



Fact Sheet Addendum

The U.S. Environmental Protection Agency (EPA)

Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) Permit for Municipal Stormwater Discharges Pursuant to the Provisions of the Clean Water Act (CWA) to:

Joint Base Lewis-McChord, WA

Public Notice Start Date: May 13, 2024

Public Notice Expiration Date: June 27, 2024

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The EPA Re-Proposes to Reissue NPDES Permit

The EPA proposes to reissue the NPDES permit for the discharges from the municipal separate storm sewer system (MS4) owned and operated by the Joint Base Lewis-McChord. This is the second public comment period on the draft permit. The EPA is seeking comment on new and revised conditions that have been added to the draft permit since the previous comment period. Accordingly, the EPA is only seeking comment on the following proposed changes:

- Addition of 6PPD-quinone monitoring requirements, and general revision and reorganization of the stormwater monitoring and reporting requirements in Permit Part 3;
- Revisions to the stormwater retrofit requirements in Permit Part 2.4.4; and
- Additions to the MS4 mapping and priority inspection area requirements in Part 2.3.

This Fact Sheet includes:

- Information on public comment, public hearing, and appeal procedures;
- Information supporting the addition of permit conditions related to 6PPD-quinone and other monitoring, stormwater retrofits, and MS4 mapping.

Public Comment

Pursuant to 40 CFR 124.14(c), the EPA is only accepting comments on aspects of the draft permit that are different from those in the draft permit proposed for public comment on February 13, 2023, as described above. Comments submitted previously during the first public comment period need not be resubmitted.

The EPA requests that all comments or requests for a public hearing be submitted via email to Bilin Basu (basu.bilin@epa.gov). If you are unable to submit comments via email, please call 206-553-0029. Persons wishing to comment on, or request a public hearing for, the re-proposed draft permit for this facility may do so by the expiration date of the public comment period. A request for a public hearing must state the nature of the issues to be raised as well as the requester's name, address, and telephone number. All comments and requests for public hearings must be submitted to the EPA as described above.

After the Public Notice expires, the EPA will make a final decision regarding permit issuance based on all comments received during both comment periods. The permit will become effective no less than 30 days after the issuance date unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR § 124.19.

State of Washington Certification

On February 13, 2023, the EPA requested that Washington Department of Ecology (Ecology) certify the draft NPDES permit under Section 401 of the CWA. On April 14, 2023, Ecology provided the EPA with its certification, which is included in the Administrative Record for this action. On May 1, 2024, Ecology informed the EPA that there was no need to recertify the draft NPDES permit based on revisions in this fact sheet addendum.

Documents are Available for Review

The initial draft and re-proposed permits, the fact sheets, and other information can be found online at: <https://www.epa.gov/npdes-permits/stormwater-discharges-municipal-sources-idaho-and-washington>.

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I. Facility Information

The EPA's Fact Sheet, dated February 13, 2023, contains information about the Joint Base Lewis-McChord (JBLM) municipal separate storm sewer system (MS4) and the receiving waters to which the MS4 discharges. No changes have been made since that time. The 2013 Fact Sheet is available online at <https://www.epa.gov/npdes-permits/npdes-stormwater-permit-joint-base-lewis-mcchord-ms4-washington>.

II. Rationale for the EPA's Re-Proposal

A. Background

On February 13, 2023, the EPA posted the draft JBLM MS4 permit for public review, with a comment deadline of March 30, 2023. After a request for comment period extension from Puget Soundkeeper Alliance, the EPA extended the comment deadline an additional 45 days to May 15, 2023. On January 30, 2024, the EPA concluded consultation required by the Endangered Species Act (ESA) and the Magnuson Stevens Fishery Conservation and Management Act (MSA). As a result of ESA consultation and after further consideration of the public comments, the EPA has revised the Draft Permit as discussed in more detail below.

Table 1 below summarizes the revised text in the Draft Permit; a detailed explanation of the changes is provided in subsequent sections of this document.

Table 1. Summary of Revised Draft Permit Text.

| <i>Revised Permit Part</i> | <i>Description and Reason for Revision</i> | <i>Permit Page(s)</i> |
|--|--|-----------------------|
| Schedule of Submissions, Acronyms | New deadlines, edits per ESA terms and conditions | 2, 5 |
| Parts 2.3.1.1, 2.3.1.2 – <i>Map of MS4 Areas</i> | New requirement for inventory and mapping information reflecting ESA requirements | 14-15 |
| Part 2.3.3.1.1 – <i>Illicit Detection Priority Areas</i> | New text to address impairment in American Lake | 17 |
| Part 2.3.6 – <i>Reporting for Illicit Detection & Elimination Requirements</i> | New reporting requirements | 19 |
| Part 2.4.4 - <i>Stormwater Retrofits</i> | New text to incorporate retrofit project targets and reporting requirements reflecting ESA terms and conditions and comparable EFH conservation recommendations. | 22, 23 |
| Part 2.4.6 - <i>Reporting for New Development, Redevelopment and Construction Runoff Control</i> | | |
| Part 3 - <i>Monitoring, Recordkeeping & Reporting Requirements</i> | Extensive revision & renumbering reflecting ESA terms & conditions, current information, readability. | 28-39 |
| Part 7 - <i>Definitions</i> | New <i>Impervious Area</i> and <i>Pollutant Generating Impervious Surfaces</i> reflecting ESA terms & conditions. Minor edits for accuracy. | 54, 56, 58, 59 |
| Appendix B - <i>Annual Report Template</i> | Revisions based on edits to Parts 2.3, 2.4 and Part 3. | 66, 70, 73 |

1. *Terms and Conditions Resulting from ESA Consultation*

In the 2023 Fact Sheet, the EPA initially determined the JBLM Permit reissuance and associated permit requirements did not warrant re-initiation of informal consultation with NMFS or U.S. Fish and Wildlife Service (USFWS), because the permit requirements were substantively unchanged from the 2013 JBLM Permit, and the content of the EPA's 2013 *Biological Evaluation and EFH Assessment* remained relevant for the ESA listed species, associated critical habitat, and EFH in the Permit Area.

After discussion with USFWS in February and June 2023, the EPA confirmed it was unnecessary to re-initiate ESA consultation with USFWS under 50 CFR § 402.16 and documented its rationale in its letter to USFWS dated June 17, 2023.

After discussion with NMFS in February 2023, the EPA subsequently determined that it was necessary to re-initiate ESA and EFH consultation pursuant to 50 CFR § 402.16 and 50 CFR § 600.920, respectively, based on new information regarding potential effects to ESA listed species and EFH under NMFS jurisdiction that was not considered in the 2013 consultation. Specifically, in 2016, NMFS designated Clover Creek as critical habitat for Puget Sound steelhead. In addition, NMFS designated EFH for additional species in the area.

On May 8, 2023, the EPA submitted to NMFS a request to reinitiate consultation pursuant to ESA Section 7 and the MSA. The EPA included with the request the *2023 Addendum to the 2013 Biological Evaluation to Reinitiate ESA and EFH Consultation for NMFS Listed Species for EPA's Reissuance of NPDES Permit No. WAS026638*.

On January 30, 2024, NMFS concluded ESA and EFH consultation with the EPA by providing the *Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Reissuance of the NPDES Permit for the Joint Base Lewis-McChord MS4 Permit* (NMFS BiOp).

The NMFS BiOp states that reissuance of the JBLM MS4 Permit "is not likely to jeopardize the continued existence of Puget Sound (PS) Chinook salmon, PS steelhead, PS/Georgia Basin (GB) bocaccio and PS/GB yelloweye rockfish or destroy or adversely modify their designated critical habitat," and "is not likely to adversely affect Southern Resident killer whale and their designated critical habitat."

However, the NMFS BiOp further states that "... Incidental take is reasonably certain to occur as harm of adult and juvenile PS Chinook salmon, PS steelhead, PS/GB bocaccio and PS/GB yelloweye rockfish from exposure to water quality degradation by stormwater contaminants." Pursuant to 50 CFR §402.2, "incidental take" refers to takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant.

Because NMFS is unable to predict the number of ESA listed species that could be injured or killed by exposure to degraded water quality, the NMFS BiOp explains that the causal link between an activity and the likely extent and duration of changes in

habitat conditions can be used to describe the extent of incidental take as a numerical level of habitat disturbance.

Given that an increase in the area that contributes stormwater will increase both the volume of stormwater and associated contaminants, the NMFS BiOp identifies a surrogate for incidental take as the approximately 2,525 acres of impervious surfaces at JBLM that contribute stormwater runoff to the Puget Sound and its tributaries. NMFS' rationale for this surrogate is that it describes the total impervious surface area that drains to the JBLM MS4 from which precipitation-related stormwater runoff is discharged.

To minimize incidental take, the NMFS BiOp specifies two nondiscretionary measures (known as reasonable and prudent measures or RPMs, as defined in 50 CFR § 402.02) that the EPA must accomplish:

“The EPA shall:

1. Minimize incidental take of ESA-listed species associated with the effects of the proposed action (stormwater discharge); and
2. Ensure completion of reporting of incidental take.”

To implement each RPM, the NMFS BiOp outlines the following terms and conditions (T&Cs) that EPA must incorporate into the JBLM MS4 Permit:

1. “The following terms and conditions implement reasonable and prudent measure 1: The EPA shall provide to NMFS (projectreports.wcr@noaa.gov and jeff.vanderpham@noaa.gov; use subject line “Attn: WCRO-2023-00605”):
 - a. “Within 180 days of the permit effective date, the water quality monitoring plan to measure the effectiveness of permit stormwater management plan (SWMP) control measures to minimize impacts from MS4 discharges on receiving waters. The plan shall include monitoring of 6PPD-quinone, including after first flush events, at representative discharge locations in Clover Creek and the JBLM Canal; and
 - b. “Annually, as part of the annual report, the stormwater retrofit plan and the stormwater monitoring report. The stormwater retrofit plan shall target retrofits in part based on monitoring data and include, at a minimum, the retrofit of treatment of 10 acres of pollutant generating impervious surface (PGIS) that discharges stormwater into Clover Creek and 10 acres of PGIS that discharges to the JBLM Canal.
 - c. “Over the permit term, implement at a minimum, the retrofit of stormwater treatment described above (1.b.) – 10 acres of PGIS that discharges to Clover Creek and 10 acres of PGIS that discharges to the JBLM Canal.

2. “The following term and condition implement reasonable and prudent measure 2: The EPA shall provide to NMFS (projectreports.wcr@noaa.gov and jeff.vanderpham@noaa.gov; use subject line “Attn: WCRO-23-00605”) as part of the first annual report the total area of PGIS within the JBLM military installation covered under the MS4 NPDES permit which contributes stormwater to the Puget Sound and tributaries. The total area of PGIS shall be reported in subsequent annual reports.”

2. *Consideration of Related Public Comments*

The EPA received extensive comments related to its initial approach to ESA and MSA consultation as reflected in the 2013 Fact Sheet, Section VII. Commenters stated the EPA failed to adequately address new and relevant information, including the likely presence of the tire related chemical 6PPD-quinone, in JBLM’s MS4 discharges, and associated impacts on ESA listed species. Other comments recommended specific revisions to the EPA’s proposed requirements to better address the potential presence of 6PPD, and its chemical by-product 6PPD-quinone, in the JBLM MS4 discharges.

B. Discussion of Permit Changes Subject to the Re-Proposal

The following sections describe the changes made to the draft permit.

1. *Stormwater Retrofits in Areas Draining to Clover Creek and the JBLM Canal*

The EPA renamed and revised Permit Part 2.4.4 consistent with the T&Cs cited in Section II.A.1 above to incorporate requirements for an updated stormwater retrofit plan and the targets for retrofits to be installed in areas draining to Clover Creek and JBLM Canal, totaling 10 acres in each drainage area (i.e., 20 acres in total). These revisions also respond to public comments that the EPA further address impacts of 6PPD-quinone on ESA listed species from the JBLM MS4 discharges.

The EPA’s 2023 draft permit required the completion of at least one stormwater retrofit project over the permit term. Pursuant to the T&Cs in the BiOp, EPA is modifying this retrofit condition to specify that required retrofits must treat and/or infiltrate a total of at least 10 acres in the Clover Creek drainage basin and 10 acres in the JBLM Canal drainage basin. In addition to the fact that NMFS included this as a T&C in the BiOp, EPA believes that defining this 20-acre level of effort in this manner is reasonable for the following reasons:

- 1) JBLM’s 2016 Stormwater Retrofit Study for the Clover Creek basin identified 18 projects that could infiltrate/treat approximately 65 acres of PGIS and estimated the total cost in 2016 at approximately \$65,200,000. Under the 2013 MS4 permit, JBLM successfully implemented one retrofit project that had been identified in the 2016 Study that effectively treated/infiltrated 30 acres of PGIS, for a 2016 estimated cost of \$4,500,000. Thus, implementation of one or more of the remaining 17 projects identified in the Study could potentially infiltrate or treat an additional 10 acres in Clover Creek basin at a reasonable cost that is

comparable to, or even lower than, than the expenditure invested during the 2013 permit term.

- 2) The EPA has recommended that NPDES regulated Phase 2 MS4 jurisdictions in western Washington be required to accomplish a level of effort for retrofit projects to address a minimum of 7.5 acres per 50,000 population.¹ Based on figures cited by JBLM in related documents, the EPA has estimated that the combined resident and employee population at JBLM is approximately 65,000 people; using the recommended formula, this population results in a level of effort of approximately 10 acres. However, because soils at JBLM are highly permeable, there is an increased opportunity for feasible, cost-effective infiltration-based stormwater retrofits.
- 3) Based on information submitted to the EPA by JBLM related to addressing elevated levels of copper in stormwater discharge monitoring required by the EPA's *Multi-Sector General Permit for Stormwater Associated with Industrial Activities* (MSGP), the EPA understands that JBLM is evaluating appropriate retrofits in the JBLM North basin area that discharges from Outfall 5 into the JBLM Canal. (See map in Appendix 1 of this document). Such actions will address all stormwater discharges due to intermingled nature of discharges in the basin and are eligible for credit toward the 10-acre retrofit requirement in this MS4 Permit for discharges into the JBLM Canal.

The EPA also added text to Parts 2.4.4 and 2.4.6, respectively, to specify annual progress summaries be submitted for each planned project during the relevant reporting period. Permit Appendix B (Annual Report Template) is similarly revised to reflect these changes.

In Permit Part 7, the EPA added new definitions for the terms *Impervious Surface* and *Pollutant Generating Impervious Surface*, using definitions for each term from the latest version of Ecology's *Stormwater Management Manual for Western Washington* (SWMMWW).

2. Monitoring for 6PPD-quinone into Clover Creek and JBLM Canal

The T&Cs cited in Section II.A.1 above require JBLM to submit a monitoring plan designed to measure stormwater management plan (SWMP) effectiveness to minimize impacts from MS4 discharges on receiving waters. This monitoring plan must outline "appropriate monitoring for 6PPD-quinone and other pollutants at representative discharge locations in Clover Creek and the JBLM Canal, including after first flush storm events." The T&Cs require that JBLM use the "resulting monitoring datato target and prioritize future retrofits of PGIS in areas draining to these waterbodies."

¹ EPA 2023d.

a. Continue with JBLM-Specific Monitoring Requirements

The EPA strongly supports the regional Stormwater Action Monitoring (SAM) program collaboration in the Puget Sound area, which allows regulated MS4 permittees throughout Western Washington to cooperate on monitoring under Ecology's municipal stormwater permit(s). The SAM program provides crucial new findings regarding status and trends of stormwater impacts on Puget Sound water quality and the verification of effective practices to mitigate those impacts. Since the program's inception in 2012 as the 'Puget Sound Regional Stormwater Monitoring Program,' the EPA has explored opportunities to allow JBLM and other federal MS4 operators in Washington to opt into SAM in lieu of other monitoring activities. As a regulated MS4 operator in Western Washington, JBLM benefits from the collective knowledge that SAM provides, and the EPA will continue to seek ways for JBLM and other federal MS4s to share data and collaborate with SAM for the benefit of Puget Sound.

However, to accomplish the NMFS' T&Cs, the EPA has determined that JBLM will not be able to participate in the SAM program during this permit term. The SAM program does not provide the waterbody-specific information necessary to inform JBLM's stormwater retrofit decisions to improve MS4 discharge quality into both Clover Creek and JBLM Canal in a manner that complies with the NMFS' T&Cs cited in Section II.A.1. As a result, the EPA has substantively revised and renumbered Permit Parts 3.2 and 3.3 to delete all reference to Monitoring Options 1 and 2 in the draft permit.

Revised Part 3.2 establishes deadlines for JBLM to submit an updated Monitoring/Assessment Plan to both the EPA and NMFS for review and EPA approval, as well as for the subsequent start of monitoring activities after EPA approval. New text in Part 3.2 allows the Permittee to request deviations from the Permit's Monitoring/Assessment Plan requirements for the EPA consideration, provided such requests are clearly identified in the cover letter submitted with the Plan and provides clear rationale for why such changes are necessary. New Part 3.2.1 is revised to reframe the monitoring objectives consistent with the other revisions discussed above. Newly renumbered Parts 3.2.2 through 3.2.4 were slightly revised for clarity.

b. Revise List of Pollutants of Concern for Monitoring

The EPA has added text requiring JBLM to assess concentrations of 6PPD-quinone in both wet weather discharges and surface water, pursuant to the T&Cs discussed in Section II.A.1 above. The EPA specifies in a subsequent subpart that JBLM can use the Draft EPA Method 1634, which was published on January 30, 2024; JBLM may instead choose to use other monitoring methods for 6PPD-quinone that become available, provided such method(s) are identified in the Monitoring/Assessment Plan to be submitted. The EPA has also added dissolved organic carbon to the list, given its importance to the interpretation of other parameter results.

The EPA renumbered and revised the list of Pollutants of Concern for Monitoring as new Part 3.2.5 and new Table 3.2.5. The revised list contains pollutants identified through the ESA consultation; pollutants for which the receiving water is impaired; and associated parameters necessary for analysis and interpretation of monitoring results. Table 2 below summarizes the list by indicating whether the parameter was retained, proposed to be added or proposed to be deleted with associated rationale.

Table 2. Revised List of *Pollutants of Concern for Monitoring* in the JBLM MS4 Permit

| <i>Retain, Delete or Add</i> | <i>Parameter</i> | <i>Rationale</i> |
|-------------------------------------|----------------------------|---|
| Retain | Flow, Hardness | Important For Data Interpretation |
| Retain | Temperature | Important for Data Interpretation |
| Delete | Oil & Grease | Not a Basis for Future Retrofit Decisions |
| Retain | Dissolved Oxygen | Impairment Parameter – Clover Creek |
| Add | Dissolved Organic Carbon | Important For Data Interpretation |
| Retain | PFAS | Included per EPA Guidance |
| Add | 6PPD-quinone | Added per ESA Terms & Conditions |
| Retain | pH | Important For Data Interpretation |
| Retain | <i>E. coli</i> | Impairment Pollutant – Clover Creek |
| Delete | Total Nitrogen | Not a Basis for Future Retrofit Decisions |
| Delete | Total Kjeldahl Nitrogen | Not a Basis for Future Retrofit Decisions |
| Delete | Total Phosphorus | Not a Basis for Future Retrofit Decisions |
| Delete | Total Suspended Solids | Not a Basis for Future Retrofit Decisions |
| Retain | Turbidity | Important For Data Interpretation |
| Retain | Total and Dissolved Copper | Included per ESA Consultation |
| Retain | Total and Dissolved Zinc | Include per ESA Consultation |

The EPA proposes to delete the following parameters from the list of pollutants of concern: oil and grease [as NWTPH-Dx (diesel, heavy oil, and summed total)], Total Nitrogen, Total Kjeldahl Nitrogen, Total Phosphorus and Total Suspended Solids. During the 2013 permit term JBLM monitored representative MS4 outfalls discharging into Clover Creek and monitoring surface water quality in Clover and Murray Creeks and the JBLM Canal, for a suite of pollutants that included these five parameters. At the time, the EPA used its discretion to refer to Ecology's Water Quality Index as the basis for the list of parameters to be sampled. Sampling in the previous permit term sufficiently characterized the presence of these pollutant parameters in the discharge.

Currently, none of the receiving waters in the JBLM Permit Area are listed as water quality impaired by Ecology for any of these pollutants. Further, pursuant to the ESA consultation with NMFS, none of these five parameters are meant to be primary

drivers for JBLM's decision making on potential future retrofit projects; instead, the EPA expects JBLM's retrofit decisions to be motivated by efforts that prevent or eliminate elevated concentrations of copper and zinc, and/or mitigate the potential presence of 6PPD-quinone. Therefore, to streamline and focus JBLM's required monitoring activities during the next permit term, the EPA is proposing to eliminate these five parameters from the Pollutants of Concern for Monitoring and all subsequent requirements in Permit Part 3.

c. Revise Wet Weather Discharge Monitoring

Consistent with the T&Cs discussed in Section II.A.1, the EPA has revised the wet weather monitoring provisions by adding requirements for JBLM to sample from one (1) outfall location draining to the JBLM Canal, and from two (2) outfalls discharging to Clover Creek. Using information submitted by JBLM in its Annual Reports, the EPA has revised new Permit Tables 3.2.6.4 and 3.2.6.5 to specify the specific MS4 outfalls in each receiving water where this monitoring should occur. Maps illustrating the proposed outfall monitoring locations are provided in Appendix 1 of this document.

The EPA has revised text related to monitoring frequency in newly renumbered Parts 3.2.6.4 and 3.2.6.5 to require discharge samples to be collected at least four times per year, with sample collection targeted seasonally to capture discharge during "first flush" storm events where possible. To capture appropriate first flush storm events, monitoring should occur at least twice in each of the periods between March – June and August – November, and sampling should occur within the first 30-60 minutes of storm events. The permit retains the current definition of the term *storm event* from the 2013 permit as "a precipitation event that results in an actual discharge from the outfall and which follows the preceding measurable storm event by at least 48 hours (2 days)."

Revised text in each subpart requires JBLM to monitor for all pollutants listed in newly revised Table 3.5 - Pollutants of Concern for Monitoring, except for per- and polyfluoroalkyl Substances (PFAS). The EPA originally proposed separate wet weather discharge monitoring for PFAS, and these requirements remain as originally proposed, now in newly renumbered Permit Part 3.3.

d. Revise Approach to Address Water Quality Impairment in American Lake

During the prior permit term, the EPA required JBLM to monitor for flow and Total Phosphorus at least quarterly from one MS4 outfall discharging into American Lake, based on the lake's status as impaired for Total Phosphorus in Ecology's 2008 Water Quality Assessment Report.

As explained in the 2023 Fact Sheet, Section IV.c, Ecology's most recent 2016 Water Quality Assessment Report now lists American Lake as water quality impaired for fecal coliform. No TMDL has been developed or approved by the EPA. The lake is no longer listed as impaired for total phosphorus. However, in the 2023 draft JBLM

MS4 Permit, the EPA proposed continued wet weather monitoring for Total Phosphorus into American Lake.

The EPA is revising how JBLM must address impairment pollutants in discharges to American Lake. After review of existing water quality data for the lake the EPA now determines it is no longer necessary for JBLM to continue sampling MS4 discharges to American Lake and has deleted these requirements entirely. To direct JBLM's targeted stormwater management activities to eliminate potential sources of the current impairment (fecal coliform/bacteria), the EPA has chosen to revise Permit Part 2.3.3.1 to require JBLM categorize the drainage areas discharging to American Lake as "priority areas" under the Illicit Discharge Detection and Elimination (IDDE) control measure.

New Part 2.3.3.1.1 requires JBLM to conduct at least annual investigation of MS4 outfalls in areas draining to American Lake to identify and eliminate illicit connections or other possible sources of bacterial contamination from entering or discharging through the MS4.

Depending on the outcome of these periodic investigations, the EPA expects JBLM's follow up activities to include actions to eliminate pollutant sources (such as preventing rodents, birds, and other animals from feeding/nesting/roosting in or near MS4 outfalls); eliminate possible sanitary sewer or septic tank cross-connections; and/or prevent on-site activities or sources that could result in bacterial contamination to the MS4 (e.g., mitigating dumpsters, compost piles, food waste, and animal waste or products). Such inspections and consequential mitigation practices are similar in scope to requirements imposed on JBLM by Ecology through its Clean Water Act Section 401 certification of the EPA MS4 for its industrial stormwater discharges into Clover Creek.

e. Revise Water Quality Monitoring

In newly renumbered Part 3.2.7, the EPA has revised the surface water quality monitoring requirements by adding 6PPD-quinone and dissolved organic carbon to the list of parameters to be sampled in JBLM Canal and Clover Creek to implement the T&Cs described above.

In Part 3.2.7.4 and its associated Table, the EPA has updated the water quality sampling for the JBLM Canal to require analysis for all pollutants in new Table 3.2.5, except PFAS. The EPA has revised the monitoring frequency in the JBLM Canal from its original proposal (e.g, twenty-four (24) months of quarterly sampling, plus five "high flow" storm events) to a more simplified schedule aligned with revised wet weather monitoring requirements into the Canal (namely, at least four times per year, with collection targeted seasonally during each of the following periods: March – June and August – November). The EPA has also included direction that, to the extent practicable, surface water sampling events should occur during the same storm as associated wet weather discharge monitoring required by Part 3.2.6.4.

Newly renumbered Part 3.2.7.5 and associated Table 3.2.7.5 requires all pollutants in new Table 3.2.5, except PFAS, to be sampled in Clover Creek at a comparable frequency (namely, at least 4 times per year, with collection targeted seasonally, during the same storm event as wet weather sample collection where feasible). JBLM must continue to collect samples in Clover Creek at two locations, representing upstream and downstream of MS4 Outfalls J002 and J007. Appendix 1 of this document contains maps reflecting the intended surface water monitoring locations for both Clover Creek and the JBLM Canal.

The EPA believes that by revising the monitoring frequency from the original proposal (quarterly sampling over twenty-four [24] months plus five “high flow” storm events) to the revised frequency (namely, four times per year, seasonally targeted over the duration of the permit term), will result in a robust dataset that also provides opportunity for a more streamlined monitoring schedule for JBLM to oversee.

f. Delete Water Quality, Biological & Habitat Monitoring in Murray and Clover Creeks

After reconsidering the scope of the proposed monitoring program by incorporating changes consistent with the T&Cs discussed in Section II.A.1, and acknowledging the considerable level of effort that will be necessary to begin new sampling for both 6PPD-quinone and PFAS in wet weather discharges, the EPA has chosen to balance the required monitoring actions by deleting the proposed surface water quality and biological/habitat monitoring in Murray Creek and deleting the comparable proposed biological/habitat monitoring requirement in Clover Creek.

The EPA intends these changes to help narrow JBLM’s focus on the collection of the most relevant monitoring data for receiving waters that may affect ESA listed species and associated critical habitat, and on the timely use of that collected data to prioritize investment in retrofit projects that improve water quality.

Murray Creek does not contain ESA-listed species, critical habitat, or EFH, and therefore is not considered a prioritized MS4 receiving water identified in the NMFS BiOp. Given the preventative activities and investments made by JBLM to date in the JBLM-Main drainage area, the EPA believes that JBLM’s sustained implementation of its SWMP activities will continue to adequately protect water quality in Murray Creek.

JBLM has noted in its comments on the 2023 draft permit and in prior Annual Reports that the results of its biological monitoring in Clover Creek to date have been of limited value to directing its stormwater management activities. Using the *Puget Sound Benthic Index of Biological Integrity* (BIBI) protocols, JBLM monitored in Clover Creek in October 2016 and October 2017. Both BIBI resulting scores, (20 in 2016, 22 in 2017) indicate poor but improving health of indicator species populations. JBLM states that this and other benthic data appears more representative of issues associated with historic channelization and invasive

vegetation within and beyond JBLM's fence line, rather than tied to the stormwater discharges from JBLM areas. This information further supports the EPA's decision to delete these provisions.

g. Revise Reporting Requirements

As discussed below, the EPA has revised reporting requirements in the draft Permit, consistent with the T&Cs discussed in Section II.A.1.

Revised Part 2.3.6 has been revised to require the reporting of PGIS and related drainage area characteristics in Annual Reports submitted for the Year 1 and Year 5 reporting periods. See additional discussion in Section II.3.a, below.

Newly renumbered and revised Part 3.6 (Reporting Requirements) has been edited to indicate that documents required by the Permit must be submitted to EPA and/or NMFS, and to include the specific address and reference information as specified in the T&Cs discussed in Section II.A.1. Documents that must be submitted to both EPA and NMFS include monitoring/assessment plan, retrofit plan information, Annual Reports, and associated wet weather and surface water monitoring data reports.

Newly renumbered Part 3.6.2 (Annual Reports) and Part 3.6.3 (Monitoring Reports) have each been edited consistent with changes described above, and to clarify that the EPA will provide a dedicated Web-based reporting portal for the submittal of MS4 permit documents to the EPA as required by the NPDES E-Reporting Rule.

Permit Appendix B (Annual Report Template) has been revised to reflect changes previously described related to requirements for MS4 mapping, stormwater retrofits, and wet weather and surface water monitoring.

3. Other Revisions

a. Permit Part 2.3.1 (Map of MS4 Areas)

The EPA has added new requirements for mapping in areas draining to the JBLM Canal and Clover Creek to confirm the following acreage characteristics in each drainage area: *Total Impervious Surface Area; Total PGIS Area; Total PGIS Area Infiltrated and/or Treated; and Total PGIS Area Not Infiltrated/Untreated*. Reporting of this information must be submitted in the 1st and 5th Year Annual Reports. The EPA has revised Permit Part 2.3.6 and Appendix B (Annual Report Template) in comparable manner to reflect these additions. These acreage characteristics will be used to determine attainment of the 10-acre retrofit target in each drainage area, and to track the net reduction of untreated stormwater from impervious areas at JBLM over time.

b. Permit Part 3.3 (Wet Weather Discharge Monitoring for PFAS)

The EPA edited newly renumbered Part 3.3 as appropriate given the changes described above.

c. Permit Part 3.4 (Quality Assurance Requirements)

The EPA edited the QA requirements in newly renumbered Part 3.4 in light of the changes described above pertaining to submittal of the monitoring/assessment plan for approval, and to reflect the EPA's updated Quality Assurance Project Plan Standard published in July 2023, after the close of the initial public comment period.

d. Permit Part 7 (Definitions)

The EPA edited the following definitions for accuracy:

- *Stormwater Management Program Document* contained an incomplete sentence; the EPA has revised text to complete the definition.
- *Waters of the State* has been revised to refer to the correct federal regulation defining "waters of the United States."
- *Wetlands* has been revised to reflect the current definition found at 40 CFR 120.2(c)(1).

III. References

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1) 2023 Addendum to the 2013 Biological Evaluation to Reinitiate Endangered Species Act and EFH Consultation for NMFS Listed Species for EPA's Reissuance of NPDES Permit No. WAS026638 (JBLM MS4 Permit), May 2023.

2) Addendum Attachment A: NMFS' 2013 Concurrence Letter to EPA, dated July 12, 2013.

3) Addendum Attachment B: Letter from EPA to NMFS, dated Aug 26, 2013. Re: Joint Base Lewis McChord Municipal Separate Storm Sewer System NPDES Permit #WAS026638; NMFS Reference #NWR-2013-10009

EPA. 2023c. Letter from EPA to USFWS dated July 17, 2023. Re: Reissuance of the Joint Base Lewis-McChord National Pollutant Discharge Elimination System (NPDES) MS4 Permit, WAS-026638; USFWS Reference #01EWF00-2013-1-0271.

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IV. Appendix 1: JBLM Maps and Monitoring Locations

Figure 1. Joint Base Lewis-McChord Vicinity (Source: JBLM 2019)

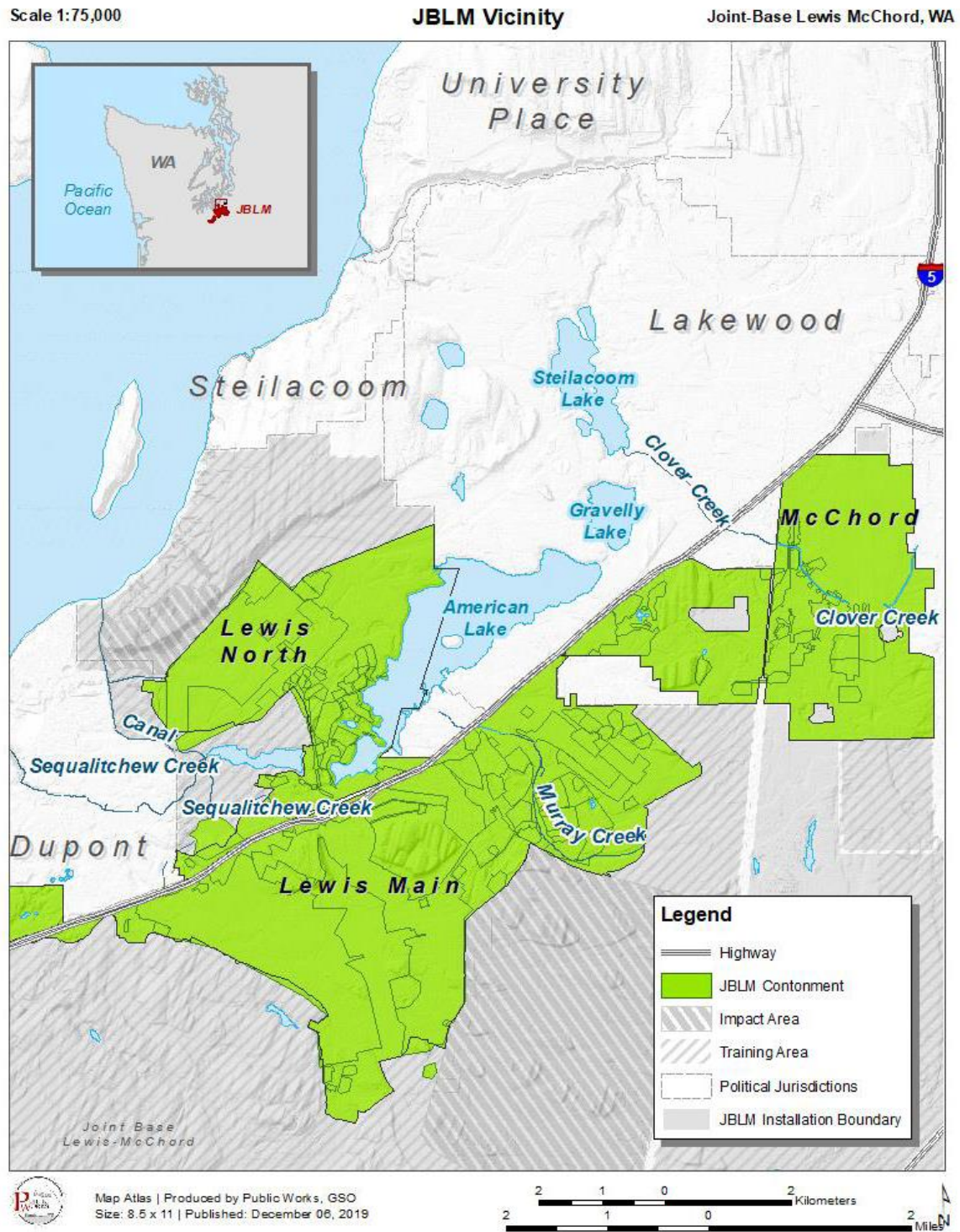


Figure 2. Map of JBLM-North (Source: JBLM 2019)

In Revised Draft Permit Part 3.2.5 and 3.2.6, the EPA proposes to require JBLM to sample wet weather discharges into the JBLM Canal from Outfall L005, and surface water quality in the JBLM Canal at the location immediately downstream. This map illustrates both locations.

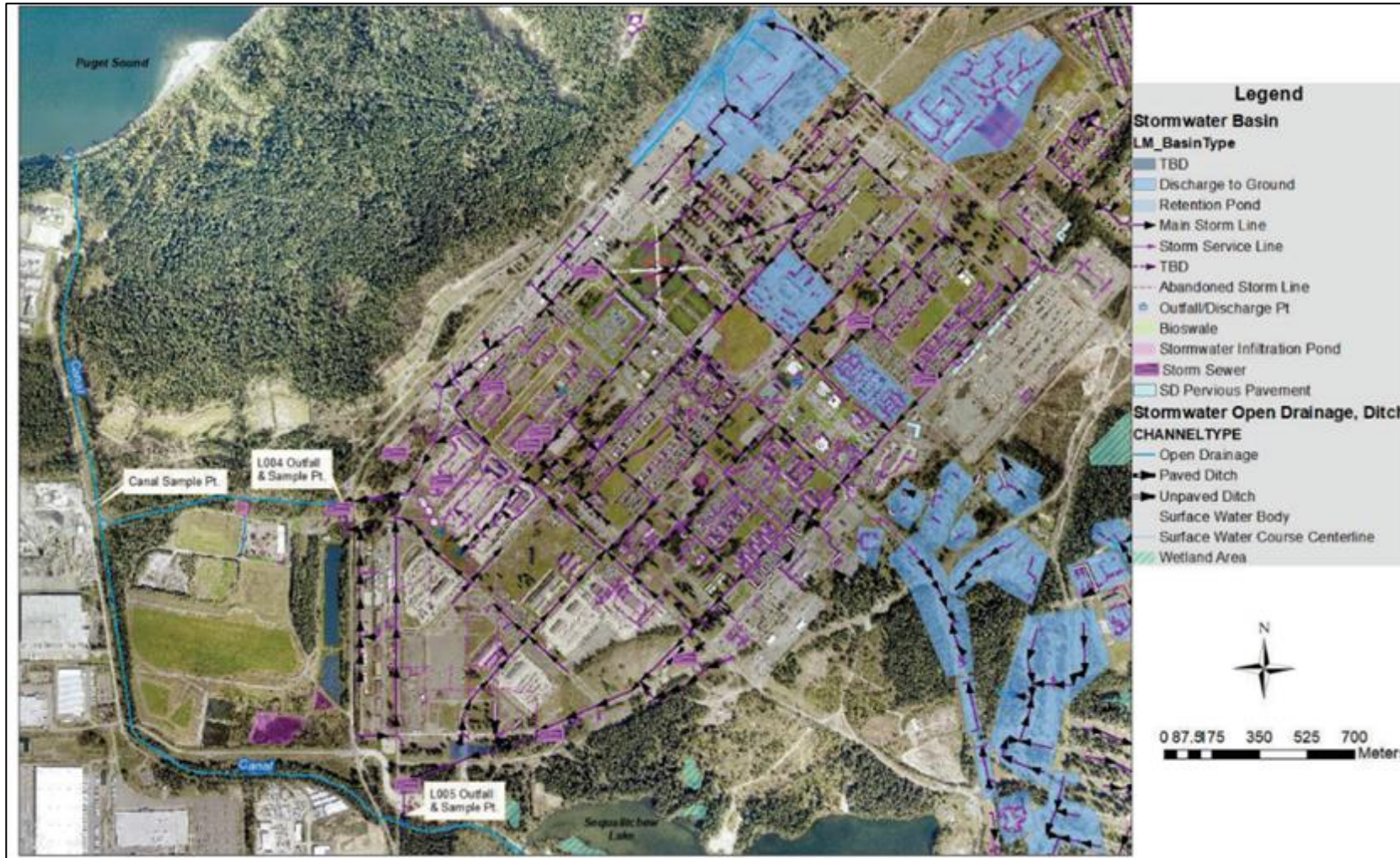


Figure 3. Map of JBLM-McChord (Source: JBLM 2019)

The EPA proposes in Draft Permit Part 3.2.5 and 3.2.6 to require JBLM to sample wet weather discharges from Outfalls J002 and J007 into Clover Creek, and surface water quality at two locations in Clover Creek upstream and downstream the JBLM-McChord area. The map below, prior surface water sampling locations are identified as CCUS (Clover Creek Upstream) and CCDS_Revised (Clover Creek Downstream_Revised).

