

AP/AL: Appropriation

Project Type: Health and Safety

Category: Public Protection

Location: Statewide

Contact: John Cramer

House District: Statewide (HD 1-40)

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Estimated Project Dates: 07/01/2006 - 06/30/2011

Brief Summary and Statement of Need:

This project will develop a digital map of the State and is funded by NASA. This project is a collaborative effort with UAF, DNR and NASA. Life safety enhancement end results, ability to protect our citizens and infrastructure, will continue to improve within our performance management framework. This amendment transfers the project from the Department of Military and Veterans Affairs to the Department of Natural Resources.

Funding:	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	<u>FY2012</u>	<u>Total</u>
Total:	\$0	\$0	\$0	\$0	\$0	\$0	\$0

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

Operating & Maintenance Costs:

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	314,000	5
<u>One-Time Startup:</u>	<u>0</u>	
Totals:	314,000	5

Additional Information / Prior Funding History:

Cumulative prior year appropriations total \$14,452,000 federal.

Project Description/Justification:

This project consists of two separate but complementary elements. Both elements deal with remote sensing and the use of satellite acquired images to map the state.

The first part is a research project funded by NASA and is focused on improving general aviation safety in Alaska. In support of this element, over the past four years, DMVA has received four appropriations from NASA in the form of grants totaling over \$6 million dollars. NASA has provided more than \$6 million additional dollars in remote imaging products in support of this project under other NASA in-house appropriations. Over the past four years these findings have allowed DMVA to digitally map the twelve most dangerous mountain passes in the state in very exacting detail. By geographical area, these 12 passes constitute the majority of aviation related fatalities in the state.

This project has also demonstrated that it is possible to:

- a) use remote imaging as a technology to map traditional air corridors in a 3-D fashion;
- b) use renderings from ortho-rectified data sets for detailed mapping in the general aviation and other related transportation fields;
- c) superimpose exacting elevation data to create virtual 3-D fly-through renderings of general aviation air corridors;
- d) create notional land based traditional motoring highway concepts in the aviation field called "highways and street signs in the sky" and;
- e) make real time wireless originated data dynamically available to pilots and rescuers for their use in the cockpit.

This research has been nationally recognized in both the print and viewing media. The application of this research has also demonstrated significant possibilities that it can be used in the marine and road transportation corridors throughout the nation.

The second element of this project addresses the issues associated with digitally mapping the entire State of Alaska. Since the information on the majority of the maps used in Alaska is over 60 years old, the data cannot be relied upon in most instances to support many private and public professional disciplines. In Alaska, most project managers, resource developers, planners, emergency response personnel, engineers, hydrologist and permitting officers must revalidate the source of each map they use dependent upon the projects needs because the State does not have a single statewide digital map from which to source and validate its data. To validate each maps "accuracy" before it can be used is time consuming, costly and has traditionally been project specific. In addition, once the project is complete the geospatial information used, its source acquisition standards are forgotten or not documented and the licenses used to create the product are seldom used again. This is unacceptable.

It is the operational intent of this project element to create a single, statewide digital map that meets all national standards, be made available to the public and be used as the single source document for most development, planning, emergency response, permitting and scientific research in the state. By creating a single project to map the entire state, all levels of government and the private sector will benefit significantly because their project initiatives will simply be layered over this single map through traditional GIS principals.

The oversight governance for this element of the project will be provided through a formal MOA between the President of UAF and the Commissioners of DMVA and DNR. This collaborative effort will ensure all interests, both public and private, are addressed and a single map of the state will be available to all users.

By initially understanding the operational, management oversight, fiduciary and political issues associated with originating digital maps of the 12 mountain passes for aviation purposes, DMVA, in collaboration with its partners, is positioned well to facilitate the mapping of the state. This CIP will allow that process to begin.

Finally, according to FAA statistics, there is an aircraft related fatality in Alaska every ninth day and an aircraft accident every other day and one out of every 11 pilots in Alaska will die in an aircraft related accident. The first element of this CIP will advance the department's end result of "Decreasing Alaska's general aviation related accidents and search and rescue events through the application of wireless and remote imaging technology." In addition, this initiative will also allow the department to accept future federal grants awarded for the purpose of advancing digital mapping technology on a statewide initiative. In support of the second element of this CIP, the other 49 states have all been digitally mapped at least once and some as many as three times. These states are some 15 years ahead of Alaska in the collective management of their infrastructures through traditionally applied GIS principals. Not to have a digital map of the state in today's digital world creates an inordinate amount of additional work for all public and private employees, requires unnecessary appropriation expenditures to complete projects on a case-by-case basis and causes the state to be at a significant disadvantage in developing its resources and infrastructure.

By focusing on the creation of a single statewide map, it is possible to advance every professional discipline and recreational need where geospatial information is used in the decision process.