



## Alaska Water Level Watch - 2020 Annual Meeting

Teleconference

April 29, 2020 9:00 AM-12:00 PM AKST

### Attendees:

Leslie Jones	AGC
Sally Russell Cox	Alaska DCRA
Jacquelyn Overbeck	Alaska DGGGS
Steve Masterman	Alaska DGGGS
De Anne Stevens	Alaska DGGGS
Katie Miller	Alaska DGGGS
Mark Turner	Alaska DGGGS
Richard Buzard	Alaska DGGGS
Rick Dembroski	Alaska DHS&EM
Amy Orange-Posma	Alaska DMLW
Bryan Raines	Alaska DMLW
Marta Kumle	Alaska DNR
Michael Knapp	Alaska DOT&PF
Carol Janzen	AOOS
Jill Prewitt	AOOS
Molly McCammon	AOOS
Davin Holen	Alaska Sea Grant
Erik Stromberg	ASTRA
Will Koeppen	Axiom Data Science
Jessica Austin	Axiom Data Science
Andrea Meeks	CRW Engineering Group
Anthony Robinson	CRW Engineering Group
Ted Perkins	FEMA Region X
Wendy Shaw	FEMA Region X
Rada Khadjinova	Fugro
Kristin Reardon	Geosyntec
Evan Elder	Golder Associates
Phil Osborne	Golder Associates
Dave Maune	Hydrographic Services Review Panel
Erik Oppegard	JOA Surveys, LLC
Christina Belton	NOAA
Michelle Burt	NOAA
Richard Edwing	NOAA
Amy Holman	NOAA
Laura Rear McLaughlin	NOAA CO-OPS
Mike Michalski	NOAA CO-OPS
Bart Buesseler	NOAA Coast Survey
Nic Kinsman	NOAA NGS
Jack Riley	NOAA NOS
Becki Heim	NOAA NWS
Crane Johnson	NOAA NWS APRFC
Jonathan Chriest	NOAA NWS Fairbanks
Ed Plumb	NOAA NWS Fairbanks
T.J. Moore	NOAA OCM
Doug Marcy	NOAA OCM
Jihye Park	Oregon State University
David Schoenmaker	Stillwater Technologies
Roberta Glenn	University of Alaska Fairbanks

Chris Maio	University of Alaska Fairbanks
Damrongsak Wirasaet	University of Notre Dame
Joannes Westerink	University of Notre Name
Deirdre Ginter	USACE
Rebecca Kloster	USACE
Elizabeth Powers	USGS
Ann Gibbs	USGS, PCMSC
Danielle Stickman	WALCC

9:00-9:20 **Alaska Water Level Watch Introductions** (Jacquelyn Overbeck, Alaska DGGs)

- Notes under meeting tab at : <https://aoots.org/alaska-water-level-watch/meetings/>

What is AWLW and agenda:

- Alaska Water Level Watch (AWLW) <https://aoots.org/alaska-water-level-watch/>
  - Made up of individuals interested in water levels in Alaska
  - Having annual meetings for the past 3 years
  - More information may be found at : <https://www.arcgis.com/apps/MapSeries/index.html?appid=c37fd52e07a74d6999b6855754d67914>
- 2019-2020 Highlights
  - Recent Updates to AWLW website:
    - Recent updates changed to tabs from links
    - Updated build-out plan
    - Data portal launched this year (<https://water-level-watch.portal.aoots.org/>)
  - Feature Stories:
    - VDatum updates by NOAA
  - Equipment purchases this year (JOA)
    - Produce new site with real-time data
  - Documenting historical water levels
    - DGGs photo database <http://maps.dggs.alaska.gov/photodb/>

9:20-9:50 **Meeting Participates Introductions and Membership**

*Meeting participants introduced themselves and designated whether their organization would participate as an official AWLW member or not. The final member list will be posted on the AWLW website in the AWLW Guidance Plan.*

9:45-9:50 **AOOS/IOOS Strategic Plan** (Molly McCammon, AOOS)

- AOOS (Alaska Ocean Observing System) is part of IOOS (Integrated Ocean Observing System) working with NOAA
- Increase observations and forecast
- Pilot alternative observation approach
- Facilitate working groups and materials
- Host statewide data portal
- Package information and data to meet user needs
- Contribute to AOOS:
  - Contact Molly McCammon [McCammon@aoots.org](mailto:McCammon@aoots.org)
  - Contact Carol Janzen [Janzen@AOOS.org](mailto:Janzen@AOOS.org)

9:50-10:10 **Water Level Data for Alaska Water Level Watch** (Will Koeppen and Jessica Austin Axiom Data Science)

- Data portal: <https://water-level-watch.portal.aoots.org/>
- Submit data with text form file

- Feedback tab – if the user has questions this will send the question and the page the user is on
- Map layers show water levels and tidal predictions
  - Can view the data graphically
- Inventory tab
  - Shows data issues per station
- Search catalog
  - Search data by station

**10:10-10:25 GNSS Reflectometry for Water Level Measurements in Challenging Locations**  
(Eric Stromberg ASTRA)

- New type of water level sensor
  - Low cost
  - Not complex
  - Remote deployable
- Use GPS sensor and local water level sensor
- Off-grid setup with solar panel and iridium communications
- On-grid setup with ac power – cell and ethernet communication
- Started with unit in Seward April 2017 to July 2018
- Moved the unit to Homer July 2018 to April 2019
- Seward was ideal location – sensor mounted with constant visibility of water
  - Data agrees with NOAA predictions
- Homer has 250 meter intertidal zone
  - Low tide difficult for sensor to measure tidal
- Future sensor installments at Utqiavik
  - May be challenging site – building not adjacent to water

Questions/Comments

- Ann Gibbs: Would this be useful for Unalakleet site for sea ice
- Eric (response): have not used it with sea ice

**Real-time Data Updates:**

- DGGS plans for next year to install real-time sensors in western Alaska and Bristol Bay.

**10:30-10:40 Break**

**10:40-10:55 GNSS Reflectometry for Tidal Datums** (Erik Oppegard, JOA Surveys, LLC)  
<https://joasurveys.com/>

- Measures multi path (reflective signal)
  - Allows tidal measurement
- St. Michael case study
  - Compared to Unalakleet tide station
  - Results similar to Unalakleet tide station
- Online real time data processing <https://joasurveys.com/online-resources/>
  - Exports data computation report

**Tidal Datum Updates:**

- Priorities or tidal data collection
  - Establish tidal datums at all communities in Alaska
  - Data on portal with metadata that shows data quality
  - Increase public access

Questions: Hydroball pilot hydrography project to depend on tidal datums this summer?

Answer: No. Will have to depend on short-term water level occupations that do not meet NOAA standards for authoritative tidal datum, but will have a tidal correction.

11:10-11:25 **Coastal Flood Impact Assessments for Alaska Communities** (Rich Buzard, Alaska DGGGS)

- Statewide water level have not been recorded
  - How many storms unknown
  - How high water reached during storms are unknown
- DGGGS is working on community flood reports
  - Turn qualitative data (first-hand accounts) to quantitative data
  - Transfer reports to tables to be put in reports
  - Use NWS color scheme and categories for flood history
    - Minor
    - Moderate
    - Major
  - Compile photos at DGGGS photo database <http://maps.dggs.alaska.gov/photodb/>

Questions: How did you calculate uncertainty?

Answer: there is uncertainty associated with the measurements that is taken into account, and recommendations from statistics literature on how to handle these type of data.

#### **Other Water Level Updates:**

- Historical flood reports will be linked (in the future) at AWLW Build-out to the community links on the map.

11:35-11:55 **Hydrographic Services Review Panel Issues Paper**

Marta Kumle (AOOS/DNR/NOAA Coastal Strategist)

- Alaska mapping strategy:
  - NOAA to map economic shore zone
  - Map shoreline and nearshore of Alaska

Rich Edwing (NOAA CO-OPS) and Dave Maune (HSRP)

- HSRP Background:
  - Federal advising committee to NOAA
  - Made up of 15 panelist from different agencies and users of the information

Question: HSRP needs a gaps map for tidal datums and NWLON, which will be provided by Alaska Water Level Watch.

12:00 **End of meeting**