

# Alaska Roundtable Meeting Notes

June 28, 2012

## Meeting Opening - Anne Castle

### Opening remarks - Lt. Governor Meade Treadwell

- Alaska and the federal government are on the same page with regard to mapping Alaska.
- Governor's office supports federal-state cooperation.
- *Highlighted the complexity and strategic importance of the state*
- Governor committed to this goal. Put money in the budget for this goal.
- *Mentioned NGA and NOAA as critical partners to date.*
- We tend to talk about terrestrial elevation, but we have the same needs offshore, *thanked NOAA for filling in the gaps.*
- Commercial opportunities include the ability to:
  - Keep the AK pipeline full.
  - Capitalize on AK's strategic location.
  - Develop rare earth elements.
  - Manage sustainable fisheries.
  - Promote a robust aerospace industry.

### Opening remarks - Anne Castle

- *Led introductions of the meeting participants.*
- *Introduced and presented David Hayes video.*
- *Discussed the purpose of the meeting - to use the level of federal representation in the room to gain insights into policies and budget intricacies. Encouraged participants to think creatively on how to collectively solve the lack of adequate mapping in AK.*
- Look at value of benefits that will flow from mapping – dollars, lives, property. Think about it as an investment that brings near and long term benefits.
- Don't want to waste time with one-off meeting, it's a starting point for more in depth work and an action plan
- *Provided an overview of the agenda.*

### National Goals for Topographic Mapping in Alaska - Kevin Gallagher

- The National Geospatial Program (NGP) embodies the nation's 125 year history in mapping and topographic mapping series which underpins many uses and applications.
- It initially took the USGS 55 years to map the nation. Today it takes us 3 years to cover the nation (other than Alaska).
- *Invited USGS Director Marcia McNutt to speak:*
  - It is compelling to see the people who are giving their time today. What does this broad range of agencies have in common? A need for high quality topographic data.

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- We have a compelling case for the need to bring Alaska into the 21<sup>st</sup> century in terms of the quality of mapping data for the State. It is a small investment in terms of its return, that will pay for itself quickly, one that is so needed now.
- As director of USGS, I am committing to take leadership to put together requirements for this effort to make it happen, but we can't do it alone. With state of AK and help of others we need to make it happen.
- Alaska mapping is so overdue it's a national travesty.
- NGP produces data that is all digital. Outlets include web services, data services, and a viewer to access data. Maps are downloadable to handhelds and can be used with GPS. USGS has a legacy of 125 years of topographic mapping, and are leaders of hydrography and elevation. Alaska has significant needs in both.
- USGS worked collaboratively with partner agencies on a comprehensive elevation assessment. LiDAR and IfSAR are transformative technologies. They provide a 3D rendering you could walk through, and model. There is an explosion of applications that use these data *see presentation*. The potential for a 3D elevation dataset for the nation has gripped us.
- 3DEP starts with Alaska.
- The US Topo series is moving on to Alaska. A lot of data layers are required to make the maps. All layers need to be integrated vertically to a high degree of accuracy. This is critical to modeling and resource management decisions.
- Each layer for Alaska is in a different state of preparedness. Statewide IfSAR is the most important, as well as hydrography. Statewide IfSAR is a critical baseline, then from there we need to work on LiDAR collection. There are other datasets like Landsat data not listed here. The key is filling these topographic layers to feed US Topo production.
- There is a large funding gap. USGS and DOI stand committed, but need support and partnership to fund the gap. What would modern mapping mean to your mission? Elevation is a first key step, and there are many other steps to it. We need your partnership.

### Alaska Requirements and Benefits - Dave Maune

- Two studies have been conducted for Alaska – one identified the problem and solutions, and the other, the major benefits of the solution. NEEA is a nationwide to study requirements and benefits of enhanced elevation data.
- If you drape imagery currently being collected for AK on the existing elevation, you can see that the rivers don't flow between mountains.
- IfSAR as solution provides a digital terrain model (DTM), digital surface model (DSM), and orthorectified radar image (ORI).
- Benefits to agencies of IfSAR data for Alaska are financial, operational, customer, and social benefits, but here we are just showing the dollar benefits that the agencies were able to quantify (*see presentation*). Half of them were unable to estimate their benefits.

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- We estimate \$19 M benefits for Alaska from statewide IfSAR data, and the investment pays for itself in 3 years. This represents only the benefits that could be reported and not the many other needs identified.
- Hope today goes a long way in mapping America's last frontier.

### State Perspectives - Mark Luiken

- This is not just a state but also a significant federal issue.
- Thank you, to all of the high powered Federal players for participating. Thanks to USGS for your leadership and commitment.
- SDMI is the statewide committee that has been going on for some time. It has an executive committee. Ed Fogels is the Executive Director of SDMI. *Invited Ed Fogels to speak:*
  - I have been with the SDMI since its inception. I have personally used maps in my professional career and was frustrated with their shortcomings.
  - The State started with a \$6 M initiative, developed white papers on imagery and elevation, which provided a set of specifications to strive for. Half of the funding went to imagery, half to the elevation. We leveraged money with federal partners, and fiscally the imagery is done. The rest is why we are here today. We've accomplished a lot and have more to do.

### State Perspectives - Nick Mastrodicasa

- The SDMI project has been supported by three consecutive Governors.
- The focus of elevation data is the beginning – the foundation for the other 6 critical layers. This also includes bathymetric elevation.
- 2/3 of the national parks are in AK. It is the only arctic state in the union. It has strategic military importance as well as natural resources. Balance of preserving and using resources requires accurate mapping.
- SDMI conducted an open stakeholder process and came to consensus on 5 meter IfSAR data.
- The ORI (orthorectified radar imagery) may be the only image we have for some areas that are perpetually cloud covered.
- After two years of collection we'll be 1/3 complete – people said it couldn't be done. Now goal is to finish the job in another 2-3 years.
- Coincidental data are being collected by vendors – if there is end of year funding, it could be applied to processing these data to the final IfSAR products.
- Tiaga –named after a type of vegetation – *is a program in Alaska pertaining to aviation*. If we put poor elevation in the cockpit people will be killed though the intent is to help.
- Another request of the State is for the Federal agencies to provide letters of support for this effort, to help in budget support.
- Requires a state-federal nexus to complete the project.

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### Discussion facilitated by Tricia Gibbons

#### Needs for Alaska Mapping

- A list of mission needs might complement the benefits documented in the Dewberry report.
- The military has had 10m and 30m requirements, but over the next 60 days will be looking at 5m.
- Adaptive management requires a common frame of reference – we can't understand change without a baseline. We lack that in AK.
- Mapping is important to mitigation. An example was the storms in western AK last year which resulted in huge erosion. We need mapping to mitigate to rebuild communities.
- Partnership is the way to go to obtain datasets.
- The human and public safety issues are huge. There is significant flood risk in AK, but we don't know where it is. IfSAR will give us a baseline from which to most efficiently go after higher resolution LiDAR data.
- Aviation safety dependent on good elevation. Half of all accidents are due to CFIT (controlled flight into terrain). We could prevent that.
- IfSAR data was a key for the recovery of a crashed airplane.

#### Getting Alaska Mapping Completed

#### **Enterprise Approach/Standards**

- There are multiple agencies collecting data. We need to explore in the near term what has already been done – to reduce duplication. How much of that data is useable?
- We need to take an enterprise approach to control, archiving and making the data accessible, searchable and discoverable.
- The existing State geospatial strategic plan is a great baseline for how to take an enterprise approach to benefit agencies broadly. If we took joint State-Federal approach we could all get what we need faster. Work has already been done in that direction.
- Data standards have been developed by the FGDC, which has a process and mechanism for standards. FGDC standards should be used. Several people FGDC members are here, and Anne Castle is its leader.
- It is important that data be fully open source and not licensed.
- Coordination has been good and data are going into The National Map. There is a national system. We just need to acquire data, the worst would be to have a mix of authoritative data and not. Generally we are coordinated well and data are made available in the national archives.
- It would be good to reach out to NDEP, for advice on standards.

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### Executive Committee

- Establishing an executive committee could be a strong step in solving the issue. If we were all at the table and knew where the resources were, we could move more quickly.
- The executive committee needs to be at the right decision maker level of authority, so that we're not just talking but committing to getting it done in a couple years.
- The State has done a good job of surveying needs, and getting key feds involved, but at the operational level they don't control budget. So we need senior decision makers, like those present in this meeting, at the table.
- A strategic plan is good but not enough. Need high level commitment to make it happen. Local coordination in AK is important, need that at the Federal level.
- It is the task of committee to find the data, and a way to synthesize it. We might find that the goal is smaller than we believe it is, if other data exist.
- Ensure ground rules or foundation for executive committee, including a process for distribution of the data developed by executive committee.

### Funding

- Every federal agency has mission critical requirements, a question is what the best strategy is – try to get all the funding at once in one agency, or have many agencies request it?
- In terms of each agency vs a central fund – it's a public good so one entity should pay. In this room it's a priority but it is not well reflected in agency budgets. Given limited resources, the question is where does it rank against other priorities?
- The executive committee needs to be at level that can command budget decisions. The need has to be reflected in budget policy that is presented to OMB.
- When agencies come in with coordinated budget request it fares more favorability. Coordination carries a lot of weight.
- We got the rest of the nation funded and mapped except for AK. Are there models we should look at how that was funded? There is NAIP for example that helped get things done in lower 48. Distinctions for Alaska include the weather, remoteness – but those issues are getting overcome by technology.
- In terms of NAIP, industry benefits from it, Google uses it. The process has been repeated numerous times, it's extensible, a model of success. Part of that is to provide a buy-up program for special needs. There is a contract in place that could be used if it addresses elevation concerns.
- On the NAIP example, from the DOI perspective, it's a wonderful program because of its shared cost and benefit. There are other similar examples: USGS National Hydrography Dataset of the digital data representing surface waters of the US. This has been a 15 year project shared across multiple feds and states. The first DOQ coverage of the U.S. was done by USGS partnership activity that involved many feds and states. The funding was distributed but the work executed centrally, this model has worked many times and is worth thinking about.

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### Related Work

- NGS is currently providing an up-to-date accurate network called Grav-D which is the framework to update the elevation data. In AK the vertical reference system is off 2 meters because of when it was collected. Excluding Aleutians, NGS will have 50% of AK flown for the new reference system. This will give the IfSAR a better starting point. This is being done with partners and other federal assets to combine their platforms with this mission. Grav-D is scheduled to be completed in 2022, State of AK by 2020. Expensive areas remain to be collected including the Aleutians, out to sea.

### Resolution

- IfSAR is moderate resolution, while on the coast we know we need to get to cm resolution.
- Considering vast nature of Alaska and expense of LiDAR the first step is to obtain IfSAR to better understand how to plan for LiDAR.
- Agency input to the Dewberry studies was to collect IfSAR first to determine where to collect LiDAR. LiDAR is many hundred of millions of dollars, and IfSAR is considerably less expensive and sees through clouds.

### Wrap Up – Anne Castle

- To summarize the direction that we've heard:
  - Great agreement for an enterprise approach.
  - Taking advantage of disparate data sources.
  - Support for the executive committee with representation at the level that can direct budget.
  - Ensure that data are access and discoverable, there may need to be a technical working group to drill down on that standard and methodology.
  - Is there any disagreement in the room? *None raised.*
- We agree we want an executive committee composed of federal agency representatives with skin in the game. The federal group would either reach out to include the AK group already stood up and continuing, or engage AK colleagues in whatever representation they wish.
- Suggest that DOI lead the committee. Agencies that should be included are NOAA NGA, USGS, NORTHCOM, FEMA, USDA, USACE, Coast Guard and Executive Office of the President, OMB and/or OSTP. The committee should also include FAA, NASA and EPA.
- NSF and its monitoring program should be considered, coordination of arctic science.
- We alluded to all sorts of activity in AK that is not all well understood. For the first meeting, put out a call for participants to put something together about what each agency is doing and what is projected. It would be a much better start to know where we all are.
- Certainly this needs to be done as part of the Geospatial Platform.
- We should include some modeling of the network of relationships. It would be a useful view to see how agencies are networked.

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- There are lots of synergies, and we now have a good solid road map.

### **Lt. Gov. Treadwell - Closing**

- Thank you all for being here. There are several places where state and federal government work together.
- If the executive committee comes together and consolidates on a budget goal, we'll do our best to match it. We will continue to ask for funds from our legislature. But we need to do that working with you.
- We will work with delegation to be sure the funding is supported.