

White Pine Pumped Storage Project

Presentation to
Nevada's State Land Use
Planning Advisory Council

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A Subsidiary of rPlus Hydro, LLLP
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TABLE OF CONTENTS

1. Company Introduction
2. Energy Goals & Interconnection
3. Project Overview
4. Progress Highlights
5. FERC License Process
6. Water Sourcing
7. Wildlife Technical Working Group
8. Looking Ahead



FOUNDED IN 2018



BASED IN SALT LAKE CITY, UT



SUBSIDIARY OF THE GARDNER GROUP



DEVELOPS LARGE SCALE RENEWABLE ENERGY, WIND, PUMPED STORAGE HYDROPOWER, AND BATTERY PROJECTS



OVER 30 PROJECTS (AND GROWING) ACROSS THE U.S.



SIGNIFICANT EXPERIENCE EXECUTING CORPORATE PPA'S



FIRST PROJECT COMMISSIONED IN 2022, OVER 1 GW TO BE UNDER CONSTRUCTION IN 2023

COMPANY BACKGROUND

rPlus Hydro, LLLP is a subsidiary of rPlus Energies, LLC. rPlus Energies develops modern power plants to contribute to the rebuilding of America's energy infrastructure. Through partnership with the private sector, municipalities, and utilities, rPlus Energies develops utility-scale power plants to access a region's best mix of renewable resources to enable a more dispatchable and reliable power supply. rPlus Energies has over 30 projects across 15 market areas in the U.S. in active development including solar, wind, pumped storage hydro, and solar plus battery.

rPlus Energies is a subsidiary of The Gardner Group, family owned and operated since 1976, which is dedicated to building better communities through thoughtful, sustainable practices in developing and managing real estate, renewable energy and technology, and providing results-oriented philanthropy.



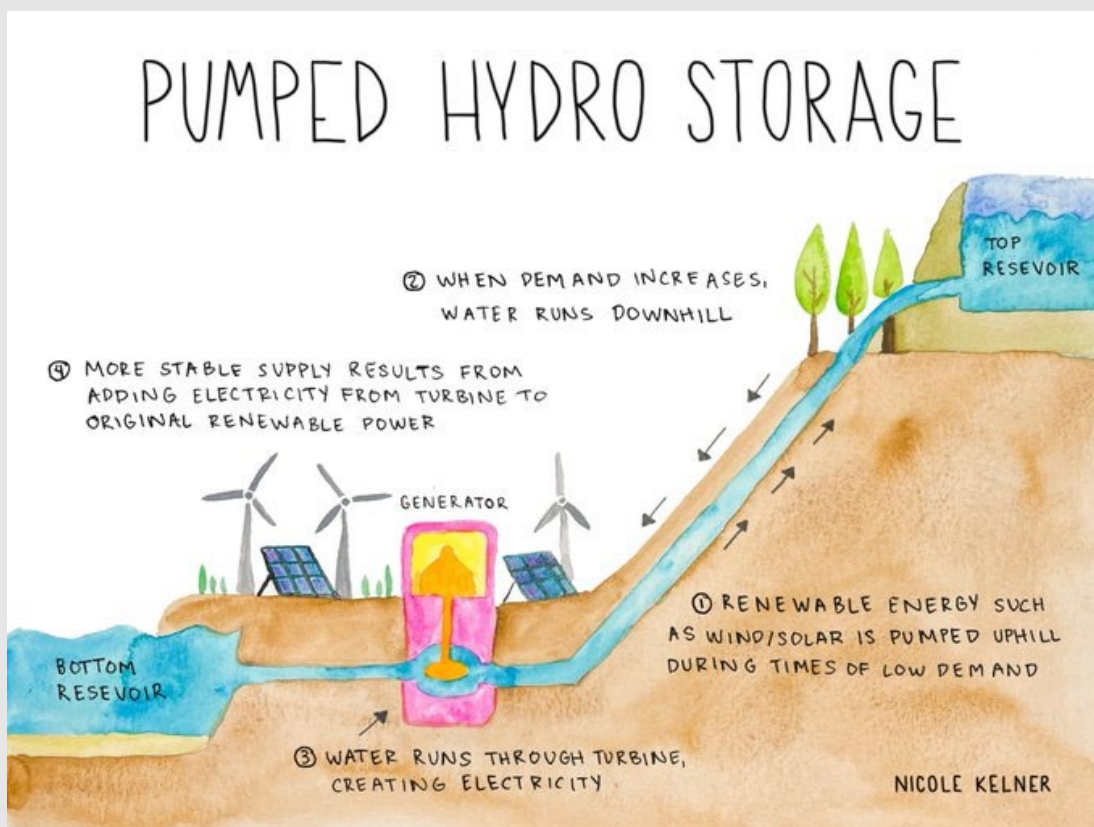
rPlus Hydro Overview

- Controls 50% of all current interconnection queue for planned or proposed pumped storage projects
- Has 12 pumped storage projects in various stages of development across the U.S.
- White Pine Waterpower, LLC is the license applicant for this project
- Future pumped storage project locations include: Washington, Wyoming, Utah, New Mexico, Oregon, Colorado, California, Kentucky





What is Pumped Storage?



- The oldest plant in the US was built in 1932 and is still operating.
- 42 existing pumped storage plants in the US and around 150 worldwide.
- Pumped storage plants have the ability to operate flexibly, respond quickly, and to provide a variety of services that help keep an electric system stable.
- 75-79% roundtrip efficiency



Project Overview

- **Closed-loop project**
 - More than \$2.5 billion capital investment
- **1000 megawatts (MW) of generating and pumping capacity**
 - 8 hours of full-output storage (8,000 MWh/day)
 - Approx. 1/8 of Nevada's peak power demand
- **Rapid dispatchable response generation**
 - from 0 to full power within 90 seconds
- **All water rights have been secured**



Project Facilities

Upper Reservoir	4,082 acre-feet active storage capacity	46 -acre footprint	Natural basin closed with lined rockfill dam 167' high at crest
Lower Reservoir	4,082 acre-feet active storage capacity	62.8-acre footprint	Lined earth fill dam, 145' maximum height
Conduits	2,326' vertical; 360' horizontal headrace; 7,610' tailrace; all 20'-22' diameter		
Transmission	25-mile line (H-Frame Structures)	345 kV gen-tie line	
Powerhouse & Equipment	Underground	3 variable speed generating units	1000 MW at POI





Estimated Economic Benefits

- **Estimated Employment**

- Construction Phase:

- Estimated **500 to 600 jobs over a period of 5 years**
 - Mostly skilled labor of the kind that should be able to draw upon area mining expertise (heavy equipment, earth-moving, tunneling)

- Long-Term Operation:

- **More than 35 direct full-time employees**, good income, local spending

- **Estimated Taxes**

- Project capital investment estimated to be more than **\$2.5 billion**
 - **Local tax revenue** is expected to be more than **\$12 million annually** starting after commercial operation and throughout its life





Energy Policy Goals

- **Nevada Energy Policy Goals**

- Nevada law requires at least 50% renewable energy by 2030, 100% carbon-free by 2050
- This requirement was added to the state constitution

- **Federal Energy Policy Goals**

- Energy Act of 2020 requires DOI to permit 25 GW of renewable energy by 2025
- NV BLM state office land use planning goals for renewable energy support this requirement

A significant amount of energy storage will be required to facilitate both policy objectives





Need for Interconnection Support

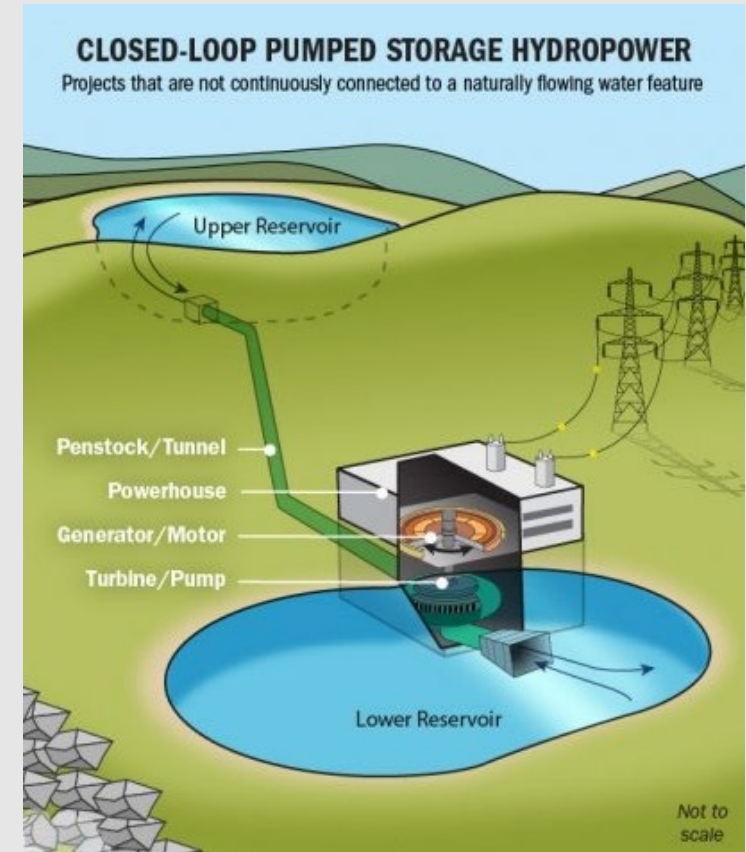
- Needed infrastructure for the region's transmission grid
- Manages non-dispatchable renewable resources and provides grid stabilization
 - Turns variable and intermittent renewable energy into a dispatchable energy source
 - Provides inertia and reactive power for grid stabilization, increasingly important as fossil fuel generation is retired





Progress Highlights

- In the past six months, the White Pine Pumped Storage project made substantial progress with:
 - Filing the Final License Application (FERC)
 - Survey to assess potential impacts to Northern Nevada Railroad user experience
 - Formation of BLM, NDOW, SETT Technical Working Group to address potential wildlife impacts





Progress Highlights

Completed Environmental Study Reports:

- Aquatic Resources Delineation
- Special-Status Plants and Noxious Weeds
- Greater Sage-Grouse Lek and Habitat
- Rare, Threatened, and Endangered Wildlife Species Assessment
- Recreation Resources
 - Supplemental Recreation Resources
- Cultural Resources (*Privileged*)
- Visual and Aesthetic Resources
 - Supplemental Visual and Aesthetic Resource
- Socioeconomic
- Historic Properties Management Plan (*Privileged*)

Ongoing Studies

- Supplemental Socioeconomic
- Sage Grouse Lek Monitoring



FERC Licensing Jurisdiction

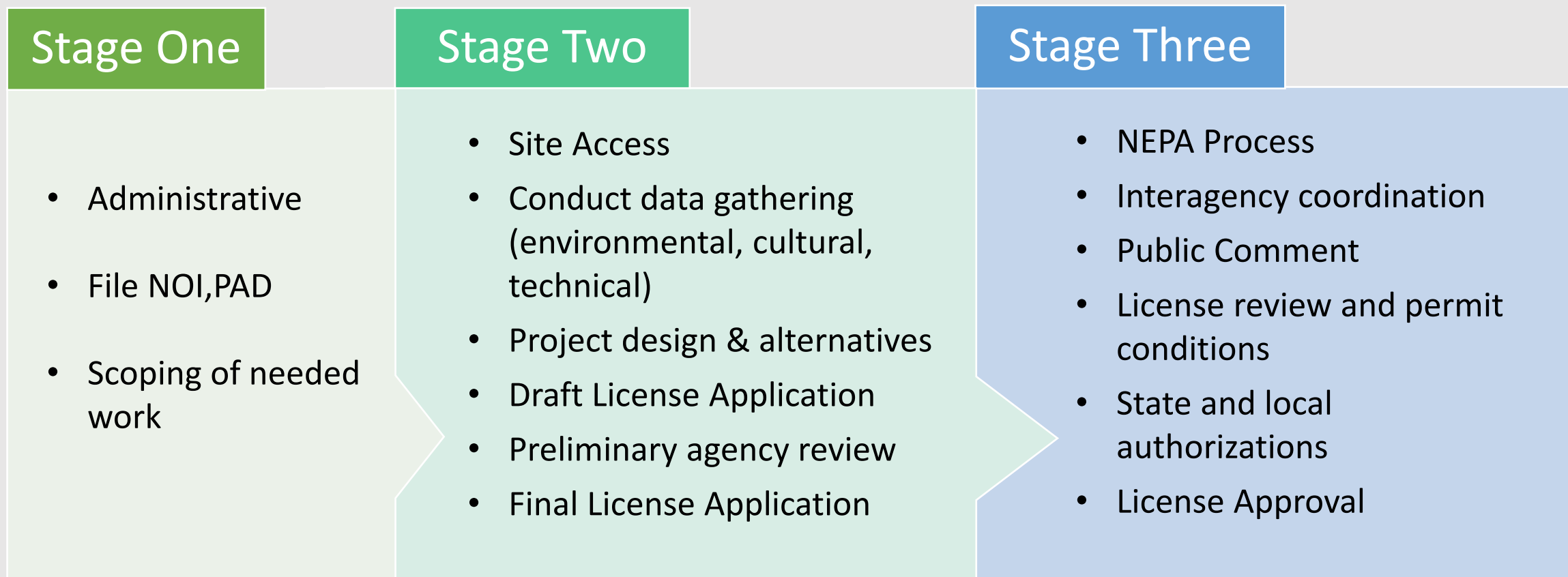
- A hydropower project is subject to FERC's licensing jurisdiction under the Federal Power Act if it:
 - is located on navigable waters;
 - **occupies federal lands or reservations;**
 - uses water from a federal dam; or
 - is located on a Commerce Clause waterway, was constructed after 1935, and affects interstate commerce.
- ***FPA § 23(b); 16 U.S.C. § 817(1)***



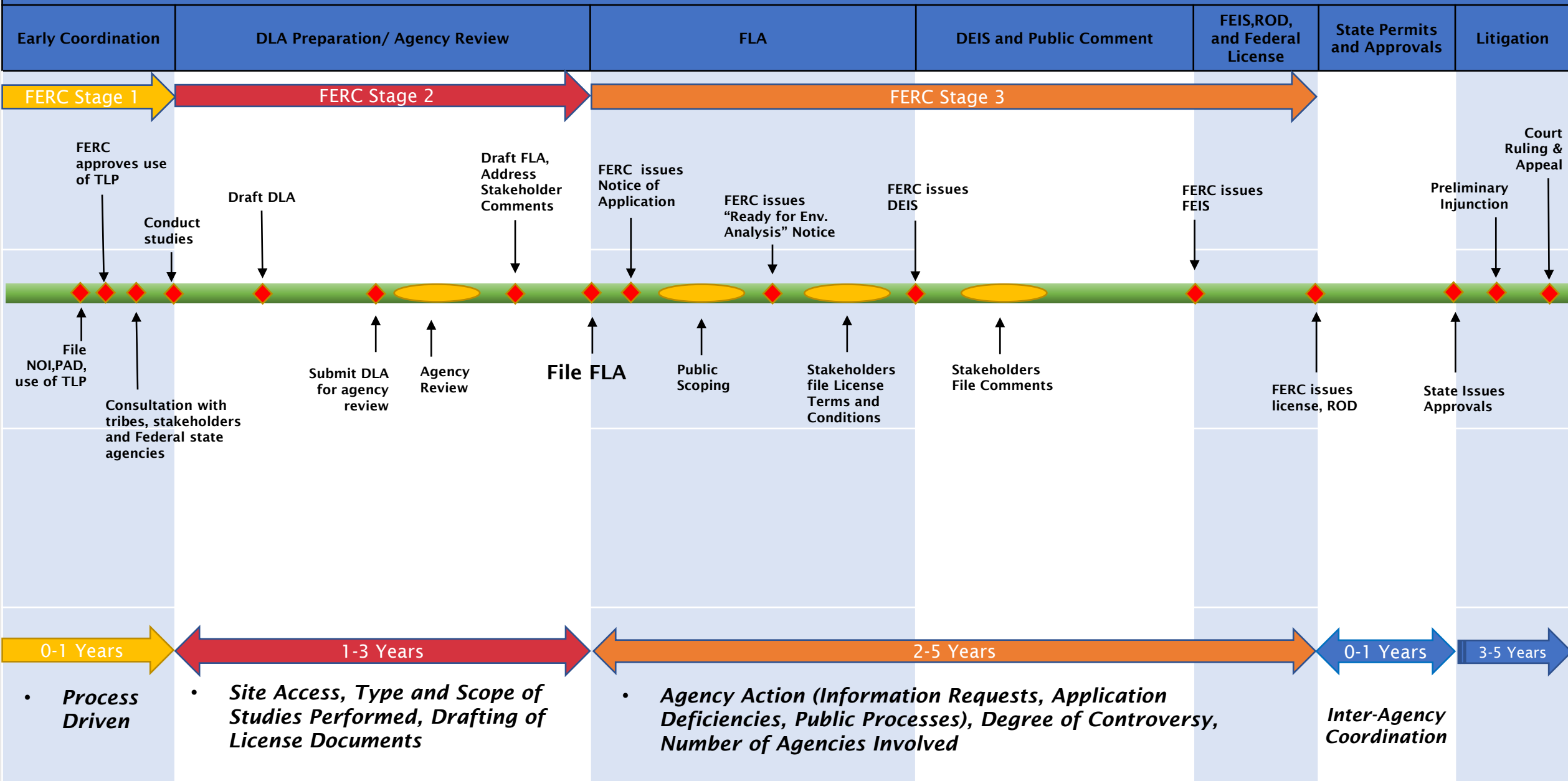


FERC License Process

(Integrated, Traditional, Alternative, Expedited Closed Loop)



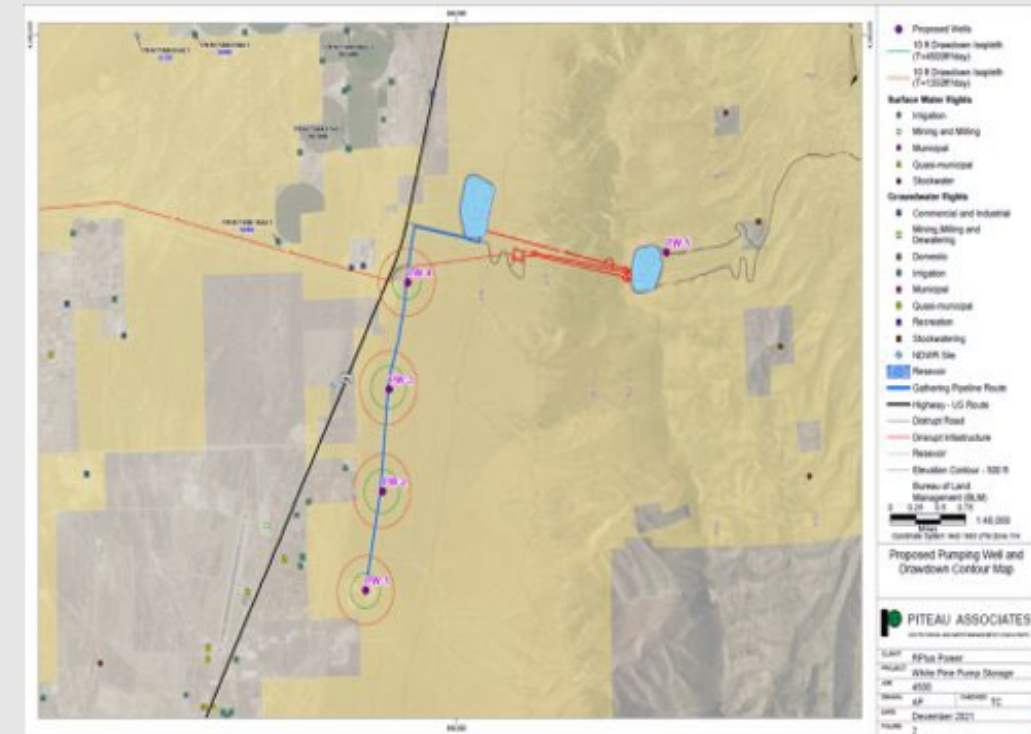
TLP License Application and NEPA Road Map





Water Sourcing

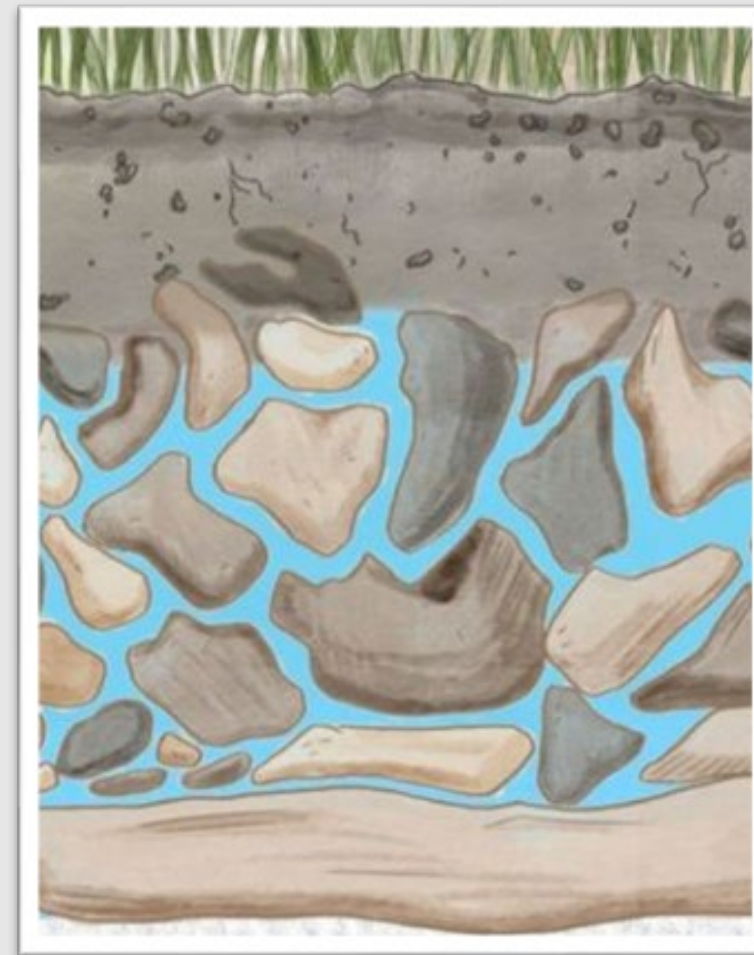
- **Water sourcing for the project is under contract**
 - Steptoe Valley water allocated to White Pine County (24,000 AF/Y) for industrial & economic development use (originally for planned coal plants)
 - Water agreement signed with White Pine County in March 2021
- **Water usage**
 - Construction Phase: Up to 900 acre-feet per year for 5 years
 - Initial fill requirement ~4,500 acre-feet
 - Annual make-up water for the life of project, approximately 500-750 acre-feet
- **Approval was received from the Nevada State Engineer's office for a change in permitted usage and the point of diversion for groundwater permits for the purposes of sourcing construction-phase water and reservoir fill water.**





Water Sourcing

- **Hydrogeological Study**
 - Why? Better understand and describe potential impacts to groundwater
 - What? Initial reservoir fill and the make-up water
 - Next Steps? Mitigate for impacts.
- **BLM approval of the pending Hydrogeologic Testing SF-299 application**
- **Timing of the study will be based on several factors:**
 - Winter seasonal restrictions,
 - wildlife restrictions, and
 - equipment and operational availability.





Looking Ahead

- **FERC review of Final License Application for Acceptance**
 - FAST-41 Project Status
 - NEPA Process to start by FERC upon license acceptance
- **Update BLM Right-of-Way Application**
- **BLM led Technical Working Group to address potential wildlife impacts**
- **Section 106 Consultation**
- **Development Services Agreement with White Pine County**
- **Continue working with state and federal agencies on additional and/or supplemental cultural, socioeconomic, and environmental topics**





THANK YOU

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