Operate Responsibly by Attaining Environmental, Cultural Resource and Regulatory Compliance
Who Is Grant PUD?

- Created by popular vote in 1938, we are a public electric utility serving over 46,000 customers throughout Grant County, WA.

- Grant County is a rural, predominantly agricultural region. The ability to maintain local leadership of power resources has allowed the county to grow and prosper.

- We own and operate the Priest Rapids Project on the Columbia River. The Priest Rapids Project, comprised of Priest Rapids and Wanapum dams, has the capacity to produce 2,000 megawatts of clean, renewable and reliable electricity.

- We share this affordable electric power with 23 Northwest utilities that serve millions of customers, creating economic benefits throughout the Northwest.
Requirements/Agreements

- FERC License Order
- Biological Opinion – NOAA Fisheries
- Biological Opinion – US Fish & Wildlife Service
- 401 Certification – WA Department of Ecology
- Priest Rapids Salmon/Steelhead Settlement Agreement
- Hanford Reach Fall Chinook Protection Program
- Yakama Nation/GPUD Settlement Agreement
Three-Pronged Approach to Reaching **No-Net Impact (NNI)**

- Hatchery Production
- Combined Adult & Juvenile Survival
- Tributary Projects
Tools to Reach NNI

Wanapum **Advanced Turbine System**
- Installed in 2004-2013

Wanapum **Future Unit Fish Bypass**
- Surface Spill of 20 KCFS
- Installed April 2008

Priest Rapids **Top-spill Fish Bypass**
- Surface Spill of 27 KCF
- Installed April 2014

Priest Rapids/Wanapum “**Fish Mode**”

**Avian Wire Arrays** – Tern and gull deterrents

**Predator Control**
- Remove an average of ~174,630 northern pikeminnow annually (all age classes)
Performance Standards For Juvenile Salmonids

93% survival thru the reservoir and past the dam (combined)

95% survival goal at the concrete

Priest Rapids Project survival standard is 86.5% (93% X 93%)

Ave. of 3 consecutive years of survival studies
The average estimated survival through the Wanapum Bypass for multiple species is >96.2%. Survival for individual species ranges from 93.0%-100%.
Advanced Turbines
Wanapum Dam

Average turbine survival for multiple species (3) at Wanapum Dam ranges from 91.4%-98.2%
Estimated spillway survival for yearling Chinook & steelhead is 97.0% and 99.4%, respectively.
Juvenile Performance Standards Achieved

Chinook 86.6%

Steelhead 87.0%

Sockeye 91.7%

Next survival studies are in 2025/2026
Coho NNI Achieved & Subyearling (TBD)

Coho NNI via hatchery production through 2032.
Hatchery Production

Hatchery Mitigation Numbers Recalculated every 10 yrs.
- Production Numbers Can Increase or Decrease
  - Monitoring & Evaluation Data
  - Adult Escapement Data
  - Juvenile Survival Data
- Next Recalculation 2023

Operation & Maintenance/Monitoring & Evaluation
- Required Annually
- $9-10 million Annually

Programs Adaptively Managed
- Monitoring & Evaluation Data

- Spring Chinook 470,000
  (Wenatchee, Methow & Okanagan Basins)
- Fall Chinook 5.6 M
  (Priest Rapids Hatchery)
- Summer Chinook 660,000
  (Wenatchee, Methow & Okanagan Basins)
- Summer Steelhead 100,000
  (Okanagan Basin)
- Coho 375,000
  (Wenatchee & Methow Basins)
- Sockeye up to 1.143M
  (Okanagan Basin)

~8.3 Million Total Smolts Annually
(Adjusted every 10 years)
### Okanagan Hatchery Supplementation

<table>
<thead>
<tr>
<th>Species</th>
<th>Smolts</th>
</tr>
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<tbody>
<tr>
<td>Sockeye</td>
<td>Up to 1.143 M</td>
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<tr>
<td>Spring Chinook</td>
<td>156,666</td>
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<tr>
<td>Summer/Fall Chinook</td>
<td>220,000</td>
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<tr>
<td>Steelhead</td>
<td>100,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1,619,666</strong></td>
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Habitat Funding & NNI

**No-Net-Impact** - Provides near-term compensation for annual survival less than performance standards (86.49%) for each covered species (yearling Chinook, steelhead, sockeye, and summer subyearling Chinook)

**Priest Rapids Conservation Account** - Provides habitat funding for all covered species included in Salmon & Steelhead Settlement Agreement

**BiOp Account** - Provides habitat funding for Upper Columbia River spring Chinook & steelhead
Habitat Projects

- **Grant PUD** invests more than $2.5 million **annually** in habitat enhancement, protection and restoration efforts in the upper Columbia River Basin.

- Habitat projects are intended to improve survival and aid recovery of Chinook, steelhead, sockeye, and coho.

- A committee made up of the US Fish and Wildlife Service, Confederated Tribes of the Colville Reservation, Washington Department of Fish and Wildlife, Yakama Nation, the National Marine Fisheries Service, and Grant PUD review sponsor proposals. By a consensus based-approach projects are approved for implementation.

- **To date, 100 separate habitat enhancement, protection, and restoration projects** have been implemented throughout the Columbia River Basin, extending from Penticton, British Columbia downstream to the Priest Rapids Project.
## Okanogan/Okanagan Habitat Projects

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project Type</th>
<th>Sponsor</th>
<th>Status</th>
<th>Location</th>
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<tr>
<td>McIntyre Dam</td>
<td>Fish Passage</td>
<td>ONA</td>
<td>Completed</td>
<td>BC</td>
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<td>ORRI IV</td>
<td>Habitat Restoration</td>
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<td>Omak Creek</td>
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<td>UCB LiDAR</td>
<td>Topographic Survey</td>
<td>USGS</td>
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<td>ORRI 1 &amp; 2</td>
<td>Habitat Restoration</td>
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<td>Shuttleworth Diversion</td>
<td>Instream Flow</td>
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<td>McIntyre FPE</td>
<td>Fish Passage</td>
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<td>Spawning Platforms 1-4</td>
<td>Habitat Restoration</td>
<td>ONA</td>
<td>Ongoing</td>
<td>BC</td>
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</table>
Health-Fish & Water Analysis

- Disease Screening for IHN
  - No major outbreaks
- Otolith Polishing & Reading
  - Ageing juveniles & adults
  - Origin composition
- In-Lake Analysis
  - Water quality
  - Stomach content
  - eDNA
# Okanagan Harvest (Fish Caught)

<table>
<thead>
<tr>
<th></th>
<th>Chinook</th>
<th>Sockeye</th>
<th>Steelhead</th>
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<tr>
<td>CCT</td>
<td>5137</td>
<td>4329</td>
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<tr>
<td>WDFW</td>
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<td>2609</td>
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<tr>
<td>ONA</td>
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Three-Prong Approach to Hydro Mitigation

- No Net Impact
- Juvenile Survival
- Hatchery Supplementation
- Habitat Restoration