

An aerial photograph of a large concrete dam spanning a deep canyon. The reservoir behind the dam is a deep blue color. The canyon walls are steep and composed of layered, reddish-brown rock. The sky is a clear, pale blue. The text "Salt River Pumped Storage Project" is overlaid in large, white, sans-serif font across the upper half of the image.

Salt River Pumped Storage Project

Stakeholder Workshop

November 2023

A blue geometric graphic element consisting of two overlapping triangles, one pointing right and one pointing left, creating a larger triangular shape.

Welcome

Open House Purpose

Share Project Details

- Generation
- Transmission
- Resources
- Considerations



Share Feedback:

- Site Selection
- Route Options

Review Details & Ask Questions

- Breakout Sessions
- Displays
- Technical Experts



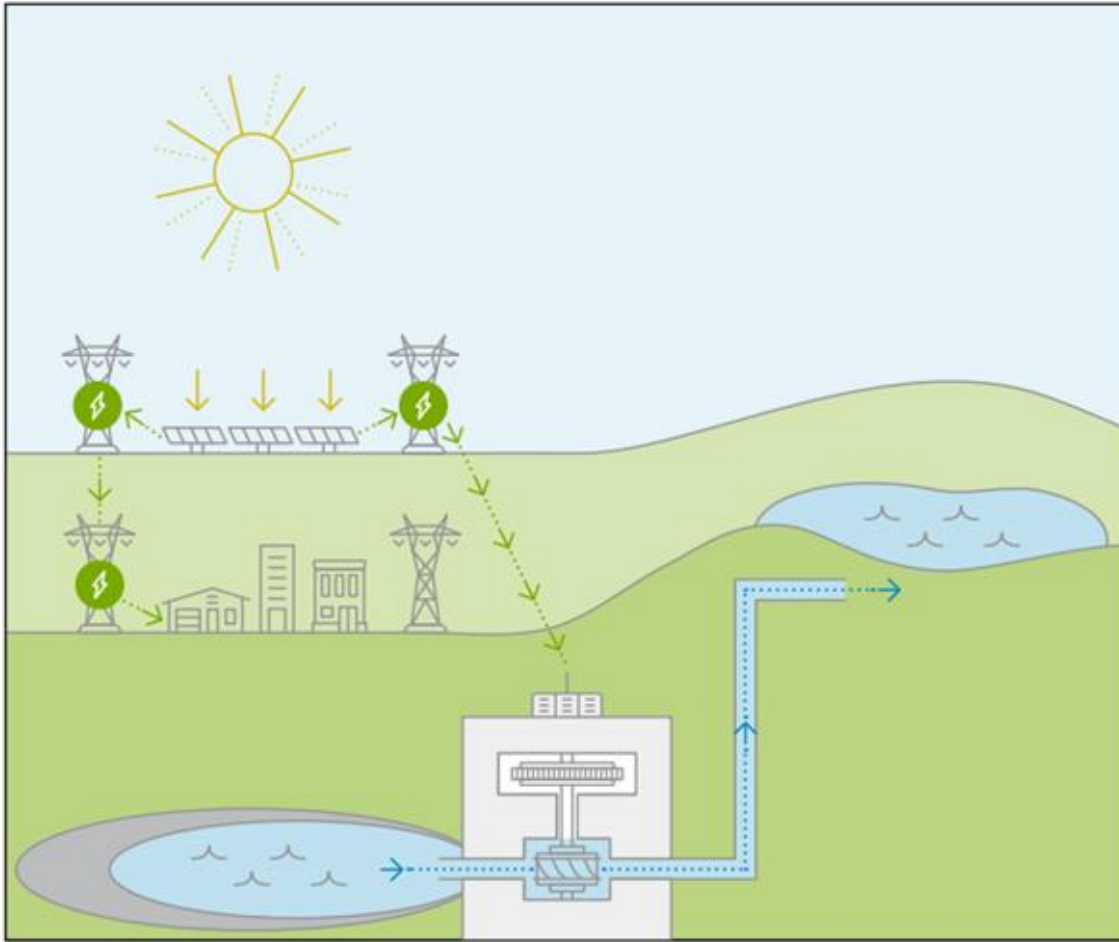
- Comment Cards
- Feedback Form
- Stickers
- Discussions
- Website

Background: What is Pumped Storage?

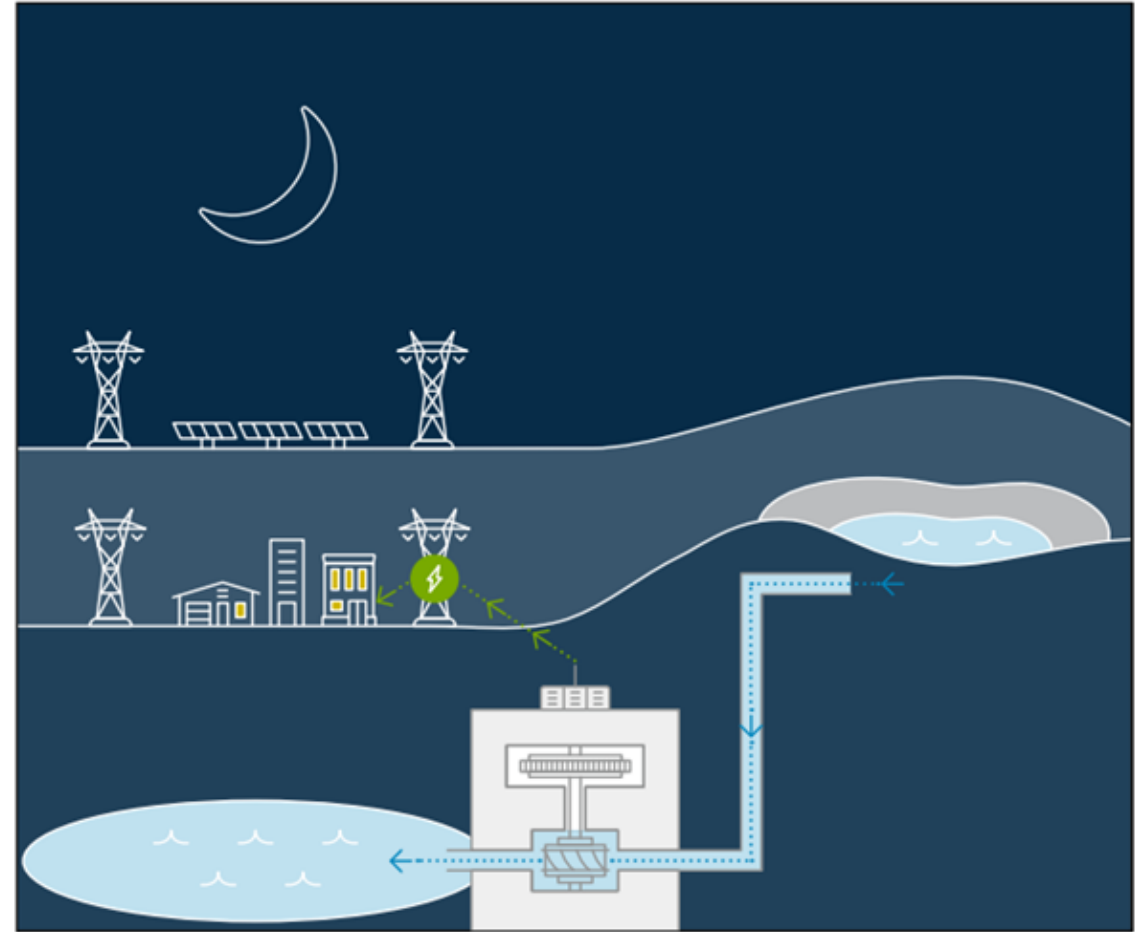


Pumped Hydropower Technology Overview Example

Morning and Midday Operation



Late Afternoon and Overnight Operation



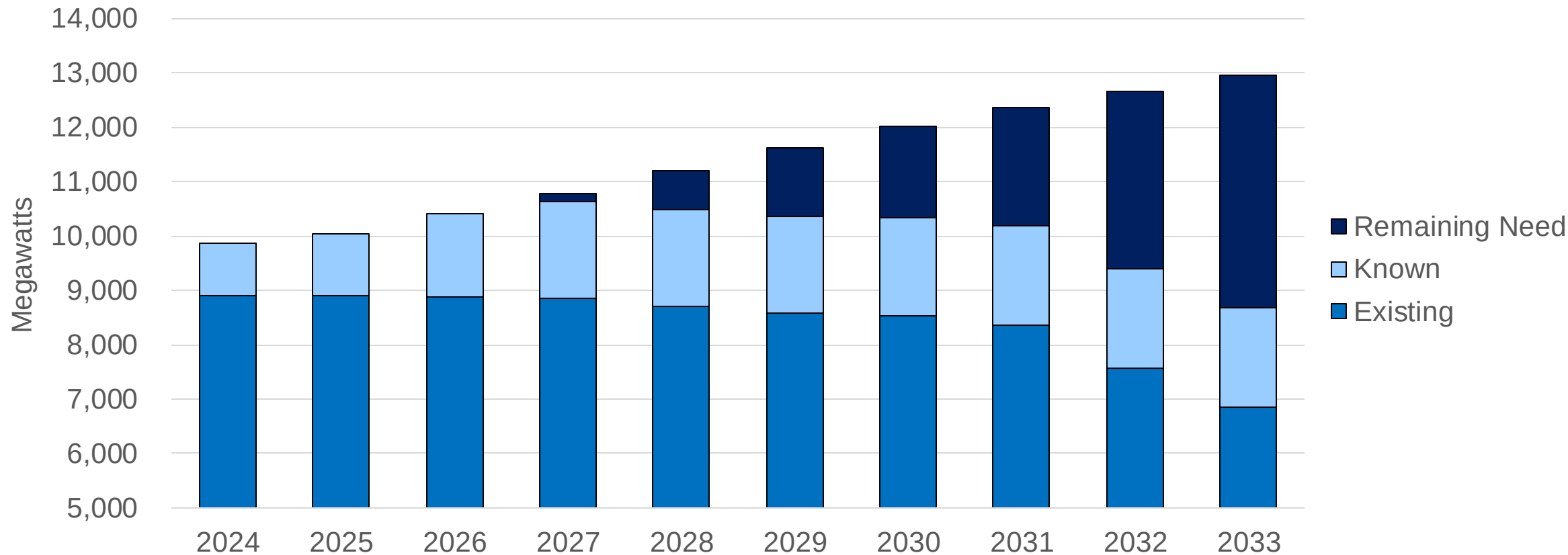
An aerial photograph of a large concrete dam situated in a deep, rugged canyon. The canyon walls are composed of layered, reddish-brown rock. A river flows through the canyon, curving around the base of the dam. The water is a deep blue. The sky is a clear, pale blue. The text "Background: Resource Plan & Need" is overlaid in white, bold, sans-serif font.

Background: Resource Plan & Need



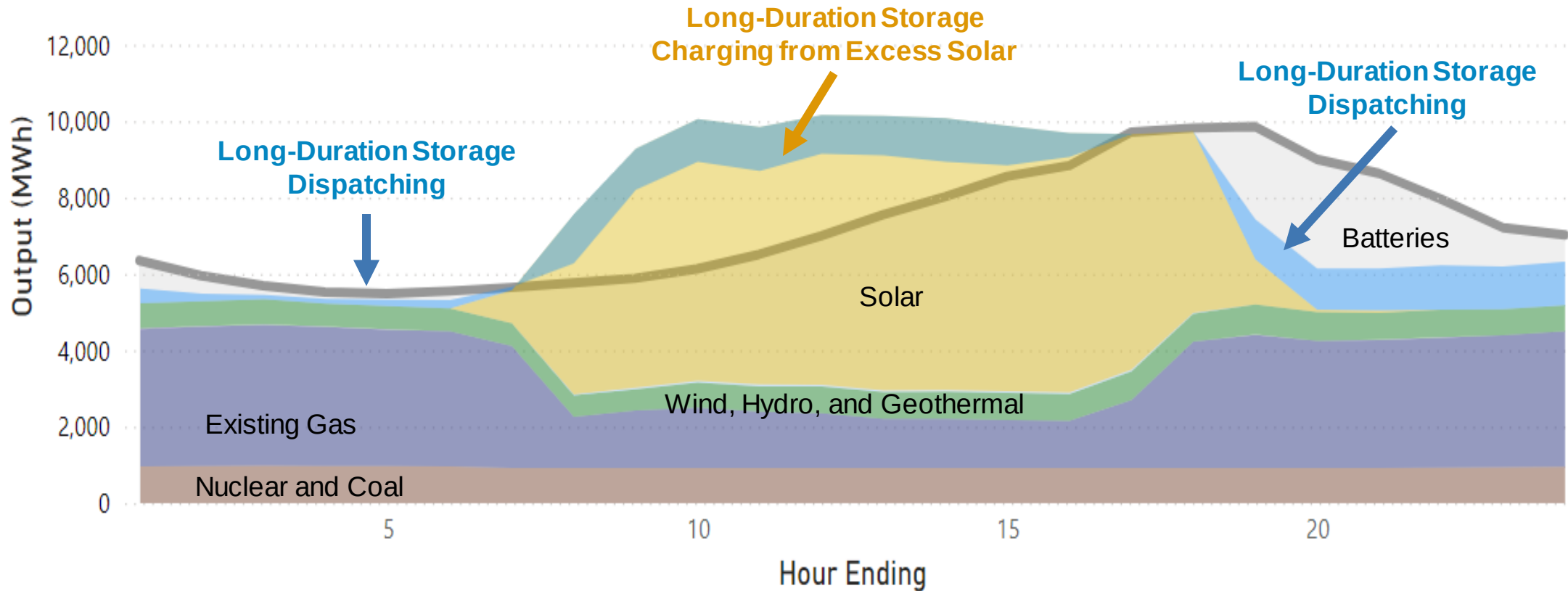
Resource Needs to Meet Summer Peak Demand *

* Based on Oct 2023 Load Forecast



Key Takeaway: SRP needs >4,000 MW by 2033; pumped storage could provide 1,000 MW in this timeframe

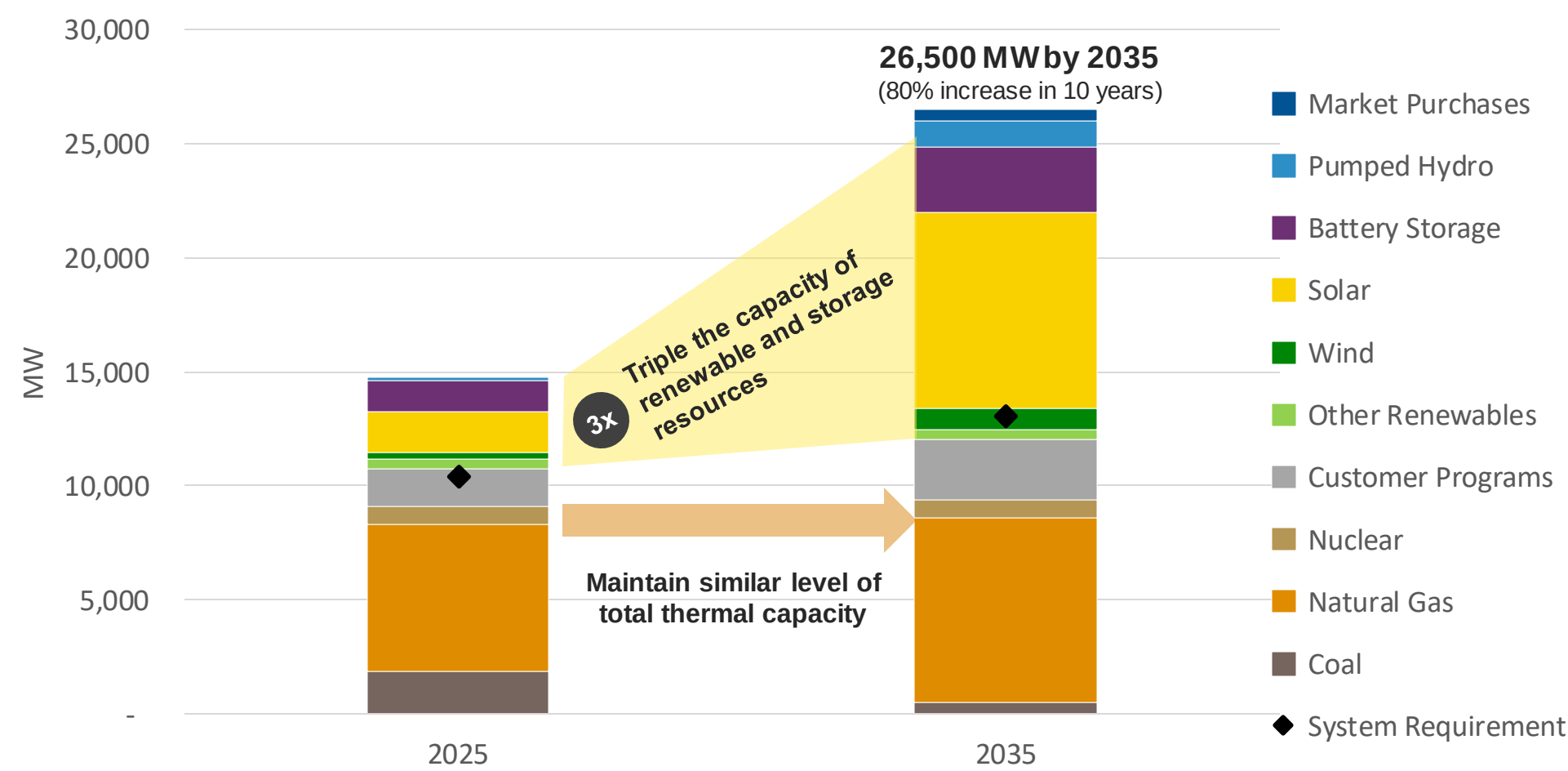
Example Day in Summer 2033 *



Key Takeaway: Pumped storage can store solar and discharge it to meet peak demand and through the night

* Modeling result – actual operations may differ

Planned Resource Additions *



Key Takeaway: Majority of resource additions over this time will be solar and battery storage

* Based on 2023 Integrated System Plan Balanced System Plan. Plans may change over time.

Pumped Storage Benefits

Benefits

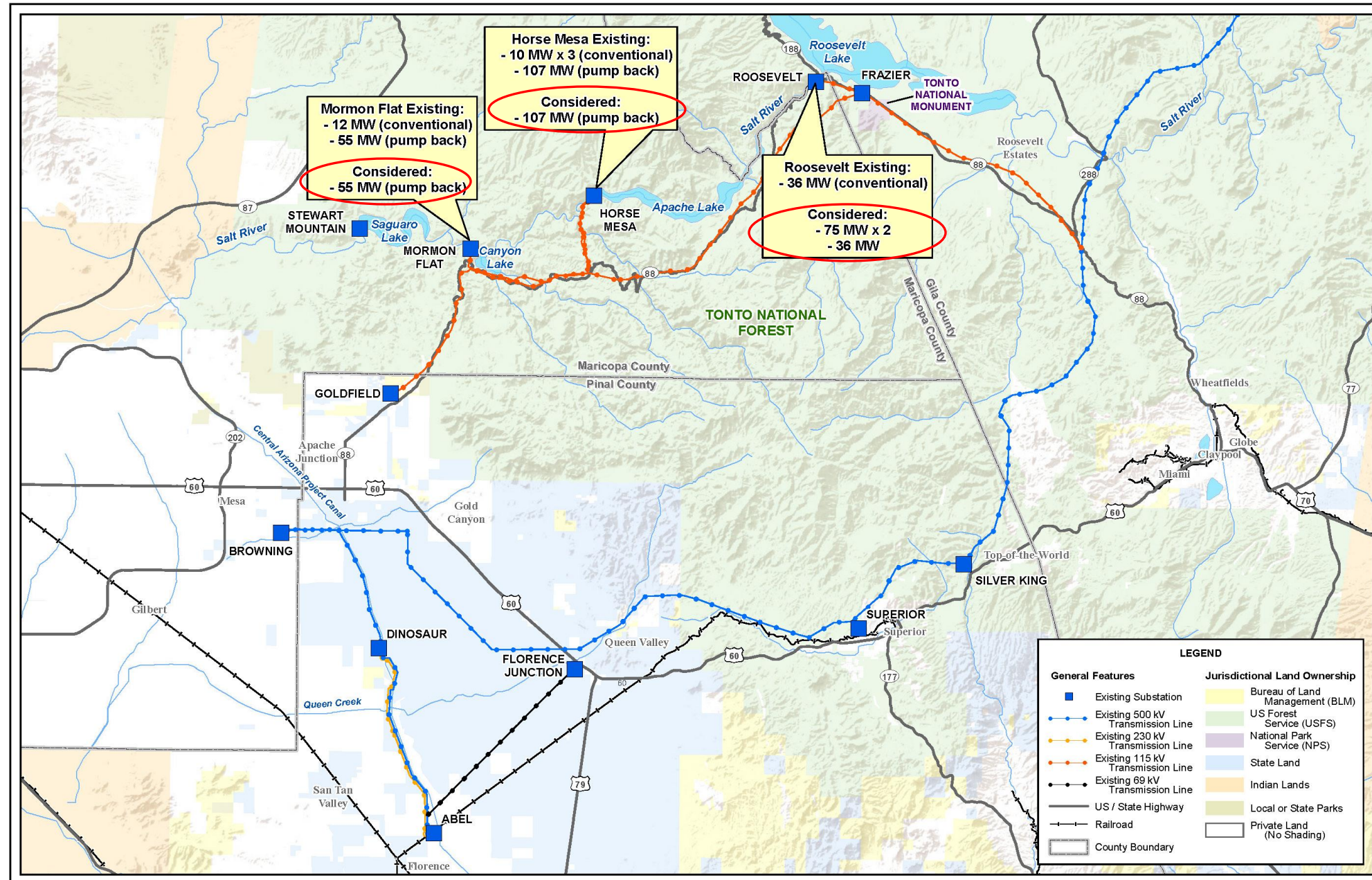
- Resource Diversity
 - >3,900 MW of 4-hour battery storage by 2033 (~1/3 of SRP portfolio)
 - Supply Chain & Workforce Diversity
- Proven Technology
 - SRP has ~150 MW in operation today
 - Less expected performance degradation
 - Provides a reliable source of inertia
- Long Asset Life
 - 100 years vs. 10-20 years for battery

An aerial photograph of a large concrete dam situated in a deep, rugged canyon. The canyon walls are composed of layered, reddish-brown rock. A river flows through the canyon, curving around the base of the dam. The water is a deep blue. The sky is a clear, pale blue. The text "Background: Project Location & Facilities" is overlaid in white, bold, sans-serif font.

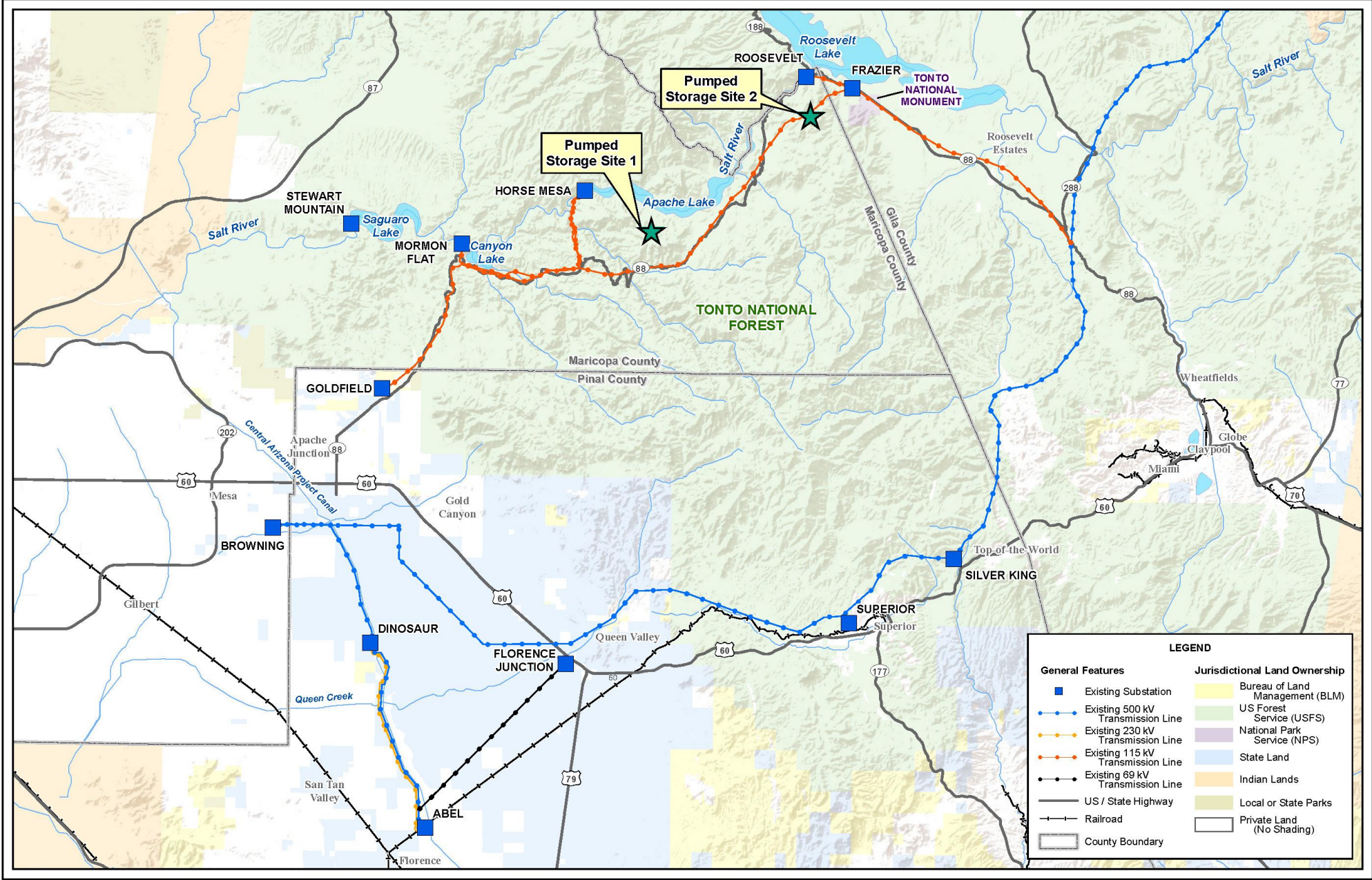
Background: Project Location & Facilities



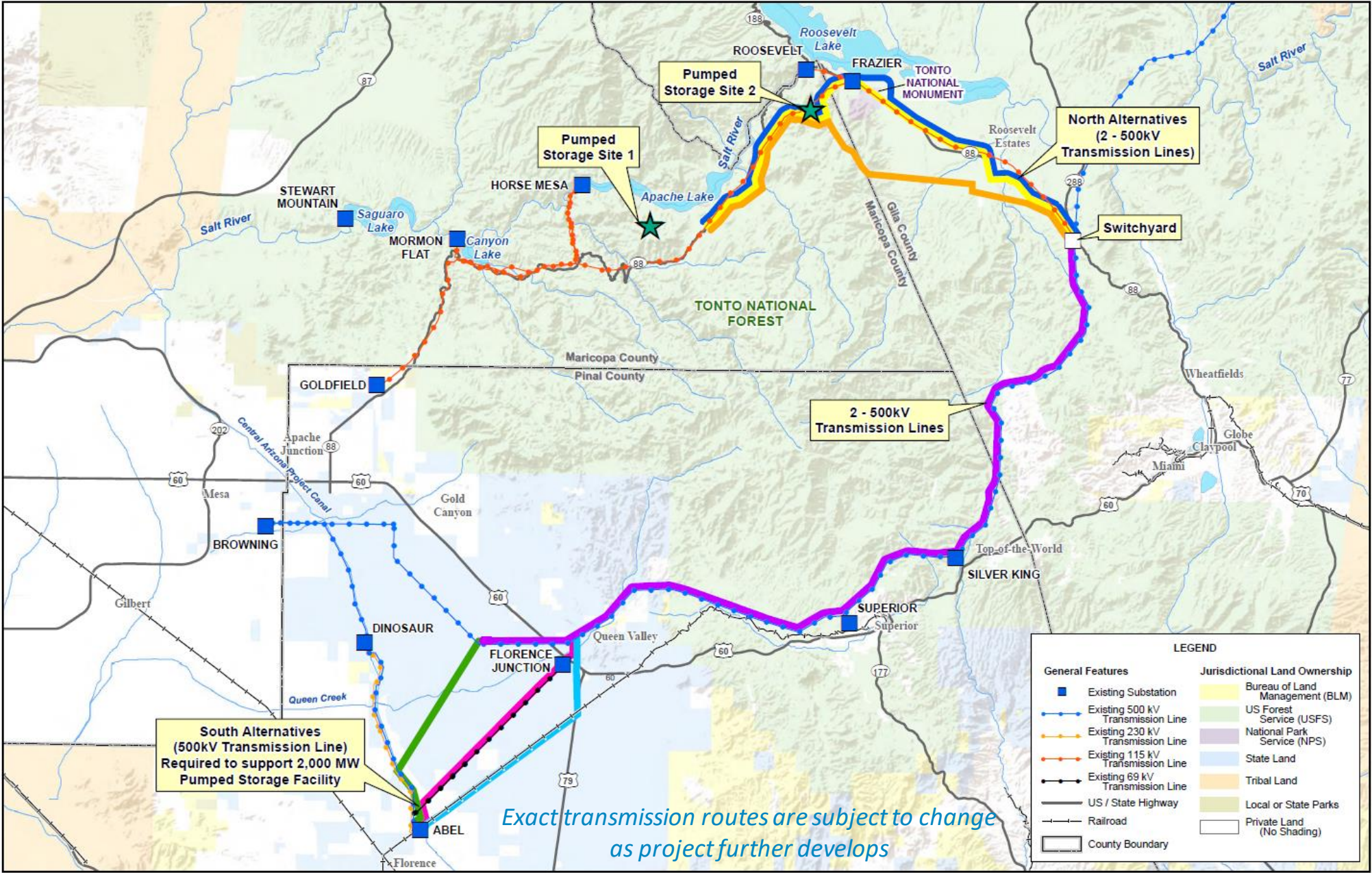
Pumped Storage Sites Considered but Eliminated from Further Study



Pumped Storage Site Options



Project Area– Generation and Transmission Options

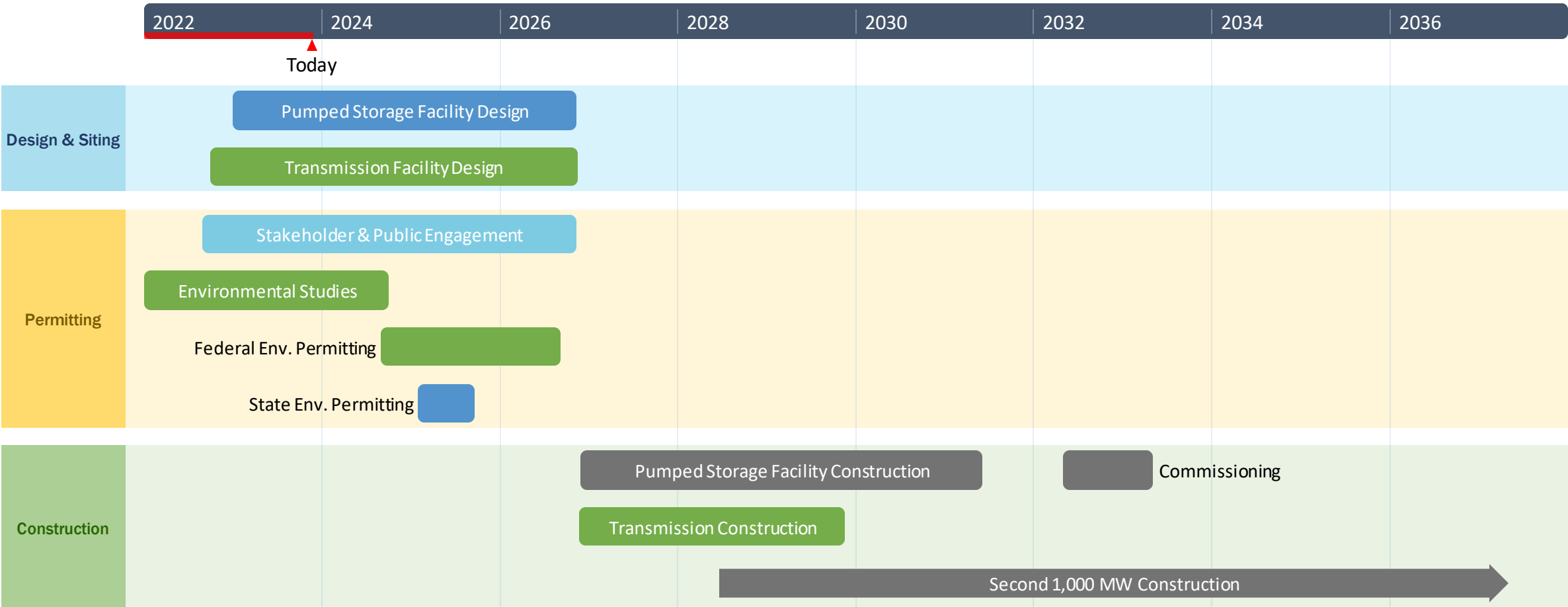


An aerial photograph of a large concrete dam situated in a deep, rugged canyon. A river flows through the canyon, curving around the base of the dam. The canyon walls are steep and composed of layered rock formations, with some sparse vegetation. The sky is clear and blue. The text "Background: Project Development Timelines" is overlaid in large white letters.

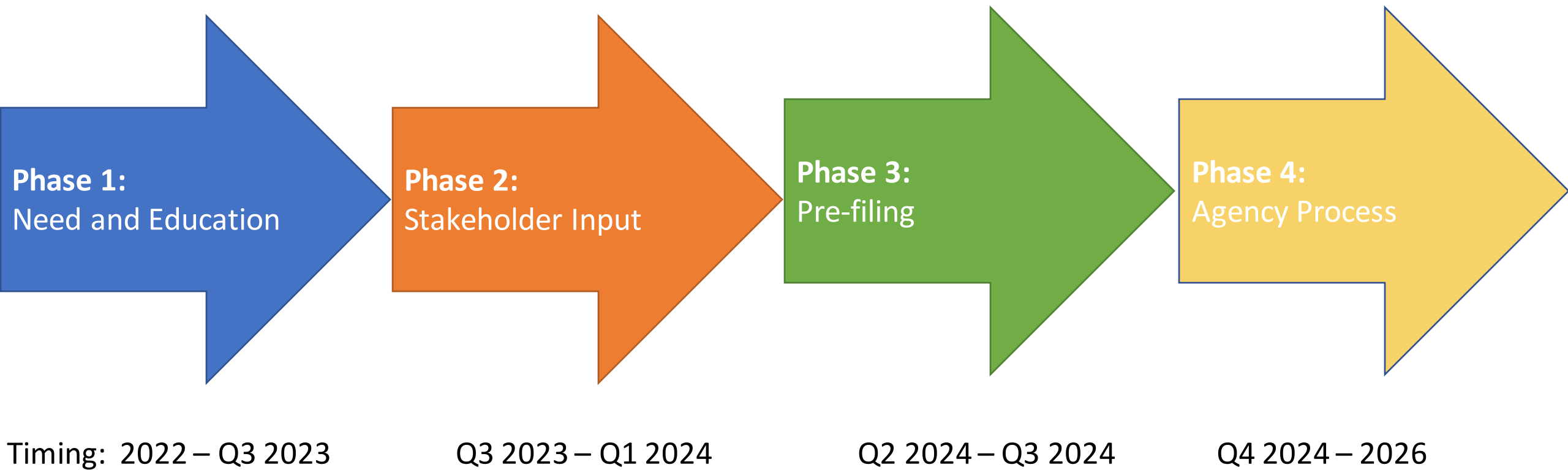
Background: Project Development Timelines



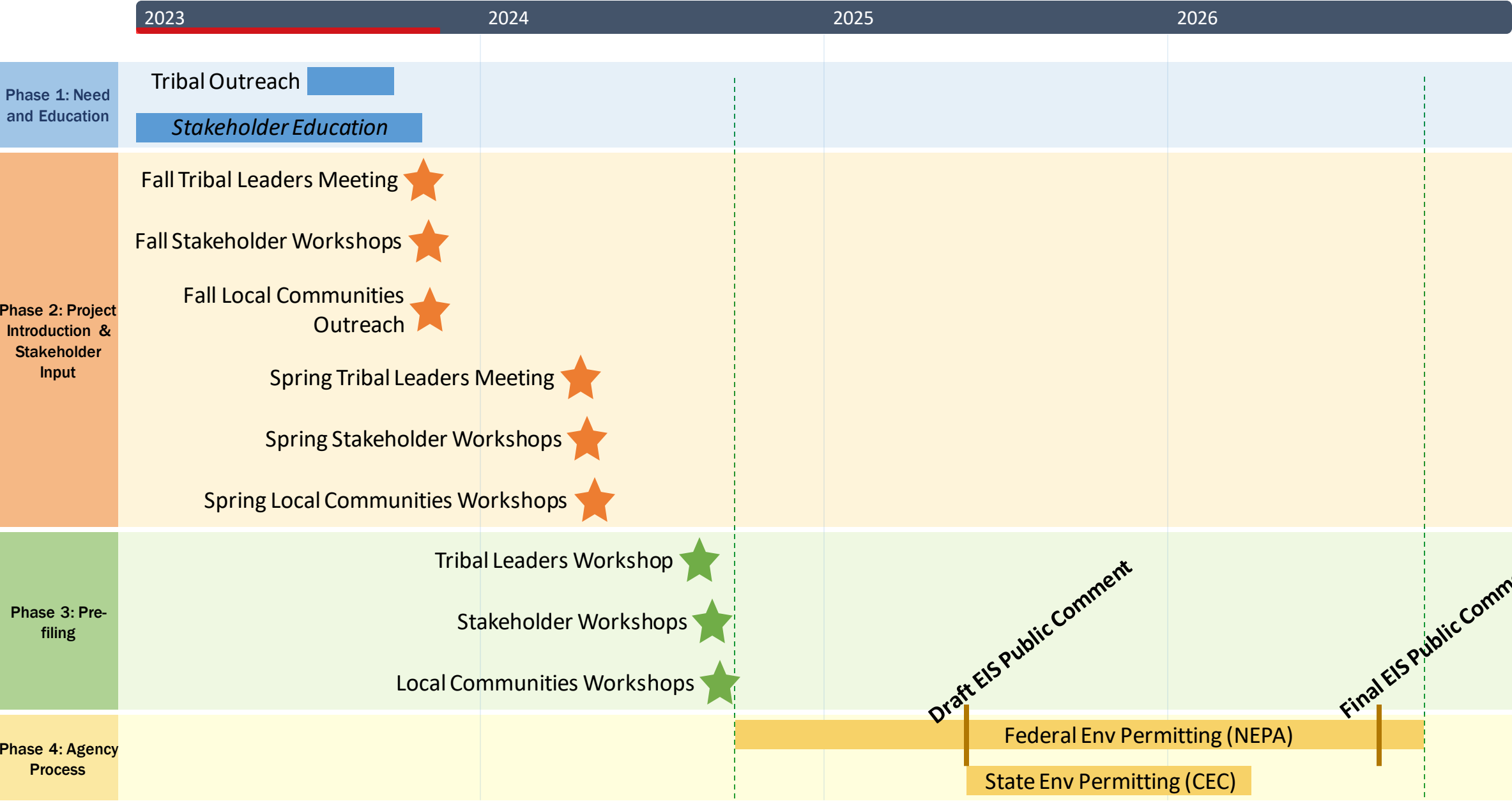
Development Timeline



Outreach Strategy: Phased Approach



Outreach Activities & Milestones



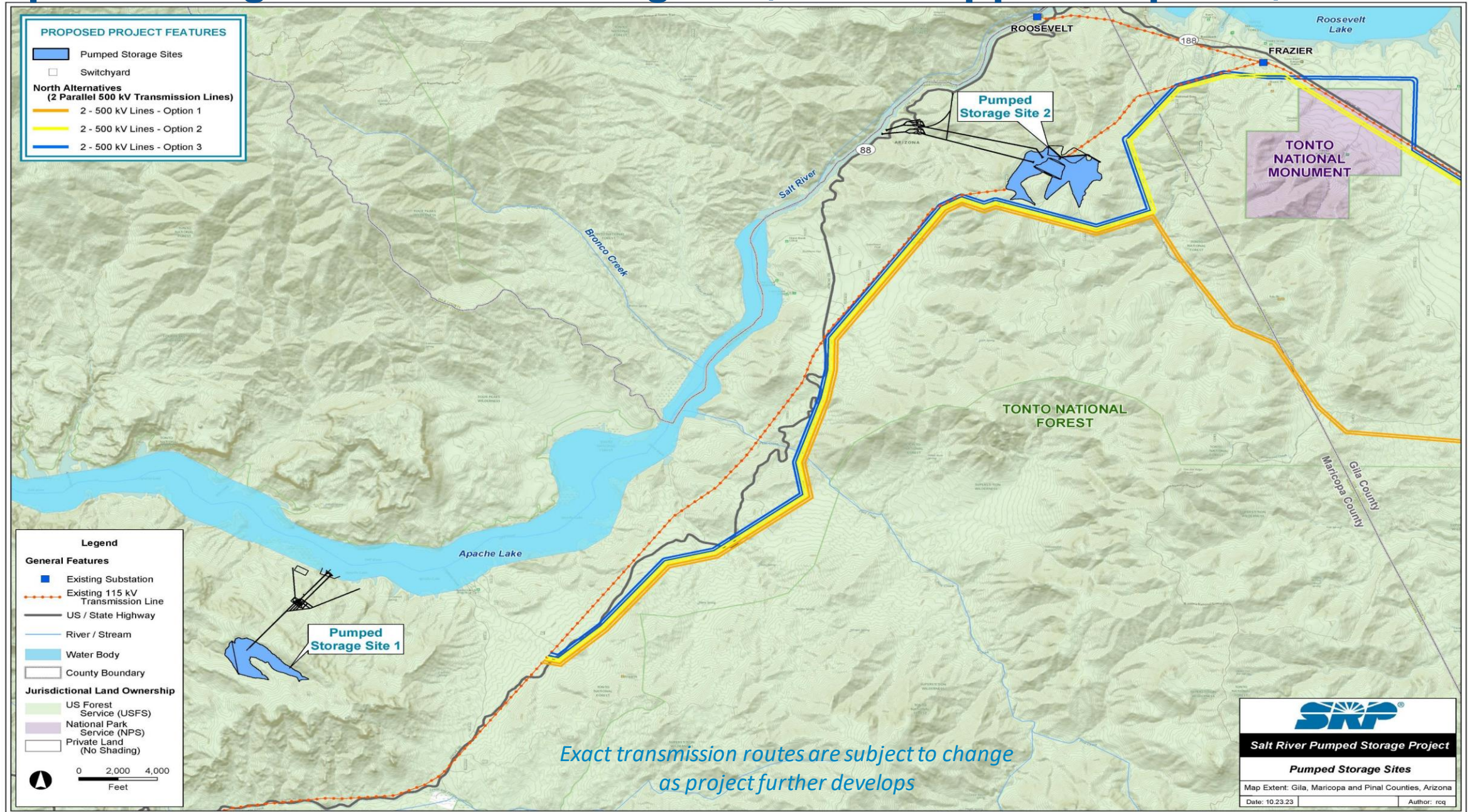
Start of Federal Environmental Permitting

NEPA, CEC, Record of Decision Completed

Generation Facilities



Pumped Storage Sites—Selecting one, each supports up to 2,000 MW



PROPOSED PROJECT FEATURES

-  Pumped Storage Sites
-  Switchyard

Apache Lake

TONTO NATIONAL
FOREST

Pumped
Storage Site 1



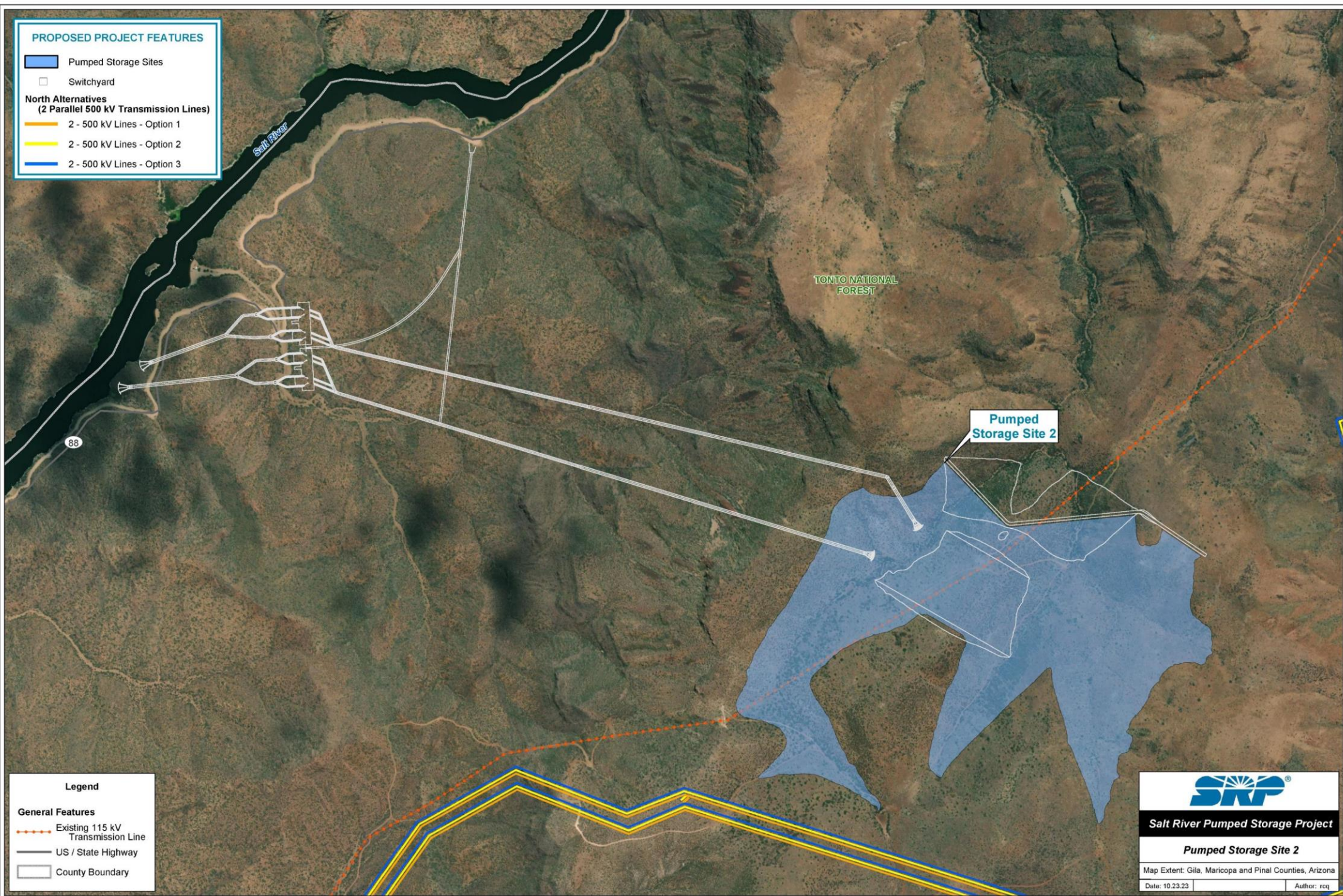
Salt River Pumped Storage Project

Pumped Storage Site 1

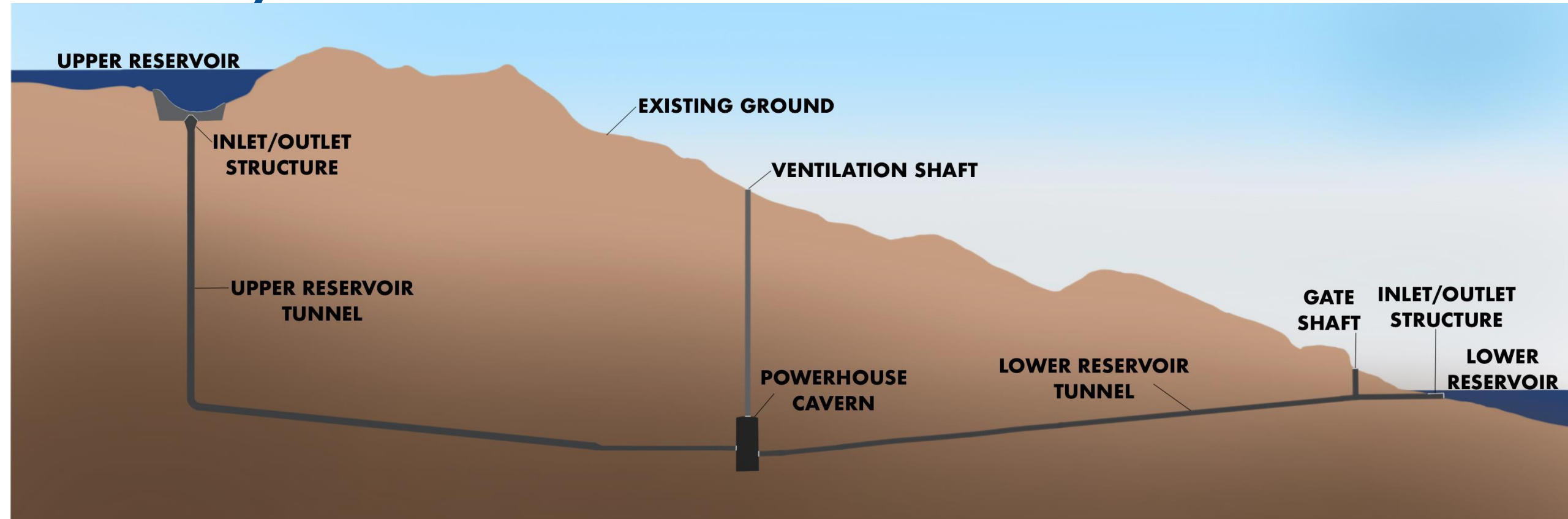
Map Extent: Gila, Maricopa and Pinal Counties, Arizona

Date: 10.23.23

Author: roq



Pumped Storage Option: Tunneled Underground (UG) Waterway Profile



Legend:

Inlet/Outlet Structure: Structure where water enters a tunnel from a reservoir.

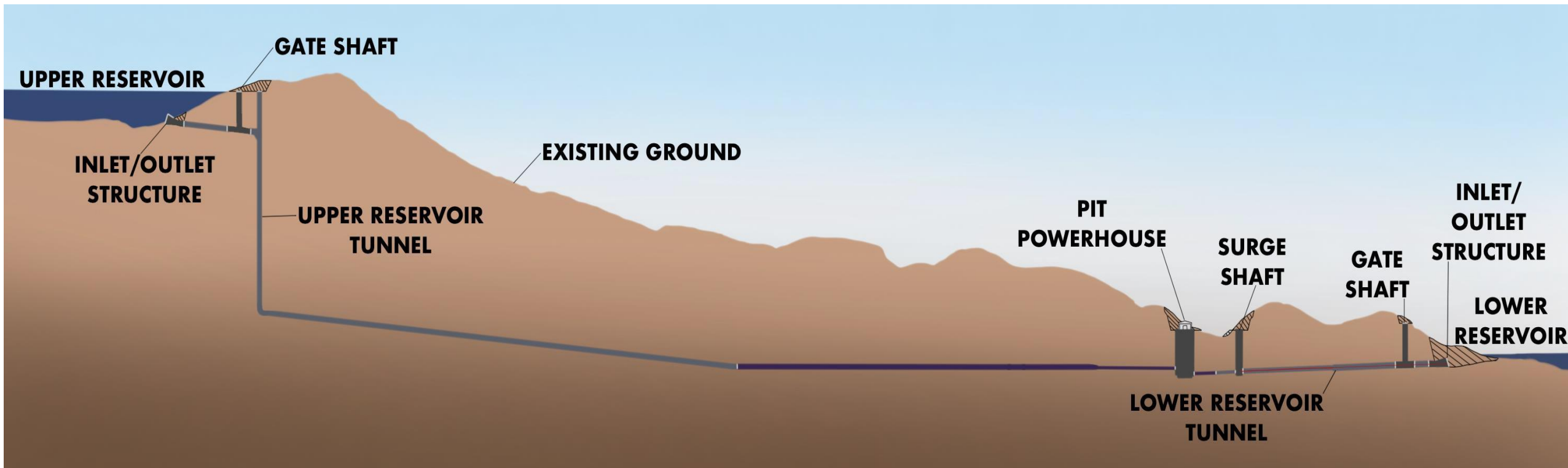
Reservoir Tunnels: Watertunnel connecting the reservoirs to the powerhouse.

Ventilation Shaft: Provides fresh air to the underground powerhouse where people and equipment are located.

Powerhouse Cavern: Fully underground cavern where pump-turbines and other power generating equipment is located.

Gate Shaft: Structure with gates to shut water flow from the reservoir to allow maintenance activities to be completed.

Pumped Storage Option: Pit Waterway Profile



Legend:

Inlet/Outlet Structure: Structure where water enters a tunnel from a reservoir.

Reservoir Tunnels: Watertunnel connecting the reservoirs to the powerhouse.

Ventilation Shaft: Provides fresh air to the underground powerhouse where people and equipment are located.

Pit-style Powerhouse: Below-grade excavation exposed to the surface where pump-turbines and other power generating equipment is located.

Gate Shaft: Structure with gates to shut water flow from the reservoir to allow maintenance activities to be completed.

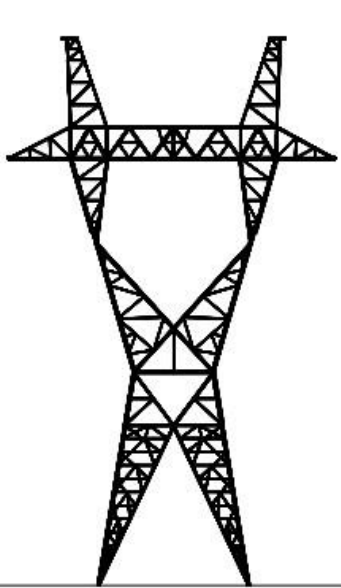
Surge Shaft: Pipeline that allows air to enter or exit a water tunnel to improve water flow characteristics.

A wide-angle photograph of a massive concrete dam situated in a deep, rugged canyon. The canyon walls are composed of layered, reddish-brown rock formations. A river flows through the canyon, curving around the base of the dam. The sky is a clear, pale blue. The overall scene is bathed in the warm, golden light of late afternoon or early morning.

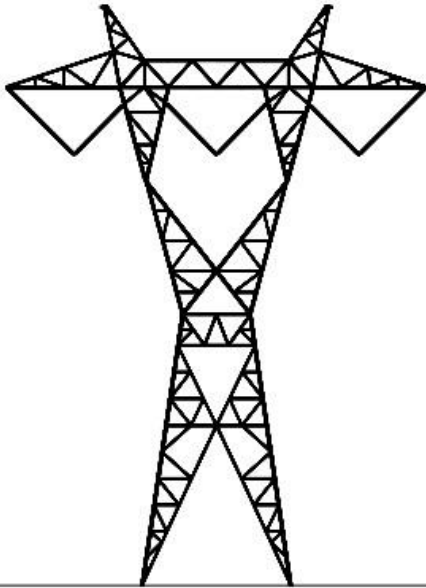
Transmission Facilities and Route Options



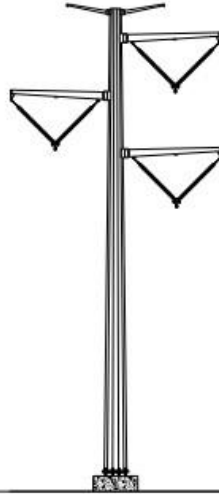
Typical Structure Types



5A6 Tower Family
500kV - Single Circuit
Height: 114-145 ft.



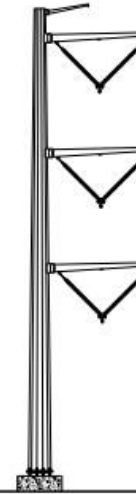
5T3+BE Tower Family
500kV - Single Circuit
Height: 97-160 ft.



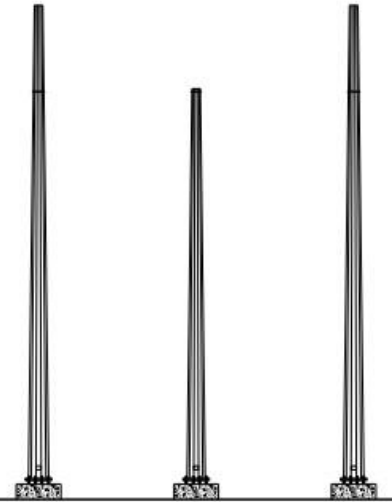
Monopole Tangent Delta
500kV Single Circuit
Fdn. Width: Up to 20 ft.
Height: Up to 190 ft.



Monopole Tangent Delta
500kV Single Circuit
Fdn. Width: Up to 20 ft.
Height: Up to 190 ft.



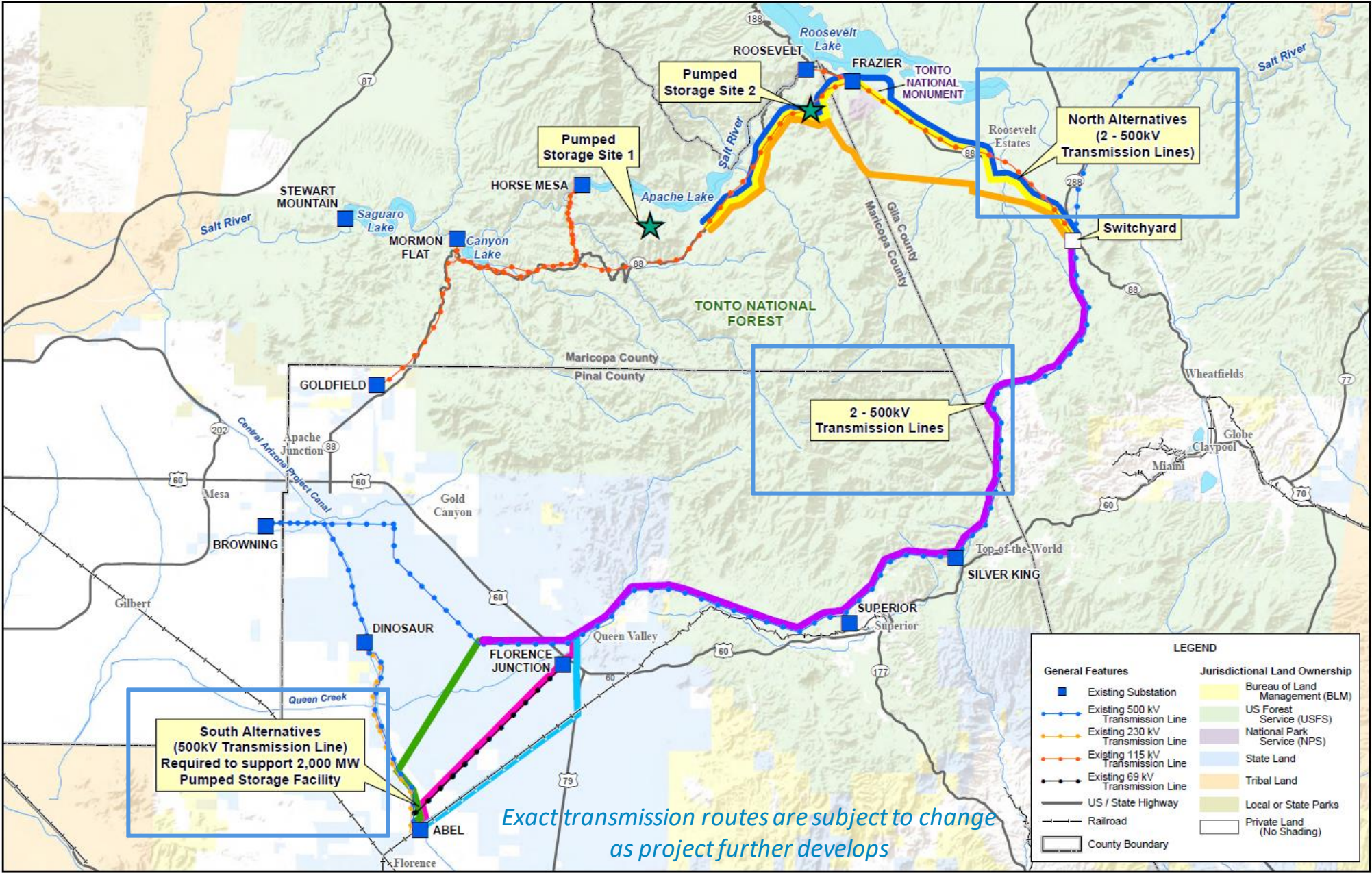
Monopole Tangent Vertical
500kV Single Circuit
Fdn. Width: Up to 20 ft.
Height: Up to 190 ft.

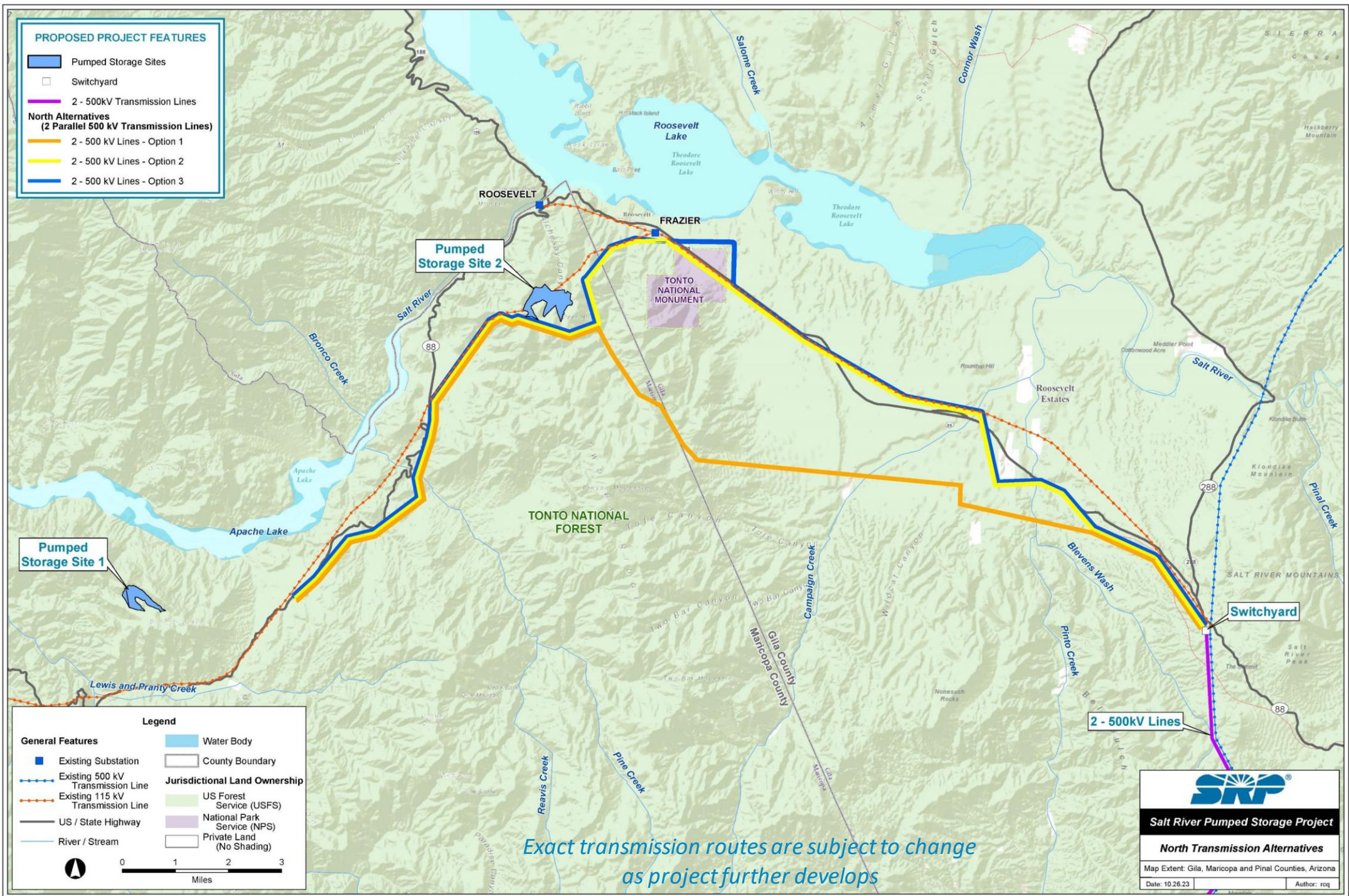


3-Pole Deadend
500kV Single Circuit
Fdn. Width: Up to 20 ft.
Height: Up to 190 ft.

Represents SRP's typical structures. Actual structure types for this project have not yet been determined and may vary depending on location.

Project Area– Generation and Transmission Options





Existing View: Tonto National Monument Visitor Center Overlook



Looking North

Rendering: Tonto National Monument Visitor Center Overlook



Looking North – Transmission Option 2

Rendering: Tonto National Monument Visitor Center Overlook



Looking North – Transmission Option 3

Existing View: Tonto National Monument Trail Overlook



Looking North

Rendering: Tonto National Monument Trail Overlook

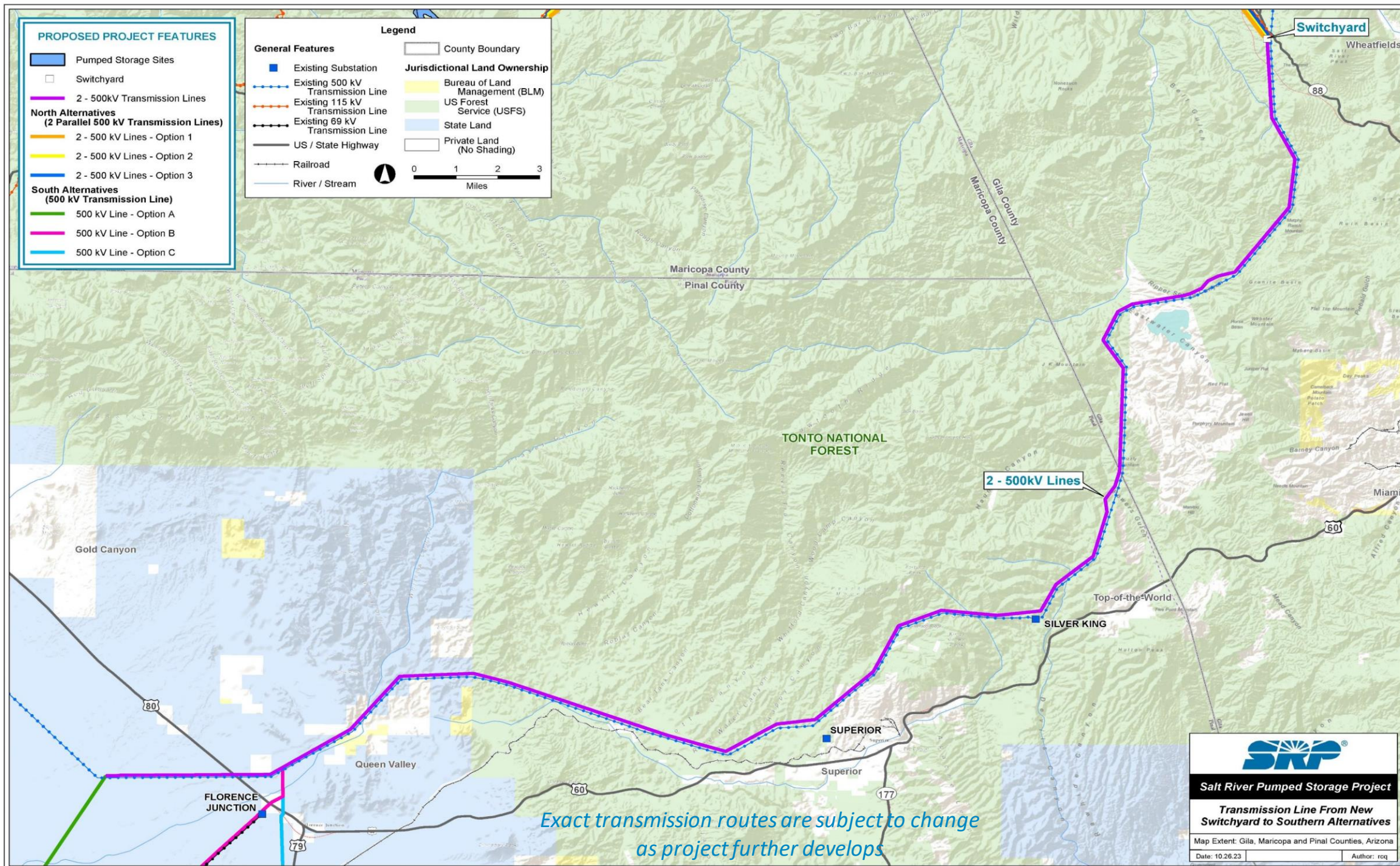


Looking North – Transmission Option 2

Rendering: Tonto National Monument Trail Overlook



Looking North – Transmission Option 3



Exact transmission routes are subject to change
as project further develops

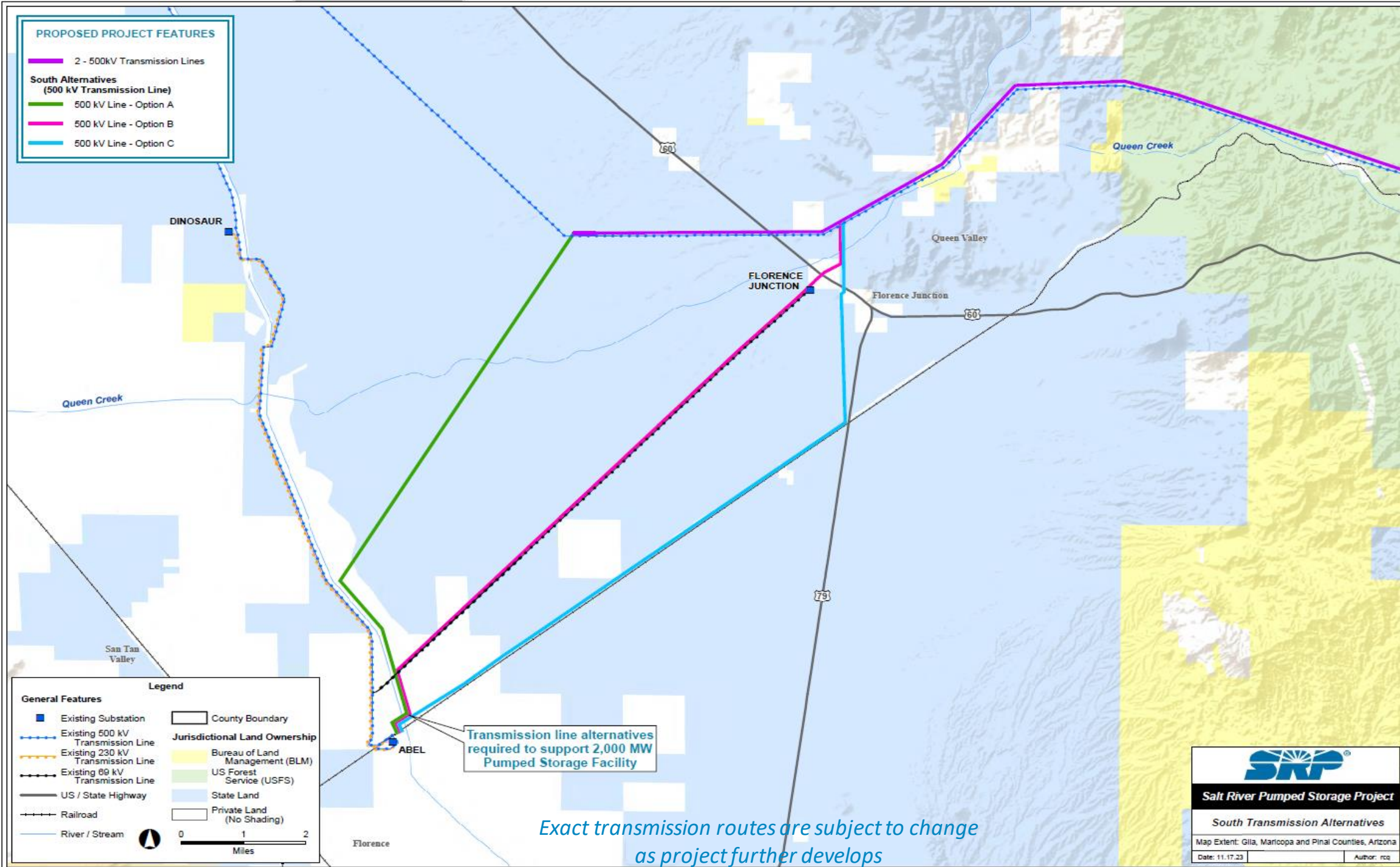


Salt River Pumped Storage Project

Transmission Line From New Switchyard to Southern Alternatives

Map Extent: Gila, Maricopa and Pinal Counties, Arizona

Date: 10.26.23 Author: roq

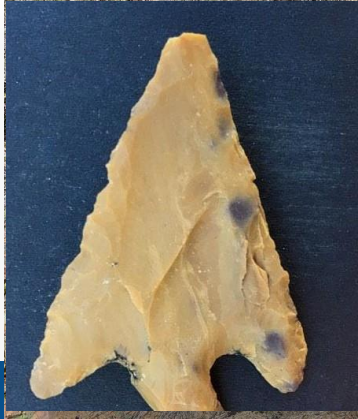


Resources





Cultural Resources within Project Area



Cultural Resources

- Class III (intensive pedestrian) survey conducted in January – March 2023 by Westland Resources prior to geotechnical drilling.
- Purpose to identify archeological sites, historic cultural resources, and places important to Native American Tribes.
- Area around pumped storage facilities have been surveyed.
- Transmission rights-of-ways need to be surveyed.



Pumped Storage Site 1

- 588 acre inventory area.
- 22 cultural resources identified:
 - 18 ancient Native American archaeological sites, including habitation sites, campsites, and gathering areas.
 - 2 historic-era archaeological sites, one corral and one campsite.
 - 2 multiple-component ancient and Historic-era archaeological sites.
 - In addition, two seep springs were identified by Tribal archaeologists as important Native resources.
- Area was likely used for permanent or seasonal habitation as well as for the foraging of wild resources such as medicinal plants, game, and raw rock materials.
- Area also was a likely travel corridor used by ancient O'odham and historic Apache or Yavapai groups.
- Site 1 contains many significant cultural resources that would be impacted by construction.



Pumped Storage Site 2

- 943 acre inventoried area.
- 17 cultural resources identified:
 - 7 ancient Native American archaeological sites.
 - 1 rock feature, likely Basque shepherd related.
 - 1 historic highway camp, 1 mine prospect, and 1 historic artifact scatter.
 - 6 historic utility lines and roads.
- Area was a source of abundant and important toolmaking and plant resources likely used seasonally and sporadically inhabited by ancient O'odham and historic Apache or Yavapai groups.





Bald Eagle



Southwest Willow Flycatcher



Saguaro



Golden Eagle

Potential Species within Project Area



Hedgehog Cactus



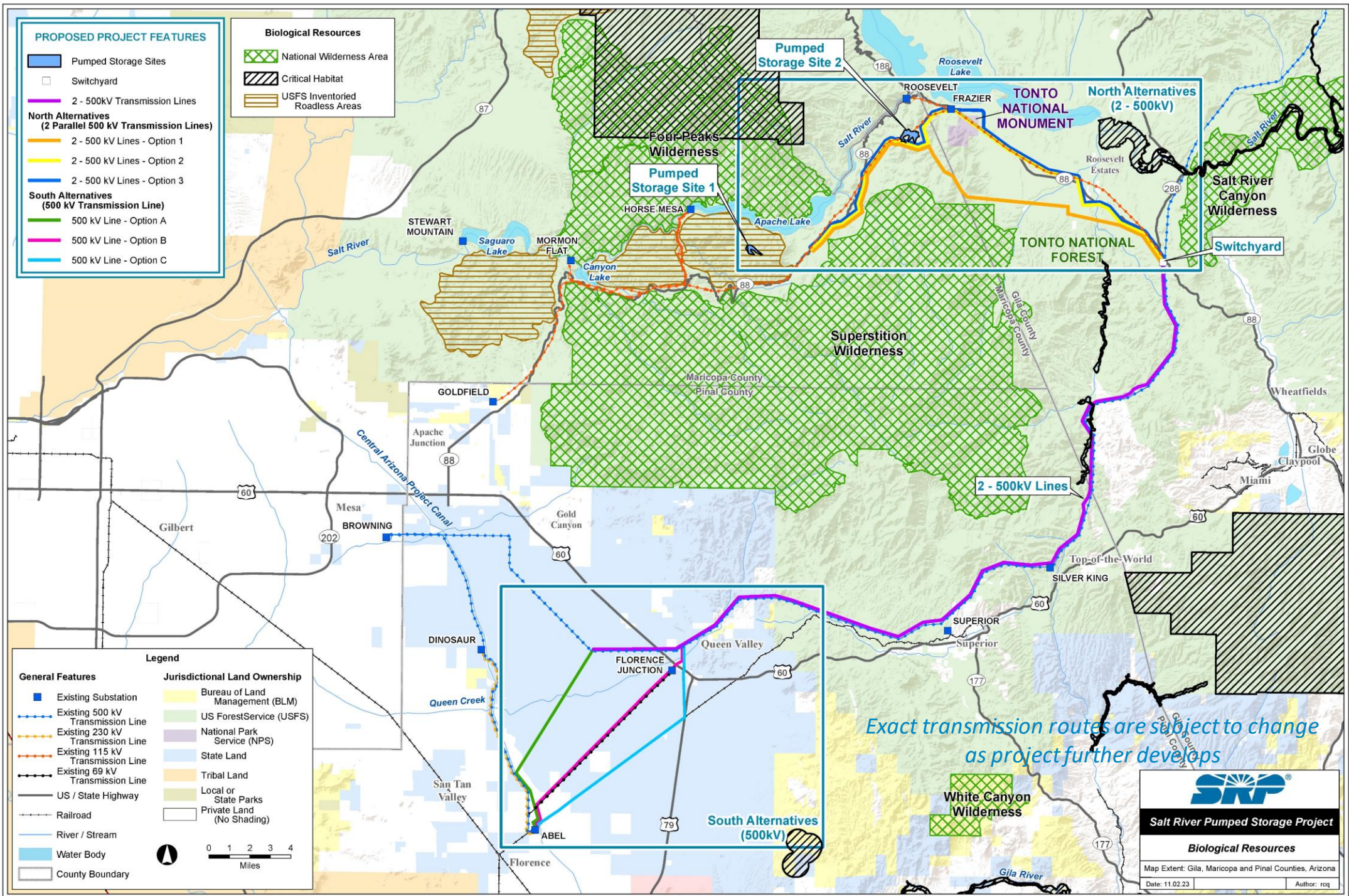
Yellow Billed-Cuckoo

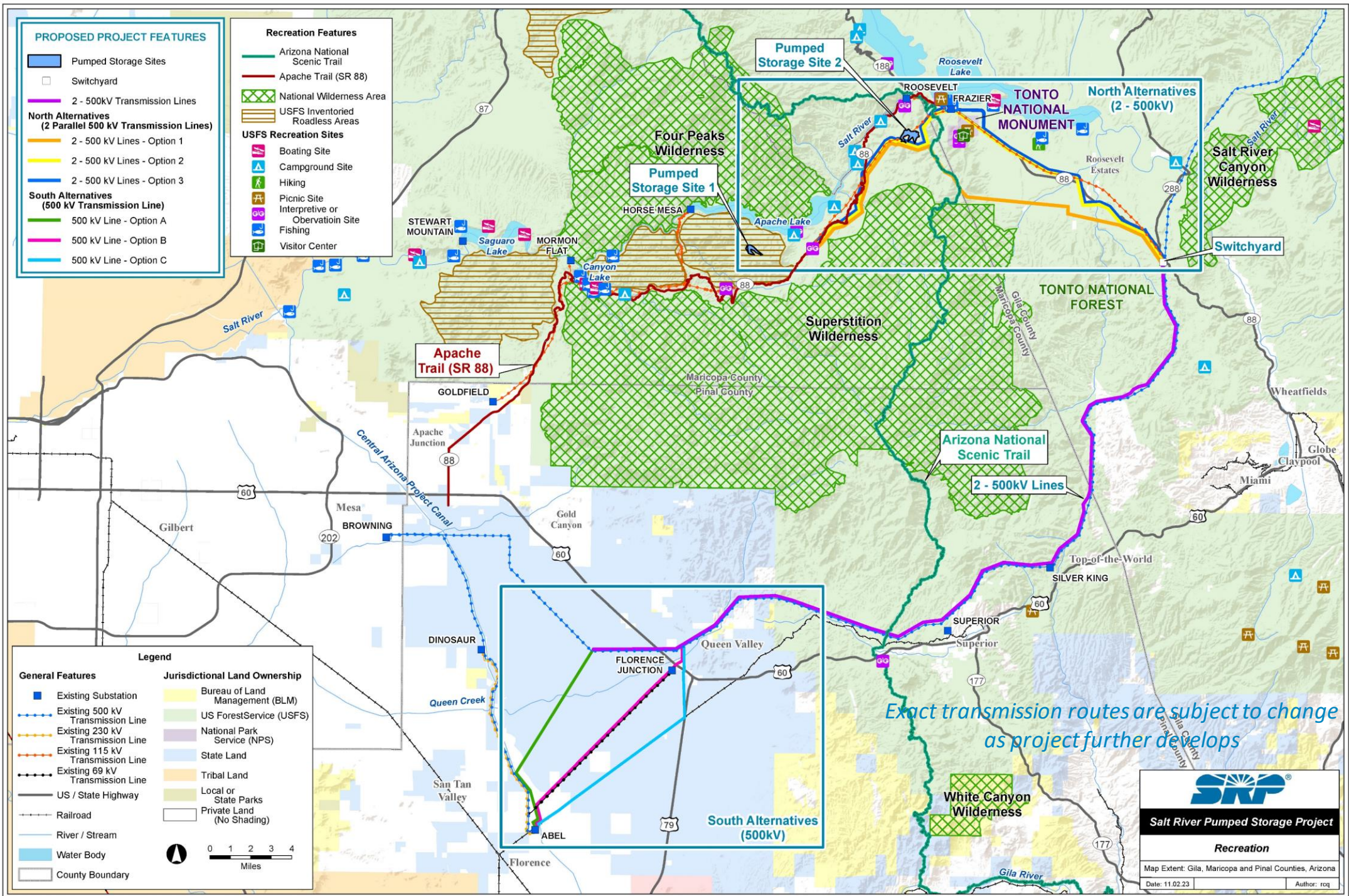


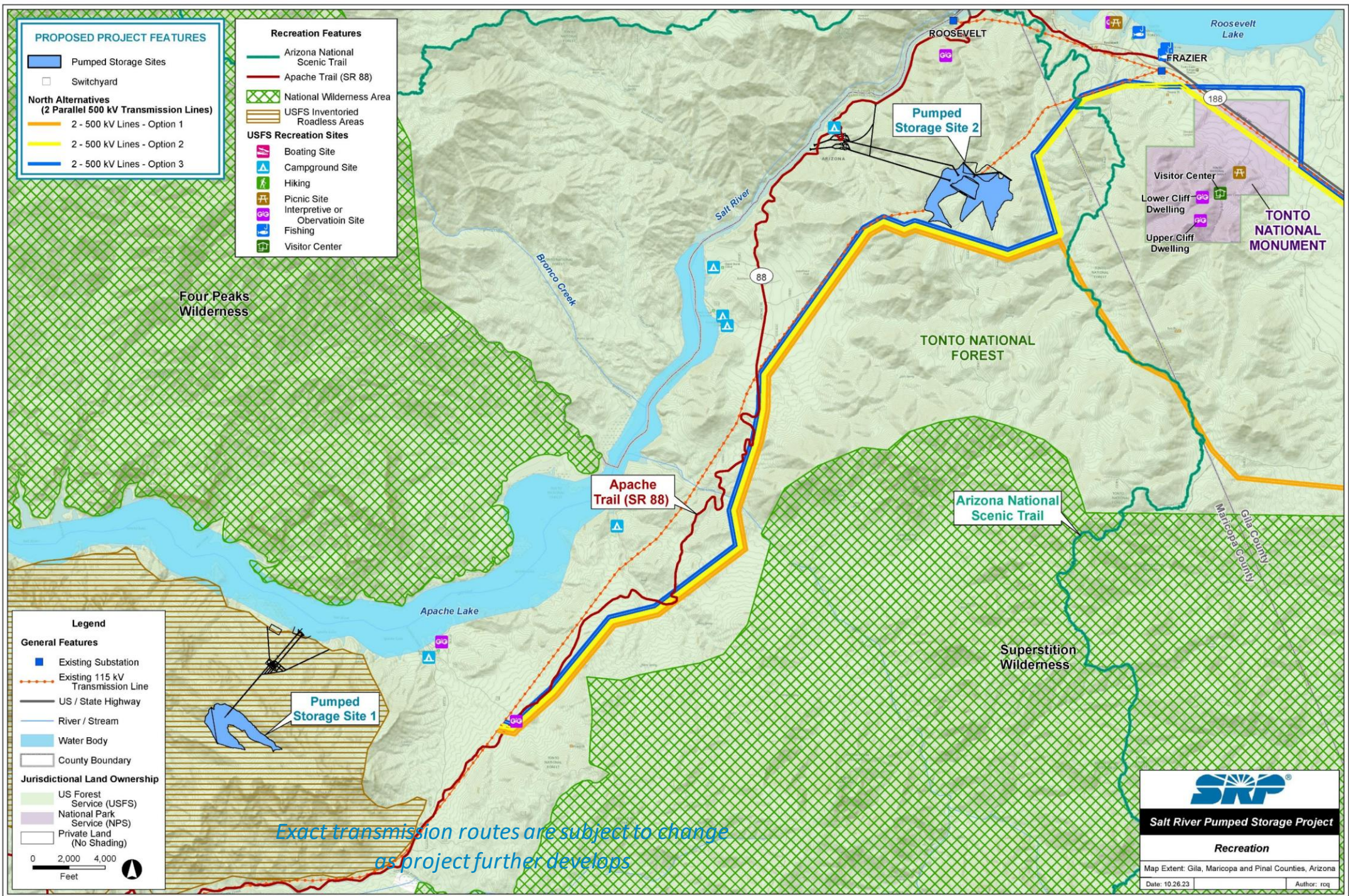
Gila Topminnow



Sonoran Desert Tortoise







Next Steps

- **Complete remaining fall workshops seeking input**
- **SRP take input and incorporate in site selection decision process**
- **Spring Workshops: Spring 2024**
 - Re-engage with Tribal Leadership, Local Communities, and Stakeholders
 - Summarize feedback from fall workshops
 - Share decision rationale on site selection
 - Present updates on site selection process
 - Provide opportunity for input

Feedback and Thank You!



Scan this QR Code to add your feedback



srp.net/pumped-storage

1-855-584-1484

thank you!