

# Coastal Erosion Hazard Map Task Force Meeting

MN DNR-Conference Room | 1568 Hwy 2, Two Harbors, MN 55616

Wednesday January 22<sup>nd</sup>, 2020- 10:00 am-12:00pm

## Agenda

1. **Brief Overview of meetings/work done to date as needed** (Justin/Charlie)
2. **Vision Statement Draft Review** (Justin, full group)
  - a. Provide feedback and finalize Vision Statement)
3. **Action Plan Discussion** (Charlie, Justin, full group)
  - a. Review draft action/work plan for feedback
4. **Methodology Discussion** (Clint, Charlie, full group)
  - a. USGS DSAS Update
  - b. Review of Coastal Work and previous Analysis
  - c. Relevant Questions that may frame discussion:
    - i. How do we come to Consensus?
    - ii. What are Parameters to determining the method?
    - iii. Who is documenting and doing methodology?
    - iv. Is there a single pilot location we can start with?
5. **Data Update** (full group)
  - a. Provide updates that haven't yet been discussed.
6. **Other Partner Updates** (full group)
7. **Future Meeting Location** (Justin)
8. **Next steps**
  - a. Methodology Focused Discussion to near finalize and identify future needs.

## Coastal Erosion Hazard Mapping Task Force Meeting Notes

ARDC Conference Room- December 19<sup>th</sup>, 2019 – 10:00 a.m.

**Meeting Attendees:** Neva Maxwell-Lake County, Clint Little-MN DNR Coastal Program, Melanie Perello-MN DNR Coastal Program, Ilena Hansel-Cook County SWCD (Phone), Sonja Smerud-Lake County SWCD, Stacey Stark-UMD (phone), Zac Morris-AMI, Julie McDonnell-MN DNR Coastal Program, Jenn Moses-City of Duluth, Charlie Moore-ARDC, Justin Otsea- ARDC, Brandon Krumwiede-NOAA (phone)

### 1. Welcome/Introductions

- a. All were welcomed and introduced themselves.
- b. Zac Morris from AMI introduced himself as a new member to the team. A coastal engineer who's worked on coastal issues with private property owners up and down the shore for years is interested in helping and would like to see more education on the issue.

### 2. Overview of meetings/work done to date

- a. Justin introduced Jenn Moses who was on the phone and was happy to announce that the City had made an agreement to make payment on their portion of the required match to be a partner in the project. Jenn expressed her excitement to work on the project and hopes the data can help with making decision on public facilities along the shoreline.
- b. Charlie announced that a tutorial to help teach users how to use the phase one data tool has been completed and uploaded to the [www.ardc.org/cehm](http://www.ardc.org/cehm) website.

### 3. Lake Levels Conference Debrief

- a. Justin asked members to briefly share their thoughts or takeaways from the recently completed Lake Levels Conference in Duluth, most team members were able to attend.
- b. Summary of Discussion included:
  - i. Forecasting water levels was discussed by army corps came up- hardest thing is that the observation data is so limited it's difficult to forecast accurately, specifically with limited data points on Lake Superior. Canadian side has large gaps as well.
  - ii. 3-month outlooks from NOAA for temp / precipitation helps a lot to forecast what the snow melt will look like come spring.
  - iii. Ice cover is also a question, if we get heavy ice cover, we won't see evaporation, ice is just starting to form.
  - iv. **\*\*Getting a link to the CFS outflows at St Mary river /Soo locks out to Team was requested (ask Brandon for link).**
  - v. National weather service is needing more reports of damage and if there's a cost estimate. More information in the official record helps them.
    - One page 'report the storm' handout to help NWS be helpful.
  - vi. Attendees can expect an email with resources and including a Survey from the International Joint Committee link.
  - vii. Additional discussion on educational materials and resources that were at the conference and could serve as examples for resources related to project.

### 4. Coastal Fellow Update

- a. Melanie and Clint are exploring using DSAS (Digital Shoreline Analysis System) continuing to experiment with Park Point as an example to learn how to use the software and see what the results look like.

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- b. DSAS is an ArcMap extension made by USGS- can automatically calculate transects and recession rates based on LIDAR data.
- c. More focused on sand but could be a possible tool for analysis. Targeting Park Point due to sand composition and wealth of available data.
- d. Melanie discussed a Texas Highschool Coastal Monitoring Program – Outreach based monitoring program where they get High school students to go out and make measurements also teach students about coastal processes, and mapping, and now they have 20 years of data. Grad students from geology department to teach the students.
- e. Discussion followed on various data sources including:
  - i. Clint working on transferring aerial imagery data – DNR 9:9 115:48 scale imagery that goes back to the 1940's. Hard copies were here, now are in Grand Rapids, scanned and deciding how they can distribute but could be helpful.
  - ii. Lake CO finished their LIDAR flight just recently and its 3 inch on the coast line.
  - iii. St. Louis county 2019 picometre is impressive and same scale.
  - iv. Lake County is currently processing it right now- may take some time but will share once it's completed. Expects it will be available in parcel viewer.
- f. Melanie is currently going through all the variances and permits from jurisdictions within the management zone. Analysis is not complete but is underway and will help validate data moving ahead.

### 5. NGS Benchmark Data Update

- a. Brandon outlined that NGS benchmark data has been filtered into the coastal program counties and filtered down based on stability codes.
- b. Stability code for NGS benchmarks is 'how susceptible is that benchmark to any sort of horizontal or vertical movement'
  - A- Expected to hold well
  - B- Expect to probably hold well
  - C- May hold well but subject to movement (not included)
  - D- Questionable or unknown reliability.

Filter down to these points and wonder where we can tie in transect cross sections along the shoreline. These could be potential transects for the monitoring happening as a part of this project.
- c. Clint and Brandon have data available if the temporary FTP site Brandon sent out earlier goes down.

### 6. Action Plan Discussion

- a. Justin introduced a draft Action Plan for the project to receive input from stakeholders to guide the phase 2 of the project. Discussion followed and is summarized below:
  - i. Brandon to SWCD's Do you do an assessment of erosion on the property when working with homeowners? (is there data out there that could help out identify the scale of the erosion issues we're discussing)
    - Right now, they take a photo, and measure maybe the size of parcel, or where the grass is to the structure or very rough notes. No one is measuring erosion happening so finding out what they can/should be measuring?

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- ii. AMI is collecting erosion data and could be a data source right there – have worked on imagery to determine erosion rates to try and regain shoreline, if you can prove it to DNR you can regain it. A couple dozen projects up the North shore and expects he can share some of that information. Only time there's a measurement is if there's an improvement.
- iii. Next year we should define how we do that and SWCD's can help measure that on future projects.
  - A standard – top of erosion area, bottom, width, slope, but having some very simple geometry associated with these would be very helpful.
  - Fellow is supposed to develop a coastal inventory form to standardize these. Ranges, or etc. can give you ideas of costs for improvements.
  - Team would appreciate some standards to help eliminate gray area. Compared to having no standards.
  - Quantitative or Qualitative both matter. Looking at what AMI has collected could be a starting place for that.
  - Having a range finder can be very helpful for hazardous situations. Even just having a photo can help approximate items as well.
- iv. **Discussion followed on the various forms of other similar analysis that has been reported on by Melanie. This report will help future discussions of finalizing a methodology and should be on the website if it's not already.**
- v. Charlie is waiting until Melanie is complete with review to insure no duplication of work is being done.
- vi. After detailed discussion the Group found consensus to move completing the methodology up in the action plan to allow additional time for observation and analysis. Ground truthing will be instrumental in finalizing the analysis for the entire shore, so adequate time to evaluate and analyze results over the summer is primary need from the group.
- vii. Need for documentation of the methodology and rationale as to how/why it was selected to justify if challenged later.

### Coastal Program Match Documentation

- a. Otsea outlined that at the end of the project he will need letters from each organization documenting hours worked and wage rates as form of match documentation.

### 7. Future Meeting Dates

- a. After discussion, 3<sup>rd</sup> Wednesdays at 10:00 a.m. in a central shore location was agreed on for ongoing meeting schedules. Justin will follow up with Outlook reminder.

### 8. Next steps

- a. *Draft Vision Statements for Review at January Meeting*
- b. *Revise Action Plan based on feedback received for finalization at January Meeting.*
- c. *Review Melanie's report of separate Methodologies to inform discussion on methodology at January meeting.*

### Other Conference/ Next Meeting

- Next meeting will be Wednesday, January 22<sup>nd</sup> at a location tbd but likely in Lake County.

## Vision Statement (Drafts)

Develop an Erosion Hazard layer through methodology which utilizes the latest data to create a reliable, legally defensible data source to influence land use decisions across multiple jurisdictions throughout the North Shore Management Board Zone and serve the needs of our partners.

Develop an Erosion Hazard layer to influence land use decisions throughout the North Shore Management Board by analyzing up-to-date data and incorporating ongoing monitoring and update opportunities to serve partnering organizations.

Create an Erosion Hazard map tool to showcase levels of risk throughout the North Shore management zone, influence land use decisions by partnering organizations and provide education to stakeholders throughout the region.

# Coastal Erosion Hazard Mapping

## Phase II Action Plan (Draft)

### *Coastal Grant outcomes:*

- 1) Develop methodology – by July 2020
- 2) Test mapping in pilot areas with summary – by November 2020

### *Draft Action Plan*

- a. Develop Vision Statement (Feb)
  - i. Vision statement exercise (Complete)
  - ii. Finalize Statement (Feb)
- b. Review of Coastal Fellow Work (Feb)
  - i. Which methodology works best/is closest aligned with this project?
- c. Define Methodology (March-April 2020)
  - i. Determine/define classification of erosion (March)
  - ii. Define ground truthing: timescale, who does it?, locations, private/public, landowner permission (March)
  - iii. Does this analysis meet the needs of stakeholders (Zoning ordinance departments, SWCDs, Landowners, others?) (April)
  - iv. Identify who documents & runs analysis (April)  
  
(Relevant Questions- How do we come to Consensus? What are Parameters to determining the method? Who is documenting and doing methodology? Target site for remote sensing?)
- d. Determine Analysis Locations (May- Early June)
  - i. Determine if Landowner Permission is needed (May)
  - ii. Identify schedule for installation. (May-Early June)
- e. Run and Document Analysis (June-September)
- f. Review findings and develop summaries (October)
- g. Finalize Summary/report materials and submit to Coastal Program (November)