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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

**NORTHWEST ENVIRONMENTAL
ADVOCATES**, an Oregon non-profit
corporation,

Plaintiff,

v.

**UNITED STATES
ENVIRONMENTAL PROTECTION
AGENCY; MICHAEL REGAN**, in his
official capacity as Administrator of the
Environmental Protection Agency; and
MICHELLE PIRZADEH, in her
official capacity as Acting Regional
Administrator Environmental Protection
Agency Region 10,

Defendants.

Case No. _____

COMPLAINT

Pursuant to the Administrative
Procedure Act, Clean Water Act

NATURE OF THE CASE

1. Through this action, Plaintiff Northwest Environmental Advocates (“NWEA”) challenges the failure of Defendant United States Environmental Protection Agency (“EPA”) to ensure the protection and restoration of the marine waters of Puget Sound in the State of Washington in violation of the mandates of the Clean Water Act (“CWA” or “Act”), 33 U.S.C. § 1251, *et seq.*

2. For over three decades, the marine waters of Puget Sound have been known to be impaired by dangerously low levels of dissolved oxygen, caused by nitrogen pollution, and high levels of toxic pollutants. Along with oxygen depletion, nitrogen pollution fuels extensive algal

1 blooms in Puget Sound, some toxic to people, some toxic to shellfish, and some that are upending
2 the food chain that supports imperiled Chinook salmon and orca whales.

3 3. The quality of water in Puget Sound and its tributaries has degraded as population
4 has increased and is predicted to further degrade based on estimates of future population growth.
5 The Washington Department of Ecology (hereinafter “Ecology” or “Washington”) predicts a 40
6 percent increase in nitrogen levels in the next few decades. Combined with climate change, this
7 pollution increase is predicted to significantly worsen deleterious dissolved oxygen levels in
8 Puget Sound.

9 4. Nitrogen is a form of nutrient pollution that, while essential for the growth of
10 plant life, in excess leads to excessive growth of algae that die and, in decaying, consume life-
11 sustaining oxygen from water. Nitrogen causes myriad cascading environmental effects including
12 the following: more widespread and longer-lasting algal blooms; increases in harmful algal
13 blooms (“HAB”) that create toxins; depleted dissolved oxygen; increased acidification of waters
14 that, in turn, causes effects such as thinning of shellfish shells; an explosion of jellyfish
15 populations; and fundamental changes to the food web that include the growth of dinoflagellate
16 algae that ravage the diatoms and copepods that form the very base of the marine food web and,
17 in turn, starve forage fish such as herring and the species that prey upon them. These shifts lead to
18 reduced food availability for salmonids that, in turn, affect larger marine life such as the
19 endangered Southern Resident killer whale.

20 5. Ecology has continued to issue and reissue permits to sewage treatment plants
21 discharging to Puget Sound and its tributaries, none of which includes nutrient effluent limits
22 sufficient to protect Puget Sound.

23 6. Ecology has continued to issue and reissue permits to sewage treatment plants
24 discharging to Puget Sound and its tributaries, almost none of which includes effluent limits for
25 toxic pollutants and none of which includes effluent limits for a class of pollutants including but
26 not limited to pharmaceuticals, industrial and food additives, some pesticides, plasticizers, flame

1 retardants, and personal care products referred to as “contaminants of emerging concern.” Yet, in
2 2010, Ecology and EPA issued a report showing that there is a high potential for removal of such
3 toxics when nutrient removal technology is installed at sewage treatment plants.

4 7. Beyond sewage treatment plants, Ecology has no program or plan to reduce the
5 input of pollution from nonpoint sources, such as stormwater and polluted runoff from farming
6 and logging, to Puget Sound and its tributaries despite its having found that such sources are
7 significant contributors to nitrogen levels in Puget Sound.

8 8. Despite having worked for many years to develop the technical basis of Total
9 Maximum Daily Loads (“TMDL”) pursuant to the requirements of CWA section 303(d) to
10 address nitrogen in Puget Sound, Ecology has instead decided to issue a “TMDL Alternative,” an
11 action that EPA has approved in at least one document entitled “Environmental Performance
12 Partnership Agreement, State Fiscal Years 2020-2021 July 1, 2019 to June 30, 2021.”

13 9. The planned issuance of a “TMDL Alternative” in lieu of the required TMDLs
14 means that Ecology and EPA will not take regulatory actions necessary to comply with the CWA
15 and restore water quality of Puget Sound to water quality standards.

16 10. In doing so, EPA has violated its mandatory duty under CWA section 303(d), 33
17 U.S.C. § 1313(d)(2), to develop TMDLs for Puget Sound. Additionally, EPA’s decision to
18 approve Ecology’s “TMDL Alternative” in the Performance Partnership Agreement (“PPA”) was
19 arbitrary, capricious, and contrary to the CWA, within the meaning of the APA, 5 U.S.C. § 706.

20 **JURISDICTION AND VENUE**

21 11. This Court has jurisdiction pursuant to the judicial review provision of the
22 Administrative Procedure Act, 5 U.S.C. § 702, as well as the federal question statute, 28 U.S.C. §
23 1331.

24 12. On June 4, 2021, NWEA sent EPA the required notice of intent to sue, pursuant to
25 33 U.S.C. § 1365(b)(1)(A). That notice of intent to sue is attached hereto as Exhibit 1.

1 13. Venue is properly vested in this Court pursuant to 28 U.S.C. § 1391(e) because a
2 substantial part of the events or omissions giving rise to the claims occurred in Seattle,
3 Washington, where EPA's Region 10 administrative office is located.

4 **PARTIES**

5 14. The plaintiff in this action is NORTHWEST ENVIRONMENTAL
6 ADVOCATES. Established in 1969, NWEA is a regional non-profit environmental organization
7 incorporated under the laws of Oregon in 1981 and organized under section 501(c)(3) of the
8 Internal Revenue Code. NWEA's principal place of business is in Portland, Oregon. NWEA's
9 mission is to work through advocacy and education to protect and restore water and air quality,
10 wetlands, and wildlife habitat in the Northwest, including Washington. NWEA employs advocacy
11 with administrative agencies, community organizing, strategic partnerships, public record
12 requests, information sharing, lobbying, education, expert review, and litigation to ensure better
13 implementation of the laws that protect and restore the natural environment. NWEA has
14 participated in the development of CWA programs to control both point and nonpoint sources in
15 the State of Washington for many years, including the state's TMDL program by, *inter alia*,
16 having brought suit in 1991 against EPA for its failure to establish TMDLs for the State of
17 Washington and again in 2019; having brought suit against EPA for not acting on TMDLs for the
18 Deschutes River basin and, later, for not replacing those TMDLs it subsequently disapproved, and
19 not completing TMDLs for Budd Inlet and Capitol Lake; and serving on EPA's TMDL federal
20 advisory committee from 1996 to 1998.

21 15. NWEA's members regularly use and enjoy the waters and adjacent lands of Puget
22 Sound. NWEA's members have definite future plans to continue using them for recreational,
23 scientific, aesthetic, spiritual, conservation, educational, employment, and other purposes. Many
24 of these interests revolve around viewing sensitive salmonid species, the endangered Southern
25 Resident killer whales, and other aquatic and aquatic-dependent species that are under threat by
26 pollution in the waters at issue in this lawsuit. The use and enjoyment that NWEA's members

1 derive from viewing these species, and otherwise recreating on or near and enjoying the waters of
2 Puget Sound and its tributaries, is diminished by the effects of pollution, including specifically
3 nitrogen and toxic pollution. NWEA’s members would derive more benefits and enjoyment from
4 their use of these waters if these pollutants were not adversely affecting water quality and aquatic
5 and aquatic-dependent species in these waters.

6 16. Some of NWEA’s members derive or used to derive recreational and aesthetic
7 benefits by fishing and shellfish gathering in Puget Sound, its embayments and tributaries. These
8 members have curtailed their fishing and shellfish gathering in the Sound and its tributaries, or no
9 longer fish and gather shellfish in the Sound, due in part to concerns regarding pollutants and their
10 effect on fisheries. Successful completion of TMDLs to address these pollution problems in Puget
11 Sound and its tributaries is a critical step in fully implementing the goals of the CWA for these
12 waters, fully protecting salmonids, orcas, other aquatic and aquatic-dependent species, and
13 improving water quality. EPA’s failure to establish TMDLs for the waterbodies at issue in this
14 lawsuit, along with EPA’s approval of Ecology’s “TMDL Alternative,” puts these species at risk
15 and threatens or negatively affects the interests of NWEA’s members.

16 17. The recreational, aesthetic, conservation, employment, scientific, and other
17 interests of NWEA and its members have been, are being, and unless relief is granted, will
18 continue to be adversely affected and irreparably injured by EPA’s failure to comply with the
19 CWA.

20 18. Defendant U.S. ENVIRONMENTAL PROTECTION AGENCY is the federal
21 agency charged with the administration of the CWA, and specifically with approving or
22 disapproving state identification of impaired waters and state TMDL submissions under section
23 303(d)(2) of the CWA, 33 U.S.C. § 1313(d)(2).

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LEGAL BACKGROUND

The Clean Water Act and Water Quality Standards that Establish Water Quality-Based Pollution Controls

19. Congress adopted amendments to the CWA in 1972 in an effort “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). While the primary goal of the CWA is to eliminate the discharge of pollutants into navigable waters entirely, Congress established “an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife.” *Id.* § 1251(a)(1)–(2).

20. To meet these statutory goals, the CWA requires states to develop water quality standards that establish, and then protect, the desired conditions of each waterway within the state’s regulatory jurisdiction. 33 U.S.C. § 1313(a). Water quality standards must be sufficient to “protect the public health or welfare, enhance the quality of water, and serve the purposes of [the CWA].” *Id.* § 1313(c)(2)(A). Water quality standards establish the water quality goals for a waterbody. 40 C.F.R. §§ 131.2, 131.10(d). EPA is charged with approving or disapproving a state’s water quality standards or, in some instances, establishing standards for a state. *See* 33 U.S.C. § 1313(c).

21. Water quality standards are comprised of designated uses, numeric and narrative criteria to protect the designated uses, and an antidegradation policy that ensures that beneficial uses dating to 1975 are protected and high-quality waters will be maintained and protected. 33 U.S.C. §§ 1313(c)(2), (d)(4)(B); 40 C.F.R. Part 131, Subpart B. Overall, water quality standards establish the water quality goals for a waterbody. 40 C.F.R. §§ 131.2, 131.10(d).

22. States must designate uses based on consideration of the use and value of a waterbody for public water supplies, protection and propagation of fish, shellfish, and wildlife, recreation, and agricultural, industrial, and other purposes. 40 C.F.R. § 131.10(a).

23. Water quality criteria must be set at a level necessary to protect the designated uses of a waterbody. 33 U.S.C. § 1313(c)(2); 33 U.S.C. § 1313(d)(4)(B); 40 C.F.R. Part 131, Subpart B. Criteria “must be based on sound scientific rationale and must contain sufficient

1 parameters or constituents to protect the designated use.” 40 C.F.R. § 131.11(a)(1). The criteria
2 must also be set at the level necessary to protect the most sensitive use of a waterbody. *Id.*

3 24. States may also establish narrative water quality criteria “to supplement numerical
4 criteria.” 40 C.F.R. § 131.11(b)(2).

5 25. The third component of water quality standards, the antidegradation policy, stems
6 from the CWA’s dictate to “restore and maintain the chemical, physical, and biological integrity
7 of the Nation’s waters.” 33 U.S.C. § 1251(a). The antidegradation policy must assure that water
8 quality that meets or exceeds water quality standards is maintained and that no further
9 degradation is allowed for waters that do not meet water quality standards. 40 C.F.R. § 131.12.
10 States must also develop antidegradation policy implementation methods. *Id.*

11 26. Among other things, water quality standards serve as the regulatory basis for
12 establishing water quality-based controls for so-called point sources of pollution, as required by
13 sections 301 and 306 of the CWA, 33 U.S.C. §§ 1311 & 1316. Point source discharges are
14 regulated under National Pollutant Discharge Elimination System (“NPDES”) permits, which
15 must contain limitations “necessary to meet water quality standards.” 33 U.S.C. §§
16 1311(b)(1)(C), 1342(a). Water quality standards are thus integral to the regulation of point source
17 pollution.

18 27. Water quality standards also are used to establish measures to control nonpoint
19 sources pollution. Unlike point source pollution, nonpoint source pollution is generally considered
20 to be any pollution that cannot be traced to a single discrete conveyance. Examples include runoff
21 from agricultural or forestry lands and increased solar radiation caused by the loss of riparian
22 vegetation. Congress did not establish a federal permitting scheme for nonpoint sources of
23 pollution, such as pollution from timber harvesting and agriculture. Instead, Congress assigned
24 states the task of implementing water quality standards for nonpoint sources, with oversight,
25 guidance, and funding from EPA. *See, e.g.*, 33 U.S.C. §§ 1288, 1313, 1329. Even so, water
26 quality standards apply to all pollution sources, point and nonpoint alike.

List of Impaired Waters: Every Two Years the State Must Identify Waters that Are Not Meeting the Water Quality Standards

28. CWA section 303(d)(2) requires states to “submit to the Administrator from time to time” a list of “waters identified and loads established under” subsections 303(d)(1)(A)–(D), including, among other components, a list of waters for which technology-based effluent limitations “are not stringent enough to implement any water quality standard applicable to such waters.” 33 U.S.C. § 1313(d)(2); *see also* 40 C.F.R. §§ 130.7(b); 130.10(b), (d).

29. Such waters are called “water quality limited” or “impaired” waters. 40 C.F.R. § 131.3(h) (“*Water quality limited segment* means any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards.”) (emphasis in original).

30. EPA has promulgated rules that establish the frequency of such submissions, consistent with the statute. Every two years states must compile their list of impaired waters and submit them to EPA for approval. 33 U.S.C. § 1313(d)(1)(A), (d)(2). These lists are commonly called “303(d) lists” in reference to section 303(d) of the CWA, 33 U.S.C. § 1313(d).

31. The 303(d) lists serve several important functions, in addition to identifying which waterbodies must receive the required TMDL clean-up plans. The list provides the public and local governments with specific information about the health of the waterbodies throughout the state and identifies which waterbodies may not be safe to use. The list identifies where improved nonpoint source controls of polluted runoff from land activities, such as farming and logging, are needed, as well as priorities for habitat restoration. Finally, when a waterbody is listed as water quality limited, additional protections are triggered under the CWA’s NPDES permitting requirements to ensure impaired waters are not further degraded. *See* 40 C.F.R. §§ 122.4, 122.44.

32. For purposes of listing impaired waters, the applicable water quality standards include waters’ designated uses, numeric criteria, narrative criteria, and antidegradation requirements. 40 C.F.R. § 130.7(b)(3).

1 33. In order to identify water quality-limited segments, each state, at a minimum,
 2 must “assemble and evaluate all existing and readily available water quality-related data and
 3 information” for certain categories of waters that include, but are not limited to, “those for which
 4 water quality problems have been reported by local, state, or federal agencies; members of the
 5 public; or academic institutions.” 40 C.F.R. § 130.7(b)(5), (b)(5)(iii).

6 34. “The Regional Administrator shall approve a list developed under § 130.7(b) . . .
 7 only if it meets the requirements of § 130.7(b).” 40 C.F.R. § 130.7(d)(2).

8 35. A state must submit an updated impaired waters list to EPA on April 1 of every
 9 even-numbered year. 40 C.F.R. § 130.7(d)(1). States submit these lists to EPA for approval or
 10 disapproval. 33 U.S.C. § 1313(d)(2). EPA must act on the list within 30 days; if it disapproves the
 11 list, EPA must establish a replacement list within 30 days of the disapproval. 33 U.S.C. §
 12 1313(d)(2).

13 **Total Maximum Daily Loads: The States Must Develop Clean-Up Plans to Ensure**
 14 **Pollution Levels Are Reduced to Meet Water Quality Standards**

15 36. For each of their 303(d)-listed impaired waters, states must establish a “total
 16 maximum daily load” (“TMDL”) of pollutants “at a level necessary to implement the applicable
 17 water quality standards[.]” 33 U.S.C. § 1313(d)(1)(C). To encourage prompt state action even
 18 where water quality data are imperfect, the Act requires that TMDLs include a “margin of safety
 19 which takes into account any lack of knowledge concerning the relationship between effluent
 20 limitations and water quality.” *Id.*

21 37. States are required to “establish a priority ranking” for their 303(d)-listed
 22 impaired waters, “taking into account the severity of the pollution and the uses to be made of such
 23 waters.” 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(4). States “shall establish” TMDLs “in
 24 accordance with the priority ranking.” 33 U.S.C. § 1313(d)(1)(C). “Schedules for submission of
 25 TMDLs shall be determined by the Regional Administrator and the State.” 40 C.F.R. §
 26 130.7(d)(1).

1 38. A TMDL is the total daily loading of a pollutant for a particular waterbody or
2 segment. *See* 40 C.F.R. §130.2(i). The total amount of a pollutant that may enter a waterbody
3 while ensuring the waterbody is still meeting water quality standards is called its “loading
4 capacity.” 40 C.F.R. § 130.2(f). TMDLs for individual waterbodies or segments are often bundled
5 together by watershed or subbasin in the same analytical document.

6 39. After calculating a waterbody’s loading capacity, a TMDL then distributes
7 portions of the total loading capacity to individual sources or categories of pollution sources, like
8 dividing up a pie. These allocations include both “load allocations” for nonpoint sources and
9 “wasteload allocations” for point sources of pollution. 40 C.F.R. § 130.2(i). The purpose of load
10 and wasteload allocations is to allocate the total amount of pollution that may enter a waterbody
11 between all the sources of pollution, including both point and nonpoint sources, thereby
12 restricting pollution inputs sufficiently to attain and maintain water quality standards. 40 C.F.R. §
13 130.7(c).

14 40. A TMDL is the CWA mechanism designed to ensure that assumptions about
15 nonpoint source load reductions that “make more stringent load allocations practicable, then
16 wasteload allocations can be made less stringent.” 40 C.F.R. § 130.2(i). In this way, “the TMDL
17 process provides for nonpoint source control tradeoffs.” *Id.* Without “reasonable assurance” that
18 nonpoint source controls will be implemented, TMDLs must require maximum pollution controls
19 from NPDES permitted sources.

20 41. As with water quality standards and impaired waters lists, states must submit
21 TMDLs to EPA for approval or disapproval. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.2(d). EPA
22 must act on the TMDL submission within 30 days, and if it disapproves the TMDL, EPA must
23 establish a replacement TMDL within 30 days of the disapproval. 33 U.S.C. § 1313(d)(2); 40
24 C.F.R. § 130.7(d)(2) (“If the Regional Administrator disapproves such listings and loadings, he
25 shall, not later than 30 days after the date of such disapproval, identify such waters in such State
26

1 and establish such loads for such waters as determined necessary to implement applicable [water
2 quality standards].”).

3 42. Subsequent to EPA approval of TMDLs, the permitting authority for a state must
4 ensure that “[e]ffluent limits developed to protect a narrative water quality criterion, a numeric
5 water quality criterion, or both, are consistent with the assumptions and requirements of any
6 available wasteload allocations for the discharge prepared by the State and approved by EPA
7 pursuant to 40 CFR 130.7.” 40 C.F.R. § 122.44(d)(1)(vii)(B). The approved load allocations serve
8 as the basis for state and local programs for controlling nonpoint source pollution, including state
9 programs that receive federal funds under CWA section 319, 33 U.S.C. § 1329. Once EPA
10 approves a TMDL, the state must also incorporate the TMDL into its “continuing planning
11 process” under CWA section 303(e), 33 U.S.C. § 1313(e)(3)(C).

12 43. In guidance published more than 20 years ago, EPA recognized that it “needs an
13 overall plan for completing and approving TMDLs for all listed waters” and that each EPA
14 Region should “secure a specific written agreement with each State in the Region establishing an
15 appropriate schedule for the establishment of TMDLs for all waters on the most recent section
16 303(d) list,” with those schedules being “expeditious” and extending “from eight to thirteen years
17 in length.” Memorandum from Robert Perciasepe, Assistant Administrator, EPA Office of Water,
18 to Regional Administrators and Regional Water Division Directors: New Policies for Establishing
19 and Implementing Total Maximum Daily Loads (TMDLs) (1997) at 3.¹

20 44. Thus, as this Court itself has noted, section 303(d) of the CWA “expressly
21 requires the EPA to step into the states’ shoes if their TMDL submissions . . . are inadequate.”
22 *Alaska Center for the Env't. v. Reilly*, 762 F. Supp. 1422, 1429 (W.D. Wa. 1993). Further,
23 because “Congress prescribed early deadlines for the TMDL process,” appropriate TMDL
24 schedules must be counted in “months and a few years, not decades.” *Idaho Sportsmen’s*
25 *Coalition v. Browner*, 951 F. Supp. 962, 967 (W.D. Wa. 1996).

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¹ Available at https://www.epa.gov/sites/default/files/2015-10/documents/2003_10_21_tmdl_ratepace1997guid_0.pdf (last visited December 3, 2021).

1 38. Congress intended for TMDLs to be developed promptly, without undue delay. 33
 2 U.S.C. § 1313(d). To that end, the Ninth Circuit, along with other courts, has adopted—and
 3 recently reaffirmed—the “constructive submission” doctrine. Pursuant to this doctrine, a clear
 4 and unambiguous decision by a state to not submit TMDLs to EPA will be construed as the
 5 constructive submission of no TMDLs, “which in turn triggers EPA’s nondiscretionary duty to
 6 act” under CWA section 303(d)(2) by preparing its own TMDLs instead. *Columbia Riverkeeper*
 7 *v. Wheeler*, 944 F.3d 1204, 1208 (9th Cir. 2019).

8 **Performance Partnership Grants and Performance Partnership Agreements**

9 39. States may apply for Performance Partnership Grants (“PPG”) from EPA. 40
 10 C.F.R. §§ 35.101(a)(3), 35.130. The PPG application process requires a Work Plan, which is the
 11 product of negotiations between the applicant state and the EPA Regional Administrator. *Id.* §
 12 35.107(a). PPG Work Plans “must be consistent with applicable federal statutes; regulations;
 13 circulars; executive orders; and EPA delegations, approvals, or authorizations.” *Id.* §
 14 35.107(b)(3); *see also id.* § 35.111(a)(2). Performance Partnership Agreements (“PPA”) may be
 15 used as work plans for PPGs. *Id.* §§ 35.102, 35.107(c).

16 40. PPAs are defined as “[a] negotiated agreement signed by the EPA Regional
 17 Administrator and an appropriate official of a State agency and designated as a Performance
 18 Partnership Agreement. Such agreements typically set out jointly developed goals, objectives,
 19 and priorities; the strategies to be used in meeting them; the roles and responsibilities of the State
 20 and EPA; and the measures to be used in assessing progress.” 40 C.F.R. § 35.102.

21 41. The EPA Regional Administrator and the state jointly develop an evaluation of
 22 progress made on the Work Plan, no less than annually. 40 C.F.R. § 35.115. Reports must
 23 include specified elements, *id.* § 35.115(b), and the Regional Administrator is required to ensure
 24 that they are completed, *id.* § 35.115(d). The Regional Administrator is responsible for
 25 negotiating resolution of insufficient progress under the Work Plan and for taking appropriate
 26

1 measures under 2 C.F.R. § 200.338 that include withholding of payments, denying use of funds,
2 terminating the award, and taking other actions that are legally available. 40 C.F.R. § 35.115(d).

3 **Judicial Review under the Clean Water Act’s Citizen Suit Provision**

4 42. The CWA authorizes citizen suits against the EPA Administrator “where there is
5 alleged a failure of the Administrator to perform any act or duty under this chapter which is not
6 discretionary with the Administrator.” 33 U.S.C. § 1365(a)(2).

7 43. The district courts have jurisdiction over suits against the Administrator arising
8 under the citizen suit provision and may “order the Administrator to perform such act or duty”
9 the non-performance of which is the basis for the claim. 33 U.S.C. § 1365(a). Regulations
10 promulgated by EPA to implement the CWA may establish for the agency a nondiscretionary
11 duty the failure to undertake of which is subject to review under the citizen suit provision of the
12 CWA where the duty is clear-cut and readily ascertainable from the regulatory language.

13 **Judicial Review under the Administrative Procedure Act**

14 44. Section 702 of the Administrative Procedure Act (“APA”) provides a private
15 cause of action to any person “suffering legal wrong because of agency action, or adversely
16 affected or aggrieved by agency action within the meaning of a relevant statute.” 5 U.S.C. § 702.

17 45. Only final agency actions are reviewable under the APA. 5 U.S.C. § 704. Agency
18 action includes a “failure to act.” *Id.* § 551(13). Under the APA, a court must “hold unlawful
19 and set aside agency actions, findings, and conclusions found to be . . . arbitrary, capricious, an
20 abuse of discretion, or otherwise not in accordance with law;” “in excess of statutory jurisdiction,
21 authority, or limitations, or short of statutory right;” or “without observance of procedure
22 required by law.” 5 U.S.C. § 706(2)(A), (C), (D).

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FACTUAL BACKGROUND

Washington’s Water Quality Standards

Designated Uses

46. Washington has established several categories of designated uses for fresh water, such as “aquatic life uses,” which include “all indigenous fish and nonfish aquatic species” including but not limited to char (bull trout and Dolly Varden), salmonids (salmon and steelhead), non-anadromous interior redband trout, and indigenous warm water species (dace, redband shiner, chiselmouth, sucker, and northern pikeminnow); recreational uses (extraordinary primary contact recreation, primary contact recreation, and secondary contact recreation); and water supply uses (domestic, agricultural, industrial, and stock watering). WAC 173-201A-200(1)-(3). Fresh water use designations are described, designated, and mapped at WAC 173-201A-600 and WAC 173-201A-602.

47. Washington’s use designations for marine waters are by category— “extraordinary,” “excellent,” “good,” and “fair,”—and apply to salmonids and other fish species; clam, oyster, and mussel, rearing and spawning; and crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.). *See* WAC 173-201A-210. Use designations for Washington’s marine surface waters are described and designated at WAC 173-201A-210, WAC 173-201A-610, and WAC 173-201A-612.

Numeric and Narrative Criteria

48. Washington’s water quality standards include numeric criteria for a wide range of conventional, toxic, and non-toxic pollutants, designed to protect aquatic life uses. These include, for example, numeric criteria for temperature that establish maximum levels of temperature for specific life cycle stages of cold-water species of salmon, steelhead, and bull trout (char), many of which are listed as threatened or endangered pursuant to the Endangered Species Act, 16 U.S.C. § 1531, *et seq.* *See* WAC 173-201A-200(1)(c), Table 200(1)(c). The standards also include minimum levels of dissolved oxygen for life cycle stages in fresh water. *See* WAC 173-201A-200(1)(d), Table 200(1)(d). Numeric criteria for marine waters also include

1 minimum levels of dissolved oxygen. *See* WAC 173-201A-210 (1)(d), Table 210(1)(d).
2 Dissolved oxygen numeric criteria for Puget Sound range from 7.0 mg/L for extraordinary
3 quality waters to 4.0 mg/L for fair quality waters.

4 49. Numeric criteria to protect fresh water and marine aquatic uses and human health,
5 from consumption of water and organisms, from toxic substances—including metals, chemicals,
6 and pesticides—are established at WAC 173-201A-240(5), Table 240.

7 50. Washington has established two generally applicable narrative criteria for fresh
8 and marine waters. WAC 173-201A-260(2).

9 51. First, “[t]oxic, radioactive, or deleterious material concentrations must be below
10 those which have the potential, either singularly or cumulatively, to adversely affect
11 characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent
12 upon those waters, or adversely affect public health.” *Id.* 173-201A-260(2)(a).

13 52. Second, “[a]esthetic values must not be impaired by the presence of materials or
14 their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or
15 taste[.]” *Id.* 173-201A-260(2)(b).

16 53. Washington’s narrative criteria are essential to the protection of its waters. For
17 example, Washington does not have numeric criteria for the protection of rivers and streams
18 from common forms of nutrient pollution, such as nitrogen and phosphorus. Nutrient pollution,
19 which is a stated national priority of EPA’s and a significant pollution problem in Puget Sound,
20 causes extensive algal blooms that deplete dissolved oxygen, alter food webs, and can release
21 toxins hazardous to people, pets, marine life, and wildlife. Washington has no numeric criteria
22 for the protection of wildlife, such as marine and freshwater mammals and aquatic-dependent
23 birds, relying solely on its narrative criteria and designated uses for their protection. Washington
24 also must rely on its narrative criteria for protection of aquatic species from pharmaceuticals and
25 personal care products and other so-called “contaminants of emerging concern” because EPA has
26 not recommended and Washington has not adopted any numeric criteria for these pollutants.

1 ***Antidegradation Policy and Implementation Methods***

2 54. Washington’s antidegradation policy seeks to “[r]estore and maintain the highest
3 possible quality of the surface waters of Washington.” WAC 173-201A-300(2)(a). The policy
4 includes a so-called Tier 1 requirement that “[e]xisting and designated uses must be maintained
5 and protected. No degradation may be allowed that would interfere with, or become injurious to,
6 existing or designated uses, except as provided for in this chapter.” WAC 173-201A-310(1).
7 Existing uses are defined as “those uses actually attained in fresh or marine waters on or after
8 November 28, 1975, whether or not they are designated uses.” WAC 173-201A-020; *see also* 40
9 C.F.R. § 131.3(e). Washington’s antidegradation policy calls for Ecology to “take appropriate
10 and definitive steps to bring the water quality back into compliance with the water quality
11 standards” for waters that do not meet assigned criteria or protect existing or designated uses.
12 WAC 173-201A-310(2). A TMDL is an appropriate first step with which to bring a waterbody
13 into compliance with applicable standards.

14 **EPA and Ecology Performance Partnership Agreements**

15 55. For many years, EPA and Ecology have documented their contractual agreement
16 and “commitments” between the two agencies relating to federally-funded projects addressing,
17 *inter alia*, water quality programs in Performance Partnership Agreements (“PPA”).

18 56. The most recent PPA between EPA and Ecology covers the period between July
19 1, 2021 and June 30, 2023 and was signed on June 21, 2021 by Michelle Pirzadeh, Acting EPA
20 Region 10 Regional Administrator, and Laura Watson, Director of Ecology.² As with previous
21 PPAs, this 2021–2023 PPA was put out for public comment. As with PPAs going back to 2007,
22 the 2021–2023 PPA identifies “protect[ing] and restor[ing] Puget Sound as a “strategic
23 priorit[y],” *id.* at 11, noting that “recognition of the national importance of Puget Sound enables
24 the EPA to focus dedicated federal funds to Puget Sound cleanup goals and restoration efforts,”
25 *id.* at 35–36. This PPA also commits EPA and Ecology to “work together on addressing priority
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² See <https://apps.ecology.wa.gov/publications/documents/2101002.pdf> (last visited December 3, 2021).

1 nutrient problems to reduce current loadings of nitrogen and phosphorus to surface waters.” *Id.*
 2 at 81.

3 57. According to the 2021–2023 PPA, it “reflects the mutual understandings between
 4 Ecology and EPA for program implementation and extent of oversight” and “serve[s] as the
 5 work plan for PPG funds provided to Ecology [in accordance with Section 106 of the CWA].”
 6 *Id.* at 69.

7 58. In the previous PPA, for 2019 to 2021, EPA and Ecology agreed that the state
 8 would issue an alternative to a Puget Sound nitrogen TMDL. *See* EPA/Ecology, *Environmental*
 9 *Performance Partnership Agreement, State Fiscal Years 2020-2021 July 1, 2019 to June 30,*
 10 *2021* (June 2019) (hereinafter “2019–2021 PPA”).³

11 59. The 2021–2023 PPA, as do previous PPAs, requires written status reports on its
 12 progress as well as regular meetings to evaluate progress.

13 **Puget Sound and its Poor Quality**

14 60. Puget Sound is an inlet of the Pacific Ocean including marine and estuarine
 15 waters, open to the Strait of Juan de Fuca through Admiralty Inlet, and to a lesser extent,
 16 Deception Pass and Swinomish Channel, and open to the Strait of Georgia through Bellingham
 17 Bay, Rosario Strait, and Haro Strait, that generally surround the San Juan Islands. Puget Sound is
 18 composed of six primary basins: South, Central, Whidbey, Admiralty Inlet, Hood Canal, and
 19 Northern. These waters together are also called the Salish Sea.

20 61. In the 2007–2009 PPA, EPA and Ecology described Puget Sound as the “Crown
 21 Jewel” of Washington State, stating that “[b]oth EPA and Ecology are dedicated to the
 22 protection, clean-up and restoration of Puget Sound,” and noting that “EPA has included Puget
 23 Sound as one of the few estuaries that are specifically included in its National Strategic Plan,” an
 24 inclusion that “will enable EPA to focus more resources and federal funds towards clean-up
 25 goals and restoration efforts.” EPA/Ecology, *Environmental Performance Partnership*
 26

³ *See* <https://apps.ecology.wa.gov/publications/documents/1901004.pdf> (last visited December 3, 2021).

1 *Agreement for July 1, 2007 to June 30, 2009* (August 22, 2007) (hereinafter “2007–2009 PPA”).

2 62. In that PPA, the two agencies declared that:

3 The welfare of all living creatures in the Puget Sound depends on clean and
4 healthy marine waters. Over the past century, human activities resulting from
5 growth and development in and around the Puget Sound have contributed greatly
6 to nutrient and pathogen pollution. Environmental pollution is endangering the
7 overall health of Puget Sound and is pushing many marine species to the brink of
8 extinction. For example, more than 40 species in the region are on the federal and
9 state lists of threatened and endangered species due in large part to chemical
10 pollution and habitat loss.

8 *Id.* at 23.

9 63. Species that depend upon Puget Sound include many threatened and endangered
10 species identified as such under the Endangered Species Act. These include the following: Puget
11 Sound Chinook, Hood Canal summer chum salmon, Lake Ozette sockeye, and Puget Sound
12 steelhead, all of which were listed in 2005. NMFS then listed critical habitat in 2005 for many
13 species of West Coast salmonids, including Puget Sound Chinook, Hood Canal summer chum
14 salmon, Lake Ozette sockeye. In 2010, NMFS listed the Puget Sound/Georgia Basin distinct
15 population segment (“DPS”) of yelloweye rockfish and canary rockfish as threatened, and
16 bocaccio as endangered. Additionally, the Southern Resident killer whale (orca) DPS was listed
17 as an endangered species in 2005, with critical habitat designated in 2006 and again in 2021.⁴

18 64. The waters of Puget Sound are impaired by nitrogen pollution, which removes
19 dissolved oxygen from water as organic nitrogen deaminates into ammonium and then goes
20 through the process of nitrification to become nitrate, consuming oxygen in the process. Nitrogen
21 also fuels excessive algae growth in surface waters. When the algae die, they sink to the bottom
22

23 ⁴ See 64 Fed. Reg. 58,910, 58,933 (Nov. 1, 1999) (Bull Trout Listing); 75 Fed. Reg. 53,898
24 (Oct. 18, 2010) (Bull Trout Critical Habitat Designation); 70 Fed. Reg. 37,160 (June 28, 2005) (Puget Sound
25 Chinook, Hood Canal Summer Chum Salmon, Lake Ozette Sockeye, and Puget Sound Steelhead); 70 Fed. Reg.
26 52,630 (Sept. 2, 2005) (Designation of Critical Habitat for Puget Sound Chinook, Hood Canal Summer Chum
Salmon, and Lake Ozette Sockeye); 75 Fed. Reg. 22,276 (April 28, 2010) (Puget Sound/Georgia Basin DPS of
Yelloweye Rockfish, Canary Rockfish, and Bocaccio Listing); 70 Fed. Reg. 69,903 (Nov. 18, 2005) (Southern
Resident Killer Whale DPS Listing); 71 Fed. Reg. 69,054 (Nov. 29, 2006) (Critical Habitat Designation of Southern
Resident Killer Whale DPS); 86 Fed. Reg. 41,668 (Aug. 2, 2021) (Critical Habitat Designation of Southern Resident
Killer Whale DPS).

1 of a waterbody where they are consumed by bacteria. These bacteria, combined with the natural
2 respiration of other oxygen-breathing organisms, use up the available oxygen in the lower water
3 column, gradually reducing the dissolved oxygen concentration to unhealthy levels.

4 65. Warm weather and high levels of sunlight exacerbate hypoxic (low oxygen)
5 conditions; therefore, they tend to occur during summer months. High temperatures also lower
6 levels of dissolved oxygen in water.

7 66. Some of the algal blooms in Puget Sound are toxic and generate a range of
8 paralytic, diarrhetic, and neurotoxic effects on people and animal life. Some macroalgae in Puget
9 Sound pile up on beaches.



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23 *Figure 1. Macroalgae Deposited on Edmonds Beach, Puget Sound (2016).*

24 67. Nitrogen entering Puget Sound from municipal discharges and rivers generally
25 feeds the nutrient levels at the surface of the water, unlike ocean sources. It is also at this surface
26 layer where growth of the microbial food web—driven by sunshine, warmth, and nutrients—

1 explodes on a seasonal basis. Normally the surface layer would be dominated by phytoplankton
2 diatoms that construct themselves with silica. These diatoms, in turn, support a population of
3 copepods that transfer their high-lipid energy to forage fish, such as herring, when consumed.

4 68. In Puget Sound, however, the increase in surface nitrogen has driven widespread
5 algal blooms of the red-orange dinoflagellate *Noctiluca* that consume the diatoms that are
6 essential to the Sound food web, as well as the copepods themselves. In Puget Sound, the change
7 from a diatom-based surface food web to one based on *Noctiluca* is dramatic. *Noctiluca* are
8 capable of consuming the entire population of diatoms in one day. The end result is both a
9 starving of the benthos as well as a starving of the surface layer. The *Noctiluca* out-competes the
10 copepods for diatoms thus resulting in a lower quality diet for species at higher trophic levels.
11 And it has the effect of retaining the nutrients near the surface.



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Figure 2. The Dinoflagellate Noctiluca in Puget Sound (Near Seabeck on Hood Canal) Photo by Don Paulson (2009).



12 *Figure 3. The dinoflagellate Noctiluca in Puget Sound Seen from the Air (Ecology, Eyes Over*
13 *Puget Sound Program).*

14 69. Nitrogen pollution in Puget Sound also contributes to local ocean acidification,
15 which impairs the ability of shellfish to build shells.



25 *Figure 4. A Pteropod Shell (Sea Snail) Dissolved Over the Course of 45 Days in Seawater*
26 *Adjusted to an Ocean Chemistry Projected for the Year 2100. NOAA Environmental*
Visualization Laboratory.

1 70. Moreover, nitrogen pollution in Puget Sound contributes to the large numbers of
2 jellyfish masses that, like *Noctiluca*, are a nutritional dead end in the food web.



15 *Figure 5. Jellyfish in Puget Sound.*

16 71. The waters of Puget Sound and its tributaries are protected by Washington water
17 quality standards that include numeric and narrative criteria as well as designated uses. Some of
18 these water quality standards are intended to protect human use of the waters (e.g., indicator
19 bacteria for human pathogens, toxic criteria that apply to fish tissue). Others are intended to
20 protect sensitive aquatic life uses such as rearing, migration, and spawning of salmon, steelhead,
21 trout, and other aquatic life uses (e.g., temperature, pH, dissolved oxygen, acute and chronic
22 levels of toxics). Designated beneficial uses and narrative criteria are intended to protect such
23 aquatic-dependent uses as wildlife (e.g., birds and mammals) from pollutants for which there are
24 no numeric criteria—such as some toxics, nutrients, and harmful algal blooms. Narrative criteria
25 also protect aesthetic values, such as those harmed by widespread algal blooms, for which there
26 are no numeric criteria.

1 75. In its report on 1994 and 1995 monitoring results, Ecology identified “severely
2 low DO concentrations in southern Hood Canal,” and low dissolved oxygen in central Hood
3 Canal, East Sound, Penn Cove, Budd Inlet, Possession Sound, Elliott Bay, Skagit Bay, Port
4 Susan, and the Saratoga Passage, some of which were described as having dissolved oxygen
5 levels that were “especially severe and approached anoxia [an absence of dissolved oxygen].”
6 *Id.* at 63. Moreover, the report concluded that the location of monitoring stations resulted in a
7 “definite undersampling of locations within Puget Sound.” *Id.*

8 ***Washington’s 2012 Section 303(d) List of Impaired Waters***

9 76. Despite its knowledge that Puget Sound was highly sensitive to nitrogen pollution
10 dating back to at least 1975, by 1996, the South Sound was listed for dissolved oxygen and/or
11 nitrogen impairment in only three waterbodies (Outer and Inner Budd Inlet, and Oakland Bay)
12 and in 1998, Ecology had added Henderson Inlet but removed Oakland Bay, and removed the
13 only portion of Puget Sound listed as impaired for excess nitrogen. These listings were based on
14 data from as early as 1985.

15 77. By 2004, EPA approved a Washington 303(d) list with 22 segments⁵ in South
16 Puget Sound identified as impaired, with another 43 segments identified as “waters of concern.”

17 78. For the entirety of Puget Sound, 17 segments were listed for dissolved oxygen
18 violations in 1996, which grew to 25 segments listed in 1998, 52 segments listed in 2004, and
19 100 segments listed in 2008. There are currently 141 segments throughout Puget Sound listed for
20 low levels of dissolved oxygen on Washington’s 2012 303(d) list. Ecology identifies another 330
21 Category 2 marine waters segments listed for dissolved oxygen, a category that indicates “waters
22 of concern.”

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⁵ The waters of Puget Sound are assessed by grid cells, equivalent to stream segments, and by individual pollutant or parameter, thus yielding segment-parameter impairments. Each cell is approximately 2,460 by 3,660 feet.

79. The Washington 2010 303(d) list represents the last time that Ecology or EPA completed an update of the state's list of impaired marine waters. The list is based on data obtained prior to October 15, 2009. EPA approved what it termed the "2010 303(d) list" on December 21, 2012.

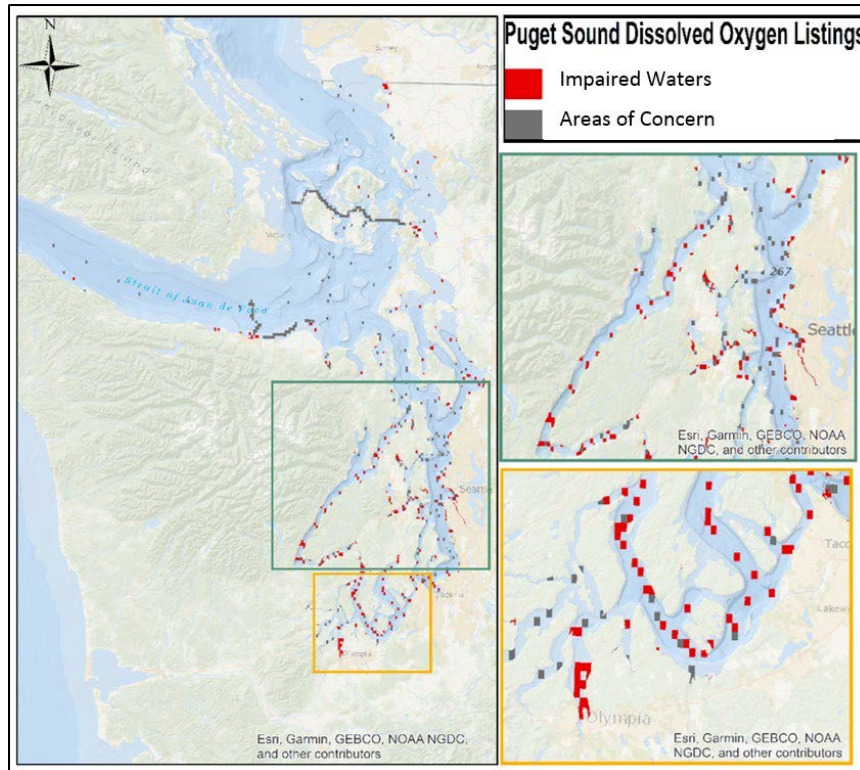


Figure 6. Map of 303(d) Listings of Puget Sound Segments Impaired for Dissolved Oxygen (2010); Ecology, Puget Sound Nutrient Source Reduction Project Volume 1: Model Updates and Bounding Scenarios (January 2019) at 16, fig. 2.

80. The Washington 2012 303(d) list represents the last time that Ecology or EPA completed an update of the state's list of impaired waters. The list is based on data obtained prior to May 1, 2011. EPA approved what it termed the "2012 303(d) list" on July 22, 2016.

81. EPA has never approved an Ecology 303(d) list submission with TMDL priorities.

82. Toxics impairment listings in Puget Sound waters have also increased over time. Based on tissue samples, 32 segments were placed on the 303(d) list in 1996, 44 segments were listed in 1998, 51 were listed in 2004, and 47 were listed in 2008. Now, on its most recent 2012

1 303(d) list, Ecology currently lists 257 segments of Puget Sound marine waters as impaired for
2 toxics in animal tissue.

3 83. Ecology currently lists 480 segments of Puget Sound marine waters as impaired
4 for toxics in sediment. An additional 1,116 segments are listed as Category 2 waters of concern.

5 ***A Much Broader and Increasing Extent of Puget Sound Impairment Is Reflected by Data and***
6 ***Information Not Used for the 2012 Washington 303(d) List of Impaired Waters***

7 84. The waters listed on Washington's 303(d) list tell only half the story of nitrogen
8 impacts to Puget Sound's dissolved oxygen depletion because many impaired segments are not
9 on the list. In 2014, Ecology found that:

10 current human nutrient loads to South and Central Puget Sound (both internal and
11 external to model domain) cause >0.2 mg/L decreases in daily minimum oxygen
12 concentrations in portions of Totten, Eld, Budd, Carr, and Case inlets of South
13 Puget Sound (Figure ES-3a). We also found violations in East Passage in Central
14 Puget Sound.

15 * * *

16 If marine point sources (internal to model domain) discharged at their maximum
17 permitted loads every day of the year, maximum loads would cause >0.2 mg/L
18 depletions in more regions of the South Sound inlets and in a large portion of
19 Central Puget Sound.

20 Ecology, *South Puget Sound Dissolved Oxygen Study: Water Quality Model Calibration*
21 *and Scenarios* (March 2014) at 16–19 (hereinafter “2014 Scenarios”).

22 85. As of February 2019, Ecology reports that its modeling studies show that
23 approximately 20 percent of Puget Sound currently violates water quality standards for dissolved
24 oxygen. See Ecology, *Puget Sound Nutrient Source Reduction Project Volume 1: Model Updates*
25 *and Bounding Scenarios* (January 2019) (hereinafter “2019 Bounding Scenarios”). According to
26 Ecology, this reflects a total of 1,258 Puget Sound cells or 303(d) assessment units that violate
dissolved oxygen standards for which TMDLs are required. These data and information are not
reflected in the 2010 or 2012 303(d) lists.

86. The 20 percent of Puget Sound that is not meeting dissolved oxygen standards
manifests in both the number of noncompliant days and maximum oxygen depletion as well as
the spatial extent of the impairment. For example, the model demonstrated that:

1 Portions of Puget Sound, primarily in South Sound and Whidbey Basin,
 2 experience a large number of days per year when the marine DO standards are not
 3 met. The number of noncompliant days varies by year and location. For instance,
 4 the maximum number of noncompliant days occurred in 2006 (Carr Inlet, 250
 days), followed by 2008 (Carr Inlet, 216 days), and 2014 (Quartermaster Harbor,
 198 days). The average cumulative number of noncompliant days computed over
 all areas not meeting the standard was 63, 50, and 46 in each of those years,
 respectively.

5 2019 Bounding Scenarios at 13.

6 87. Ecology also reported that in 2006, hypoxic levels—“very low oxygen regions
 7 [below 2 mg/L] . . . with well-documented consequences for aquatic life”—peaked around
 8 52,500 acres, approximately 19 percent of which was attributable to human nutrient loading. *Id.*
 9 at 78. The model also showed that the hypoxic volume for 2006, 2008, and 2014 was between 28
 10 and 35 percent higher than pre-industrial conditions. The Bounding Scenarios report also found
 11 that “[t]he locations most impacted consist of poorly flushed inlets and bays, such as Penn Cove;
 12 Quartermaster Harbor; Case, Carr, Budd, Sinclair, and Dyes Inlets; and Liberty Bay.” *Id.* at 83.

13 88. Upon information and belief, Washington’s 303(d) list does not include waters
 14 predicted by the model to violate water quality standards for dissolved oxygen.

15 89. Also, Washington’s 303(d) list represents only a fraction of the Sound’s waters
 16 with toxic impairment. For example, a single assessment cell in Central Puget Sound represents
 17 an entire body of evidence pertaining to toxic contamination in the tissue of harbor seal pups
 18 (three listings for total dioxin, total furans, and PCBs) and killer whales (for dioxin), limited to
 19 that single assessment cell because the “[l]ocation is based on best estimate of where the tissue
 20 samples were taken for the study.” Ecology, *Washington State Water Quality Assessment,*
 21 *303(d)/305(b) List*, Listing 36166, Assessment Unit ID 47122F4I4.⁶ This assessment cell
 22 constitutes 0.836 square kilometers of Puget Sound waters.

23 90. No waters are on the 303(d) list based on levels of contaminants of concern
 24 despite ongoing monitoring and research on their loading and toxic effects in Puget Sound. For

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 26 ⁶ Available at
https://apps.ecology.wa.gov/approvedwqa/approvedpages/viewapprovedlisting.aspx?LISTING_ID=36166; Map link
 available at <https://apps.ecology.wa.gov/waterqualityatlas/wqa/map?lstid=36166> (last accessed December 3, 2021).

1 example, in a paper issued recently, Ecology found that:

2 Recent research on CECs in wastewater has demonstrated biological impacts such
3 as: negative metabolic changes in Chinook salmon (Meador et al., 2016),
4 endocrine disruption in multiple fish species (Brodin et al., 2014; Harding et al.,
5 2006), reduced fertility in fathead minnows (Niemuth & Klaper, 2015), increased
6 antibiotic resistant bacteria, general increased morbidity in Coho and Chinook
7 salmon (Meador, 2014), and bioaccumulation in annelids (Kinney et al., 2015).

8 Ecology, *Contaminants of Emerging Concern and Wastewater Treatment* (June 2021) at

9 12. Some of these studies are on Puget Sound and Puget Sound species.

10 91. However, the Puget Sound Partnership’s 2021 assessment of marine water
11 quality reports that the “Marine Water Condition Index” is “getting worse,” the status of
12 dissolved oxygen in marine waters is “Below 2020 Target,” and the decline is “noteworthy in
13 Bellingham Bay, Whidbey Basin, and further north in the Georgia Basin, Canada. Dissolved
14 oxygen levels in many parts of Puget Sound were lower on average in 2019 compared to the
15 baseline (1999–2008) conditions, continuing a six-year declining oxygen trend.” Puget Sound
16 Partnership, *State of the Sound Report 2021* (2021) at 19–20. In addition, the health of benthic
17 communities is “especially degraded in areas . . . low in oxygen.” *Id.* at 20. Ocean acidification,
18 which is related to nitrogen pollution, “is a continuing problem.” *Id.*

19 92. The Partnership’s 2021 evaluation of toxic contaminants in four species of fish
20 indicate all are “Below 2020 Target” and either have no or insufficient data (adults and juvenile
21 Chinook) or “mixed results” (English sole and Pacific herring). *Id.* at 19. “Thousands of
22 chemicals, known as contaminants of emerging concern, might harm Puget Sound aquatic
23 species but are less well known. Governments do not regulate their levels.” *Id.* at 20.

24 93. Although Ecology does not place any waters on its 303(d) list solely for failure to
25 support designated uses, the Partnership reports the status of Chinook salmon is “Not
26 Improving,” the biomass of spawning Pacific herring is “Getting Worse,” and the population of
endangered Southern Resident killer whales is “Getting Worse.” All three species are listed as
“Below 2020 Target.” *Id.* at 29.

1 94. In addition to monitoring nutrient impacts to dissolved oxygen, Washington has
 2 been monitoring the status of marine benthic communities—bottom dwelling parts of the food
 3 web—for three decades. Ecology has not placed any segments on its 303(d) list on the basis of
 4 these data and information. Yet, in 2017, Ecology demonstrated that the benthos has been
 5 declining from baseline conditions (1997–2003) to “resample” conditions (2004–2014). *See*
 6 Weakland *et al.*, *Regional Declines in Puget Sound Benthic Communities* (July 2017) at 5. In
 7 five types of habitats across Puget Sound, the number of organisms has declined; and in four of
 8 those five habitat types, the number of species has declined. The number of sampling sites
 9 considered adversely affected changed from 35 percent to 44 percent. The study also
 10 demonstrated an increase in pollution/hypoxia tolerant species and concluded that “Model
 11 Predictions of Low DO Correspond with Affected Communities.” *Id.* at 15.

12 95. Upon information and belief, Washington’s 303(d) list does not include waters
 13 where data and information demonstrate that water quality standards are violated because of
 14 nitrogen-caused impairments to the Puget Sound food web, benthos, or species.

15 **Ecology Began Working on TMDLs for Dissolved Oxygen Depletion Caused**
 16 **by Nitrogen in South Puget Sound and Puget Sound**
 17 **and Has Abandoned Them**

18 96. Models are developed to assist in the establishment of TMDLs, particularly for
 19 waters that are polluted by a combination of point and nonpoint sources, and for waters with
 20 complex considerations of the transport, fate, and effects of pollutants.

21 ***Ecology Developed a Model for Nitrogen Impacts to Depleted Dissolved Oxygen in South***
 22 ***Puget Sound in 2001***

23 97. Ecology, with EPA funding and technical assistance, has been studying and
 24 modeling the impacts of nitrogen and other influences on Puget Sound for many years. By 2001,
 25 Ecology had concluded that “many sites in South Puget Sound would be sensitive to nutrient
 26 addition or eutrophication [high concentrations of nutrients].” Ecology, *Assessing Sensitivity to*
Eutrophication of the Southern Puget Sound Basin (2001). Model development began with South

1 Puget Sound in 2001 in response to many studies, from as early as 1975, that had “previously
2 concluded that South Puget Sound is susceptible to water quality problems due to reduced
3 circulation . . . and shows signs of nutrient sensitivity.” Ecology, *South Puget Sound Water
4 Quality Study: Phase I* (October 2002) at vii, ix (hereinafter “2002 Phase I Study”).

5 98. In 2002, the first report on the model “found that South Puget Sound is sensitive
6 to nutrient addition, confirming the potential for serious water quality degradation due to
7 increased nutrient loads,” and concluding that “[b]oth point and nonpoint sources contribute
8 significantly” to a situation that “urgently deserves further attention and quantitative
9 assessment.” *Id.* at vii, ix.

10 99. An interim report issued in 2008 concluded that, taking the South and Central
11 Puget Sound together, sewage treatment plants contributed roughly 80 percent of anthropogenic
12 nitrogen on an annual basis and 92 percent in the fall. Even so, in some inlets of Puget Sound,
13 the input of rivers dominated the annual loading. This 2008 report also found that:

14 Low levels of DO occurred throughout South Puget Sound near-bottom waters
15 (Figure ES-6). Concentrations below the water quality standards were recorded in
16 Budd, Carr, Case, and Henderson Inlets; Pickering Passage; Dana Passage; and
17 the Nisqually Reach. Central Puget Sound and the Tacoma Narrows also
18 exhibited low near-bottom DO in summer 2007. Lowest levels occurred in
19 southern Budd Inlet, but levels near or below 5 mg/L occurred in Case and Carr
20 Inlets as well as through the Tacoma Narrows in September 2006. Low levels
21 persisted until December 2006 and returned again in June 2007.

22 Ecology, *South Puget Sound Dissolved Oxygen Study: Interim Data Report* (December 2008) at
23 19.

24 100. Three years later, in 2011, Ecology issued another report, confirming that sewage
25 treatment plants are the dominant human source of nitrogen pollution to Puget Sound. This
26 report concluded that “current loads from rivers and streams are 2.2 times higher than natural
conditions for South Puget Sound, 1.5 times higher for Central Puget Sound, and 1.8 times
higher overall. When we include WWTPs [sewage treatment plants], current loads are 3.4 times
higher than natural conditions for South Puget Sound, 7.7 times higher for Central Puget Sound,

1 and 6.1 times higher overall.” Ecology, *South Puget Sound Dissolved Oxygen Study Interim*
2 *Nutrient Load Summary for 2006-2007* (January 2011) at 58. The report concluded that sewage
3 treatment plants produce 71 percent of annual anthropogenic nitrogen loads in Puget Sound and
4 rivers produce 29 percent.

5 101. Finally, in 2014, yet another report on dissolved oxygen in South Puget Sound
6 was described as a “study to evaluate the impact of humans on DO concentrations within South
7 and Central Puget Sound, which fall below the numeric criteria in the water quality standards.”
8 2014 Scenarios at 9. The report concluded that “current [2007 South Puget Sound] human
9 nutrient loads from marine point sources and watersheds as well as external (north of model
10 domain [Edmonds]) current anthropogenic loads are causing DO to decline by as much as 0.4
11 mg/L in portions of Totten, Eld, Budd, Carr, and Case Inlets, and East Passage, which violates
12 the standards[.]” *Id.*

13 102. The 2014 report stated that the South Puget Sound model demonstrated that a
14 reduction of 75 percent of all human sources in South and Central Puget Sound would “eliminate
15 all violations except in Eld Inlet[.]” *Id.* at 18. It concluded that Central Puget Sound sources of
16 nitrogen “potentially contribute 30 to 40% of the DO depletions in Carr and Case Inlets.” *Id.* at
17 131. Ecology concluded that “[a]dditional scenarios should be combined into potential sets of
18 management actions to support the future development of load and wasteload allocations if a
19 TMDL is pursued. Ecology may not conduct a TMDL if alternative management approaches are
20 used to address violations.” *Id.* at 22.

21 103. The South Puget Sound model has since been incorporated into the modeling of
22 the larger geographic area of Puget Sound and the Salish Sea where it provides a “more detailed
23 comparison to the standards.” Ecology, *Quality Assurance Project Plan Salish Sea Dissolved*
24 *Oxygen Modeling Approach: Sediment-Water Interactions* (January 2015) at 10.

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1 ***Ecology Developed a Model for Nitrogen Impacts to Depleted Dissolved Oxygen in the Entire***
 2 ***Puget Sound in 2008***

3 104. In 2008, EPA, Ecology, and other agencies began developing models of the entire
 4 Puget Sound in response to studies from 1999, 2002, 2005, 2006, and 2007, showing that
 5 eutrophication was present in Puget Sound and expected to worsen. A plan for the development
 6 of an “intermediate-scale” model was undertaken in 2009 “[a]s part of mandates under the
 7 Federal Clean Water Act to manage pollutant loading to meet water quality standards, [by] EPA,
 8 Pacific Northwest National Laboratory (PNNL), and Ecology” to address “nutrient management
 9 questions” because “[n]utrient pollution . . . [is] considered one of the largest threats to Puget
 10 Sound[.]” Ecology, *Quality Assurance Project Plan: Puget Sound Dissolved Oxygen Modeling*
 11 *Study: Intermediate-scale Model Development* (April 2009) at 5, 7 (hereinafter “2009 QAPP”).
 12 Specifically, the project would help to determine “what level of nutrient reductions are necessary
 13 to reduce or eliminate human impacts to dissolved oxygen levels in sensitive areas.” *Id.* at 4.

14 105. In 2011, Ecology published its first report on the Puget Sound model,
 15 demonstrating that sewage treatment plants are the dominant human source of nitrogen pollution
 16 to Puget Sound by contributing 81 percent of the nitrogen loads in the summer and 59 percent on
 17 an annual basis. These loading estimates were to be plugged into the model. This report
 18 confirmed the results of five other studies that evaluated nutrient load estimates from 1997, 1998,
 19 2006, 2009, and 2011, concluding that “[o]verall [the] results were comparable.” Ecology, *Puget*
 20 *Sound Dissolved Oxygen Model: Nutrient Load Summary for 1999-2008* (November 2011), at
 21 xxii.

22 106. Also in 2011, the plan for development and use of the model was amended to
 23 “evaluate the effects of current and potential future nutrient loads on DO levels in Puget Sound”
 24 and “define potential Puget Sound-wide nutrient management strategies and decisions” because
 25 “there has been considerable concern over the assimilative capacity of Puget Sound and ability to
 26 withstand continued human population growth.” Ecology, *Addendum 1 to Quality Assurance*
Project Plan: Puget Sound Dissolved Oxygen Study: Intermediate-scale Model Development

1 (October 2011) at 6. It outlined steps to “develop the model to a state of robustness and readiness
2 of a ‘Water Quality Management Tool’ for use by EPA and Ecology[.]” *Id.* at 7.

3 107. A paper on the model results was published by the authors in 2012 that
4 concluded: “the model reproduces overall seasonal algal bloom dynamics and DO levels in Puget
5 Sound resulting from exchanges with the Pacific Ocean and nutrient loads from natural and
6 human sources within the basin.” Tarang Khangaonkar, *et al.*, *Simulation of annual*
7 *biogeochemical cycles of nutrient balance, phytoplankton bloom(s), and DO in Puget Sound*
8 *using an unstructured grid model* *Ocean Dynamics* (2012) 62:1353, 1373.

9 108. But not until 2014 did the agencies publish a report predicting the impact of these
10 human nitrogen contributions on dissolved oxygen depletion in Puget Sound. This 2014 report
11 assessed the “current” 2006 conditions as well as future conditions in 2020, 2040, and 2070, both
12 with and without the effects of climate change. Ecology, *Puget Sound and the Straits Dissolved*
13 *Oxygen Assessment Impacts of Current and Future Human Nitrogen Sources and Climate*
14 *Change through 2070* (March 2014) at 117 (hereinafter “Future Conditions Report”). The report
15 predicted significantly worsening conditions and recommended yet further studies.

16 109. To these results, in the years from 2014 to 2017, were added an improved
17 understanding of sediment-water exchanges and predicting acidification impacts of nitrogen
18 pollution in Puget Sound. Since 2017, the agencies have used the model to demonstrate that if all
19 sewage treatment plants were required to install only very modest nitrogen removal—far less
20 than the capacity of current technology—those sources would continue to cause and contribute to
21 violations of water quality standards in Puget Sound.

22 ***Ecology Began and Then Abandoned the Development of TMDLs for Puget Sound and South***
23 ***Puget Sound Waters***

24 110. In PPAs signed in 1997 and again in 1998, EPA and Ecology agreed to
25 “[c]onvene an interagency group to develop options for measuring/evaluating loadings of toxic
26 and conventional pollutants to Puget Sound or parts of Puget Sound.” The regulatory purpose of

1 developing loadings of pollutants is to establish TMDLs from which load limits are then
2 allocated to point and nonpoint sources.

3 111. EPA and Ecology were well aware that “[m]any studies have previously
4 concluded that South Puget Sound is susceptible to water quality problems due to reduced
5 circulation . . . and shows signs of nutrient sensitivity,” based on studies from 1975 through
6 1997, when they embarked on a two-phase study to evaluate and model nitrogen pollution loads
7 and resulting dissolved oxygen levels in South Puget Sound in order to prepare TMDLs. 2002
8 Phase I Study at x. Funding was provided by both agencies in 1998.

9 112. The 2002 Phase I study of South Puget Sound “confirm[ed] the potential for
10 serious water quality degradation due to increased nutrient loads,” *id.* at vii, found that
11 “dissolved oxygen is more sensitive to nutrient-driven processes than direct biochemical oxygen
12 demand (BOD) loading [used for NPDES permits],” *id.* at xv, identified NPDES point sources as
13 the primary contributor of nitrogen, and asserted that Phase 2 of the South Puget Sound model
14 “[u]ltimately . . . will establish load and wasteload allocations based on the TMDL for South
15 Puget Sound,” *id.* at xi.

16 113. Despite the urgency it asserted, Ecology did not pursue Phase 2 of the TMDL
17 study, until August 2007, when it issued a plan for “a critical first step in determining what might
18 need to be done to improve Puget Sound water quality.” Ecology, *South Puget Sound Water*
19 *Quality Study Phase 2: Dissolved Oxygen, Quality Assurance Project Plan* (August 2007) at 10.
20 Asserting that “We Must Solve the Problem Before it Gets Worse,” *id.* at 11, Ecology cited
21 “about \$200 million worth of [sewage treatment plant] investments being planned, designed, or
22 constructed right now in South Puget Sound,” *id.* at 15, noting that the population in the area is
23 expected to increase significantly and that “[e]very additional person in the region produces
24 about ten pounds of additional nitrogen every year . . . much of that nitrogen makes its way to
25 Puget Sound,” *Id.* The study plan also noted that “once nitrogen is discharged to Puget Sound, it
26 moves around—nitrogen discharged at one location may cause low dissolved oxygen levels

1 many miles away.” *Id.* at 11. The plan also cited the first known outbreak of harmful algal
2 blooms in Puget Sound in 1997 and the growing number of paralytic shellfish poisoning events.

3 114. In 2006, EPA critiqued the Partnership’s discussion of modeling the
4 transportation of nitrogen in Puget Sound because it made no mention of needed TMDLs, “that
5 would include all the necessary source assessments, fate and transport analysis, and long range
6 goals for point and non-point sources of pollution.”

7 115. In a Puget Sound work plan for fiscal year 2008, EPA discussed developing
8 “nutrient management plans for TMDLs, [and] NPDES permits,” and nonpoint sources, as well
9 as completing the Capitol Lake and Budd Inlet dissolved oxygen TMDLs. EPA, *6. Tasks,*
10 *Products, and Environmental Outcomes* (2008). Environmental results and outcomes for South
11 Puget Sound, Budd Inlet, and Hood Canal were identified to include “Quantification of Nutrient
12 Reduction targets or attainment of D.O. conditions.” *Id.* For the whole of Puget Sound, this work
13 plan called for nutrient modeling to result in: “Publish Recommendation for Action (e.g., TMDL,
14 AKART, nonpoint actions).” *Id.* By March 2008, Ecology represented to EPA that its model
15 would be used to develop nitrogen TMDLs for the South Puget Sound with results completed by
16 June 2010, while developing a study plan for the next set of Puget Sound basin TMDLs, which
17 would possibly be Whidbey Basin. Ecology, *DRAFT Proposal for Puget Sound Nutrient*
18 *Monitoring* (March 7, 2008) at 3–4.

19 116. In October 2007, EPA identified South Puget Sound dissolved oxygen as new
20 TMDLs that were slated for a Summer 2010 submittal from Ecology to EPA. In a December
21 2007 PPA status report, under the category “TMDLs,” the agencies wrote: “EPA will help seek
22 additional funds for Ecology’s South Puget Sound Study to determine how nitrogen from a
23 variety of sources affects dissolved oxygen levels in South Puget Sound.” EPA, Ecology, *WA*
24 *State Performance Partnership Agreement, July 2007-June 2009, Water Quality Program Status*
25 *Report (As of December 31, 2007)* at 10. In a subsequent PPA status report, the agencies made
26

1 clear that the studies and modeling of nitrogen's effect on dissolved oxygen in Puget Sound were
2 to result in TMDLs:

3 Revised Activity description: *EPA will continue to support Ecology's ongoing*
4 *effort to conduct a water quality evaluation and develop a water quality modeling*
5 *tool for South Puget Sound waters. Excessive amounts of nutrients from a variety*
6 *of sources affect dissolved oxygen levels in South Puget Sound waters. When*
7 *completed, the modeling tool is expected to support development of a TMDL for*
8 *the sources of nutrient loading.*

9 The state has received the funding for this project. As resources allow, EPA will
10 continue to provide technical and financial assistance to complete this study and
11 the model.

12 EPA, *WA State Performance Partnership Agreement July 2007-June 2009, Water Quality*
13 *Program Status Report As of June 30, 2008 (EPA Responses November 2008)* (November 2008)
14 (emphasis original) at 14. Repeated PPA status reports from June 2009 through September 2012
15 discuss EPA's assistance with Ecology's South Puget Sound Dissolved Oxygen Study under the
16 category "TMDLs."

17 117. In 2009, seeking funding, Ecology wrote to EPA that its model and studies of
18 dissolved oxygen in South Puget Sound "are being developed to provide the technical basis of a
19 TMDL if human contributions cause violations of the State water quality standards. If load
20 reductions are necessary, [the water quality program] WQP would lead a TMDL or other process
21 to quantify who reduces what, where, when, and how much." Ecology, *-DRAFT- Dissolved*
22 *Oxygen/Nutrient Strategy in Puget Sound* (January 27, 2009) at 1. The state cited a study on
23 costs associated with treatment technology to remove nutrients from sewage treatment plants for
24 which funding was sought as assisting in "implementing TMDLs" and identified Fall 2010 as the
25 decision point to decide "how do we proceed Sound-wide? TMDL route? Technology route?
26 Both? Other?" *Id.* at 3.

118. The 2009 plan for modeling the entire Puget Sound was stated to respond to CWA
mandates and considered "essential for future applications in Puget Sound such as Total

1 Maximum Daily Load (TMDL) calculations or sediment impact zone (SIZ) assessment for
2 remedial investigations.” 2009 QAPP at 14.

3 119. In the March 2010 PPA status report, EPA and Ecology reported that they
4 discussed Washington’s statewide nutrient management plan, which:

5 focuses on implementation of programs and TMDLs to reduce dissolved oxygen,
6 pH and temperature, which impact the ability for nutrients to grow. The plan was
7 well received by EPA, who gave suggestions for improving upon the results of the
8 plan by looking at information that may provide trends towards improving water
9 quality as a result of these efforts. Ecology is also leading the South Sound
Nutrient study (supported by PSP and funded by EPA) which focuses on
dissolved oxygen, by determining what amount of nitrogen loading can be
permitted to meet acceptable DO levels.

10 A draft description of the South Puget Sound Dissolved Oxygen Study in May 2010 noted that
11 the study area “includes Central Puget Sound (which contains the largest wastewater dischargers
12 in the state) to determine if these dischargers contribute to the water quality problems in the
13 South Sound.” EPA/Ecology, *South Puget Sound Dissolved Oxygen Study DRAFT Version: May*
14 *4, 2010*. The agencies identified the need for an “interim permit strategy” for permits that need to
15 be renewed before study completion, with “[d]etailed what-if scenarios” expected to be
16 completed by 2012. *Id.* at 1.

17 120. By 2011, the agencies were suggesting that the extensive studies and modeling of
18 dissolved oxygen in Puget Sound and South Puget Sound might be used as a non-regulatory
19 alternative to TMDLs. EPA and Ecology described their joint efforts on South Puget Sound,
20 Hood Canal, and possibly other areas of Puget Sound with known dissolved oxygen problems, as
21 “TMDL[s] (or other management plan).” EPA, *Puget Sound Toxics and Nutrients projects*
22 (January 7, 2011) at 2.

23 121. In April 2012, EPA wrote in response to public comments about the permit it
24 proposed to issue for the Fort Lewis sewage treatment plant that nutrient monitoring of the
25 facility’s discharge was called for because:

26 Washington State’s Puget Sound is a priority watershed for EPA, and as such it
has been the site of a number of EPA-funded research activities such as Ecology’s

1 South Puget Sound Dissolved Oxygen Study (which was partially funded by a
 2 grant from EPA’s National Estuary Program). The need for this study became
 3 evident when, in their 2008 Water Quality Assessment, Ecology found 24
 4 locations in South Puget Sound that were impaired due to a lack of dissolved
 5 oxygen. The South Puget Sound Dissolved Oxygen Study evaluated a number of
 6 different sources for nitrogen, as nitrogen is the main pollutant responsible for
 7 low dissolved oxygen levels in this environment. The study included Solo Point
 8 as one of 29 municipal wastewater treatment plants that discharge nitrogen into
 9 South Puget Sound. The early findings of the study include the following: “On an
 10 annual basis, rivers and wastewater treatment plants south of the Tacoma Narrows
 11 sent roughly equal amounts of nitrogen into the South Sound. However, in
 12 September 2007 – a critical period for dissolved oxygen concentrations –
 13 wastewater treatment plants south of the Tacoma Narrows contributed four times
 14 more nitrogen to South Puget Sound than the rivers. In looking at the entire study
 15 area, which reaches to just south of Edmonds, wastewater treatment plants
 16 contributed more than ten times more nitrogen than the rivers.”

17 EPA, *Response to Comments Fort Lewis NPDES Permit No. WA-0021954* (April 2012) at 4.

18 EPA went on to explain that the monitoring required by the permit was needed “in order to
 19 inform future studies that may ultimately lead to a water quality-based effluent limit (WQBEL)
 20 or Total Maximum Daily Load (TMDL) if necessary to protect this vital waterway [of South
 21 Puget Sound].” *Id.*

22 122. That same year, the EPA staffer assigned to the Puget Sound nitrogen TMDLs
 23 noted that “EPA will likely need to push the state on what could be the most important TMDL
 24 yet undertaken in WA, it would certainly be a plus for Puget Sound.” EPA, *Ongoing work*
 25 *assigned to David Ragsdale* (May 20, 2013).

26 123. A March 2014 study by Ecology for South Puget Sound noted that model runs of
 different scenarios “should be combined into potential set of management actions to support the
 future development of load and wasteload allocations if a TMDL is pursued” but that “Ecology
 may decide to not conduct a TMDL if alternative management approaches are used to address
 violations.” 2014 Scenarios at 135.

124. Even so, in 2016, Ecology prepared a detailed memorandum to share with EPA
 concerning the overlapping dissolved oxygen TMDLs for Budd Inlet and Puget Sound that
 demonstrated no doubt that the result of the modeling would be TMDLs. Ecology saw two
 choices, one of which was to “[d]evelop separate Budd Inlet and Puget Sound DO TMDLs” and

1 the other of which was to “[c]ombine Budd Inlet TMDL into Puget Sound DO TMDL.”
 2 Ecology, *Two options for approach to Budd Inlet* and Puget Sound DO TMDLs* (October 2016).
 3 Moreover, Ecology captured EPA’s previously-expressed position that if the Budd Inlet TMDLs
 4 were completed first, to be approvable by EPA, Ecology would have to have a schedule for
 5 completing the Puget Sound TMDLs because protection of Budd Inlet will require significant
 6 load reductions from point sources in the greater Puget Sound. *See id.*

7 125. However, by 2017, Ecology was again alluding to developing a “TMDL or
 8 TMDL equivalent.” Ecology, *Options for ensuring WQS for downstream water–Budd Inlet*
 9 *TMDL* (February 8, 2017). Later that year, Ecology classified its position on whether it would
 10 develop nitrogen TMDLs for Puget Sound as “agnostic,” and stated that:

11 [I]t would be wise to wait until we have a better understanding of our options for
 12 nutrient source reduction before we decide to formally call this a TMDL effort or
 13 an alternative to a TMDL. One of the primary objectives on which to base this
 14 decision is timely implementation of the solutions that are needed for Puget
 Sound water quality improvement, and we should decide on an implementation
 pathway that best fulfills this objective.

15 Ecology, *FY2019 WQP/EAP Project Planning, Final Puget Sound Nutrient Source*
 16 *Reduction Project EAP Extended Scoping Form* (October 13, 2017) (hereinafter “2017
 17 Scoping”) at 3, 6.

18 126. Likewise, in the next PPA, signed in June 2017, the agencies no longer described
 19 the work to address over-enrichment of nutrients in Puget Sound as TMDLs, merely noting that
 20 “[b]oth agencies are mindful of large-scale nutrient problems in other estuaries around the
 21 country (e.g., Chesapeake Bay, Gulf of Mexico, and Long Island Sound). We are monitoring
 22 sensitive areas in Puget Sound and building models to help identify how excess nutrients affect
 23 Puget Sound. This will enable us to address nutrient problems before they become catastrophes.”
 24 EPA/Ecology, *Environmental Performance Partnership Agreement Washington State*
 25 *Department of Ecology U.S. Environmental Protection Agency State Fiscal Years 2018–2019,*
 26 *July 1, 2017–June 30, 2019* (June 27, 2017). And, in January 2017, after hearing from Ecology

1 that it was “still kicking around . . . whether it will be a TMDL or TMDL alternative,” EPA
2 acknowledged that “the effort may result in the development of a TMDL.” Email from Laurie
3 Mann, EPA, to Dustin Bilhimer, Ecology, Re: *EPA lead on Puget Sound DO* (January 11, 2017).

4 127. On October 10, 2017, NWEA petitioned Ecology for development of TMDLs for
5 nitrogen in Puget Sound. By letter dated December 8, 2017, Ecology denied the petition agreeing
6 that Puget Sound is impaired by nutrient pollution and asserting that a “TMDL may be
7 necessary.”

8 128. Planning the use of the model for determining what steps to take, in June 2018,
9 Ecology issued a plan for its next phase of using the Puget Sound model to “guide regional
10 investments in point and nonpoint source nutrient controls so that Puget Sound will meet DO
11 water quality criteria and aquatic life designated uses by 2040.” The plan specifically included
12 the goal of “[p]rovid[ing] a technical basis for exercising National Pollutant Discharge
13 Elimination System (NPDES) authority for nutrient water quality-based effluent limits.”
14 Ecology, *Quality Assurance Project Plan Salish Sea Model Applications* (June 2018) at 8.

15 129. On or before July 30, 2018, Ecology made an internal determination that it would
16 pursue a “TMDL Alternative” in lieu of EPA-approved TMDLs because it gives the state more
17 “flexibility.” Ecology, *Draft Nutrient Source Reduction Charter, Version 1.5* (July 30, 2018) at
18 7. In describing its decision-making process, Ecology itself identified an important risk
19 associated with this “alternative” approach: “If a decision is made to not develop a TMDL, it is
20 unclear how we use our NPDES permit authority to require dischargers to invest in advanced
21 treatment to meet new effluent limits that do not have the force of a wasteload allocation.” *Id.* at
22 18.

23 130. In November 2018, NWEA petitioned Ecology to update its technology-based
24 rules for sewage treatment plants based on Washington State law. In its 2019 denial of that
25 petition, Ecology asserted that it “believes a water quality-based approach is necessary to address
26 dissolved oxygen impairments caused by excess nutrient loading to Puget Sound and its

1 tributaries” and that “water quality-based effluent limits are set at the levels necessary to ensure
2 that a discharger does not cause or contribute to a violation of water quality standards.” Letter
3 from Maia D. Bellon, Director, Ecology, to Nina Bell, Executive Director, NWEA, Re: *Petition*
4 *for Rulemaking to Adopt a Presumptive Definition of “All Known, Available, and Reasonable*
5 *Treatment” as Tertiary Treatment for Municipal Sewage Dischargers to Puget Sound and its*
6 *Tributaries* (January 11, 2019). However, on June 16, 2021, Ecology issued a draft permit to
7 cover 58 municipal dischargers of nitrogen to Puget Sound that lacks numeric water quality-
8 based effluent limitations that are necessary to ensure compliance with water quality standards.
9 *See Ecology, Draft Fact Sheet for the State of Washington Puget Sound Nutrient General Permit*
10 (June 16, 2021) at 34 (“Numeric limits remain infeasible because modeling is not yet
11 complete.”).

12 131. Finally, on June 20, 2019, EPA approved Ecology’s decision to not issue Puget
13 Sound TMDLs. In the PPA signed that day, EPA and Ecology agreed that Ecology will:
14 “execut[e] the Puget Sound Nutrient Source Reduction Project with the goal of using the Salish
15 Sea model and focused stakeholder engagement to develop a TMDL alternative for dissolved
16 oxygen in the Sound.” 2019–2021 PPA at 33. The 2019–2021 PPA states that “modeling [] will
17 culminate in a portfolio of point and nonpoint nutrient source reduction actions that we are
18 confident will improve marine water quality. These actions will be documented in a Puget Sound
19 Nutrient Management Plan that will inform Ecology’s regulatory and non-regulatory
20 implementation actions, similar to a TMDL.” *Id.* at 34.

21 132. In January 2020, Ecology announced to the public its plans to issue a draft Puget
22 Sound Nutrient Management Plan by Fall 2022 as a “TMDL Alternative,” further publicly
23 affirming its decision to not develop TMDLs for nitrogen loading and dissolved oxygen
24 depletion in Puget Sound. Ecology, *Puget Sound Nutrient Forum* (January 30, 2020) at 3.

25 133. In May 2020, Ecology decided on various nutrient reduction scenarios to run in
26 the Puget Sound model to inform the development of the “TMDL Alternative.” It chose five

1 permutations, three of which rely on “high implementation” of nonpoint source controls, a level
2 it stated “represents an extremely optimistic (based on studies of reductions in other coastal
3 estuaries) level of effort and equates to a 40% reduction of [total nitrogen] TN loads.” Ecology,
4 *Draft Summary of Scenario 5 anthropogenic nutrient load inputs for Salish Sea Model* (May
5 2020) at 3.

6 134. In June 2020, Ecology released preliminary results of modeling the year 2006 as
7 “existing conditions.” These results show that year-round use of a moderate level of nitrogen
8 control—much less than the limits of technology—at all sewage treatment plants will reduce
9 2006 levels of impairment in Puget Sound from 484 square kilometers (17.0 percent) to 208
10 square kilometers (7.3 percent) and reduce the 2006 average number of days of noncompliance
11 from 67 days to 21 days. Reducing nitrogen only from large facilities or only during the summer
12 season results in less benefit to Puget Sound. *See Ecology, PSNGP AC Preliminary Findings,*
13 *Background material for discussion* (June 2, 2020).

14 135. In August 2020, Ecology set out a “current timeline” to complete and report on
15 “optimization scenarios modeling” by the end of 2022 and to issue the draft “TMDL Alternative”
16 that year; to issue the final “TMDL Alternative” in 2023, and to conduct “further modeling to
17 support permit development” in the years 2023-2025.” Ecology, *Puget Sound Nutrient Source*
18 *Reduction Project Update Puget Sound Nutrient Forum Meeting* (August 11, 2020) at 5. This
19 timeline indicates that the “TMDL Alternative” may not even include informal “wasteload
20 allocations” for individual permittees.

21 136. In October 2020, EPA confirmed its June 20, 2019 approval of Ecology’s
22 decision to not complete TMDLs for Puget Sound. EPA advised Ecology that “[t]he federal
23 caucus strongly supports the development of a comprehensive nutrient reduction plan for point
24 and non-point sources” and “strongly supports Ecology finalizing its model within the next 2-3
25 years to establish numeric WQBELs in the next [general nitrogen] permit.” Ecology, *Excel*
26 *spreadsheet, Final Recommendations AC Comments* (October 15, 2020).

1 137. EPA reaffirmed its June 20, 2019 approval of Ecology’s issuing a “TMDL
2 Alternative” for Puget Sound on June 21, 2021. *See* 2021–2023 PPA at 37, 38.

3 138. On September 9, 2021, Ecology issued its *Technical Memorandum: Puget Sound*
4 *Nutrient Source Reduction Project Phase II - Optimization Scenarios (Year 1)* (“2021 Tech
5 Memo”), representing another year of running the model. The 2021 Tech Memo drew a number
6 of conclusions: (1) “The clearest pathway to predicted DO compliance includes comprehensive
7 spatially and temporally distributed reductions from both WWTPs and watersheds”; (2) year-
8 round nitrogen removal from sewage treatment facilities would result in better water quality
9 outcomes than seasonal removal; (3) controlling nitrogen discharges from Main Basin sewage
10 treatment facilities “had the greatest impact in reducing predicted noncompliant total cumulative
11 days and areas (around 80%, and 63% respectively) in WA waters”; and (4) “Future year (2040)
12 growth projections will present further DO compliance challenges.” *Id.* at 44–45.

13 139. The 2021 Tech Memo recommended more model runs.

14 **Lack of a Puget Sound TMDL Results in a Failure to Regulate Discharges of Nitrogen and**
15 **Toxics as Required by the Clean Water Act**

16 140. NPDES permits for sources that discharge to Puget Sound have long been
17 considered state priorities by EPA and Ecology. In the 2007–2009 PPA, EPA designated Puget
18 Sound permits and those in areas covered by EPA-approved TMDLs as “high priority” for the
19 permits issued by EPA. 2007–2009 PPA at 63. They have consistently remained so through the
20 PPA between the agencies covering the period 2019–2021. Additionally, EPA has committed to
21 seek “additional funds for Ecology’s effort to estimate toxics loading from point sources to Puget
22 Sound” in multiple PPA-related documents from November 2008 through 2015, in order “to
23 develop a more robust toxics control strategy for Puget Sound.” EPA/Ecology, *Environmental*
24 *Performance Partnership Agreement for July 1, 2009 - June 30, 2011* (July 10, 2009) at 16, 57.

25 141. Notwithstanding the EPA and Ecology emphasis on identifying loads of toxic
26 pollution from NPDES-permitted sources, with the exception of ammonia and chlorine toxicity,

1 only six of 95 Ecology-issued NPDES permits for sewage treatment plants discharging to Puget
2 Sound and its tributaries contain limits on toxics.⁷

3 142. Notwithstanding the agencies' emphasis on identifying needed load reductions of
4 nitrogen, and the identification of sewage treatment plants as the primary source of
5 anthropogenic nitrogen in Puget Sound, only seven⁸ of 95 permits issued by Ecology and zero of
6 11 permits issued by EPA for sewage treatment plants, establish water quality-based limits on
7 nitrogen discharges to Puget Sound and its tributaries. None of the effluent limits for the seven
8 NPDES permits with nitrogen limits is designed to protect the waters of Puget Sound. With the
9 exception of the LOTT permit, which discharges to Budd Inlet, the remainder of these nitrogen
10 limits were triggered by the completion of three freshwater TMDLs: for the Snoqualmie River in
11 1994, the Puyallup River in 1994, and the Snohomish River Estuary in 1999—all over 20 years
12 ago—none of which was designed to protect the downstream waters of Puget Sound.

13 143. Ecology has explicitly cited to future, unscheduled Puget Sound TMDLs as a
14 rationale for not including required water quality-based effluent limits for nitrogen in existing
15 NPDES permits. For example, for the King County Renton South discharge, Ecology stated that
16 it “included additional nutrient monitoring in the proposed permit. Ecology will use this data if a
17 TMDL is developed for dissolved oxygen; such a TMDL will likely establish waste load
18 allocations for nutrients.” Ecology, *Fact Sheet for NPDES Permit WA0029581 King County*
19 *South Wastewater Treatment Plant* (July 1, 2015) at 39. For the Sound's largest single
20 discharger, Ecology cites incomplete nitrogen studies predicted to be completed in several years
21 that it says “may impact nutrient control in future permits but since the study is not yet complete,
22 the proposed permit does not include nutrient limits.” Ecology, *Fact Sheet for NPDES Permit*
23 *WA0029181, West Point Wastewater Treatment Plant (WWTP) and Combined Sewer Overflow*

24 _____
25 ⁷Permits with WQBELs for toxic chemicals include: copper limits for LOTT, Buckley, Enumclaw, Orting, Mt.
26 Vernon (emergency outfall only) and lead limits for Yelm (emergency Nisqually River outfall only). One permit for
a sewage treatment plant issued by EPA includes a WQBEL for copper: Puyallup.

⁸ The seven permits with surface water nitrogen limits are: LOTT, Orting, Everett (Snohomish River outfall), Lake
Stevens, Snohomish, North Bend, and Duvall.

1 (CSO) System (Dec. 19, 2014) at 72. Other fact sheets that cite future Puget Sound nitrogen
2 TMDLs as the basis for not including nitrogen effluent limits in permits include: Carlyon Beach,
3 LOTT, Tamoshan, Tacoma Central, Salmon Creek (Burien), King Renton South, Bremerton,
4 Carnation, Arlington, and Friday Harbor.

5 144. Ecology’s “TMDL Alternative” for nitrogen pollution in Puget Sound is intended
6 to focus solely on 90 sewage treatment plants. 2017 Scoping at 5.

7 145. EPA and Ecology refer to pollutants discharged from point sources that cause
8 depleted dissolved oxygen as “far field” pollutants. For example, EPA describes nitrogen as
9 having a far-field effect:

10 Nutrients are another class of pollutants which would be examined for impacts at
11 some point away from the discharge. The special concern is for those water
12 bodies quiescent enough to produce strong algae blooms. The algae blooms create
nuisance conditions, dissolved oxygen depletion, and toxicity problems (i.e., red
tides or blue-green algae).

13 EPA, *NPDES Permit Writers’ Manual*, Appendix A at A-17 (September 2010) at 176.

14 146. According to Ecology, NPDES permits may be issued without effluent limitations
15 for far-field pollutants until a TMDL has been completed:

16 If the pollutant is a far-field pollutant, is present in the discharge and is the subject
17 of a TMDL in progress, the permit writer may defer any water quality-based
limits on the pollutant until the TMDL is completed and a WLA is assigned.
18 When the WLA is assigned the permit writer may modify the permit or
incorporate the WLA at the next reissuance, depending on timing.

19 Ecology, *Water Quality Program Permit Writer’s Manual (rev. Jan. 2015)* at 196.

20 147. EPA added nutrient monitoring to six permits it issued to sewage treatment plants
21 between 2011 and 2015 because, as EPA said in a fact sheet for its 2012 permit to Joint Base-
22 Lewis McChord:

23 Given these [2007] findings, the fact that Fort Lewis is a major discharger in
24 South Puget Sound, and the fact that both nitrogen and phosphorus contribute to a
loss of dissolved oxygen in receiving waters, EPA determined that the Fort should
25 be required to conduct monitoring of nutrient species in their effluent to better
characterize their loadings throughout the year. Under the authority of Clean
26 Water Act Section 308, this increased monitoring has been included in the draft
permit. The frequency corresponds with a similar effort underway at Ecology,
which will be requiring Puget Sound dischargers to increase monitoring of

1 nutrients (nitrate and nitrite, total Kjeldahl nitrogen (TKN), ammonia, and total
2 phosphorus) in order to inform future studies that may ultimately lead to a water
quality-based effluent limit (WQBEL) or Total Maximum Daily Load (TMDL) if
necessary to protect this vital waterway.

3 EPA, *Fact Sheet NPDES Permit Number: WA-002195-4, The U.S. Environmental Protection*
4 *Agency (EPA) Plans To Reissue A Wastewater Discharge Permit To: Solo Point Wastewater*
5 *Treatment Plant* (2012) at 16.

6 148. All permits issued by EPA to sewage treatment plants (on tribal or federal land)
7 discharging to the greater Puget Sound area are currently expired and administratively continued.

8 149. The oldest of these EPA permits is for Pierce County's Suquamish Wastewater
9 Treatment Plant. In September 2019, EPA requested that Ecology provide a CWA section 401
10 certification for issuance of a new permit. EPA did not include effluent limitations for nitrogen in
11 the permit.

12 150. In November 2020, Ecology issued an amended CWA section 401 certification
13 for the Suquamish plant. The certification stated:

14 Nutrients discharged from wastewater treatment plants contribute to low
15 dissolved oxygen (D.O.) levels, below state water quality criteria, in Puget Sound.
16 Nitrogen is the limiting nutrient in Puget Sound waters, and total inorganic
17 nitrogen (TIN) is the form of nitrogen more available for algal growth that drives
eutrophication and the dissolved oxygen impairment. All wastewater dischargers
to Puget Sound containing inorganic nitrogen contribute to the D.O. impairment.

18 The Permittee's discharge contains inorganic nitrogen, and the NPDES permit
19 must require the Permittee to control nutrients consistent with the Clean Water
20 Act and Washington's Water Pollution Control Act. Water quality based effluent
21 limits (WQBELs) are required for wastewater treatment plants discharging to
surface waters when the discharge has reasonable potential to cause or contribute
to an in-stream excursion above a narrative or numeric State water quality criteria
(40 CFR 122.44(d)(1)(iii)).

22 Washington State does not have numeric criteria for nitrogen from which to
23 derive a WQBEL, and Ecology uses D.O. as a surrogate which requires modeling
to demonstrate water quality impacts from a discharge.

24 The nitrogen in the Permittee's discharge has reasonable potential to contribute to
25 far-field water quality impacts. For this permit, implementing a discharge-specific
26 numeric WQBEL for nitrogen is infeasible. This is due to the additional modeling
scenarios necessary to quantify both the Permittee's far-field water quality effect
and the corresponding effluent limit necessary to prevent an exceedance of the
D.O. standard.

1 *In re First Amendment to Clean Water Act Section 401 Water Quality Certification Order*
2 *No. 16892 for EPA National Pollutant Discharge Elimination System Permit No.*
3 *WA0023256 – Suquamish Wastewater Treatment Plant* (November 12, 2020) at 1–2.

4 151. Notwithstanding the lack of nitrogen effluent limits in NPDES permits and
5 401 certifications issued by Ecology, the state has concluded that “a comprehensive suite
6 of measures, including watershed load reduction, is needed to fully address human-
7 caused hypoxia in Puget Sound.” 2019 Bounding Scenarios at 79.

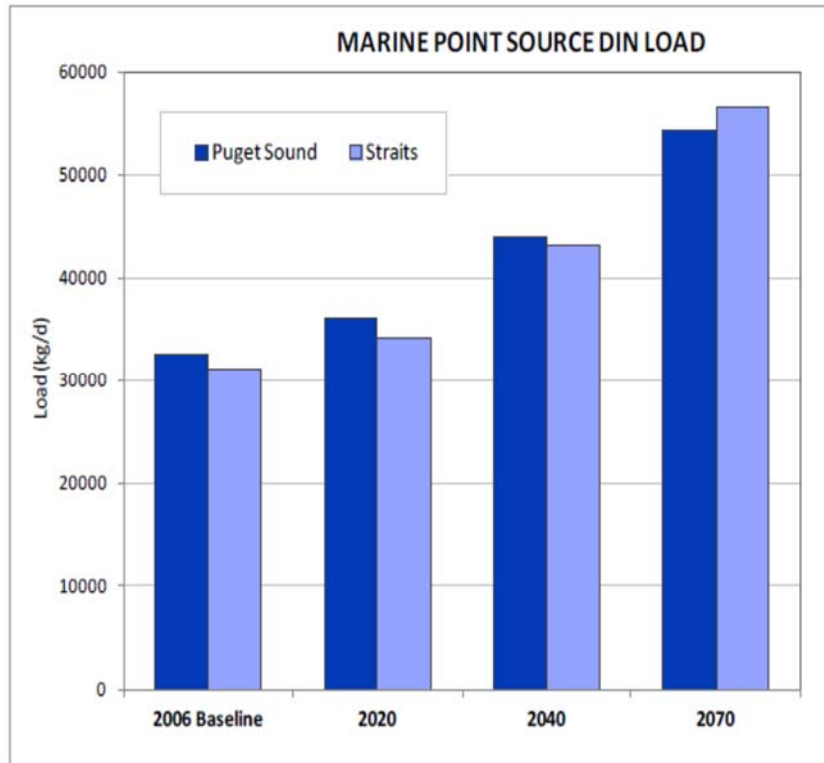
8 152. On December 1, 2021, Ecology issued its Puget Sound Nutrient General
9 Permit covering nitrogen discharges from 58 sewage treatment facilities that discharge to
10 Puget Sound. The permit does not contain numeric effluent limits because, according to
11 Ecology, “[w]hile Ecology has enough information to determine reasonable potential
12 exists [that all sewage plant discharges cause or contribute to violations of water quality
13 standards], additional modeling work is still necessary to establish numeric WQBELs.”
14 Ecology, *Fact Sheet for the Puget Sound Nutrient Draft General Permit* (December 1,
15 2021) at 33.

16 ***EPA and Ecology Predict Nitrogen Loads Will Increase, Causing Increased Impairment of***
17 ***Puget Sound***

18 153. In their 2007–2009 PPA, EPA and Ecology noted that “[a]s the population of
19 Washington State continues to increase, nutrient releases of nitrogen and phosphorus to surface
20 waters will become a much larger problem. Advanced technology to treat nitrogen and
21 phosphorus in wastewaters is readily available and may be cost effective for municipal and
22 industrial dischargers.” 2007–2009 PPA at 24.

23 154. In 2014, Ecology issued a study using its Puget Sound model to project the
24 increase in human point and nonpoint source contributions of nitrogen to Puget Sound, combined
25 with the expected impacts of climate change, to predict the extent and breadth of decreased
26

1 dissolved oxygen in the future. Nitrogen loads from sewage treatment plants are expected to
 2 nearly double by 2070. *See* Future Conditions Report at 78.



16 *Figure 7. Projections of Future Growth in Average Annual Dissolved Inorganic Nitrogen loads from Marine Sources into Puget Sound (2014); Ecology, Puget Sound and the Straits Dissolved*
 17 *Oxygen Assessment Impacts of Current and Future Human Nitrogen Sources and Climate Change through 2070 (March 2014).*

18 155. The study shows that average regional and seasonal dissolved oxygen depletion
 19 increases steadily in 2020, 2040, and 2070 compared with current conditions, with the greatest
 20 changes occurring in South Puget Sound and the southern part of Central Puget Sound. *See, e.g.,*
 21 *id.* at 93 (fig. 44).

22 156. When predicted human contributions of nitrogen in 2070 are combined with
 23 future circulation impacts, future ocean trends, and future air temperatures, nearly all of the
 24 Salish Sea would experience average dissolved oxygen depletions of 0.21 mg/L to 1.10 mg/L
 25 compared to current conditions. (Then-applicable water quality standards allowed a 0.2 mg/L
 26 depletion of dissolved oxygen below “natural conditions”.) *See id.* at 97 (fig. 47).

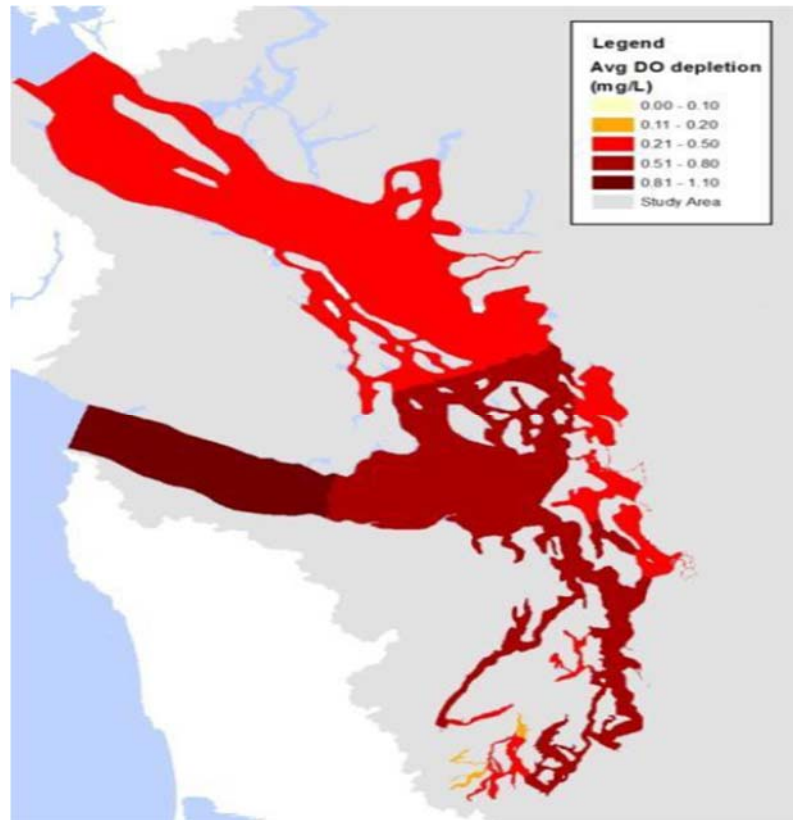


Figure 8. Average total regional dissolved oxygen depletion (mg/L) for September 1 through October 31 with the combined effect of future 2070s human sources and ocean conditions with future circulation. Ecology, Puget Sound and the Straits Dissolved Oxygen Assessment Impacts of Current and Future Human Nitrogen Sources and Climate Change through 2070 (March 2014).

Development and Implementation of a Budd Inlet TMDL Will be Hampered by Lack of a Puget Sound TMDL

157. Ecology first submitted a proposed TMDL for nitrogen to address dissolved oxygen depletion in Budd Inlet to EPA in 1992 that EPA subsequently rejected as “incomplete.” Letter from Adrienne Allen, EPA Assistant Regional Counsel, to James Coon, Swanson, Thomas & Coon, Re: Civil No. C91-427R, *Northwest Environmental Advocates and Northwest Environmental Defense Center v. Carol Browner* (June 3, 1996) (response to Plaintiffs First Set of Interrogatories at 22). While still not completed nearly three decades later, in modeling Ecology has done to develop a TMDL to address dissolved oxygen impairments in Budd Inlet, the state determined that meeting water quality standards in the inlet requires controlling nitrogen discharges from sewage treatment plants in Puget Sound, external to Budd Inlet.

1 158. In October 2017, Ecology reported that it had “negotiated a solution with EPA to
2 integrate the allocations between these two projects using a bubble allocation in the Budd Inlet
3 TMDL which represents the sum of external sources to Budd Inlet and must be met with the
4 reductions identified in [the Salish Sea Model] SSM and this project.” 2007 Scoping at 9.
5 Ecology has described the bubble allocation—which would not include wasteload allocations to
6 specific permittees—in the Budd Inlet TMDL as requiring a 35 or 45 percent reduction in the
7 dissolved oxygen deficit from sewage treatment plants outside of Budd Inlet. *See Ecology,*
8 *Description of allocations and model inputs, [Budd Inlet] Model Phase 3* (Oct. 30, 2017) at 5.

9 159. Without specific EPA-approved wasteload allocations, no sewage treatment plant
10 will be required to reduce nitrogen discharges to Puget Sound that impair the dissolved oxygen
11 in Budd Inlet notwithstanding completion of a Budd Inlet TMDL. Although Ecology states that
12 “[e]xternal sources to Budd Inlet must meet bubble allocation,” Ecology, *Puget Sound Nutrient*
13 *Source Reduction Project Master Slide Deck* (February 1, 2019) at Slide 62 (Connection with
14 Budd Inlet TMDL), the only way that this outcome can be assured is when a Puget Sound TMDL
15 is completed with wasteload allocations to specific permitted sources that implement the Budd
16 Inlet TMDL bubble allocation.

17 ***Lack of a Puget Sound Nitrogen TMDL Hampers the Development of TMDLs and EPA-***
18 ***Approved Wasteload Allocations for Waters Upstream of Puget Sound’s Marine Waters***

19 160. Since at least 2014, Ecology and EPA have known that nitrogen sources in the
20 greater Puget Sound contribute to violations of water quality standards in other parts of Puget
21 Sound, reconfirming in 2019 that “discharges in one basin can affect the water quality in other
22 basins.” 2019 Bounding Scenarios at 13.

23 161. Ecology asserts that it is in the process of developing TMDLs for dissolved
24 oxygen depletion in waters upstream of Puget Sound, including the Sammamish River and
25 tributaries and the Old Stillaguamish River Channel, neither of which “ha[s] targets for nutrient
26 loading to the Puget Sound.” 2017 Scoping at 8. Likewise, none of the EPA-approved TMDLs

1 that have been developed to address dissolved oxygen in the Puget Sound region have been
 2 developed to protect the downstream waters of Puget Sound. This includes: McAllister Creek in
 3 the Nisqually River watershed (2005), Lake Whatcom Creek watershed (2014), Puyallup River
 4 watershed (1994), Snoqualmie River watershed (1994), Snohomish River Estuary (1999), and
 5 Stillaguamish River watershed (2005).

6 162. TMDLs for nutrients in the Lower White River that flows into the Puyallup River
 7 prior to entering Puget Sound were started in 1999 to address high pH values caused by
 8 nutrients. Despite years of progress reports, TMDLs have not been completed over two decades
 9 later.

10 163. Without Puget Sound TMDLs, neither Ecology nor EPA can prepare upstream
 11 freshwater watershed TMDLs that are sufficient to meet dissolved oxygen water quality
 12 standards in and nitrogen loading limits for Puget Sound. Without TMDLs for freshwaters
 13 flowing into Puget Sound, Ecology is unlikely to issue NPDES permits to 28 sewage treatment
 14 plants that discharge to those waters with effluent limitations for nitrogen.

15 164. In 2019, Ecology confirmed that, like impacts on Budd Inlet, nitrogen sources in
 16 the greater Puget Sound impact dissolved oxygen depletion in Hood Canal.

17 ***Lack of Nitrogen TMDLs for Puget Sound Increases Discharge of Toxic Pollutants Including***
 18 ***Contaminants of Emerging Concern***

19 165. Toxic contamination in Puget Sound at levels high enough to cause fin erosion,
 20 protrusions, kidney and gill lesions, and liver tumors and changes in species composition has
 21 been reported at least as early as 1987. EPA has reported that killer whales in Puget Sound “are
 22 some of the most contaminated marine mammals in the world because they have bioaccumulated
 23 these chemical contaminants through the entire food web,” and that “[t]oxic chemical
 24 concentrations in Killer Whales and contamination of food sources” are among the reasons the
 25 species has been listed under the Endangered Species Act. EPA, *Puget Sound Georgia Basin*
 26 *Transboundary Ecosystem Indicator Report* (2006) at 119–120.

1 166. Studies published from 2016 to the present have demonstrated that
2 pharmaceuticals and other drugs are discharged to Puget Sound at a rate of approximately 97,000
3 pounds per year and that these drugs have a measurable adverse impact on fish species including
4 Chinook salmon. Fish fed drugs at the same level as found in the Puyallup River and Sinclair
5 Inlet estuaries experienced reduced growth rates and metabolism disruptions, a “pattern generally
6 consistent with starvation” that “may result in early mortality or an impaired ability to compete
7 for limited resources.” James P. Meador *et al.*, *Adverse metabolic effects in fish exposed to*
8 *contaminants of emerging concern in the field and laboratory*, 236 *Environmental Pollution* 850
9 (2018). In an earlier 2014 study, scientists concluded that “juvenile Chinook salmon migrating
10 through contaminated estuaries in Puget Sound exhibited a strong reduction in survival (two-
11 fold) compared to those migrating through uncontaminated estuaries[.]” *Id.*

12 167. In the 2007–2009 PPA, EPA and Ecology noted that they had “successfully
13 worked together over the past few years towards mapping out an overall Puget Sound Toxic
14 Loadings and Reduction strategy.” 2007–2009 PPA at 24. Beginning in 2006, with EPA funding,
15 Ecology produced reports on toxic loading in Puget Sound. These reports highlighted the fact
16 that “toxic chemicals continue to persist and circulate throughout the Puget Sound ecosystem and
17 are still being introduced via stormwater runoff, municipal sewage treatment plants, and
18 atmospheric deposition,” causing “significant concern for human health,” having “acute and
19 chronic effects on nearshore organisms,” and “concentrat[ing] in larger predatory animals,
20 ultimately affecting marine fish and mammals.” Ecology, *Control of Toxic Chemicals in Puget*
21 *Sound Phase 3 Data and Load Estimates* (April 2011) (hereinafter “2011 Toxic Loading”) at 1.
22 In 2010, Ecology concluded that “POTWs [publicly owned treatment works] are a significant
23 secondary source of toxic chemicals,” defining “primary” sources as toilets. Ecology, *Control of*
24 *Toxic Chemicals in Puget Sound Summary Technical Report for Phase 3: Loadings from POTW*
25 *Discharge of Treated Wastewater* (December 2010) at 4, 35.
26

1 168. After its 2011 report, which concluded “[l]ow-level loading to Puget Sound is a
2 concern for those toxic chemicals that bioaccumulate or cycle within receiving waters and lead to
3 persistent degraded conditions or are known to impact marine organisms at low concentrations,”
4 2011 Toxic Loading at 89, upon information and belief, Ecology and EPA ceased evaluating
5 toxic loading to Puget Sound.

6 169. Sewage treatment technology to remove nutrient pollution including nitrogen,
7 known as advanced secondary treatment or tertiary treatment, also removes toxic pollutants
8 including contaminants of emerging concern for which no numeric criteria exist. In 2008,
9 Ecology confirmed that tertiary treatment of sewage significantly reduces toxics in treated
10 sewage, including pharmaceuticals and personal care products. Ecology/EPA, *Control of Toxic*
11 *Chemicals in Puget Sound, Phase 3: Pharmaceuticals and Personal Care Products in Municipal*
12 *Wastewater and Their Removal by Nutrient Treatment Technologies* (January 2010).

13 170. No waters in Puget Sound are listed on the Washington CWA section 303(d) list
14 for unsafe levels of contaminants of emerging concern.

15 171. No NPDES permits issued for discharge to Washington waters have effluent
16 limits for contaminants of emerging concern.

17 172. A TMDL for nitrogen in Puget Sound will result in wasteload allocations to
18 sewage treatment plants that require the use of advanced technology for the removal of nitrogen,
19 technology that will also significantly reduce the discharge of toxics, including contaminants of
20 emerging concern.

21 **FIRST CLAIM FOR RELIEF**
22 **Violation of the Clean Water Act**
23 **(Pursuant to 33 U.S.C. § 1365(a)(2))**

24 173. Plaintiff realleges all preceding paragraphs.

25 174. Washington has failed to submit any TMDLs for nitrogen and dissolved oxygen
26 depletion, and related violations of water quality standards in Puget Sound, despite those waters’
having long been on Washington’s 303(d) list, despite that the causes of impairment have been

1 studied intensively for decades, and despite evidence that these pollution problems are harming
2 Puget Sound’s beneficial uses, growing in severity, and will continue to worsen.

3 175. Washington has repeatedly delayed completion of planned TMDLs for Puget
4 Sound waters. Washington has announced that it will not develop TMDLs for Puget Sound, and
5 instead, will develop a “TMDL Alternative.” Washington has no credible schedule or plan for
6 completion of TMDLs for waters in Puget Sound.

7 176. Washington has clearly and unambiguously abandoned its obligation to submit
8 TMDLs for Puget Sound.

9 177. Washington’s prolonged and ongoing failure to prepare the required TMDLs, its
10 clear and unambiguous abandonment of its plans to complete the required TMDLs, and its lack
11 of a schedule and credible plan for producing them constitutes the “constructive submission” of
12 those TMDLs, which triggers the EPA Administrator’s mandatory duty to review and disapprove
13 them within thirty days, and to establish the needed TMDLs within thirty days of disapproval,
14 pursuant to 33 U.S.C. § 1313(d)(2) and 40 C.F.R. § 130.7(d)(2).

15 178. EPA’s failure to act on Washington’s constructive submission of no TMDLs for
16 nitrogen and dissolved oxygen depletion, and related violations of water quality standards, is a
17 violation of EPA’s mandatory duty pursuant to the CWA, 33 U.S.C. § 1313(d)(2). EPA’s failure
18 to undertake the nondiscretionary duties described above is subject to review under 33 U.S.C. §
19 1365(a)(2), and NWEA is entitled to an order compelling EPA to perform such duties.

20 **SECOND CLAIM FOR RELIEF**
21 **Violation of the Administrative Procedure Act**
22 **(Pursuant to 5 U.S.C. § 702)**

23 179. Plaintiff realleges all preceding paragraphs.

24 180. EPA identified Puget Sound as a priority for problem identification and corrective
25 action planning in PPAs signed with Washington in 2007 and every year since then.

26 181. EPA’s approval of the 2019–2021 PPA that includes the development of a
“TMDL Alternative” in lieu of TMDLs for nitrogen and dissolved oxygen depletion, and related

1 violations of water quality standards, in Puget Sound is inconsistent with the CWA’s requirement
2 that TMDL priorities “tak[e] into account the severity of the pollution and the uses to be made of
3 such waters.” 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(4).

4 182. EPA’s approval of the 2019–2021 PPA that includes the development of a
5 “TMDL Alternative” in lieu of TMDLs for nitrogen and dissolved oxygen depletion, and related
6 violations of water quality standards, in Puget Sound is inconsistent with the CWA mandate to
7 establish TMDLs for waters that violate water quality standards. 33 U.S.C. § 1313(d)(1)(B), (C).

8 183. The EPA Regional Administrator’s approval of the 2019–2021 PPA that includes
9 the development of a “TMDL Alternative” in lieu of TMDLs for nitrogen and dissolved oxygen
10 depletion, and related violations of water quality standards, in Puget Sound constitutes the
11 Administrator’s having carried out the mandate under 40 C.F.R. § 130.7(d)(1) that “[s]chedules
12 for submission of TMDLs shall be determined by the Regional Administrator and the State.”

13 184. The issuance of a “TMDL Alternative” in lieu of TMDLs relieves EPA of its
14 obligation to review and approve or disapprove a state submission to ensure that it is consistent
15 with the CWA, 33 U.S.C. § 1313(d)(2), including that there is reasonable assurance that
16 assumed nonpoint source controls will take place such that allocations of pollution reductions to
17 permitted point sources can be less than otherwise required by law, that there is a lawful margin
18 of safety, that TMDLs are developed on the basis of statutory priorities, and that the allocations
19 to point and nonpoint sources will result in attainment of water quality standards. *See* 33 U.S.C.
20 § 1313(d)(1)(C); 40 C.F.R. §§ 130.2(i); 130.7(b)(4), (c), (c)(1)(ii).

21 185. For at least these reasons, EPA’s approval of the 2019–2021 PPA was arbitrary,
22 capricious, an abuse of discretion, or otherwise not in accordance with law, within the meaning
23 of the APA, 5 U.S.C. § 706(2)(A).

24 **REQUEST FOR RELIEF**

25 WHEREFORE, plaintiff Northwest Environmental Advocates respectfully requests that
26 this Court:

