Geraldine Phase 2 Funding Options

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GreatWest ENGINEERING®

BEAR PAW DEVELOPMENT CORPORATION

Options for Phase 2

- Move forward with full project
- Move forward with 75% of project
- Don’t move forward

Why do we need Phase 2?

Distribution System Issues

Leaking and Problematic AC Water Distribution Mains and Fittings – The Town's distribution system is comprised mostly of AC pipe that is 4- inches or smaller in diameter. These pipes and fittings were installed in the 1950s and some sections earlier, and the system is operating well beyond its useful service life. The piping experiences significant leaks as well as water main breaks. Water loss in the system can be up to 50%. The suspected causes for the leaking are the age and degrading condition of the pipes and weak connection points. Documented longitudinal cracks are propagating along sections of this piping. Leaky water main piping presents a significant health hazard due to the potential for contamination from backflow events.

Corroded and Inoperable Water Valves – Another source of leaking in the water system are the old water valves and metallic fittings that have corroded severely. In addition to leaking, many of the gate valves in the system no longer function to fully close the lines. The lack of useful valves has prevented the Town from being able to isolate small sections of the distribution system for maintenance and repair. Instead, large portions of the system, if not the entire town, instead of the single Town block being worked on, need to be shut down during leak repairs and often with little or advanced notice to the residents due to emergency repairs. The soils are documented to be corrosive. The inability to isolate specific portions of a system is out of compliance with DEQ standards and poses a higher risk for potential pathways for contaminants to enter the water system when larger sections of mains are depressurized.

Spring Source Issues

No alternate potable water source – The spring supply at Square Butte is a high quality water source. The Town does not have any other backup potable source that can meet the demands of the system. Groundwater wells have not proven viable for the community.

Spring Ground Movement - The springs occur within a mapped alluvial landslide deposit. Slow ground movement is observed to affect surficial spring collection features; valve boxes, vault structures and fencing are exhibiting dislocation and settling impacts. Ground movement has caused some valves to be inaccessible and has buried by-pass outfall pipes. It is unclear at this time to what extent ground movement may be affecting the sub-surface spring collector piping.

Spring Source Contamination Concerns – Livestock and game activity in and around the springs poses a threat to spring water quality. The immediate area around each of the spring galleries is fenced, however, the areas have inadequate protection from cattle-born or game fecal contamination of the larger springs footprint. The system has also received past violations for fecal positive testing showing the susceptibility of contamination of this source location.

Spring Source Issues (continued)

Potential for Surface Water Infiltration at Spring Site - Spring water is considered groundwater not under the direct influence of surface water. However, the documentation suggests the spring collection galleries were not constructed with an upper membrane or impermeable materials to effectively inhibit surface water infiltration. Spring water not captured by the collection galleries flows overland across the spring development as surface water and can infiltrate groundwater. In addition, ground settling above the collection galleries has produced some surficial depressions which can retain surface water/snow melt, providing increased potential for surface water contamination of the spring collectors. This situation can be the cause of past total coliform and e coli deficiencies.

Vegetation and Soil above Spring Galleries - The springs are relatively lush areas with abundant plant growth and a developed organic soil profile. Excessive vegetation provides habitat for rodents, and plant roots can cause clogging of spring collector piping over time. Organic-rich soils can increase concerns for bacterial contamination of the spring water collection system.

Chemical Treatment Building/Equipment

Unsafe Chlorination Station – The water system receives disinfection through a chlorination station using liquid sodium hypochlorite at an injection point located north of the springs. The vaults that contain the flow meter and injection equipment are in tight and confined spaces, and the Town's workers are unable to easily and safely operate and maintain the equipment. Replacing the chlorine injectors can be extremely difficult in the existing tight working area within the 48-inch manhole vaults. Additionally, the building that houses the chlorination equipment has begun to deteriorate to a state which allows rodents and other vermin access to the chlorination equipment space.

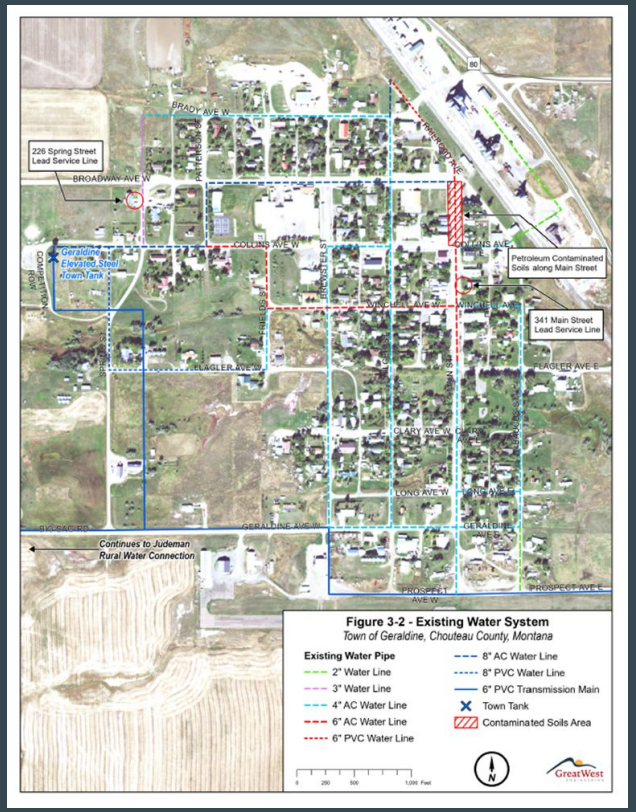
SCADA/Control System

Outdated System Control and Data Acquisition (SCADA) System – The Town uses an outdated SCADA program, installed over 20 years ago, to monitor and operate its water system. The hardware and software platforms are both no longer supported. The SCADA system that the Town utilizes is vulnerable to failing and leaving Geraldine without any control of its system.

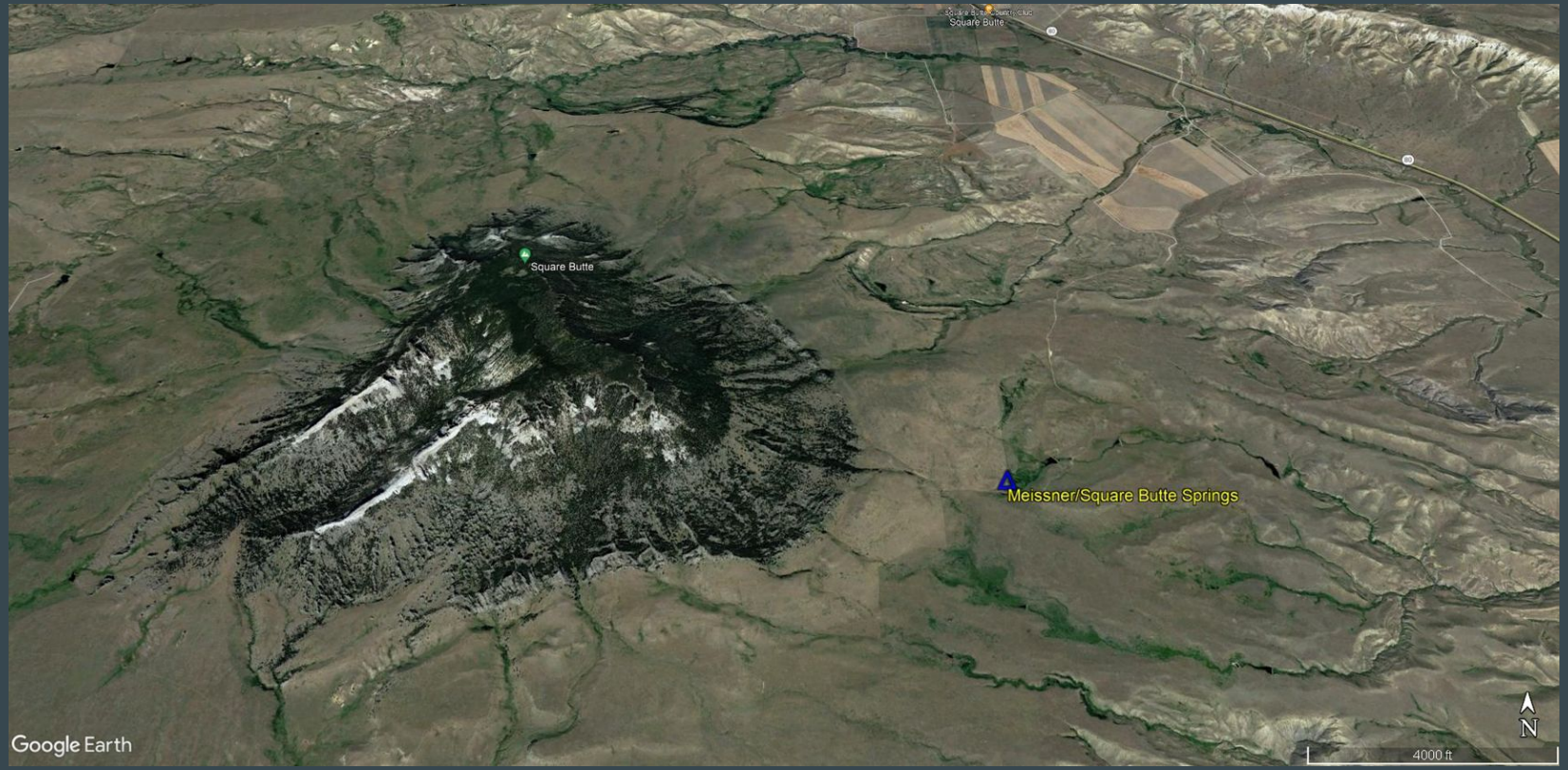
Additional deficiencies and problems (Tanks, Transmission Issues) can be found in the PER Executive Summary and Chapter 3

Water system/Planning area

Distribution

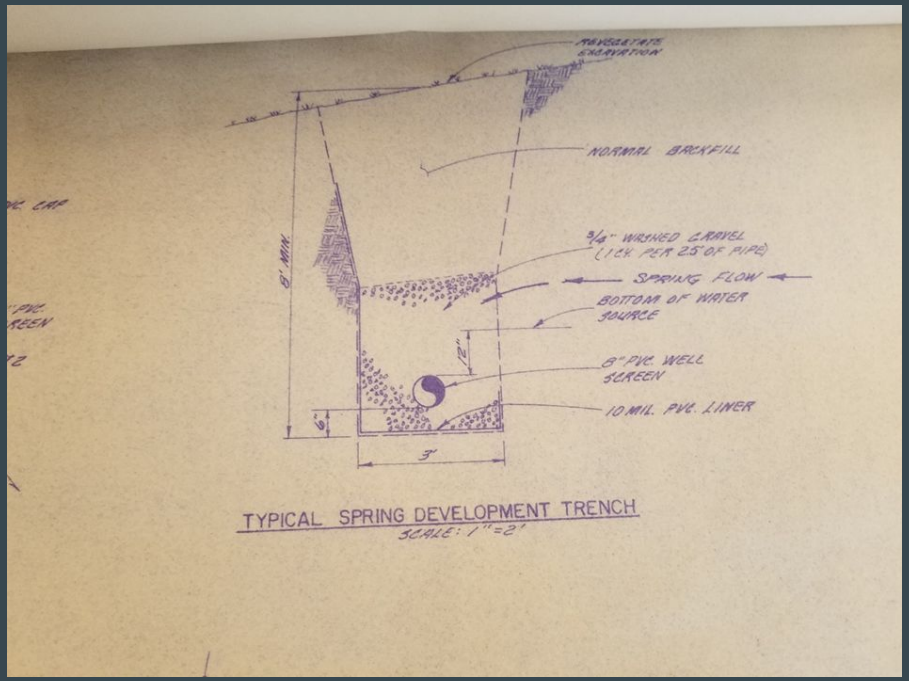


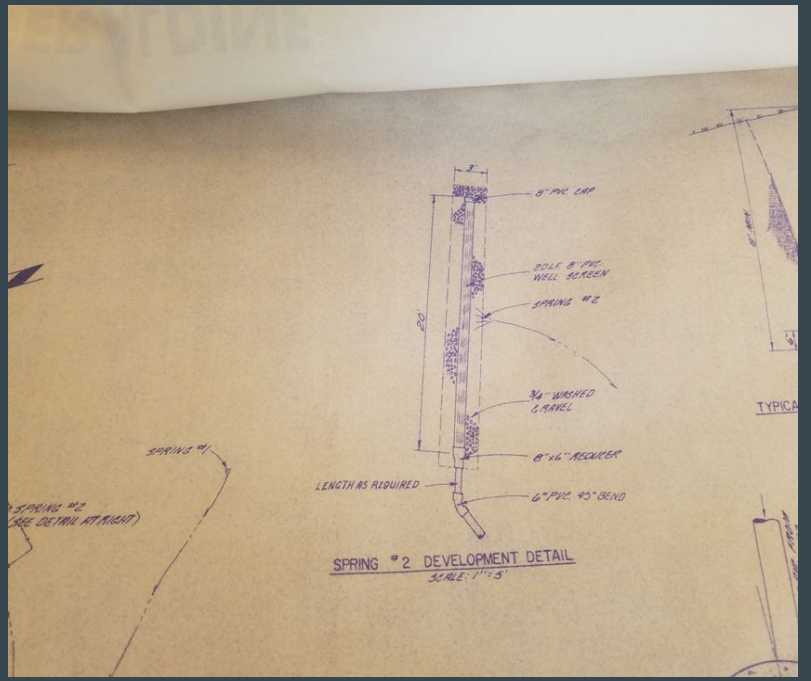
SQUARE BUTTE SPRINGS OCCURRENCE



SPRING GALLERY VIEW TO EAST

Springs


NORMAL BACKFILL
3/4" WASHED GRAVEL (1CY PER 25' OF PIPE)
SPRING FLOW
BOTTOM OF WATER SOURCE
8" PVC WELL SCREEN
10 MIL. PVC. LINER
3'
TYPICAL SPRING DEVELOPMENT TRENCH
SCALE: 1"=2'


8" PVC. CAP
20LF 8" PVC. WELL SCREEN
SPRING #2
3/4" WASHED GRAVEL
8"x6" REDUCER
LENGTH AS REQUIRED
6" PVC. 45° BEND
SPRING #2 DEVELOPMENT DETAIL
SCALE: 1"=5'

Springs (cont)

Springs (cont)

Treatment Building

- 2 Vaults (Confined Space)
- Degrading/Corroded Shed Space

Locations & Phasing

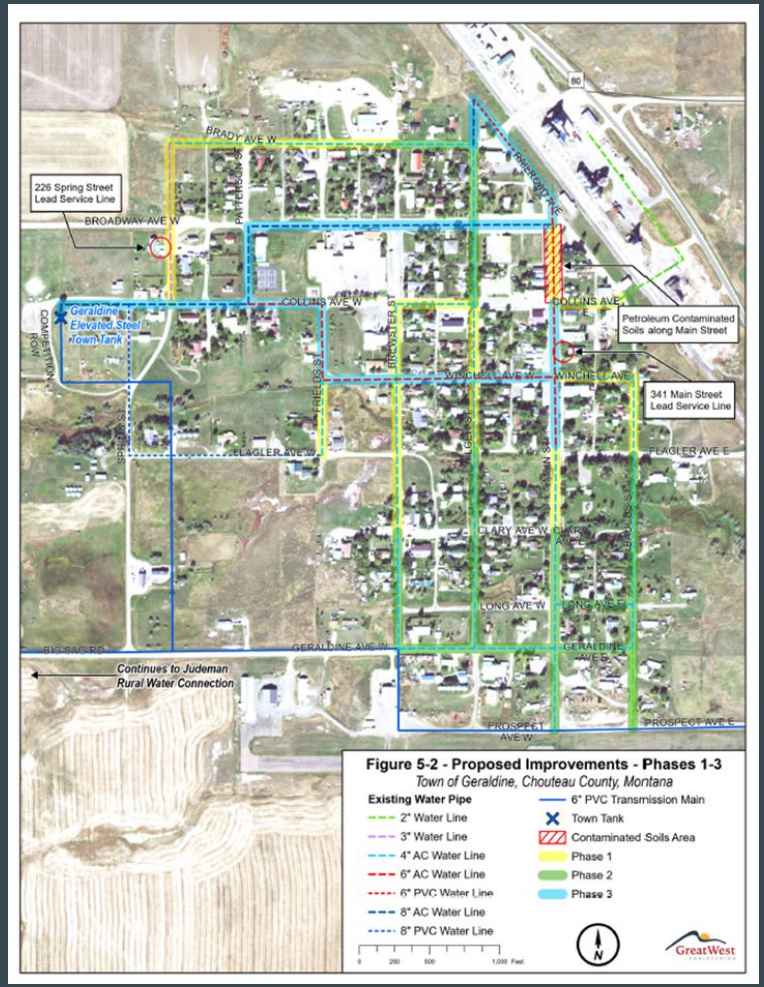
Total Project Estimates

»D-1: No Action

»D-2: Phase 1 – $2.66 mil.

»D-3: Phase 2 - $2.5 mil.

»D-4: Phase 3 - $2.65 mil



Option#1
FULL PHASE 2

Scope of Work

- Springs: a detailed assessment of the springs will be done along with a rehabilitation upgrade at the springs site.
- Replacing AC: 6,800 ft of additional 4” AC pipe will be replaced

Project Cost for **Full** Phase 2: $2,643,000

MCEP	$500,000
CDBG	$750,000
DNRC-RRGL	$125,000
Remaining Cost to be Funded	$1,268,000

Loan Options

RD 40-yrs, 2.75%	SRF 30-yrs, 2.5%
Loan:$697,500	Loan: $634,000
Grant: $570,500	Forgiveness:$634,000
Rate increase: $8.50-$9.50	Rate increase: $10.50-$11.50

Things to Consider

- Bear Paw will help you apply for RD at no cost
- Applying for RD leaves no obligation to take a loan when awarded
- The town will be paying off 1 of the current loans in 2025

Option #2
75% of PHASE 2

Why 75%?

The Department of Commerce will not allow more than a 25% reduction in pipe without lowering grant awards or rescinding grants all together.

Scope of Work

- Springs: a detailed assessment of the springs will be done along with a rehabilitation upgrade at the springs site. (springs work will not change)
- Replacing AC: 5,100 ft of pipe will be replaced (25% reduction from the original scope)

Project Cost for **75%** Phase 2: $2,070,000

MCEP	$500,000
CDBG	$750,000
DNRC-RRGL	$125,000
Remaining Cost to be Funded	$695,000

Loan Options

RD 40-yrs, 2.75%	SRF 30-yrs, 2.5%
RD will likely not fund a scaled back project.	Loan: $347,500 Forgiveness:$347,500 Rate increase: $2.90-$4.00

Things to consider:

- DOC will expect the remaining 25% of phase 2 to be completed in the coming years
- RD typically likes to fund full phases of projects so the only option would be SRF

Option #3
Don’t move forward

Things to consider:

- You will be giving back over a million dollars in grants
- Deferred maintenance could further deteriorate your system
- If emergency grants are needed they could be a harder to get because of deferred maintenance
- Prices are increasing every year. The same projects will be more in the future.
- All future phases will be pushed back potentially costing the town additional money.

Any Question?