

Briefing for PWSRCAC Board of Directors – January 2019

ACTION ITEM

Sponsor: Alan Sorum
Project number and name or topic: 6533 - Hinchinbrook Entrance Wind and Wave Extremes

1. **Description of agenda item:** Acceptance of Tetra Tech final report, and supporting interim reports therein, for the Hinchinbrook Entrance Wind and Wave Extremes Project. A presentation is scheduled for Jim Stronach, Ph.D., P.Eng., Tetra Tech Manager for Water and Marine Engineering, to brief the Board on the project.

2. **Why is this item important to PWSRCAC:** Based on research conducted on the behalf of the Council, we know weather conditions reported at Hinchinbrook Entrance are greatly underreported. Several oil tanker safety related decisions are based on the weather reported at the Entrance, more specifically the weather reported by the NOAA weather buoy 46061 at Seal Rocks. The Seal Rocks buoy is somewhat sheltered in its location, a nod to its continued survival in this extreme environment.

It has also been noted by National Weather Service representatives that the moored buoys tend to under report the sustained winds when wind speeds and sea heights get large. As winds increase and seas build, errors in the sustained wind speed become prominent. This appears to be caused by two major factors - both of them influenced by the eight minutes that wind speeds are averaged over to produce the sustained wind.

Obtaining accurate weather data for the Entrance has been elusive and potential solutions like the X-band radar WAMOS system expensive. This project's goal was to formulate a probability distribution applicable to a risk analysis of wind and wave conditions at Hinchinbrook Entrance using hindcasting or backtesting.

3. **Previous actions taken by the Board on this item:**

<u>Meeting</u>	<u>Date</u>	<u>Action</u>
Board	May 2017	Approved Project Budget
Board	October 2017	Approved Tetra Tech Canada Contract

4. **Summary of policy, issues, support or opposition:** Developing a better understanding of the met-ocean forces that exist during extreme weather events relates directly to establishing performance requirements for rescue tugboats and development of best practices to be employed in the save of an oil tanker in distress in these adverse conditions.

As a result of computer simulation modeling, risk assessment work, and sea trials, closure conditions were set such that outbound laden tankers are not allowed to transit Hinchinbrook Entrance when winds exceed 45 knots or seas exceed 15 feet. These conditions are primarily determined from data collected by the weather buoy stationed at Seal Rocks. In January 2018 the Board passed Resolution 18-01 supporting safe tanker transit through Prince William Sound that includes the position that oil tankers and escort vessels should not be permitted to transit through PWS and into the Gulf of Alaska in weather conditions that have been determined to be unsafe for training.

Report Acceptance: Hinchinbrook Entrance Wind & Wave Extremes 4-2

5. **Committee Recommendation:** The POVTS Committee recommends acceptance of the final and supporting interim reports therein.
6. **Relationship to LRP and Budget:** This project is in the approved FY2019 budget and annual work plan.

6533--Hinchinbrook Entrance Wind & Waves as of December 19, 2018

FY-2019 Budget

Original	\$50,000.00
Modifications	<u>(\$21,454.00)</u>
Revised Budget	<u>\$28,546.00</u>

Actual and Commitments

Actual Year-to-Date	\$9,017.00
Commitments (Professional Services)	<u>\$19,529.00</u>
Actual + Commitments	<u>\$28,546.00</u>

Amount Remaining	<u>0</u>
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7. **Action Requested of the Board of Directors:** Acceptance of the final and supporting interim reports therein titled “Final Report: Hinchinbrook Entrance Wind and Wave Extremes” by Tetra Tech.
8. **Alternatives:** None.
9. **Attachments:** “Final Report: Hinchinbrook Entrance Wind and Wave Extremes” by Tetra Tech” dated November 20, 2018 (including interim reports provided electronically).

Interim reports are incorporated into the final report, and include:

- [Interim Report 1.0 - Hinchinbrook Entrance Wind Wave Extremes](#), April 11, 2018
- [Interim Report 2.0 - Hinchinbrook Entrance Wind Wave Extremes](#), May 16, 2018