



NOS Alaska Concept Paper

AOOS/CO-OPS Alaska Water Level Partnership

Statement of Need

CO-OPS National Water Level Observation Network (NWLON) data in Alaska is insufficient to meet a wide range of maritime applications, water resources management, and scientific research needs. AOOS, through partnerships, has been working to augment the existing NWLON network with coastal water level observation products (real-time stations, short time series, and high water mark measurements) derived from sites with lower accuracy standards or off-specification installations. As this integrated water level observation strategy moves forward, a robust data management system that parallels and the CO-OPS *Tides Online* system at [Tides & Currents](#) is critical to ensuring that these complimentary products are well understood and readily accessible by all users.

Proposed Approach

An expanded data management system and associated interface will be developed to house water level data at AOOS. This system will (1) build on the existing capabilities of the statewide Ocean Data Explorer, (2) accommodate the range of observational water level data acquired under the AOOS Water Level Watch Program, (3) mirror critical functionality of the CO-OPS *Tides Online* system, and (4) be designed in alignment with the CO-OPS “Tiered Data Policy.” Development of this system in direct collaboration with CO-OPS staff will produce a final product that is more consistent and compatible with downstream tools, will improve access to critical water level data in Alaska, and the described effort will also be a pilot project for advancing nationwide IOOS/CO-OPS coordination on external source data.

CO-OPS Tides Online	CO-OPS Tiered Data Policy	AOOS Water Level Watch
<i>Authoritative Source for coastal and Great Lake water levels</i>	<i>Policy for Management and Dissemination of External Source Water Level Data</i>	<i>Collaboration to improve quality, coverage, and accessibility of water level observations in Alaska’s coastal zone.</i>
<p>Water Levels - Real-time water level information updated every 6 minutes (+ Station Information and Data Inventory)</p> <p>Datums and Bench Mark Sheets- The base elevation used as a reference from which to reckon heights or depths.</p> <p>Extreme Water Levels - Statistics show the likelihood water levels will exceed a given elevation for select NOAA stations.</p>	<p>Tier A: NWLON</p> <ul style="list-style-type: none"> • ≤10 cm accuracy • redundancy and full vertical control requirements <p>Tier B: Approx. IHO standard</p> <ul style="list-style-type: none"> • ≤30 cm accuracy • Meets minimum vertical control requirements <p>Tier C: Other Partner Data</p>	<ul style="list-style-type: none"> • Near/Real-Time Cont. Data <ul style="list-style-type: none"> ○ iGages ○ GNSS Reflectometry sites • Observations (long-term, short-term, and high water mark) <ul style="list-style-type: none"> ○ Rapid response tools ○ Seasonal pressure sensors ○ Tide and tsunami buoys • Tidal Datums <ul style="list-style-type: none"> ○ JOA Online Tidal Datum Comps ○ Tidal Analysis Datum Calculator

References:

AOOS (June 2016), Coastal & Nearshore Water Level Observations in Alaska: Challenges, Assets, Gaps, and Next Steps v 1.0, 33 p., available online at [http://www.aos.org/wp-content/uploads/2011/05/2016 Alaska Water Level Observations v1-0.pdf](http://www.aos.org/wp-content/uploads/2011/05/2016_Alaska_Water_Level_Observations_v1-0.pdf)

Edwing, Richard (December 2015), Approval of Revised Policy for Management and Dissemination of External Source Water Level Data, Memorandum, 11 p.

Integrated Ocean Observing System (IOOS; 2014), Manual for Real-Time Quality Control of Water Level Data: A Guide to Quality Control and Quality Assurance for Water Level Observations, version 1.0, QUARTOD, 43 p.

Rear McLaughlin, Laura (2018), Regional Collaboration in Alaska to Complement the U.S. National Water Level Observation Network, 2019 Ocean Observations, submitted abstract.