

RX DISCOVERY 2011: Kenai Peninsula Borough, Dan Mahalak Interview

Meeting Notes

January 26, 2011, 1:00 pm MT, interview via conference call

Attendees: Dan Mahalak, Geohydrologist, Kenai Peninsula Borough
Christy Stauffer, Coordinator, Seward/Bear Creek Flood Service Area
Matthew Johnson, STARR Discovery NFIP Specialist
Bridget Belliveau, STARR Discovery GIS Coordinator

Hello Dan,

I have learned you are doing a lot of work around Seward and have a good understanding of the flood hazard. We are hoping to gather some insight towards what you're working on, some of the larger scale issues, and from that, isolating specific problem areas. Taunie Boothby (Planner, Alaska Planning and Land Management) briefly explained some of the challenges you folks face, and forwarded on the Seward Sedimentation report. The report indicates a lot of migration and deposition.

Yes. Basically, Seward is a glacial outwash plain that's very dynamic with no zoning or building codes, other than what the 1981 Flood Insurance Rate Maps (FIRMs) regulate (which are conservatively drawn). There are no avulsion hazard pathways identified. Hopefully, under the DFIRM process, the footprint can be increased in areas to incorporate more of the hazard.

Does the Borough's ordinance allow building in the Special Flood Hazard Area (SFHA)?

Yes. All that is required is a conveyance calculation. Also, FEMA Guidelines and Specifications in Appendix G (*Guidance for Alluvial Fan Flooding Analyses and Mapping*) indicate any alluvial fan is extremely hazardous, yet Seward has been mapped and identified as low to moderate risk. To simply generate an insurance product, but not mapping the entire hazard is sufficient, but unfortunate. Dan and the borough are attempting to fill a gap between the regulatory NFIP maps and voluntary compliance through outreach. They attempt to prevent haphazard building in known flood prone areas, regardless of what the NFIP map suggests. An example is providing outreach to builders, in the form of proper building techniques for alluvial fans that currently have no building codes or SFHA identified.

The alternative to outreach is to retroactively provide flood control on the alluvial fan with maintenance support. Bear Creek Flood Service Area is finding different ways to map and regulate building practices through federal regulations, best management practices, and voluntary compliance. Information is also being provided to residents, explaining the reasoning for purchasing flood insurance, and why the area has not been mapped as an SFHA. Some struggles have been evident working with US Army Corps of Engineers (USACE). Specifically, the guidance documents for flood hazard identification on alluvial fans are geared towards planning and future development. They do not, however, provide information with respect to threats on existing development. Seward would like a Risk Map effort that focuses on alluvial fans, one of the predominant flood risks in the Borough.

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It seems the Borough has quite the diversity in flood hazard, compared to some areas where the flood risk is well defined and straight forward.

The Borough has a wide range of flooding sources. Some rivers fit perfectly into a HEC-RAS model, while others are conical surfaces where sheet flow occurs. The work on the Japp Creek alluvial fan involved using HAZUS, to generate depth cells, but the data needs to be compiled under a project to move forward. The Borough has been promised a \$250,000 grant to move forward under Risk Map funds; however they were surprised when only Homer was initially selected for Discovery.

So you would like to see maps with a better representation of the actual risk, to get better leverage for regulating development.

Ordinances are currently being revised but are limited to referencing the Federal map. However the Federal map does not accurately portray risk and compromises the quality of any new or revised ordinances. The Borough is very much in favor of new maps, but expects to meet some resistance by some residents.

You almost need a new study done on a regular basis here, it sounds like, to get a true accurate portrayal of the risk on the map.

The riverine systems here are very dynamic and frequently change. For example, the Seward Sedimentation report Taunnie Boothby sent is already outdated. A new sedimentation report was drafted for the changes observed in a narrow timeframe during the 2006 flooding. The Kenai Peninsula Borough is in severe need of attention from FEMA. A different type of solution is needed here. The Risk MAP program may provide the necessary changes to the current situation here. FEMA should provide the Borough with site-specific solution to provide a sound basis for floodplain management and prevent loss in this unorthodox riverine environment that is not well suited for traditional NFIP practices and procedures.

Does our line work on the map showing on-going studies look correct for Japp Creek?

The line work looks correct; however it doesn't reach the top of the catchment. The line shown is basically following the thalweg of the creek, but the flood risk is from the alluvial fan landform itself.

What is your goal for the Japp Creek study? Would you like to see that incorporated as a SFHA?

Yes, ultimately it will be incorporated as a Letter of Map Revision (LOMR). The Flood Service Area is trying to supplement the NFIP maps to be inclusive and fill in the gaps where the maps didn't reflect the actual hazard. The HAZUS work is attempting to illustrate the problem areas that were never mapped and some mitigation strategies for the area, although it is not mapped in the SFHA.

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Can you provide some insight to where in the Borough the most severe mapping needs are located?

In 1981, the USACE remapped a portion of the Kenai River drainage, which is the primary waterway with substantial development. Most of the 47 SFHA are mapped along that waterway, and most of the insurance policies are located. Kenai and Soldotna didn't agree with the maps the first time around, and that is why they left the NFIP. They've asked how to fix this so they can get back into the NFIP. Dan recommends remapping the Kenai River with all the cumulative effects that have happened since 1981. To improve usability, the flooding should be converted to digital format and be available for anyone to access it. The analog maps are severely inaccurate and poorly drawn. There is a lot of hazard in Seward that was overlooked because it wasn't in the scoping effort for the Map Modernization DFIRM conversion, for example the Japp Creek alluvial fan, which the town of Seward is built on, was neglected.

Did you have a chance to look over the Fact Sheet, map, and contacts list we sent? How did the data look to you?

The levee information is not correct. Dan has an inventory of berms for Seward alone. Every subdivision has a berm or levee protecting it. They range from congressionally appropriated levees to sacrificial berms put in place on a biannual basis.

Do you have GIS data for the berms; our database does not show any levees in Alaska?

Dan agreed to send GIS data for the berms; it is in draft phase right now but won't be ready and polished for three months.

Have you been involved with scoping meetings with FEMA in the past?

This is the first time Dan has been able to speak on a Borough-wide basis at the flood issues they face.

Would the Bear Creek Flood Service Area like an invitation to the Discovery Meeting?

They would like to attend the meeting. The Bear Creek Flood Service Area provides a large effort to update mapping and develop hydrology in the area. If mapping needs future Light Detection and Ranging (LiDAR) or letters written, they will likely come from the Service Area.

Looking at the Seward map, are there any areas of concern, with respect to the Coordinated Needs Management Strategy (CNMS) lines, areas of high growth and development that we should know about?

Looks pretty good, you've hit all the high points, although there isn't a CNMS for Box Canyon. There is currently not a population here, but it is susceptible to development. There is a substantial flood control structure there that is owned by a native corporation. This area is on the

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list of areas they want to map flood hazards in. The Water Resource Conservation Act (Section 205) is being utilized here for a new flood control structure.

Do you know of any other mitigation projects in the area to that you've been pursuing in addition to Japp Creek?

Yes. The Lowell Creek tunnel project is under the authority of the USACE. They've deactivated the entire alluvial fan that Seward is built on by diverting water with a pipe through the mountain which dumps flood flows into Resurrection Bay. Built in 1940, the tunnel has a design lifespan to 2015.

Do you have any shape files of that location?

The tunnel is on the base map you've sent. The long term affects from the tunnel have altered the sediment budget for the system, effectively over-steepening the watershed. This may lead to increased risk from mass failure/debris flow. Furthermore, if the impoundment gives out, the affect it will have on Seward is unknown.

Any other mitigation projects you can think of?

There are two potential Section 205 projects currently in the works: one is for Box Canyon, and the other is Kweejack Creek (National Hydrography Dataset is Salmon Creek) which is just south of Bear Lake. These projects are in queue, but not actual projects at this point.

The \$250,000 grant was in response to the Yukon River Ice Jam flooding in 2006; a proposal was drafted and sent to FEMA.

Several local roads have inadequate bridges. The Borough is attempting to open those areas to mitigate the backwater affect around Seward, as well as redesign culvert projects to allow for fish passage. Dan Bevington, of the River Center, should be able to provide more information.

We noticed across Cook Inlet, westward of the peninsular portion of the Borough, is another landmass part of the borough. Is there much activity there?

There is not much urban sprawl or residential development, but there is a lot of oil and gas exploration and recreation development.

Can you provide any additional GIS information for aerial imagery, roads, structures, political boundaries, etc.? Do you have a specific contact person we can work with?

Dan will send the links to the GIS data.

Well, thank you for providing this wonderful information, I suggest you attend the Discovery meeting to further emphasis your concerns and work out solutions. Thanks again folks.