



## State of Idaho

# DEPARTMENT OF WATER RESOURCES

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C. L. "BUTCH" OTTER  
Governor

DAVID R. TUTHILL, JR.  
Director

March 4, 2009

Wayne Hammon  
Division of Financial Management  
700 W. State Street  
P.O. Box 83720  
Boise, Idaho 83720-0032

*Re: Southeast Idaho Flood Hazard Determination Project under The  
Federal American Economic Recovery and Reinvestment Act of 2009,  
Division A, Title 1*

Dear Mr. Hammon:

The enclosed proposal demonstrates a partnership of county governments, private firms and this agency working together to protect the safety and property of Idaho citizens while sustaining jobs, providing updated information about flood risks, and developing spatial data that provides tools for floodplain management.

The project would result in flood hazard determinations for three of Idaho's fastest growing counties. The flood hazard maps would meet standards of the Federal Emergency Management Agency and would result in updated and modernized Flood Information Rate Maps. Levees, infrastructure of national importance, would be inventoried and would be added to a national database.

The counties desperately need this information to steer growth to safe areas. The local economy would benefit if fully-qualified local engineering firms were hired to produce the maps and spatial data products.

And, this department would benefit by keeping a Floodplain Unit staff member with mapping skills fully employed. The position is partially supported by soft money that will expire in 2009. This project would fill the funding gap.

Sincerely,

A handwritten signature in blue ink that reads "David R. Tuthill". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

David R. Tuthill  
Director

Encl.



# FREMONT COUNTY

## **Fremont County Planning and Building**

March 3, 2009

Re: Southeast Idaho Watershed Management and Flood Hazard Determination Project

To whom it may concern:

Fremont County, Idaho urges you to fund this important project to modernize the flood hazard maps in areas of Southeastern Idaho.

Fremont County is a large geographic county, yet has limited financial resources due to the nature of our rural population base. We are under tremendous pressure to protect our water resources and are seeking tools to allow us to better administer our floodplains, waterways, and groundwater aquifer. Without this federal funding support, this project will likely never happen, yet with the federal funding it can begin as soon as monies become available.

Fremont County has over 650 river miles throughout the county and updating the hazard areas associated with them will aid our decision-makers to effectively manage our river resources. With updated hazard areas, the Federal Flood Insurance Program can be more accurately administrated and decrease the risk of personal loss in these areas for our residents.

This data is also critically needed to jump start job creation in the development and construction industry that are being delayed due to inadequate floodplain data. This project will create jobs for both our county residents and for local private engineering firms and hydrologic experts in the area.

Please feel free to contact me with any questions or comments.

Sincerely,

Kurt Hibbert MPA  
Planning and Building Administrator



Brent G. McFadden  
Madison County  
P&Z Administrator  
PO Box 389  
Rexburg, Idaho 83440

March 2, 2009

To Whom It May Concern:

Madison County is excited to be participating in the joint application for the stimulus funds. Receiving this funding will allow us to do more detailed study of our flood plains, giving us better and more accurate information on where and how to build and protect the waterways in Madison County.

We may also be able to become contributing members with FEMA, saving residents of the county money in lower flood insurance costs or removing them from the flood plain, thus removing the need for insurance altogether.

If you have any questions feel free to contact me at 359-6260 between the hours of 8 am and 5pm.

Sincerely,

A handwritten signature in black ink that reads "Brent G. McFadden". The signature is written in a cursive style with a long horizontal flourish at the end.

Brent G. McFadden  
Madison County  
Planning & Zoning Administrator



March 2, 2009

Re: Southeast Idaho Watershed Management and Flood Hazard Determination Project

To Whom It May Concern:

Teton County enthusiastically supports this project to map the flood hazard areas of Teton, Fremont and Madison Counties. This project will help our county financially, both in process in the form of jobs and in outcome in the form of more accurate flood insurance rate maps and program. This project will also help our local land planners administer planning regulations to the best extent possible.

Teton County has shown considerable growth in the past ten years and, before last fall's economic crash, was projected to continue at a record-setting pace (2007 population of 8,500 and 2020 projected population of 30,000). Accurate flood hazard maps will immensely help our county plan its growth in a way that encourages healthy river systems and decreases the chance of impacting human health and welfare due to flooding.

We have local private businesses that will benefit from this mapping project and funding this project will likely save several jobs in the local private sector. There is immediate economic stimulus as a result of saving local jobs.

If you have any questions you would like to discuss further, please feel free to contact me.

Respectfully Submitted,

Patrick M. Vaile  
Planning Administrator

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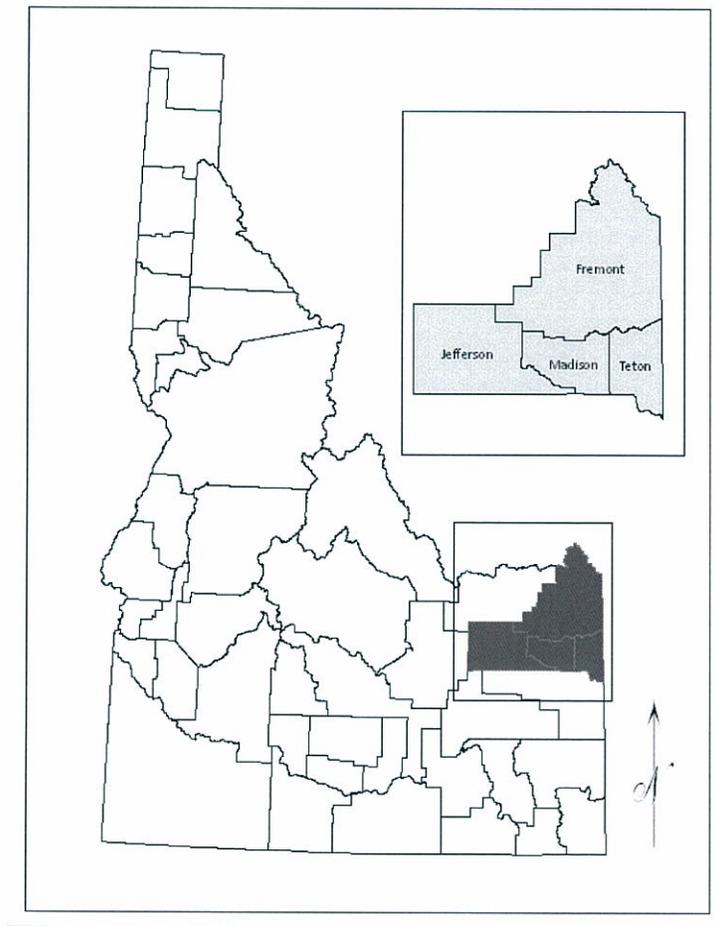
# Response to Idaho Executive Order 2009-06

## Project Name

Southeast Idaho Flood Hazard Determination Project.

## Location

Counties of Teton, Madison, Jefferson and Fremont located in Southeast Idaho (Figure 1).



**Figure 1 - Vicinity Map**

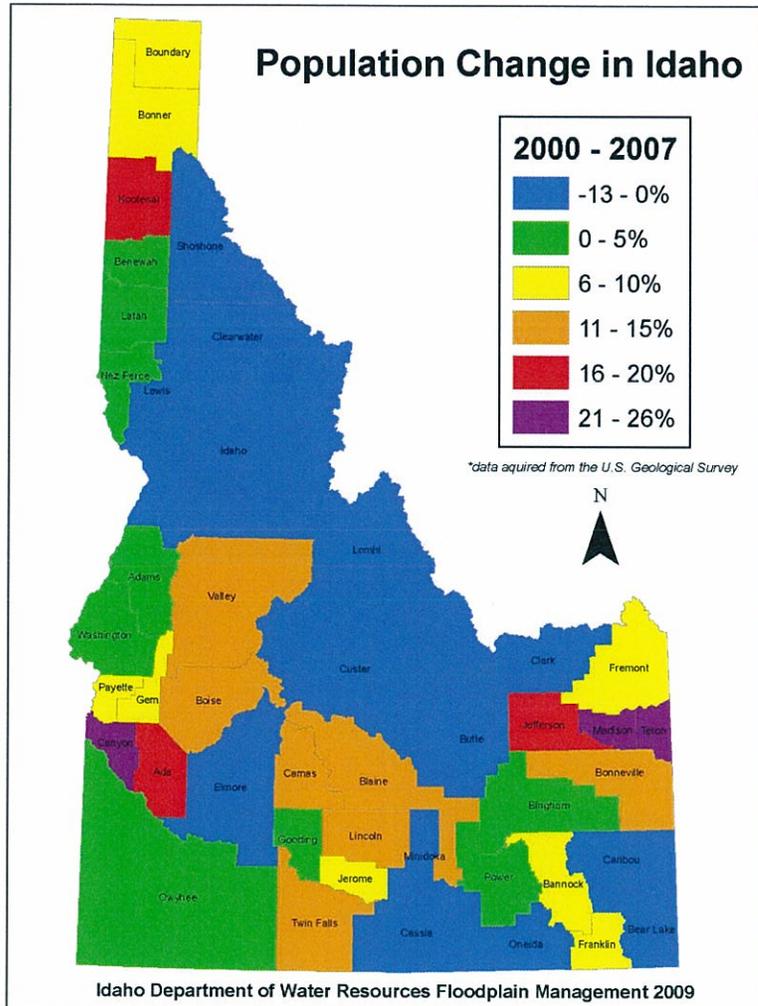
## Project Definition

This project includes updating flood hazard determinations, modernizing flood hazard maps from paper to digital and performing a levee inventory for four counties located in southeastern Idaho (Figure 1). The primary result of the project will be protection of lives, property and infrastructure. These counties include headwater streams and the

mainstem Snake River, which makes it possible to take a comprehensive, watershed approach to flood risk analysis. The spatial data and mapping products, using a Geographic Information System (GIS), will be valuable tools for watershed management. The communities and elected officials will be invited to a series of informational meetings about the project and watershed management activities that reduce flooding and protect rivers and streams.

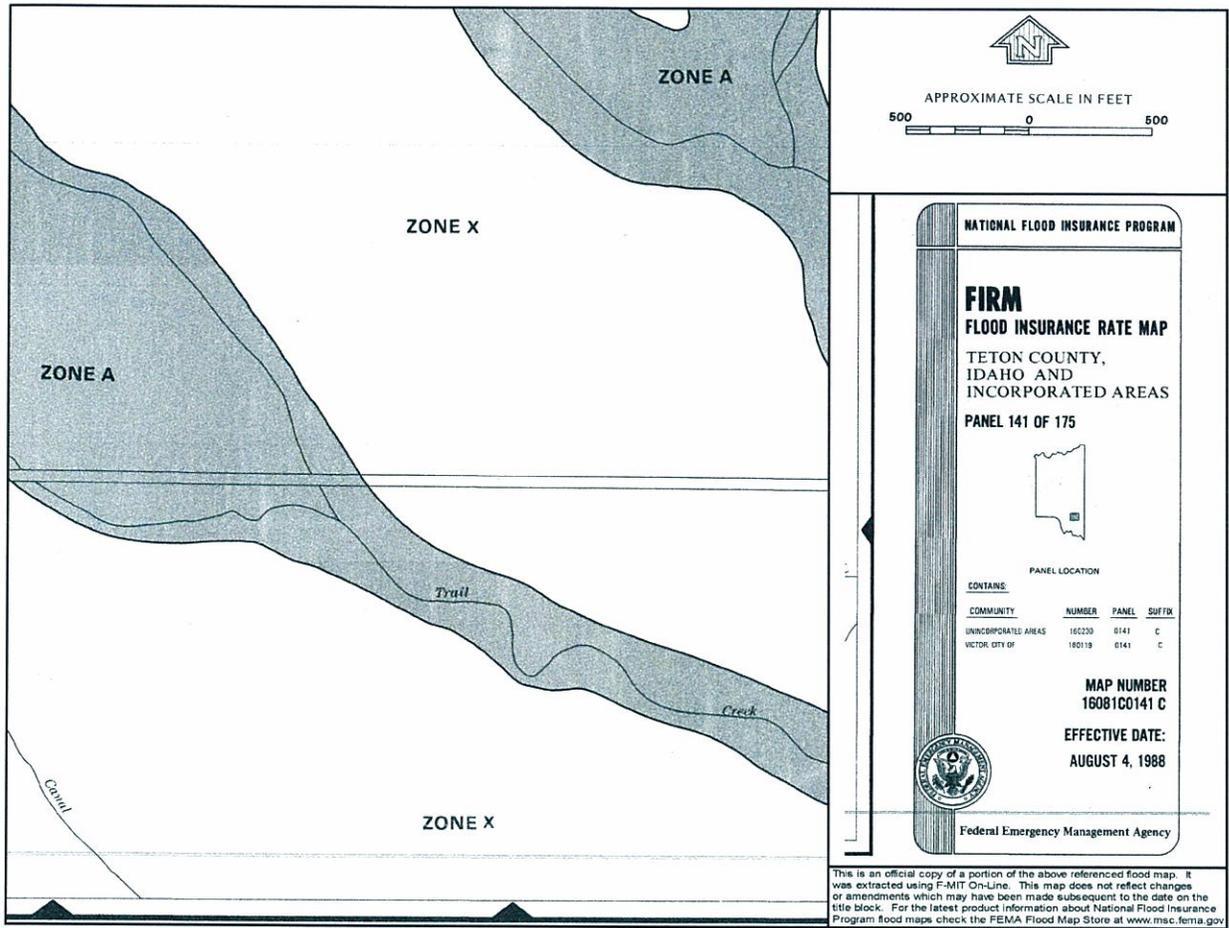
Flood hazard determination activities include producing additional, updated and modernized flood hazard maps based on current hydrological information and hydraulic studies for approximately 833 stream miles in Teton, Madison and Fremont Counties. These maps will meet guidelines put forth by the Federal Emergency Management Agency (FEMA) and will be submitted for adoption by FEMA to be used for insurance rating purposes.

Enhanced watershed management and flood hazard mapping is critical to the economies of southeastern Idaho. These counties have experienced rapid growth rates ranging from 6 to 26% population increases between 2000 and 2007 (Figure 2) and yet, these counties are using flood risk maps that are over 20 years old. Adopting updated and modernized flood risk maps coupled with proven watershed management activities can reduce risk exposure and losses from flooding exacerbated by rapid population growth. This project will result in safer development and future savings to tax payers due to avoided flood losses. Watershed management based on up-to-date information can result in better environmental protection.

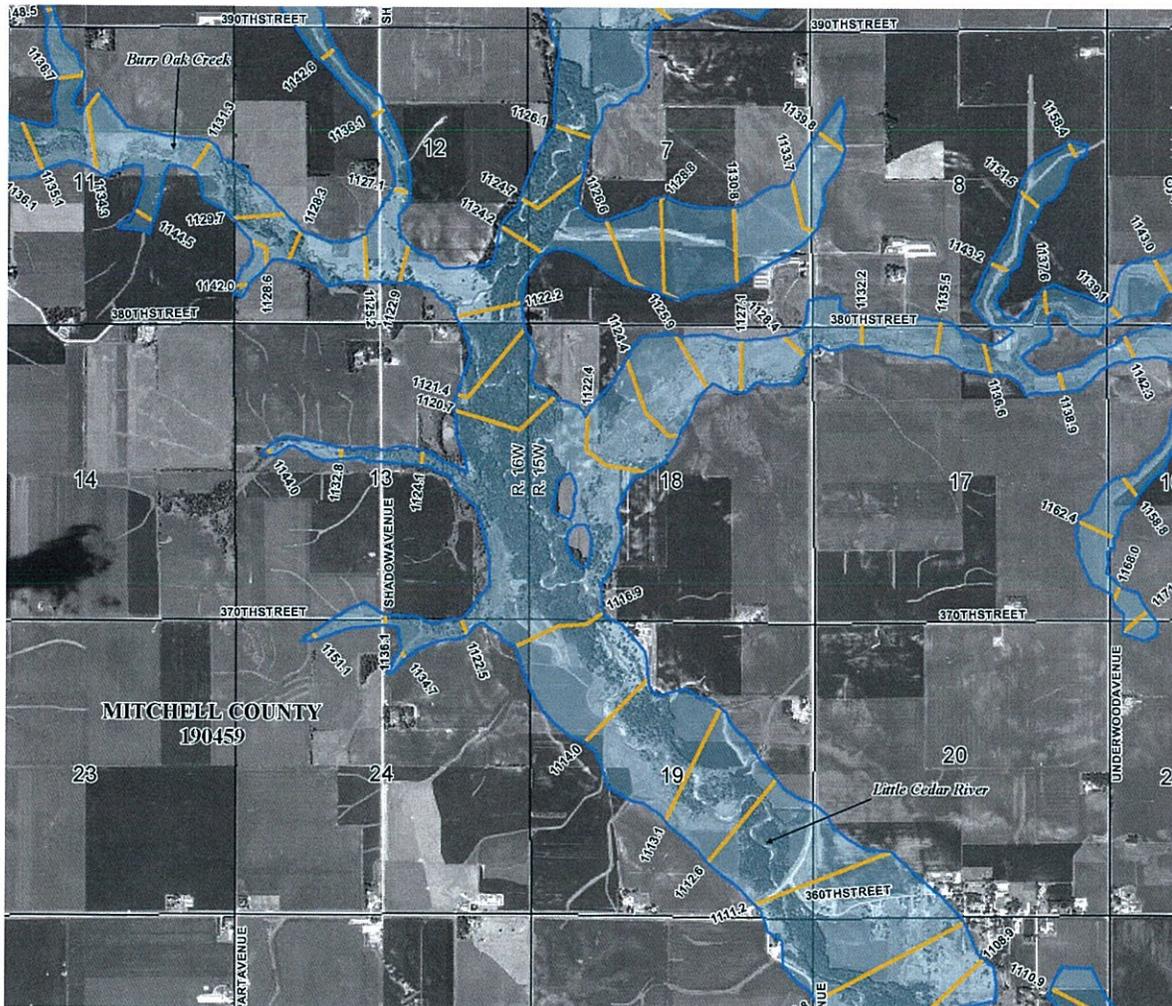


**Figure 2 – Idaho Population Growth Map**

An example of the 1988 Flood Insurance Rate Map (FIRM) is shown in Figure 3. The current effective FIRM lacks important details, is difficult to use and modify, and it does not reflect recent land development activities. Modernized and more accurate FIRMs in digital format can be easily updated when new information is available, and they will be great planning resources to help guide land development, which is crucial to the economic growth of these counties.



**Figure 3 – Current Flood Insurance Rate Map (1988)**



**Figure 4 – Example of Digital Flood Map (Mitchell County, Iowa, 2008)**

The condition of the nation’s levees has taken on utmost importance since the devastation caused by levee breaks after Hurricane Katrina passed over New Orleans. An inventory of the location and preliminary assessment of the condition of all levees in the four counties will allow managers to better understand the risks of those levees to human welfare. The preliminary levee assessment will also make it possible to target levees that would qualify for the next step of certification for protection from the 1-percent annual chance flood (formerly known as the 100-year flood). The National Committee on Levee Safety (<http://www.iwr.usace.army.mil/ncls/>) is proposing formation of a national levee safety program analogous to the national dam safety program. Levee inventory is one of the first steps. The information assembled in this project could provide information for a national levee database.

This project has multilevel support from State, County, and private organizations. Supporters include Idaho Department of Water Resources (IDWR), Teton County,

Madison County, Jefferson County and Fremont County. Both public and private entities will benefit from this project. Benefits in addition to protecting lives and property are economic (jobs, flood risk reduction, streamlined insurance programs), institutional (better management, effective planning, increased cross-organization communication), and environmental (protection of natural and beneficial functions of streams and other watershed management approaches based on current information).

### **Scope of Work**

Work on the project can commence immediately after funds are available and will quickly provide an economic boost to the local economies.

The scope of work for the flood hazard mapping portion of the project includes collecting detailed aerial survey with Light Detecting and Ranging (LiDAR) technology. LiDAR data is captured with specialized equipment on low elevation aircraft flights. LiDAR technology is one of the most accurate and cost-effective ways to capture wide-area elevation information to produce highly detailed Digital Elevation Models (DEMs). LiDAR is combined with Geographic Information System (GIS) data and other surveying information to generate complex geomorphic-structure mapping products, advanced three dimensional modeling/earthworks and many more high quality mapping products.

The LiDAR data will provide data for performing hydrologic analyses for the watersheds, performing hydraulic analyses for the streams, and completing flood hazard mapping for Teton, Madison and Fremont Counties. Digital Flood Maps, which use updated aerial photos as a base, and a Flood Insurance Study will be produced. Internal and external technical reviews will be completed to insure a high quality end product that is necessary for cities and counties to better manage flood risk and so that the maps will be accepted by FEMA as official Digital Flood Information Rate Maps (DFIRMs).

The levee inventory and preliminary assessment includes identifying levees within the four participating counties according to standards accepted by the U.S. Army Corps of Engineers. While no floodplain mapping is proposed for Jefferson County, understanding the hydrology and hydraulics of the rivers associated with the Jefferson County levee will allow managers to assess the functionality and effectiveness of the levee for certification.

Staff from the Floodplain Unit at IDWR will serve as project manager. IDWR is a Cooperating Technical Partner (CTP) with FEMA. The CTP agreement recognizes IDWR as a partner in flood hazard identification activities. The project manager's role would be to oversee the overall project which is expected to take 12 to 18 months. A community outreach component will inform the public, developers and community officials of low-impact development techniques, which have fewer impacts on watersheds and about no adverse impact floodplain management philosophies. The project manager, in partnership with other project participants, will hold public meetings, distribute public information and create a website devoted to the project. IDWR will provide technical assistance in acquiring spatial data, coordinating with FEMA on mapping standards and helping the communities through the map adoption process, which is mandated by federal regulations.

### **Employment & Jobs**

Private businesses that have been hardest hit by the recent recession include engineering and construction companies that have been dependent on the housing market. This project will immediately save approximately 19 jobs in the private sector including the hydrologists, engineers, GIS specialists, surveyors and field technicians that will be working on the project and support a portion of an existing position at IDWR. There are fully qualified consultants and engineers in Idaho who have the skills and expertise to complete this project so that all of the jobs to be saved will be local to Idaho. These private sector companies are small businesses and/or woman owned small businesses, priority targets for the American Recovery and Reinvestment Act.

### **Funds Required**

This project can be funded under Division A, Title I of the American Recovery and Reinvestment Act of 2009, Agriculture, Rural Development, Food and Drug Administration and Related Agencies – Natural Resources Conservation Service – Watershed and Flood Prevention Operations.

Once the project is completed, no additional funding will be required. If funding sources end prior to the completion of the projects, work can be stopped until additional funding is secured. The estimated project cost is \$1,697,969 and the breakdown is shown in Table 1.

**Table 1 – Project Budget**

| <b>Item</b>  | <b>qty</b> | <b>unit</b> | <b>cost/unit</b> | <b>Total</b>      |
|--|------------|-------------|------------------|-------------------|
| Project Coordinator                                  | 1          | each        | \$ 40,000        | \$ 40,000         |
| Levee Inventory & Analysis                           | 1          | each        | \$ 50,000        | \$ 50,000         |
| Education & Outreach Activities                      |            |             |                  |                   |
| <i>Web Site</i>                                      | 1          | each        | \$ 10,000        | \$ 10,000         |
| <i>Informational Mailings</i>                        | 3          | each        | \$ 4,000         | \$ 12,000         |
| <i>Community Meetings</i>                            | 9          | each        | \$ 2,000         | \$ 18,000         |
| <b>Subtotal Watershed Management Activities</b>      |            |             |                  | <b>\$ 130,000</b> |
| Jefferson County Hydrology & Hydraulics (H&H)        | 27         | stream mi   | \$ 5,000         | \$ 135,000        |
| <b>Subtotal Jefferson County</b>                     |            |             |                  | <b>\$ 135,000</b> |
| Madison County LiDAR                                 | 408        | sq mi       | \$ 205           | \$ 83,640         |
| Madison County Floodplain Mapping                    |            |             |                  |                   |
| <i>H&amp;H&amp; Mapping with detailed study (1D)</i> | 49         | stream mi   | \$ 5,000         | \$ 245,000        |
| <i>H&amp;H&amp; Mapping with detailed study (2D)</i> | 20.5       | stream mi   | \$ 8,000         | \$ 164,000        |
| <i>H&amp;H&amp;Mapping with approximate study</i>    | 10.3       | stream mi   | \$ 200           | \$ 2,060          |
| <i>Final Flood Mapping QA/QC</i>                     | 79.8       | stream mi   | \$ 40            | \$ 3,192          |
| <i>Work Maps &amp; deliverable files</i>             | 10         | panel       | \$ 300           | \$ 3,000          |
| <i>DFIRM Map Panel production</i>                    | 10         | panel       | \$ 1,200         | \$ 12,000         |
| <i>Flood Insurance Study production</i>              | 1          | each        | \$ 8,000         | \$ 8,000          |
| <b>Subtotal Madison County</b>                       |            |             |                  | <b>\$ 520,892</b> |
| Teton County LiDAR                                   | 313        | sq mi       | \$ 205           | \$ 64,165         |
| Teton County Floodplain Mapping                      |            |             |                  |                   |
| <i>H&amp;H&amp; Mapping with detailed study</i>      | 38.7       | stream mi   | \$ 5,000         | \$ 193,500        |
| <i>H&amp;H&amp;Mapping with approximate study</i>    | 232.5      | stream mi   | \$ 200           | \$ 46,500         |
| <i>Final Flood Mapping QA/QC</i>                     | 271.2      | stream mi   | \$ 40            | \$ 10,848         |
| <i>Work Maps &amp; deliverable files</i>             | 12         | panel       | \$ 300           | \$ 3,600          |
| <i>DFIRM Map Panel production</i>                    | 12         | panel       | \$ 1,200         | \$ 14,400         |
| <i>Flood Insurance Study production</i>              | 1          | each        | \$ 8,000         | \$ 8,000          |
| <b>Subtotal Teton County</b>                         |            |             |                  | <b>\$ 341,013</b> |
| Fremont County LiDAR                                 | 1092       | sq mi       | \$ 205           | \$ 223,860        |
| Fremont County Floodplain Mapping                    |            |             |                  |                   |
| <i>H&amp;H&amp; Mapping with detailed study</i>      | 40         | stream mi   | \$ 5,000         | \$ 200,000        |
| <i>H&amp;H&amp;Mapping with approximate study</i>    | 442.1      | stream mi   | \$ 200           | \$ 88,420         |
| <i>Final Flood Mapping QA/QC</i>                     | 482.1      | stream mi   | \$ 40            | \$ 19,284         |
| <i>Work Maps &amp; deliverable files</i>             | 21         | panel       | \$ 300           | \$ 6,300          |
| <i>DFIRM Map Panel production</i>                    | 21         | panel       | \$ 1,200         | \$ 25,200         |
| <i>Flood Insurance Study production</i>              | 1          | each        | \$ 8,000         | \$ 8,000          |
| <b>Subtotal Fremont County</b>                       |            |             |                  | <b>\$ 571,064</b> |
| <b>Total Project Investment</b>                      |            |             | <b>\$</b>        | <b>1,697,969</b>  |