CAPITAL IMPROVEMENT PROGRAM
City of Missoula CIP Project Request Form FY 2014-2018

Program Category:	Project Title:		12 Project #	13 Project #	14 Project #
Community Service	Grant Creek Drainage Improvements		CS-08	CS-08	CS-08

Description and justification of project and funding sources:

Analysis of the Grant Creek drainage indicates a potential for storm water impacts beyond the capacity of the existing drainage structures. Preliminary design of the drainage improvements needs to be conducted so that project scope and funding sources may be identified.

Is this equipment prioritized on an equipment replacement schedule?	Yes	No	NA
			X

Are there any site requirements:

REVENUE

How is this project going to be funded:

Funding Source	Accounting Code	FY14	FY15	FY16	FY17	FY18	Funded in Prior Years
Potential FEMA grant application					50,000	400,000	
		-	-	-	50,000	400,000	-

EXPENSE

How is this project going to be spent:

Budgeted Funds	Accounting Code	FY14	FY15	FY16	FY17	FY18	Spent in Prior Years
A. Land Cost							
B. Construction Cost						320,000	
C. Contingencies (10% of B)						32,000	
D. Design & Engineering (15% of B)					50,000	48,000	
E. Percent for Art (1% of B)							
F. Equipment Costs							
G. Other							
		-	-	-	50,000	400,000	-

OPERATING BUDGET COSTS

Does this project have any additional impact on the operating budget:

Expense Object	Accounting Code	FY14	FY15	FY16	FY17	FY18	Spent in Prior Years
Personnel							
Supplies							
Purchased Services							
Fixed Charges							
Capital Outlay							
Debt Service							
		-	-	-	-	-	-

Description of additional operating budget impact:

Responsible Person:	Responsible Department:	Date Submitted to Finance	Today's Date and Time	Preparer's Initials	Total Score
Kevin Slovarp	Public Works		4/10/2013 15:12	JSM	-

CAPITAL IMPROVEMENT PROGRAM

Project Rating

(See C.I.P. Instructions For Explanation of Criteria)

Program Category:	Project Title:		14 Project #
Community Service	Grant Creek Drainage Improvements		CS-08

Qualitative Analysis	Yes	No	Comments
1. Is the project necessary to meet federal, state, or local legal requirements? This criterion includes projects mandated by Court Order to meet requirements of law or other requirements. Of special concern is that the project be accessible to the handicapped.		X	
2. Is the project necessary to fulfill a contractual requirement? This criterion includes Federal or State grants which require local participation. Indicate the Grant name and number in the comment column.		X	
3. Is this project urgently required? Will delay result in curtailment of an essential service? This statement should be checked "Yes" only if an emergency is clearly indicated; otherwise, answer "No". If "Yes", be sure to give full justification.		X	
4. Does the project provide for and/or improve public health and/or public safety? This criterion should be answered "No" unless public health and/or safety can be shown to be an urgent or critical factor.		X	

Quantitative Analysis	Raw Score Range	Comments	Weight	Total Score
5. Does the project result in maximum benefit to the community from the investment dollar?	(0-3)	Leveraged 100% with grant funds.	5	-
6. Does the project require speedy implementation in order to assure its maximum effectiveness?	(0-3)	The drainage analysis has not been formally adopted.	4	-
7. Does the project conserve energy, cultural or natural resources, or reduce pollution?	(0-3)	No.	3	-
8. Does the project improve or expand upon essential City services where such services are recognized and accepted as being necessary and effective?	(0-2)	Yes, flood control.	4	-
9. Does the project specifically relate to the City's strategic planning priorities or other plans?	(0-3)	Yes, Grant Creek Drainage Plan.	4	-
			Total Score	-

14 Project # CS-08

WGM Group, Inc.

ENGINEERING
SURVEYING
PLANNING

3021 Palmer • P.O. Box 16027 • Missoula, Montana 59808-6027

(406) 728-4611
FAX: (406) 728-2476
e-mail: wgm@wgmgroup.com

May 21, 2002

Steve King, P.E., City Engineer
City of Missoula
435 Ryman Street
Missoula, MT 59802

RE: Grant Creek Between I-90 and Prospect Drive

Dear Steve:

The purpose of this letter is to inform the City of Missoula and the adjacent landowners of a serious problem that has been developing in the Grant Creek area over the last 10 years.

The reach of Grant Creek above I-90 to Prospect Drive is not a natural stream channel. The water irrigation users and agricultural landowners have moved and altered this channel for about 100 years. In the last 10 years, the channel has been very stable and protected from historical activities. We have also seen the various water rights, water users, and ditch rights fall into misuse or abandonment. The historical use of water by Grant Creek Ranch, Wheelers, Goodans, Ostregans, Kennys, Doughertys, Flynns and others have either been greatly reduced or abandoned. This section of Grant Creek use to go dry by early June due to heavy irrigation use, but now runs year-round and with larger than typical flows. This is also a reach of Grant Creek that use to transition between erosion and deposition on an annual basis, but no longer does.

Three major items have taken place that you should be aware of:

1. The westside of Grant Creek was protected from flooding by a levee constructed in 1991. The levee area and waterway were dedicated to the City of Missoula as a waterway and addition to Grant Creek Road right-of-way. It is the City of Missoula's responsibility to maintain the levee and the waterway.

2. The lands lying west of the levee have been and continue to be developed with high value commercial and residential uses that rely on the levee and the City's maintenance for flood protection.

3. The Reserve Street improvements at I-90 replaced the open stream channel in this area with an 800 foot long, 14 foot x 7 foot, box culvert. The FWPS required that riprap be placed in the channel of the box culvert to provide resting areas for fish.

14 Project # CS-08

In the last 10 years, I have driven along this channel several times a day noticing the series of changes and the neglect of this floodway. The channel has become blocked with fallen trees at several locations, debris has accumulated in the channel, the side areas have become filled with deadfall that will be moved during high water, brush and excessive growth of under storage have not been managed. The presence of dead and unhealthy trees along the channel and Grant Creek Road not only place the waterway at risk, but also reduce the safety along the roadway.

My first concern is with the debris collecting on the bottom of the box culvert or being moved into the box culvert during high water. I doubt if anyone regularly inspects the interior of the culvert. Unlike most culverts, the irregular bottom is ideal for trapping debris. If a blockage took place during any significant event, no one could clear it by entering either end for fear of drowning. Flood flows would then crest and flow under I-90 and down Reserve Street. Grant Creek is rated at 245 CFS for a 10 year, 380 CFS for a 50 year, 465 CFS for a 100 year and 730 CFS for a 500 year storm event. These are significant flows and they will move accumulated debris downstream to the box culvert.

My second concern is with the upstream channel blockages by fallen trees and debris accumulation in the flood way. Trees that have fallen across and into the channel creating barbs that direct flows against the side of the channel and possibly the levee or Grant Creek Road. During a major event, the accumulated debris will collect on fallen trees creating dams that will raise the 100-year flood profile, placing adjacent property and improvements at risk. If water ever exited the west side of Grant Creek, it would not have a chance to get back into the channel before it discharged under I-90 and down Reserve Street.

My third concern is for the safety of Grant Creek Road between Stonebridge and Prospect. Since the removal of agricultural uses and livestock 10 years ago, the westside of Grant Creek Road has become an area of fallen down fences, overgrown underbrush, thickets of cottonwoods and a collection place for deadfall. During a recent event where numerous branches were blown down, I saw the City of Missoula Street Department clearing the road and tossing the debris into the westside of the right-of-way or into the floodway.
The growth of roadside brush and vegetation has caused sight distances to be greatly reduced, especially just south of Prospect. The clear distance between the vehicle travel way and the adjacent fence and brush offers no safe area for pedestrians, bikes or a stopped vehicle.

Floodway maintenance plans for almost any levee project call for the removal of accumulated driftwood and debris from the stream, floodway and levees on a regular basis. They call for annual inspections and documentation on the status of levees, weeds, vegetation, riprap, burrowing animals, debris, etc. These inspections are then followed up with documented corrective actions. The control of trees, brush and weeds is also important to provide desirable vegetation growth of native plants and healthy trees.

14 Project # CS-08

The levee and floodway delineation for this reach of Grant Creek were designed by Morrsion-Maierle, Inc. in 1991. I believe they would be concerned about the status and condition of the floodway, if they inspected it today. I have attached a few photos to illustrate my points.

I would advise that serious consideration be given to clearing the floodway of accumulated debris, thinning brush, and thickets in the floodway and along Grant Creek Road to provide a safe and healthy riparian area and roadway. I also advise that the box culvert be inspected and a debris trap be constructed upstream of the box culvert.

Lastly, a regular and documented inspection and maintenance plan should be put in to place.

Steve, I have also watched the channel of Grant Creek that was constructed and dedicated through Grant Creek Center slowly fill with bed load, debris and trees over the last 22 years. This reach of the channel that goes dry every year also has been neglected in regards to inspections and/or maintenance and its ability to carry flood flows has greatly diminished.

Grant Creek is easily as great of a risk as Pattee Creek to periodic high flows and property damages. If these City owned floodways and improvements are not kept in the condition to which they were designed and constructed, then surely problems will follow. As the normal flows have been diverted for irrigation use for 100-years return to in stream flows, the need to be attentive to Grant Creek and its changing character becomes very necessary. Because Grant Creek loses volume to the Missoula Valley's gravels, it does not carry debris downstream to the Clark Fork River. All the debris eventually collects in the streambed and must be removed. Historically, the agricultural users did this as part of their irrigation maintenance, but since they have stopped, no one has provided this form of maintenance for Grant Creek.

I would hope this letter would assist your department in evaluating a course of action.

Sincerely,
WGM Group, Inc.

Thomas P. McCarthy, E.S.

cc: John Crowley, Washington Corporation
Kenneth Salo, Morrison-Maierle
Rocky Mountain Elk Foundation
Montana Department of Transportation

W:\Projects\910122\ltrs\King.doc

14 Project #	CS-08

#1

North end of 800-foot long (14'x7') box culvert under I-90 and Reserve Street intersection

#2

Stream gauging station between I-90 and Expo Parkway

#3

Logs and debris upstream of Expo Parkway

14 Project # CS-08