United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, Seattle, WA 98101

2025 MS4 Annual Report
Under Phase II MS4 General Permitting Program
01/31/2024 - 01/30/2025

FORM Approved OMB No. 2040-0004 Expires On 07/31/2026

MS4 Entity Information

MS4 Name: Naval Base Kitsap Ms4

MS4 Operator: Department Of The Navy

MS4 Class: Phase II: Small
Operator Type: Federal
MS4 Entity Type: Military Installation

City: Bremerton
County: Kitsap
MS4 State/Territory: Washington

Designation Date: 11/13/2000
Designation Type: Automatic Nationwide
Population:
Source:

MS4 Identifier: MS4-WA-SM-FE-2000-0003
NPDES ID: WAS026646
MGP Number: WAS4IP000
Joint Coverage:

Latitude: 47.720556°N
Longitude: 122.713056°W

Description of Location:

MS4 Contact Information

MS4 Program Coordinator Information

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Middle Initial:
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State: Washington
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Permittee Responsibilities and Equivalent Documents

Has the Permittee submitted to EPA for consideration any documents, plans, programs or program summaries that the Permittee believes to be equivalent to a required control measure or control measure? No

Do you, the Permittee, share Permit implementation responsibility with one or more Outside Entity for compliance with the Permit? No

Have you established and maintained relevant enforceable mechanisms to control pollutant discharges into and from the MS4 and to meet the requirements of this Permit? Yes

Are you maintaining system(s) to track SWMP data and information? Yes

MCM1: Public Education and Outreach

Have you listed and publicized means for the public and Permittee personnel to report spills and other illicit discharges? Yes

Have you informed target audiences of the environmental impacts associated with illegal discharges and improper disposal of waste and how to report them? Yes

Have you selected specific education and outreach topics to build general awareness and effect behavior change? Yes

Please list these topics:

Education and outreach on appropriate spill prevention practices started during the first year of the permit and has continued through this year. During the second year of the permit, proper pet waste management was added as a second topic of emphasis.

Please summarize your activities and accomplishments as part of the Southern Resident Killer Whale Outreach and Education efforts.

As required by part 2.1.1.3, Naval Facilities Engineering Systems Command (NAVFAC) Northwest (NW) worked with National Marine Fisheries Service (NMFS) to develop and deliver a training program for target audiences. During Year 1 of the permit, NOAA hosted a virtual training for MS4 program managers and other Navy personnel who could potentially impact stormwater management. During Year 3, NOAA provided a slide presentation to MS4 program managers on impacts from stormwater on Southern Resident killer whales (SRKW) on June 6, 2023. For 2024, NAVFAC NW obtained the Northwest Area Committee and Region 10 Response Team's Deterrence Task Force Final Report, published June 2024, to develop a training program to present the report findings to the installations within the region. Flyers describing pollution effects on SRKWs were posted at mailbox kiosks in installation housing areas at Bangor, Jackson Park, and Keyport.

Have you conducted public education and outreach activities specifically on bacterial pollution problems? Yes

Have you assessed, or participated in efforts to assess, the understanding and adoption of intended behaviors by the target audiences for at least one of the topics? Yes

Please summarize your efforts to assess the education and outreach activities conducted during the reporting period, and how this information is being utilized to improve the public education and outreach program efforts. Please also include one or more example of successful education/outreach.

Education regarding proper spill reporting on base to prevent stormwater pollution has resulted in an increase in the number of reported spill notifications and cleanup responses relative to pre-permit baseline information (2019-2020). This was the first indication of behavioral change. The volume of calls attracted the attention of command leadership, who established command emphasis on spill prevention with the support of the Installation Environmental Office, marking leadership behavioral change, with the COMNAVREGNW and NBK Commanding Officer both establishing spill reduction goals as command Objectives, requiring ongoing metric and improvement tracking for the command. In 2024, NBK Bangor Established an Oil and Hazardous Substance (OHS) Environmental Working Group amongst base leadership and stakeholders, to facilitate improvement in command Spill Prevention goals for NBK Bangor.

Pet waste was selected as an educational and outreach topic to build general awareness and effect behavior change. Hunt Military Communities, the Navy's Public/Private Venture housing service provider, has been engaged with base housing residents on pet waste management. The Installation Environmental Office has conducted ongoing surveys of base housing areas, to evaluate resident and housing management compliance with installation pet waste management policy. Survey feedback was provided to Hunt Military Communities for their action, with notable improvements made in the few problem areas observed. Surveys of base recreational areas have been conducted for several years, with no problem areas identified, and overall less than one pile per acre observed. Surveys of public and recreation areas by the Installation Environmental Office for pet waste have identified neighborhoods without fencing as the most problematic areas. Although not a significant problem prior to the educational campaign, behavioral change on pet waste management has been observed in these limited problem areas as a result of survey feedback to Hunt Military Communities and their follow-up actions, to include outreach to residents coupled with warnings and fines to individual offenders when identified.

The Installation Environmental Office developed new advertisements for spill prevention and response and distributed them out to tenant commands. The NBK commanding officer supported these advertisements by sponsoring their display on video screens throughout the installation operated by Navy Morale Welfare and Recreation. The Installation Environmental Office placed these advertisements on durable educational posters and installed them on industrial piers where the greatest risks exist. The Installation Environmental Office continued to provide magnets to the Unaccompanied Housing Office reminding residents that vehicle maintenance was prohibited in installation parking lots.

The Installation Environmental Office engaged the public face to face at the following events:

- Monthly Environmental Awareness Training for industrial workers
- Annual recreational fishing derby at Trident Lakes, May 4, with about 400 attendees
- Operation MWR festival and concert, June 1, with about 1000 attendees
- Wheels and Wags Walk, July 18
- Elwood Point Beach Walk, July 20
- Spoil Your Dog Day, August 10

As a result of engagement with local municipalities through the West Sound Stormwater Outreach Group, NBK obtained permission to demonstrate Kitsap County's poop toss game for public education on proper pet waste disposal, which was received with great enthusiasm by children and adults at multiple events.

NBK advanced understanding of pet waste environmental impact with educational signage placed at pet waste stations in housing and recreational areas maintained by Hunt Military Communities and the Installation Environmental Office, respectively.

MCM2: Public Involvement and Participation

Have you conducted one or more meetings to coordinate among appropriate staff, managers and others who play a role in Permit implementation? Yes

Briefly describe meeting(s), participants, and topics:

Installation stakeholders include environmental compliance staff, base housing management, public works, and NAVFAC NW Design and Construction Division. Having established roles, responsibilities and procedures in the SWMP, communication has become in formal and ad hoc, focusing on particular issues and construction projects.

The NBK commanding officer is briefed annually on the installation stormwater program in coordination with the NBK Environmental Management System (EMS) Management Review and delivery of this annual MS4 report.

NBK continues to collaborate on education and public involvement initiatives with the West Sound Stormwater Outreach Group, a county-wide partnership of municipalities. Due to practical constraints, NBK develops separate parallel programs, such as for pet waste, but the forum is valuable for information, idea sharing and feedback.

Monthly stormwater meetings are held with key stormwater management personnel at Naval Station Everett, Naval Air Station Whidbey Island, and Naval Base Kitsap. Consistent monthly meetings were started in February 2020, and have continued since. These monthly meetings are used to discuss any topic related to stormwater, and to share best practices and lessons learned regarding stormwater management and implementation of the MS4 permit, MSGP, and CGP. The meetings provide a collaborative approach to stormwater management in the NW Region. Below is a summary of meetings held during the year:

Year Month Meeting Topics
2024

February SWPPP and SWMP updates, annual reports, 6PPD, SWMMWW, Downspout Evaluation updates, stormwater mapping, upcoming construction projects, funding, upcoming NeT MS4 training, and MS4 education and outreach.
March Education and outreach campaign, stormwater mapping, funding, SWPPP for heavy equipment maintenance, firefighter training, and annual reports.
April Downspout Evaluation updates, SWMP and SWPPP updates, SIIPs, EAP, MCM# 1 discussion, educational and outreach materials, upcoming SWMMWW training, ongoing and upcoming construction projects, dewatering and monitoring plans for construction projects, and funding.
May Education outreach discussion.
June Funding, Downspout Evaluations, draft Ecology ISGP discussion, sampling discussion, MSGP signs, and construction projects.
July Contract awarding, SIIP, funding for permit renewal, Ecology MS4 permit discussion, 6PPD, PCBs, PFAS, SWPPP and maps, construction project updates, and education and outreach items.
August
Meeting with EPA to discuss the MS4 permit and SAM program.
October

November
Installation websites, upcoming SWMMWW training, vessel incidental discharge national standards, UNDS, EAPs, educational material items, stormwater mapping, and upcoming draft MSGP.

The Installation Environmental Office has also engaged with Joint Base Lewis-McChord to share information and ideas for developing a robust MS4 program.

Coordination with the base operational services contractor, tasked with maintenance of stormwater structures at NBK, has been ongoing at several levels. Biweekly meetings to coordinate and prioritize stormwater maintenance actions have resulted in focusing available resources to mitigate highest risks to the environment. Stormwater maintenance is also being addressed at mid- and upper-management meetings with the contractor.

Communication between the Integrated Solid Waste Program and the Installation Environmental Office eliminated illicit discharges from the metal recycling sorting area.

Please describe any engagement with affected entities in setting priorities for the storm water program.

NBK actively engages with the Native American tribes regarding environmental issues and to ensure that tribal treaty rights are maintained within the Puget Sound and Hood Canal.

NBK’s participation in the Stormwater Action Monitoring Program provides coordination with other entities and allows NBK resources to be applied to the highest priorities across the region.

Have you sponsored at least twice during the Permit term volunteer activities designed to actively engage residents and/or employees to better understand stormwater pollution? Yes

➜ **Please describe these events and activities:**

NAVFAC coordinated with Morale Welfare and Recreation event planners on a trail cleanup around the Trident Lakes recreation area.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Have you developed updated maps of the MS4 within the Permit Area that include all of the features listed in Part 2.3.1 of the Permit? N/A

Do you effectively prohibit non-stormwater discharges into the MS4 (except those authorized in Part 1.3.4 of this Permit) through effectively robust policies and procedures? Yes

For any discharges of potable water, have you dechlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4?

Yes

Have discharges from lawn watering and other irrigation runoff been minimized through public education and water conservation efforts? Yes

For any discharges of swimming pool, spa and hot tub waters, have you dechlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted and re-oxygenized if necessary, volumetrically and velocity controlled to prevent resuspension of sediments in the MS4, thermally controlled to prevent an increase in temperature of the receiving waters, and prohibited the discharge of pool cleaning wastewater and filter backwash?

N/A

Have discharges from street and sidewalk wash water, water used to control dust, and routine external building wash down that does not use detergents been minimized through public education and water conservation efforts?

Yes

For any discharges of accumulated stormwater from utility vaults, have you conducted sampling to verify that no pollutants cause or contribute to water quality impairments, AND visually verified prior to any discharge, that there are no visible sheens or solids in the discharge?

N/A

For any discharges of accumulated stormwater from secondary containment structures, have you conducted sampling to verify that no pollutants cause or contribute to water quality impairments, AND visually verified prior to any discharge, that there are no visible sheens or solids in the discharge?

N/A

Are you implementing a targeted IDDE program at Naval Base Kitsap-Keyport and Naval Base Kitsap-Bangor for fecal coliform source identification in sub-basins draining to Liberty Bay and Clear Creek, respectively?

Yes

Does the program described in the SWMP document include procedures for locating priority areas likely to have illicit discharges, including areas where complaints have been recorded and areas with storage of large quantities of materials that could result in spills and areas where storage, usage, releases or contamination of any pollutant in Table 2.4.4 is or has occurred?

Yes

Do you conduct a dry weather analytical and field screening monitoring program to identify non-stormwater flows from stormwater outfalls? Yes

For Annual Reporting Year 5 only, have you completed field screening of at least 75% of all MS4 outfalls located within the Permit Area? Yes

Are your screening methods/protocols consistent with Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004, or another methodology of comparable effectiveness?

Yes

Do you have and implement procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges which are found by or reported to the Permittee? Yes

Do these procedures include the evaluation of whether the discharge must be immediately contained and the steps to be taken for containment of the discharge per the stipulations in Part 2.3.3.3? Yes

In the Comments section, please summarize all illicit discharge responses, including responses to spills and recurring discharges. Also summarize any investigations and referrals as detailed in Part 2.3.3.3.2.

See list of spills at attachment 2.

Do you have and implement procedures for notification of affected parties, including immediate notification of the spills and illicit discharges and ongoing updates about abatement measures and possible impacts? Yes

Please summarize all notifications to downstream operators of MS4s, shellfish beds/fisheries, agricultural/livestock operations, drinking water systems (public or private) or other affected entity of spills or other non-stormwater discharges that may impact those systems. Please include in the description all outreach, discussions and/or information exchanges regarding the impacts of discharges and the status of illicit discharge elimination activities.

Reportable spill notifications and any updates are made through the installation Oil and Hazardous Substance (OHS) spill program and OHS Program Manager. The spill notifications and updates are made depending upon the location and substance released as specified in the Navy Region Northwest Oil and Hazardous Substances Integrated Contingency Plan. Depending upon the type and nature of the release, notifications are made to appropriate agencies, which may include the National Response Center, Washington State Department of Ecology, Kitsap County Department of Emergency Management, Washington State Health Department, Kitsap County Department of Health, Puget Sound Clean Air Agency, Region 10 EPA office, Center for Disease Control, Department of Health and Human Services, US Coast Guard National Command Center and District 13, Northwest treaty tribes, and Washington State Emergency Management. See Attachment 2 for the list of reportable spills that required notification.

Do you have and implement procedures for tracing sources of illicit discharges, including visual inspections, opening manholes, using mobile cameras, collecting and analyzing water samples, and other procedures, as appropriate?

Yes

Do you have and implement procedures for eliminating illicit discharges, including scheduling and implementing remedial measures and other safeguards to ensure the discharge does not recur? Yes

Do these procedures include initiation of an investigation within 21 days of a report or discovery of an illicit connection to determine the source, nature and volume, and responsible party? Yes

Do these procedures include initiation of action to eliminate the illicit connection within 45 days of confirming the connection? Yes

Have all staff responsible for investigating, identifying and eliminating illicit discharges, spills, and illicit connections into the MS4 received program-specific training? Yes

Please describe any training provided during this reporting period, including new employee training and follow-up training.

No IDDE specific training was required during this reporting period. Personnel involved in the stormwater program received ICS and Spill Response and Prevention Program trainings.

Please include a general summary of the results of dry weather screening program activities conducted over the preceding reporting period, including number and type of illicit connections identified, dry weather screening efforts, and location and efforts to correct identified illicit discharges.

See Dry Weather Survey Summary at Attachment 3.

MCM4: Construction Site Stormwater Runoff Control

Does the SWMP document describe, and are you implementing, a program to reduce pollutants in stormwater runoff to the MS4 from all construction in the Permit Area, including roads? Yes

During this reporting year have you provided adequate oversight to “regulated construction activities” and “regulated industrial activities” to ensure that all regulated activities obtained coverage under the appropriate stormwater permits?

Yes

Have you implemented an enforceable mechanism to address runoff from construction site projects to include the minimum requirements, thresholds and definitions? Yes

Does the enforceable mechanism include all of the criteria listed in Part 2.4.2.2 of the Permit? Yes

Have you had any equivalent criteria approved by EPA for use in stormwater controls from construction site runoff? No

Have you implemented policies and procedures, including contract mechanisms, to ensure review of all stormwater site plans for proposed development activities? Yes

Do you inspect, prior to clearing and construction, all development sites that have a high potential for sediment transport as determined through plan reviews based on definitions and requirements of Appendix C of the Permit?

Yes

Do you inspect all development sites during construction to verify proper installation and maintenance of required erosion and sediment controls? Yes

During this reporting year, did you take the necessary enforcement actions, as relevant, based on the results of these inspections? Yes

➜ **Please describe:**

Engineering technicians from Construction Management verify proper installation and maintenance of required erosion and sediment controls as part of their site visits to support construction projects. If noncompliance is observed, they address it with the contractor through contractual enforcement mechanisms. If the contractor doesn't comply or has a repeat offense with the same issue, then a formal noncompliance notice is issued. All concerns identified during construction inspections by stormwater personnel are referred to the assigned contracting officer's representatives to address with the contractor.

A noncompliance notice was issued to one contractor on 13 November for failure to plan for a forecasted storm event, inadequate BMPs, and discharging muddy water. The contractor completed corrective actions, verified on site. No further action required.

Eleven noncompliance notices have been issued against a contractor on 30 December for erosion concerns, lack of SWPPP documentation and lack of compliance with the SWPPP, identified during multiple site inspections. The government is in the process of contract enforcement actions against the contractor.

Were at least 80% of scheduled inspections completed during this reporting year? Yes

Have you established and implemented an internal tracking system to respond to issues of non-compliance? Yes

Please describe any training provided during this reporting period, including new employee training and follow-up training.

Engineering technicians performing construction site inspections were directed to EPA's Construction Inspection Training Course. The availability of this course online without cost, significantly increased technician understanding of construction stormwater management. Construction contractors are required to complete environmental training through the ECATTS web-based training system. They are also required to submit erosion and sediment control certification when required by regulation.

Please include a general summary any corrective actions taken at construction sites, number of site plans reviewed, site inspections, and one or more example of follow-up actions.

During the fourth year of the MS4 permit, stormwater managers reviewed 15 site plans and conducted 12 formal site inspections. Project construction sites were also reviewed during required quarterly MSGP site inspections. See attached Inspection Tracker (Attachment 4).

The significant corrective actions were for missing, ineffective and poorly maintained erosion control BMPs at one site. The contractor repaired or replaced BMPs and added additional controls, but did not install the mulch and blankets that were specified in the SWPPP. Noncompliance notices were issued after a follow-up inspection found additional BMP maintenance problems in addition to the still-missing BMPs. NBK construction management continues to address these concerns with the contractor and continues to document non-performance through the required contract administration procedures.

All other corrective actions identified during construction inspections were minor. Examples include:

- Applying additional quarry spalls to a sedimented construction entrance
- Replacement of damaged wattles protecting a storm drain
- Replacement of a storm drain filter full of sediment and overflowing followed by increased inspection and replacement frequency
- Absorbents placed underneath dewatering pump producing a sheen followed by pump replacement

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

Does the SWMP document describe, and are you implementing, a program to reduce pollutants in stormwater runoff to the MS4 from new development and redevelopment project site activities in the Permit Area, including roads?

Yes

Have you implemented an enforceable mechanism to address runoff from new development and redevelopment to include the minimum requirements, thresholds and definitions? Yes

Does the enforceable mechanism include all of the criteria listed in Part 2.4.2.2 of the Permit? Yes

Have you had any equivalent criteria approved by EPA for use in stormwater controls from new development and redevelopment runoff? No

Please document what percentage of all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new developments were inspected every six months prior to 90% of the common plan of development being constructed during this reporting year.

Due to the limited number and size of construction projects, it is practical and standard practice to review all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new developments during recurring inspections.

Do you inspect all development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities? Yes

Are all maintenance requirements assigned/entered into the electronic tracking system for stormwater treatment and flow control BMPs/facilities? Yes

Do you keep adequate records to document that all the requirements of Part 2.4.3 of the Permit have been fully implemented? Yes

Were at least 80% of scheduled inspections completed during this reporting year? Yes

Have you established and implemented an internal tracking system to respond to issues of non-compliance? Yes

Annual Reporting Year 1: Please describe the Early Action Projects (EAPs) you plan to implement during this permit term. Please also provide a summary of all EAP planning and implementation actions taken to date.

Annual Reporting Year 2-5: Please provide any updates to your Early Action Projects (EAPs) plan. Please also provide a summary of all EAP planning and implementation actions taken in this reporting year.

Sampling continued in 2023 for constituents of concern that were detected above established benchmarks. There are currently two TKN samples outstanding to complete sampling for all constituents of concern that have been identified above established benchmarks. Funding was not available in FY24 to complete the TKN sampling. Funding has been provided in FY25 to complete the outstanding TKN samples and sampling is pending execution. See also #17 above.

Annual Reporting Year 4: Have you submitted a written Stormwater Infrastructure Investment Plan to EPA that documents future investments and upgrades in your facility's stormwater infrastructure designed to improve MS4 discharge quality, AND that meets all of the requirements of Part 2.4.4?

Yes

Attach the SW Infrastructure Investment Plan:

Name	Uploaded Date	Size
Atch 5 - NBK SIIP.docx (reportAttachment/12180)	03/28/2025	49.50 KB

Please describe any training provided during this reporting period, including new employee training and follow-up training.

Engineering technicians performing construction site inspections were directed to EPA's Construction Inspection Training Course. The availability of this course online without cost, significantly increased technician understanding of construction stormwater management. Construction contractors are required to complete environmental training through the ECATTS web-based training system. They are also required to submit erosion and sediment control certification when required by regulation.

Washington Department of Ecology provided a hybrid training session 17 Oct 2024 on the 2024 Stormwater Management Manual for Western Washington. The training covered the minimum requirements, LID, UICs, and updates to the 2024 SWMMWW. Some additions to the 2024 SWMMWW are new guidance for 6PPD, PCBs, and PAHs, climate change, and bioretention. Stormwater program managers, design and construction personnel attended.

Please include a general summary any corrective actions taken at construction sites, number of site plans reviewed, site inspections, and one or more example of follow-up actions.

During the fourth year of the MS4 permit, stormwater managers reviewed 15 site plans and conducted 12 formal site inspections. Project construction sites were also reviewed during required quarterly MSGP site inspections. See attached Inspection Tracker (Attachment 4).

The significant corrective actions were for missing, ineffective and poorly maintained erosion control BMPs at one site. The contractor repaired or replaced BMPs and added additional controls, but did not install the mulch and blankets that were specified in the SWPPP. Noncompliance notices were issued after a follow-up inspection found additional BMP maintenance problems in addition to the still-missing BMPs. NBK construction management continues to address these concerns with the contractor and continues to document non-performance through the required contract administration procedures.

All other corrective actions identified during construction inspections were minor. Examples include:

- Applying additional quarry spalls to a sedimented construction entrance
- Replacement of damaged wattles protecting a storm drain
- Replacement of a storm drain filter full of sediment and overflowing followed by increased inspection and replacement frequency
- Absorbents placed underneath dewatering pump producing a sheen followed by pump replacement

MCM6: Pollution Prevention and Good Housekeeping in Municipal Operations

Have you established maintenance standards that are protective of facility function for all permanent stormwater facilities used for onsite management, flow control and treatment? Yes

Were all required maintenance activities, as relevant, undertaken per the schedules in Part 2.5.1.2? No

Please explain:

The stormwater infrastructure inventory has been completed and all newly identified stormwater treatment assets and flow control structures will be added to preventive maintenance contracts and installation GIS maps and equipment property databases in FY2026. Continuous inventory improvement will continue as additional stormwater structures are identified or when structural designs are reviewed for various reasons.

NBK's base operational support (BOS) contractor has not met its preventive maintenance schedule of stormwater features and structures in accordance with contract requirements. Contractor shortfalls with respect to stormwater feature and structures maintenance have been referred to the government's contract administrative team for resolution, This has resulted in stormwater preventive maintenance falling short of meeting maintenance standards established in the Stormwater Management Plan. The Navy has issued a Request For Proposal (RFP) to resolicit the BOS contract with the intent to award a new BOS contract in FY2026. This contract will include both structure and facility grounds maintenance. Until the next contract is awarded, NBK will continue to pursue improvement in meeting SWMP maintenance standards with the current BOS contractor and continue to document instances of contract non-performance through the required contract administration procedures.

To facilitate maintenance program improvements, in 2023 NBK established a risk-based approach to stormwater inspection and maintenance with the current BOS contractor, focusing their efforts on prioritizing structures with higher maintenance risk of impacts to water quality, such as oil/water separators. Biweekly meetings continue to be conducted with the contractor to prioritize stormwater maintenance items, and these biweekly meetings have achieved success in completing delayed maintenance on oil/water separators and other selected high-risk stormwater structures. Despite current challenges in maintenance performance, the observed impact to stormwater quality at monitored discharge locations has been limited to a single outfall exceeding EPA's Multi-Sector General Permit benchmark level for nitrate and nitrite due to a partial clog from trapped vegetation. NBK remains committed to improving stormwater quality through an effective preventive maintenance program of structures and equipment, and has taken positive action to address observed maintenance shortfalls.

Does your operation and maintenance program include an enforceable mechanism that clearly identifies the party/parties responsible for maintenance? Yes

During this reporting year have you conducted inspections of all stormwater treatment and flow control BMPS/facilities that discharge to the MS4 at least annually or per an alternative schedule as established in the SWMP based on maintenance records or other documented information?

No

Please explain:

Please see text block above.

Please specify the number of inspections of permanent stormwater facilities conducted pursuant to Parts 2.5.2. Please also indicate what percentage of the overall number of permanent stormwater facilities these numbers represent.

Inspections required by part 2.5.2 are tasked to a contractor as part of NBK's BOS contract. The BOS contractor documented inspection of 1 of 3 pretreatment devices, 19 of 29 filter cartridge vaults and performed monthly inspections of 14 of 16 oil/water separators. The BOS contractor reported completing inspections of 23 of 23 Filterra biofiltration units. No inspections of flow control structures were reported by the BOS contractor, however NBK stormwater program managers did informally inspect many stormwater ponds. A total of 39 bioswales, filter strips and bioretention facilities have been identified for maintenance beginning with the FY2026 BOS maintenance contract. NBK stormwater program personnel will continue to work with the BOS contractor to improve the effectiveness and scope of their inspection program, and address shortfalls in execution through available contract enforcement methods.

During this reporting year, have you conducted spot checks of all permanent stormwater facilities, per the requirements of Part 2.5.3 after all major storm events? Yes

Please specify the number of catch basins and inlets that were inspected during this reporting year. Please also indicate what percentage of the overall number of catch basins and inlets, this represents.

NBK's maintenance contractor inspected 2 of 3795 catch basins located at properties covered under this permit during the reporting year.

Please specify the number of catch basins cleaned during this reporting year.

NBK's maintenance contractor cleaned 2 of 3795 catch basins located at properties covered under this permit during the reporting year.

During this reporting year, did you undertake and complete all the necessary maintenance, as required by Part 2.5.6 of the Permit, and as described in the SWMP document? No

Please explain:

NBK's established maintenance programs, supported by in-house labor and facility support contracts, are intended to be conducted in a manner protective of receiving waters. BOS contractor-conducted stormwater preventive maintenance has fallen short of meeting MS4 permit maintenance standards established in the Stormwater Management Plan. See also the text blocks above.

Please briefly describe the animal waste management activities at the facility during this reporting year.

Periodic surveys of pet waste management at recreation areas and housing common areas were performed. NBK housing and recreation areas have pet waste stations maintained by the housing contractor and NBK Environmental, respectively. During the permit year, 31 rolls of 200 bags were replaced in ten stations maintained by the Installation Environmental Office, an 82% increase in usage over the previous year. Usage statistics for pet waste stations in housing were not available. NBK has discussed pet waste management behavior change programs with local municipalities through the West Sound Stormwater Outreach Group. Surveys and anecdotal evidence provided by group members indicated that pet waste is far less of a problem at NBK than at municipal parks elsewhere in the area. NBK Environmental conducts periodic surveys, typically monthly, in NBK housing and recreation areas. A few playgrounds and public areas in a section of housing without backyard fencing have been the only problem areas noted. Engagement with the housing contractor to install educational signs, provide environmental impact advertisements, and enforce community standards has significantly decreased the amount of pet waste observed at these locations over the past few years and indicates a behavior change. NBK Environmental has also been active in placing educational flyers at mailbox kiosks

Please describe any training provided during this reporting period, including new employee training and follow-up training.

NBK established a new environmental awareness training program in 2023 for workers, addressing best management practices for industrial operations and maintenance for pollution prevention, to include stormwater. Monthly training sessions have been well attended, with the goal of rotating through all industrial shops for presentation.

March 2024 EWRI/ASCE O&M of Stormwater Systems Conference: The conference highlights advances in O&M of gray and green stormwater control infrastructure, including design for maintenance, O&M training programs, new maintenance approaches, advances in municipal program management and implementation, life cycle cost analysis, lessons from the field, and more. Attended by MS4 program manager.

19-Apr-2024 Naval Safety & Environmental Training Center Oil/Hazardous Substance Spill Response Tabletop Exercise: 8-hour exercise utilizing the various plans during a worst-case discharge managed under the Incident or Unified Command System. Attended by environmental program managers and environmental operations staff.

26-Jun-2024 EPA ORD Water Research Webinar: Emerging Environmental Impacts of Tire Wear Particles and Their Chemical Cocktails. Attended by stormwater program managers

Nov 2024 Washington Stormwater Center Stormwater Awareness Week: WSDOT new prioritization and mapping tool; Stormwater investments in Puget Sound; Adopt a drain program; Stormwater games; Creating a storybook adventure; Effective staff training for stormwater compliance; National perspectives on stormwater. Attended by MS4 program manager

16-Jan-2025 EPA's Proposed 2026 Multi-Sector General Permit (MSGP) for Industrial Stormwater Discharges Webinar: The training laws and regulations. Some proposed changes to the 2026 MSGP include Additional Implementation Measures, updated benchmark monitoring requirements for certain sectors, impaired water monitoring, PFAS indicator monitoring, water quality based effluent limit, and resilient stormwater control design. Attended by stormwater program managers.

Have you developed and implemented SWPPPs for all heavy equipment maintenance and storage yards and all material storage facilities within the MS4 area that are not already regulated under the MSGP? Yes

During this reporting year, have you kept records of all inspections, findings of inspections, follow up actions to correct problems, and all maintenance? No

➔ **Please explain:**

Recordkeeping has improved significantly in 2024 relative to previous years. Opportunities for inspection program improvement continue to be identified and implemented.

Monitoring, Recordkeeping and Reporting Requirements

Please provide a short statement summarizing your overall compliance with the Permit conditions and progress towards achieving the control measures, during this reporting year.

Minimum Control Measure (MCM) #1 – Education and Outreach

NBK is fully compliant with education and outreach requirements in the MS4 permit. Implementation efforts and accomplishments dur ing the permit year include:

- Pet waste management
o Distributed pamphlets on pet waste environmental impact to housing residents
o New, more durable educational signage on pet waste environmental impact was obtained to replace damaged signage placed at pet waste stations last year
o Continued pet waste surveys of base housing and recreation areas to evaluate compliance with policy
o Identified behavioral change through decreased pet waste at problematic public areas in housing
o Hunt Military Communities engaged with base housing residents on pet waste management throughout the year
o Determined quantity of unremoved NBK pet waste compared extremely favorably against local municipalities

- Southern Resident Killer Whale (SRKW) outreach and education
o NAVFAC NW obtained the Northwest Area Committees and Region 10 Response Team's Deterrence Task Force Final Report, publis hed June 2024, to develop a training program presenting the report findings to the installations within the region.
o Flyers describing pollution effects on SRKWs were posted at all mailbox kiosks in housing areas.

- Continued focused education on spill awareness and reporting
o The Installation Environmental Office developed new advertisements for spill prevention and response and distributed them out to tenant commands.
 The NBK commanding officer supported these advertisements by sponsoring their display on video screens throughout the ins tallation operated by Navy Morale Welfare and Recreation.
 The Installation Environmental Office placed these advertisements on durable educational posters and installed them on in dustrial piers where the greatest risks exist.
o The Installation Environmental Office continued to provide magnets to the Unaccompanied Housing Office to distribute to r esidents reminding them that vehicle maintenance was prohibited in installation parking lots.
 Installation leadership discussed interest in reopening MWR auto hobby shop to provide an option for residents
o Continued environmental awareness training, to include BMPs to prevent spills and illicit discharges, for all installatio n personnel

- The Installation Environmental Office engaged the public face to face at the following events on (1) the environmental im pacts associated with illegal discharges, spills, and improper disposal of waste and how to report them, and (2) pet waste manage ment for bacterial control of pollutants at the following events:
o Monthly Environmental Awareness Training for industrial workers
o Annual recreational fishing derby at Trident Lakes, May 4, with about 400 attendees
o Operation MWR festival and concert, June 1, with about 1000 attendees
o Wheels and Wags Walk, July 18
o Elwood Point Beach Walk, July 20
o Spoil Your Dog Day, August 10

- As a result of engagement with local municipalities through the West Sound Stormwater Outreach Group, NBK obtained permis sion to demonstrate Kitsap County's poop toss game for public education on proper pet waste disposal, which was received with gre at enthusiasm by children and adults at multiple events.

MCM #2 – Public Involvement and Participation

NBK is fully compliant with public involvement and participation requirements in the MS4 permit. Implementation efforts and accom plishments during the third permit year include:

- Annual brief installation stormwater program brief to NBK commanding officer
- Informal communication with engineering design and construction staff for specific project issues
- Monthly stormwater meetings with stormwater management personnel at Navy installations across the region
- Engagement with Joint Base Lewis-McChord to share information and ideas
- Continued engagement with Native American tribes regarding environmental issues
- Participation in the Washington Dept. of Ecology's Stormwater Action Monitoring Program
- Coordination with the contractors tasked with maintenance of stormwater structures
- Coordination with Integrated Solid Waste Program to eliminate illicit discharges
- Coordination with the West Sound Stormwater Outreach Group for the development of education and public involvement initia tives
- NAVFAC coordinated with Morale Welfare and Recreation event planners on a trail cleanup around the Trident Lakes recreati on area

MCM #3 – Illicit Discharge Detection and Elimination

NBK is fully compliant with illicit discharge detection and elimination requirements in the MS4 permit. Implementation efforts an d accomplishments during the third permit year include:

- Continuing facility water conservation programs to minimize discharges from lawn watering and irrigation
- Continued dry weather screening program to identify illicit discharges, particularly targeting fecal coliform in discharg es leading to Liberty Bay and Clear Creek.
- Staff training beyond permit requirements for awareness in identifying and reporting illicit discharges through face-to-f ace environmental awareness training
- Command leadership commitment to reduce the number of spills

MCM #4 – New Development, Redevelopment, and Construction Site Runoff Control and
MCM #5 – Post-Construction Site Runoff Control

NBK is fully compliant with development, construction, and post-construction site runoff requirements in the MS4 permit. Implemen tation efforts and accomplishments during the third permit year include:

-	Review of 10 major construction site plans for inclusion of MS4 requirements
-	14 formal inspections of temporary and permanent stormwater treatment and flow control BMPs/facilities and catch basins
o	Numerous informal and drive-by inspections exceeded MS4 permit requirements
-	Implementation and completion of corrective actions addressing inspection findings
-	Developed infrastructure investment plan (Attachment 5)
-	Continued stormwater sampling and analysis to identify any contaminants of concern for priority action

MCM #6 – Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance

NBK continues to implement its operations and maintenance program for compliance with the requirements of the MS4 permit. Implementation efforts and accomplishments during the third permit year include:

-	The stormwater infrastructure inventory has been completed and all newly identified stormwater treatment assets and flow control structures will be added to the preventive maintenance contract and database in FY2026
-	NBK continues to work with the BOS contractor to improve contracted inspection and maintenance execution. An RFP for a new BOS contract has been issued with expected award in FY26.
-	Continuing risk-based approach to stormwater inspection and maintenance
-	Continuing engagement with base operational support contractor on maintenance and reporting requirements toward achieving MS4 and SWMP compliance
o	QC and feedback on contractor-performed maintenance
o	Continued development of stormwater maintenance tracking and reporting
-	Pet waste management activities are captured in MCM #1 above

For Annual Reporting Year 1: Did you select monitoring Option 1 (Monitoring/Assessment Plan) or monitoring Option 2 (participation in the Stormwater Action Monitoring Program)?

Option 2

➥ **Please summarize your activities as a participant with the Stormwater Action Monitoring Program.**

Through negotiations with the Washington Dept. of Ecology Stormwater Action Monitoring (SAM) Network, the Navy is considered an active participant through annual payment. The regional MS4 manager participates in SAM Stormwater Work Group meetings, and while not currently voting on project proposals, the ability to do so in the future is available.

During this reporting year, have you complied with all elements of your Quality Assurance Program Plan (QAPP) developed pursuant to the requirements of part 3.3.9 of the Permit? Yes

Are you complying with the record-keeping requirements of Part 3.6 of the Permit? Yes

During this reporting year have you ensured that an updated SWMP and all SWMP records are available to the public? Yes

➥ **Please discuss what records are available on your website, any requests you have received for records and your responses.**

The SWMP was published to the public web site in accordance with MS4 permit requirements.

During this reporting year, have any transfers of operational authority or responsibility or boundary changes to your facilities resulted in either an increase or a decrease in the Permit Area? No

Please provide an annotated list of any attachments to this Annual Report.

Attachment 1: Dry Weather Analytical Summary 2024
Attachment 2: 2024 Spill Log
Attachment 3: Dry Weather Survey Summary 2024
Attachment 4: Construction Inspection Tracker
Attachment 5: Infrastructure Investment Plan

Use the space below as needed to attach files to your Annual Report:

Name	Uploaded Date	Size
Atch 1 - Dry weather analytical summary 2024.xlsx (reportAttachment/12181)	03/28/2025	591.77 KB
Atch 2 - MS4 Spills.xlsx (reportAttachment/12182)	03/28/2025	17.99 KB
Atch 3 - Dry weather survey summary 2024.docx (reportAttachment/12183)	03/28/2025	24.38 KB
Atch 4 -Construction Site Inspection Tracker.xlsx (reportAttachment/12184)	03/28/2025	15.16 KB
Atch 5 - NBK SIIP.docx (reportAttachment/12185)	03/28/2025	49.50 KB

Are all monitoring data collected during this reporting year, as applicable, attached to this Annual Report? Yes

Required Response to Exceedances of Water Quality Standards

During this reporting year were any exceedances of water quality standards identified, per the terms of Part 4 of the Permit? No

Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction, or supervision, in accordance with a system designed to assure that qualified personnel gathered and evaluated the information submitted. Based upon my inquiry of the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for willful violations.

Certified By: Rory S. Eisele

Certifier Title:

Certifier Email: rory.eisele@navy.mil

Certified On: 03/31/2025 11:31 AM ET

Dry Weather Analytical Summary 2024

Outfall	Site	Date Collected	Time	Fecal Coliform (cfu/100 ml)
H2NBK3	Bangor	25-Jul-24	8:35	20
OF11BE	Bangor	25-Jul-24	9:55	55
OF11BS	Bangor	25-Jul-24	10:00	5
OF11C	Bangor	25-Jul-24	10:13	**245**
OF11C	Bangor	8-Aug-24	8:50	**936**
OF11C	Bangor	15-Aug-24	9:45	**180**
OF11C	Bangor	26-Aug-24	8:50	54
OF11C	Bangor	9-Sep-24	9:15	29
OF11C	Bangor	19-Sep-24	10:10	50
OF11F	Bangor	25-Jul-24	10:40	80
OF13	Bangor	25-Jul-24	10:25	**400**
OF13	Bangor	8-Aug-24	8:57	**5000**
OF13	Bangor	15-Aug-24	9:50	340
OF13	Bangor	26-Aug-24	8:45	390
OF13	Bangor	9-Sep-24	9:10	130
OF13	Bangor	19-Sep-24	10:05	10
OF13	Bangor	20-Sep-24	9:17	29
OF13US	Bangor	20-Sep-24	9:12	127
OF1C	Bangor	23-Jul-24	10:05	50
OF3	Bangor	25-Jul-24	8:55	5
OF3A	Bangor	25-Jul-24	8:55	**375**
OF3A	Bangor	8-Aug-24	8:25	**150**
OF3A	Bangor	15-Aug-24	9:20	55
OF3A	Bangor	26-Aug-24	9:05	9
OF4	Bangor	25-Jul-24	11:05	**235**
OF4	Bangor	8-Aug-24	9:10	**800**
OF6	Bangor	25-Jul-24	10:50	75
OF6	Bangor	15-Aug-24	10:00	100
TGS	Bangor	23-Jul-24	9:34	**105**
TGS	Bangor	26-Jul-24	8:28	**330**
TGS	Bangor	8-Aug-24	9:55	39
TGS	Bangor	15-Aug-24	10:45	50
TGS	Bangor	26-Aug-24	9:27	117
TGS	Bangor	9-Sep-24	9:55	285
TGS	Bangor	19-Sep-24	10:25	10
WBRBH	Bangor	23-Jul-24	8:10	25
WBRFSN	Bangor	23-Jul-24	8:40	5
WBRFSS	Bangor	23-Jul-24	8:55	<5
WBRZZ	Bangor	23-Jul-24	7:46	**120**
WBRZZ	Bangor	26-Jul-24	8:15	**100**
WBRZZ	Bangor	8-Aug-24	9:40	29
WBRZZ	Bangor	26-Aug-24	9:15	99
CMUS	Camp McKean	22-Jul-24	11:50	**>2000**
CMUS	Camp McKean	26-Jul-24	8:45	**315**
CMUS	Camp McKean	8-Aug-24	10:10	10
CMUS	Camp McKean	15-Aug-24	8:35	20

CMUS	Camp McKean	26-Aug-24	8:01	54
CMUSN	Camp McKean	22-Jul-24	12:04	**250**
CMUSN	Camp McKean	26-Jul-24	8:52	**140**
CMUSN	Camp McKean	8-Aug-24	10:17	10
CMUSN	Camp McKean	15-Aug-24	8:40	50
CMUSN	Camp McKean	26-Aug-24	8:07	153
DBPP	Jackson Park	16-Aug-24	10:50	25
PBLS	Jackson Park	16-Aug-24	9:57	25
SD209 (705)	Jackson Park	16-Aug-24	9:00	<5
SD212	Jackson Park	16-Aug-24	9:45	20
SD224 (716)	Jackson Park	16-Aug-24	10:25	<5
SD226	Jackson Park	16-Aug-24	10:37	50
SD227	Jackson Park	16-Aug-24	10:43	310
SD227	Jackson Park	26-Aug-24	7:51	153
SD227	Jackson Park	3-Sep-24	9:40	32
SD227	Jackson Park	9-Sep-24	8:12	7
SD237	Jackson Park	16-Aug-24	9:10	<5
WS	Jackson Park	16-Aug-24	10:08	<5
01-730	Keyport	13-Aug-24	8:10	<5
01-733	Keyport	13-Aug-24	8:40	25
02-726	Keyport	14-Aug-24	6:45	<5.0
02-733	Keyport	14-Aug-24	7:10	5
03-717	Keyport	13-Aug-24	9:25	8000
03-717	Keyport	14-Aug-24	7:30	8000
03-717	Keyport	15-Aug-24	8:07	8000
03-717	Keyport	19-Aug-24	11:01	800
03-717	Keyport	21-Aug-24	10:52	20
03-717	Keyport	26-Aug-24	7:30	430
03-717	Keyport	3-Sep-24	9:20	200
03-717	Keyport	4-Sep-24	11:51	42
03-717	Keyport	12-Sep-24	10:00	2100
03-718	Keyport	13-Aug-24	9:50	220
03-718	Keyport	4-Sep-24	11:45	5
03-718	Keyport	12-Sep-24	9:45	5
03-719	Keyport	13-Aug-24	10:05	75

Spill Reports from February 1, 2024 to January 31, 2025

Site	Date	Product	Quantity (gal)	Recovered	Cause
Bangor	7-Feb-24	Diesel fuel	<10	75%	Supected privately-owned vehicle leak, source not present when investigated
Bangor	14-Feb-24	Battery acid	0.58	0%	Privately-owned vehicle fire
Bangor	28-Mar-24	Diesel fuel	<1	UNK	Operator error while fueling vehicle
Bangor	15-Apr-24	Engine oil	0.75	95%	Faulty maintenance of privately-owned vehicle
Bangor	15-Apr-24	Epoxy hardener	0.25	95%	Housing resident spilled in gutter
Bangor	29-Apr-24	Latex paint	0.125	80%	Improper disposal of household hazardous waste
Bangor	26-Jul-24	Engine coolant	2	UNK	Commercial vehicle coolant leak
Bangor	15-Aug-24	Oil	5	90%	Faulty maintenance of equipment
Bangor	15-Aug-24	Vegetable oil	3	UNK	Equipment hydraulic failure
Bangor	23-Aug-24	Motor or transmission oil	0.25	90%	Privately-owned vehicle leak
Bangor	26-Aug-24	Hydraulic oil	0.25	UNK	Equipment hydraulic failure
Bangor	10-Sep-24	Diesel fuel	0.06	50%	Unsecured vehicle fuel cap
Bangor	20-Sep-24	Oil/fuel	0.129	90%	Privately-owned vehicle leak
Bangor	3-Nov-24	Domestic wastewater	24,000	0%	Domestic Wastewater Lift station power outage and generator failure, overflowed to ditch/woods in immediate area. No stormwater outfall discharge associated.
Bangor	5-Nov-24	Engine oil	0.5	100%	Improper disposal of privately-owned vehicle oil
Bangor	13-Nov-24	Gasoline	36	25%	Boat fell off trailer
Bangor	18-Nov-24	Engine coolant	0.25	75%	Humvee coolant leak
Bangor	25-Nov-24	Diesel fuel	30	85%	Fueling equipment failure
Bangor	9-Dec-24	Gasoline	2	50%	Privately-owned vehicle accident
Bangor	13-Dec-24	Hydraulic fluid	0.13	100%	Commercial vehicle hydraulic leak
Bangor	17-Dec-24	Cooking oil	1	0%	Improper storage
Bangor	26-Dec-24	Engine oil	1	0%	Privately-owned vehicle accident
Bangor	10-Jan-25	Motor or transmission oil	0.25	0%	Privately-owned vehicle leak

Attachment 2

Dry Weather Survey Summary 2024

Naval Base Kitsap (NBK) is required by its MS4 permit to conduct field assessments for illicit discharges, including visual inspections of outfalls during dry weather. NBK has maintained a robust dry weather survey program for many years to detect and investigate illicit discharges. During 2024, dry weather surveys were conducted for all areas of NBK listed in the MS4 permit, which are described below. All water found flowing from identified MS4 outfalls during this survey was characterized. NBK has met the requirement to complete field screening of 75% of all MS4 outfalls during the 5-year permit term. Surveys were conducted according to permit-prescribed procedures in *Illicit Connection and Illicit Discharge Field Screening and Source Tracking Guidance Manual*, Herrera Environmental Consultants, Inc, May 2013.

A survey of the shoreline of Jackson Park was accomplished during 2024. Fecal coliform samples/backup samples were taken to support the Sinclair and Dyes Inlets TMDL. Only outfall SD227 had fecal coliform sample results high enough to warrant additional investigation and further sampling, but the follow up sample results and indicator measurements were low enough to rule out an illicit discharge. This outfall will continue to be monitored for any changes in dry weather flow and water quality. No fecal coliform was detected at outfall SD209, which had elevated levels of fecal coliform is 2023. Neither of these two outfalls have any other history of significantly elevated fecal coliform, dating back to 2020 for SD209 and to 2021 for SD227. None of the fecal coliform sample results nor indicator measurements at other outfalls indicated illicit discharges were present. All flows were determined to be upstream natural creek flows or groundwater intrusion.

At Keyport, a comprehensive shoreline survey of stormwater outfalls was conducted from the northern boundary to the lagoon. Fecal coliform samples were collected to support MS4 permit requirements for fecal coliform identification and elimination for drainage to Liberty Bay, as well as requirements from the Liberty Bay TMDL implementation plan. Fecal coliform results at outfall 03-717 were high enough to warrant further investigation per the permit-prescribed guidance. This outfall is in the drainage area of identified degraded sewer infrastructure, which is the likely cause. The sewer lines in this area are scheduled to be rehabilitated or replaced as part of a larger construction project, with expected completion in May 2025. Outfall 03-718 had fecal coliform sample results high enough to warrant further sampling, but the follow up sample results and indicator measurements were low enough to rule out an illicit discharge. This outfall will continue to be monitored for any changes in dry weather flow and water quality. None of the fecal coliform sample results nor indicator measurements at other outfalls indicated illicit discharges were present. All flows were determined to be drainage from seawater inundation or from groundwater intrusion.

At Bangor, a survey was performed along the installation boundary clockwise from the veterinary clinic on Tautog Circle around the southern boundary to Hood Canal to support the MS4 permit focus on fecal coliform identification and elimination for drainage to tributaries of Clear Creek as well as the Sinclair and Dyes Inlets TMDL. Flows occurring along the West

Boundary Road and along the Hood Canal shoreline were characterized and fecal coliform samples taken. Unlike previous years, several outfalls showed initial levels of fecal coliform worthy of resampling. These were attributed to wildlife based on a history of visible evidence of their presence. Follow up sampling showed a progressive decline in measured fecal coliform results with the exception of the marsh discharging through outfall OF4. None of the fecal coliform results nor indicator measurements at the other outfalls indicated that any illicit discharges were present.

At Camp Wesley Harris, no water was flowing, so there was nothing to indicate that any illicit discharges were occurring.

At Camp McKean, samples collected upstream of the facility historically have had elevated levels of fecal coliform, indicating that fecal coliform in the surface water entering the Camp McKean MS4 from upstream are responsible for elevated fecal coliform levels previously measured at the outfall. The source of flow at the outfall is from water flow out of forested areas on the north and south side of the west parking lot. This flow enters the piping on the west side of Kitsap Lake Road NW and then travels underground to the outfall with no other stormwater inputs. Supporting the Sinclair and Dyes Inlets TMDL and investigation of the fecal coliform level in the outfall, additional fecal coliform samples taken in 2024 at these two upstream flows. The sample results continue to show elevated fecal coliform levels. The only Camp McKean stormwater that enters the piping leading to the outfall is runoff from the west parking lot, which was dry at the time these samples were collected.

Construction Site Inspection Tracker

NBK Bangor Project ID/Descrip	Site Plan Review	New SW Structures	Pre-Construction Site Inspection	Start Date	Eros & Sed controls/SW struc inspec's (every 6 months till completion)								Completion Inspection	SW Maint in system
					6 months	1 year	18 months	2 year	30 months	3 year	3.5 year	4 year		
Substation 1 upgrade (Annex)	Yes, before Permit	No	Yes, before Permit	Before Permit	7/21/2021	11/18/2021	Project on hold			11/29/2023	5/2/2024	1/16/2025	N/A	N/A
P400 Delta Pier Building/Shoreline Storage area	Yes, before Permit	No	Yes, before Permit	Before Permit	7/21/2021	1/21/2022	7/22/2022	2/9/2023	8/4/2023	12/20/2023	6/10/2024	1/16/2025	N/A	N/A
P907 Fueling and Vessel Maintenance Facility	EPP 11/8/2023 SWPPP 11/15/2023 NOI 12/4/2023	Yes	11/14/2023	12/18/2023	6/10/2024	12/12/2024								
Replace Bangor Sewage Lift Station B7024	EPP 10/3/2023 100% 11/20/2023 SWPPP 11/29/2023	No	12/20/2023	1/8/2024	7/11/2024	1/16/2025							N/A	N/A
RM18-1806 - Repair RR Culverts RM9.28 and RM17.84	EPP 11/15/2023 SWPPP 9.28 4/1/2024 SWPPP 17.84 4/19/2024 NOIs WAR10F091 and 092	Yes	3/7/2024	5/6/2024	RM 9.28 11/18/2024, RM9.28 and 17.84 12/19/2024									
Modernize Electrical Substation 5	EPP 10/27/2023 SWPPP 5/20/2024 NOI 5/31/2024 WAR10F096	No	12/20/2023	7/3/2024	Phase 1 complete 7/23/2024	1/16/2025							N/A	N/A
18938149 - Re-route Tang Road and Repair Waterfront	100% 10/25/2023 SWPPP/EPP 5/23/2024 NOI WAR10F09Q 7/31/2024	Yes	6/10/2024	7/31/2024	11/20/2024									
P790 Bangor child development center	SWPPP 7/6/2024 NOI WAR10F0A1 8/22/2024	Yes	4/25/2024	8/22/2024	12/11/2024									
18688644 - RM8.2 - Repair RR Culvert Phase 2 (near Deer Creek Rd), Shelton	100% 6/12/2023	Yes	6/10/2024	awarded 8/21/2024										
Repair Seawolf Rd 20091728	100% 6/5/2024	Yes	6/10/2024	Feb 2025										

NBK SIIP

1. Background

Part 2.4.4 of the National Pollutant Discharge Elimination System (NPDES) permit WAS026646 issued by EPA to Naval Base Kitsap (NBK) states, "No later than the reporting deadline for the fourth Annual Report, the Permittee must submit a written plan to EPA that documents future investments and upgrades in Naval Base Kitsap's stormwater infrastructure designed to improve [municipal separate storm sewer system (MS4)] discharge quality." NBK has prepared the following Stormwater Infrastructure Investment Plan (SIIP) to document future investments and upgrades in its stormwater infrastructure, designed to improve MS4 discharge quality. The NPDES further specifies the required content of SIIP, which will be detailed the sections below.

2. Characterization of MS4 Discharges

2.1 Pollutants of Concern

The NPDES permit requires this plan to prioritize reduction and elimination of pollutants of concern, if those pollutants have been identified in discharges from NBK. NBK's MS4 covers five installations that discharge into several waterbodies. No pollutants of concern were identified at NBK Bangor or Camp McKean. Pollutants of concern identified in discharges from NBK that adversely impact water quality include the following:

Table 2-1 – Pollutants of Concern

Installation	Identified Pollutant	Receiving Waterbody
Keyport	Zinc	Liberty Bay
	Copper	
	Nitrite	
Jackson Park	Zinc	Ostrich Bay/Dyes Inlet
	Copper	
Camp Wesley Harris	Copper	Wildcat Lake

2.2 Total Maximum Daily Loads (TMDLs)

The NPDES permit requires the Permittee must also prioritize pollutants for which relevant total maximum daily loads (TMDLs) have been established. Receiving waterbodies with published TMDLs are listed in Table 2-2 below. Other than the pollutants already listed in Table 2-1 above, no discharges from NBK with adverse impact to water quality according to the listed TMDL pollutants have been identified.

Table 2-2: Waterbodies and TMDLs

Installation	Affected Waterbodies	Published TMDL
NBK Bangor	Clear Creek – Dyes Inlet	Fecal Coliform
	Hood Canal	Mercury (sediment)
		PCBs (sediment)

NBK Keyport	Liberty Bay	Arsenic (sediment)
		Cadmium (sediment)
		Chromium (sediment)
		Copper (sediment)
		Lead (sediment)
		Mercury (sediment)
		HPAH (sediment)
		Phenol (sediment)
		Zinc (sediment)
		LPAH (sediment)
		Silver (sediment)
		PCBs (sediment)
	Unnamed tributary to Liberty Bay	Fecal coliform
NBK Jackson Park	Dyes Inlet & Port Washington Narrows	Arsenic (sediment)
		Cadmium (sediment)
		Chromium (sediment)
		Copper (sediment)
		Lead (sediment)
		Mercury (sediment)
		HPAH (sediment)
		Zinc (sediment)
		LPAH (sediment)
		Silver (sediment)
		PCBs (sediment)
NBK Camp McKean	Kitsap Lake	Fecal coliform
	Unnamed tributary to Kitsap Lake	Fecal coliform

4. Current and Completed Projects to Mitigate Water Quality Impact

4.1 Early Action Project (EAP) Plan

The NPDES permit requires the Permittee to identify early action projects during the first year of the first year of the effective date of the permit. An EAP plan was prepared and submitted with the first annual report. The EAP plan included extensive sampling and analysis data to evaluate pollutants of concern at all sites and provided a list of operational, maintenance and structural projects to be completed during the permit term to reduce pollutants of concern and TMDL pollutants. In particular, the structural EAP projects are part of NBK's overall SIIP. Table 4-1 summarizes these EAP projects.

Table 4-1: Early Action Project Status

Project Description	Pollutant of Concern Addressed	Status
Bangor Sanitary Sewer System Improvements	Fecal Coliform	Completed

Naval Hospital Bremerton and Jackson Park Housing Sanitary Sewer System Improvements	Fecal Coliform	Completed
Replace Bangor Sanitary Sewer Lift Station, Building 7204	Fecal Coliform	In Progress
Replace Keyport Building 514 Roof	Zinc	Completed

4.2 Downspout Evaluation Survey

The NPDES permit requires an evaluation of existing building locations where the disconnection of existing flows from rooftop downspouts into the MS4 and/or to Puget Sound could be feasible and could contribute to water quality improvement, including support of beneficial uses. A downspout evaluation survey was conducted in 2023, and the final report was provided to NBK in June 2024. The detailed results of survey are at Attachment A. Table 4-2 shows the breakdown of recommended best management practices for buildings at NBK Bangor, Keyport, and Jackson Park.

Table 4-2 – Feasible Buildings for Retrofits

Installation	Total Buildings	Splash Block	Infiltration Trench	Bioretention Swale	Dispersion Trench	Rain Garden
Bangor	125	97	23	2	1	2
Keyport	18	17	0	1	0	0
Jackson Park	62	48	11	0	2	1

4.3 Completed Projects

- Oyster shells placed in Keyport catch basins 04-728 and 08-705 in the summer of 2019 cut metals concentrations by roughly 75%. These were replaced in 2022 and continue to effectively control stormwater discharge metals concentrations within established benchmark levels.
- Repair Railroad Culverts, Phase 1 replaced two railroad culverts to improve peak storm capacity as well as fish passage to enhance spawning.
- Bravo Gate Safety Improvements included street grading to improve road runoff.
- Two culverts at intersections were excavated and replaced with new plastic culvert pipes to improve stormwater drainage flow and reduce erosion of road surface, and to eliminate sediment and debris from entering the drainage system.
- The sewage lift station at Marginal Wharf was replaced to eliminate fecal coliform contamination from sewage leaks and overflows.

4.4 Current Projects

- Repair Railroad Culverts, Phase 2 will improve peak storm capacity as well as fish passage to enhance spawning.
- Regrade/Excavate Site to Restore Drainage, VMPB-2 will (1) regrade existing site to improve storm drainage around the building perimeter area between it and the adjacent

building, (2) replace existing storm drainage system to allow positive flow from the valleys, (3) restore street drainage to allow proper storm water flow, (4) replace or repair all downspouts, install subdrain piping on north side of the building, and connect north-side downspouts to subdrain piping and the storm drainage system.

4.5 Future Projects

- Remove and Replace 7 (Seven) Bangor Culverts and 1 (One) Keyport Culvert will reduce risk of flooding on the base and reduce maintenance needed. On Bangor, Devil's Hole is a significant watershed of high Tribal significance and addressing fish passage for salmonids is of high priority to the Tribes. The watershed on the whole has fantastic intact wetland areas which contribute year-round water supply to the tributaries. Providing summer refugia to juvenile salmon in the face of warmer, longer summers, will be critical for the resource. Current estimate for these projects is $5,517,262. Other culvert improvement projects are scheduled at Bangor and Keyport.
- Repair Keyport Lift Station 102 will repair or replace sanitary sewer lines at Keyport where leaks have contaminated the stormwater system with high fecal coliform levels. The project is expected to be completed May 2025. Projects to replace sewage lift stations 7023 and 1026 will achieve similar benefits.
- Repair Seawolf Road Between Runner and Escolar will repair an eroded bank next to Seawolf Road on NBK Bangor, which will eliminate slope erosion and protect stormwater runoff from sediment contamination.
- Redesign and Replace Services and Equipment to Smallcraft Refueling Station will improve stormwater at the Smallcraft Refueling Station on NBK Bangor. Repair and Increase Ship Oily Discharge Capacity for Bangor Olympic Pier will similarly improve stormwater quality by eliminating leaks from failed wastewater infrastructure.
- Tang Road Replacement and Repair Missile Haul Roads will incorporate new stormwater controls according to current Department of Ecology requirements.
- Repair Railroad Culverts, Phases 3 through 9 will improve peak storm capacity as well as fish passage to enhance spawning.
- Install a 32' Culvert and Gravel Along Existing Ditch (self-explanatory)
- Seal Exterior and Improve Drainage at NUWC Security (self-explanatory)

4.6 Military Construction (MILCON) Projects:

MILCON projects are congressionally authorized and appropriated. MILCON funds are available for new obligations for five years.

4.6.1 MILCON Project Environmental Objectives:

There are a number of MILCON projects planned and underway to develop or redevelop land at NBK. MILCON projects incorporate Washington Dept. of Ecology's stormwater design requirements per the Stormwater Management Manual for Western Washington (SWMMWW) to include runoff treatment, flow control and wetlands protection. Where already developed land

is being redeveloped, the new stormwater controls required by SWMMWW significantly reduce the environmental impact from stormwater runoff compared to present site conditions.

The objective of runoff treatment is to reduce pollutant loads and concentrations in stormwater run-off using physical, biological, and chemical removal mechanisms so that beneficial uses of receiving waters are maintained and, where applicable, restored.

The objective of flow control is to prevent increases in the stream channel erosion rates that are characteristic of natural conditions (i.e., prior to disturbance by European settlement). The Flow Control Performance Standard intends to maintain the total amount of time that a receiving stream exceeds an erosion-causing threshold based upon historic rainfall and natural land cover conditions, in order to protect fish habitat and production.

Wetlands protection standards ensure that wetlands receive the same level of protection as any other water of the state. Wetlands are extremely important natural resources that provide multiple functions and values, including ground water recharge, flood control, and stream channel erosion protection. Careful planning and management are conducted to avoid impact by urban development through pollutants in the runoff or disruption of the natural hydrologic pattern of the wetland.

4.6.2 MILCON Redevelopment Projects Completed:

- P834 Service Pier Extension included stormwater media filters to improve stormwater discharge quality.
- P400 Delta Pier Building/Shoreline Storage Area provided covered storage, eliminating stormwater contact with industrial equipment that would otherwise be uncovered.

4.6.3 MILCON Redevelopment Projects Currently Under Construction:

- P790 Replace Bangor and Jackson Park Child Development Centers

4.6.4 MILCON Redevelopment Projects Planned/Funded:

- P780 Renovate Jackson Park Child Development Center
- P434 SSBN Regional Periscope and Photonics
- P788 SSBN Trident Refit Facility Warehouse
- P817 Columbia Submarine Repair Facility
- P818 Columbia Submarine Trident Training Facility
- P799 Replace Keyport Main Substation
- PQ502 Cold Water Training Facility

5. Potential Projects to Mitigate Water Quality Impact

The NPDES permit requires where the available data and information indicate that the Permittee's MS4 discharges adversely impact water quality, including beneficial uses, and where non-structural best management practices (BMPs) are inadequate to sufficiently avoid such impacts, the Permittee must analyze potential locations for structural stormwater control measures designed to further reduce pollutant loadings. For each potential location, the written plan must evaluate the feasibility of using low impact development techniques, and/or other controls that eliminate stormwater pollutant loadings, from existing surfaces draining into Puget Sound. The written plan must evaluate and recommend potential projects and project locations to mitigate water quality impacts identified therein based on the following considerations:

- Effectiveness in improving water quality in the receiving water, including support of beneficial uses and protection of endangered species;
- Feasibility;
- Cost effectiveness;
- Pollutant removal effectiveness; and
- Long term maintenance requirements.

NBK conducted sampling and analysis under the EAP for pollutants of concern and TMDL pollutants. Those pollutants determined to adversely affect water quality are listed in Table 5-1 below.

Table 5-1 – Pollutants Adversely Affecting Water Quality

Installation	Identified Pollutant	Discharge Locations
Keyport	Zinc	02-732, 03-718
	Copper	01-741
	Nitrite	02-704
Jackson Park	Zinc	North outfall, outfall N of north outfall
	Copper	North outfall, outfall N of north outfall
Camp Wesley Harris	Copper	Culvert under Seabeck Highway

5.1 Non-Structural BMPs

NBK prioritizes the use of non-structural operations and maintenance BMPs to eliminate stormwater pollutants at the source before they can be captured by stormwater.

At NBK Jackson Park, extensive stormwater sampling and analysis to determine the source of zinc and copper determined these pollutants to be pervasive across the facility, which suggests that vehicles are the primary source of these contaminants. Further investigation revealed that street sweeping to remove pollutants from the streets at NBK Jackson Park was extremely limited when compared with the neighboring Naval Hospital Bremerton where these pollutants were not detected. NBK is currently working with its base operations maintenance contractor and Hunt Military Communities to implement additional street sweeping. After this additional sweeping has been implemented, NBK will later perform sampling and analysis to assess the

effectiveness of this BMP and determine if any additional BMPs are required. NBK has opened a compliance finding in its environmental management system to track required actions.

At NBK Keyport, the base operation support contractor (BOSC) opened service request #23228135 on 19 October 2023 for water jetting the storm drain to remove organic debris partially clogging the pipe, which is the presumed source of nitrite. The work performed by the contractor thus far has been unsuccessful in fully unclogging the pipe and resolving the deficiency. NBK will continue to track resolution of the finding as part of its Environmental Management System (EMS), until the deficiency is resolved.

5.2 Projects Required

At Keyport, copper and zinc are believed to be primarily from building materials. Some of these building materials have already been removed or replaced with resulting reduction of metal concentrations. NBK is working with the responsible tenant commands owning these buildings to remove or coat additional materials to reduce zinc and copper stormwater concentrations to acceptable levels. Funding to execute these projects will be provided by the owning commands. Coordination with these commands has been initiated, and NBK has opened compliance findings in its environmental management system to track required actions.

At Camp Wesley Harris, the copper in stormwater is believed to be from expended munitions on its outdoor training range. Navy policy is to not remediate active sites. Treatment may be a potential option, however, due to the site's geography, would require significant design. NBK is currently evaluating potential options to address the issue.

As discussed in section 5.1 above, NBK intends to initially address the zinc and copper at Jackson Park through street sweeping, and will move on to evaluation of other potential options, such as treatment, depending on the effectiveness of initial corrective actions.