a non-profit organization benefiting all water users in the basin
816 Grizzly Drive Great Falls, Montana 59404 406-727-4437

June 3, 2015

Planning Department
City of Great Falls
PO Box 5021
Great Falls, MT 59403

RE: West Ridge Addition Phase VII-XI

Dear Great Falls Planning Department:

The Sun River Watershed Group (SRWG) would like to voice some concerns on the West Ridge Addition Phase VII-XI development as it relates to runoff changes that may occur into the Sun River. While in general we support the need for growth in this area we do want to make sure safeguards are put in place that ensure our hard work for more than 20 years to reduce polluted runoff into the Sun River is not lost.

Our specific concerns, with what we are aware of at this time, that need to be addressed better include:

1. Montana already lists the Sun River as impaired for nutrients and sediment that this project development may cause additional problems. So how will this development address the Sun River Watershed TMDL issues?

2. Storm water runoff from communities frequently contains contaminates from over fertilization of yards, vehicle oil and many other problems. There are now many proven tools to capture storm water runoff to reduce any contaminants from reaching the Sun River that can be incorporated into this development. Can these proven tools be incorporated into the development that is also not too costly on the developer?

3. As this land is converted from agriculture to subdivisions the runoff events will have higher flow events that may cause severe erosion as it flows across the remaining agriculture lands. Can retention and detention ponds with higher capacity be installed to reduce this potential erosion concern?

4. The SRWG has been working with the Great Falls Flood District on many projects to ensure the flood control dikes remain stable. Any changes in the land use in Watson Coulee could become a major problem for the Great Falls Flood District. See the attached documentation supplied by the Corps of Engineers about runoff from Watson Coulee and those calculations assumed the Sun River would not be flooding when Watson Coulee high runoff was occurring. Before this project is

approved, we fell there needs to be a stakeholders meeting with the Corps of Engineers, Great Falls Flood Control District, Cascade Conservation District, SRWG and many others to ensure this development will not jeopardize the flood district's capacity to release flows back into the Sun River.

So we want to reiterate, we are not opposed to this development but we are concerned how it is designed at this time. Please examine the attached data we collected as tools to justify further review on the need for resolving storm water runoff.

Thanks for considering our opinion on this project. You may contact me at 727-4437 or arollo7@msn.com if you have any questions.

Sincerely,

Alan Rollo, coordinator
Sun River Watershed Group

CC: Great Falls Planning Board
Great Falls Commissioners
Great Falls Flood Control District
Cascade Conservation District

ATCH: Corps Flood Protection data

PROJECT C9919
DISK 574-C

SUN RIVER

FLOOD PROTECTION PROJECT

AT GREAT FALLS, MONTANA

OPERATION AND MAINTENANCE MANUAL

CORPS OF ENGINEERS, U. S. ARMY

OFFICE OF THE COMMANDER

OMAHA DISTRICT

OMAHA, NEBRASKA

1988

PERTINENT DATA

Location

The project is located in Great Falls, Montana in Cascade County. The levee was constructed on the left bank of the Sun River a distance of 6 miles upstream from the junction with the Missouri River.

Hydrologic Data

Drainage Area, sq. mi.	1,927
Design Flow, c.f.s.	65,000
Watson Coulee Design Flow, c.f.s.	1,450

Levee Design

Crown Width, ft.	10
Side Slopes (both sides)	1 on 3
Freeboard, ft.	3
Average Height, ft.	15.5
Length, ft.	31,800

Relocations

Buildings to be removed	24

Drainage Structures

Levees	21
Road Culvert	3
Watson Coulee	6

Watson Coulee Interceptor Ditch

- Drainage Area, sq. mi.	7.0
- Dike, ft.	3,265
- Buried Conduit, ft. 2 - 84" conduits	4,795' each

Freeboard → 3 feet
therefore @ 65,000 cfs
(design flow)
estimate water will be
3 feet BELOW
top of levee elevation
3/24/97 per Harold Dingman
Corps - Fort Peck

1 mile
= 5,280 feet
= 1,760 yards
= 1.6097 Kilometers

Project No. C9919
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SUN RIVER

FLOOD PROTECTION PROJECT

AT GREAT FALLS, MONTANA

OPERATION AND MAINTENANCE MANUAL

SECTION V - WATSON COULEE

CORPS OF ENGINEERS, U. S. ARMY

OFFICE OF THE COMMANDER

OMAHA DISTRICT

OMAHA, NEBRASKA

SECTION 5 - WATSON COULEE

5.1 DESCRIPTION. The Watson Coulee part of the project consists of two 84-inch conduits and an interceptor ditch and embankment to convey the flows from the Watson Coulee ditch through the protected area to the Sun River. The system of conduits, ditches, embankments, and interior drainage inlets are designed to handle Watson Coulee even in the event of high flows in the Sun River.

5.1.1 Conduits. The two 84-inch RCP conduits begin at the Sun River (Levee Station 258+74) and runs under 27th Street N.W. and extends under Interstate 15 to a point next to the Burlington Northern Railroad tracks as shown on Plate C-7. At that point, the conduits run perpendicular to the tracks and U.S. Highway 89. The inlet is located just north of the abandoned Chicago-Milwaukee St. Paul and Pacific railroad tracks. The conduits are 4,688-feet long and are constructed to withstand the pressure from the Sun River during flood stage, Watson Coulee, or both.

5.1.2 Interceptor Ditch and Embankment. The interceptor ditch and embankment divert the flows of Watson Coulee from the previous ditch drainage to the twin conduits. The embankment begins at the Watson Coulee Road and extends to high ground (a distance of 2,540 feet). An interceptor and drainage ditch is located parallel to the embankment and extends through the high ground to the conduit inlets (a distance of 3,150 feet).

five(5) **5.1.3 Area Inlets.** Interior drainage along the conduits are handled by six side inlets. These side inlets allow flow to enter the conduits but prevent flows from a pressurized conduit from flowing back into the protected area. Each inlet contains a flap gate and a slide gate to prevent backflows from the conduit. cross-reference page VII-4 7.6

5.1.4 Roller Gates. The roller gates are located at the outlet structure of the conduits. These gates are to be closed only in the event the side inlet flap gate and slide gate fail to prevent backflows from

Add #1

entering the protected area or the conduit separates and allows flows to enter. If this occurs only the gate for the conduit which is experiencing flows should be closed. This will allow flows from Watson Coulee to pass through the outer conduit. THESE GATES SHOULD NOT BE CLOSED DURING A HIGH WATER EVENT (except for an actual back flow emergency).

5.2 MAINTENANCE. After each high water event or at least once a year, this part of the system should be inspected to determine what maintenance is required.

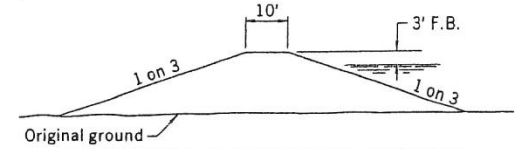
5.2.1 Conduits. The joints should be inspected to monitor any differential settlement which might separate the joints between the pipe sections. If the joints separate sufficiently, flows from the Sun River could flow into the protected area.

5.2.2 Interceptor Ditch and Embankment. The ditch and levees should be inspected and monitored as suggested in SECTION IV - LEVEES.

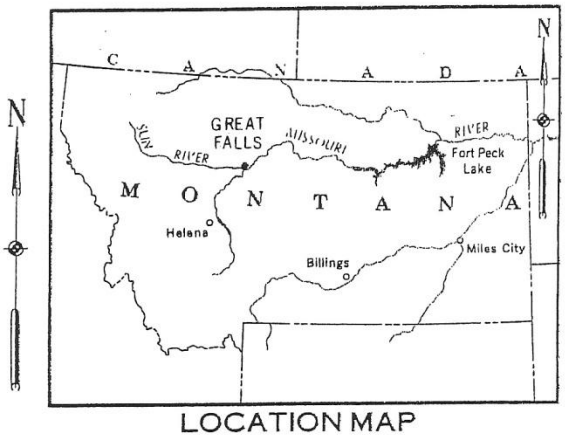
5.2.3 Area Inlets. The side inlets should be inspected and monitored as suggested in SECTION VII - DRAINAGE STRUCTURES.

5.2.4 Roller Gates. The roller gate should be inspected and exercised as suggested in SECTION VII - DRAINAGE STRUCTURES and should remain in the open position at all times.

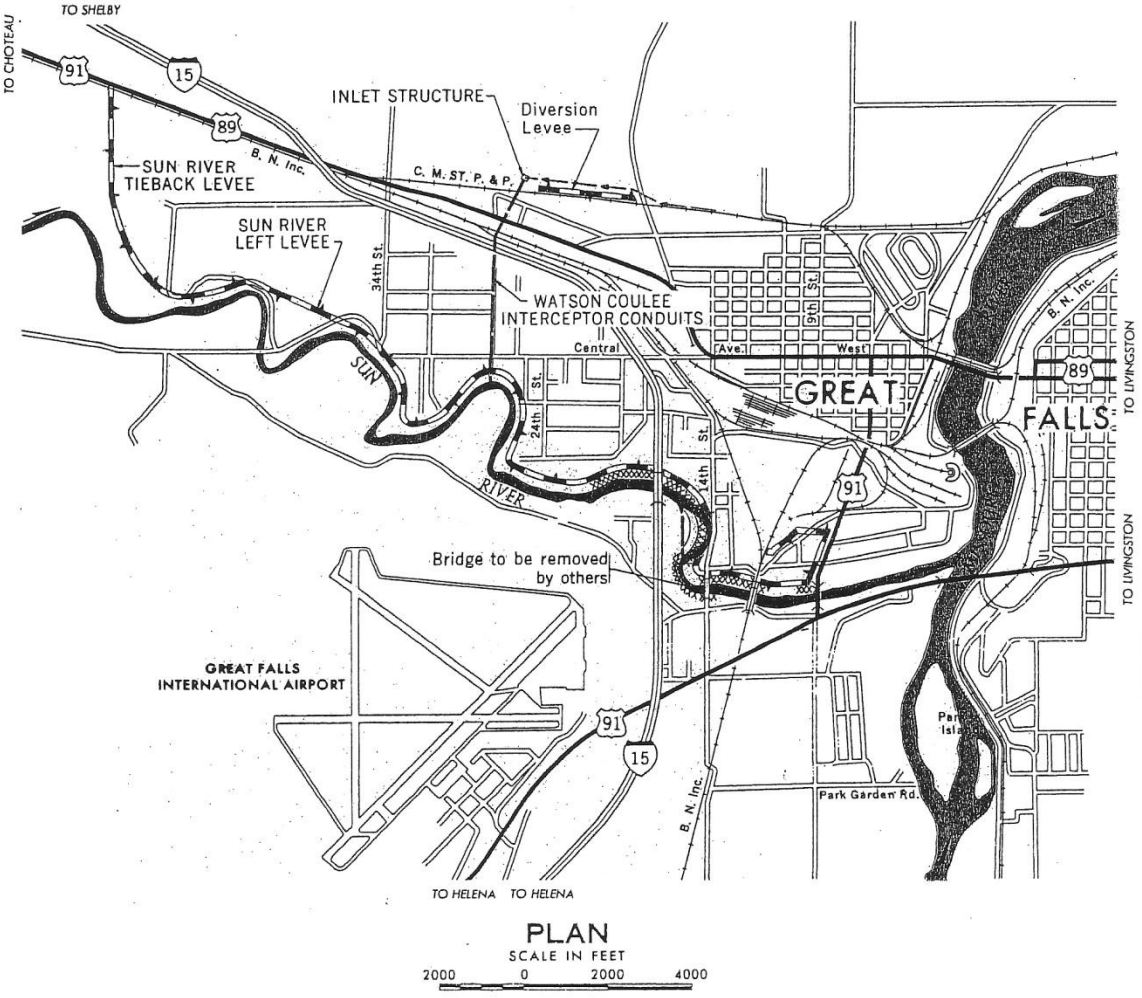
5.3 OPERATION. The operation of the Watson Coulee system is automatic and needs to be monitored during high flows for operation of slide gates if a rupture of the pressurized conduits occurs.



TYPICAL LEVEE SECTION



LOCATION MAP



PLAN

SCALE IN FEET

2000 0 2000 4000

LEGEND.

- Proposed levee this project
- Proposed riprap this project
- Proposed channel this project
- Floodwall

FLOOD CONTROL PROJECT

GREAT FALLS
SUN RIVER, MONTANA

U. S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS
OMAHA, NEBRASKA
30 SEPT. 1981