

DRAFT MEMO — Gap Analysis & Comments – Drayton Harbor

To: Washington State Department of Ecology (NWRO – Water Quality Program)

From: Otto Pointer, WaterPlanningMatters.org

Date: September 26, 2025

Subject: Drayton Harbor Cleanup—Gaps Caused by the City of Blaine; Priority Corrections for Cain Creek & Spooner Creek

Executive Summary

The **Draft Drayton Harbor Bacteria TMDL (Aug 2025)** requires **~61–99%** fecal bacteria reductions to protect marine shellfish uses, with **Cain Creek** needing the most extreme cut (**~99%**). Yet the plan relies on **voluntary measures** in a critically impaired watershed and **does not fully address cumulative impacts** (bacteria + **nutrients** + roadway-runoff **toxics**) or climate-amplified hydrology. We recommend Ecology immediately: (1) expand scope via **SEPA supplemental review (SEIS)**; (2) require **uniform adoption of the 2024 SWMMWW** for all Blaine projects draining to Drayton Harbor (no vesting to 2019); (3) **designate Blaine’s MS4** (or impose Phase II–equivalent conditions) using Residual Designation Authority; and (4) modify **LPWRF (WA0022641)** to add **water-quality-based effluent limits (WQBELs)**, updated **mixing-zone** analysis, **enterococcus** monitoring, and **collection-system I&I** performance requirements.

Special focus: Cain Creek (urban Blaine) and **Spoooner Creek** (CARA; salmon-bearing).

1) Scope Limitations & Analytical Completeness

1.1 Why a bacteria-only plan under-delivers

Limiting the cleanup plan to bacteria alone **misses additive risks** from nutrients (especially phosphorus) and roadway-runoff toxics (e.g., **6PPD-quinone**), and understates **climate-driven extremes** that intensify pollutant delivery. These cumulative impacts directly affect the same designated uses (shellfish harvesting/salmon habitat) the TMDL seeks to protect.¹

1.2 HABs crisis demonstrates nutrient-loading urgency (*new*)

In **May 2024**, Drayton Harbor/Semiahmoo Bay monitoring **reached marine biotoxin action levels** and shellfish beds were closed. Multiple advisories in **2024–2025** confirm recurring HAB pressure. This is direct evidence of **nutrient enrichment** (especially phosphorus) creating eutrophic conditions; a **bacteria-only** scope fails to address an immediate pathway threatening shellfish harvests.^{2 3}

Directive: Add **phosphorus controls** to TMDL implementation. In phosphorus-sensitive receiving waters or where HAB risk is documented, require **phosphorus-treatment BMPs** designed to achieve **≈50% TP removal** for influent **0.1–0.5 mg/L**, and **avoid default/compost bioretention mixes with underdrains** near P-sensitive waters due to potential phosphorus export; specify **high-performance bioretention soil media (HPBSM)** and maintenance to mitigate media saturation.^{4 5}

2) Mandatory Compliance Gaps Attributable to Blaine

2.1 MS4 coverage & enforceability (designation or TMDL-equivalent order)

Blaine operates a municipal storm system in a **303(d)/TMDL** watershed **without** Phase II MS4 permit coverage. Under **Residual Designation Authority**, Ecology may **designate** small MS4s when discharges **contribute to water-quality standard violations** or when **TMDL WLAs** require controls—both apply here. Ecology should **designate Blaine’s MS4** (or impose **Phase II-equivalent** conditions by order).^{6 7}

Cain Creek facts (Draft TMDL):

- **~99% fecal-bacteria reduction** required.
- **Dry-season loading ~2.7 billion cfu/day**, roughly equal to wet season **despite ~6× lower flow—a chronic source signal** (e.g., sewer exfiltration/cross-connections) superimposed on storm pulses.
- Most of the Cain sub-basin lies within **City of Blaine** jurisdiction.¹

These data justify **priority IDDE, retrofits, and sewer rehabilitation** with enforceable deadlines.

MST standards: Any MST informing enforcement should use **library-independent host-marker methods (e.g., qPCR)**, with robust **QA/QC** (spiked blinds, duplicates, blanks) and **rapid reporting** to track dynamic sources.⁸

2.2 2024 SWMMWW (AKART) vs. vesting to 2019

Blaine’s application of **2019** standards to “vested” projects sidesteps **2024 SWMMWW** updates: lowered **treatment thresholds** (more projects must treat), **HPBSM** options that address **toxic organics (incl. 6PPD-q)** and phosphorus risk, stronger source-control/O&M linkages. Ecology should **mandate 2024 SWMMWW** for **all** projects draining to Drayton Harbor; **no vesting** where it impedes TMDL attainment.⁹

2.3 IDDE deadlines & reporting in TMDL basins

Once designated (or via equivalent order), require **bacteria-focused IDDE screening of 100% of TMDL sub-basins by July 31, 2029**, with annual public reporting of

qualitative/quantitative actions—mirroring the **Western WA Phase II (2024–2029)** schedule.¹⁰

2.4 Impervious-surface reduction & LID hierarchy

Make **avoidance/preservation** the first step (protect native cover and hydrology); apply permeable pavements and other LID as **secondary** measures. Require submittals to demonstrate **material reduction in effective impervious area**, not just add-on treatment boxes.⁹

3) SEPA & Cumulative Impact Review (Supplemental EIS)

3.1 Need for supplemental environmental review

Relying on a **2013 MDNS** is not adequate in 2025. **WAC 197-11-600** allows use of existing documents only when still adequate; significant **new information and changed conditions** (HAB closures, updated TMDL science, climate intensification, shoreline build-out) warrant a **Supplemental EIS (SEIS)**.¹¹

3.2 Connected/cumulative actions

Under **WAC 197-11-060(4)(e)**, **connected and reasonably foreseeable** actions must be evaluated together. For Drayton Harbor, that includes shoreline build-out on the Spit (e.g., **Lots 3, 4, 2A, Tract A**), stormwater-sewer interties, marina-adjacent contamination, and shellfish-area protection **as a combined, programmatic action**.¹²

4) Creek-Specific Corrections

4.1 Cain Creek (primary city responsibility)

Order: (1) **IDDE blitz** (smoke/dye/CCTV) with quarterly published fixes until **human markers** are eliminated at outfalls; (2) **AKART retrofits** at key outfalls and downtown corridors—distributed **bioretention with HPBSM**, pretreatment sumps/gross-solids capture, **oil-water separators** at high-ADT roadways; (3) **Operations KPIs**—pre-wet-season catch-basin cleanouts, stepped-up wet-season sweeping; (4) **Sewer rehab** near Cain; track I&I vs **120/275 gpcd** thresholds.^{1 13}

4.2 Spooner Creek (CARA; salmon-bearing)

Adopt **BAS-defensible buffers**; we recommend **≥300 ft** native vegetated buffers from OHWM for estuarine/forage-fish-supporting reaches, **no variances without net ecological gain**, and **LID with pretreatment**. Where phosphorus risk exists, require **HPBSM** (avoid underdrained compost mixes).^{4 5 9}

5) LPWRF (WA0022641) — Permit & Collection-System Alignment

5.1 WQBELs & monitoring

The plant currently uses **technology-based fecal coliform (FC) limits** (e.g., **200 cfu/100 mL** monthly geomean). In an **impaired marine** setting adjacent to shellfish beds, Ecology must evaluate **reasonable potential** and impose **WQBELs** as needed, add **marine enterococcus monitoring**, and include a **reopener** tied to TMDL progress.^{1 14}

5.2 Mixing-zone & dispersion (update required)

Historic mixing-zone work referenced **~0.8 MGD** assumptions from the pre-MBR plant, while current documentation identifies **1.54 MGD maximum-month design flow** (and city materials cite higher short-term treatment capability). A fresh **CORMIX** (or equivalent) analysis using **current flows, tides, diffuser configuration**, and dual indicator results (**FC & enterococcus**) is required to confirm the chronic zone does **not** intersect shellfish areas.^{14 15}

5.3 Collection-system I&I (numeric performance)

Tie permit/TMDL conditions to EPA-recognized **excessive I&I thresholds—120 gpcd (infiltration) and 275 gpcd (inflow)**—with wet-weather audits, CCTV/smoke testing, bypass/overflow prevention sized to peak I&I, and **public quarterly reporting**.¹³

6) Site-Specific Development Risks on Semiahmoo Spit (*new*)

6.1 Encroachment & connected actions (Lots 3, 4, 2A, Tract A)

Recent PUD amendments shifting parking/units among **Lot 3, Lot 4, Tract A** increase pressure within shoreline buffers and critical habitats. Even without immediate grading, these are **connected actions** with foreseeable water-quality/habitat effects and require a **cumulative SEPA review/EIS** (see §3).^{12 16}

6.2 Contaminated sediments/soils (Lot 4, marina-adjacent)

Port/Ecology records document contamination controls to **prevent releases** from upland soil/groundwater to marine waters/sediments in Blaine Harbor. Disturbance or infiltration near contamination risks mobilizing **metals and hydrocarbons**. The **SWMMWW** screens **infiltration BMPs ≥ 100 ft** away from **known deep contamination** and requires contamination review before siting. Apply these siting constraints explicitly to Lot 4 and adjacent designs.^{9 17}

7) Stormwater AKART & Phosphorus Controls (*expanded*)

- **AKART treatment trains:** Bioretention/biofiltration with **HPBSM**, sand filters, and oil capture near traffic corridors; prioritize first-flush capture at repeatedly non-compliant outfalls (Cain + shoreline).
 - **Phosphorus treatment target:** Design to achieve **$\approx 50\%$ TP removal** for influent **0.1–0.5 mg/L** where P-sensitive waters/HAB risk are documented; **avoid** underdrained compost mixes near P-sensitive waters; specify **HPBSM** or P-targeted devices and long-term media maintenance.^{4 5}
 - **Monitoring & adaptive management:** Require **storm-event** outfall sampling (E. coli/fecal, nutrients, turbidity), year-round tributary mouths, and marine shellfish stations; trigger corrective actions from results.¹
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8) DOE Action Checklist (Enforceable, Time-Bound)

Immediate (0–6 months)

1. **Designate Blaine’s MS4** (or impose **Phase II–equivalent** TMDL conditions: IDDE, source control, O&M, construction oversight, outfall monitoring & annual reporting).^{6 7}
2. **Order 2024 SWMMWW adoption** for all projects draining to Drayton Harbor (**no vesting to 2019** where it blocks TMDL attainment).⁹
3. **Initiate LPWRF permit modification:** WQBEL reasonable-potential analysis; **enterococcus monitoring; updated mixing-zone** modeling; **I&I performance** (120/275 gpcd), bypass/overflow prevention; **quarterly public reporting**.^{1 13 14 15}
4. **Launch Cain Creek IDDE blitz** with quarterly public fixes; require **storm-event** outfall sampling.¹

Near-term (6–24 months)

- 5) **SEPA SEIS** scoped to cumulative effects (bacteria + nutrients + urban-runoff toxics) and climate; integrate **HAB closure evidence** and phosphorus control.^{11 2 3}
- 6) **Retrofit priority outfalls** (Cain + shoreline) with **HPBSM bioretention**, pretreatment sumps, oil capture—prioritize by exceedance history/proximity to shellfish areas.⁹

7) **Spooner Creek protections:** adopt **≥300-ft** buffers, CARA-aligned LID with pretreatment, and P-aware media selection.^{4 5 9}

9) Milestones (First 12 Months)

- **Q1:** MS4 designation/order; LPWRF permit-mod draft; Cain **IDDE plan** approved.
 - **Q2:** Citywide **2024 SWMMWW** in effect; first **AKART retrofits** under construction; **enterococcus** monitoring begins.
 - **Q3:** Cain **sewer rehab** package bid; O&M KPIs reported (catch-basin % cleaned pre-wet season; sweeping frequency); **Spooner** buffer ordinance introduced.
 - **Q4:** Publish **Stormwater Report Card** (outfall performance; I&I vs **120/275**; IDDE fixes; tributary/marine bacteria trends).
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Conclusion

The Draft TMDL will not restore water quality or protect shellfish without **mandatory, enforceable** actions. Expanding scope (SEIS), closing the **MS4 coverage** gap, applying **2024 SWMMWW** uniformly, and aligning the **LPWRF permit** with **WQBELs/mixing-zone updates/I&I performance**—combined with targeted **Cain/Spooner** corrections—provide a credible path to the required **61–99%** bacteria reductions while addressing nutrients and roadway-runoff toxics already impacting designated uses.

End Notes / References

1. **WA Dept. of Ecology — Drayton Harbor Bacteria TMDL (Draft Technical Study & WQIP, Aug 2025):** reduction ranges (61–99%); Cain Creek load/flow contrasts; roles and implementation framing.
2. **Whatcom County Health & Community Services / WA Dept. of Health — Marine biotoxin advisories & shellfish closures (May–June 2024; 2025 updates):** closure notices affecting Drayton Harbor/Semiahmoo.
3. **Whatcom Marine Resources Committee — 2024 Annual Report & HAB summaries:** early-season HAB activity reaching action levels in May 2024 at Drayton Harbor/Semiahmoo Marina.
4. **WA Ecology — Bioretention Soil Mix Treatment Alternatives (Pub. 21-10-023, 2024):** phosphorus-export risks from default mixes/underdrains; HPBSM guidance; media maintenance.
5. **WA Ecology — TAPE/Phosphorus Treatment Category:** performance objective **≈50% TP removal** for influent **0.1–0.5 mg/L** in phosphorus-treatment BMPs.

6. **40 CFR §122.26(a)(1)(v), (a)(9)(i)(C)–(D) — Residual Designation Authority** for small MS4s when discharges contribute to WQS violations or when TMDL WLAs require controls.
7. **EPA — Residual Designation Authority (RDA) guidance/factsheets:** case-by-case MS4 designation basis and examples.
8. **EPA/Ecology MST guidance/QAPP standards:** preference for library-independent host-marker methods (qPCR); QA/QC elements (spiked blinds, duplicates, blanks); rapid reporting.
9. **WA Ecology — Stormwater Management Manual for Western Washington (SWMMWW, 2024):** lowered treatment thresholds; HPBSM options; LID hierarchy; siting constraints near contamination.
10. **Western WA Phase II Municipal Stormwater Permit (Effective Aug 1, 2024 – Jul 31, 2029):** TMDL/IDDE timelines; Appendix provisions for bacteria-listed basins.
11. **WAC 197-11-600** — Use of existing environmental documents; triggers for **supplemental review (SEIS)** when new info/conditions exist.
12. **WAC 197-11-060(4)(e)** — Scope/content of environmental review; **connected and cumulative actions**.
13. **EPA I&I performance thresholds** — commonly used benchmarks **120 gpcd (infiltration); 275 gpcd (inflow)** for corrective programs and permit tie-ins.
14. **Ecology PARIS/LPWRF (WA0022641) permit record** — technology-based FC limits (e.g., 200 cfu/100 mL monthly geomean); marine **enterococcus** considerations; reopener/WQBEL framework.
15. **Mixing-zone analyses & modeling practice (CORMIX / dye studies)** — need to update with **current design flows** (e.g., **1.54 MGD** maximum-month) and present diffuser/tidal conditions.
16. **Resort Semiahmoo PUD amendment materials** — recent reallocation among **Lot 3, Lot 4, Tract A**, indicating increased pressure in shoreline buffer zones.
17. **SWMMWW siting near contamination (Part 6)** — screen infiltration BMPs **≥100 ft** from **known deep contamination**; require contamination review before siting.