

CENWS-ODS-ND

MEMORANDUM FOR RECORD

February 14, 2019

SUBJECT: WILLAPA BAY FEDERAL NAVIGATION PROJECT -- RE-RANKING OF THE TOKELAND AND NAHCOTTA PROJECT AREAS IN ACCORDANCE WITH DREDGED MATERIAL MANAGEMENT PROGRAM POLICY.

1. **Introduction.** This memorandum reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the U.S. Environmental Protection Agency) regarding the re-ranking of the Tokeland Marina (Tokeland) and Nahcotta projects.
2. **Project Background.** Tokeland, Bay Center, and Nahcotta are all federal navigation projects located within Willapa Bay (Figure 1) on the west coast of Washington State. All three sites were most recently sampled for sediment characterization in September 2014, and all dredged material was found to be suitable for open-water disposal (DMMP, 2015).

This memorandum reviews the pertinent available data for the Tokeland and Nahcotta projects for down-rank consideration. Bay Center is already ranked low and is therefore not under consideration for a down-rank. Table 1 summarizes the existing DMMP rankings for the three projects and proposed re-rankings for Tokeland and Nahcotta projects.

3. **Down-rank Guidelines.** DMMP guidelines allow down-ranking of a project after two testing cycles, based on the results from those testing events and the use of best professional judgment (DMMP, 2018; PSSDA, 1988). The definitions of the various ranks must be considered:
 - High = many known chemical sources, high concentration of COCs and/or significant acute toxicity
 - Moderate = chemical and biological data are not available or are incomplete, and some sources of chemicals of concern exist nearby
 - Low-moderate = available data indicate a low rank, but there are insufficient data to confirm the ranking
 - Low = few or no sources of COCs, data are available to verify low chemical concentrations

4. **Tokeland Project Evaluation.**

For ranking purposes, the Tokeland project is subdivided into 3 sub-areas: the marina (low-moderate), marina area P1 (low-moderate), and the entrance channel (low) (Figure 2). Sediment characterizations were conducted by USACE Seattle District in 1991, 1998, 2006, and 2014. In all sampling events, the dredged material was found suitable for open-water. The results of these characterizations are briefly described below.

1991. A single composited dredged material management unit (DMMU) sample representing the marina (including marina area P1) was collected in 1991 and analyzed for DMMP chemicals of concern (COCs). Three COCs (4-methylphenol, phenol, and pyrene) had detected exceedances; non-detect exceedances occurred for an additional number of chemicals. Bioassay testing was conducted, and the DMMP agencies determined that the dredged material was suitable for unconfined open-water disposal

(DMMP, 1991).

1998. Twelve individual samples were collected in March 1998 and composited into three DMMUs to represent the entrance channel, marina, and marina area P1. There were no COC detections or non-detect concentrations that exceeded the DMMP screening levels. All material was found suitable for open-water disposal (DMMP, 1998).

2006. A total of eleven grab samples were collected from the entrance channel, marina, and marina area P1 in August 2006; the grab samples were composited into three composites to represent the entrance channel, marina, and marina area P1. Based on the two previous sequential testing rounds conducted in 1991 and 1998, the marina and marina area P1 were re-ranked from moderate to low-moderate for testing purposes. No COCs were detected above the DMMP screening levels. Five non-detected chemicals (hexachlorobenzene, dimethylphenol, benzoic acid, N-nitrosodiphenylamine, and alpha-chlordane) had detection limits that exceeded DMMP screening levels in one or all three DMMUs; bioassay testing was thus required for all three DMMUs. The results from the bioassay testing indicated that all of the material was suitable for unconfined open-water disposal (DMMP, 2007).

2014. Eight cores were collected from the entrance channel, marina, and marina area P1 in September 2014 and composited into four DMMUs (2 surface and 2 subsurface DMMUs). No COCs were detected above DMMP screening levels; three COCs (total chlordane, dieldrin, and heptachlor) were not detected with elevated reporting limits above their respective DMMP screening levels in all four DMMUs. All DMMUs samples were subsequently analyzed for the standard DMMP pesticide COCs using a high resolution method with lower reporting limits; using this method, all pesticides were non-detect with detection limits below the DMMP screening levels. Total dioxin TEQs were below the 15 ppb TEQ and 5 ppb 2,3,7,8-TCDD threshold concentrations for dispersive disposal in Willapa Bay. Total TEQs (U=1/2 RL) ranged from 1.2 to 2.7 ppb (DMMP, 2015). All material was found suitable for unconfined open-water disposal.

- 5. Nahcotta Project Evaluation.** The Nahcotta project is located near the south end of Willapa Bay and is ranked moderate. Sediment characterizations were conducted by the Port of Peninsula in 2003 and the USACE Seattle District in 2014. In both sampling events, the dredged material was found suitable for open-water. The results of these characterizations are briefly described below.

2004. In September 2003, cores were collected from a total of 17 locations and composited into four composite DMMUs. No COCs were detected above DMMP screening levels, and all detection limits were below screening levels. All material was found suitable for unconfined open-water disposal (DMMP, 2004).

2014. In September 2014, forty cores were collected and subsequently composited to represent eleven DMMUs, of which one was a subsurface DMMU. No COCs were detected above DMMP screening levels. Two COCs (total chlordane and heptachlor) were not detected with elevated reporting limits above their respective DMMP screening levels in two DMMUs. All DMMU samples were subsequently analyzed for the standard DMMP pesticide COCs using a high resolution method with lower reporting limits; using this method, no pesticides were detected or not detected above the DMMP screening levels. Total dioxin TEQs were below the 15 ppb TEQ and 5 ppb 2,3,7,8-TCDD threshold concentrations for dispersive disposal in Willapa Bay. Total TEQs (U=1/2 RL) ranged from 1.2 to 3.7 ppb. All material was found to be suitable for unconfined open-water disposal (DMMP, 2015).

- 6. Other Considerations - Spills.** In addition to reviewing testing data from the previous testing events, Ecology's spill response database was also checked to ensure no significant spills have occurred since the most recent sediment characterization (in September 2014) that may have adversely impacted the project sediments. A combination of resources was used, including consulting Ecology's online spill response database (which goes back to July 2015) and submitting Public Records requests for spills information in Willapa for the time period between September 2014 and July 2015.

The public records review revealed six reported incidents with reported spill quantities have occurred in Willapa Bay since September 2014 (Figure 3). The reported quantity of spill size ranged from 2 to 500 gallons with the largest spill occurring in central Willapa Bay in May 2018. No significant spills were reported near the Tokeland or Nahcotta projects.

- 7. Other Considerations - Pesticides.** Carbaryl and Imidacloprid are two pesticides that have been used historically in conjunction with aquaculture in north Willapa Bay. According to conversations with Ecology employees in December 2018, Carbaryl was in use between 2010 and 2013. Imidicloprid was authorized and used experimentally for one year (2014) before being discontinued.

Both the Tokeland and Bay Center projects are downstream of known aquaculture facilities where Carbaryl and Imidicloprid were applied. The Nahcotta project, located in south Willapa Bay is both spatially and hydraulically removed from the affected aquaculture sites in north Willapa Bay and is therefore of low concern for pesticide contamination due to these pesticides.

All DMMU samples collected during the September 2014 sediment characterization for the Tokeland, Bay Center, and Nahcotta sites were analyzed for several non-standard pesticides including both Carbaryl and Imidicloprid. Both chemicals were non-detect in all DMMU samples.

Given that both Carbaryl and Imidacloprid use was discontinued around or before the sediment sampling and all samples were nondetect for these two chemicals, the DMMP agencies have a low concern for sediment contamination associated with Carbaryl and Imidacloprid at the Tokeland and Bay Center dredging project areas at this time.

- 8. DMMP Re-ranking Determination.** The DMMP agencies have considered the results and information described above for Tokeland and Nahcotta and have made the following determinations:

Tokeland. The DMMP agencies have **determined that a re-ranking of the Tokeland Marina and Marina area P1 to low is supported** since a) all detected COCs have been found below SLs for three previous characterizations and all sediments with detects or non-detects above SLs passed bioassay testing; b) all material was found suitable for unconfined open-water disposal in all four previous characterizations; c) there are more than two rounds of testing available to confirm the low rank; d) there have been no significant changed conditions (e.g. spills); and e) pesticide impacts are of low concern. The ranking of the Tokeland entrance channel (low) remains unchanged.

Nahcotta. The DMMP agencies have **determined that a re-ranking to low is supported** since a) all COCs have been found below SLs for all previous characterizations; b) there were two rounds of testing available to confirm the low rank; c) there have been no significant changed conditions (e.g. spills); and d) pesticide impacts are of low concern.

Table 1 summarizes the former and new rankings for the Willapa Bay federal projects.

This memo and new rankings are based on information available at this time. Any significant future changes in condition in the region, such as spills or application of new/additional pesticides may prompt the DMMP agencies to perform a re-evaluation of project rank.

9. **Recency Period(s)**. The length of the recency period is determined by the rank of the project. The recency period for low-moderate ranked projects is 6 years; for low ranked projects, the recency period is 7 years. The Tokeland and Nahcotta projects were last sampled in September 2014. Therefore, based on the re-rank to low, the expiration of the recency period for the Tokeland marina and marina area P1 is extended to September 2021. Based on the re-rank to low, the expiration of the recency period for the Nahcotta project is also extended to September 2021 (Table 1).

Dredging and disposal after September 2021 will require reconsideration and additional sampling and testing or an extension of the recency period, both of which must be approved in advance by the DMMP agencies.

10. **References**.

DMMP, 1991. Decision on the Suitability of Dredged Material Tested for the Port of Willapa Harbor's Tokeland Marina at Tokepoint, Willapa Harbor, Washington (OYB-2-014585) to be disposed of at the Cape Shoalwater Open Water Disposal Site. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, November 11, 1991.

DMMP, 1998. Determination of the Suitability of Dredged Material Tested under DMMP Evaluation Procedures for Tokeland Marina Entrance Channel and Mooring Basin, Willapa Harbor, for Disposal at the Goose Point or Cape Shoalwater Open Water Disposal Sites. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, May 29, 1998.

DMMP, 2004. Determination of the Suitability of Dredged Material Tested under DMMP Evaluation Procedures for Port of Peninsula, Nahcotta Boat Basin Maintenance Dredging Project (2003-2-01316, DAIS # POPNB-1-A-F-195) with Proposed Disposal at an Approved Upland Site and at the Goose Point Open Water Disposal Site. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, February 23, 2004.

DMMP, 2007. Determination of the Suitability of Sediments Proposed to be Maintained Dredged From Toke Point Entrance Chanel and Tokeland Marina, Willapa Harbor (CENWS-TS-NS-28) for Open-Water Unconfined Disposal at the Cape Shoalwater or Goose Point Dispersive Sites, Appropriate Beneficial Use near Cape Shoalwater, or Upland Disposal as Evaluated under Section 404 of the Clean Water Act. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, January 24, 2007.

DMMP, 2015. Determination Regarding the Suitability of Proposed Dredged Material from the Willapa Bay Federal Navigation Projects at Tokeland Marina and Entrance Channel, Bay Center Entrance Channel and Nahcotta Mooring Basin for Unconfined Open-Water Disposal at the Goose Point or Cape Shoalwater Disposal Sites or for Flowlane Disposal and for Beneficial Use. Prepared by the Seattle

District Dredged Material Management Office for the Dredged Material Management Program, April 7, 2015.

DMMP, 2018. *Dredged Material Evaluation and Disposal Procedures (User Manual)*. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, December 2018.

11. Agency Signatures.

signed copy on file in DMMO - Seattle District office

Date Heather Whitney Fourie - Seattle District Corps of Engineers

Date Justine Barton - Environmental Protection Agency

Date Laura Inouye, Ph.D. - Washington Department of Ecology

Date Celia Barton - Washington Department of Natural Resources

Copies furnished:

DMMP signatories
John Hicks, USACE Navigation
Elizabeth Chien, USACE Navigation

Table 1. Existing and New Project Rankings and Recency Dates

| | Tokeland | | | Bay Center | Nahcotta |
|----------------------------|------------------|-----------------------|-----------------------|----------------|-----------------------|
| | Entrance channel | Marina | Marina area P1 | | |
| Former Project Rank | L | LM | LM | L | M |
| Former Recency Date | September 2021 | September 2020 | September 2020 | September 2021 | September 2019 |
| New Project Rank | L | L | L | L | L |
| New Recency Date | September 2021 | September 2021 | September 2021 | September 2021 | September 2021 |

Figure 2. Tokeland Project Map

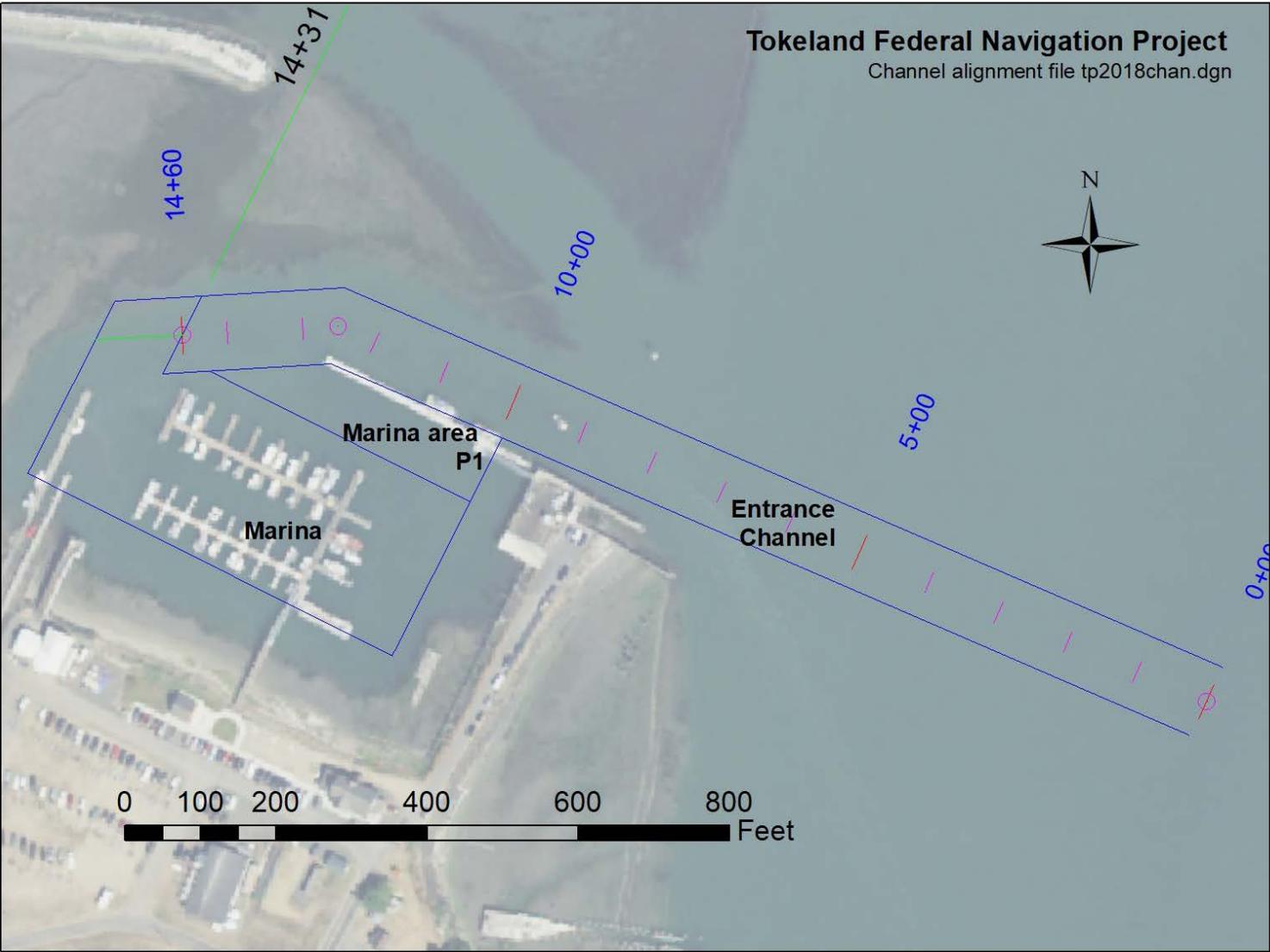


Figure 3. Reported Spills to Water in Willapa Bay since September 2014.

