

Entire Application View

Subgrant Project Application

Application Title: Whitefish Stage Landslide Mitigation
Subgrant Applicant: Flathead County Office of Emergency Services
Application Number: MT-2012-056
Application Year: 2012
Grant Type: Project Application
Address: 625 Timberwolf Parkway, Kalispell, MT 59901-2622

Subapplicant Information

Name of Subapplicant	Flathead County Office of Emergency Services
State	MT
Type of Subapplicant	Local Government

Legal status, function, and facilities owned:

State Tax Number:

Federal Tax Number:

Other type name:

Federal Employer Identification (EIN)	81-6001361
What is your DUNS Number?	000895093 -
Is Subapplication subject to review by Executive Order 12372 Process?	No. Program is not covered by E.O. 12372
Is the Subapplicant delinquent on any Federal debt?	No
Explanation:	

Contact
Authorized Subgrant Agent

Title Ms.
First Name Cindy
Middle Initial
Last Name Mullaney
Title
Agency/Organization Flathead County Office of Emergency Services
Address 1 625 Timberwolf Parkway
Address 2
City Kalispell
State MT
ZIP 59901 - 2622
Phone 406-758-5504 Ext.
Fax
Email cindy.mullaney@flatheadoes.mt.gov

Point of Contact

Title Mr.
First Name Matt
Middle Initial
Last Name Springer
Title
Agency/Organization Matt Springer
Address 1 2687 KM Ranch Rd.
Address 2
City Whitefish
State MT
ZIP 59937 - 8574
Phone 406-756-3939 Ext.
Fax
Email mspringer@fvcc.edu

Community Information

Please provide the name of each community that will benefit from this mitigation activity by clicking on the Find Community button. You shall modify Congressional District for each community by directly editing the textbox(es) provided. You should also notify your state NFIP coordinator so that it can be updated in the Community Information System database. When you are finished, click the *Save and Continue* button below.

State	County Code	Community Name	CID Number	CRS Community	CRS Rating	State Legislative District	US Congressional District
MT	300025_QBM0Z0GNF	KALISPELL, CITY OF	300025	N		300025	1

Comments

Located in Northwest Montana, Flathead County encompasses 3,262,720 acres or 5,098 square miles. Approximately 94% of the land mass is National or State Forest Land, Wilderness, Agricultural, and Corporate Timber Land, thus confining development to the remaining 6% of the area. A short distance from any developed area is Glacier National Park, designated hiking areas, 2 ski resorts, 8 golf courses, Flathead Lake, and Hungry Horse Reservoir. With the abundance of recreational opportunities and aesthetic values, it is not hard to see why Flathead County is the among the fastest growing, and the 3rd most populated county in Montana. There are 3 incorporated cities in the County. Kalispell, which is the largest, has a population of approximately 19,927. Two additional major municipalities include Whitefish, with a population of 6,357, and Columbia Falls, with a population of 4,688. There are also several small full service communities in Flathead County, which have been designated as Census Designated Places, which will also have population and housing info. Countywide, the population has increased from 74,471 in 2000, to an estimated 90,928 in 2010, according to the U.S. Census Bureau. This represents a 22.1% increase in 10 years. Native residents are now greatly outnumbered by new residents. A large percentage of new residents are retirees and middle aged professionals. Attraction development has greatly increased in recent years contributing to the influx of tourists and tourism based services, and moving the economic base towards Recreation and Tourism, and creating new jobs in the service industry. Flathead County's population increases by 40%, during the months of June through August.

Attachments

State	MT	
Community Name	KALISPELL, CITY OF	
County Name	MONTANA	
County Code	FLATHEAD COUNTY	
City Code	300025	
FIPS Code	029	Help
CID Number	300025	Help
CRS Community	N	
CRS Rating		
State Legislative District	300025	
US Congressional District	1	
FIRM or FHBM available?	Yes	
Community Status	PARTICIPATING	Help
Community participates in NFIP ?	Yes	
Date entered in NFIP	07-27-1976	
Date of most recent Community Assistance Visit (CAV) ?	04-18-2012	Help

Mitigation Plan

Is the entity that will benefit from the proposed activity covered by a current FEMA-approved multi-hazard mitigation plan in compliance with 44 CFR Part 201? Yes

If Yes, please answer the following:

What is the name of the plan?

Flathead County MJHM

What is the type of plan?

Local MultiJurisdictional Multihazard Mitigation Plan

When was the current multihazard mitigation plan approved by FEMA?

11-16-2010

Describe how the proposed activity relates to or is consistent with the FEMA-approved mitigation plan.

Local mitigation strategies are a critically important component of effective implementation of the Montana state-wide grant. The proposed mitigation is the primary mitigation proposed by the applicant in 2011.

If No or Not Known, please answer the following:

Does the entity have any other mitigation plans adopted?

No

If Yes, please provide the following information.

Plan Name	Plan Type	Date Adopted	Attachment
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Does the State/Tribe in which the entity is located have a current FEMA-approved mitigation plan in compliance with 44 CFR Part 201? Yes

If Yes, please answer the following:

What is the name of the plan?

State of Montana Multi-Hazard Mitigation Plan

What is the type of plan?

Standard Tribal Multi-hazard Mitigation Plan

When was the current multihazard mitigation plan approved by FEMA?

11-04-2010

Describe how the proposed activity relates to or is consistent with the State/Tribe's FEMA-approved mitigation plan.

Local mitigation strategies are a critically important component of effective implementation of the Montana state-wide grant. The proposed mitigation is the primary mitigation proposed by the applicant in 2011.

If you would like to make any comments, please enter them below.

To attach documents, click the *Attachments* button below.

Scope of Work (Page 1 of 3)

Title of your proposed activity (should include the type of activity and location):

Whitefish Stage Landslide Mitigation

Hazard(s) Identified to be mitigated:

Mud/Landslide

Proposed types of Mitigation Activity(ies):

Activity Code	Activity Name
106.2	Other Non Construction

If Other or Miscellaneous selected above, please specify:

Landslide due to increased groundwater

Provide a clear and detailed description of your proposed activity:

In Flathead County, there is a large silt and clay bluff, nestled between the Stillwater and Whitefish Rivers, which sits 100 feet above the valley floor. In recent years, significant erosion events, coinciding with increased groundwater levels and the flooding of the Stillwater River, have led to massive failure and sloughing of the bluff along Whitefish Stage Road in Kalispell, Montana. If unabated the annual erosion rate of the slope will catalyze catastrophic failure of six residences over the next three to eight years. Further, landslide activity has led to substantial sedimentation of the six acre stormwater management pond that sits directly underneath the area of slope failure. Reduced capacity of this pond has significant ramifications for continuing effective abatement of stormwater in the area. Since 2006, periodic monitoring of the slope indicates the slumps are increasing in size. In addition, perched groundwater seepage in this area has significantly increased and is flowing out of the hillside. The increased flows have significantly increased erosion rates in the last couple of years, specifically in 2011. An additional slump failure occurred to the north of the original failure in 2009 and has increased in size and propagation rate in the last year, likely due to the increased spring activity. The failures are rapidly incorporating more and more of the slope and if a significant effort to install drainage and rebuild the slope in a safe engineered manner is not completed in the near future, the slump failures will propagate back to existing residential structures. Tax appraisals put the collective value of the loss of those properties and residences at \$1,466,717. While the potential losses are significant, effective mitigation of the landslide area, is straightforward and comparatively inexpensive. It is anticipated that the proposed mitigation efforts would abate any measurable annual erosion on the project site. While minor cosmetic maintenance might be required to encourage propagation of surface vegetation, no major ongoing maintenance is expected to be necessary. The project has the following five goals: (1) construct safe slopes to significantly increase integrity of the slope; (2) provide adequate drainage to reduce the risk of flowing water removing additional soil; (3) restore the pond's capacity and ability to manage storm water runoff; (4) repair stormwater pipes that were damaged during the significant erosion and slumping events; (5) reduce additional sources of water. The cumulative impact of slope mitigation of the slope is expected to stop measurable erosion on the project site for the 30 year lifespan expected duration of the project. Subsurface and surface drainage will be added during slope reconstruction to abate further slope erosion. Channeling the seep and spring flow will assist with dewatering the sensitive slope area and will allow the pond to function. The project will also repair existing storm water pipes damaged during erosion and slumping events. As a part of this project, recommendations for irrigation rates for the properties near the crest of the slope will be provided to assist with reducing unneeded water flows that could increase the seep and spring activity on the slope.

Is there construction in this project?

N

Provide a detailed description of the proposed project's location (e.g. municipality, street address, major intersecting streets and other important landmarks). Supporting documentation such as maps that clearly identify the location and critical features to the project such as topography, waterways, adjacent community boundaries, etc., should be attached:

The project is located on the edge of the jurisdictions of the City of Kalispell and Flathead County, east of Whitefish Stage Road and west of the Village Greens golf course, in between the Stillwater and Whitefish Rivers. Please see the attached maps for more detail on the project location. Properties impacted by mitigation: 1461 Whitefish Stage Road, Kalispell, MT – land/property 1377 Whitefish Stage Road, Kalispell, MT – private residence 1373 Whitefish Stage Road, Kalispell, MT – private residence 123 Granary Ridge Drive, Kalispell, MT – private residence 121 Granary Ridge Drive, Kalispell, MT – private residence 119 Granary Ridge Drive, Kalispell, MT – private residence 117 Granary Ridge Drive, Kalispell, MT – private residence 195 West Nicklaus Avenue, Kalispell, MT – homeowners association

Scope of Work (Page 2 of 3)

Latitude:

48.23

Longitude:

-114.3006

Describe the need for this activity. Why should this mitigation activity be completed?

In Flathead County, there is a large silt and clay bluff, nestled between the Stillwater and Whitefish Rivers, which sits 100 feet above the valley floor. In recent years, significant erosion events, coinciding with increased groundwater levels and the flooding of the Stillwater River, have led to massive failure and sloughing of the bluff along Whitefish Stage Road in Kalispell, Montana. If unabated the annual erosion rate of the slope will catalyze catastrophic failure of six residences over the next three to eight years. Tax appraisals put the collective value of the loss of those properties and residences at \$1,466,717. Further, landslide activity has led to substantial sedimentation of the six acre stormwater management pond that sits directly underneath the area of slope failure. Reduced capacity of this pond has significant ramifications for continuing effective abatement of stormwater in the area. While more challenging to quantify, the reduced capacity of the stormwater management pond also presents a significant potential hazard. While the potential losses are significant, effective mitigation of the landslide area, is straightforward and comparatively inexpensive. The cumulative impact of slope mitigation is the cessation of measurable erosion on the project site for the 30 year lifespan expected duration of the project.

Who will the mitigation activity benefit and/or impact?

It is anticipated that all impacted property owners, including the 400 plus residents of the Village Greens development, will benefit directly from this project. It is also anticipated that project mitigation activities will benefit the applicant and the City of Kalispell by mitigating imminent disasters associated with the properties at risk, both in terms of short-term costs (emergency response) but also long-term benefits associated with catastrophic cleanup of damaged properties, infrastructure and hydraulic containment. Specific properties targeted by mitigation: 1461 Whitefish Stage Road, Kalispell, MT – land/property 1377 Whitefish Stage Road, Kalispell, MT – private residence 1373 Whitefish Stage Road, Kalispell, MT – private residence 123 Granary Ridge Drive, Kalispell, MT – private residence 121 Granary Ridge Drive, Kalispell, MT – private residence 119 Granary Ridge Drive, Kalispell, MT – private residence 117 Granary Ridge Drive, Kalispell, MT – private residence 195 West Nicklaus Avenue, Kalispell, MT – homeowners association

How will the mitigation activity be implemented?

The project will achieve the following five goals, effectively addressing both immediate dangers and root causes of the damage: (1) construct safe slopes to significantly reduce the risk of future large precipitation and runoff events adversely affecting the stability of the slope or residential properties; (2) install adequate subsurface and surface drainage channels for seeps and springs to reduce the risk of flowing water removing soil from the intact slope and/or eroding the silt soils and depositing them into the stormwater detention pond; (3) restore the stormwater pond's capacity and ability to manage storm water runoff; (4) repair stormwater pipes that were damaged during the significant erosion and slumping events; (5) reduce of additional sources of water into the area as possible. Subsurface and surface drainage will be added during slope reconstruction to abate further slope erosion. Channeling the seep and spring flow will assist with dewatering the sensitive slope area and will allow the pond to function as intended with less risk of sediments being deposited that will affect the pond's capacity. The project will also repair existing storm water pipes damaged during erosion and slumping events. Repair of the pipes will reduce the risk of water flow from the pipes affecting the stability of the slope and transporting sediment to the detention pond. As a part of this project, recommendations for irrigation rates for the properties near the crest of the slope will be provided to assist with reducing unneeded water flows that could increase the seep and spring activity on the slope. The three septic tanks and drain fields closest to the slope failures; albeit on the front side of the houses, more than 200 feet from the significantly eroded and slumped areas will also be abandoned and the residences will be connected to the city sanitary sewer. Connecting these residences to sanitary sewer will reduce the risk of increased water flow affecting the seeps and springs in the slope area, and reduce the risk of effluent reaching the planned subsurface drainage that will outlet into the detention pond. Most importantly, the activity will collectively address the presently predictable threat to loss of property and life in the project area

Describe how the project is technically feasible and will be effective in reducing the risk by reducing or eliminating damage to property and/or loss of life in the project area. Please include engineering design parameters and references to the following: preliminary schematic or engineering drawings/design; applicable building codes; engineering practices and/or best practices; level of protection (e.g., life safety, 100-yr floor protection with freeboard, 100-yr wind design, etc.):

The project will be implemented by using a local Civil Engineering company to manage the project. Project plans and specifications have been developed by the Civil Engineer in conjunction with the Geotechnical Engineer (CMG Engineering, Inc.) for the project. The project will be bid on by contractors capable of completing the work. The Civil Engineer will evaluate the bids based on required selection criteria and contracts will entered into. The project will be managed by the Civil Engineer to ascertain that the project plans and specifications are being followed and that a quality product is being produced. In addition, the Geotechnical Engineer will be heavily involved during construction to observe that the conditions encountered were as anticipated during the design phase, and that the earthwork is being constructed as anticipated. CMG Engineering, Inc. has been periodically observing and monitoring the project area since 2005. Observations indicate that significant seepage and springs have destabilized the slope and significant erosion and slumping has occurred. As erosion and slumps propagate uphill and sideways, destabilization of the area immediately above the failure limits occur. The failures continue to propagate until a relatively stable slope angle is reached. This will not occur until after the failures incorporate numerous structures near the crest of the slope. Knowing that subsurface and surface drainage needed to be controlled prior to reconstructing slopes and removing pond sediments, CMG evaluated options that included horizontal drains, dewatering wells, and a series of French and area drains in the vicinity of existing seeps and springs. Past experience indicates the French and area drains are very effective and least expensive in these types of situations. Retaining walls in addition to slope facings with soil nails were considered for this project; however, it was determined that reconstructing the slope was a viable and stable option. Past experience indicates reconstructing the slope will be a significantly more stable and less expensive option than the other methods described. CMG Engineering anticipates the cumulative actions included in this project will result in cessation of measurable erosion on the project site.

Who will manage and complete the mitigation activity?

The Flathead County Office Emergency Services will ultimately be responsible for monitoring and evaluating project activities and the timely completion of milestones. Flathead County is prepared to successfully carry out a project of this scope and cost. Flathead County OES will rely on CMG Engineering and its subcontractors to provide technical leadership to the project. Flathead County OES will rely on its Accounting Department to manage grant funds, process invoices, and track adherence to the project budget. The project will be implemented by using a local Civil Engineering company to manage the project. Project plans and specifications will be developed by the Civil Engineer in conjunction with the Geotechnical Engineer (CMG Engineering, Inc.) for the project. The project will be bid on by contractors capable of completing the work. The Civil Engineer will evaluate the bids based on required selection criteria and contracts will entered into. The project will be managed by the Civil Engineer to ascertain that the project plans and specifications are being followed and that a quality product is being produced. In addition, the Geotechnical Engineer will be heavily involved during construction to observe that the conditions encountered were as anticipated during the design phase, and that the earthwork is being constructed as anticipated.

Scope of Work (Page 3 of 3)

Will the project address the hazards identified and what risks will remain from all hazards after project implementation (residual risk)?

The proposed project is considered a comprehensive fix. It is expected that project activities would effectively mollify all measurable annual erosion. This is because the proposed project addresses both the immediate damage and the factors contributing to the erosion in the first place (irrigation, sewer infrastructure, and reparation of broken storm water drains). These estimates are consistent with established codes, local and state standards, and modeling techniques.

When will the mitigation activity take place?

It is anticipated that project activities, including reporting, will be accomplished within a 190 days to complete. The mitigation project itself would require roughly 80 days to complete and would begin, weather permitting, in the May after funding was made available. Project reporting and monitoring would be completed within 80 days of initiating slope stabilization activities. Please see attached work schedule for more specific details.

Why is this project the best alternative. What alternatives were considered to address the

Risk and why was the proposed activity considered the best alternative?

CMG Engineering, Inc. has been periodically observing and monitoring the project area since 2005. Observations indicate that significant seepage and springs have destabilized the slope and significant erosion and slumping has occurred. As erosion and slumps propagate uphill and sideways, destabilization of the area immediately above the failure limits occur. The failures continue to propagate until a relatively stable slope angle is reached. This will not occur until after the failures incorporate numerous structures near the crest of the slope, and significant reduction of the capacity of the stormwater pond below the bluff has been significantly reduced (This is the no action alternative). In CMG's professional opinion, based on experience with similar projects, the best and most cost effective method of reducing the risk of future slope failures is to construct subsurface and surface drainage in the vicinity of the seeps and springs, first. Following construction of the drainage, the Structural Fill for the slope will be constructed. The drainage and slope will be designed to provide adequate support to the hillside and enough drainage to significantly reduce the risk of future precipitation and run off events affecting the slope. In addition, repairing the storm water pipe that flows into the pond, evaluating irrigation habits in the nearby vicinity of the slope, and connecting the few residences that are currently on septic systems to the City's sanitary sewer will assist in minimizing the flow of water in the seeps and springs on the hillside. It should be noted that in our opinion, the majority of the water from the seeps and springs is from perched groundwater travelling over natural clay layers in the soil. The increased water flows have significantly destabilized the area and are a result of significant precipitation events and runoff that have occurred over the past few years. In addition, it should be noted that the flooding and increased flows within the Stillwater River last year, for an extended period of time, likely increased the perched groundwater flows that are contributing to the seep and spring activity on the slope. Knowing that subsurface and surface drainage needed to be controlled prior to reconstructing slopes and removing pond sediments, CMG evaluated options that included horizontal drains, dewatering wells, and a series of French and area drains in the vicinity of existing seeps and springs. Past experience indicates the French and area drains are typically the most effective and least expensive in these types of situations. Retaining walls in addition to slope facings with soil nails were considered for this project; however, it was determined that reconstructing the slope was a viable and stable option. Past experience indicates reconstructing the slope will be a significantly more stable and less expensive option than the other methods described. This project is the best alternative because it provides needed drainage and stability to the site and significantly increases the Factor of Safety against future events adversely affecting the repaired area. In addition, the project provides a safe slope to reduce the risk of future failure propagations reaching structures. This project will also reconstruct a safe slope in this area compared to the near vertical slope that is currently present. Reconstruction of the slope reduces the health safety concern associated with a near vertical slope. This project has been evaluated considering the most cost effective methods to provide a safe, long term solution to this persistent problem.

Please identify the entity that will perform any long-term maintenance and provide a maintenance schedule and cost information. The subapplicant or owner of the area to be mitigated is responsible for maintenance (including costs of long-term care) after the project is completed:

The project will result in an increased level of protection against future slope failures in the immediate vicinity of this project. As a result, the risk of continued slumping and erosion occurring in the project area and encroaching on the existing structures will be significantly reduced. In addition, the flow of seeps and springs in the vicinity of the project will be controlled to flow into the storm water detention pond without transporting sediment to the pond. Channeling the seep and spring flow will assist with dewatering the sensitive slope area and will allow the pond to function as intended with less risk of sediments being deposited that will affect the pond's capacity. The project will also repair existing storm water pipes damaged during erosion and slumping events. Repair of the pipes will reduce the risk of water flow from the pipes affecting the stability of the slope and transporting sediment to the detention pond. As a part of this project, recommendations for irrigation rates for the properties near the crest of the slope will be provided to assist with reducing unneeded water flows that could increase the seep and spring activity on the slope. The three septic tanks and drain fields closest to the slope failures; albeit on the front side of the houses, more than 200 ft from the significantly eroded and slumped areas will also be abandoned and the residences will be connected to the city sanitary sewer. Connecting these residences to sanitary sewer will reduce the risk of increased water flow affecting the seeps and springs in the slope area, and reduce the risk of effluent reaching the planned subsurface drainage that will outlet into the detention pond. It is anticipated that these collective activities will effectively eliminate measurable annual erosion of the project site. Impacted landowner's are aware that ongoing maintenance is their responsibility and have committed to these maintenance activities. Cosmetic maintenance costs (ongoing re-vegetation of the area) were also included in the project BCA).

If you would like to make any comments, please enter them below:

Please know that the project work schedule and project cost estimate were prepared by CMG engineers. The project cost estimate was compiled by Josh Smith, P.E., Engineer, and is based on industry cost estimating guides. Josh is a Montana registered professional engineer and provided the attached cost estimate letter. It is important to note that Flathead County understands that all benefit cost ratio (BCA) data entries (other than FEMA standard or default values) MUST be documented in the project description or project scope of work that accompanies this grant application. To that end, if Flathead County has been negligent in providing BCA data entries in this scope of work section please know that all BCA data entries are thoroughly described and presented in the cost effectiveness information section.

Attachments:

[one24000 \(2\).pdf](#)
[Pond View.jpg](#)
[North Slippage.JPG](#)
[CMG Erosion Rate Letter \(2\).pdf](#)
[one2500 \(2\).pdf](#)
[Project Location Maps.pdf](#)
[Work Schedule.pdf](#)
[Slope Crack.JPG](#)
[Wet Slough.JPG](#)

Description Of Task	Starting Point	Unit Of Time	Schedule		Work Complete By
			Duration	Unit Of Time	
Receive FEMA grant award	1	DAYS	1	DAYS	FEMA State Award to Flathead County
Coordinate all sources of funding and in-kind matches	2	DAYS	30	DAYS	Committed property owners
Engage in contract for final design, engineering, and construction management services with CMG Engineering, Inc., and Civil Engineer	10	DAYS	10	DAYS	Flathead County
Site survey	20	DAYS	10	DAYS	Sands Survey and CMG Engineering
Final Geotechnical investigation with Analysis and Recommendations	30	DAYS	21	DAYS	CMG Engineering
Slope Mitigation, Drainage, and Pond Sediment Removal Design	40	DAYS	30	DAYS	Civil Engineering and CMG Engineering
Sanitary Sewer hookup design	40	DAYS	10	DAYS	Civil Engineering and CMG Engineering
Stormwater Best Management Practices design	40	DAYS	10	DAYS	Civil Engineering and CMG Engineering
Design refinement	70	DAYS	10	DAYS	Civil Engineering and CMG Engineering
Bid Project	80	DAYS	30	DAYS	Civil Engineering and CMG Engineering
Engage in Contract with Contractor	110	DAYS	10	DAYS	Civil Engineering, CMG Engineering and Flathead County
Construct Drainage and Fill to Reconstruct Slope	120	DAYS	60	DAYS	Contractor
Repair Storm Water Pipe	180	DAYS	5	DAYS	City of Kalispell and Contractor
Remove Pond Sediment and Repair Gravel Access Road	180	DAYS	10	DAYS	Contractor
Construct and Hook 3 Residences to Sanitary Sewer	120	DAYS	30	DAYS	Contractor and City of Kalispell
Vegetate Areas Disturbed During Construction	190	DAYS	5	DAYS	Contractor
Construction Monitoring, Observation and Reporting	120	DAYS	75	DAYS	Civil Engineering and CMG Engineering
End Reporting	195	DAYS	10	DAYS	Civil Engineering and CMG Engineering
State close out of project/ final inspection	205	DAYS	90	DAYS	State Hazard Mitigation Officer
Estimate the total duration of the proposed activity:			295	DAYS	

106.2 - Other Non Construction

Federal Share: \$ 298,000.00

Item Name	Subgrant Budget Class	Unit Quantity	Unit of Measure	Unit Cost (\$)	Cost Estimate (\$)
Site survey	Contractual	1.00	Each	\$ 9,000.00	\$ 9,000.00
Geotechnical Analysis and Preaward Investigation	Contractual	1.00	Each	\$ 8,000.00	\$ 8,000.00
Final Geotechnical Investigation with Analysis and	Contractual	1.00	Each	\$ 8,000.00	\$ 8,000.00
Slope Mitigation, Drainage, and Pond Sediment Remo	Contractual	1.00	Each	\$ 12,000.00	\$ 12,000.00
Sanitary Sewer hookup design	Contractual	1.00	Each	\$ 6,000.00	\$ 6,000.00
Construction Documents	Contractual	1.00	Each	\$ 6,000.00	\$ 6,000.00
Contract Monitoring, Submittal and Review	Contractual	1.00	Each	\$ 5,000.00	\$ 5,000.00
Construct Drainage and Fill to Reconstruct Slope	Contractual	1.00	Each	\$ 221,000.00	\$ 221,000.00
Remove Pond Sediment and Repair Gravel Access Road	Contractual	1.00	Each	\$ 30,000.00	\$ 30,000.00
Construct and Connect 3 Residences to Sanitary Sew	Contractual	1.00	Each	\$ 40,000.00	\$ 40,000.00
Vegetate Areas Disturbed During Construction	Contractual	1.00	Each	\$ 25,000.00	\$ 25,000.00
Construction Monitoring, Observation and Reporting	Contractual	1.00	Each	\$ 20,000.00	\$ 20,000.00
End Reporting and Project Closeout	Contractual	1.00	Each	\$ 4,000.00	\$ 4,000.00
Pre-award Grant Preparation	Contractual	1.00	Each	\$ 6,000.00	\$ 6,000.00
				Total Cost	\$ 400,000.00

Total Project Cost Estimate: \$ 400,000.00

	Cost Share		
Activity Cost Estimate		\$ 400,000.00	
Federal Share Percentage		74.5%	
Non-Federal Share Percentage		25.5%	
		Dollars	Percentage
Proposed Federal Share		\$ 298,000.00	74.5%
Proposed Non-Federal Share		\$ 102,000.00	25.5%

Non-Federal Funds

Source Agency	Name of Source Agency	Funding Type	Amount (\$)	Action
Local Agency Funding	Flathead County OES Special Projects Fund	Cash	\$ 75,000.00	View Details
Local Agency Funding	Susan Storpha, Holly Hand	Supplies	\$ 12,600.00	View Details
Local Agency Funding	CMG Engineering	Engineering Fees	\$ 8,400.00	View Details
Local Agency Funding	Matt Springer	Consulting Fees	\$ 6,000.00	View Details
Grand Total			\$ 102,000.00	

If you would like to make any comments, please enter them below.

Attachments

Funding Source: Local Agency Funding
 Name of Funding Source: Flathead County OES Special Projects Fund
 Funding Type: Cash
 Amount: \$ 75,000.00
 Date of availability:
 Funds commitment letter date: 03-30-2012
 Attachment (funds commitment letter): [Property Owner Matching Funds.pdf](#)

Funding Source: Local Agency Funding
 Name of Funding Source: Susan Storpha, Holly Hand
 Funding Type: Supplies
 Amount: \$ 12,600.00
 Date of availability:
 Funds commitment letter date: 03-27-2012
 Attachment (funds commitment letter): [Cash in lieu of soil.pdf](#)
[In-kind soil contributions \(2\).pdf](#)

Funding Source: Local Agency Funding
 Name of Funding Source: CMG Engineering
 Funding Type: Engineering Fees
 Amount: \$ 8,400.00
 Date of availability:
 Funds commitment letter date: 03-27-2012
 Attachment (funds commitment letter): [CMG In-Kind Contribution \(2\).pdf](#)

Funding Source: Local Agency Funding
 Name of Funding Source: Matt Springer
 Funding Type: Consulting Fees
 Amount: \$ 6,000.00
 Date of availability:
 Funds commitment letter date: 03-30-2012
 Attachment (funds commitment letter): [Invoice 1.pdf](#)

Cost Effectiveness

Attach the Benefit Cost Analysis (BCA), if completed for this project
[WF Landslide BCA Revised.pdf](#)

Net Present Value of Project Benefits (A)	\$ 4068705.0
Total Project Cost Estimate (B)	\$ 402450.0
What is the Benefit Cost Ratio for the entire project (A/B)?	10.11

If you would like to make any comments, please enter them below.

Attachments:

[Property Assessments - Whitefish Stage Mitigation.pdf](#)
[WFS Landslide.zip](#)

A. National Historic Preservation Act - Historic Buildings and Structures

- * 1. Does your project affect or is it in close proximity to any buildings or structures 50 years or more in age? No

If Yes, you must confirm that you have provided the following:

- The property address and original date of construction for each property affected (unless this information is already noted in the Properties section),
- A minimum of two color photographs showing at least three sides of each structure (Please label the photos accordingly),
- A diagram or USGS 1:24,000 scale quadrangle map displaying the relationship of the property(s) to the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Information gathered about potential historic properties in the project area, including any evidence indicating the age of the building or structure and presence of buildings or structures that are listed or eligible for listing on the National Register of Historic Places or within or near a National Register listed or eligible historic district. Sources for this information may include the State Historic Preservation Officer, and/or the Tribal Historic Preservation Officer (SHPO/THPO), your local planning office, historic preservation organization, or historical society.
- Consideration of how the project design will minimize adverse effects on known or potential historic buildings or structures, and any alternatives considered or implemented to avoid or minimize effects on historic buildings or structures. Please address and note associated costs in your project budget.
- For acquisition/demolition projects affecting historic buildings or structures, any data regarding the consideration and feasibility of elevation, relocation, or flood proofing as alternatives to demolition.
- Attached materials or additional comments.

Comments:

Attachments:

[MSHPO.pdf](#)

B. National Historic Preservation Act - Archeological Resources

- * 1. Does your project involve disturbance of ground? Yes

If Yes, you must confirm that you have provided the following:

- A description of the ground disturbance by giving the dimensions (area, volume, depth, etc.) and location
- The past use of the area to be disturbed, noting the extent of previously disturbed ground.
- A USGS 1:24,000 scale or other site map showing the location and extent of ground disturbance.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Any information about potential historic properties, including archeological sites, in the project area. Sources of this information may include SHPO/THPO, and/or the Tribe's cultural resources contact if no THPO is designated. Include, if possible, a map showing the relation of any identified historic properties to the project area.
- Attached materials or additional comments.

Comments:

Flathead County has submitted an environmental scoping letter to the Montana State Historic Preservation Office. The letter described the Whitefish Stage landslide mitigation project and solicited aspects of the project that have the potential to impact archeological resources protected by National Historic Preservation Act initiatives. To Flathead County's knowledge, the only past use of the project area has been agricultural and, more recently, residential.

Attachments:

[one24000 \(2\).pdf](#)
[MSHPO.pdf](#)

C. Endangered Species Act and Fish and Wildlife Coordination Act

- * 1. Are Federally listed threatened or endangered species or their critical habitat present in the area affected by the project? No

If Yes, you must confirm that you have provided the following:

- Information you obtained to identify species in or near the project area. Provide the source and date of the information cited.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Any request for information and associated response from the USFWS, the National Marine Fisheries Service (NMFS) (for affected ocean-going fish), or your State Wildlife Agency, regarding potential listed species present and potential of the project to impact those species.

Attached materials or additional comments.

Comments:

Flathead County has submitted an environmental scoping letter to the Montana State Fish Wildlife and Parks. The letter described the Whitefish Stage landslide mitigation project and solicited aspects of the project that have the potential impact to (1) potential listed species present and potential of the project to impact those species and (2) the potential for the project to affect any water body protected by Endangered Species Act and Fish and Wildlife Coordination Act initiatives. At this point there are no identified potential impacts.

* 2. Does your project remove or affect vegetation?

Yes

If Yes, you must confirm that you have provided the following:

- Description of the amount (area) and type of vegetation to be removed or affected.
- A site map showing the project area and the extent of vegetation affected.
- Photographs or digital images that show both the vegetation affected and the vegetation in context of its surroundings.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

Attached materials or additional comments.

Comments:

The erosion and slumps have already killed most of the vegetation in the immediate vicinity of the repair area; however, during construction of the drainage and slope repair, the limits of the affected area may need to be expanded to construct a stable and effective repair. Vegetation removal will be minimal and will only occur if deemed absolutely necessary. All areas of this project, including areas where vegetation has already been killed, will be revegetated as part of this project. The affected vegetation consists mostly of grasses, evergreen trees and deciduous underbrush.

* 3. Is your project in, near (within 200 feet), or likely to affect any type of waterway or body of water?

Yes

If Yes, and project is not within an existing building, you must confirm that you have provided the following:

- A USGS 1:24,000 scale quadrangle map showing the project activities in relation to all nearby water bodies (within 200 feet).
- Any information about the type of water body nearby including: its dimensions, the proximity of the project activity to the water body, and the expected and possible changes to the water body, if any. Identify all water bodies regardless whether you think there may be an effect
- A photograph or digital image of the site showing both the body of water and the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Evidence of any discussions with the US Fish and Wildlife Service (USFWS), and/or your State Wildlife Agency concerning any potential impacts if there is the potential for the project to affect any water body.
- Attached materials or additional comments.

Comments:

At the time of submitting this grant application, Flathead County can provide a project area map and digital images of the project area. Flathead County can report that as a result of the project, water quality will be improved due to the reduced sediment load that will be introduced to the stormwater management pond following the restoration activities due to natural attenuation. Flathead County has submitted environmental scoping letters to United States Fish and Wildlife Service and Montana Fish, Wildlife & Parks. The letters described the Whitefish Stage landslide mitigation project and solicited aspects of the project that could potentially affect any water body protected by Endangered Species Act and Fish and Wildlife Coordination Act initiatives.

Attachments:

[MTFWP Response.pdf](#)

D. Clean Water Act, Rivers and Harbors Act, and Executive Order 11990 (Protection of Wetlands)

* 1. Will the project involve dredging or disposal of dredged material, excavation, adding fill material or result in any modification to water bodies or wetlands designated as "waters of the U.S." as identified by the US Army Corps of Engineers or on the National Wetland Inventory? No

If Yes, you must confirm that you have provided the following:

- Documentation of the project location on a USGS 1:24,000 scale topographic map or image and a copy of a National Wetlands Inventory map or other available wetlands mapping information.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Request for information and response letter from the US Army Corps of Engineers and/or State resource agencies regarding the potential for wetlands, and applicability of permitting requirements.
- Evidence of alternatives considered to eliminate or minimize impacts to wetlands.
- Attached materials or additional comments.

Comments:

Some sediment removal will occur in the stormwater management pond that sits on the project site, with some removed materials will be utilized in slope reconstruction. No potential negative ramifications have been identified in conjunction with these activities.

Attachments:

[DNRC.pdf](#)
[USACE.pdf](#)
[DEQ.pdf](#)

E. Executive Order 11988 (Floodplain Management)

- * 1. Does a Flood Insurance Rate Map (FIRM), Flood Hazard Boundary Map (FHBM), hydrologic study, or some other source indicate that the project is located in or will affect a 100 year floodplain, a 500 year floodplain if a critical facility, an identified regulatory floodway, or an area prone to flooding? Yes

If Yes, please indicate in the text box below any documentation to identify the means or the alternatives considered to eliminate or minimize impacts to floodplains (See the 8 step process found in 44 CFR Part 9.6.) to help FEMA evaluate the impact of the project:

As evidenced in the FIRMette, the project is not located in a floodplain. Flathead County has reviewed and familiarized itself with the 8 step process found in 44 CFR Part 9.6. The project is intended to mitigate exposure to flood hazards, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands. There are no alternatives to locating the proposed project outside the pond area. Flathead County has submitted an environmental scoping letter to the United States Army Corps of Engineers. The letter described the Whitefish Stage landslide mitigation project and solicited information regarding compliance with the Clean Water Act, Rivers and Harbors Act, Executive Order 11990 (Protection of Wetlands), and Executive Order 11988 (Floodplain Management).

- * 2. Does the project alter a watercourse, water flow patterns, or a drainage way, regardless of its floodplain designation? Yes

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Hydrologic/hydraulic information from a qualified engineer to demonstrate how drainage and flood flow patterns will be changed and to identify down and upstream effects.
- Evidence of any consultation with US Army Corps of Engineers (may be included under Part D of the Environmental Information).
- Request for information and response letter from the State water resource agency, if applicable, with jurisdiction over modification of waterways.
- Attached materials or additional comments.

Comments:

The project will be implemented by using a local Civil Engineering company to manage the project. Project plans and specifications will be developed by the Civil Engineer in conjunction with the Geotechnical Engineer (CMG Engineering, Inc.) for the project. The project will be bid on by contractors capable of completing the work. The Civil Engineer will evaluate the bids based on required selection criteria and contracts will entered into. The project will be managed by the Civil Engineer to ascertain that the project plans and specifications are being followed and that a quality product is being produced. In addition, the Geotechnical Engineer will be heavily involved during construction to observe that the conditions encountered were as anticipated during the design phase, and that the earthwork is being constructed as anticipated.

Attachments:

[FIRM.jpg](#)
[USACE.pdf](#)

F. Coastal Zone Management Act

- * 1. Is the project located in the State's designated coastal zone? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Information resulting from contact with the appropriate State agency that implements the coastal zone management program regarding the likelihood of the project's consistency with the State's coastal zone plan and any potential requirements affecting the cost or design of the proposed activity.
- Attached materials or additional comments.

Comments:

Attachments:

G. Farmland Protection Policy Act

- * 1. Will the project convert more than 5 acres of "prime or unique" farmland outside city limits to a non-agricultural use? No

Comments:

Attachments:

H. RCRA and CERCLA (Hazardous and Toxic Materials)

- * 1. Is there a reason to suspect there are contaminants from a current or past use on the property associated with the proposed project? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- Attached materials or additional comments.

Comments:

Flathead County has submitted an environmental scoping letter to the Montana Department of Environmental Quality. The letter described the Whitefish Stage landslide mitigation project and solicited information regarding compliance with the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

* 2. Are there any studies, investigations, or enforcement actions related to the property associated with the proposed project? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- Attached materials or additional comments.

Comments:

Flathead County has submitted an environmental scoping letter to the Montana Department of Environmental Quality. The letter described the Whitefish Stage landslide mitigation project and solicited information regarding compliance with the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

* 3. Does any project construction or operation activities involve the use of hazardous or toxic materials? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- Attached materials or additional comments.

Comments:

Flathead County has submitted an environmental scoping letter to the Montana Department of Environmental Quality. The letter described the Whitefish Stage landslide mitigation project and solicited information regarding compliance with the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

* 4. Do you know if any of the current or past land-uses of the property affected by the proposed project or of the adjacent properties are associated with hazardous or toxic materials? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- Attached materials or additional comments.

Comments:

Flathead County has submitted an environmental scoping letter to the Montana Department of Environmental Quality. The letter described the Whitefish Stage landslide mitigation project and solicited information regarding compliance with the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Attachments:

I. Executive Order 12898, Environmental Justice for Low Income and Minority Populations

* 1. Are there low income or minority populations in the project's area of effect or adjacent to the project area? No

If Yes, you must confirm that you have provided the following:

- Description of any disproportionate and adverse effects to these populations.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Description of the population affected and the portion of the population that would be disproportionately and adversely affected. Please include specific efforts to address the adverse impacts in your proposal narrative and budget.

Attached materials or additional comments.

Comments:

Attachments:

J. Other Environmental/Historic Preservation Laws or Issues

* 1. Are there other environmental/historic preservation requirements associated with this project that you are aware of? No

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

* 2. Are there controversial issues associated with this project? No

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

* 3. Have you conducted any public meeting or solicited public input or comments on your specific proposed mitigation project? Yes

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

Outside of outreach to public agencies through formal (city council meetings) and informal means, Flathead County has actively sought the input of impacted parties through participation in open meetings with the primary impacted parties starting in April 2006. This cooperation with stakeholders increased after further damage in 2010, leading to 3 meetings amongst all project stakeholders and many more one-on-one contacts with individual stakeholders since that time. As there is a specific group of self-selected impacted parties, the county has engaged in a broader public involvement process.

Attachments:

K. Summary and Cost of Potential Impacts

* 1. Having answered the questions in parts A. through J., have you identified any aspects of your proposed project that have the potential to impact environmental resources or historic properties? No

If Yes, you must confirm that you have:

- Evaluated these potential effects and provided the materials required in Parts A through J that identify the nature and extent of potential impacts to environmental resources and/or historic properties.
- Consulted with appropriate parties to identify any measures needed to avoid or minimize these impacts.
- Considered alternatives that could minimize both the impacts and the cost of the project.
- Made certain that the costs of any measures to treat adverse effects are realistically reflected in the project budget estimate.

Comments:

Attachments:

Evaluation (Page 1 of 2)

Is the recipient participating in the Community Rating System (CRS) ?	Yes
If yes, what is their CRS rating ?	8
Is the recipient a Cooperating Technical Partner (CTP) ?	No
Is the recipient a Firewise Community ?	No
If yes, please provide their Firewise Community number.	
Has the recipient adopted building codes consistent with the International Codes ?	No
Has the recipient adopted the National Fire Protection Association (NFPA) 5000 Code ?	No
Have the recipient's building codes been assessed on the Building Code Effectiveness Grading Schedule (BCEGS) ?	No
If yes, what is their BCEGS rating?	

Evaluation (Page 2 of 2)

How will this mitigation activity leverage involvement of partners to enhance its outcome?

At the time of submitting this grant application, Flathead County has established partnerships with the following agencies or organizations to enhance the project's success: US Army Corps of Engineers, Montana Department of Environmental Quality, Montana Department of Natural Resources and Conservation, Montana Fish Wildlife & Parks, the City of Kalispell and Flathead County. Further the county has established relationships with the primary impacted land and home owners in the project area, including the 300 plus residential development of Village Greens. All parties have agreed to a common vision and have invested through direct financing and other means in the success of this project.

How will this mitigation activity offer long-term financial and social benefits or promote resiliency for the community?

This project avoids certain catastrophic damages to multiple residences and properties and subsequent damages amounting to over \$1.4 million dollars. Further, by protecting those properties the project helps avoid the potential loss of life of those home and property owners, some of which are older and in frail condition. The project also helps abate damages to the Village Greens public golf course, by protecting the capacity of a critical stormwater management pond on the property. A no action alternative puts the golf course and nearby residences at drastically increased chance of future flooding events. Flathead County plans to prepare and distribute press releases throughout the duration of the project to share success stories and provide progress reports. Flathead County is most proud of the federal, state, and local agencies it has collaborated with to develop a project, garner support, and raise funds. Flathead County is more than willing to share the story of its Whitefish Stage project with communities considering to undertake similar projects.

Please provide the percent of the population benefiting from this mitigation activity.

3.0

Please explain your response.

This project directly benefits 14 residents living in properties and residences under direct threat of damage, and directly abates potential damages for an additional 500 plus residents of the Village Greens housing development. In 2010 Kalispell had a population of 19,927 people.

Does this mitigation activity protect a critical facility?

No

If yes, please select the type of critical facilities to be protected

Comments:

Name

Date Attached

Assurances and Certifications

Please click the link in the status column to view forms.

Forms

Status

Part I: FEMA Form 20-16A, Assurances **Non-Construction** Programs.

[Complete](#)

Part II: FEMA Form 20-16C, Certifications Regarding Lobbying; Debarment, Suspension and Other Responsibilities Matters; and Drug-Free Workplace Requirements.

[Complete](#)

Part III: SF-LLL, Disclosure of Lobbying Activities (Complete only if applying for a grant of more than \$100,000 and have lobbying activities using Non-Federal funds. See Form 20-16C for lobbying activities definition.)

Not Applicable

Name of Section	Comment	Attachment	Date Attached
Community	<p>Located in Northwest Montana, Flathead County encompasses 3,262,720 acres or 5,098 square miles. Approximately 94% of the land mass is National or State Forest Land, Wilderness, Agricultural, and Corporate Timber Land, thus confining development to the remaining 6% of the area. A short distance from any developed area is Glacier National Park, designated hiking areas, 2 ski resorts, 8 golf courses, Flathead Lake, and Hungry Horse Reservoir. With the abundance of recreational opportunities and aesthetic values, it is not hard to see why Flathead County is the among the fastest growing, and the 3rd most populated county in Montana. There are 3 incorporated cities in the County. Kalispell, which is the largest, has a population of approximately 19,927. Two additional major municipalities include Whitefish, with a population of 6,357, and Columbia Falls, with a population of 4,688. There are also several small full service communities in Flathead County, which have been designated as Census Designated Places, which will also have population and housing info. Countywide, the population has increased from 74,471 in 2000, to an estimated 90,928 in 2010, according to the U.S. Census Bureau. This represents a 22.1% increase in 10 years. Native residents are now greatly outnumbered by new residents. A large percentage of new residents are retirees and middle aged professionals. Attraction development has greatly increased in recent years contributing to the influx of tourists and tourism based services, and moving the economic base towards Recreation and Tourism, and creating new jobs in the service industry. Flathead County's population increases by 40%, during the months of June through August.</p>		
Scope of Work	<p>Please know that the project work schedule and project cost estimate were prepared by CMG engineers. The project cost estimate was compiled by Josh Smith, P.E., Engineer, and is based on industry cost estimating guides. Josh is a Montana registered professional engineer and provided the attached cost estimate letter. It is important to note that Flathead County understands that all benefit cost ratio (BCA) data entries (other than FEMA standard or default values) MUST be documented in the project description or project scope of work that accompanies this grant application. To that end, if Flathead County has been negligent in providing BCA data entries in this scope of work section please know that all BCA data entries are thoroughly described and presented in the cost effectiveness information section.</p>	<p>Slope Crack.JPG Work Schedule.pdf Project Location Maps.pdf one2500 (2).pdf CMG Erosion Rate Letter (2).pdf one24000 (2).pdf Pond View.jpg North Slippage.JPG Wet Slough.JPG In-kind soil contributions (2).pdf Invoice 1.pdf CMG In-Kind Contribution (2).pdf Cash in lieu of soil.pdf Property Owner Matching Funds.pdf Property Assessments - Whitefish Stage Mitigation.pdf WF Landslide BCA Revised.pdf WFS Landslide.zip</p>	<p>04-04-2012 03-30-2012 03-30-2012 04-03-2012 03-30-2012 04-03-2012 04-04-2012 04-04-2012 04-04-2012 03-30-2012 03-30-2012 05-03-2012 03-30-2012 03-30-2012 05-10-2012 04-02-2012</p>
Cost Share		<p>one24000 (2).pdf MSHPO.pdf</p>	<p>03-30-2012 03-30-2012</p>
Cost Effectiveness			
EHP - B - National Historic Preservation Act - Archeological Resources	<p>Flathead County has submitted an environmental scoping letter to the Montana State Historic Preservation Office. The letter described the Whitefish Stage landslide mitigation project and solicited aspects of the project that have the potential to impact archeological resources protected by National Historic Preservation Act initiatives. To Flathead County's knowledge, the only past use of the project area has</p>	<p>one24000 (2).pdf MSHPO.pdf</p>	<p>04-03-2012 03-30-2012</p>
EHP - C - Endangered Species Act and Fish and Wildlife Coordination Act	<p>Flathead County has submitted an environmental scoping letter to the Montana State Fish Wildlife and Parks. The letter described the Whitefish Stage landslide mitigation project and solicited aspects of the project that have the potential impact to (1) potential listed species present and potential of the project to impact those species and (2) the potential for the project to affect any water body protected by</p>	<p>MTFWP Response.pdf</p>	<p>03-30-2012</p>
EHP - D - Clean Water Act, Rivers and Harbors Act, and Executive Order 11990	<p>Some sediment removal will occur in the stormwater management pond that sits on the project site, with some removed materials will be utilized in slope reconstruction. No potential negative ramifications have been identified in conjunction with these activities.</p>	<p>DNRC.pdf USACE.pdf DEQ.pdf</p>	<p>03-30-2012 03-30-2012 03-30-2012</p>
EHP - E - Executive Order 11988 (Floodplain Management)	<p>As evidenced in the FIRMette, the project is not located in a floodplain. Flathead County has reviewed and familiarized itself with the 8 step process found in 44 CFR Part 9.6. The project is intended to mitigate exposure to flood hazards, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands. There are no</p>	<p>FIRM.jpg USACE.pdf</p>	<p>04-03-2012 03-30-2012</p>

EHP - H - RCRA and CERCLA (Hazardous and Toxic Materials)

Flathead County has submitted an environmental scoping letter to the Montana Department of Environmental Quality. The letter described the Whitefish Stage landslide mitigation project and solicited information regarding compliance with the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

EHP - J - Other Environmental/Historic Preservation Laws or Issues

Outside of outreach to public agencies through formal (city council meetings) and informal means, Flathead County has actively sought the input of impacted parties through participation in open meetings with the primary impacted parties starting in April 2006. This cooperation with stakeholders increased after further damage in 2010, leading to 3 meetings amongst all project stakeholders and many more one-on-one

EHP - A - National Historic Preservation Act - Historic Buildings and Structures

[MSHPO.pdf](#)

03-30-2012

**APPLICATION FOR
FEDERAL ASSISTANCE
(SF 424)**

2. DATE SUBMITTED
05-10-2012

Applicant Identifier

1. TYPE OF SUBMISSION
Non-Construction

3. DATE RECEIVED BY STATE
05-10-2012

State Application Identifier

4. DATE RECEIVED BY FEDERAL AGENCY

Federal Identifier

5. APPLICANT INFORMATION

Legal Name
Flathead County Office of Emergency Services

Organizational Unit
Flathead County Office of Emergency Services

Address
625 Timberwolf Parkway,
Kalispell, MT 59901-2622

Name and telephone number of the person to be contacted on matters involving this application
Cindy Mullaney, 406-758-5504

6. EMPLOYER IDENTIFICATION
NUMBER (EIN)
81-6001361

6.a. DUNS NUMBER
000895093

7. TYPE OF APPLICANT
Local Government

8. TYPE OF APPLICATION
Project Application

9. NAME OF FEDERAL AGENCY
Federal Emergency Management Agency

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE
NUMBER 97.047
CFDA TITLE PDM Competitive

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT
Whitefish Stage Landslide Mitigation

12. AREAS AFFECTED BY PROJECT (cities, counties, states, etc.)
FLATHEAD COUNTY

13. PROPOSED PROJECT:

Start Date:
End Date :

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant MT
b. Project MT

15. ESTIMATED FUNDING

a. Federal	\$ 298,000.00
b. Applicant	\$ 0.00
c. State	\$ 0.00
d. Local	\$ 102,000.00
e. Other	\$ 0.00
f. Program Income	\$ 0.00
g. TOTAL	\$ 400,000.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?
No, Program is not covered by E.O. 12372

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Name of Authorized Representative
Matthew Springer

b. Title

c. Telephone Number
4067563939

d. Signature of Authorized Representative
Matthew Springer

e. Date Signed
05-10-2012

Go Back

Close Window

Landslide Project Area 1:24000



- 1461 Whitefish Stage Rd
- 1377 Whitefish Stage Rd
- 1373 Whitefish Stage Rd
- 123 Granary Ridge Dr
- 121 Granary Ridge Dr
- 119 Granary Ridge Dr
- 117 Granary Ridge Dr







CMG Engineering, Inc.

P.O. Box 5159
1097 Trumble Creek Road
Kalispell, MT 59903-5159

Office: 406-257-8156
Fax: 406-257-8179
<http://www.cmgengineering.com>



March 27, 2012

Susan Storfa
1373 Whitefish Stage
Kalispell, MT 59901

**Subject: Geotechnical Consultation
Flathead County Granary Ridge Flood Mitigation and Restoration Project
Kalispell, Montana**

Dear Ms. Susan Storfa,

At your request, CMG Engineering, Inc. (CMG), is providing Geotechnical Engineering and Consultation services for the Flathead County Granary Ridge Flood Mitigation and Restoration Project in Kalispell, Montana. As part of CMG's evaluation, we have been asked to quantify the current erosion rates of the slope. To evaluate the current and historic erosion rates, CMG reviewed aerial photographs of the area and made measurements of the top of the failed slope in relationship to a fixed location. The aerial photographs reviewed are dated June 30, 1990, May 23, 2004, June 20, 2006, June 22, 2009, and August 11, 2011.

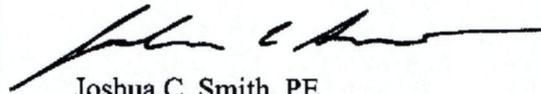
The erosion rates were calculated using propagation of the slope between dates of photographs where measurements could be obtained. Based on the aerial photographs, it appears minimal propagation of the erosion occurred between 1990 and 2004. The measured erosion rates between May 2004 and June 2006 were approximately 9 ft per year, between June 2006 and June 2009 were 5 ft per year, and between June 2009 and August 2011 were 11 ft per year. Based on these observations and measurements, it appears the erosion rate has significantly increased over the past 2 years.

CMG also made measurements between the existing structures and the limits of the current slump and erosion propagation. Dividing the current distances by the current rate of erosion, it appears the building housing 123 and 121 Granary Ridge Drive will be the first to be reached in approximately 3.5 to 4 years, assuming the erosion rates remain the same. The structures located at 117 and 119 Granary Ridge Drive, and 1373 Whitefish Stage Road will be the next to be incorporated in approximately 6 years. Finally, we anticipate the structure at 1377 Whitefish Stage Road will be reached in 7 to 8 years. Please understand, the anticipated time lines are dependent on the most recent calculated erosion rate and require propagation all the way back to the existing

structures. In our opinion, significant safety concerns will be apparent prior to the slopes reaching the existing residences. CMG anticipates the erosion rates will remain the same or possibly increase due to the current nature of the slope and the amount of exposed, near vertical soil.

In our opinion, an erosion and slope mitigation project involving significant drainage and slope reconstruction is imperative to protecting the identified properties in this letter. Please contact me if you have any questions or concerns regarding this letter.

Sincerely,

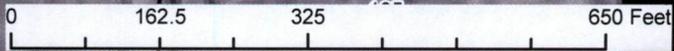


Joshua C. Smith, PE
Senior Geotechnical Engineer

Landslide Project Area 1:2500



- 1461 Whitefish Stage Rd
- 1377 Whitefish Stage Rd
- 1373 Whitefish Stage Rd
- 123 Granary Ridge Dr
- 121 Granary Ridge Dr
- 119 Granary Ridge Dr
- 117 Granary Ridge Dr

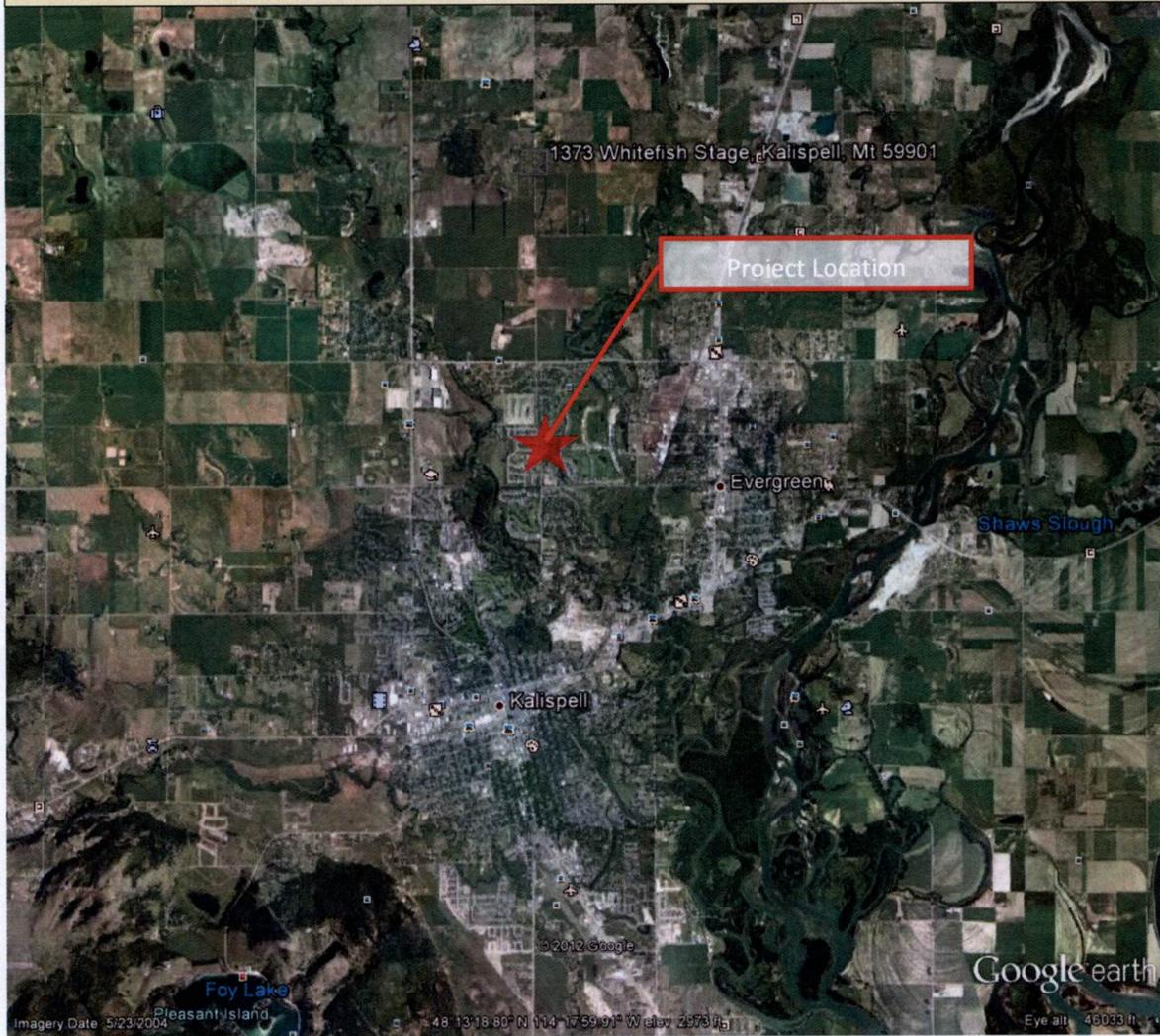




Granary Ridge Landslide Mitigation Project

Project Location

Map 1: Showing Relation of Project to Downtown Kalispell and unincorporated Evergreen.





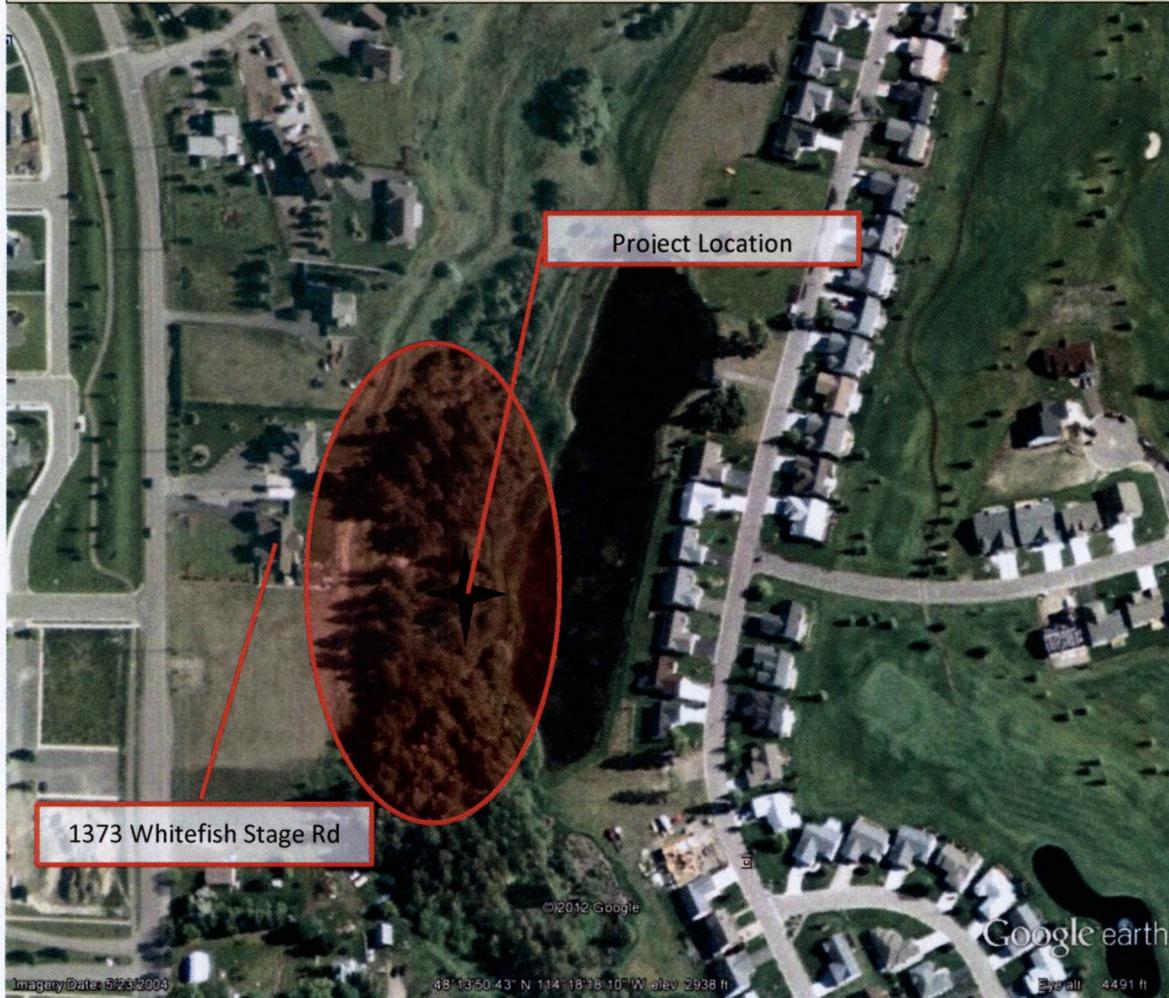
Granary Ridge Landslide Mitigation Project

Map 1: Showing Project in Relation to Stillwater and Whitefish Rivers.



Granary Ridge Landslide Mitigation Project

Map 3: Showing Close Up of Project Area. *Google Earth Image does not depict four 2005-2006 Granary Ridge Development residences which are located south of 1373 Whitefish Stage.*

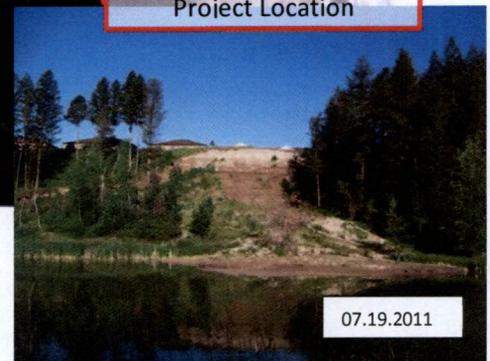
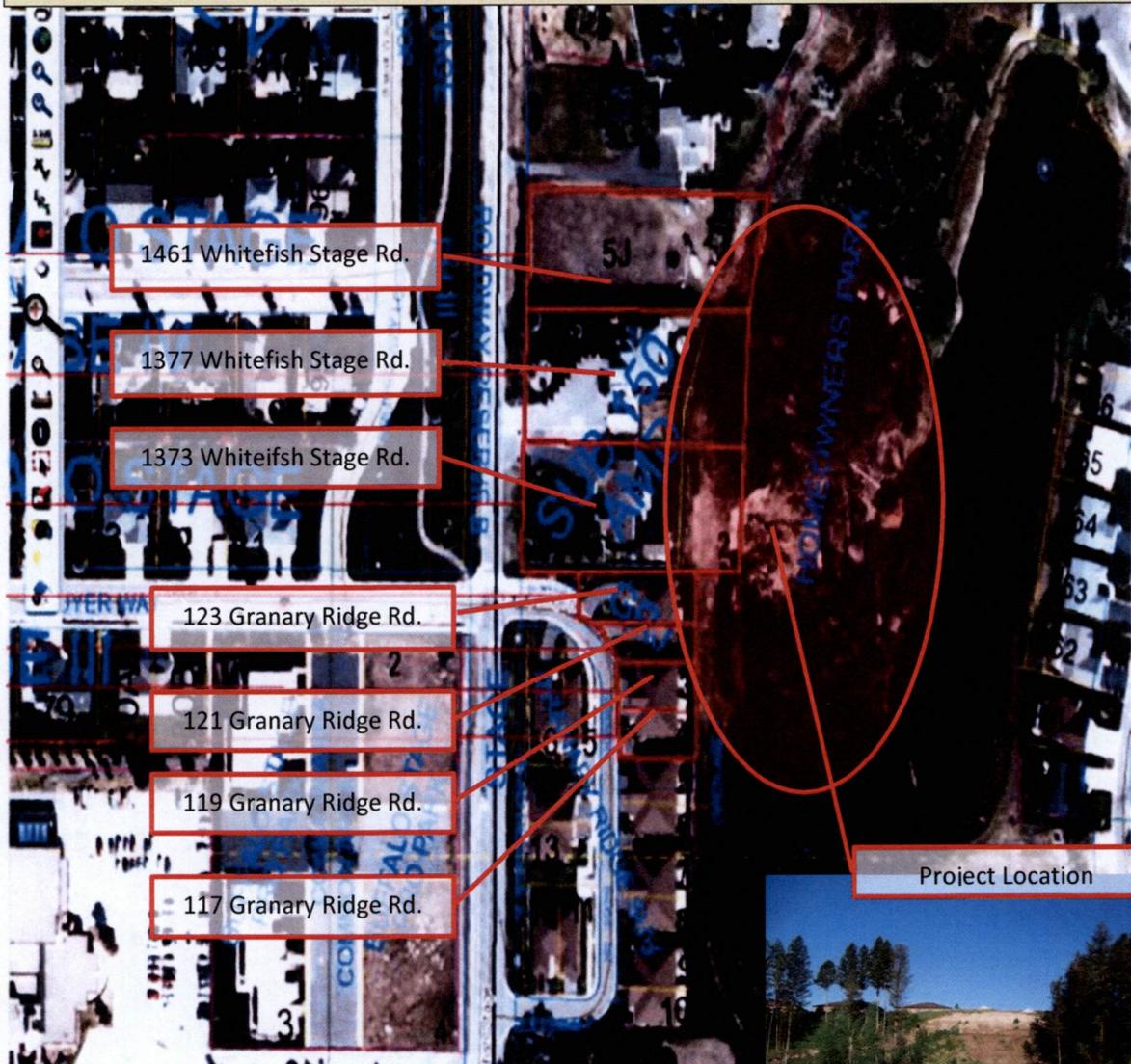


Latitude: 48°13'48.90"N

Longitude: 114°18'21.53"W

Granary Ridge Landslide Mitigation Project

Map 4: Showing Properties Impacted by Landslide and Proximity of Slide to Residences.





Joshua C. Smith, P.E.
 Senior Geotechnical Engineer
 CMG ENGINEERING, INC.
 P.O. Box 5159
 1097 Trumble Ck. Rd.
 Kalispell, MT 59903-5159
 Office: 406-257-8156 Fax: 406-257-8179
 Cell: 406-270-3480
 Email: jsmith@cmgengineering.com
 http://www.cmgengineering.com

Whitefish Stage Landslide Project

March 11, 2012

Work Schedule

Enter Work Schedule					
Description Of Task	Starting Point	Unit Of Time	Duration	Unit Of Time	Work Complete By
Receive FEMA grant award	1	DAYS	1	DAYS	FEMA State award to Flathead County
Coordinate all sources of funding and in-kind matches	2	DAYS	30	DAYS	Property Owners of Project Area
Engage in contract for final design, engineering, and construction management services with CMG Engineering, Inc., and Civil Engineer	10	DAYS	10	DAYS	Flathead County
Site survey	20	DAYS	10	DAYS	Sands Surveying and CMG Engineering
Final Geotechnical investigation with Analysis and Recommendations	30	DAYS	21	DAYS	CMG Engineering
Slope Mitigation, Drainage, and Pond Sediment Removal Design	40	DAYS	30	DAYS	Civil Engineer and CMG Engineering
Sanitary Sewer hookup design	40	DAYS	10	DAYS	Civil Engineer and CMG Engineering
Stormwater Best Management Practices design	40	DAYS	10	DAYS	Civil Engineer and CMG Engineering
Design refinement	70	DAYS	10	DAYS	Civil Engineer and CMG Engineering
Bid Project	80	DAYS	30	DAYS	Civil Engineer and CMG Engineering
Engage in Contract with Contractor	110	DAYS	10	DAYS	Civil Engineer, CMG Engineering, and Flathead County
Construct Drainage and Fill to Reconstruct Slope	120	DAYS	60	DAYS	Contractor
Repair Storm Water Pipe	180	DAYS	5	DAYS	City of Kalispell and Contractor
Remove Pond Sediment and Repair Gravel Access Road	180	DAYS	10	DAYS	Contractor
Construct and Hook 3 Residences to Sanitary Sewer	120	DAYS	30	DAYS	Contractor and City of Kalispell
Vegetate Areas Disturbed During Construction	190	DAYS	5	DAYS	Contractor
Construction Monitoring, Observation and Reporting	120	DAYS	75	DAYS	Civil Engineer and CMG Engineering
End Reporting	195	DAYS	10	DAYS	Civil Engineer and CMG Engineering
Estimate the total duration of the proposed activity:			195	DAYS	







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Kalispell, MT 59903-5159

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Fax: 406-257-8179
<http://www.cmgengineering.com>



March 27, 2012

Susan Storfa
1373 Whitefish Stage
Kalispell, MT 59901

**Subject: In-Kind Contributions for Donated Fill Soils
Flathead County Granary Ridge Flood Mitigation and Restoration Project
Kalispell, Montana**

Flathead County OES is proposing to undertake flood mitigation and restoration activities on a site just northeast of the intersection of Whitefish Stage Road and Bruyer Way in Kalispell, Montana. The Flathead County Office of Emergency Services (OES) is pursuing funds to support the project from multiple federal, state, and private agencies. I understand that, in pursuit of mitigation funding, Flathead County OES needs to provide evidence that it has commitments from local entities to provide 25% of the total project costs in matching funds.

The proposed project location is a twelve acre site where high perched ground water levels, resulting from flooding of the nearby Stillwater River, led to propagation of sloughs, extensive erosion and slope failure. A 6 acre pond that serves a critical function in storm water management for a golf course sits at the bottom of the eroded hillside. The flood related sloughs have greatly reduced the pond's functionality. The threat of ongoing erosion presents a clear danger to the residents and properties that sit atop the bluff where sloughing has occurred. It is important to note that the majority of the project site is in heavily developed residential, commercial, and public properties within the City of Kalispell. The project area is located in the following townships, ranges and section: T29N, R21W, S21.

Discussions with Susan Storfa and Holly Hand indicate that they will be donating fill soil to the project to assist with covering a portion of the project costs. Discussions with local contractors indicate the fill soil is worth \$1 per yard for the soil and \$8 per yard due to the lack of trucking costs needed to haul the material to the site. Susan Storfa and Holly Hand will be converting a portion of their flat property to sloped property. The total yardage of fill soil to be donated by Susan Storfa and Holly Hand, is 1,200 and 200 cubic yards, respectively. The total cost of the fill material to be considered as an in-kind contribution is \$10,800 from Susan Storfa, and \$1,800 from Holly Hand.

Please feel free to contact CMG Engineering if you have any questions regarding this correspondence.

Sincerely,

Joshua C. Smith, PE
Senior Geotechnical Engineer