Peaks to Rio

Santa Fe River Watershed Resiliency Vision

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Biohabitats

Prepared for the Santa Fe Watershed Association

Erin English/Biohabitats

WaterSMART Aquatic Ecosystem Restoration Program (AERP) provides funding to support projects that restore or protect aquatic ecosystems. Bureau of Reclamation (BOR) program.

BOR leverages funding to work with states, Tribes, and other entities to study, design, and construct **aquatic ecosystem restoration projects** that are:

- collaboratively developed,
- have widespread regional benefits, and
- result in the improvement of the health of fisheries, wildlife, and aquatic habitat through restoration and improved fish passage.

ELIGIBLE PROJECTS

- Restores or protects connectivity
- Restores or protects aquatic habitat
- Improves water availability, quality, or temperature
- Removes or modifies a barrier to fish passage

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This Vision is one that is inspired from listening to community perspectives & ideas, project experience over the years working in the watershed (The Living River process, river and raingarden design), and leadership from the City of Santa Fe.

PEAKS TO RIO CONCEPT

Restoration of Connectivity

Restoration of Aquatic Habitat

Water Availability, Quality & Temperature

PEAKS TO RIO CONCEPT

Restoration of Connectivity

Opportunities at different positions in the watershed

Connected Corridors for floodplain, recreation and wildlife connectivity throughout watershed.

Consideration of the value of river, spring and other riparian areas for biodiversity support, priorities for restoration and conservation within the ecoregion.

PEAKS TO RIO CONCEPT

Restoration of Aquatic Habitat

Protect & restore the ecosystems where we source and discharge water

Santa Fe River Watershed Springs Restoration & Recharge to enhance habitat, biodiversity and assess opportunities to recharge spring baseflow and groundwater.

Restoration downstream of WWTP, build upon previous experience.

Headwaters restoration to compliment fireshed, recreation opportunities.

PEAKS TO RIO CONCEPT

Improve Water Availability, Quality & Temperature

Improve water quality throughout watershed. Recharge opportunities.

Address Santa Fe River's known impairments:

- Upper Watershed – metals
- Middle reaches – bacteria, metals, PCBs
- Lower reaches – bacteria, nitrogen, phosphorus

Paseo Real Wastewater Treatment Plant Upgrades to improve water quality for traditional & recreational uses, aquatic organisms and wildlife, and any future return flows to the Rio Grande.

Urban Waters Green Stormwater Infrastructure to enhance water quality & recharge.

PEAKS TO RIO

Santa Fe River does not currently have a comprehensive Watershed Management Plan for its ~285 square mile basin that spans from the peaks in the Sangre de Christo mountains to the lands of Cochiti Pueblo.

River Facts Courtesy Santa Fe Watershed Association

The Santa Fe River Watershed is 285 square miles – from Lake Peak (12,408') in the Sangre de Cristo Mountains to the confluence with the Rio Grande at Cochiti (5,220').

10% of this area (17,400 acres) lies above the City of Santa Fe, primarily within the Santa Fe National Forest.

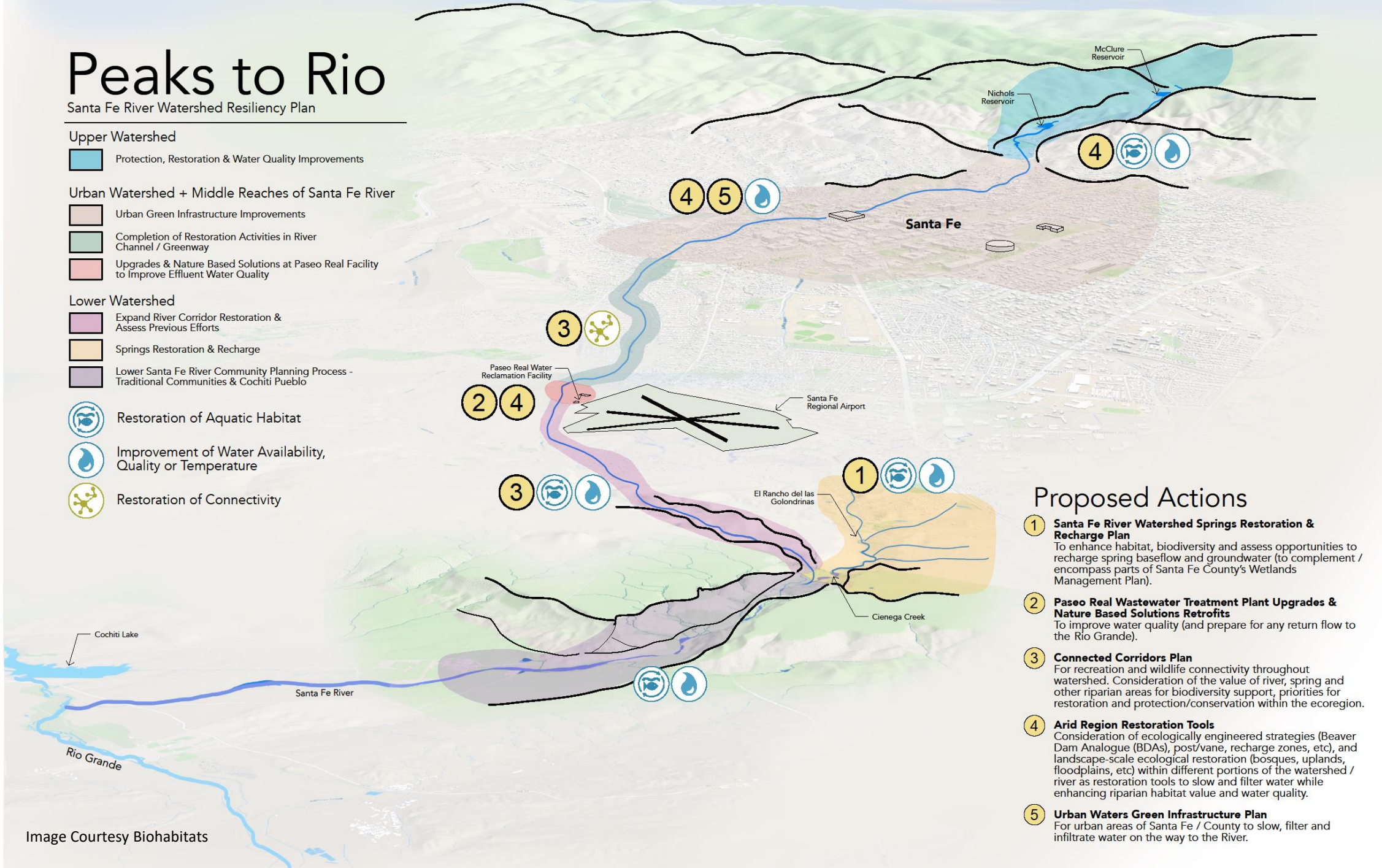
At Lake Peak, precipitation averages 35 inches/year; at Santa Fe 14 inches/year; at Cochiti 10 inches/year.

The Santa Fe River is 46 miles long.

The reach from Santa Fe Lake to Nichols Dam is roughly 10 miles.

Peaks to Rio

Santa Fe River Watershed Resiliency Plan



Proposed Actions

1. **Santa Fe River Watershed Springs Restoration & Recharge Plan**
   To enhance habitat, biodiversity and assess opportunities to recharge spring baseflow and groundwater (to complement / encompass parts of Santa Fe County's Wetlands Management Plan).
2. **Paseo Real Wastewater Treatment Plant Upgrades & Nature Based Solutions Retrofits**
   To improve water quality (and prepare for any return flow to the Rio Grande).
3. **Connected Corridors Plan**
   For recreation and wildlife connectivity throughout watershed. Consideration of the value of river, spring and other riparian areas for biodiversity support, priorities for restoration and protection/conservation within the ecoregion.
4. **Arid Region Restoration Tools**
   Consideration of ecologically engineered strategies (Beaver Dam Analogue (BDAs), post/vane, recharge zones, etc), and landscape-scale ecological restoration (bosques, uplands, floodplains, etc) within different portions of the watershed / river as restoration tools to slow and filter water while enhancing riparian habitat value and water quality.
5. **Urban Waters Green Infrastructure Plan**
   For urban areas of Santa Fe / County to slow, filter and infiltrate water on the way to the River.

Image Courtesy Biohabitats

Peaks to Rio

Santa Fe River Watershed Resiliency Plan

Upper Watershed

- Protection, Restoration & Water Quality Improvements

Urban Watershed + Middle Reaches of Santa Fe River

- Urban Green Infrastructure Improvements
- Completion of Restoration Activities in River Channel / Greenway
- Upgrades & Nature Based Solutions at Paseo Real Facility to Improve Effluent Water Quality

Lower Watershed

- Expand River Corridor Restoration & Assess Previous Efforts
- Springs Restoration & Recharge
- Lower Santa Fe River Community Planning Process - Traditional Communities & Cochiti Pueblo

- Restoration of Aquatic Habitat
- Improvement of Water Availability, Quality or Temperature
- Restoration of Connectivity

Image Courtesy Biohabitats

Cochiti Lake

Proposed Actions

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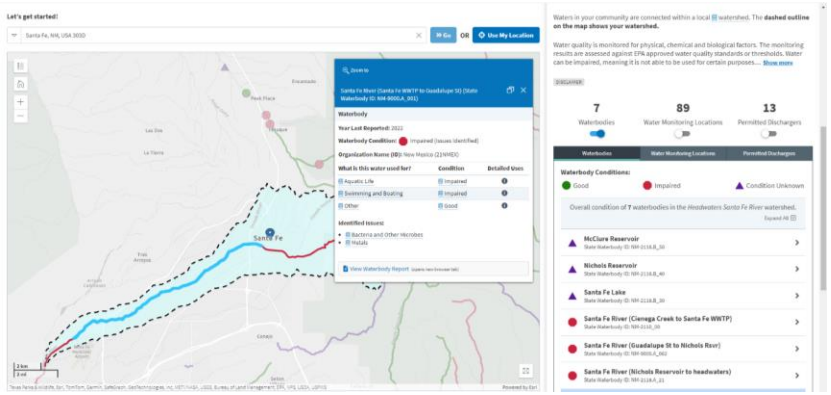
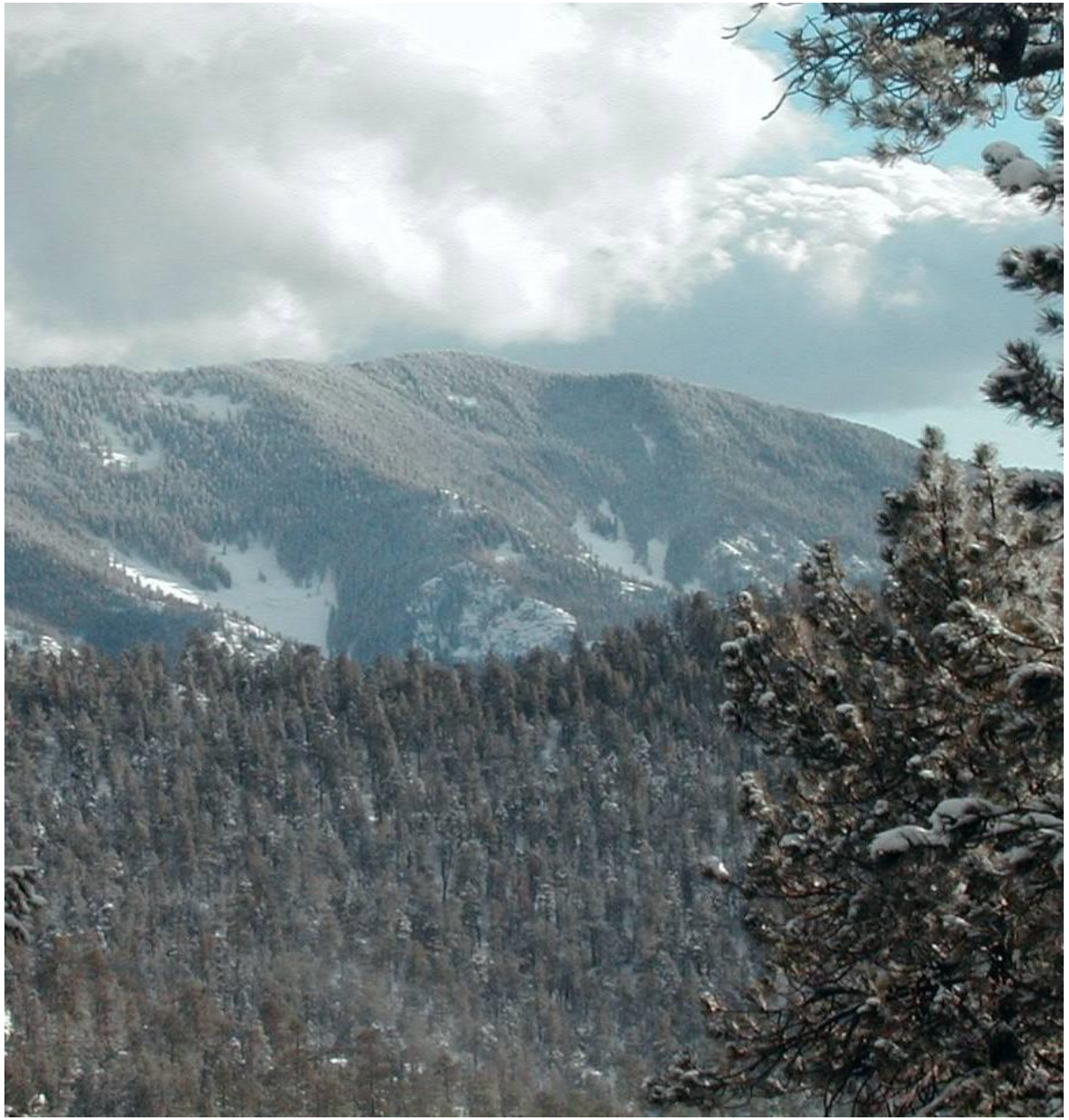
HEADWATERS

UPPER WATERSHED/ SANTA FE MUNICIPAL WATERSHED



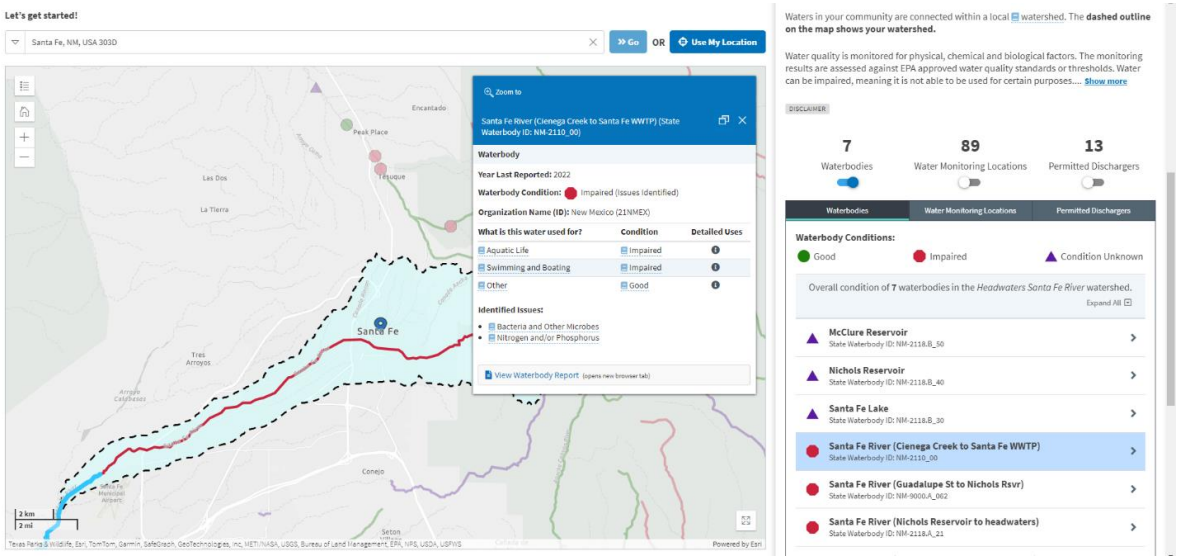
Map Courtesy of City of Santa Fe



Images Courtesy Santa Fe River Watershed Association

MIDDLE WATERSHED

RESERVIORS TO WASTEWATER TREATMENT PLANT



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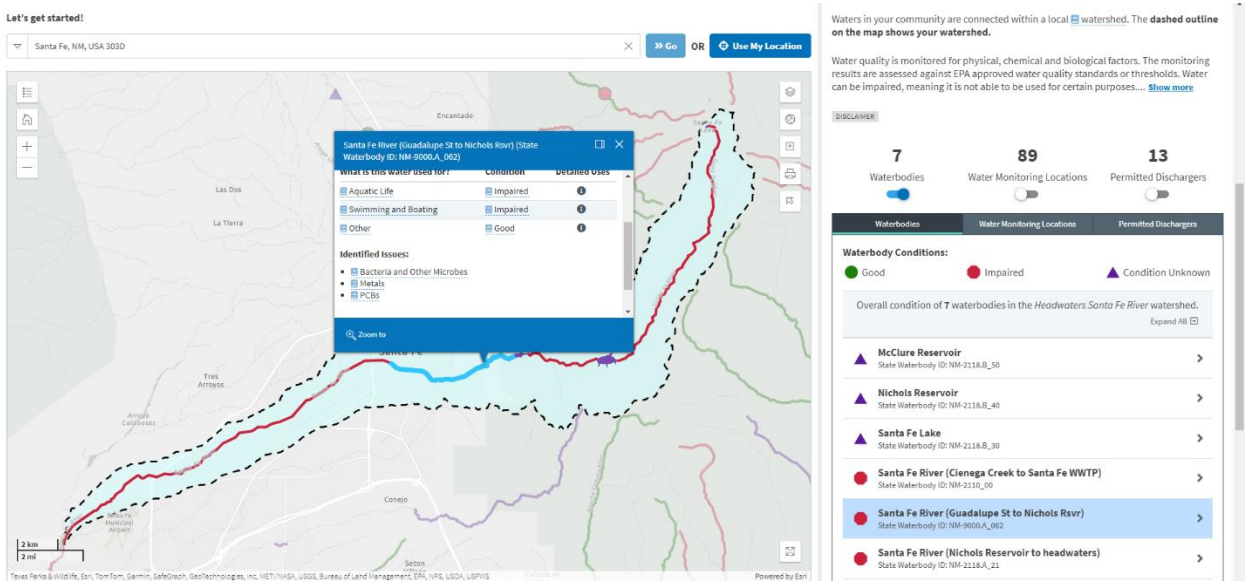
LOWER WATERSHED

WASTEWATER TREATMENT PLANT TO RIO GRANDE



LOWER WATERSHED

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Peaks to Rio

Watershed Resilience Plan

Incorporates USEPA/319 Watershed Planning Strategies

Restoration-Oriented

Traditional & Historic Uses

Future Resiliency

Thank you

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Fernhill Natural Wastewater Treatment System Retrofit, Oregon