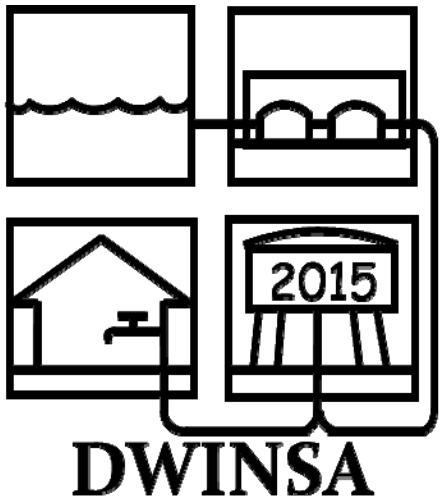
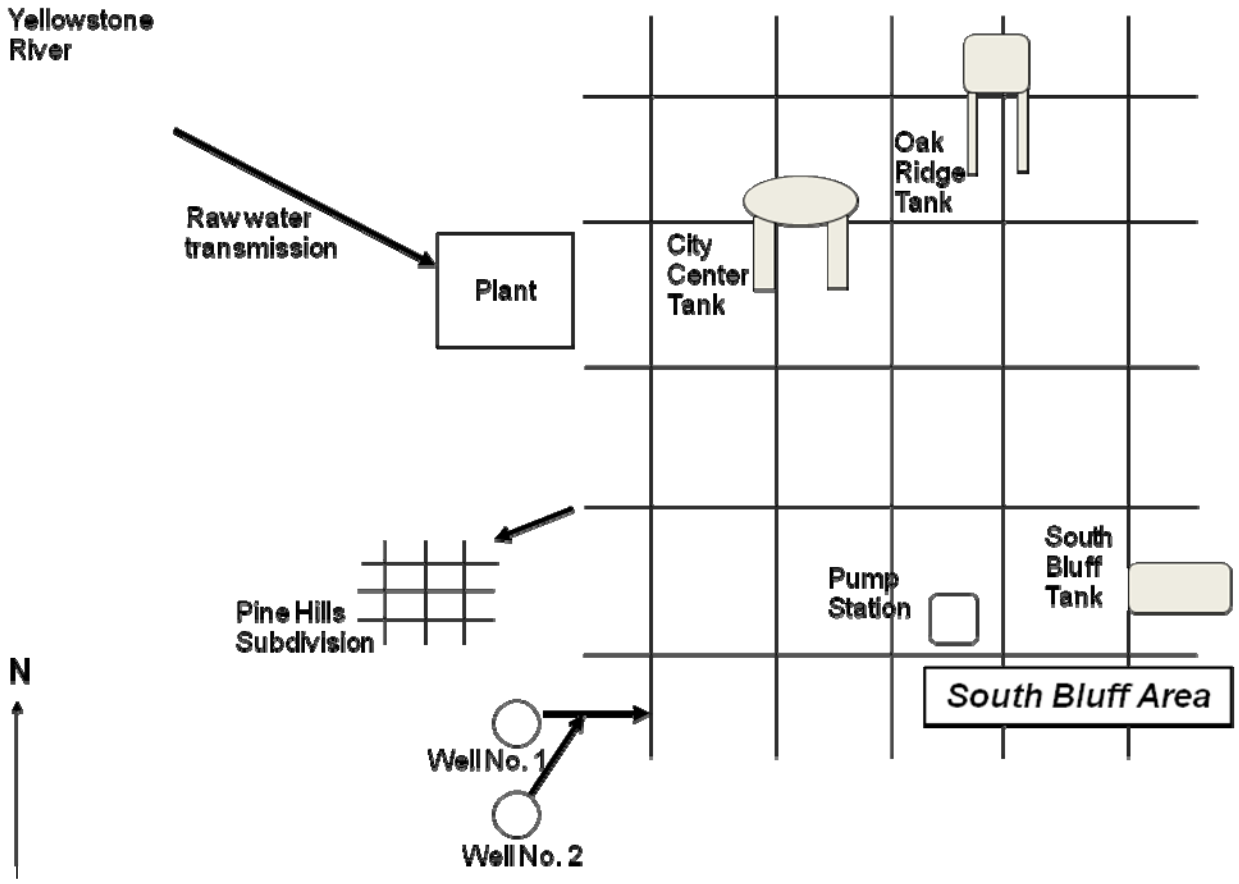
NEEDS EVALUATION GUIDE



U.S. Environmental Protection Agency
Office of Ground Water and Drinking Water

Note: This guide is intended to assist states and EPA Regions in determining system needs. This guide notes documentation requirements. A single asterisk (*) indicates that weight of evidence (WOE) is required and two asterisks (**) indicate that WOE plus independent documentation (ID) is required. If this Evaluation Guide is signed and adequate information is included, this document can serve as survey-generated documentation of need.

System Schematic:



2015 DRINKING WATER NEEDS EVALUATION GUIDE

SECTION I: SYSTEM AND SURVEYOR INFORMATION

Date of Survey: ***4/27/2015*** Surveyor: ***John L. Engineer***

A. System Name: : ***Kettle Falls*** **PWSID:** ***0045987***

B. Person(s) Interviewed:

Name: ***John Q. Operator*** Title: ***Water Treatment Plant Supervisor***

Phone: ***(987) 654-3210*** E-mail address: ***JQO@gmail.com***

Name: _____ Title: _____

Phone: _____ E-mail address: _____

C. System Address (Street or P.O.): ***153 Main Street***

(City): ***Kettle Falls*** (State): ***XX*** (Zip): ***12345***

Telephone Number: ***see above*** Fax***: (987) 654-3211***

Best Time of Day to Reach System Contact: ***9:00-5:00 Eastern Mon-Fri***

D. Ownership (Circle One) (Public) Investor-owned Private Non-Profit Native American	**E. Seller?** System Sold To: _____ PWSID: _____ Population of Consecutive System: _____ Connections in Consecutive System: _____
F. System Size Population Served: ***13,000*** Residential Connections: ***5,000*** Non-residential Connections***:200***	**G. Source** (Circle All That Apply) (Groundwater) (Surface Water/GWUDI) Purchased Groundwater Purchased Surface Water/GWUDI Water
H. Water Demand (with units) Average Daily Demand: ***2.0 MGD*** Maximum Daily Demand: ***4.3 MGD***	

SECTION II: SOURCES AND TREATMENT

A. Groundwater Sources

Source Name/No.	*1*	*2*	
Capacity	*100 gpm*	*200 gpm*	
Source Type • Well • Spring • Inf. Gallery	*Well* *(120')*	*Well* *(95')*	
Age/Condition: • Well • Pump • Controls	*Well 42 years old* *Pump approx 12 years*	*Well is 27 years old* *Pump approx 14 years*	*Well house is in poor condition – scheduled to be replaced by treatment building*
Rehab Needed?* (WOE not required for well pump) (C) or (F)		*Well No. 2 will need rehab in the future because of iron and iron bacteria. It is typical for this system to need to rehab or replace wells every 5 - 10 years due to fouling.*	
Replacement Needed?* (WOE not required for well pump) (C) or (F)	*Well No. 1 is in need of replacement at this time because its capacity has diminished by 50% over the past 5 years due to fouling. The most recent rehab had improvement impact on production.*		
WQ Problems? (Describe, e.g., biological, physical, chemical, corrosive)	*Fe and Mn*	*Fe and Mn*	
New Source Needs?* What is the total reliable source capacity when the largest source is out of			

Source Name/No.	*1*	*2*	
service?			

B. Groundwater Treatment

Treatment Plant Name/No.		*None*	
Capacity			
Plant Type (e.g., ion exchange)			
List unit processes			
Age/Condition • Plant • Components			
Choose only one	Rehab Needed? • Plant • Components (C) or (F)		
	Expansion/Upgrade Needed?** • Plant (C) or (F)		
	Replacement Needed? • Plant** • Components (C) or (F)		
New Treatment Needs?**		*Iron at 0.5 mg/l (no treatment), Mn @ 0.1 mg/l (see lab slip).* *The system is planning to install treatment to sequester iron and manganese. Disinfection will be required as a result of adding chemical.* *New building will be required as existing well house is in poor condition and will not be adequate for use as a treatment building.*	

C. Surface Water Sources

1. Provide the following information for each surface water supply:

Source Name/No.	*Yellowstone River*	
Raw Water Storage?	*No*	
Source Type • Stream • Lake/Res • GWUDI	*River*	
Treated?	*Yes*	
Reliable Source Capacity	*Yes*	
Raw Water Quality (consider T&O, precursors, etc.)	*High turbidity during spring runoff*	
Rehab Needed?* (C) or(F)	*No*	
Replacement Needed?* (C) or(F)	*No*	
New Source Needs**	*No*	

D. Surface Water Treatment

Treatment Plant Name/No.		*Yellowstone Plant*	
Capacity		*4.2 MGD*	
Plant Type (e.g., conventional filtration)		*Direct Filtration*	
List unit processes		*Coagulant addition* *Rapid mix* *Multimedia filtration* *Disinfection*	
Raw Water Pumps (condition, capacity, redundancy)			
Age/Condition • Plant • Component		*The existing plant is a direct filtration plant and is unable to handle spring run-off. In addition, it is downgradient of several wastewater treatment plant dischargers.*	
Choose only one	Rehab Needed? • Plant • Components (C) or (F)		
Choose only one	Expansion/Upgrade Needed?** • Plant (C) or (F)	*The system is planning a major upgrade which will make use of the existing multi-media filters (unchanged) but will add 3 stage flocculation and a sedimentation basin ahead of the filters. See pages 13 - 15 of engineering report for details and estimated costs.*	
Choose only one	Replacement Needed? • Plant** • Components (C) or (F)		
New Treatment Needs?**			

E. Treatment Schematic(s):

ADDRESS PROCESS WASTEWATER & SLUDGE:

SECTION III: FINISHED/TREATED WATER STORAGE

A. Storage Facilities

Name/No.	*Oak Ridge*	*City Center*	*South Bluff*	
Capacity (MG)	*elevated*	*elevated*	*ground level*	
Type • Elevated • Ground • Standpipe Buried (fully or partially) • Hydropneumatic	*0.1*	*0.25*	*5.0*	
Material	*steel*	*steel*	*concrete*	
Age/Condition	*fair*	*good*	*new*	
Rehab Needed? (C) or (F)	*Yes-Current*	*Yes-Future*	*No*	
Replacement Needed?* (WOE not required for replacement of hydropneumatic tanks) (C) or (F)	*No*	*No*	*No*	
New Storage Needs? (e.g., Is storage adequate for existing population?) * WOE required for new hydropneumatic tanks ** WOE plus independent documentation required for new elevated and ground-level finished water storage tanks	*No*			

SECTION IV. DISTRIBUTION SYSTEM

A. Distribution System Pumps or Pump Stations

(Keep in mind that raw and finished water pump needs are included in the treatment section.)

Name/No.	*Oak Street PS*			
Capacity (MG)	*2.0*			
Type	*Booster Pump Station*			
Age/Condition	*15 years – poor condition*			
Issues to consider: • controls • pump house • zones of low pressure • redundancy • safety (pits, etc.)	*Station is a below-grade vault in very poor condition. It is a confined space and it unsafe for entry. Pumps are all over 20 years old and showing signs of wear.*			
Rehab Needed? (C) or (F)				
Replacement Needed?* (WOE only required for replacing pump stations) (C) or (F)	*Yes – Current Need*			
New Pumping Needs? * WOE required for new pumps ** WOE plus independent documentation required for new pump stations				

B. New Pipe Needs:** Consider if the system needs new pipe for issues such as looping to address water quality problems or to serve homes with contaminated or inadequate sources.

Needs for new installation	Length	Diameter	Discussion
Distribution	*10,350 feet*	*8 inch*	*The system has several areas with dead ends where it is practical to provide looping. This will help address the water quality problems they have experienced in these areas. See independent doc.*
Transmission	*10,560*	*8 inch*	*A two mile transmission line is needed to supply water to Pine Hills Subdivision. Their individual wells have been contaminated with VOCs and running a transmission line to these homes is the most economical option for providing safe water. See ind. Doc.*

* WOE required

** WOE plus indep. documentation required

C. Rehabilitation and Replacement Needs (WOE with independent documentation only if needs exceed 10 percent of total pipe):** Review distribution system information and maps for length and diameter of existing pipe needing rehabilitation or replacement - Consider the following:

- o Material
- o Diameter
- o Age
- o Condition
- o Pressure Complaints
- o Leaks and breaks
- o Soil conditions/Corrosivity
- o Installation (bedding, depth of bury…)

Needs for rehabilitation or replacement of existing mains	Existing pipe (Feet or Miles)	Rehab (H) or Replace (R)	Current (C) or Future (F)	Length of pipe to rehab/replace (Feet or Miles)	Discussion
Distribution <6-inch	*None*				
Distribution 6-inch	*146,800 feet*	*R*	*C*	*2,800 feet*	*PVC and ductile are in good shape, but all cast iron pipe needs replacement*
Distribution 8-inch	*84,000 feet*	*R*	*C*	*1,500 feet*	*PVC and ductile are in good shape, but all cast iron pipe needs replacement*
Distribution 10-inch	*None*				
Distribution 12-inch	*20,000 feet*	*R*	*C*	*800 feet*	*PVC and ductile are in good shape, but all cast iron pipe needs replacement*
Distribution 18-inch	*None*				
Distribution 24-inch +	*None*				
Transmission (size) ***18"***	*13,200 feet*	*R*	*C*	*13,200 feet*	*Transmission main from river to plant – all cast iron and in need of replacement.*

Total amount of pipe in the system (feet or miles)	*50 miles*

D. Meters Indicate type and number of water meters that need to be installed or replaced.

Type	Number of Meters	Diameter of Meters	New or Replacement	Why is this project needed?
Domestic	5,200	5/8 and ¾ inch	R	Meters will need replacement within 20 years
Other				

E. Backflow Indicate type and number of backflow prevention assemblies that need to be installed or replaced.

Type	Number of Assemblies	Diameter of Assemblies	New or Replacement	Why is this project needed and is the system responsible for the cost?
Domestic				
Other				

F. Services Indicate the type and number of service lines that need to be replaced.

Type	Number of Service Lines	New or Replacement	Why is this project needed?
Lead			
Other[1]			

[1] Include information on ownership (i.e., does the system own the service lines or the consumer).

G. Valves Indicate type and number of valves that need to be installed or replaced in addition to those included in any pipe projects.

Number of Valves	Diameter of Valves	New* or Replacement*	Why is this project needed?

SECTION V: OTHER INFRASTRUCTURE NEEDS

A. SCADA

Note – if at all possible, obtain documented cost estimate from system

Process controls and SCADA are part of plant upgrade.

B. Emergency Power (* WOE for new generators/emergency power)

Note – rehabilitation of generators is considered O&M – not allowed for Needs Survey

The water treatment plant has power from two separate sources. The pumping station on Oaks Street, however, needs auxiliary power to prevent pressures from falling below 20 psi. The station is fed by only one section of the power grid, and experiences regular outages. In the past 2 years pressures in this section of town have dropped below 20 PSI during power outages on 5 separate occasions. This will require a 50 kW generator.

C. Other (* WOE for documentation of need; documented cost estimate required)

Note – Use for types of need not already addressed. Consider green infrastructure or climate resiliency-related needs such as a berm to protect an at-risk pump station or elevating an emergency power generator.