RED LAKE PSH PROJECT

GRAVITY STORAGE LLC, Ver. 20250103

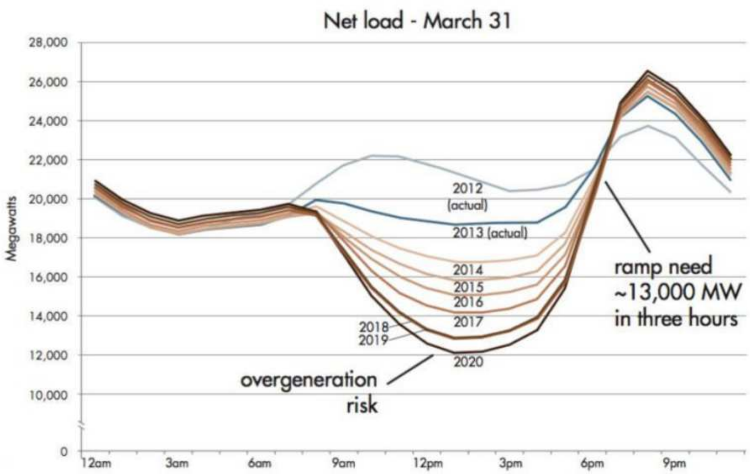
GS LLC

CAUTIONARY STATEMENT

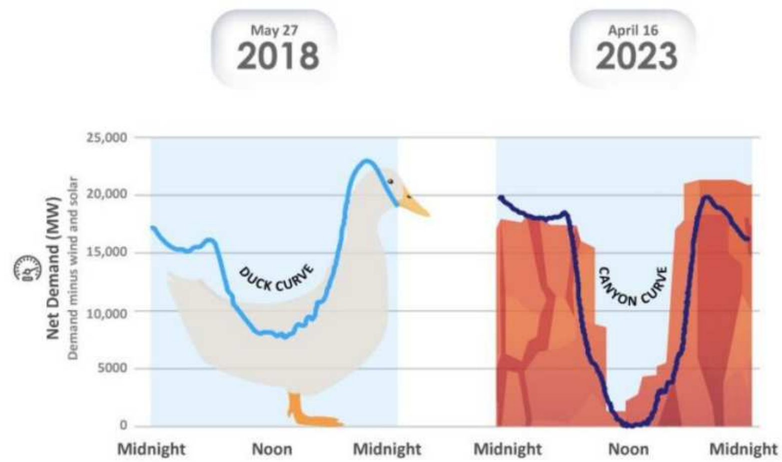
SAFE HARBOR

Cautionary Note Regarding Forward Looking Statements: This presentation contains forward-looking statements made regarding matters which are not historical facts, such as anticipated Net Revenue timing and amounts, expenditures and expansion plans; achieving gross margin positive operation and the timing thereof; costs associated with land acquisitions; costs associated with construction, equipment purchases and shipping; strategic and business plans; planned and potential activities and expenditures, are "forward looking statements" within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 and Canadian securities legislation and involve risks and uncertainties that could cause actual results to differ materially from those projected, anticipated, expected or implied. These risks and uncertainties include, but are not limited to, operating problems or accidents at operating project facilities; permitting problems or delays; variations in grid power requirements and power costs; delays or changes in planned expansions; equipment problems or delays; failure of equipment and improvements to achieve anticipated results including anticipated energy production, timing and cash operating costs; delay in achievement of cash flow gross margin positive operations for the outlined Pumped Storage Hydro Projects; energy price volatility, lower net back energy prices than anticipated and their impact on the timing of positive cash flow at the outlined Pumped Storage Hydro Projects; the availability of external financing, if required, on acceptable terms or at all; operating risks and results; future actions of governments of countries where our properties are located; world economic and capital markets conditions; and our future performance and expectations about our performance.

THE CAISO POWER GRID



ORIGINAL DUCK CURVE



PRESENT DAY CANYON CURVE

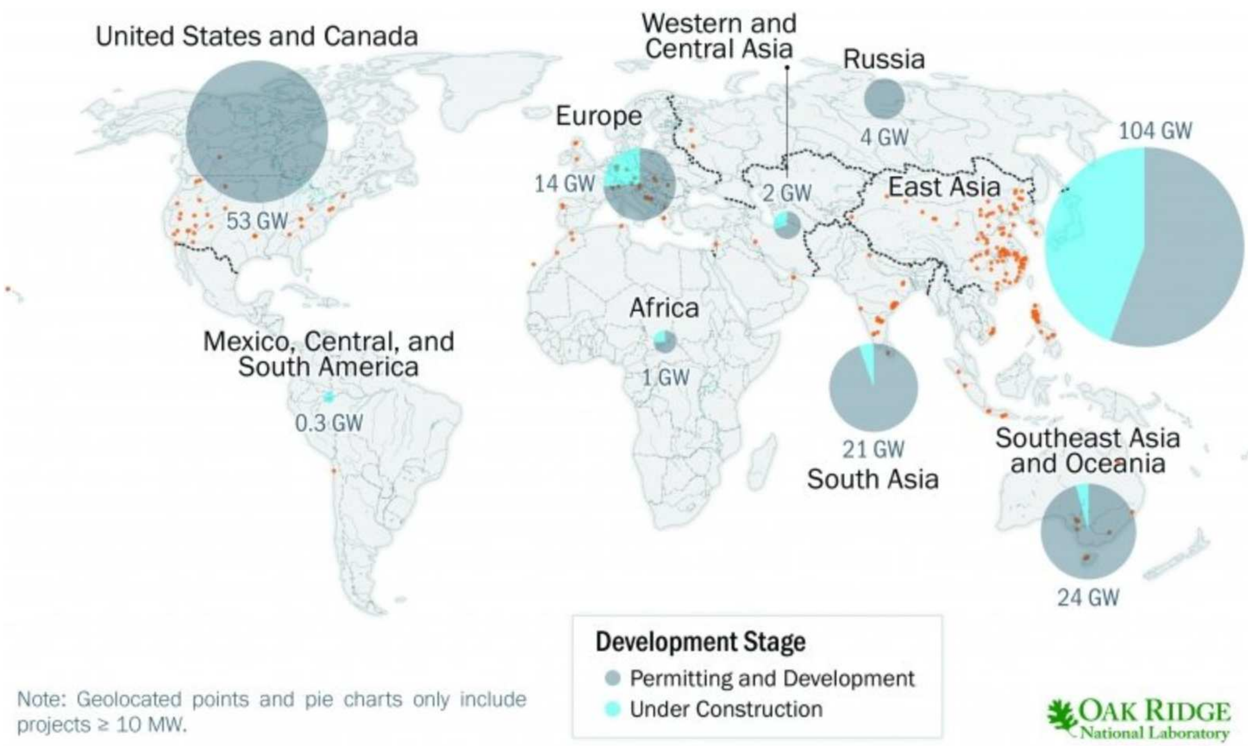
- The original duck curve shows the challenge with the growing solar resource that results in net demand being reduced during the day(duck's belly) and increasing at sunset (duck's neck), with the duck's belly getting deeper and the neck getting steeper and longer with every year.
- The duck's belly can cause both over-generation issues and renewable curtailment.
- The neck can make it more difficult for the resource fleet to be flexible enough to ramp up.
- The southwest energy system has morphed from the duck curve to the canyon curve.
- Flexibility is paramount to address the challenges associated with the Canyon Curve.
- Pumped Storage Hydro will play a big part in delivering flexibility to the energy system. PSH will reduce the gas generation that is currently being used to climb out of the canyon.

Power Magazine, Duck Curve Now Looks Like a Canyon, Sonal Patel, Apr 27, 2023.

PUMPED STORAGE HYDRO

ENERGY STORAGE AND GROWTH

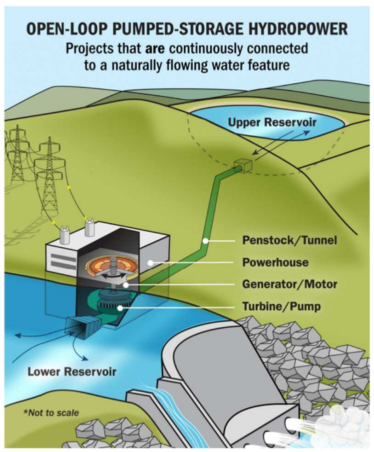
- First known cases of PSH were found in Italy and Switzerland in the 1890's.
- PSH first used in the United States in 1930.
- PSH currently accounts for 96% of all utility-scale energy storage in the United States.
- 43 PSH plants currently operating in the United States.
- United States PSH facilities originally built to compliment nuclear base load power plants.

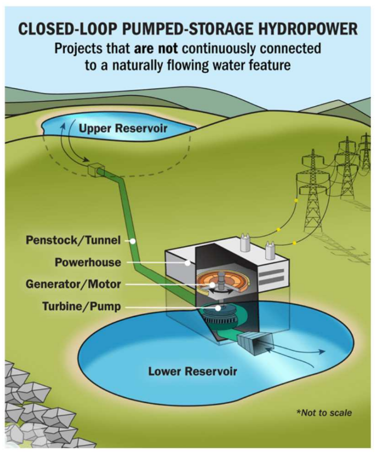


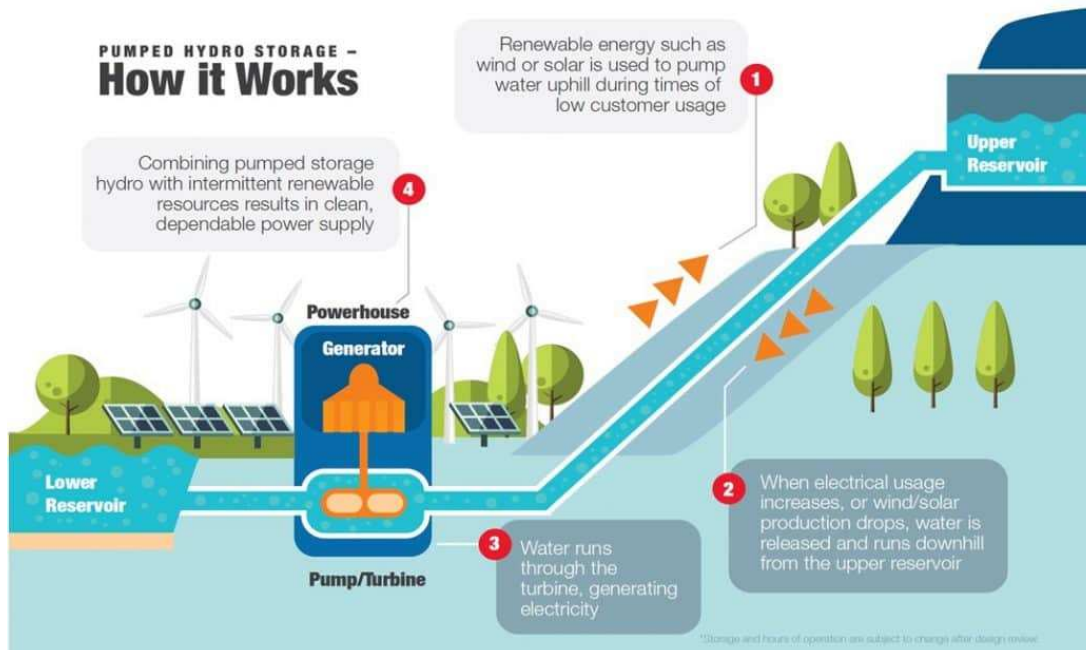
PUMPED STORAGE HYDRO (PSH)

STORING RENEWABLE POWER

Closed and Open Loop Pumped Storages operate with an upper and lower reservoir of water that is continually pumped and drained from one reservoir to the other. The pump/turbine is used to pump water up to the upper reservoir during the low peak periods. The water drains from the upper reservoir, through the turbine, to the lower reservoir generating energy during the high peak periods. PSH facilities can operate 12 hours per day or more, depending on their reservoir sizes, producing clean reusable peak energy.

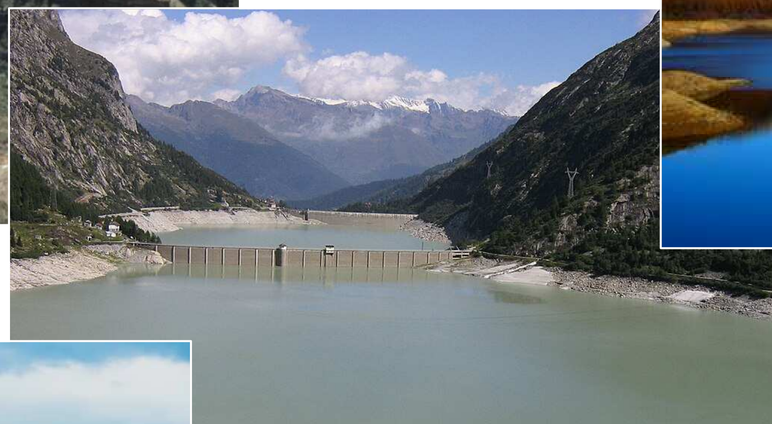






PUMPED STORAGE HYDRO RESERVOIRS

WORLDWIDE EXISTING PSH RESERVOIRS



STORAGES TECHNOLOGIES AVAILABLE

PUMPED STORAGE HYDRO – LARGE CAPACITY STORAGE

TYPE	Max. Power Rating (MW)	Discharge Time	Max. Cycles Lifetime	LCOS[1] Levelized Cost of Storage	Efficiency	Capital Cost US$/kW
Pumped Storage PSH	3,000	4h – 16h	30 - 80 Years	$0.105	70 – 85%	$1,700 - $5,100
Li-ion Battery	1,000	1 min – 8h	1,000 – 10,000	$0.160	85 - 95%	$2,500 - $3,900
Lead-Acid Battery	100	1 min – 8h	6 – 40 years	$0.330	80 – 90%	$139
Molten Salt (Thermal)	150	hours	30 years	No data	80 – 90%	$350
Compressed Air CAES	1,000	2h – 30h	20 – 40 years	$0.105	40 – 70%	$800 - $1,550
Flow Battery	100	hours	12,000 – 14,000	$0.180	60 – 85%	$5,200
Hydrogen	100	mins - week	5 – 30 years	$0.350	25 – 45%	$1,500

EESI, Energy Storage, February 2019

- LCOS[1] unit: US$/kwh, (US Department of Energy, 2022 Grid Energy Storage Technology Cost and Performance Assessment, August 2022).
- PSH facilities can typically provide 10 to 12 hours of electricity, compared to about 6 hours for lithium-ion batteries.
- **PSH projects are long-term investments:** Bath County, Virginia PSH (3-GW) operating since 1985.

PEAKING POWER PLANTS (aka “PEAKERS”)

TYPICALLY USED IN CONJUNCTION WITH BASELOAD POWER PLANTS

- Peak hours during the day are in the morning with industry starting up, afternoons with home activities, heating in the mornings for the northern climate, and A/C in the afternoons in the southern climates.
- Peaker plants are used to ensure grid reliability, from energy peaks.
- Peaker plants are natural gas turbines, or natural gas engines.
- A peaker plant may operate many hours or a few hours per day, depending on the load requirement.
- 10% of the grid infrastructure is built to supply energy during peak demand. The actual peak demand is estimated to be 1% of the year.
- Pumped Storage Hydro (PSH) is the largest form of energy storage on the market today. A PSH replaces the peaker plants by giving the grid energy flexibility (dispatchable power).
- A PSH combined with solar is a true form of renewable (green energy).

GS LLC

PROJECT DESCRIPTION

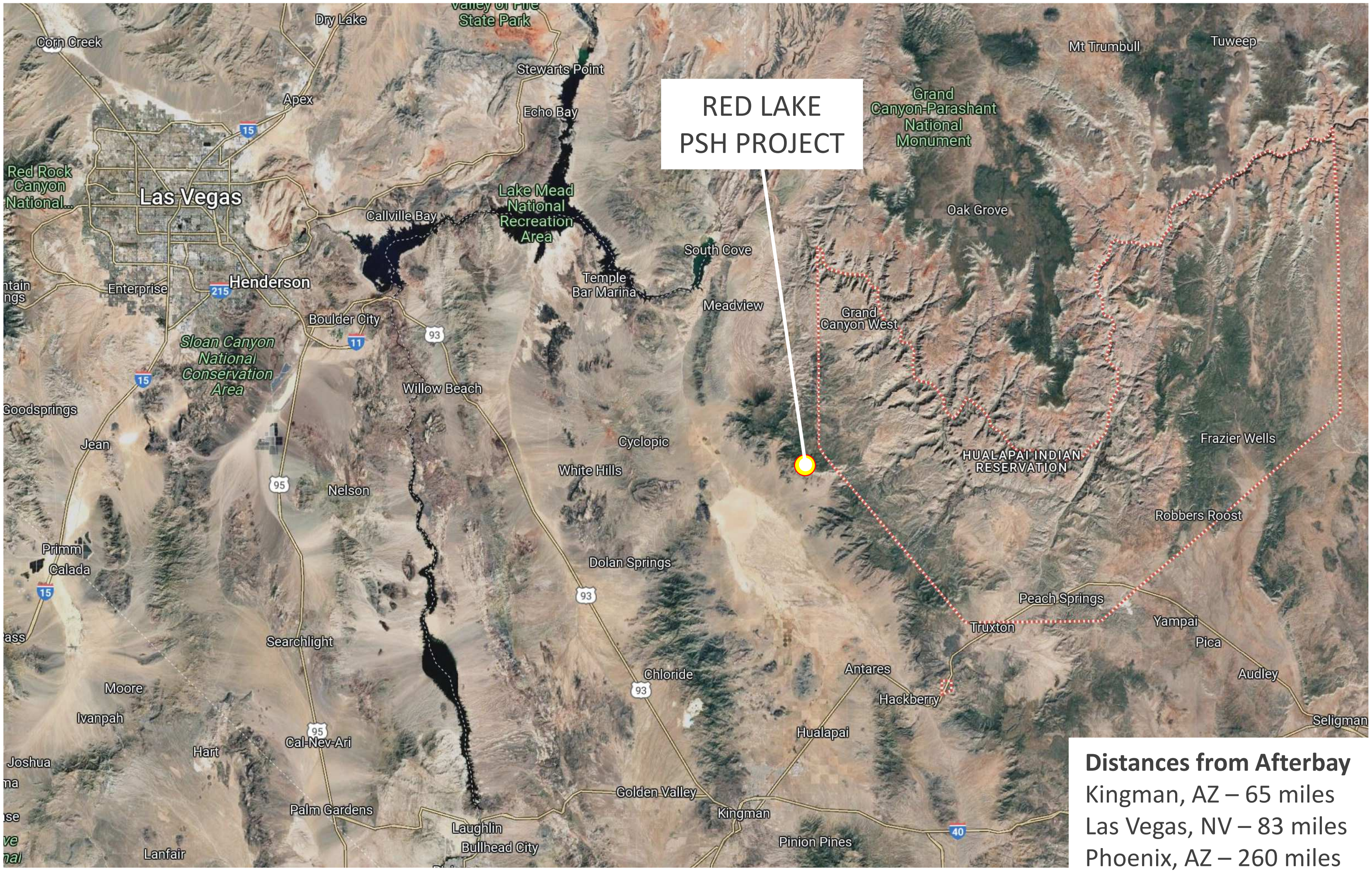
RED LAKE PLAN COMPONENTS

The proposed project is a Pumped Storage Hydro (PSH) located near Dolan Springs, AZ. The Red Lake project consists of the following components:

- Forebay and Afterbay; a closed Loop system.
- Three Powerhouses; capability of generating 3,000-MW for up to 12-hours per day (based on reservoir sizes), 36-GWh daily.
- Staged construction design to enable “best level capitalization and generation capacity”.
- Drainage control canals constructed with rip-rap and gabion baskets.
- Underground access with surface infrastructure.
- Twelve 300-MW turbine/pump units.
- Two 6.4-miles 500kV OH transmission lines from the project to a new substation that connects to two existing 500kV OH transmission lines.

PROJECT LOCATION

THE RED LAKE PROJECT IS IN ARIZONA, USA



Distances from Afterbay

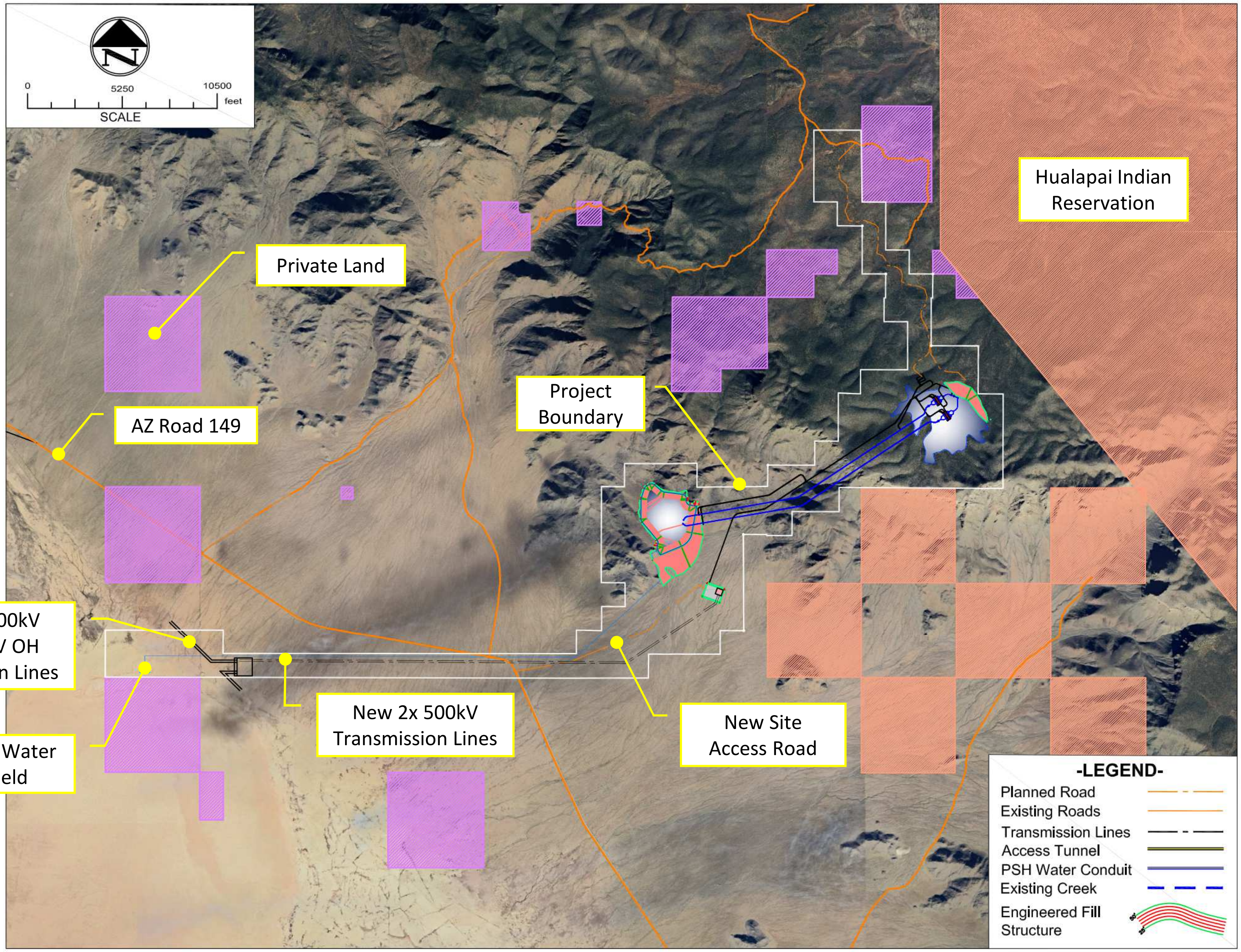
Kingman, AZ – 65 miles

Las Vegas, NV – 83 miles

Phoenix, AZ – 260 miles

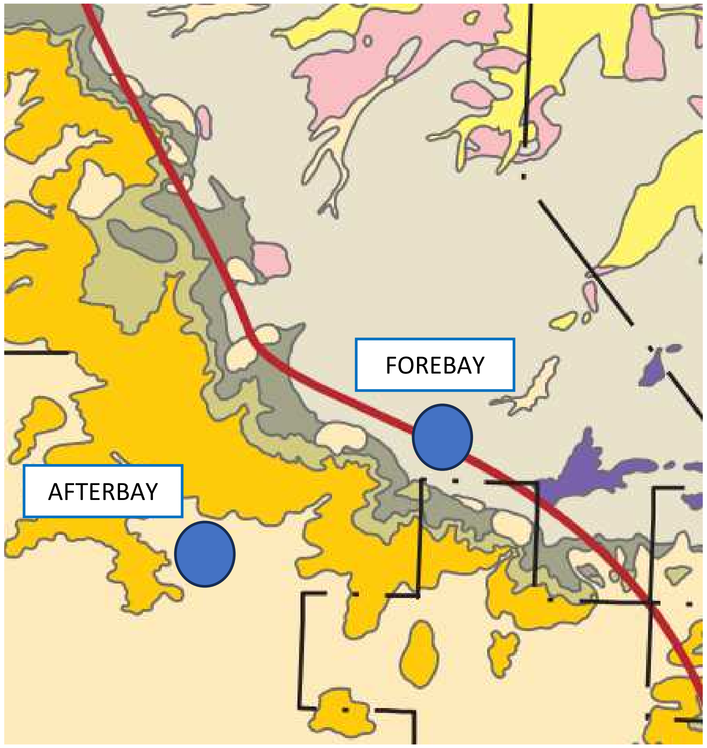
NOTE: No Part of the project is on or crosses the Hualapai Reservation Land.

RED LAKE PROJECT



REGIONAL GEOLOGY

THE RED LAKE PROJECT SITE IS PART OF THE GRAND WASH CLIFFS



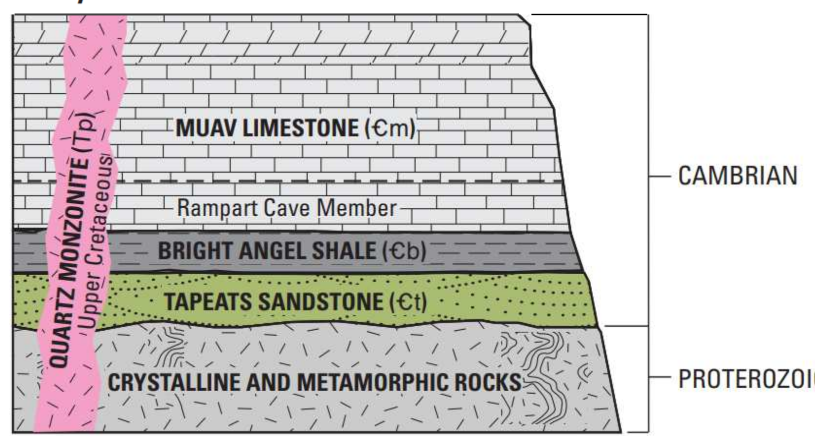
€m	Muav Limestone
€ba	Bright Angel Shale
€t	Tapeats Sandstone
	Proterozoic rocks
Xcm	Crystalline and metamorphic rocks

Fault—Includes approximately located, concealed, or inferred faults. Bar and ball on downthrown block

Regional monocline—Includes approximately located, concealed, or inferred. Showing axial plane and direction of plunge

Hualapai Indian Reservation boundary

Study area boundary



The Grand Wash Fault, forming the Grand Wash Cliffs, is the boundary between the Hualapai Plateau and the heavily faulted, folded, and eroded Basin and Range Province to the west. The geology of the western Hualapai Plateau consists of Proterozoic crystalline and metamorphic rocks. The Cambrian units: Tapeats Sandstone and Bright Angel shale have a thickness of 300 to 550 ft. and the Muav Limestone is about 1,200 to 1,400 ft. thick.

POWERHOUSE DESIGN

REVERSIBLE FRANCIS TURBINE/PUMP UNITS

Our Powerhouse designs consists of Francis Turbine units and single speed pumps with synchronized 300-MW air cooled motor/generators. The Reversible Pump-Turbine units have a Round Trip Efficiency (RTE) of 77.4-percent. The flow of water through each turbine is 537,200-gpm when producing full power (6.45M-gpm when producing 3-GW). The generators will output 23kV that is stepped up to 500kV in the transformer hall.

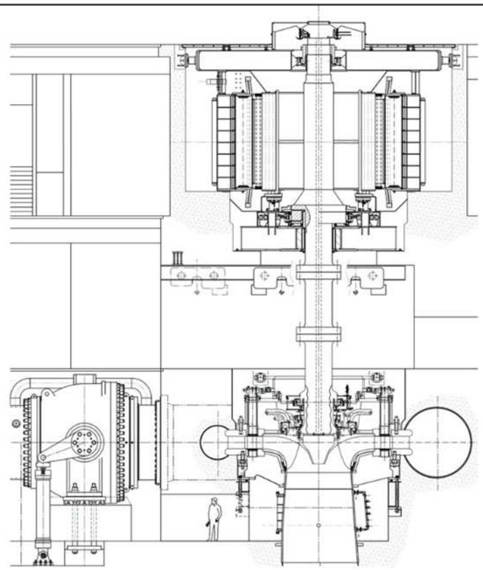


FIGURE: Voith Reversible Pump Turbine and Generator Unit

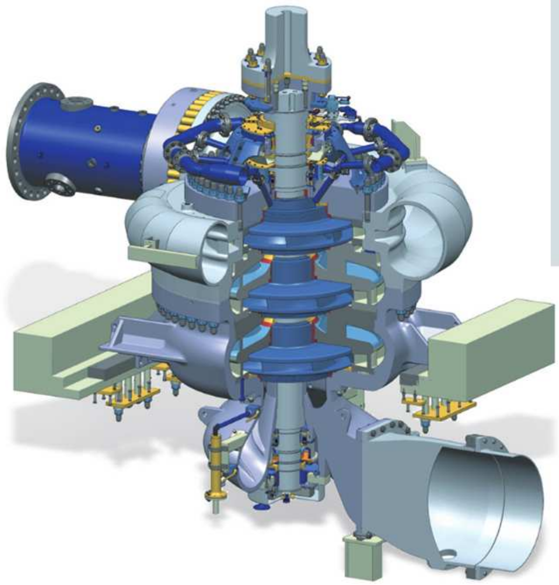


FIGURE: Voith 150 MW Reversible Pump Turbine Unit

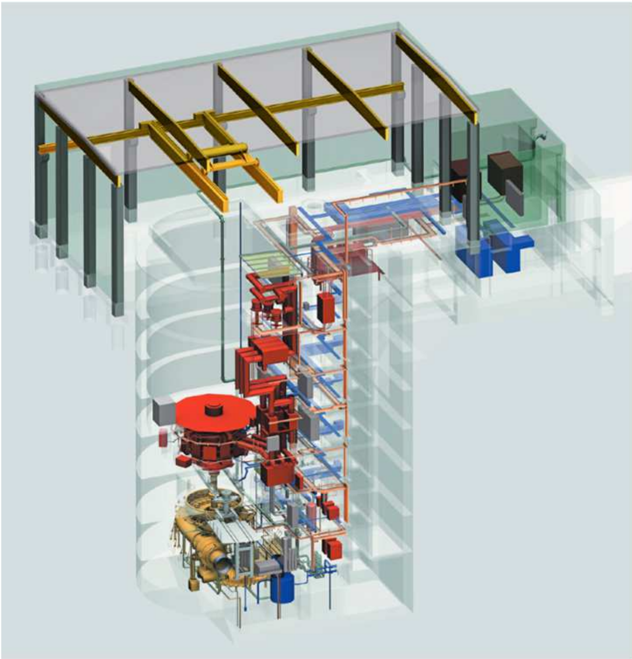
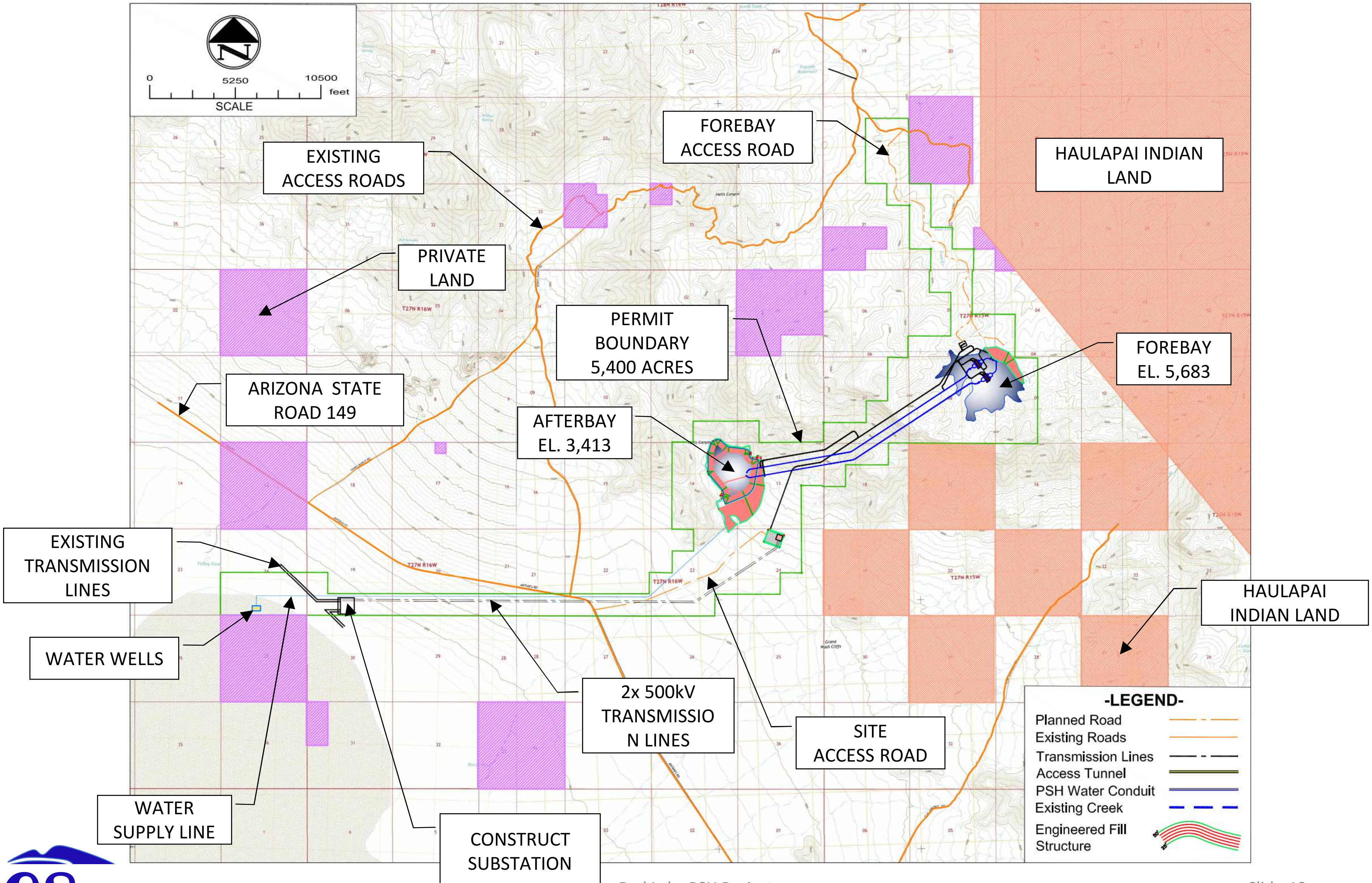


FIGURE: Voith Reversible Pump Turbine Unit, Generator, Ancillary Equipment, and Structure

RED LAKE PROJECT

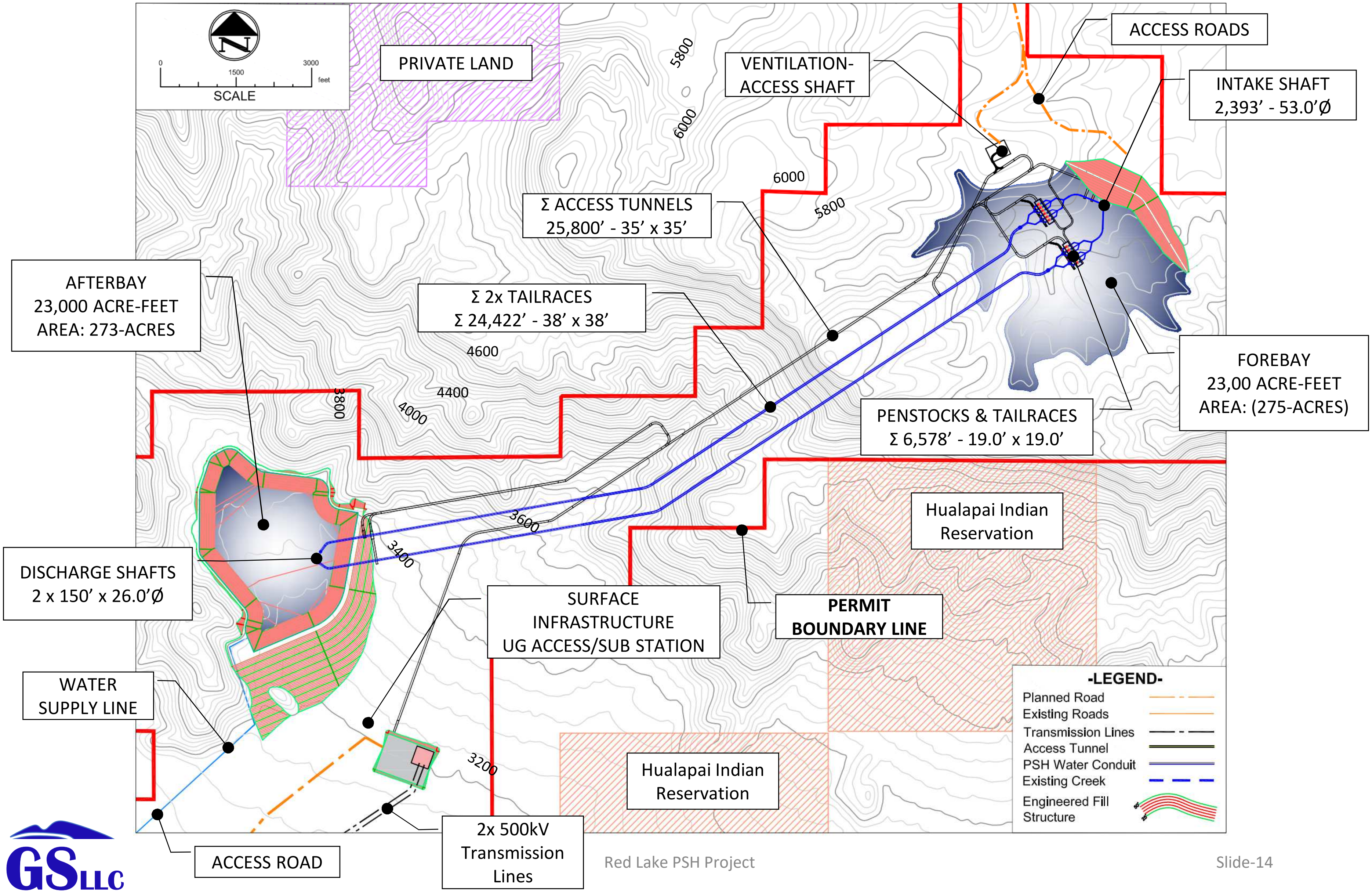
REGIONAL LAYOUT



GS LLC

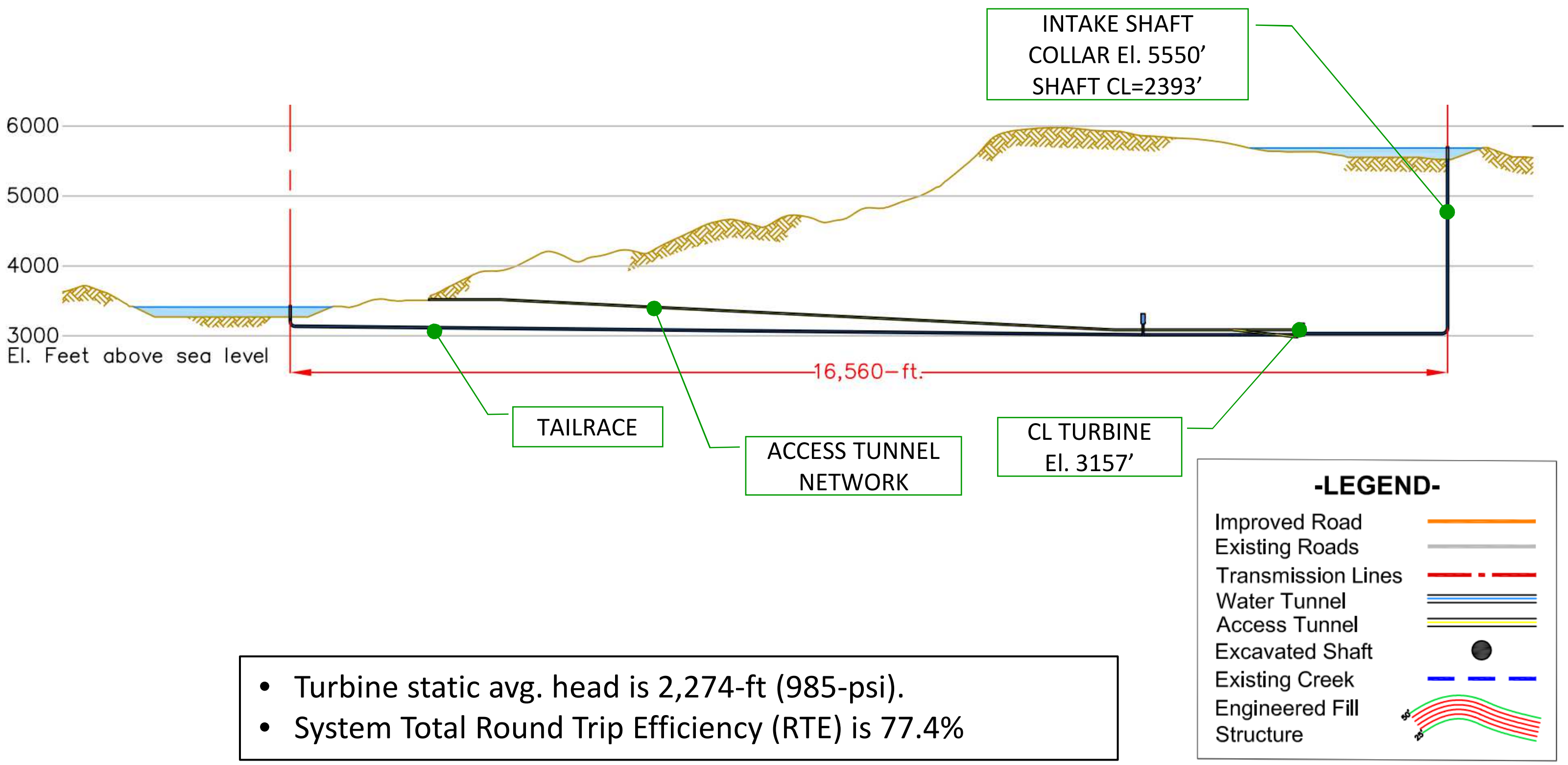
RED LAKE PROJECT

GENERAL LAYOUT



RED LAKE PROJECT

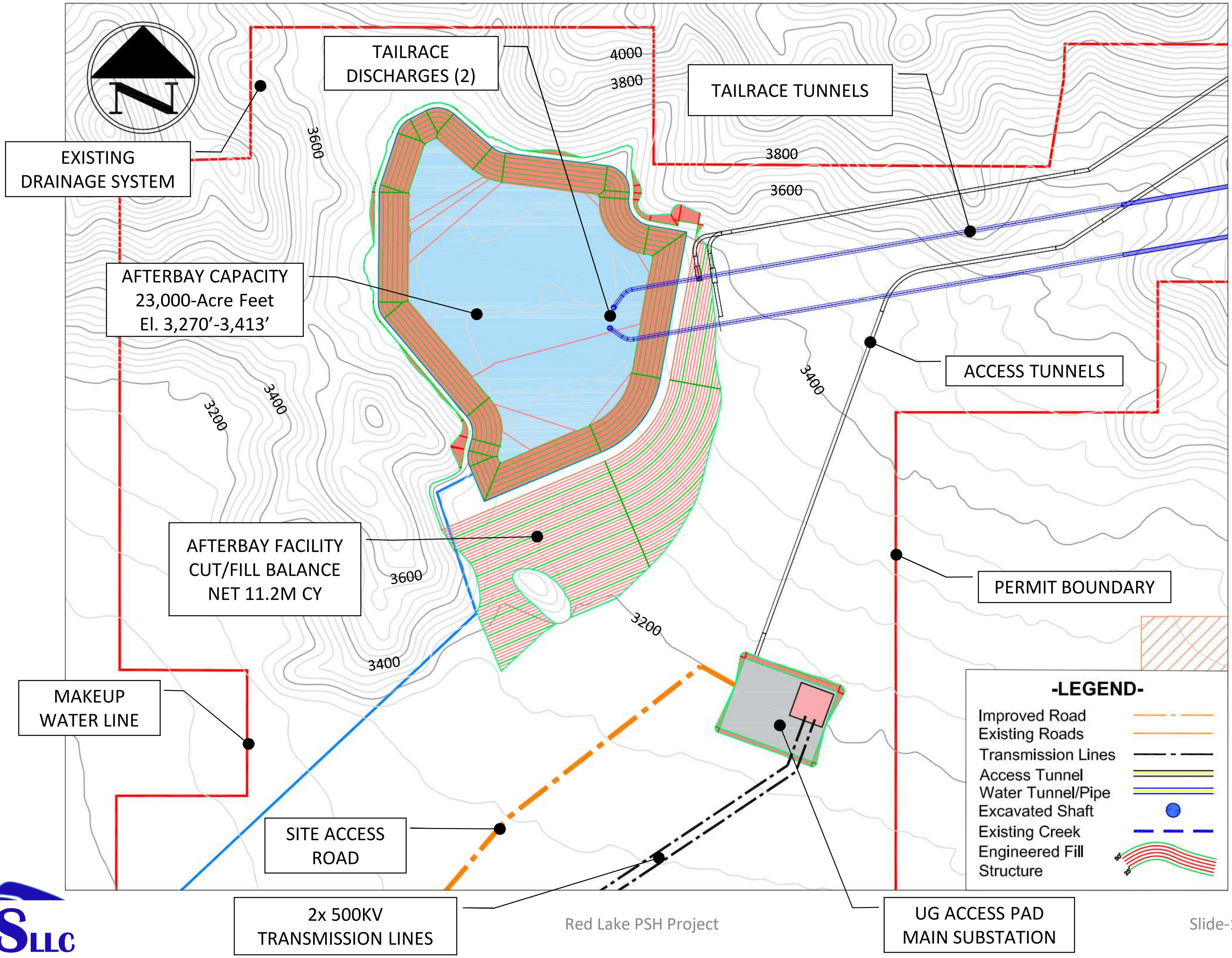
LONG SECTION VIEW



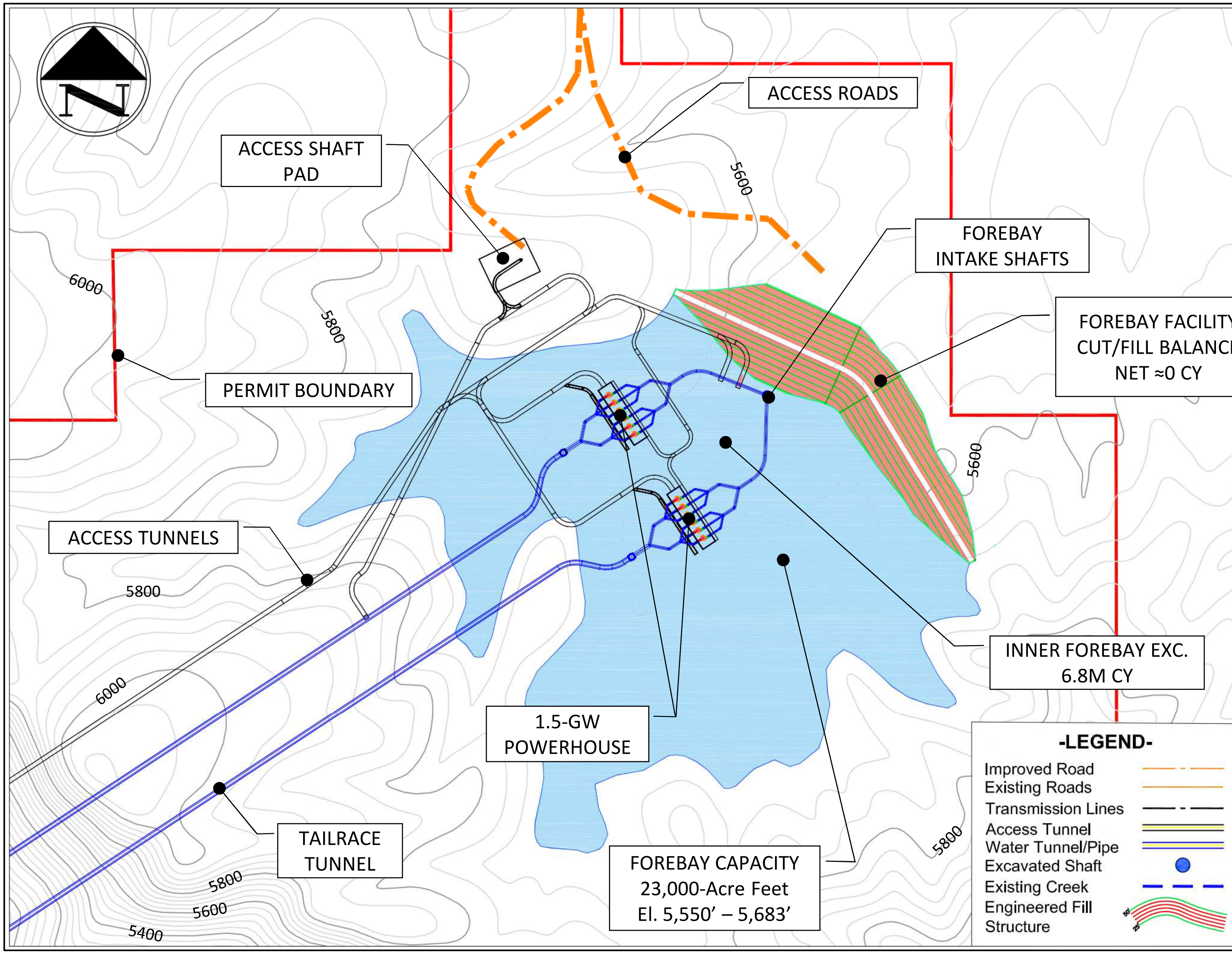
- Turbine static avg. head is 2,274-ft (985-psi).
- System Total Round Trip Efficiency (RTE) is 77.4%

GS LLC

RED LAKE AFTERBAY



RED LAKE FOREBAY

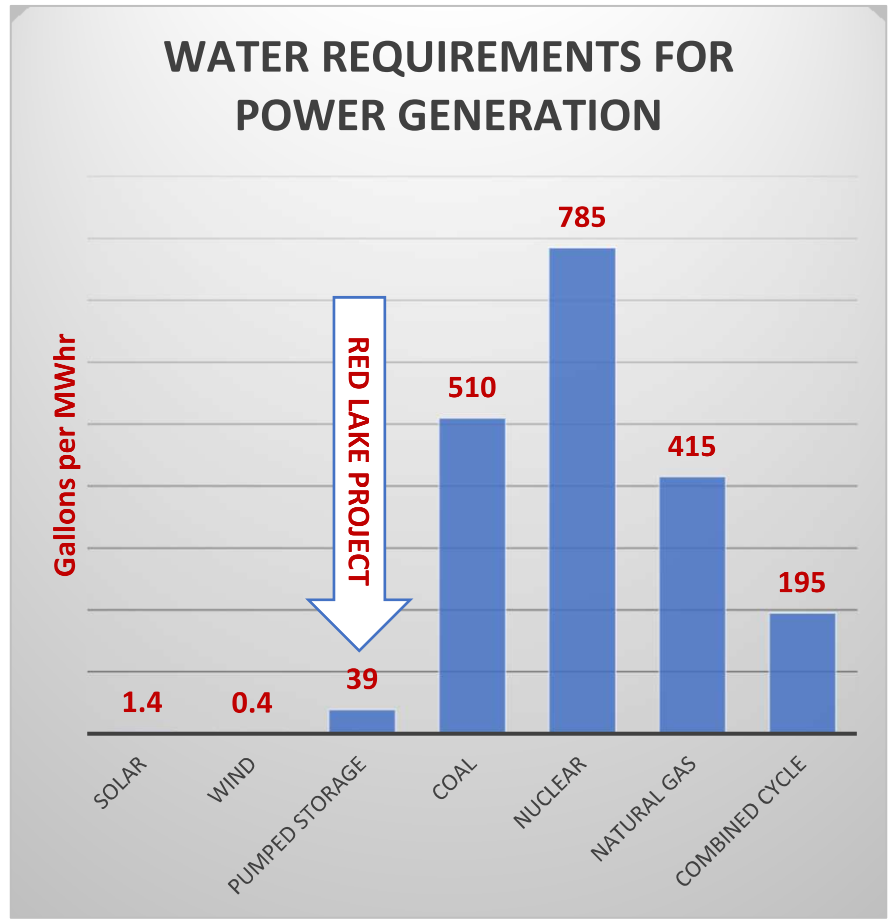


PROJECT WATER CONSUMPTION

REQUIRED WATER FOR THE RED LAKE PSH OPERATION

RED LAKE PSH WATER REQUIREMENTS

- Both reservoirs will be constructed with HDPE Liner installed on a clay/sand layer to ensure a minimal amount of leakage.
- The projected Leakage will be ≈450-gpm in the Forebay, and ≈570-gpm in the Afterbay.
- The leakage associated with the two reservoirs will re-charge the aquifers associated with each reservoir (Hualapai and/or Truxton).
- The initial filling of the lower reservoir will require ≈23,000 acre-feet.
- Floating solar panels (Afterbay – 20MW, Forebay – 11MW), and reservoir covers will be employed to reduce the water evaporation to a minimum. Solar will reduce replacement water pumping costs.
- Evaporation is estimated to be≈1,310 acre-feet annually (810-gpm).



GSLLC

PROJECT WATER SUPPLY

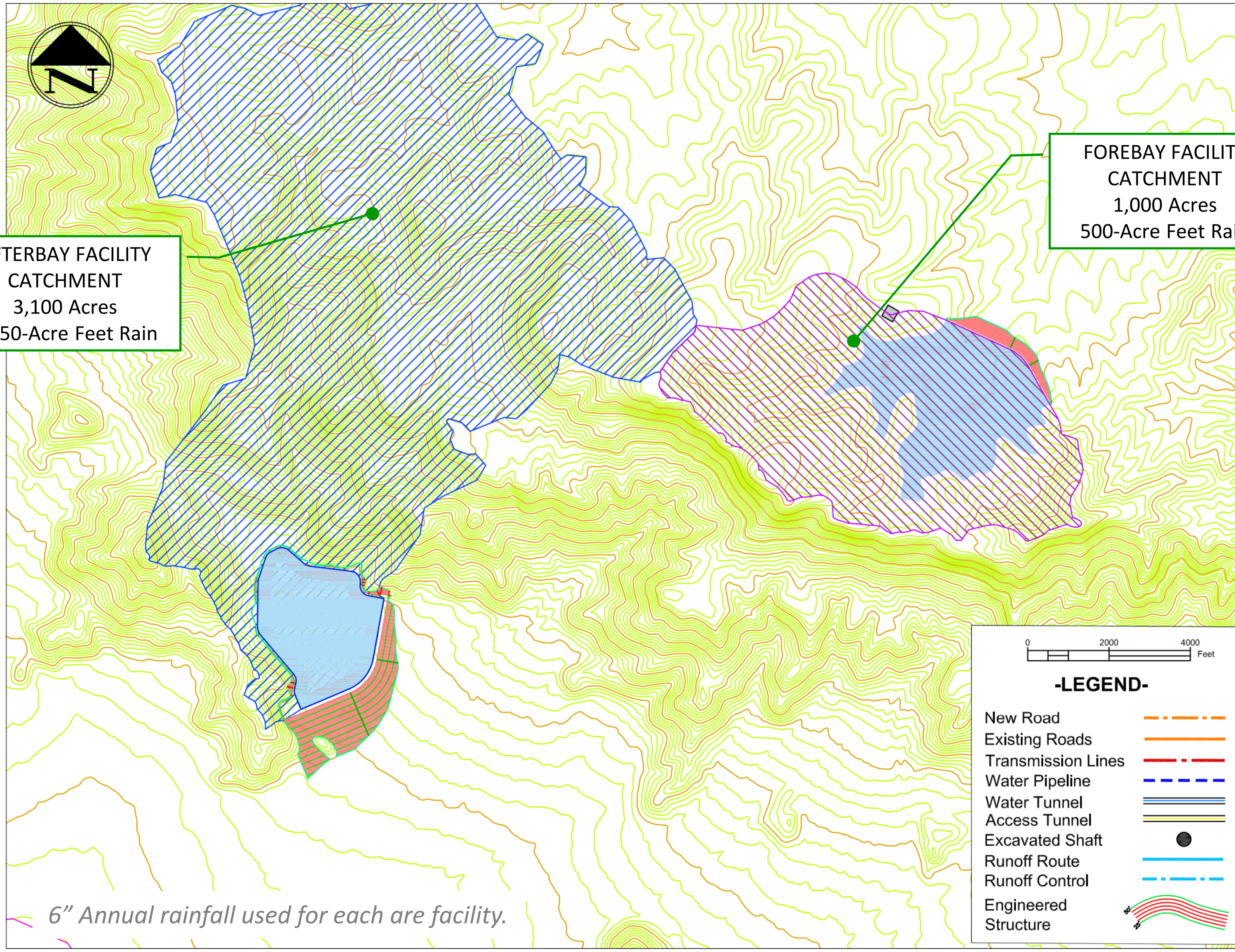
RED LAKE PSH PROJECT WATER SUPPLY OPTIONS

The preliminary design assumes that constructed wells adjacent to the Red Lakebed will be used to supply all the project's required water from the Hualapai aquifer.

- PLANNING: Floating solar panels and covers on the two reservoirs to reduce evaporation.
- OPTION: Construct storages to warehouse a portion of the 2,050 acre-feet of annual rainfall that falls in the project's 4,100-acre catchment basin.
- OPTION: Test the Truxton aquifer to determine if it can also supply water to the project (Forebay located above the Truxton aquifer).
- OPTION: Test the Mead View aquifer and other local sources to determine if they can contribute to the project.
- OPTION: Purchase local industries with water rights to supply water to the project.

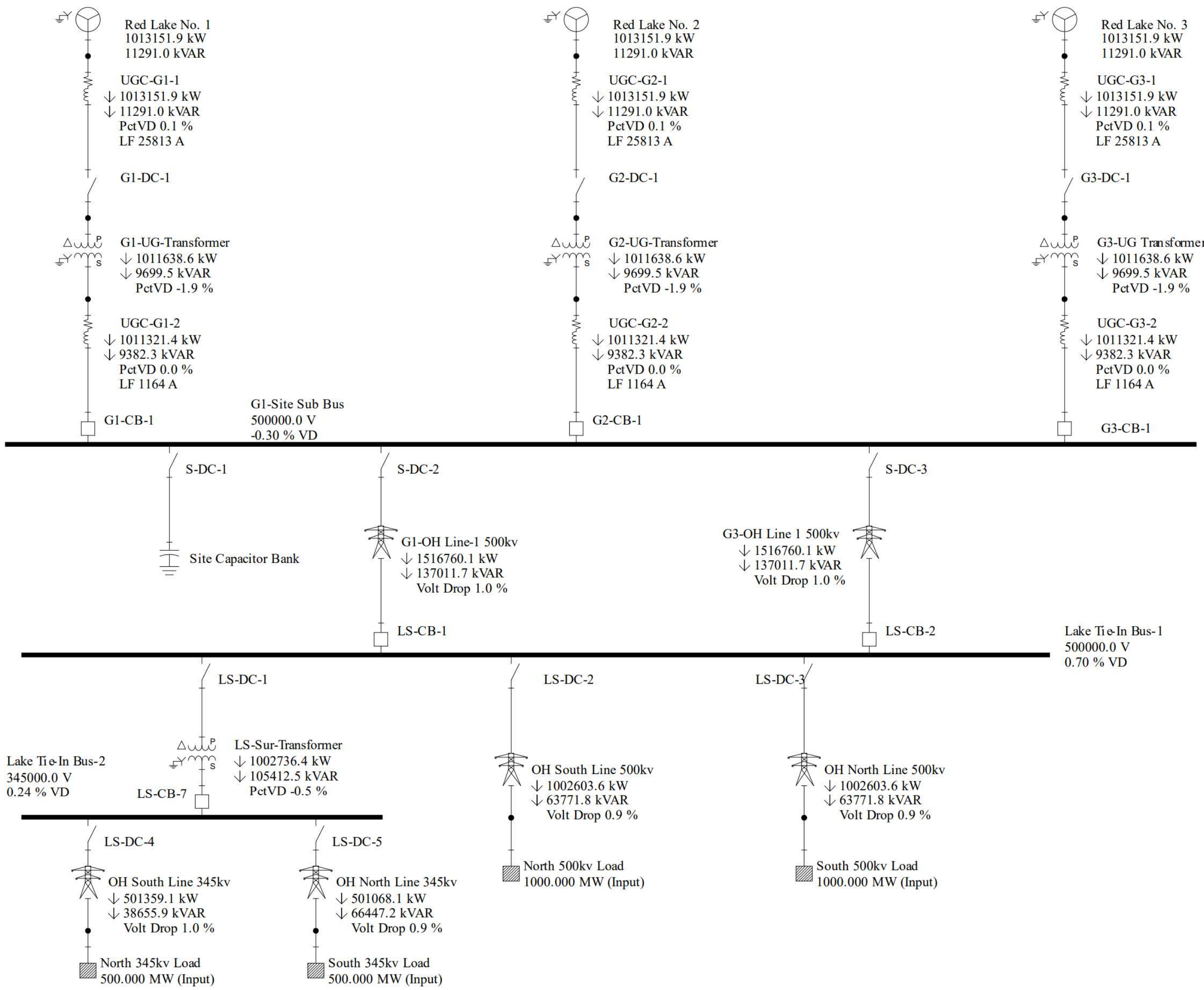
RED LAKE PSH WATER CONSERVATION

CATCHMENT AREA



RED LAKE PROJECT

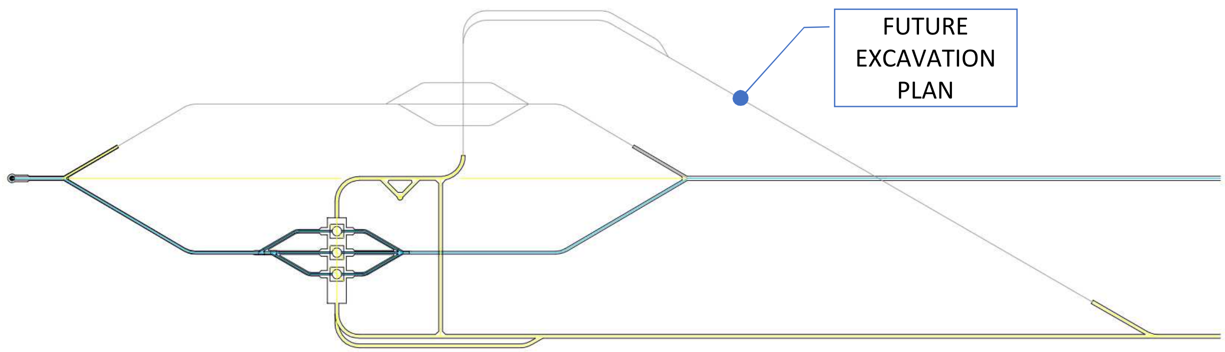
PRELIMINARY CONCEPT FOR ENERGY TRANSMISSION



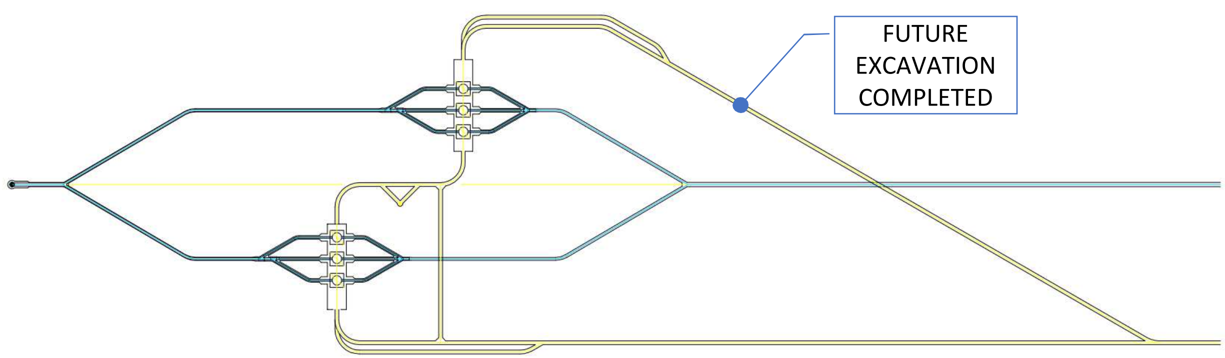
GS LLC

STAGED CONSTRUCTION

REDUCED CAPITAL WITHOUT REDUCING FUTURE CAPABILITY



STAGE 1: 250-MW TO 1500-MW INSTALLED



STAGE 2: 1750-MW TO 3000-MW INSTALLED

STAGED CONSTRUCTION

a) The Feasibility study will determine the best projection of near future energy demand for the project.

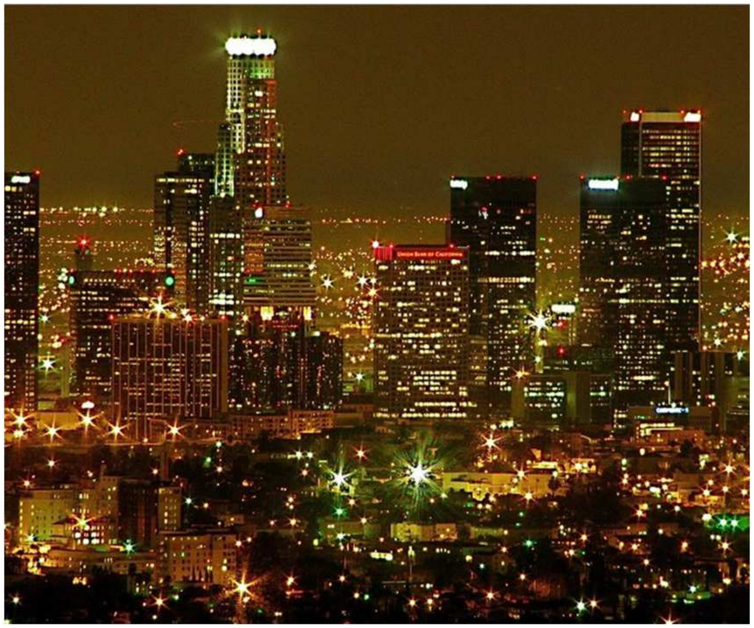
b) If the projected demand is less than 1.5-GW, then build Stage 1 excavation and construction. Installing 1 to 6 pump/turbine units.

c) Electrical Mechanical is 60% of the PSH capital cost; so, the additional excavation and infrastructure is a small investment to allow easy future expansion.

d) The stage 2 excavation will be completed with energy demand growth; bringing the project to it's full potential.

RED LAKE PSH REVENUE

THE REVENUE STREAM ASSOCIATED WITH PUMPED STORAGE HYDRO UNITS



PROJECT REVENUE STRATEGY

The goal with marketing energy from the Red Lake Pumped Storage Hydro project will be to secure a solid base load agreement with a utility connected to the WAPA grid for 67-percent, or more, of the PSH's output. The balance of the produced energy will be sold to the utilities during peak or grid instability periods. This strategy maximizes the revenue stream for the project, while reducing the risk to the revenue stream.

1) ***Cost savings for other renewable energy:*** Annual total system production cost saving attributed to PSH capacity.
2) ***PSH Energy arbitrage net revenue:*** The value of energy arbitrage based on LMP (Locational Marginal Price) of electricity. The cost of charging the forebay is part of this Net Revenue.
3) ***Contributions to operating reserves*:** Reserves that are needed during times of low flexibility in the power system (grid load).
4) ***PSH will enable the addition of VER (Variable Energy Resources) units to the grid*:** PSH plants enable larger penetration of VRE in the power system by providing a large quantity of flexible system capacity that can be used to compensate for the variability and uncertainty of VER generation.
5) ***Reduced thermal startup costs*:** Savings generated by reducing the number of startups and shutdowns of thermal plants in the system.
6) ***Thermal generator ramping*:** Decreases the ramp ups and ramp downs of thermal plants in the system.
7) ***Reduction in transmission line congestion*:** Markets that use LMP have a transmission line charge component.

RED LAKE PRELIMINARY ECONOMICS

PEAKER REPLACEMENT

GSLLC requires funding to have a transmission study completed to fully understand the project's revenue stream, however the project can be examined (preliminary) using available data from CAISO.

- Project economics using CAISO published power supply and demand; the project is assumed to be a Peaker replacement.
- Four periods analyzed, end of: winter, summer, summer peak, and fall.
- At the completion of construction, the project should qualify for feed-in credits of $0.03/kWh.
- The preliminary economic result is a 13.5-percent IRR and an $NPV_{3\%}$ of $16,019M, for a 40-year Project operating Life.

[1] Based on a Net Revenue that is Pre-Tax, no Tax Credits, and no depreciation or amortization.

RED LAKE CARBON CREDITS

NATURAL GAS PEAKER REPLACEMENT

The Red Lake PSH, once constructed, will use solar generated energy (from the grid) to pump water from the low reservoir to the upper reservoir. The PSH power generation cycle will be coordinated with replacing operating Peaker generation plants that would normally be on-line.

- Peaker Plants generate 484-grams CO_2 per kwh.
- The 8-hr. high peak energy demand period currently utilizing Peaker power will instead use the Red Lake PSH power.
- The supply of Red Lake PSH power will generate 4.7M-tons of carbon credits per year. The project may be eligible for carbon credit revenue.
- The Red Lake PSH can supply power an additional 4-hrs. per day resulting in 2.3M-tons of carbon credits per year.

INVESTMENT PLAN

THREE STAGES OF FUNDING ARE PROPOSED TO BRING THE PROJECT ONLINE

PROJECT FINANCING: The project will advance using four tranches of financing, each phase accomplishing a specific set of milestones.

Tranche 1: Conduct scoping studies, EA/EIS Study, and complete all work to gain a FERC operating license and regulatory requirements outlined in the Alternative Licensing Process (next slide).

Tranche 2: Design optimization, utility discussions and transmission studies, geotechnical drilling and evaluation, hydrology studies, site design, water permits, and secure required land for the project. Publish a feasibility study.

Pre-Construction: Construction budget, construction design, equipment selection, and gain all construction related permits required by state and local governments.

Construction Funding: Construction activities completed, project commissioning, connection to the energy grid, initial filling of the reservoirs, and market agreements with utilities in-place.

ALTERNATIVE LICENSING PROCESS

FACILITATES AN ORDERLY AND EXPEDITIOUS REVIEW

- **PRE-FILING**
  - ↓ Applicant Forms. Communications Protocol. Consensus on Process
  - ↓ Request Use of Alternative Procedures
  - ↓ Commission Notice Comments, Commission Response
  - ↓ Applicant Files Notice of Intent and Pre-Application Document
  - ↓ Initial Information Meeting and Notices
  - ↓ Studies Conducted
  - ↓ Study Results
  - ↓ Additional Studies
  - ↓ PDE/DA Issued Preliminary Conditions

NEPA Scoping:
SD1 Issued
Scoping Meetings
Commission Notice

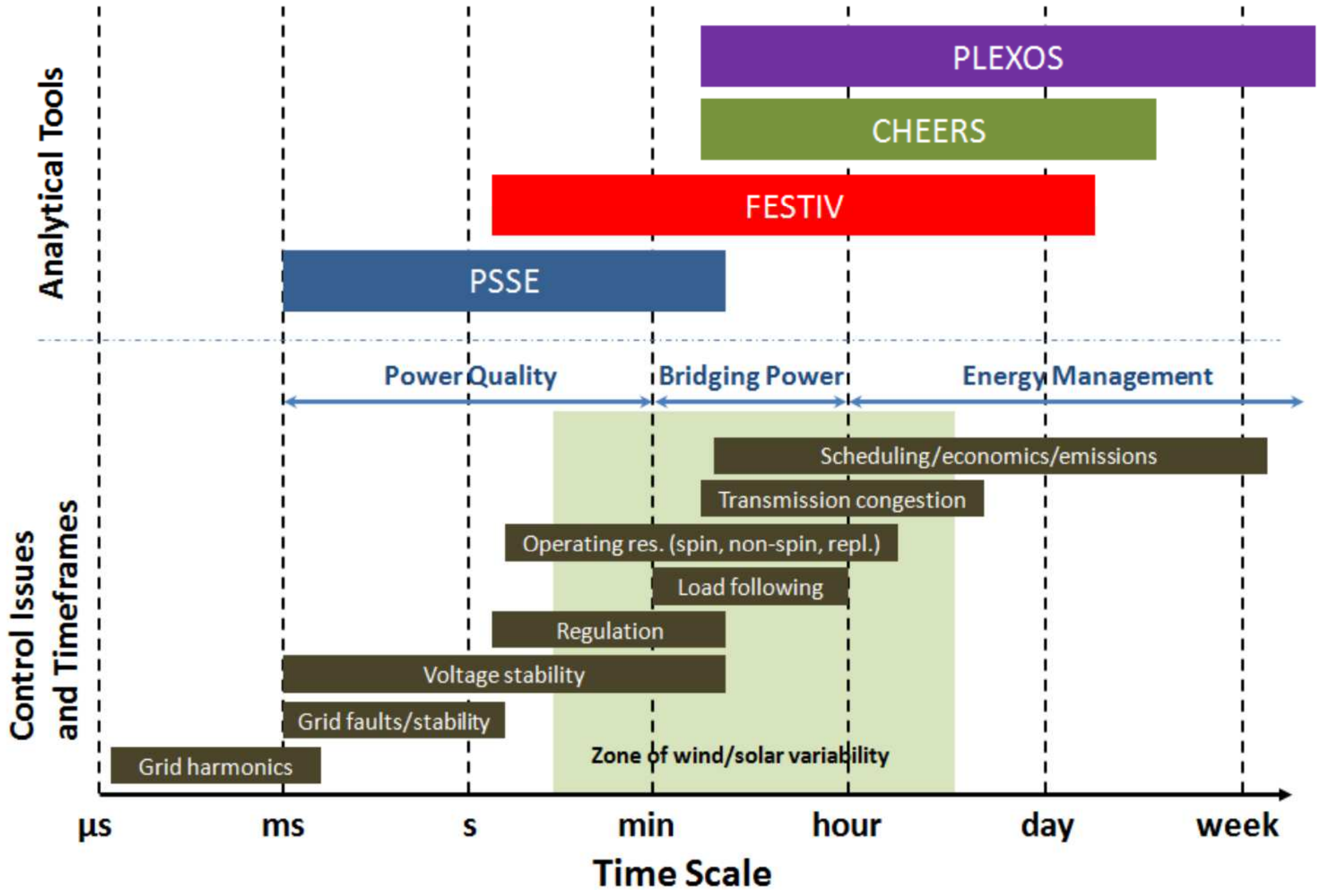
- **POST-FILING**
  - ↓ DEA Final Application Filed
  - ↓ Commission Notice, Tendering Acceptance, Interventions, Final Conditions
  - ↓ Commission Issues FEA Licensing Decision

NEPA – National Environmental Policy Act, SD1 – Scoping Document, DEA – Draft Environmental Assessment, PDE/DA – Development Application, FEA – Final Environmental Assessment

STUDIES AND SIMULATIONS

UNDERSTANDING OF THE PROJECT'S POTENTIAL ENERGY CONTRIBUTION

- Analysis aimed to capture PSH dynamic responses and operational characteristics across different timescales, from a fraction of a second to days/weeks.



NEXT STEPS

With Tranche 1 funding GSLLC intends to:

- Develop project milestones and schedule.
- Complete project base design and identify potential areas of optimization.
- Gain a FERC license for the project using the Alternative License Process:
  - Formation of Stakeholder Workgroups
  - Scoping Study using Project Base Design
  - Preliminary draft of an EA or EIS study
  - Address PDE/DA Issued Preliminary Conditions.
- Secure Tranche 2 financing.

GRAVITY STORAGE LLC KEY PERSONNEL

LEADERSHIP FOR SUCCESSFUL PROJECTS

Richard Gresham
Technical Manager

David Drips
Projects Manager

Roberto Flores
Business Unit Manager

GS LLC PRINCIPALS:

Richard Gresham: BS Mining Engineering, University of Idaho
David Drips: BS Mining Engineering, Colorado School of Mines
Roberto Flores: : Industrial Engineer, Instituto Tecnológico de Sonora (ITSON) México

ADVISORY BOARD:

GE Renewable Energy: A global leader in advanced technology focusing on wind, hydro, and solar power generation services.
Texas A&M: Electrical Engineering Department

FURTHER INFORMATION

GRAVITY STORAGE LLC GROUP CONTACT INFORMATION

RICHARD GRESHAM
Gold Canyon, AZ
(928) 701-1689
rich@ramopps.com

DAVID DRIPS
Murray, UT
(385) 227-7272
dedrips@msn.com

ROBERTO FLORES
Mesa, AZ
(928) 200-3291
roberto@ramopps.com

Visit Us at https://gravitystoragellc.com/