



Background

Purpose & Need

Timeline

- 1997**
Central Iron County Water Conservancy District (CICWCD) established
- 2005**
United States Geologic Survey concludes water shortage is inevitable at current pumping rates
- 2006**
CICWCD applies for water rights in Pine Valley
- 2012**
CICWCD, Utah water rights and BLM contract with the USGS to study hydrology in Pine Valley
- 2014**
The CICWCD begins evaluating additional water supply options
CICWCD obtains water rights in Pine Valley
- 2016**
Utah State engineer establishes safe yield for the Cedar Valley basin
- 2019**
Cedar Valley groundwater management plan drafted and CICWCD submits application to BLM for Rights-of Way for the Pine Valley water supply project

Environmental Impact Statement Timeline

- July 2020**
Notice of Intent published
- July – August 2020**
Public scoping
- Winter Spring 2021**
Draft EIS available
45-Day public comment period
- Summer 2021**
Final EIS available
30-Day availability period
- Summer-Fall 2021**
BLM record of decision

Federal Land Policy and Management Act (FLPMA)

Enacted in 1976, the FLPMA is the governing law that established BLM policy for multiple use and sustained yield management of public lands. Under FLPMA, the BLM has the responsibility to respond to the CICWCD's application for a right-of way grant on their lands.

National Environmental Policy Act

Enacted in 1970, the NEPA is a landmark environmental law that established a national policy for the environment. NEPA requires that federal agencies assess the environmental effects of all major federal actions prior to making decisions. This includes agency projects and projects such as the Pine Valley Water Supply Project which requires a discretionary federal authorization. NEPA requires that all significant environmental consequences from a project be disclosed to the public.

Applicant s Objectives

The Central Iron County Water Conservancy District (CICWCD) has the responsibility to provide municipal and other water supply to the customers within their district boundaries. After exploring various options for obtaining additional water supply, they applied for and obtained water rights in Pine Valley. They are now requesting a right-of way from the BLM to construct, operate, and maintain the wells, pipelines, and other accessory structures and developments to be able to perfect those rights.

BLM Purpose and Need

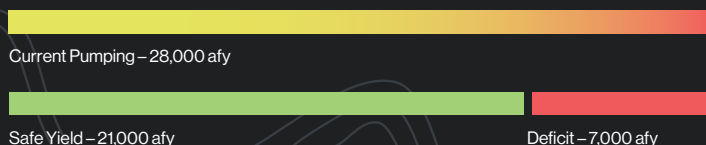
The purpose and need for the Federal action is to respond to the Right-of Way application for the proposed Central Iron County Water Conservancy District, Pine Valley Water Supply Project. This obligation is established by the Bureau of Land Management's responsibility under the Federal Land Policy and Management Act of 1976, establishing policy and direction for multiple use and sustained yield management of the public lands.

Public Scoping

As part of the NEPA process, the BLM must conduct public scoping. The purpose of scoping is to gather input from agencies, tribes, and the general public to inform the development of a range of reasonable alternatives and the potential environmental impacts of the proposed project.

The Cedar Valley Basin currently experiences groundwater withdrawal in excess of established safe yield. The Utah Division of Water Rights has established a safe yield estimate of 21,000 acre-feet per year. The basin is subject to a groundwater management plan that would gradually limit groundwater pumping over the coming decades.

Cedar Valley Groundwater Withdrawal





Proposed Development

The Pine Valley Water Supply Project consists of construction, operation, and maintenance of pipeline and well facilities and their related appurtenant facilities. The project includes the development of the following:

Project Quantities

Facility	BLM Quantity Area	Non-BLM Quantity Area	Total
Pine Valley Lateral Lines—Long-term ROW	1.61 mi 9.8 ac	0 mi 0 ac	1.61 mi 9.8 ac
Pine Valley Lateral Lines—Construction ROW	1.61 mi 13.7 ac	0 mi 0 ac	1.61 mi 13.7 ac
Pine Valley Main Line—Long-term ROW	31.1 mi 188.7 ac	2.7 mi 16.1 ac	33.8 mi 204.8 ac
Pine Valley Main Line—Construction ROW	31.1 mi 264.2 ac	2.7 mi 22.5 ac	33.8 mi 286.7 ac
Transmission Main Pipeline—Long-term ROW	9.9 mi 60.2 ac	21.0 mi 127.3 ac	30.9 mi 187.5 ac
Transmission Main Pipeline—Construction ROW	9.9 mi 84.3 ac	21.0 mi 178.2 ac	30.9 mi 262.5 ac
Production Wells	10 10 ac	5 5 ac	15 15 ac
Monitoring Wells	8 8 ac	0 0 ac	8 8 ac
Solar Power Generation Site	0 0 ac	1 200 ac	1 200 ac
Power Lines	11.73 mi 71.09 ac	0 0 ac	11.73 mi 71.09 ac
Pressure Reducing Station	0 0 ac	1 1 ac	1 1 ac
Mountain Springs Wash Tank	0 0 ac	1 20 ac	1 20 ac
Access Roads	9.22 mi 55.88 ac	0 0 ac	9.22 mi 55.88 ac
Wildlife Watering Areas	TBD* -	0 0 ac	TBD* -

Well Development

The CICWCD plans to develop up to 15 well sites, 10 of which are on BLM-managed lands. Well drilling consist of boring to a depth that achieves sufficient water production, installing a pump and perforated casing, and sealing the well. Wells would be housed in masonry houses.

Solar Field and Power Lines

Pump power would be provided by a 200-acre photovoltaic solar array located on private land owned by the CICWCD within Pine Valley. Power lines of less than 100kV constructed from the solar field to well houses. The power pole would be a monopole design without cross arms and with perch deterrents to avoid creating new perching opportunities for predators within Greater Sage-Grouse habitat.

Storage Tank

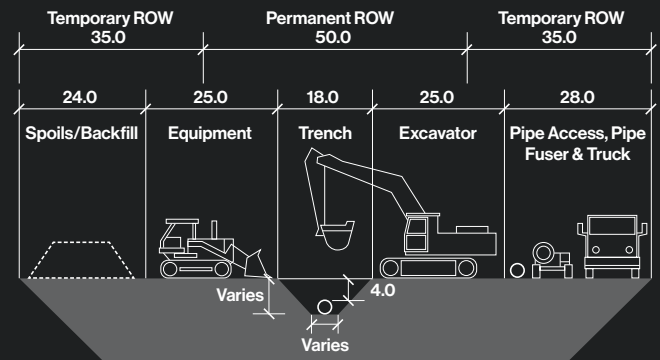
A set of large subsurface storage tanks would be installed at the high point at the southern edge of Pine Valley to receive water pumped out of the wells.

Access Roads

Construction and operational access roads would be located within the pipeline right-of way. Existing public roads would be used in areas, some of which may need to be improved. New roads to well locations would typically be “drive and crush” roads.

Construction Details

The pipelines constructed would be of various widths, as determined by the final engineering for the project at a future date. The proposed pipeline right-of way width is the same in all instances. A 50-foot wide long-term right-of way is requested, centered along the pipeline. A 70-foot wide construction right-of way is requested.



The trench depth and width would vary based on the pipe size. The pipeline would be buried with a minimum of 4 feet of cover. Pipe would be either steel or high-density polyethylene (HDPE). Typically, main lines would be steel and feeder pipelines would be HDPE. The largest pipeline size proposed is 54 inches in diameter.

Wildlife clearance surveys would be performed prior to construction. The staked right-of way would be cleared, and the topsoil salvaged and windrowed. The right-of way would then be graded, and a trench excavated. Bedding material would be placed to support the pipe, and the pipe segments would be placed into the trench. Welds would be visually inspected and tested prior to backfilling.

Crossings of minor or unimproved roads would use the same trenching construction method. Roads would be restored after construction. Boring would be required to pass under two railroad alignments.

Construction Staging Areas

Several construction staging areas have been identified at various locations along the pipeline alignment. These would be used temporarily during the construction phase for materials and equipment storage and as a nursery site.



Biological Resources

Analyzing Project Impacts to Biological Resources

Impacts to a number of biological communities and sensitive species must be analyzed as part of developing the environmental impact statement. Species identified for analysis include:

- Big Game
- Band-Tailed Pigeon
- Wild Turkey
- Migratory Birds
- Springsnails
- Greater Sage-Grouse
- Utah Prairie Dog
- Sensitive Plant Species

Sensitive Plants

Review of the potential for suitable habitat data revealed a number of sensitive plants in the project vicinity. While none of these are federally-listed threatened or endangered species, there are four BLM sensitive species of concern:

- Jones Globemallow
- Pink Egg Milkvetch
- Wah Wah Ivesia
- Franklin's Penstemon

None of these species are known to occur within the proposed pipeline right-of way or other areas of project development.

Springsnails

There are a number of springsnail species endemic to Utah and Nevada and other Western U.S. states. The Utah BLM State Office is one of the signatories of a 2017 inter-agency springsnail conservation agreement. Although Great Basin springsnail species are not federally listed under the Endangered Species Act (ESA), they are a species of concern for the Cedar City Field Office.

A number of springs would be surveyed within Pine Valley for springsnail species, and monitoring of the springs would be part of the adaptive management plan developed for the project.

Greater Sage-Grouse

The Greater Sage-Grouse is endemic to the western U.S. and Canada. Although the species is not federally listed under the ESA, the Greater Sage-Grouse is subject to management prescriptions under the BLM Utah's current Greater Sage-Grouse land use plan. The project would incorporate protection measures that would minimize habitat loss and/or help offset the effects of the project on the species.

Utah Prairie Dog

Endangered Species Act

The NEPA requires that the environmental analysis comply with all federal laws, including the Endangered Species Act (ESA). Evaluation of environmental impacts to federally-listed species is required for all levels of NEPA documentation. An evaluation of the project by Utah Natural Heritage Program Online Species Search Report revealed a single federally-listed species: Utah prairie dog.

Biological Evaluation

To facilitate consultation with the USFWS, the BLM prepared a Biological Evaluation for project impacts to Utah prairie dog. Biologists conducted field surveys following the 2018 USFWS prairie dog survey protocol. During surveys, the proposed pipeline route was found to pass through a number of Utah prairie dog colonies. Revisions were made to the proposed route to avoid species disturbance. The final recommendations included impact avoidance and minimization measures and concluded that the proposed action "may affect, but is not likely to adversely affect" Utah prairie dog.

Section 7 Consultation

Consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (if applicable) is required to ensure the actions taken by agencies do not jeopardize listed species. The USFWS may issue a concurrence letter agreeing with the findings of the Biological Evaluation or provide a Biological Opinion on the effects of the proposed action. After reviewing the Biological Evaluation, the USFWS either issues a Biological Opinion or provides a concurrence letter stating that the agency agrees with the findings.





Cultural Resources

Background

Identifying cultural resource sites in the project area of effect is an important part of the NEPA analysis. Several federal laws require the BLM to assess and protect cultural resources occurring on lands under their jurisdiction. The primary driver is the National Historic Preservation Act which directs federal agencies to take the effects of their actions on historic properties into account. Consultation with the State Historic Preservation Office and Native American tribes with vested interests in the project area is an integral part of the process.

Cedar City Field Office Vision Statement

The BLM Cedar City Field Office defined its goal for their cultural program in 2010 to “protect, curate, monitor, stabilize, interpret, and restore at-risk resources.” Cataloging and managing cultural resources that may be impacted by the proposed project is a critical part of the NEPA process.

Cultural Resources Survey

Archaeological staff performed an inventory report for the project development. Staff first reviewed the existing sites that would be impacted and project cultural data. Subsequently, staff conducted a field survey that identified cultural resources and their eligibility as a historic site on the National Register of Historic Places. The findings were detailed in a cultural resources inventory report.



Findings and Determination

The cultural resources inventory report was submitted to the State Historic Preservation Office (SHPO) in June 2020 with a finding of No Adverse Effect to Historic Properties. Protective measures that include shifting the pipeline route to a specific side of the road and conducting work with a cultural resources monitor are included and would be part of project mitigation measures.

Old Spanish Trail

A Piece of Utah History

Over the 1700s and into the 1800s, the Spanish explored the (now) U.S. southwest from their settlement in Santa Fe. However, they did not connect their territories of New Mexico and Alta California for many years. It took until 1829 for a Mexican trader named Antonio Armijo to lead a caravan from Santa Fe to Los Angeles in Alta California. This network of indigenous footpaths, early trade and exploration routes, and horse and mule routes passing through New Mexico, Colorado, Utah, Arizona, and California became known as the Old Spanish Trail.



Coordination with the OST Association

Based on initial records survey, a segment of the Old Spanish Trail was identified in proximity to the project alignment. The BLM invited the Old Spanish Trail Association to their offices to discuss the project. Their expertise was used to help identify OST features present near the alignment. After a supplemental field survey, the pipeline route was shifted slightly to reduce impacts to the OST segment.

Conclusion

The final Cultural Resources Inventory Report was submitted to agencies and organizations with interests in the Old Spanish Trail, including the National Park Service and Old Spanish Trail Association. The report included a finding of No Adverse Effect to the Old Spanish Trail, which is a significant cultural resource eligible for listing on the National Register of Historic Places.



Project Operation

The project would be operated over the term of the 30-year right-of way issued by the BLM. Inspection and maintenance of the pipelines, wells, and other facilities would occur periodically once the project is operational. Typically, well and solar facility inspections would occur every six months. Operational activities would be conducted within the 50-foot pipeline right-of way, utilizing public or project access roads.

Well Field Operation

The well field would be operated up to a maximum withdrawal of 15,000 acre-feet per year, in accordance with the CICWCD's water rights. Wells would be operated during daytime hours, powered by the solar field. Depending on the drawdown observed, wells may be turned off or pumping reduced to limit groundwater impacts.

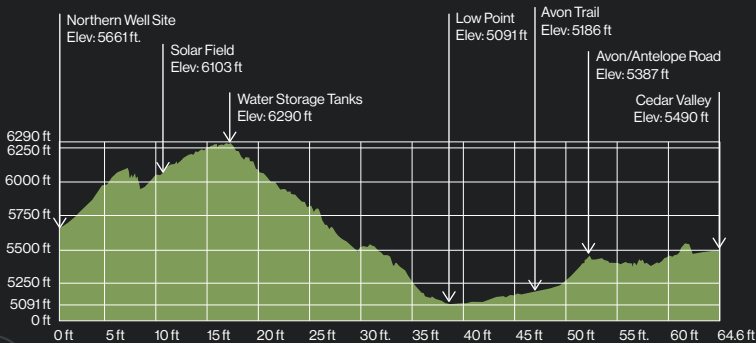
Pipeline Maintenance

The typical life expectancy of steel and HDPE pipe is 50-100 years, which exceeds the length of the initial right-of way authorization. The pipelines would be cleaned and inspected routinely by a "pig." If anomalies or defects are detected, a section of pipe may need to be replaced.

Pipeline Operation

The Pine Valley Water Supply pipeline design would not require pumping aside from the wells. Water would be pumped from the wells to a set of large storage tanks at the high point at the southern edge of Pine Valley. From here the water would gravity feed down to Lund and maintain enough pressure to flow to Cedar City. The pipeline would not require active pumping. See figure below for the pipeline elevation profile.

Pine Valley Transmission Line Profile



Project Retirement

Pipeline Lifespan

The intended lifespan of the proposed pipeline is longer than the term of the right-of way grant. The BLM may authorize an extension of the ROW grant, which would be subject to NEPA as a discretionary agency action. The CICWCD would need to seek to renew the grant near the end of the 30 years.

Pipeline Decommissioning

Once the ROW grant expires, the pipeline would need to be decommissioned. This is typically done by abandoning the pipe in place and leaving it in the ground.

Well Decommissioning

Wells would be sealed, well houses would be removed and the well sites restored to original conditions.





Groundwater Modeling

Groundwater Background

The impact to groundwater resources is one of the primary resource concerns for the Pine Valley Water Supply Project. Pine Valley groundwater levels have been holding steady, and the BLM must address impacts to groundwater resources as part of the NEPA analysis. Effects on other resources, including sensitive species, spring flow, and other wells and groundwater basins must be understood and described.

Groundwater Project Team

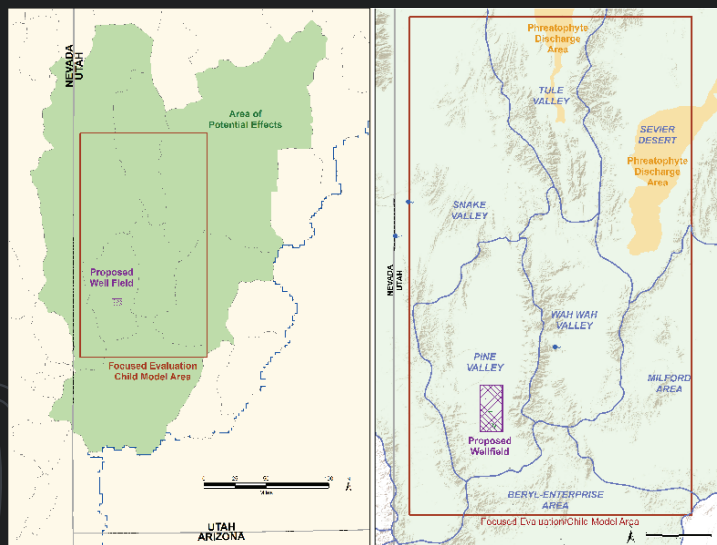
The BLM has organized an interagency team including United States Geologic Survey (USGS) staff, BLM staff, and consultants with expertise in groundwater modeling. This team has met regularly to address groundwater concerns and model development. The USGS Great Basin Carbonate Alluvial Aquifer System (GBCAAS) model, which covers about 100,000 square miles in Utah, Arizona and Nevada, is being used to develop a locally refined project groundwater model for analyzing groundwater impacts from pumping in Pine Valley.

GBCAAS Modeling

The Pine Valley Water Supply Project groundwater model is a refined version of the GBCAAS model with a focus on the project effects rather than a regional analysis. A child model with refinement in the immediate project area has been developed. Additionally, satellite, rain gauge and well testing data have been used to refine the water budget for Pine and Wah Wah valleys. Modeling is not complete, but preliminary results would be available in the next couple months.

Groundwater Resource Impact Assessment (GRIA)

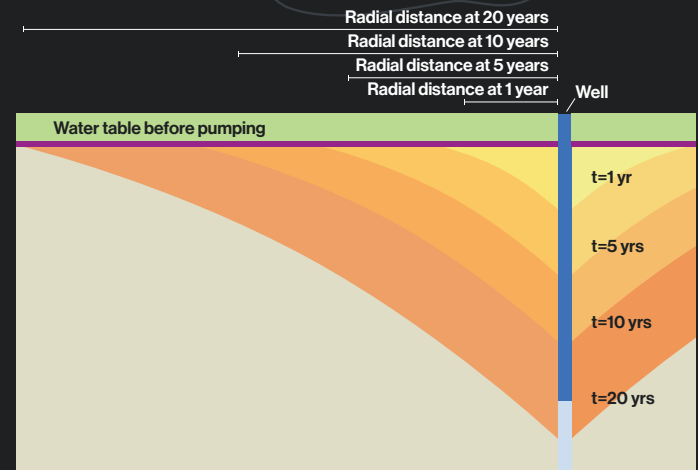
The modeling results would be used to estimate the drawdown within Pine Valley due to project pumping and to understand potential effects to the adjacent basins and other resources. A Groundwater Resources Impact Assessment (GRIA) report would address potential impacts and provide mitigation strategies that would be incorporated into an adaptive management plan and NEPA project mitigation measures.



Responding to Drawdown

What is Drawdown?

As pumping progresses, the water levels in Pine Valley would experience drawdown. Drawdown is the drop in groundwater levels experienced around an active well over a period of time.



Groundwater drawdown can be predicted, but impacts would not be fully understood until pumping commences and data is gathered over a period of years. Drawdown would be monitored at existing monitoring wells and at a set of sentinel wells at the edges of Pine Valley to make sure the predictions are accurate. The BLM would address groundwater impacts through an adaptive management plan that would detail how the project would respond to pumping effects.

Springs and Springsnails

The springs around the edge of Pine Valley are a localized concern. Most of the springs are thought to be disconnected from the regional groundwater system and therefore cannot be affected by pumping. However, until this can be proven, the project is assumed to have a potential to impact spring flow, which would have an effect on spring snails, a BLM sensitive species. Spring flow would be routinely monitored as part of the adaptive management plan.

Phreatophyte Plants

Phreatophytes are plants that are at least partly dependent on groundwater. Groundwater in Pine Valley is too deep to support phreatophytes, but in Tule Valley and around Sevier Lake, it is possible that phreatophyte plants could be affected by pumping in Pine Valley after a long period of time. This possibility will be assessed in the GRIA report and addressed as appropriate.

Impacts to Other Wells and Water Rights

Drawdown in Pine Valley has the potential to impact other wells and water rights holders. The modeling would reveal the potential effects in areas both within and outside Pine Valley. One example is Wah Wah Springs, which has been identified as a regional spring by the USGS and would be monitored as part of the adaptive management plan.