Manager, Michelle Maitland.	Positive contact	Environmental / Nicole Hester	Not specified	initial contact with previous town manager on 24 Jan 2018	The SUBASENLON MS4 is interconnected to the CTDOT, and Towns of Groton and Ledyard. The only true interconnects are along the base access road, sharing one outfall (O-35) with the town of Groton.
6-4 Develop/implement program to control other sources of pollutants to the MS4	Ongoing	Leaf collection procedures revised to include ensuring piles remain away from storm drains. Ensured repeat notice sent with leaf collection activities on Dec 2024.	BMPs	Environmental / Nicole Hester	Not specified	N/A	Created a one page document to be dispersed to on base patrons, and via social media.
6-5 Evaluate additional measures for discharges to impaired waters*	Ongoing	Implementing Geese control program with USDA, pet waste management and feral cat control program continuing. "Do Not Feed Geese" signs maintained. Plan to reevaluate after next Industrial sampling bacteria results are in, along with MS4 IDDE screening/sampling later this year.	Reduced levels	Environmental / Nicole Hester	Not specified	N/A	

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-6 Track projects that disconnect DCIA	Ongoing	GIS/GRX system updates are the basis for a contracted action that calculates DCIA each year.	Maintain an accurate list of DCIA.	PWD Facility Management Division Director	Jul 1, 2024	N/A	
6-7 Implement infrastructure repair/rehab program	Ongoing	Briefed key decision makers on MS4 requirements and explored how to work new requirements into existing prioritization scheme.	Add MS4 aspects for consideration for project prioritization.	PWD Facility Management Division Director and Production Division Director	Jul 1, 2024	6N/A	Received copy of master Installation Development Plan and Execution Plan, EV to look for opportunities within scheduled projects.
6-8 Develop/implement plan to identify/prioritize retrofit projects	Ongoing	Briefed key decision makers on MS4 requirements and explored how to work new requirements into existing prioritization scheme.		PWD Facility Management Division Director	Jul 1, 2024	N/A	Reviewed Installation Development Plan
6-9 Implement retrofit projects to disconnect 2% of DCIA	Complete	Briefed key decision makers on MS4 requirements and explored how to work new requirements into existing prioritization scheme.	2% of baseline disconnected	PWD Facility Management Division Director	Jul 1, 2022	31 Dec 2019	SUBASENLON currently requires that development and redevelopment conform to UFC 3-210-10, LID, and EISA Section 438. In addition, SUBASENLON requires design and construction contractors to comply with the LID standards defined by the MS4 General Permit. SUBASENLON PWD staff continues to review development/construction plans that include associated stormwater design calculations for compliance with these standards.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-10 Develop/implement street sweeping program	Ongoing	Annual sweeping event augmented with select additional uses.	MS4 compliance.	PWD Transportation Branch Head	Jul 1, 2024	N/A	Log book in both sweepers and the vac truck; schedule/program in the transportation section and on an as-needed basis with PWD.
6-11 Develop/implement catch basin cleaning program	Ongoing	This has been transferred in-house and a contracted cleaning effort happened at "hand-over" to address some of the worst cases.	MS4 compliance.	PWD Facilities Sustainment Branch Head	Jul 1, 2024	N/A	The cleaning program and equipment has been paused, and after the initial use period we are holding for a disposal solution that may include a contracted cleaning effort, to create a new baseline. Also working towards purchasing equipment to filter metals before discharge.
6-12 Develop/implement snow management practices	Complete	Annual training	6 Dec 17	Transportation Branch Head	Jul 1, 2020	Sept 2019	N/A

6.2 Describe any Pollution Prevention/Good Housekeeping activities planned for the next year, if applicable.

Continue to implement ECATTS training modules, conduct inspections, and review all projects for MS4 compliance.

6.3 Pollution Prevention / Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes, various dates
Street sweeping	
Curb miles swept	~2 miles
Volume (or mass) of material collected	~1/2 yards
Catch basin cleaning	
Total catch basins in priority areas	61
Total catch basins in MS4	845 (excluding infalls and scuppers)
Catch basins inspected	486
Catch basins cleaned	3
Volume (or mass) of material removed from all catch basins	0 gallons to sanitary/2 yds
Volume removed from catch basins to impaired waters (if known)	0 gallons to sanitary/2 yds
Snow management	
Type(s) of deicing material used	Salt / Ice-bite
Total amount of each deicing material applied	~400 tons / ~4500 gal
Type(s) of deicing equipment used	Truck-mounted Sprayers and Salt spreaders
Lane-miles treated	60 miles (including parking lots), estimated ~1,000 total miles treated through multiple passes.
Snow disposal location	Area near North Lake parking lot was approved and used successfully.
Staff training provided on application methods & equipment	Jan 2023, each snow month (Jan-Apr, Nov-Dec)

Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	<p>2023 Greens totals: 1.381 lb/N .063 lb/P .042 lb/K</p> <p>Greens: 30% decrease in Lb/N per 1000 Square feet since past year, maintaining a slight decrease since start of permit.</p> <p>22% decrease in Lb/P per 1000 Square feet since past year, a slight decrease since start of permit.</p> <p>6.8% decrease in Lb/K per 1000 Square feet since past year, maintaining a slight decrease since start of permit.</p> <p>Tees and Fairways: No reduction in Lb/N per 1000 Square feet (roughly 50lbs/acre, 8 acres, applied 2x).</p>
Reduction in turf area (since start of permit)	None
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	N/A
Cost of mitigation actions/retrofits	\$6,391 for Basewide geese mitigation effort.

6.4 Catch basin cleaning program

<p>Provide any updates or modifications to your catch basin cleaning program.</p> <p>After several "false-starts" due to personnel and equipment issues, SUBASE program commenced by the July 2020 regulatory due date. A decant dumpster was purchased and used, however, discharges of wastewater to sanitary sewer have been temporarily halted due to metal exceedances. Avenues of resolution include increased sampling, more wide-spread (area wise) draws into the vac truck, to minimize the chance of sanitary exceedances, and purchasing equipment to filter out metals.</p>

6.5 Retrofit program

Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project.

Weapon Storage Area projects, DCIA affected is up to 25.27 Acres, depending on finalized plan.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years.

Navy designers are aware of Low Impact Development (LID), incorporating Environmental/MS4 requirements with the Integrated Development Plan to ensure BMPs and Water Quality Volume (WQV) requirements are met. The 2% Directly Connected Impervious Area (DCIA) reduction effort for the initial permit period was met prior to this reporting period.

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years.

Activities beyond the permit term are being identified and prioritized for inclusion with the base Integrated Development Plan, but it appears likely offsets (rather than in-place WQV retention) will be needed for lower base developments, due to factors including heavy development, Installation Remediation status for certain sites, and mission needs which limit available "green space".

Part II: Impaired waters investigation and monitoring

1. Impaired waters investigation and monitoring program

1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution. This data is available on the MS4 map viewer: <https://uconn.edu/ctms4map>.

Nitrogen/ Phosphorus Bacteria Mercury Other Pollutant of Concern

1.2 Describe program status

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.

- 1) Contracted monitoring program commenced in Spring 2020 and was completed in 2022, results posted below (Table 2.1). Please note Industrial Stormwater Permit GSI000679 already requires monitoring for bacteria at eight (8) outfalls, those results are also reported to DEEP. No changes were made to the Outfalls selected for continued Annual Sampling under the permit. It's worth noting that due to the abnormally dry weather, the Screening and the Annual samples were collected on the same day, but by different teams.
- 2) Turbidity readings were sampled due to their inclusion on an earlier iteration of the CLEAR pollutants of concern map for the Thames River near SUBASE, and are included here since they were measured. Areas were observed and no abnormal contributors were noted. The last sample run (6/16/2023) had many Bacteria exceedances, either Entero, Fecal Coliform, or both. The sites were tested after a significant dry period where the sumps were never "flushed out" with new rainwater, we believe that's what contributed to the high numbers, and will continue watching bacteria results from the two permits. All sites where exceedances occurred are in a regular rotation of sites that are inspected, and nothing was noticed to have been released to the environment.
- 3) No changes to our Stormwater Management Plan have been needed thus far due to monitoring results, but we are looking at the possibility of working with nearby towns for catch basin cleaning/debris removal.

2. Screening data for outfalls to impaired waterbodies (Section 6(i)(1) / page 41)

2.1 Screening data

Complete the table below for any outfalls screened during the reporting period. Each Annual Report will add on to the previous year's screening data showing a cumulative list of outfall screening data.

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results Entero / Fecal Coliform (cfu/100ml) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
		Bacteria			
O 1	6/8/2022	Bacteria	1660 / 457	Phoenix	Yes
O 2	3/18/2021	Bacteria	<10 / <10	Phoenix	No

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results Entero / Fecal Coliform (cfu/100ml) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
O 3	3/18/2021	Bacteria	10 / 20	Phoenix	No
O 4	3/18/2021	Bacteria	<10 / 30	Phoenix	No
O 5	3/18/2021	Bacteria	<10 / 20	Phoenix	No
O 6	1/24/2019	Bacteria	10 / <10	MicroBac	No
O 6 Revisit	9/2/2020	Bacteria	140 / 1110	MicroBac	Yes
O 6 Revisit	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O-6 Revisit	1/19/2023	Bacteria	<10 / <10	Phoenix	No
O 7	1/24/2019	Bacteria	40 / 230	MicroBac	No
O 7	9/2/2020	Bacteria	30 / 470	MicroBac	No
O 7 Revisit	3/18/2021	Bacteria	<10 / 10	Phoenix	No
O 7 Revisit	1/19/2023	Bacteria	10 / <10	Phoenix	No
O 8	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 9	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 10	3/18/2021	Bacteria	<10 / 10	Phoenix	No
O 11	6/8/2022	Bacteria	2280 / 2360	Phoenix	Yes
O 12	3/18/2021	Bacteria	<10 / 20	Phoenix	No
O 13	3/18/2021	Bacteria	<10 / 30	Phoenix	No
O 15	1/24/2019	Bacteria	70 / <10	MicroBac	No
O 15 Revisit	9/2/2020	Bacteria	3600 / 6300	MicroBac	Yes
O 15 Revisit	3/18/2021	Bacteria	<10 / 10	Phoenix	No
O 15 Revisit	1/19/2023	Bacteria	277 / <10	Phoenix	No
O 16	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 17	1/24/2019	Bacteria	80 / 10	MicroBac	No
O 17 Revisit	9/2/2020	Bacteria	50 / 430	MicroBac	Yes
O 17 Revisit	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 17 Revisit	1/19/2023	Bacteria	5480 / <10	Phoenix	Yes
O 17a	6/8/2022	Bacteria	4350 / 521	Phoenix	Yes
O 18	6/8/2022	Bacteria	24200 / 1660	Phoenix	Yes
O 19	6/8/2022	Bacteria	9800 / 548	Phoenix	Yes
O 20	3/18/2021	Bacteria	20 / 132	Phoenix	No
O-20a	3/18/2021	Bacteria	<10 / 10	Phoenix	No
O 21	3/18/2021	Bacteria	<10 / 10	Phoenix	No
O 21 Revisit	6/8/2022	Bacteria	145 / 20	Phoenix	No
O-21	6/16/2023	Bacteria	1314/1935	ECL Inc.	Yes
O 22	4/26/2019	Bacteria	<10 / <10	Phoenix	Yes
O 22 Revisit	3/18/2021	Bacteria	243 / 20	Phoenix	No
O 22a	1/24/2019	Bacteria	80 / 10	MicroBac	No - 5 yr resample (NLT 4/2024)
O 22a Revisit	9/2/2020	Bacteria	270/1490	MicroBac	Yes
O 22a Revisit	3/18/2021	Bacteria	<10 / 462	Phoenix	No
O 22a Revisit	6/8/2022	Bacteria	75 / 110	Phoenix	No
O 22a Revisit	1/19/2023	Bacteria	624 / <10	Phoenix	Yes
O-22a	6/16/2023	Bacteria	591/<10	ECL Inc.	No
O 22b	3/18/2021	Bacteria	20 / 52	Phoenix	No
O 23	3/18/2021	Bacteria	10 / 10	Phoenix	No
O 25	3/18/2021	Bacteria	364 / 41	Phoenix	Yes
O 25 Revisit	6/8/2022	Bacteria	233 / 199	Phoenix	No
O 25a	3/18/2021	Bacteria	<10 / 63	Phoenix	No
O-25	6/16/2023	Bacteria	9504/19863	ECL Inc.	Yes

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results Entero / Fecal Coliform (cfu/100ml) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
O 26	3/18/2021	Bacteria	<10 / 288	Phoenix	No
O 26b	3/18/2021	Bacteria	109 / 74	Phoenix	No
O 27	1/24/2019	Bacteria	3400 / 100	MicroBac	Yes
O 27 Revisit	9/2/2020	Bacteria	80/1750	MicroBac	Yes
O 27 Revisit	1/19/2023	Bacteria	12000 / 4610	Phoenix	Yes
O 28	3/18/2021	Bacteria	<10 / 185	Phoenix	No
O 29	6/8/2022	Bacteria	132 / 85	Phoenix	No
O 31	6/8/2022	Bacteria	262 / 173	Phoenix	No
O 32	6/8/2022	Bacteria	1110 / 309	Phoenix	Yes - 5 yr resample (NLT 06/2024)
O 32a	6/8/2022	Bacteria	<10 / <10	Phoenix	No
O 33	6/8/2022	Bacteria	2610 / 842	Phoenix	Yes
O 33a	6/8/2022	Bacteria	2480 / 279	Phoenix	Yes
O 33b	6/8/2022	Bacteria	173 / 1920	Phoenix	Yes
O 34	6/8/2022	Bacteria	2480 / 5790	Phoenix	Yes
O 35	3/18/2021	Bacteria	<135 / 504	Phoenix	Yes
O 35 Revisit	6/8/2022	Bacteria	4110 / 2280	Phoenix	Yes
O 35	6/16/2023	Bacteria	5172/2613	ECL Inc.	Yes
O 35-1	1/24/2019	Bacteria	1070 / 130	MicroBac	Yes
O 35-1 Revisit	9/2/2020	Bacteria	30 / 1090	MicroBac	Yes
O 35-1 Revisit	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 35-1 Revisit	6/8/2022	Bacteria	767 / 1190	Phoenix	Yes
O-35-1	6/16/2023	Bacteria	5794/520	ECL Inc.	Yes
O 35-1 Revisit	1/19/2023	Bacteria	185 / <10	Phoenix	No
O 35-2	6/8/2022	Bacteria	2480 / 10	Phoenix	Yes
O 35-3	3/18/2021	Bacteria	73 / 52	Phoenix	No
O 35-4	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 35-5	4/26/2019	Bacteria	31 / 226	Phoenix	Yes—5 yr resample (NLT 4/24)
O 35-5 Revisit	3/18/2021	Bacteria	30 / 294	Phoenix	No
O 35-6	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 35-7	3/18/2021	Bacteria	<10 / 10	Phoenix	No
O 35-8	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 35-9	3/18/2021	Bacteria	<10 / <10	Phoenix	No
O 35-10	6/8/2022	Bacteria	122 / <10	Phoenix	No
O 35-11	6/8/2022	Bacteria	5170 / 3040	Phoenix	Yes
O 36	1/24/2019	Bacteria	20 / 10	MicroBac	No
O 36 Revisit	9/2/2020	Bacteria	390 / 8400	MicroBac	Yes
O 36 Revisit	3/18/2021	Bacteria	<10 / 30	Phoenix	No
O 36 Revisit	6/8/2022	Bacteria	<1080 / 169	Phoenix	Yes
O 36 Revisit	1/19/2023	Bacteria	63 / <10	Phoenix	No
O 36	6/16/2023	Bacteria	24196 / 2359	ECL Inc.	Yes
O 37	3/18/2021	Bacteria	<10 / 41	Phoenix	No
O 39	6/8/2022	Bacteria	211 / 259	Phoenix	No
O 40	6/8/2022	Bacteria	455 / 565	Phoenix	Yes
		Turbidity (>5)			
O 1	6/8/2022	Turbidity	Not Detected	-	No
O-2	6/5/2020	Turbidity	68.47	-	Yes—note this is surface flow
O-3	6/5/2020	Turbidity	7.48	-	Yes
O-4	6/6/2020	Turbidity	5.06	-	Yes

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results (cfu/100ml) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
O-5	6/6/2020	Turbidity	2.28	-	No
O-6	6/6/2020	Turbidity	2.19	-	No
O-7	6/6/2020	Turbidity	5.78	-	Yes
O-8	6/6/2020	Turbidity	6.8	-	Yes
O-9	6/6/2020	Turbidity	1.48	-	No
O-10	6/6/2020	Turbidity	19.17	-	Yes
O 11	6/8/2022	Turbidity	Not Detected	-	No
O 12	3/18/2021	Turbidity	5.08	-	Yes
O 13	3/18/2021	Turbidity	6.13	-	Yes
O 15	3/18/2021	Turbidity	31.43	-	Yes
O 16	3/18/2021	Turbidity	27.29	-	Yes
O 17	3/18/2021	Turbidity	9.01	-	Yes
O 17a	6/8/2022	Turbidity	Not Detected	-	No
O 18	6/8/2022	Turbidity	6.07	-	Yes
O 19	6/8/2022	Turbidity	3.33	-	No
O 20	3/18/2021	Turbidity	5.32	-	Yes
O-20a	3/18/2021	Turbidity	8.87	-	Yes
O 21	3/18/2021	Turbidity	12.03	-	Yes
O 21	6/16/2023	Turbidity	24	-	Yes
O 22	3/18/2021	Turbidity	7.92	-	Yes
O 22a	3/18/2021	Turbidity	101.7	-	Yes
O 22a	6/16/2023	Turbidity	2.6	-	No
O 22b	3/18/2021	Turbidity	35.07	-	Yes
O 23	3/18/2021	Turbidity	19.79	-	Yes
O 25	3/18/2021	Turbidity	17.9	-	Yes
O 25	6/16/2023	Turbidity	115	-	Yes
O 25a	3/18/2021	Turbidity	23.36	-	Yes
O 26	3/18/2021	Turbidity	18.19	-	Yes
O 26b	3/18/2021	Turbidity	11.58	-	Yes
O 27	3/18/2021	Turbidity	18.7	-	Yes
O 28	3/18/2021	Turbidity	16.64	-	Yes
O 29	6/8/2022	Turbidity	Not Detected	-	No
O 31	6/8/2022	Turbidity	Not Detected	-	No
O 32	6/8/2022	Turbidity	Not Detected	-	No
O 32a	6/8/2022	Turbidity	Not Detected	-	No
O 33	6/8/2022	Turbidity	Not Detected	-	No
O 33a	6/8/2022	Turbidity	1.09	-	No
O 33b	6/8/2022	Turbidity	Not Detected	-	No
O 34	6/8/2022	Turbidity	Not Detected	-	No
O 35	6/6/2020	Turbidity	2.09	-	No
O 35	6/16/2023	Turbidity	21	-	Yes
O 35-1	6/5/2020	Turbidity	0	-	No
O 35-1	6/16/2023	Turbidity	5.3	-	Yes
O 35-2	6/8/2022	Turbidity	Not Detected	-	No
O 35-3	6/5/2020	Turbidity	5.93	-	Yes
O 35-4	6/6/2020	Turbidity	1.02	-	No
O 35-5	6/6/2020	Turbidity	1.1	-	No
O 35-6	6/6/2020	Turbidity	0.02	-	No
O 35-7	6/6/2020	Turbidity	0	-	No
O 35-8	6/6/2020	Turbidity	35.76	-	Yes

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results Entero / Fecal Coliform (cfu/100ml) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
O 35-9	6/6/2020	Turbidity	6.2	-	Yes
O 35-10	6/8/2022	Turbidity	Not Detected	-	No
O 35-11	6/8/2022	Turbidity	6.25	-	Yes
O 36	3/18/2021	Turbidity	30.18	-	Yes
O 36	6/16/2023	Turbidity	9.4	-	No
O 37	3/18/2021	Turbidity	40.86	-	Yes
O 39	6/8/2022	Turbidity	3.01	-	No
O 40	6/8/2022	Turbidity	Not Detected	-	No
		Nitrogen (<2.5)			
O 1	6/8/2022	Nitrogen	2.014	Phoenix	No
O 2	6/5/2020	Nitrogen	1.46	Phoenix	No
O 3	6/5/2020	Nitrogen	1.63	Phoenix	No
O 4	6/6/2020	Nitrogen	0.96	Phoenix	No
O 5	6/6/2020	Nitrogen	1.06	Phoenix	No
O 6	6/6/2020	Nitrogen	1.09	Phoenix	No
O 7	6/6/2020	Nitrogen	0.83	Phoenix	No
O 8	6/6/2020	Nitrogen	0.85	Phoenix	No
O 9	6/6/2020	Nitrogen	1.47	Phoenix	No
O 10	6/6/2020	Nitrogen	1.97	Phoenix	No
O 11	6/8/2022	Nitrogen	1.162	Phoenix	No
O 12	3/18/2021	Nitrogen	0.54	Phoenix	No
O 13	3/18/2021	Nitrogen	0.91	Phoenix	No
O 15	3/18/2021	Nitrogen	0.8	Phoenix	No
O 16	3/18/2021	Nitrogen	0.78	Phoenix	No
O 17	3/18/2021	Nitrogen	0.32	Phoenix	No
O 17a	6/8/2022	Nitrogen	0.754	Phoenix	No
O 18	6/8/2022	Nitrogen	0.65	Phoenix	No
O 19	6/8/2022	Nitrogen	1.05	Phoenix	No
O 20	3/18/2021	Nitrogen	0.67	Phoenix	No
O-20a	3/18/2021	Nitrogen	0.23	Phoenix	No
O 21	3/18/2021	Nitrogen	0.79	Phoenix	No
O 21 Revisit	6/8/2022	Nitrogen	1.35	Phoenix	No
O 21	6/16/2023	Nitrogen	2.94	ECL Inc.	Yes
O 22	3/18/2021	Nitrogen	0.44	Phoenix	No
O 22a	3/18/2021	Nitrogen	0.65	Phoenix	No
O 22a Revisit	6/8/2022	Nitrogen	1.45	Phoenix	No
O 22a	6/16/2023	Nitrogen	2.43	ECL Inc	No
O 22b	3/18/2021	Nitrogen	0.69	Phoenix	No
O 23	3/18/2021	Nitrogen	0.37	Phoenix	No
O 25	3/18/2021	Nitrogen	0.49	Phoenix	No
O 25 Revisit	6/8/2022	Nitrogen	1.69	Phoenix	No
O 25	6/16/2023	Nitrogen	2.65	ECL Inc	No
O 25a	3/18/2021	Nitrogen	0.66	Phoenix	No
O 26	3/18/2021	Nitrogen	0.37	Phoenix	No
O 26b	3/18/2021	Nitrogen	0.48	Phoenix	No
O 27	3/18/2021	Nitrogen	0.44	Phoenix	No
O 28	3/18/2021	Nitrogen	0.53	Phoenix	No
O 29	6/8/2022	Nitrogen	0.82	Phoenix	No
O 31	6/8/2022	Nitrogen	0.86	Phoenix	No
O 32	6/8/2022	Nitrogen	0.77	Phoenix	No

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results Entero / Fecal Coliform (cfu/100mL) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
O 32 a	6/8/2022	Nitrogen	0.59	Phoenix	No
O 33	6/8/2022	Nitrogen	0.64	Phoenix	No
O 33a	6/8/2022	Nitrogen	1.03	Phoenix	No
O 33b	6/8/2022	Nitrogen	0.942	Phoenix	No
O 34	6/8/2022	Nitrogen	0.43	Phoenix	No
O 35	6/6/2020	Nitrogen	1	Phoenix	No
O 35 Revisit	6/8/2022	Nitrogen	1.46	Phoenix	No
O 35	6/16/2023	Nitrogen	2.64	ECL Inc	Yes
O 35-1	6/5/2020	Nitrogen	2.82	Phoenix	Yes
O 35-1 Revisit	6/8/2022	Nitrogen	2.02	Phoenix	No
O 35-1	6/16/2023	Nitrogen	2.23	ECL Inc.	No
O 35-2	6/8/2022	Nitrogen	1.29	Phoenix	No
O 35-3	6/5/2020	Nitrogen	1.34	Phoenix	No
O 35-4	6/6/2020	Nitrogen	0.82	Phoenix	No
O 35-5	6/6/2020	Nitrogen	0.93	Phoenix	No
O 35-6	6/6/2020	Nitrogen	0.86	Phoenix	No
O 35-7	6/6/2020	Nitrogen	0.98	Phoenix	No
O 35-8	6/6/2020	Nitrogen	1.43	Phoenix	No
O 35-9	6/6/2020	Nitrogen	0.94	Phoenix	No
O 35-10	6/8/2022	Nitrogen	1.64	Phoenix	No
O 35-11	6/8/2022	Nitrogen	1.64	Phoenix	No
O 36	3/18/2021	Nitrogen	3.18	Phoenix	Yes
O 36 Revisit	6/8/2022	Nitrogen	1.43	Phoenix	No
O 36	6/16/2023	Nitrogen	1.64	ECL Inc	No
O 37	3/18/2021	Nitrogen	4.99	Phoenix	Yes
O 39	6/8/2022	Nitrogen	0.46	Phoenix	No
O 40	6/8/2022	Nitrogen	0.34	Phoenix	No
		Phosphorus (<0.3)			
O-1	6/8/2022	Phosphorus	0.215	Phoenix	No
O-2	6/5/2020	Phosphorus	0.105	Phoenix	No
O-3	6/5/2020	Phosphorus	0.051	Phoenix	No
O-4	6/6/2020	Phosphorus	0.043	Phoenix	No
O-5	6/6/2020	Phosphorus	0.056	Phoenix	No
O-6	6/6/2020	Phosphorus	0.017	Phoenix	No
O-7	6/6/2020	Phosphorus	0.013	Phoenix	No
O-8	6/6/2020	Phosphorus	0.03	Phoenix	No
O-9	6/6/2020	Phosphorus	0.010	Phoenix	No
O-10	6/6/2020	Phosphorus	0.050	Phoenix	No
O 11	6/8/2022	Phosphorus	0.123	Phoenix	No
O 12	3/18/2021	Phosphorus	0.037	Phoenix	No
O 13	3/18/2021	Phosphorus	0.113	Phoenix	No
O 15	3/18/2021	Phosphorus	0.120	Phoenix	No
O 16	3/18/2021	Phosphorus	0.060	Phoenix	No
O 17	3/18/2021	Phosphorus	0.017	Phoenix	No
O 17a	6/8/2022	Phosphorus	0.108	Phoenix	No
O 18	6/8/2022	Phosphorus	0.057	Phoenix	No
O 19	6/8/2022	Phosphorus	0.217	Phoenix	No
O 20	3/18/2021	Phosphorus	0.031	Phoenix	No
O-20a	3/18/2021	Phosphorus	0.014	Phoenix	No
O 21	3/18/2021	Phosphorus	0.684	Phoenix	Yes

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results Entero / Fecal Coliform (cfu/100ml) 500 / 260 benchmarks	Name of Laboratory (if used)	Follow-up required? *
O 21 Revisit	6/8/2022	Phosphorus	0.096	Phoenix	No
O 21	6/18/2023	Phosphorus	0.188	ECL Inc	No
O 22	3/18/2021	Phosphorus	0.048	Phoenix	No
O 22a	3/18/2021	Phosphorus	0.123	Phoenix	No
O 22a Revisit	6/8/2022	Phosphorus	0.201	Phoenix	No
O 22a	6/18/2023	Phosphorus	0.164	ECL Inc	No
O 22b	3/18/2021	Phosphorus	0.079	Phoenix	No
O 23	3/18/2021	Phosphorus	0.094	Phoenix	No
O 25	3/18/2021	Phosphorus	0.028	Phoenix	No
O 25 Revisit	6/8/2022	Phosphorus	0.248	Phoenix	No
O 25	6/16/2023	Phosphorus	0.546	ECL Inc	Yes
O 25a	3/18/2021	Phosphorus	0.167	Phoenix	No
O 26	3/18/2021	Phosphorus	0.076	Phoenix	No
O 26b	3/18/2021	Phosphorus	0.040	Phoenix	No
O 27	3/18/2021	Phosphorus	0.070	Phoenix	No
O 28	3/18/2021	Phosphorus	0.128	Phoenix	No
O 29	6/8/2022	Phosphorus	0.176	Phoenix	No
O 31	6/8/2022	Phosphorus	0.071	Phoenix	No
O 32	6/8/2022	Phosphorus	0.094	Phoenix	No
O 32a	6/8/2022	Phosphorus	0.088	Phoenix	No
O 33	6/8/2022	Phosphorus	0.064	Phoenix	No
O 33a	6/8/2022	Phosphorus	0.134	Phoenix	No
O 33b	6/8/2022	Phosphorus	0.021	Phoenix	No
O 34	6/8/2022	Phosphorus	0.189	Phoenix	No
O 35	6/6/2020	Phosphorus	0.06	Phoenix	No
O 35 Revisit	6/8/2022	Phosphorus	0.141	Phoenix	No
O 35	6/16/2023	Phosphorus	2.94	ECL Inc	Yes
O 35-1	6/5/2020	Phosphorus	<0.010	Phoenix	No
O 35-1 Revisit	6/8/2022	Phosphorus	0.201	Phoenix	No
O 35-1	6/16/2023	Phosphorus	0.119	ECL Inc	No
O 35-3	6/5/2020	Phosphorus	0.11	Phoenix	No
O 35-4	6/6/2020	Phosphorus	0.071	Phoenix	No
O 35-5	6/6/2020	Phosphorus	0.042	Phoenix	No
O 35-6	6/6/2020	Phosphorus	0.028	Phoenix	No
O 35-7	6/6/2020	Phosphorus	0.073	Phoenix	No
O 35-8	6/6/2020	Phosphorus	0.127	Phoenix	No
O 35-9	6/6/2020	Phosphorus	0.042	Phoenix	No
O 35-10	6/8/2022	Phosphorus	0.055	Phoenix	No
O 35-11	6/8/2022	Phosphorus	0.116	Phoenix	No
O 36	3/18/2021	Phosphorus	0.110	Phoenix	No
O 36 Revisit	6/8/2022	Phosphorus	0.245	Phoenix	No
O 36	6/16/2023	Phosphorus	0.167	ECL Inc	No
O 37	3/18/2021	Phosphorus	0.277	Phoenix	No
O 39	6/8/2022	Phosphorus	0.038	Phoenix	No
O 40	6/8/2022	Phosphorus	0.049	Phoenix	No

*Follow-up investigation required (last column) if the following pollutant thresholds are exceeded:

Pollutant of concern	Pollutant threshold
Nitrogen	Total N > 2.5 mg/l
Phosphorus	Total P > 0.3 mg/l
Bacteria (fresh waterbody)	<ul style="list-style-type: none"> E. coli > 235 col/100ml for swimming areas or 410 col/100ml for all others Total Coliform > 500 col/100ml
Bacteria (salt waterbody)	<ul style="list-style-type: none"> Fecal Coliform > 31 col/100ml for Class SA and > 260 col/100ml for Class SB Enterococci > 104 col/100ml for swimming areas or 500 col/100 for all others
Other pollutants of concern	Sample turbidity is 5 NTU > in-stream sample

3. Follow-up investigations (Section 6(i)(1)(D) / page 43)

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall	Status of drainage area investigation	Control measure implementation to address impairment
O17, O21, O22A, O25, O27, O35, O35-1, and O36	Ongoing (Industrial permitted area)	Monthly inspections, feral cat management program, general Housekeeping efforts have addressed the Bacteria (O17, O21, O22A, O25, O27, O35, O35-1, O36) and N (O21, O25, O35 exceedances, turbidity exceedances at O21, O25, O35, O35-1, and O36 is addressed below
Various	Turbidity exceedances along the lower base corridor have been impacted by extensive sewer repair work, though BMPs were employed vehicle traffic and extent of work resulted in raised levels, with repair work largely completed existing BMPs will be adequate for normal operations.	Focus on BMP upkeep after initial installation (for example, fabric screens were so loaded down with material they would tear).
O 40	Ongoing	This is one of the Outfalls impacted by the Weapons Area recapitalization project, control measures are in final design stage.

4. Prioritized outfall monitoring (Section 6(i)(1)(D) / page 43)

Once outfall screening has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 1, 2021.

Outfall	Sample Date	Parameter(s)	Annual Results	Name of Laboratory (if used)	Results
O 21	3/18/2021 6/8/2022 6/16/2023	P, N, Bacteria (FC & Entero)	High Bacteria, Fecal Coliform, and Turbidity	ECL	Enterococcus Bacteria 1314 MPN/mL; Fecal Coliform Bacteria 1935 MPN/100mL; pH 6.3 S.U.; Turbidity 24 NTU; Nitrate-Nitrite 0.72 mg/L; Nitrogen Tot Kjeldahl 2.22 mg/L; Total Nitrogen 2.94 mg/L; Phosphorus as P 0.188 mg/L

Outfall	Sample Date	Parameter(s)	Annual Results	Name of Laboratory (if used)	Results
O 22a	3/18/2021 6/8/2022 6/16/2023	P, N, Bacteria (FC & Entero)	High Bacteria	ECL	Enterococcus Bacteria 591 MPN/100mL; Fecal Coliform Bacteria <10 MPN/100mL; pH 7.7 S.U.; Turbidity 2.6 NTU; Nitrate-Nitrite 0.74 mg/L; Nitrogen Total Kjeldahl 1.69 mg/L; Total Nitrogen 2.43 mg/L; Phosphorus as P 0.164mg/L
O 25	3/18/2021 6/8/2022 6/16/2023	P, N, Bacteria (FC & Entero)	High Bacteria, Fecal Coliform, Turbidity, and Phosphorus	ECL	Enterococcus Bacteria 9804 MPN/100mL; Fecal Coliform Bacteria 19863 MPN/100mL; pH 7.75 S.U.; Turbidity 115 NTU; Nitrate-Nitrite 0.53 mg/L; Nitrogen Total Kjeldahl 2.12 mg/L; Total Nitrogen 2.65 mg/L; Phosphorus as P 0.546 mg/L
O 35	3/18/2021 6/8/2022 6/16/2023	P, N, Bacteria (FC & Entero)	High Bacteria, Fecal Coliform, Turbidity, and Phosphorus	ECL	Enterococcus Bacteria 5172 MPN/100mL; Fecal Coliform Bacteria 2613 MPN/100mL; pH 6.28 S.U.; Turbidity 21 NTU; Nitrate-Nitrite 0.42 mg/L; Nitrogen Total Kjeldahl 2.22 mg/L; Total Nitrogen 2.64 mg/L; Phosphorus as P 2.94 mg/L
O 35-1	3/18/2021 6/8/2022 6/16/2023	P, N, Bacteria (FC & Entero)	High Bacteria, Fecal Coliform, and Turbidity	ECL	Enterococcus Bacteria 5794 MPN/100mL; Fecal Coliform Bacteria 520 MPN/100mL; pH 7.56 S.U.; Turbidity 5.3 NTU; Nitrate-Nitrite 0.59 mg/L; Nitrogen Total Kjeldahl 1.64 mg/L; Phosphorus as P 0.119 mg/L
O 36	3/18/2021 6/8/2022 6/16/2023	P, N, Bacteria (FC & Entero)	High Bacteria, Fecal coliform, and Turbidity	ECL	Enterococcus Bacteria 24196 MPN/100mL; Fecal Coliform Bacteria 2359 MPN/100mL; pH 6.43 S.U.; Turbidity 9.4 NTU; Nitrate-Nitrite 0.34 mg/L; Nitrogen Total Kjeldahl 1.30 mg/L; Total Nitrogen 1.64 mg/L; Phosphorus as P 0.167 mg/L

Part III: Additional IDDE Program Data

1. Assessment and Priority Ranking of Catchments data (Appendix B (A)(7)(c) / page 5)

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

Catchment Area ID	Catchment Classification	Catchment Priority Rank		Catchment Area ID	Catchment Classification	Catchment Priority Rank
DA-35-5	Problem	1		DA-7	Low	30
DA-22	High	2		DA-9	Low	31
DA-35-1	Low	3		DA-6	Low	32
Sheet Flow	Low	4		DA-16	Low	33
DA-21	Low	5		DA-10	Low	34
DA-35	Low	6		DA-33-2	Low	35
DA-35-3	Low	7		DA-35-10	Low	36
DA-36	Low	8		DA-29	Low	37
DA-23	Low	9		DA-33-1	Low	38
DA-18	Low	10		DA-35-6	Low	39
DA-17-1	Low	11		DA-12	Low	40
DA-15	Low	12		DA-35-11	Low	41
DA-13	Low	13		DA-35-13	Low	42
DA-32	Low	14		DA-34	Low	43
DA-25	Low	15		DA-20/22	Low	44
DA-11	Low	16		DA-19	Low	45
DA-26	Low	17		DA-3	Low	46
DA-20	Low	18		DA-35-12	Low	47
DA-27	Low	19		DA-4	Low	48
DA-33	Low	20		DA-2/11	Low	49
DA-37	Low	21		DA-5	Low	50
DA-31	Low	22		DA-35-2	Low	51
DA-2	Low	23		DA-39	Low	52
DA-17	Low	24		DA-40	Low	53
DA-32-1	Low	25		DA-35-7/8	Low	54
DA-28	Low	26		DA-35-9	Low	55
DA-20A	Low	27		DA-26-1	Low	56
DA-35-4	Low	28		DA-1	Low	57
DA-8	Low	29				

2. Outfall and Interconnection Screening and Sampling data (Appendix B (A)(7)(d) / page 7)

2.1 Dry weather screening and sampling data from outfalls and interconnections

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies.

Outfall / Interconnection ID	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken
022 - 106	8/22/2019 10:30	0.165	<0.05	760	<1	<10 / 10	<0.0500	28.1	Bacteria	
022 - Shark	8/22/2019 9:40	0.0798	0.08	350	<1	80 / 360	0.063	25.4	Bacteria	
035 - 433	8/22/2019 11:25	<0.0500	<0.05	350	<1	30 / 150	<0.0500	25.3	Bacteria	
035 - 484	8/22/2019 11:20	0.168	<0.05	330	<1	50 / 540	0.156	26.1	Bacteria	O-35 complex is under investigation, including sampling and projects such as 549 tank replacement, suspect findings are all related to high-groundwater "Crystal Lake" site.
035 - Tang	8/22/2019 12:20	0.646	0.06	2400	1.2	60 / 610	0.148	24.8	Bacteria	
035 - Track	8/22/2019 13:10	0.71	0.09	980	<1	10 / <10	0.079	24.5	Bacteria	
035 - Baseball	8/22/2019 12:45	0.38	0.07	1010	<1	70 / 290	0.086	24.2	Bacteria	
Thames (background sample)	8/22/2019 13:40	0.094	<0.05	Above limits	Unable to calculate	<10 / <10	0.14	28.1	Bacteria	
020/22 - Rock	8/22/2019 10:00	<0.0500	<0.05	280	<1	<10 / <10	<0.0500	24.5	Bacteria	

020/022-449	9/23/2019 9:30	2.32	<0.05	190	<1	<10 / 28	0.79	21.6	Bacteria	Building check
037-519	9/23/2019 10:30	0.177	<0.05	20	<1	150 / 50	0.139	22.9	Bacteria	
035-5-520	9/23/2019 11:00	0.408	<0.05	30	<1	240 / 691	0.231	23.1	Bacteria	
Outfall / Interconnection ID	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken
035-461	9/23/2019 11:40	0.066	<0.05	500	<1	100 / 39	0.051	19.6	Bacteria	
034-A571	9/23/2019 12:10	0.0613	0.08	1470	<1	<10 / 1	0.056	22.7	Bacteria	
02-PR1	9/23/2019 13:00	0.0664	0.12	740	<1	<10 / 722	0.089	23.8	Bacteria	Looked at Golf course area and surface flow, nothing found
011-SHARK	9/23/2019 13:20	0.106	0.07	1720	<1	<10 / 232	0.099	22.2	Bacteria	
035-582	9/23/2019 14:00	<0.0500	0.05	300	<1	<10 / 60	<0.0500	25.7	Bacteria	
035-4-518	9/26/2019 9:20	0.121	0.06	830	<1	<10 / 6	0.14	21.9	Bacteria	
035-3-569	9/26/2019 9:50	0.403	<0.05	660	<1	<10 / 261	<0.500	21.5	Bacteria	
026-84	9/26/2019 10:20	0.367	<0.05	70	<1	<10 / <1	ND	23.4	Bacteria	
032-499	9/26/2019 11:20	2.54	<0.05	50	<1	<10 / 10	0.116	21.7	Bacteria	Building check uphill, nothing found
035-9-434	9/26/2019 12:20	0.0627	<0.05	1320	<1	50 / 33	<0.0500	19.0	Bacteria	
026-492	9/26/2019 13:00	<0.0500	<0.05	20	<1	<10 / 37	<0.0500	21.9	Bacteria	
035-Tautog	9/26/2019 13:40	0.105	<0.05	1110	<1	<10 / 68	0.085	21.8	Bacteria	

032-168	9/26/2019 14:20	0.289	<0.05	40	<1	<10 / 83	0.204	21.3	Bacteria	
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2.2 Wet weather sample and inspection data

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor.

Outfall / Interconnection ID	Sample date	Ammonia	Chlorine	Conductivity	Salinity	Fecal coliform / Enterococcus (Sampled on 3/18/2021)	Surfactants	Water Temp C	Pollutant of concern
O 1	6/8/2022	0.42	0.16	690	0.34	457 / 1660	0.14	19	Bacteria
O-2	6/5/2020	0.31	0	817	0.4	<10 / <10	<0.10	20.3	Bacteria
O-3	6/5/2020	0.11	0.06	15674	9.18	10 / 20	0.64	20.7	Bacteria
O-4	6/6/2020	0.28	0	53.2	0.02	<10 / 30	0.22	19.9	Bacteria
O-5	6/6/2020	0.36	0	42.6	0.02	<10 / 20	0.28	19.8	Bacteria
O-6	6/6/2020	0.24	0	31.5	0.01	<10 / <10	0.12	19.9	Bacteria
O-7	6/6/2020	0.19	0	120.2	0.06	<10 / 10	0.19	19.9	Bacteria
O-8	6/6/2020	0.29	0	67	0.03	<10 / <10	0.06	19	Bacteria
O-9	6/6/2020	0.14	0.03	18593	11.06	<10 / <10	0.52	19.4	Bacteria
O-10	6/6/2020	0.35	0.01	2385	1.23	<10 / 10	0.64	19.8	Bacteria
O 11	6/8/2022	0.21	0.33	523.1	0.25	2360 / 2280	0.1	19	Bacteria
O 12	3/18/2021	0.12	0	58.6	0.02	<10 / 20	0.18	8.5	Bacteria
O 13	3/18/2021	0.23	0	38.6	0.01	<10 / 30	0.06	8.5	Bacteria
O 15	3/18/2021	0.13	0.22	58	0	<10 / 10	0.12	8.4	Bacteria
O 16	3/18/2021	0.15	0.20	571	0.3	<10 / <10	0.28	8.4	Bacteria
O 17	3/18/2021	0.10	0.01	211.8	0.1	<10 / <10	<0.05	8.6	Bacteria
O 17a	6/8/2022	0.13	0.11	36.7	0.02	521 / 4350	0.07	19.7	Bacteria
O 18	6/8/2022	0.23	0	19.1	0.01	1660 / >24200	0.12	19.7	Bacteria
O 19	6/8/2022	0.30	0.04	50.6	0.02	548 / 9800	0.08	19.5	Bacteria
O 20	3/18/2021	0.08	0	106	0.1	20 / 132	<0.05	8.4	Bacteria
O-20a	3/18/2021	0.05	0	32.3	0	<10 / 10	<0.05	8.3	Bacteria
O 21	3/18/2021	0.14	0	65.1	0	<10 / 62	<0.05	8.5	Bacteria
O 22	3/18/2021	0.09	0.01	18.1	0	243 / 20	0.11	8.4	Bacteria
O 22a	3/18/2021	0.12	0	33.3	0	<10 / 462	0.10	8.6	Bacteria

Outfall / Interconnection ID	Sample date	Ammonia	Chlorine	Conductivity	Salinity	Fecal coliform / Enterococcus (Sampled on 3/18/2021)	Surfactants	Water Temp C	Pollutant of concern
O 22b	3/18/2021	0.09	0	176.7	0.1	20 / 52	0.07	8.6	Bacteria
O 23	3/18/2021	0.10	0	73.4	0	10 / 10	<0.05	8.3	Bacteria
O 25	3/18/2021	0.10	0	63.3	0	364 / 41	<0.05	8.6	Bacteria
O 25a	3/18/2021	0.14	0	38.4	0	<10 / 63	<0.05	8.7	Bacteria
O 26	3/18/2021	0.07	0	19.0	0	<10 / 288	0.16	8.5	Bacteria
O 26b	3/18/2021	0.09	0.01	90.7	0	109 / 74	<0.05	8.5	Bacteria
O 27	3/18/2021	0.09	0	116.4	0.1	10 / 122	<0.05	8.6	Bacteria
O 28	3/18/2021	0.12	0	176.1	0.1	<10 / 185	0.09	8.4	Bacteria
O 29	6/8/2022	0.17	0.04	18.5	0.01	85 / 132	0.09	18.9	Bacteria
O 31	6/8/2022	0.25	0.01	37.4	0.02	173 / 262	0.14	19.6	Bacteria
O 32	6/8/2022	0.22	0.02	41.7	0.02	309 / 1110	0.09	19.7	Bacteria
O 32a	6/8/2022	0.2	0	40	0.02	<10 / <10	<0.05	19.2	Bacteria
O 33	6/8/2022	0.12	0.04	40	0.02	842 / 2610	<0.05	19.5	Bacteria
O 33a	6/8/2022	0.16	0.07	54	0.02	279 / 2480	0.10	19.6	Bacteria
O 33b	6/8/2022	0.21	0.02	33.7	0.01	1920 / 173	0.27	19.6	Bacteria
O 34	6/8/2022	0.05	0.09	253	12	5790 / 2480	<0.05	18.5	Bacteria
O 35	6/6/2020	0.22	0	40.6	0.02	135 / 504	0.07	19.1	Bacteria
O 35-1	6/5/2020	0.06	0	637	0.31	<10 / <10	<0.05	21.1	Bacteria
O 35-2	6/8/2022	0.43	0.09	107.1	0.05	10 / 2480	0.08	19.6	Bacteria
O 35-3	6/5/2020	0.11	0	633	0.31	73 / 52	0.14	19.5	Bacteria
O 35-4	6/6/2020	0.1	0	388.2	0.19	<10 / <10	0.07	18.9	Bacteria
O 35-5	6/6/2020	0.13	0	120	0.06	30 / 294	0.08	19.7	Bacteria
O 35-6	6/6/2020	0.19	0	0.2	0	<10 / <10	0.11	19.4	Bacteria
O 35-7	6/6/2020	0.11	0	113.9	0.05	<10 / 10	<0.05	19.9	Bacteria
O 35-8	6/6/2020	0.16	0	86.9	0.04	<10 / <10	0.09	19.6	Bacteria
O 35-9	6/6/2020	0.24	0	137.3	0.06	<10 / <10	0.09	20.1	Bacteria
O 35-10	6/8/2022	0.43	0.23	33.6	0.01	<10 / 122	0.08	19.7	Bacteria
O 35-11	6/8/2022	0.48	0.12	34.4	0.01	3040 / 5170	0.15	18.7	Bacteria
O 36	3/18/2021	0.35	0.04	5,480	3.4	<10 / 30	0.16	8.4	Bacteria
O 37	3/18/2021	1.28	0.01	2352	1.2	<10 / 41	0.34	9.1	Bacteria
O 39	6/8/2022	<0.05	0	403.9	0.19	259 / 211	0.1	17.9	Bacteria
O 40	6/8/2022	<0.05	0	181.7	0.09	565 / 455	<0.05	17.7	Bacteria

3. Catchment Investigation data (Appendix B (A)(7)(e) / page 9)

3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

Outfall ID	Receiving Water	System Vulnerability Factors
All	Thames River	SUBASE Catchment Assessments were conducted for our IDDE Program Plan and then ranked, based off of the SVF's listed below. When documenting the presence or absence of specific SVFs, it was apparent SVF #10 (below) applied universally to SUBASE, with very few isolated areas within a given catchment having significant updates/upgrades. As such, the entire Stormwater sewer system falls under the illicit discharge elimination screening program. Screening selection/baselines were conducted from 25-26 October 2016 and verified from 17 July-15 August 2018. DA 35-5 ("Problem") and DA 22 ("High priority") were investigated, results below (Table 3.3 & 3.4). Additionally, a contracted screening action ending 26 September 2019 added a single (potential) floor drain cross-connection within DA 32 (Bldg 499)—reasonable and prudent measures have been taken to minimize the discharge of pollutants through "plugs", and the site has been inducted for permanent correction, with verification sampling to follow. All repair actions have been completed, awaiting final verification sampling.

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

Key Junction Manhole ID	Sample date / Time	Visual / olfactory evidence of illicit discharge	Ammonia mg/L	Chlorine mg/L	Surfactants mg/L
022 - 106	8/22/2019 10:30	Flow (~5 gpm)	0.165	<0.05	<0.0500
022 - Shark	8/22/2019 9:40	Flow (~5 gpm)	0.0798	0.08	0.063
035 - 433	8/22/2019 11:25	Flow (~5 gpm)	<0.0500	<0.05	<0.0500
035 - 484	8/22/2019 11:20	Flow (~1 gpm)	0.168	<0.05	0.156
035 - Tang	8/22/2019 12:20	Flow (~5-10 gpm)	0.646	0.06	0.148
035 - Track	8/22/2019 13:10	Flow (~3-5 gpm)	0.71	0.09	0.079
035 - Baseball	8/22/2019 12:45	Flow (~3-5 gpm)	0.38	0.07	0.086
Thames (background sample)	8/22/2019 13:40	N/A	0.094	<0.05	0.14
020/22 - Rock	8/22/2019 10:00	Flow (~10-15 gpm)	<0.0500	<0.05	<0.0500
020/022-449	9/23/2019 9:30	Flow (~1 gpm)	2.32	<0.05	0.79
037-519	9/23/2019 10:30	Flow (~1-3 gpm)	0.177	<0.05	0.139
035-5-520	9/23/2019 11:00	Flow (<0.5 gpm)	0.408	<0.05	0.231
035-461	9/23/2019 11:40	Stream Flow (50+ gpm)	0.066	<0.05	0.051
034-A571	9/23/2019 12:10	Flow (~1 gpm)	0.0613	0.08	0.056
02-PR1	9/23/2019 13:00	Stream Flow (20+ gpm)	0.0664	0.12	0.089
011-SHARK	9/23/2019 13:20	Stream Flow (20+ gpm)	0.106	0.07	0.099
035-582	9/23/2019 14:00	Flow (~1 gpm)	<0.0500	0.05	<0.0500
035-4-518	9/26/2019 9:20	Flow (~100 gpm)	0.121	0.06	0.14
035-3-569	9/26/2019 9:50	Flow (~1 gpm)	0.403	<0.05	<0.500
026-84	9/26/2019 10:20	Flow (<.1 gpm)	0.367	<0.05	ND
032-499	9/26/2019 11:20	Flow (<1 gpm)	2.54	<0.05	0.116
035-9-434	9/26/2019 12:20	Flow (~1-2 gpm)	0.0627	<0.05	<0.0500
026-492	9/26/2019 13:00	Flow (~1 gpm)	<0.0500	<0.05	<0.0500
035-Tautog	9/26/2019 13:40	Flow (~5-10 gpm)	0.105	<0.05	0.085
032-168	9/26/2019 14:20	Flow (~1-3 gpm)	0.289	<0.05	0.204


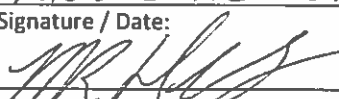
3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
DA 35-5	4/26/19 (5-year confirmation test due before 4/2024)	0.25	.14/retest .02 (6/6/2019)	0.11
DA 22	4/26/19 (5-year confirmation test due before 4/2024)	0.25	.00 (6/6/2019)	0.13
DA 32	9/26/2019 (5-year confirmation test due before 6/2024)	0.22	0.02	0.09

3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed
DA 35-5	Bldg 439	Floor drain in mech room appeared to flow to Storm sewer system	IDDE survey	Verified 24 Jul 2018	Verified 6 June 2019	Removed drain and plugged with concrete pour, re-routed floor drains to known sanitary sewer connection.	Intermittent, likely only from HVAC use
DA 32	Bldg 499	Floor drain in mech room appears to flow to Storm sewer system	IDDE survey	Verified 5 Dec 2019	Verified 5 March 2021	Re-routed to nearby sanitary sewer, direct connection for condensate sources within mechanical room.	Intermittent, likely only from HVAC use
DA 22a	Bldg 106	Sewage odor	IDDE survey	Various	Verified 6 June 2019	Sampled and Shops investigated via Work Order.	N/A

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name: Chris Kapraski	Print name: Nicole Hester
Signature / Date:  3-26-2024	Signature / Date:  3-26-2024