POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

KING COUNTY WASTEWATER TREATMENT DIVISION,  
  Appellant,  
  
v.

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,  
  Respondent.

Respondent, State of Washington, Department of Ecology (Ecology), represented by Ronald L. Lavigne; and Appellant, King County Wastewater Treatment Division (King County), represented by Verna Bromley, hereby submit this Settlement Agreement (Agreement) to the Pollution Control Hearings Board (Board) as a full and final settlement of the above-referenced appeal, and request that the Board dismiss the appeal with prejudice.

I. BACKGROUND

1. On September 12, 2017, Ecology issued Penalty No. 15326 (Penalty) in the amount of $361,000 to King County.

2. On October 11, 2017, King County appealed the Penalty to the Board.

3. Ecology and King County have agreed to resolve the appeal of the Penalty through the settlement outlined below.
II. SETTLEMENT AGREEMENT

The parties desire to resolve the dispute herein and avoid the cost and time associated with further litigation.

A. SCOPE

This Agreement constitutes the entire agreement between the parties to this appeal, and settles all issues raised by this appeal.

B. RESOLUTION OF THE PENALTY

1. Cash Payment of $73,721

King County agrees to make a penalty payment to Ecology of $73,721. King County’s payment shall be by U.S. Mail or Federal Express, postage prepaid to Ecology and be postmarked within 30 calendar days of the date the Board dismisses this appeal. King County shall make the payment by check or money order directly payable to “Department of Ecology,” make reference to Penalty No. 15326, and shall send the payment to:

Department of Ecology
Attn: Cashiering Unit
P.O. Box 47611
Olympia, WA 98504-7611

If King County’s payment of $73,721 is not sent within 30 calendar days of the Board’s dismissal of this appeal, the full penalty amount of $361,000 will become immediately due and payable without further right of administrative or judicial review, except as provided in Paragraph C of this Agreement.

2. Supplemental Environmental Project (SEP) payment of $287,279

King County agrees to contribute $287,279 to the Department of Natural Resources (DNR) to fund a survey of eelgrass and kelp distribution along King County nearshore areas and restore ecologically significant habitats in areas where they historically grew. A description of this project, including a scope of work and estimated schedule and budget, is attached hereto as Exhibit A, and by this reference is incorporated herein. King County agrees to make payments to DNR totaling $287,279 based on quarterly invoices submitted by DNR.
as the tasks set forth in Exhibit A are performed. Within 30 days of each quarterly payment, King County shall submit the invoices from DNR and proof of the quarterly payments to Ecology.

King County shall ensure that the SEP project as described in Exhibit A is completed by DNR by December 31, 2022. Interim deadlines may be adjusted by contract between King County and DNR. King County shall provide Ecology a copy of any contract and/or contract amendment between King County and DNR within 30 days of final signature of the contract and/or contract amendment. King County agrees to provide Ecology a copy of all deliverables from DNR identified in the contract and/or contract amendment within 30 days of receipt.

If King County fails to make payments totaling $287,279 to DNR, then the full penalty amount of $361,000 will become immediately due and payable to Ecology without further right of administrative or judicial review, except as provided in Paragraph C of this Agreement.

C. REMEDIES

In the event that King County violates the terms of this Agreement, Ecology may pursue all remedies available by law. By entering into this Agreement, King County shall have waived its right of administrative or judicial review on the underlying merits of the Penalty. However, King County does not waive the right to contest whether violations of this Agreement have occurred. In any action to enforce the terms of this agreement, the prevailing party shall be entitled to an award of its reasonable costs and attorneys’ fees incurred.

D. VENUE

King County agrees that the venue for any judicial action to enforce this Agreement and/or to collect the Penalty, or any portion thereof, shall be in Thurston County Superior Court.
E. PRESS RELEASES AND OTHER DOCUMENTS

Any press release or other public statement issued by King County regarding performance of any term of this Agreement shall identify the same as resulting from a settlement with Ecology. In addition, King County’s $287,279 payment to DNR shall be identified as resulting from a settlement with Ecology in any public statement.

F. WAIVER OF APPEAL RIGHTS

King County understands that it has the right to contest the Penalty by presenting evidence at a Board hearing, and voluntarily waives its right to a hearing upon signature of this Agreement by representatives for King County and Ecology.

G. DISMISSAL OF APPEAL

The parties consent to the submission of this Agreement to the Board and request that, based upon a full and final settlement having been reached, the Board dismiss this appeal with prejudice. Both parties further agree to bear their own costs and attorneys’ fees associated with this appeal.

H. EFFECTIVE DATE

This Agreement shall become effective upon issuance of the Board’s order dismissing this appeal.

I. SIGNATORIES AUTHORIZED

The undersigned representatives for Ecology and King County certify that they are fully authorized by the party whom they represent to enter into the terms and conditions of this Agreement and to legally bind such party thereto.

J. EXECUTION

This document may be executed in counterparts and may be executed by facsimile and/or electronically, and each executed counterpart shall have the same force and effect as the original instrument.
STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Polly Zehm
Deputy Director

Dated: 6/20/18

ROBERT W. FERGUSON
Attorney General

Ronald L. Lavigne, WSBA #18550
Senior Counsel
Attorneys for Department of Ecology
(360) 586-6751

Dated: 6/21/18

KING COUNTY

By: Christie Truex
Department Director, King County Dept. of Natural Resources & Parks

Dated: 6/14/2018

DANIEL T. SATTERBERG
King County Prosecuting Attorney

Verna P. Bromley, WSBA #24703
Senior Deputy Prosecuting Attorney
Attorneys for King County
(206) 296-0430

Dated: 6/14/18

SETTLEMENT AGREEMENT
Nearshore habitat assessment and restoration

Jeff Gaeckle
Bart Christiaen
Nearshore Habitat Program
Aquatic Resources Division
Washington State Department of Natural Resources

Background and justification
Submerged aquatic vegetation, such as eelgrass, *Zostera marina*, and kelp are foundation species in nearshore ecosystems in the Pacific Northwest. These primary producers act as indicators of estuarine health and provide a suite of ecological functions, including critical habitat for threatened species. In Puget Sound, eelgrass provides spawning grounds for Pacific herring (*Clupea harengus pallasi*), out-migrating corridors for juvenile salmon (*Oncorhynchus* spp.), and important feeding and foraging habitats for waterbirds such as the black brant (*Branta bernicla*), and great blue heron (*Ardea herodias*). Eelgrass can mitigate wave energy and protect shorelines from erosion. It also sequesters nutrients and plays an important role in carbon and nitrogen storage and cycling. Similar to eelgrass, kelp provides biogenic habitat for hundreds of species of invertebrates and fish, including two threatened species of rockfish. Kelp species are highly productive and fuel the detrital food web. Kelp provide organic matter where they grow and are an important food source for organisms that inhabit other habitats, such as beaches, rocky intertidal zones, surface waters and even deep areas of Puget Sound.

A synthesis of historical records shows eelgrass was present from the King-Snohomish County line to Golden Gardens and further south from Lincoln Park south to the King-Pierce County line (Thom and Hallum 1990). The historical distribution of eelgrass between Golden Gardens to Lincoln Park was patchy and limited. There was also evidence of eelgrass around Vashon and Maury Island and throughout Quartermaster Harbor. Historical records of floating kelp show presence from West Point to Smith Cove and from Alki Point south to Lincoln Park with sparse distribution in the remaining areas. Information on understory kelp is severely limited.

King County is the most populated county in Washington State and includes the most intensively developed shorelines in Puget Sound. The high degree of shoreline armoring, combined with a high density of municipal, industrial, and combined sewer overflow outfalls has likely affected the nearshore habitat. However, there is limited information on current distribution of eelgrass and kelp along the shorelines of King County, relative to other parts of Puget Sound. Available data is not easily accessible, and collected with different methodology, at different spatial and temporal scales. This limits our ability to manage the current nearshore ecosystem and to assess future change relative to current conditions.

Objectives
King County is proposing to provide funds ($287,279.00) to the Washington State Department of Natural Resources (DNR) for nearshore vegetation habitat assessment and restoration activities as a Supplemental Environmental Project (SEP). King County’s funding of a SEP is allowed by the Department of Ecology as a component of the enforcement penalty imposed for the West Point Wastewater Treatment Plant flooding event on February 9, 2017, that resulted in the release of partially treated wastewater to Puget Sound for approximately three months. The objectives of this project are to 1) produce high resolution baseline data describing eelgrass distribution along the King County nearshore and to 2) restore these ecologically significant habitats in areas where they historically grew. The survey data also will enhance DNR’s ability to analyze and quantify kelp and macroalgae distribution and depth
range. However, for this proposal the focus will be on comprehensive data collection and data processing to facilitate planning only for eelgrass restoration opportunities.

**Habitat monitoring**

We propose to conduct a comprehensive survey of nearshore habitats (e.g., eelgrass, kelp and other macroalgae) along the King County shoreline, from the King-Snohomish County line south to the King-Pierce County line and around Vashon and Maury Islands (Figures 1, 2 & 3). Results will describe areal extent and depth distribution for eelgrass at every site. Surveys will also provide observational (presence/absence) results for kelp and macroalgae at each site. The survey methods are based on the DNR’s long-term monitoring program ([https://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/nearshore-habitat-eelgrass-monitoring](https://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/nearshore-habitat-eelgrass-monitoring)). Underwater video surveys are conducted from an 11 m research vessel that collects imagery with 1 m² resolution of the seafloor. Transects are spaced approximately every 100 m and span the lower intertidal to the maximum depth of vegetation. A more detailed analysis of kelp and macroalgae area and depth distribution can be ascertained with additional funding. Kelp and macroalgae survey methods would be based on the towed videography portion of recent studies of dam removal effects along the Elwha nearshore ([http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0187742](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0187742)).

The proposal will provide baseline data from 155 sites along the most highly developed shoreline in Puget Sound (Figures 1, 2 & 3). Sampling at 85 of these sites will be funded by King County, while DNR will cover the costs associated with sampling the other 70 sites in the sample area. Comprehensive sampling of all 155 sites will facilitate the determination of the most suitable eelgrass test plot and restoration opportunities in the project area. Analysis of all 155 sites at the same time also provides substantial benefits in terms of lower project cost through sampling efficiencies and enhanced environmental understanding. However, the shoreline sample analysis and restoration work performed for King County’s obligation to Ecology has independent utility from, and is not dependent on the analysis of, the information obtained from the additional 70 sites.

All data will be archived at DNR’s headquarters in Olympia, and made available through an interactive data viewer and data download portal. The Washington State Department of Natural Resources has unlimited rights to use and distribute the data as part of the sound-wide monitoring dataset. The Washington State Department of Natural Resources has conducted similar comprehensive surveys for Suquamish Tribe (see link below), and the cities of Bainbridge Island and Bellingham.

**DNR’s interactive data viewer:**


**DNR’s data download portal:**


**Initial eelgrass monitoring report for Suquamish Tribe:**


**Habitat restoration**

Sites within the study area, where loss in critical eelgrass habitat has been documented between the current survey and historical records, will be compared to eelgrass transplant suitability model results.
Sites suitable for restoration will then be assessed for environmental parameters that support eelgrass and possible stressors that may influence restoration. Potential restoration sites will be ranked and selected based on available funding to develop useful results and facilitate efficient and effective future efforts. At each site, test-transplants will be planted and monitored to further establish the suitability of the site for restoration. Large-scale plantings will be initiated in areas with successful test-transplants to enhance the recolonization of the site and restore habitat functions. Results would include a summary of sites, test- and large-scale transplant success and recommendations to improve future habitat restoration. Data will be archived at DNR’s headquarters in Olympia, and made available through an interactive data viewer and data download portal. The Washington State Department of Natural Resources has unlimited rights to use and distribute the data. The Washington State Department of Natural Resources has conducted similar eelgrass restoration efforts throughout Puget Sound for other state and federal agencies and is currently working on three federally funded projects.

Puget Sound eelgrass recovery strategy:

Eelgrass restoration site selection:

Deliverables
The Washington State Department of Natural Resources will provide deliverables for each task listed below. Unless specified, all deliverables will be submitted digitally to King County. The deliverables for tasks 3-5 are dependent upon the completion of deliverables from Marine Resource Consultants (MRC) as a result of a service contract for boat use between DNR and MRC (SC 16-01).

The eleven (11) deliverables and targeted completion dates are as follows:

**Task 1. Preparation of site maps and random transects for sampling sites**
A DNR scientist will create site polygons and stratified random transect points for sample sites in preparation for repeat sampling. All sampling will occur between August and October 2018 and therefore site maps and random transect points will be completed by 31 July 2018.

**Deliverable:**
DNR will provide shapefiles for site polygons and stratified random transect points and site maps for sites by 31 July 2018.

**Task 2. Field sampling**
DNR will sample nearshore habitat using underwater videography and Biosonics echosounder for the sample sites through an existing contract with MRC (SC 16-01). Field sampling will entail at a minimum 30, 8 hour days and up to a maximum of 34, 12 hour days. A DNR scientist will be responsible for setting all sampling parameters at each site and real-time population of a database with eelgrass presence/absence for every second of recorded video. The field sampling may require the addition of lodging and meals expenses. State per diem allowances for lodging and meals is $328/day between June through September ($244/day lodging & $74/day for meals during the 2017-2019 biennium) or
delivery: DNR will provide a progress report documenting the personnel support and preliminary field classification of eelgrass presence/absence for each site sampled by 30 November 2018.

Task 3. Video post-processing
All video recordings (e.g., tapes, DVDs, digital storage) and *.csv files provided by MRC, as stipulated by conditions set in SC 16-01, will be post-processed for eelgrass presence/absence at one-second intervals. Presence will be defined as any part of a single rooted plant that is visible in one of the video frames stamped with a specific time and position (approximately 30 video frames are recorded per second).

Deliverable:
DNR will provide post-processed eelgrass video data for 85 sample sites by 28 February 2019. Files will be in *.csv format.

Task 4. Data analysis and preliminary results
The area of eelgrass present at each site will be calculated from corrected *.csv files. Marine Resources Consultants (MRC), as stipulated by conditions set in SC 16-01, will correct depth and merge the corrected depth data with the presence/absence data so that each observation will have an associated depth measurement relative to MLLW (Mean Lower Low Water). In addition, MRC will correct any position (latitude/longitude) data due to poor GPS signal.

Deliverable:
A progress report that provides eelgrass presence/absence data along each video transect and eelgrass area and depth estimates with confidence intervals at each site. A map that shows the location of the video transects and the presence/absence of eelgrass at each site will be provided. A change analysis will be conducted at sites that have been previously sampled by DNR’s long-term eelgrass monitoring program (SVMP). In addition, a list of sites for potential eelgrass restoration will be identified through a comparison of current eelgrass distribution relative to historical distribution (e.g., Thom and Hallum 1990, Puget Sound Environmental Atlas, ShoreZone Inventory, herring spawn data). The progress report, including the list of potential eelgrass restoration sites, will be submitted by 30 April 2019.

Task 5. Nearshore Habitat Survey Final Report
DNR will compile the analyzed site data, site maps and eelgrass area and depth estimate for the sample sites in a final report. The report will contain a brief methods section and results (including maps and figures) as well as a preliminary statement of the significance to the larger sampling program conducted by DNR.

Deliverable:
A report containing the results of the eelgrass area and depth distribution assessment at sites sampled throughout King County (Figures 1, 2 & 3). The report will also present results of the change
analysis conducted at sites with more than one year of sample data and provide a preliminary list of potential eelgrass restoration sites within the study area. The report will be completed and submitted by 31 October 2019.

Task 6. Eelgrass Test-Transplant Site Assessments
DNR will evaluate sites generated in Task 4 for potential eelgrass restoration and compare results to the eelgrass transplant site suitability model (Thom et al. 2014, 2018). Site evaluations will assess suitable depth range, substrate and water quality parameters (e.g., light) and determine any potential stressors.

Deliverable:
A list of all sites evaluated for potential eelgrass restoration and ten (10) candidate sites recommended for eelgrass test-transplant plots. The potential eelgrass restoration site list will include data collected during the site evaluation period, GPS coordinates, and the potential eelgrass recovery area. The eelgrass test-transplant site list will be submitted by 31 May 2019.

Task 7. Eelgrass Test-Transplants
DNR will establish up to 10 eelgrass test-transplants sites from the recommended list generated in Task 6. At each test-transplant site, two site markers will be installed 5 meters apart. At distances 0 m, 2.5 m, and 5 m, 240 eelgrass shoots will be transplanted using the rebar (metal rod) method in a 1 m² plot. Therefore, 20 eelgrass shoots will be tied to each 50 cm rebar rod using hemp cord with 12 rods placed for each 1 m² plot for a total of 3 m² of eelgrass at a density of 240 shoots m⁻² per test site.

Deliverable:
DNR will provide a detailed summary of the eelgrass test-transplant effort conducted at each test-transplant site. The test-transplant summary will include temporal and spatially explicit data on eelgrass test-transplant effort, including geographic coordinates (latitude/longitude), depth range, sediment type and any other pertinent data (e.g., photographs, video, and field notes) that describe the restoration test-transplant sites. The summary report and all data will be provide by 31 July 2019.

Task 8. Eelgrass Test-Transplant Monitoring
DNR will monitor eelgrass shoot density at each of the 1 m² test plots within each eelgrass test-transplant site. Therefore, eelgrass shoot density will be counted at 30 test plots and test-transplant success will be determined based on percent survival from the original planting density (240 shoots m⁻², 720 shoots site⁻¹).

Deliverable:
DNR will provide a detailed summary of the eelgrass test-transplant monitoring effort conducted at each test-transplant site planted in Task 7. The monitoring summary will include eelgrass shoot count per test-plot and test-transplant site including any data on lateral expansion beyond the original transplant footprint. The assessment of the eelgrass test-transplant sites will identify potential sites for large-scale eelgrass restoration. The monitoring summary report and all data will be provide by 31 July 2020.
Task 9. Large-scale Eelgrass Transplant Sites
DNR will transplant eelgrass at up to 5 large-scale eelgrass transplant sites based on the recommended list of potential sites generated in Task 8. At each large-scale eelgrass transplant site, four site markers will be installed to delineate the large-scale transplant area of approximately 50 m². In each large-scale transplant area, 10,000 eelgrass shoots will be planted at a density of 240 shoots m⁻² using the rebar (metal rod) transplant method. Large-scale transplant site size may vary depending on potential suitable area and depth.

Deliverable:
DNR will provide a detailed summary of the transplant effort conducted at each large-scale eelgrass transplant site. The large-scale transplant summary will include temporal and spatially explicit data on eelgrass transplant effort, including geographic coordinates (latitude/longitude), depth range, sediment type and any other pertinent data (e.g., photographs, video, and field notes) that describes the large-scale eelgrass transplant sites. The summary report and all data will be provide by 31 October 2020.

Task 10. Eelgrass Transplant Monitoring
DNR will monitor eelgrass shoot density at each of the 1 m² test plots within each eelgrass test-transplant site and sample shoot density at 20, 0.25 m² quadrats in the large-scale transplant sites. At the test-transplant sites, shoot density will be counted at 30 test plots and success will be determined based on percent survival from the original planting density (240 shoots m⁻², 720 shoots site⁻¹). At the large-scale transplant sites, shoot density will be counted in 20 quadrats (0.25 m²) and success will be determined based on the estimate relative to the original number of shoots planted.

Deliverable:
DNR will provide a detailed summary of the eelgrass transplant monitoring conducted at each test-transplant site and large-scale transplant site. The monitoring summary will include a census of eelgrass shoots at test-transplant sites and sample 20, 0.25 m² quadrats at 10 large-scale transplant sites. In addition, DNR will provide any data on lateral expansion beyond the original transplant footprint of the test-transplant and large-scale transplant sites. The monitoring summary report and all data will be provide by 31 October 2021.

Task 11. Final Eelgrass Restoration Report
DNR will summarize the eelgrass restoration component of the project in a final report. The report will include details on methods, transplanted eelgrass sites, monitoring data, results and conclusions along with recommendations for future restoration work in King County.

Deliverable: The final report and all associated data, analyses and recommendations will be provided by 31 December 2021.
**Budget**

Estimated project budget and timeline to survey up to 85 sites, test-transplant eelgrass at 10 sites, transplant eelgrass at 5 large-scale sites and monitor all eelgrass transplant sites.

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Figure 1. Habitat monitoring sites along the King County shoreline from the King-Snohomish County line south to King-Pierce County line and around Vashon and Maury Islands. Blue sites (King 2018) will be surveyed with funds from King County. DNR 2017 & 2018 sites have been sampled (2017) or will be sampled with funds from DNR (2018). A few sites within Elliot Bay are obstructed and cannot be sampled due to commercial and industrial activities.
Figure 2. Habitat monitoring sites along the north King County shoreline from the King-Snohomish County line south to Seahurst Park and north Vashon Island. Site delineation and site code (cps####) is based on the Washington State Department of Natural Resources’ Submerged Vegetation Monitoring Program. Some sites within Elliot Bay are obstructed and cannot be sampled due to commercial and industrial activities.
Figure 3. Habitat monitoring sites along the south King County shoreline from Alki – West Seattle south to the King-Pierce County line. Site delineation and site code (cps####) is based on the Washington State Department of Natural Resources’ Submerged Vegetation Monitoring Program.