



## Pilgrim Creek Wells and Jackson Lake Lodge Waterline Replacement

The National Park Service is conducting National Environmental Policy Act (NEPA) compliance for proposed improvements to potable water infrastructure located in the north district of Grand Teton National Park, Wyoming. Currently, three wells at Pilgrim Creek provide potable and fire suppression water for Jackson Lake Lodge and Colter Bay Village. These areas combined serve over 2.6 million visitors annually, including 75 percent of nightly lodging in the park (Jackson Lake Lodge and Colter Bay Cabins) and 27 percent of the park's campground overnight stays (Colter Bay Campground, RV, and tent sites). In addition to visitor use, the wells and their supply lines provide water for 909 seasonal and 145 year-round NPS and concessioner employees living in both areas. These three wells provide the two areas with over 500,000 gallons of water per day during the summer for domestic water needs, as well as for structural fire protection, including the protection of historic structures.



**Figure 1: Flooding around well house 1, spring 2011**

However, there are problems with the existing system that need to be rectified in the near future. These problems are because of where it is located and its age.

Two of the three Pilgrim Creek wells (#1 and #3) and their associated well house are located in the floodplain of Pilgrim Creek. Every year during spring runoff, the subgrade chlorination vault floods. At times, the high water level makes the well house and well controls inaccessible, and maintenance and repairs difficult and

potentially unsafe (Figure 1). When this important infrastructure cannot be maintained or repaired, the risk of contamination of the Jackson Lake Lodge and Colter Bay water supply is high. A contaminated water source would require shut down of the water supply to these heavily used visitor sites until the system could be repaired, flushed, and disinfected.

Because of its location, the northernmost well house structure is in violation of Wyoming Department of Environmental Quality (DEQ) requirements that well house buildings be constructed at least 3' above the 100-year flood level or the highest known flood elevation. And, each time the wells come under the influence of surface water, there is a violation of Environmental Protection Agency and DEQ permit regulations. Public Health Service Environmental Health Surveys have reported this situation as a primary concern for the park.

Finally, although the two existing 500,000 gallon storage tanks and the Colter Bay water transmission lines are in acceptable condition, two of the three wells and the water transmission lines from these wells to Jackson Lake tank and lodge areas were installed in the 1950s and are in need of replacement. The majority of underground water mains in Colter Bay and Jackson Lake Lodge were installed in the 1950s and are asbestos cement. The park began to see the failure of these mains, in the form of large and small leaks, nearly 20 years ago and has been working to replace portions since

then. Replacing or removing these lines is further complicated because they are primarily asbestos cement pipes, now recognized as a health hazard to those handling them.

### ***Project Development***

In fall 2012, an interdisciplinary team began working on alternatives that would best meet public safety, park operations, and resource management objectives. With the assistance of NPS hydrologists from the Water Resources Division in Fort Collins, Colorado, the park identified potential areas for new well sites. Once those areas were identified, park staff began investigating alternative configurations for the new wells, treatment systems, and supply lines near Pilgrim Creek and transmission lines to Jackson Lake Lodge.

In winter 2014, two value analysis workshops<sup>1</sup> presented the most reasonable alternatives to replace the Pilgrim Creek wells and for the replacement of the Jackson Lake Lodge water main. Some alternatives were eliminated due to the potential impacts to: reliability of groundwater sources; valuable wildlife habitat loss or fragmentation; and other adverse impacts to resources. The final outcome of this planning effort is presented below as the proposed action.

### ***Proposed Action***

#### *Overview*

The park would abandon the two northernmost wells, Pilgrim Creek Wells 1 and 3, and remove the associated well house. Two new wells and a winterized well house would be installed at the Pilgrim Creek Well 2 location, 4.2 miles from Highway 89. A new water transmission line would replace existing line to the storage tank, then to Jackson Lake Lodge.

With this project, the park would abandon the two northernmost wells, remove the associated well house, and install two new wells and a winterized well house at the Pilgrim Creek Well 2 location, 1500 feet from Highway 89. A new water transmission line would replace existing line to the storage tank, then to Jackson Lake Lodge. Relocating the well house and wells would 1) allow 16,200' of aging transmission line to be abandoned and remove critical infrastructure removed from the floodplain and flooding potential; bring critical maintenance activities closer to the developed areas; 2) replace aging and failing water transmission lines; and 3) remove year-round, daily human activity from over 400 acres of valuable wildlife habitat.

#### *Pilgrim Creek Well House*

Two new wells would be added near well 2 and its well house. The three wells would supply water for both Jackson Lake Lodge and Colter Bay. The well house would be replaced to accommodate chlorination equipment and flow management for year-round use of the three wells. This reconfiguration would result in a reduction in daily maintenance checks as there would be one well house instead of two. By locating the wells closer to Highway 89, operators would reduce their daily drive into critical wildlife habitat by 2.6 miles and, over a year period, approximately 1,000 miles of driving and 90 hours of travel time could be eliminated.

---

<sup>1</sup> Value Analysis workshops focused on the developing a "Preferred" alternative within the existing budget, using Choosing By Advantages (CBA) to select individual portions of scope that provide the most value in addressing project objectives.

### *Jackson Lake Lodge Water Mains*

Originating at well house 2, a new supply line would be bored under Pilgrim Creek and installed within an existing utility (power and telephone) corridor for approximately 6,500' to where the line meets an existing two-track. For 700', the line would follow the two-track and pass through an abandoned soil storage area. At this point, the new line would be placed parallel to the existing Jackson Lake Lodge transmission line for 3,000' to the Jackson Lake Lodge storage tank. From the storage tank, the new transmission line will run parallel to the existing line for approximately 4,500' to Jackson Lake Lodge. After installation is complete, all of the old line would be abandoned in place and water would be provided through the new supply and transmission lines.

### *Areas of Disturbance*

Lines would be buried a minimum of 5' for frost protection. With a trench side slope required by OSHA for class C soil types, disturbance is calculated based on a 19' wide trench. Temporary construction limits have been estimated at 45' wide when including topsoil stockpiling adjacent to construction area needs, but in most circumstances would be less. There is an estimated 18 acres of disturbance for the entire project, most within or adjacent to existing utility corridors. All areas would be revegetated with native plants. Some conversion of vegetation types (from forest to shrub) may occur over the long-term due to maintenance of utility corridors. Vegetation in areas currently maintained as utility corridors would not change. Project design and additional mitigations will be put in place for protection of resources and limit the amount of disturbance.

### *Issues*

#### *Public Water Supply*

Jackson Lake Lodge and Colter Bay water systems serve 2.6 million visitors annually. In addition, the wells and their supply lines provide water to over 1,000 NPS and concessioner employees living in both areas. The NPS is legally required to provide safe/continuous potable water for the employees and visitors in the area.

#### *Asbestos Water Lines*

Over 16,000' of the existing water lines connecting the wells to the tanks are asbestos cement. Due to health concerns, asbestos cement (AC) pipe, also known as "transite," is now considered hazardous and regulated by U.S. Environmental Protection Agency (EPA). Studies have indicated that, in normal use, AC pipe does not pose a threat to public health and the park's water is tested regularly. However, removing the pipe from the ground completely is a high-risk activity to workers and requires workers to have specialized training in asbestos handling, as there is the risk of environmental contamination when the pipe gets damaged during removal. If the damaged pipe cannot be completely contained and removed, the area is considered a hazardous waste disposal site. Therefore, abandonment in place is the preferred method of decommissioning lines.

#### *Grizzly Bear Primary Conservation Area*

The grizzly bear was listed as threatened in 1975 and due to intensive management efforts, the Greater Yellowstone Area population has achieved biological recovery objectives and is under evaluation by the U.S. Fish and Wildlife Service for potential removal from the endangered species list. The project is within critical wildlife habitat, including the Grizzly Bear Primary Conservation Area (PCA) as established in the 2007 *Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area*. This strategy states there can be no net loss of habitat, using a 1998 baseline, in the PCA now and in the future, should the population be 'delisted'. Designers will continue to work

with resource specialists to ensure compliance with the conservation strategy, understanding that additional trail closures and rehabilitation may be needed to remain consistent with no net loss of grizzly bear habitat in the area.

#### *Canada Lynx Two Ocean Lynx Analysis Unit*

The Canada lynx is federally listed as a threatened species. The State of Wyoming classifies the lynx as a Species of Special Concern-Class 1, which indicates that habitat is limited and populations are restricted or declining. Lynx analysis units (LAUs) are management areas that contain suitable lynx habitat and approximate the size of a female home range. The project is located within the Two Ocean LAU. Because the U.S. Fish and Wildlife Service is revising the extent of designated lynx critical habitat, which includes the Two Ocean LAU, Grand Teton National Park must treat the area as critical lynx habitat. The project is being designed to follow an existing utility corridor and two-track to minimize the potential for effects on vegetation and lynx habitat. Further evaluation of potential effects to this habitat is currently taking place.

#### *Archeological Survey*

All areas where there is anticipated ground disturbance will be surveyed for archeological/historic features fall, 2014. If any discoveries are made, these areas would be avoided and/or effects to the resources would be mitigated with close consultation with the Wyoming State Historic Preservation Office.

We would like to hear your thoughts and concerns regarding this proposed action. To obtain more information and submit your comments, please visit:

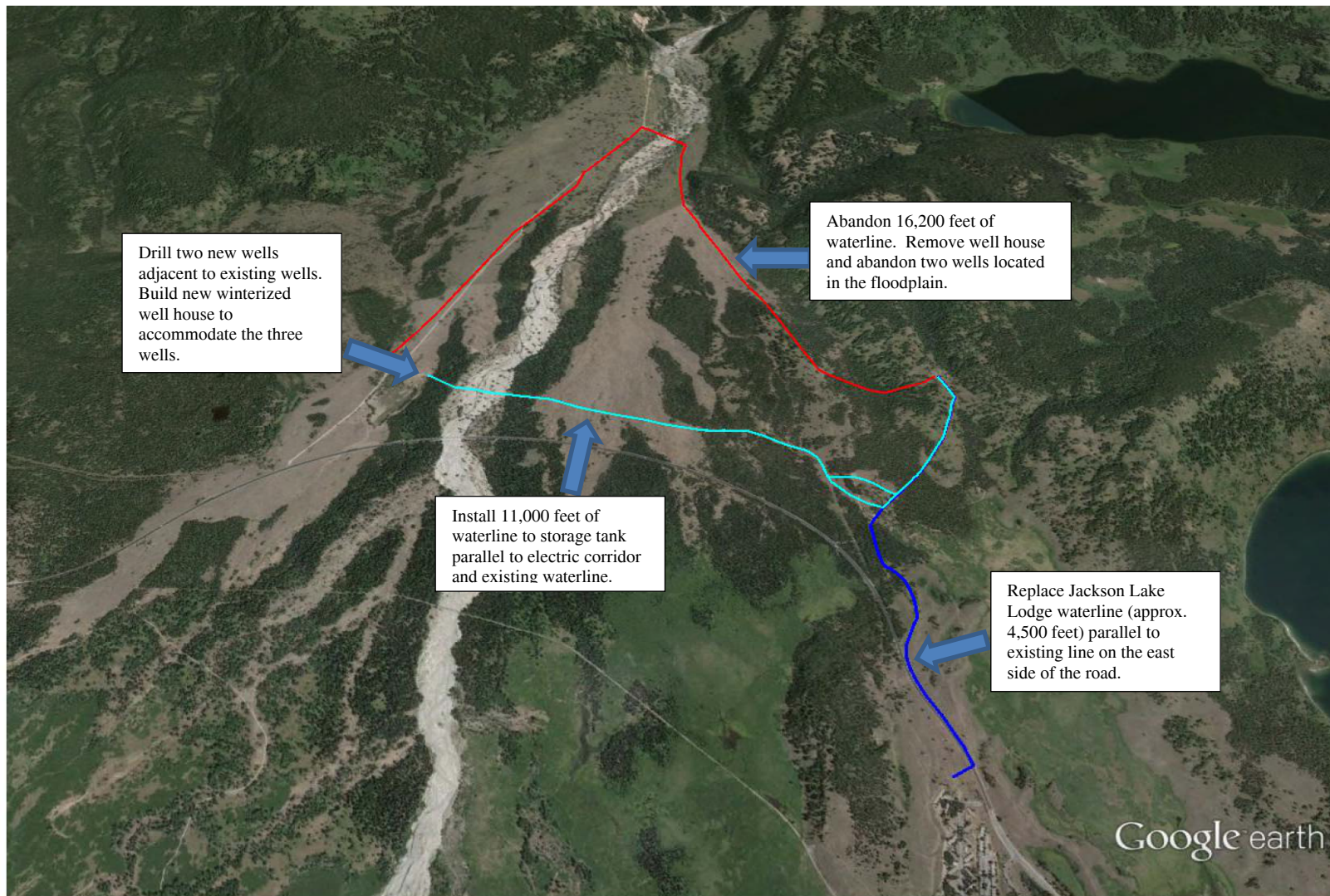
<http://parkplanning.nps.gov/pilgrimcreekwater>. You can also submit comments to Grand Teton National Park; Attention: Margaret Wilson; P.O. Drawer 170; Moose, WY 83012. The scoping period will run from September 17, 2014 through October 16, 2014.

You may respond anonymously or you may include your name, address, and e-mail address (if applicable) with your comment. Please be aware that your entire comment – including your person identifying information – may be made publicly available. While you can ask us to withhold this information from public review, we cannot guarantee that we will be able to do so. Thank you for your interest in Grand Teton National Park. We appreciate your participation.





# Pilgrim Creek Wells and Jackson Lake Lodge Waterline Replacement



Drill two new wells adjacent to existing wells. Build new winterized well house to accommodate the three wells.

Abandon 16,200 feet of waterline. Remove well house and abandon two wells located in the floodplain.

Install 11,000 feet of waterline to storage tank parallel to electric corridor and existing waterline.

Replace Jackson Lake Lodge waterline (approx. 4,500 feet) parallel to existing line on the east side of the road.

Google earth

miles 1  
km 2

