

# **1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

## **1.1 Introduction and Background**

The Bureau of Reclamation (Reclamation) in cooperation with the National Park Service (NPS) has prepared this Environmental Assessment (EA) to analyze the impacts of proposed improvements to the Tropic Ditch. The Tropic Ditch was built in the early 1890's by local farmers who "successfully channeled water from the East Fork of the Sevier River across the Paunsaugunt Plateau to their farms and orchards in the Tropic Valley." "Completion of the Tropic Ditch marked the first time water was diverted from the Great Basin to the Colorado River" (See Figure 1: Project Location Map). ([http://www.byways.org/plan/itinerary/53423/?from\\_byway\\_id=2020](http://www.byways.org/plan/itinerary/53423/?from_byway_id=2020))

The Tropic and East Fork Irrigation Company (Company), the owners of the Tropic Ditch, have approximately 150 shareholders with rights to approximately 25 cubic feet per second (cfs) of water which is stored in the Tropic Reservoir. The water is released to the East Fork Sevier River where it is diverted into the Tropic Ditch by means of a diversion structure. The ditch then travels across the Paunsaugunt Plateau and through Bryce Canyon National Park. While still in the park, the ditch travels down Water Canyon into Tropic Canyon. The ditch then crosses under Highway 12 and approximately one mile down stream it leaves the park. It continues down Tropic Canyon to the two ponds within the Tropic Valley where it is used to irrigate land in and around Tropic. The first pond lies south of Highway 12 approximately 1.5 miles downstream from where the ditch crosses under the highway. A splitter box is used to divert 15 cfs to the pond. Springs in this area are diverted into the ditch supplying approximately 2 cfs to the 10 cfs remaining in the ditch. The remaining 4 miles of the ditch carries this 12 cfs to the second pond (See Figure 2: Springs Location Map).

Recognizing that the current irrigation system is experiencing high losses to seepage, which is causing high amounts of salt to enter the Paria River and eventually the Colorado River, the Company is considering ways to reduce this salt loading. They are proposing to abandon the last 5.5 miles of the ditch and convey the water through a pipeline ranging in diameter from 18 to 30 inches.

The Company has recently finished piping the portion of the ditch from the diversion structure on the East Fork of the Sevier River to Dave's Hollow. They are in the process of piping the ditch from Dave's Hollow to within approximately 1000 feet of the Bryce Rim, approximately 2.5 miles from the beginning of the project analyzed in this EA.

## **1.2 Purpose of and Need for the Proposed Replacement of Tropic Ditch**

The purpose of the Tropic Ditch Replacement Project (Project) is to reduce the amount of salinity reaching the Paria River and ultimately the Colorado River, due to seepage of Tropic Ditch water. This purpose must be met in a cost effective and feasible manner without affecting the purpose of the Tropic Ditch which is to convey water for agricultural use.

Figure 1: Project Location Map

Figure 2: Springs Location Map

The purpose of the Colorado River Basin Salinity Control Program is to “protect the quality of water available in the Colorado River”. ([www.usbr.gov/uc/progact/salinity/](http://www.usbr.gov/uc/progact/salinity/)) The Colorado River provides water for more than 23 million people and irrigation for more than 4 million acres of land in the United States, as well as water for about 2.3 million people and 500,000 irrigated acres in the Republic of Mexico. Controlling the salinity of the Colorado River remains one of the most important challenges facing Reclamation. High salinity levels make it difficult to grow winter vegetables and popular fruits. In water systems, it plugs and destroys municipal and household pipes and fixtures.

Recent salinities in the lower portion of the Colorado River are typically about 700 mg/L, but in the future may range between 600 and 1,200 mg/L, depending upon the amount of water in the river system. Salinity damages in the United States portion of the Colorado River Basin range between \$500 million to \$750 million per year and could exceed \$1.5 billion per year if future increases in salinity are not controlled. Controlling salinity damages in the Republic of Mexico continues to be a topic of international consequence.

Although salinity impacts cannot be eliminated, the Basin States and federal government agreed to limit future increases through the adoption of salinity standards. In June 1974, Congress enacted the original Colorado River Basin Salinity Control Act. To provide better program management, Reclamation proposed major changes to the Colorado River Basin Salinity Control Program. In 1995, P.L.104-20 directed Reclamation to conduct a \$75 million test of a pilot program to award grants, on a competitive-bid basis, for salinity control projects. ([www.usbr.gov/dataweb/html/basinwidescp.html](http://www.usbr.gov/dataweb/html/basinwidescp.html))

The Company diverts water from the East Fork Sevier River into the Tropic Ditch for use by its shareholders to serve their agricultural needs. Currently the water loss from the Tropic Ditch due to seepage is 1060 acre-feet/year or 33% of the water conveyed by the ditch per year. An estimated 50% of this seepage ends up in the Paria River or 530 acre-feet/year. This 530 acre-feet of seepage carries 1829 tons of salt per year to the Paria River (Reclamation Salinity Loading Analysis, 2004). Along with needing to reduce this salt loading, the 1060 acre-feet/year of lost water needs to be retained. This lost water could be held in Tropic Reservoir by the company and its shareholders and be used to meet existing shortages. By reducing the losses within the ditch, the company would be able to better serve the needs of the shareholders.

### **1.3 Lead and Cooperating Agencies**

The Bureau of Reclamation (Reclamation) is the lead agency in the preparation of this EA and the National Park Service (NPS) is a cooperating agency.

### **1.4 Decisions to Be Made**

Reclamation would use this EA to determine whether to provide Salinity Control Program funding for project construction. NPS would determine whether to issue the right of way permit required for construction and use of the proposed pipeline alignment within Bryce Canyon National Park.

## **1.5 Permits and Authorization**

If this EA is approved, the following permits would be required prior to project implementation:

- Stream Alteration Permit – This permit would be issued through the Utah Department of Natural Resources and complies with Section 404 of the Clean Water Act for small projects not affecting wetlands.
- Right-of-Way Permit within Bryce Canyon National Park - Under all alternatives the Tropic East Fork Ditch Company would be required to obtain a NPS permit, through the issuance of a Right-of-Way (ROW) permit to maintain the irrigation ditch or pipeline through the national park service lands. The NPS would work with the Company to develop this permit following the guidance outlined in the NPS Director Orders 53 and 36CFR14. This permit would be prepared based on the installation and long term maintenance needs of the selected alternative.
- Easements with landowners
- Utah Pollution Discharge Elimination Permit – This permit (if required) would be issued to the contractor by the Utah Division of Water Quality and complies with Section 402 of the Clean Water Act for actions disturbing more than one acre of ground or any discharge as a point source into the Paria River.

Compliance with the following Laws and Executive Orders (E.O.) is also required prior to and during project implementation:

### **Natural Resource Laws**

- Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884) – This EA was used as a BA for informal consultation with the Fish and Wildlife Service.
- Clean Water Act

### **Cultural Resource Laws**

- National Historic Preservation Act (16 U.S.C. 470 et seq., 1966)
- Archaeological Resources Protection Act (16 U.S.C. 470aa et seq., 1974)
- Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716)

### **Native American Laws**

- American Indian Religious Freedom Act of 1978 (43 U.S.C. 1996)
- Enhancing the Intergovernmental Partnership, E.O. 12875, October 26, 1993 [ 58 Federal Register 58093]
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001)
- Consultation and Coordination with Tribal Governments, E.O. 13084, May 14, 1998
- Protection of Indian Sacred Sites, E.O. 13007, May 24, 1996 [61 Federal Register 26771]

Consultation with the Utah State Historic Preservation Office, the Utah Geological Survey, the Ute Tribe, the Paiute Indian Tribe of Utah, the Moapa Paiute Tribe, the Zuni Tribe and the Pueblo of Zuni, the Kaibab Band of Paiute Indians, the Chemehuevi Indian Tribe, the Las Vegas Paiute Tribe, the Shivwits Paiute Band and the Hopi Indian Tribe has been completed.