

License Compliance & Lands Services Q3 Business Review

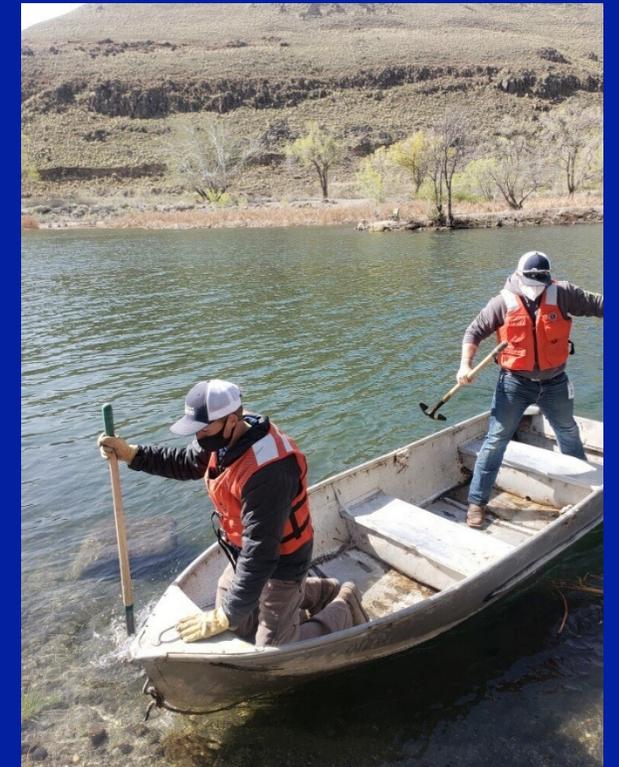
Grant PUD Commission Meeting – July 11, 2023



Powering our way of life.

Departmental Purpose and Goal

- In alignment with Grant PUD's safety, financial, and compliance goals, the License Compliance & Lands Services Department is responsible for the protection of Grant PUD's natural resources through implementation of the Priest Rapids Project license, management of Grant PUD's lands and waters within the Project Boundary, and in providing company-wide real property, permitting, and geographic information system (GIS) services.



License Compliance & Lands Services 2023 Goals

- Conduct all work in a manner that sends everyone home safely at the end of the day
- Support District projects with high-quality real estate, permitting, and GIS services
- Partner with Public Affairs on Big 3 Key Priority for recreation marketing campaign and website improvements
- Develop a service request procedure for real estate services
- Provide support to users of Grant PUD's new Project Scoping Tool
- Provide permitting education Districtwide
- Identify and resolve reservoir safety issues
- Complete and communicate 5-year analysis for Crescent Bar Golf Course
- Conduct and analyze recreation in-person visitor surveys and usage data

2022 Q2 Compliance Review



- Safety
 - Recordable incidents = 0
 - Injuries = 0
 - Non-recordable incidents = 1
 - Vehicle incidents = 1
 - Safety meeting attendance = 100%
 - Job Site Reviews = 4
- Regulatory Review
 - FERC filings by Grant PUD = 0
 - Filings by third-parties = 0
 - FERC approvals/orders/notices = 1

FERC Order approving Extension of Time for renovation of Wanapum Lower Boat Launch to May 31, 2027

License Implementation – Q2 Review

- Onboarded/trained PRRA camp host, student interns, and Lands & Rec Tech
- Began recreation visitor surveys
- Presented golf course analysis to Commission
- Held summer recreation law enforcement coordination meeting
- Attended annual HOA meetings
- Continued reservoir assessments to identify potential hazards



License Implementation – Q2 Review

- Completed trail repair and tree removal work at Crescent Bar



License Implementation – Q2 Review

Completed
Vantage Phase II
marina removal
and
placement of “no
boats” buoy
barrier



License Implementation – Q3 Preview

- Conduct visitor surveys and collect camera data
- Prepare for FERC environmental compliance inspection
- Wanapum Dam Visitor Center repairs
- Summer recreation security coordination
- Ongoing reservoir assessment analysis
- Notification of increase in third-party dock, boat launch insurance requirements
- Explore mosquito and milfoil solutions



Lands & Permitting Services – Q2 Review

- Continued support for large and small District projects
- Training for new staff
- Continued development of Lands & Permitting Services Policy and Procedures Manual
- Continued Permitting Basics and Regulatory Scoping Tool Training for key stakeholder groups



Lands & Permitting Services – Q2 Review

Project support activities:

- **QTEP**
 - ✓ COL-MTV, MTV Loop 1 appraisal and right-of-entry for geo-tech
 - ✓ WAN-MTV environmental surveys underway
 - ✓ Kick off with HDR real estate support team
- **Power Delivery Facilities**
 - ✓ SC1 and SC2 support – ongoing due diligence, appraisal, and property owner contact



Lands & Permitting Services – Q3 preview

- **QTEP –**
 - ✓ COL-MTV, MTV Loop 1, MH-RF, MH Loop #1 – property appraisals, rights of entry for field work, easement negotiations, initiation of NCRPPs
 - ✓ WAN-MTV – Environmental studies, USBR coordination, continued property owner outreach as needed
- **Power Delivery Facilities**
 - ✓ Continue SC1 and SC2 support
- **Group 14 distribution power**
 - ✓ Permitting process underway
 - ✓ Easement coordination support



Lands & Permitting Services – Q3 preview

- **PR Siphon Intake**
 - ✓ Stakeholder agency coordination
- **PR Anchoring Project**
 - ✓ Initiation of NCRRP and permitting support as needed
- **WSDOT Franchise Consolidation**
- **License Implementation support**
 - ✓ Crescent Bar shoreline access for O&M activities



Thank you!





Grant Fiber

Quarter 2

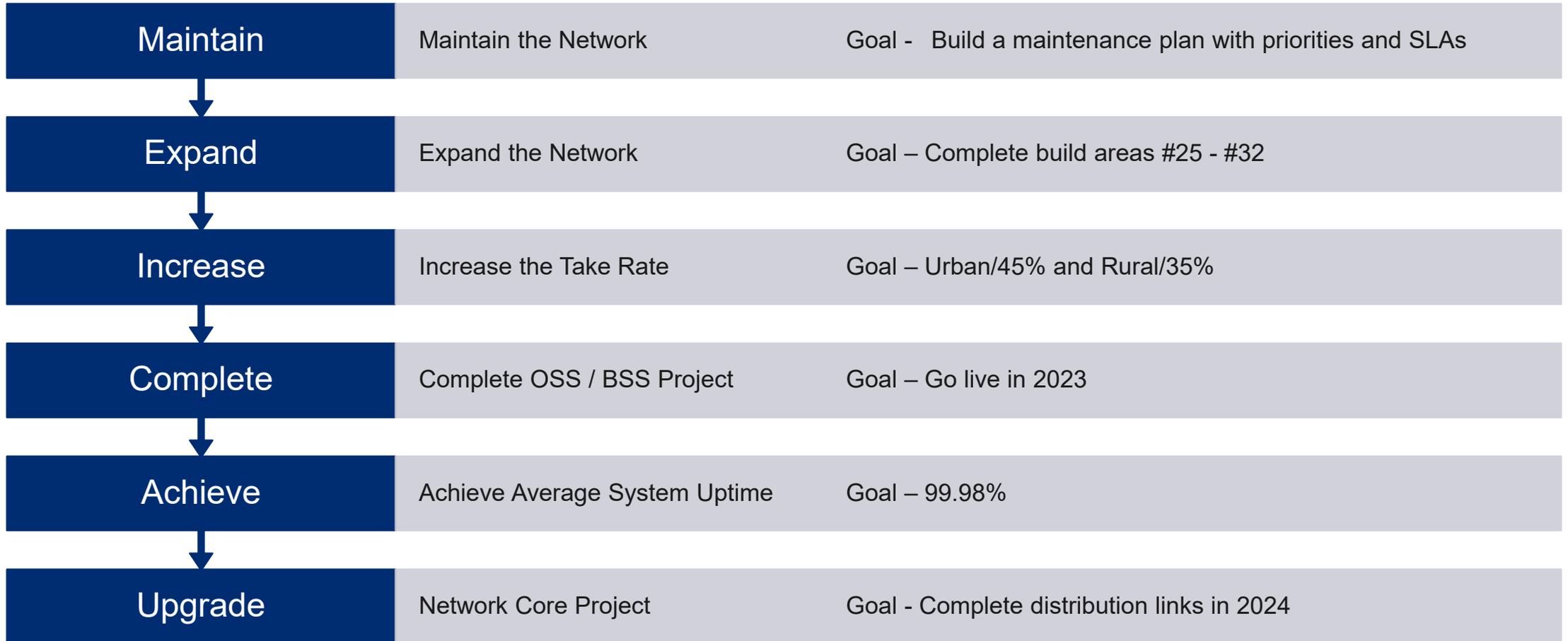
2023 Business Report

July 11, 2023



Powering our way of life.

2023 Priorities



Strategic Plan – Objective 7

Develop A Sustainable Fiber Optic Network

We are committed to expanding and maintaining our wholesale fiber optic network to all the people of Grant County. We seek to identify and offer services that meet customers' needs and increase network revenue for the utility. As with all utility services, we make decisions that best serve present and future generations of customers.

Construction and Maintenance Specialist

Grant Fiber



- **Prioritizing all fiber construction and maintenance packages / requests**
- **Managing the calendar to minimize OT, relief days and duration of the maintenances**
- **Coordinating with Asset Management**
- **Coordination with Telecom Engineering for Standards, Planning and Design**
- **Assist with Telecom Engineering with construction and maintenance requirements**
- **Coordination with Outside Plant work packages, and red line changes**
- **Coordination with supervisors for scheduling resources**
- **Escalation point for fiber techs, electronic techs, and contractors that are working on work packages**
- **Coordination with Customer Service for outage notification and communication planning**

Grant Fiber Operations (Construction and Maintenance)

Maintenances

May

Date	Project	Hours
May 19th and 20th	Sand Dunes to Potholes (Backbone) Cable Replacement (2.5 miles)	Line Department Electronic Technicians Fiber Technicians Telecom Engineering
May 2nd and 4th	Maple Grove (Wholesale Fiber) Cable Replacement (1 mile)	NorthSky Fiber Technicians Electronic Technicians
May 19th	Data Refresh Project	Facilities Dispatch Electronic Technicians Telecom Engineering

Fiber Expansion

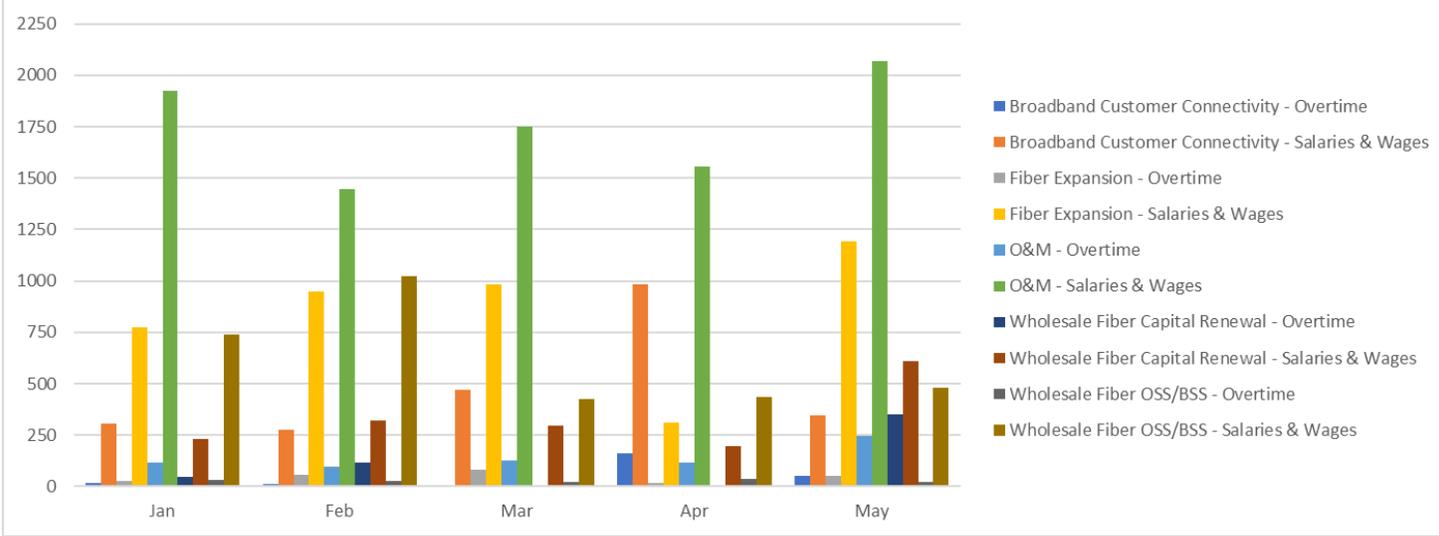
2023 Update

Area	Location	Date
25	Warden Area	June 13th – 100% Complete
26	North, East and South of Quincy	June 15th – 100% Complete
27	NW/SW Quincy	8/14/2023
28	Rd A SE/Smyrna	9/12/2023
29	Jericho	11/7/2023
30	Dodson to Frenchman	11/22/2023
31	Wahluke Area East to Mattawa	1/2/2024
32	Desert Aire to Rd O	1/23/2024

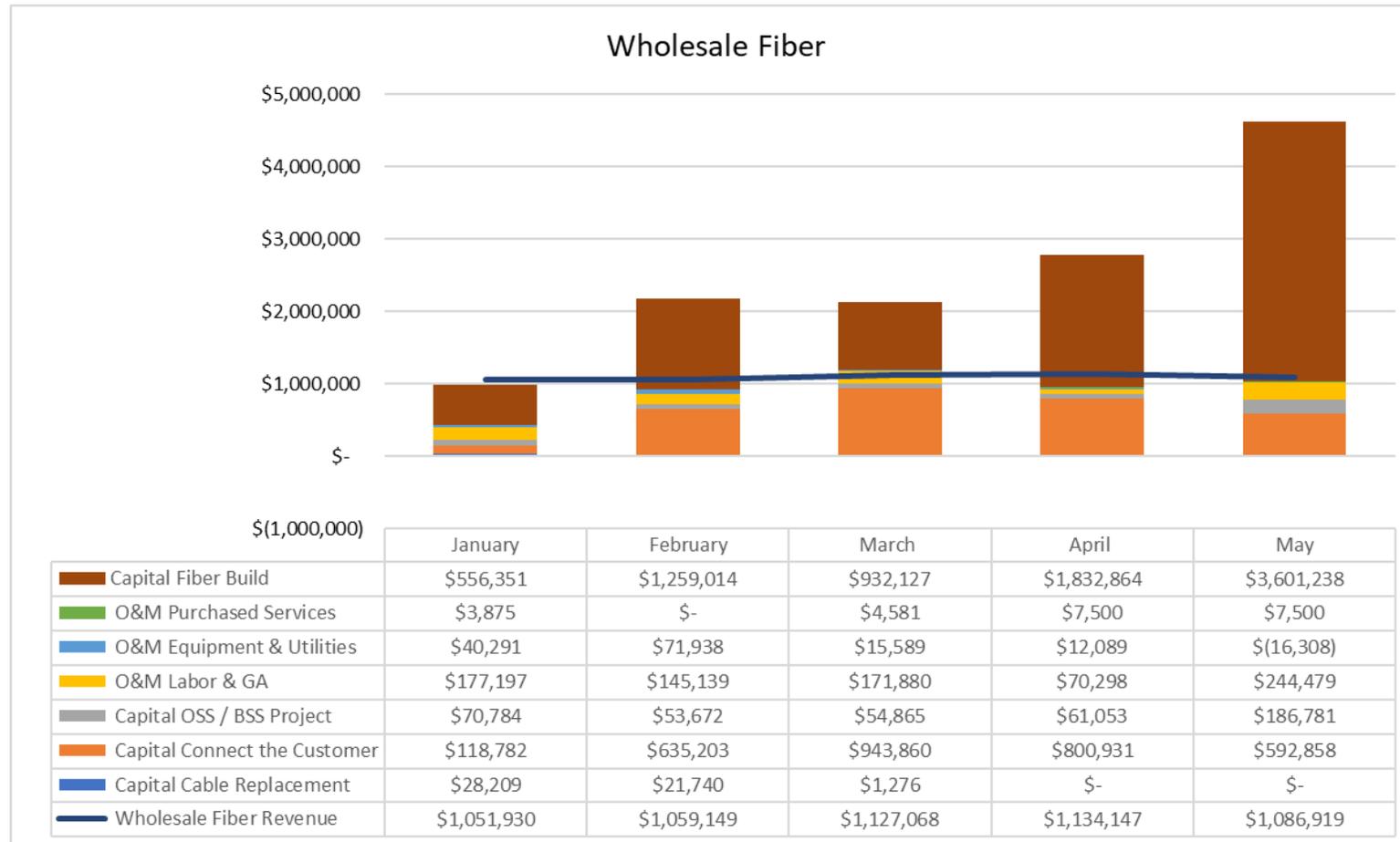
Project and O&M Workload (Hours)

2023

Wholesale Fiber Project and O&M Workload



2023 Capital, O&M and Billed Revenue



Premise Information

- Excluding Irrigation, Flat, Street Light Service Points
- Active Service Points – 49,328

Type	Customers	Total SPs	Active SPs
Check Meter	75	264	166
Electric Commercial	3,964	9,032	7,739
Electric Flat	32	365	310
Industrial	147	323	260
Irrigation	1,287	5,461	5,057
Large Load USBR	3	15	15
Electric Unmetered	73	561	140
Electric Residential	36,407	44,375	41,329
Electric Street Lights	6	48	45
TOTAL	41,994	60,444	55,061

Active Wholesale Fiber Premise Participation

- Services - 30,720
 - 3,343 multiple services per premise
 - 27,379 unique premise
 - Urban – 57%
 - Rural – 43%
- Remedy Report
 - Subscribers – 28,542
 - Participation Potential - 40,354

City	Active Premise	Rural	Urban
Beverly	173	62	111
Coulee City	431	219	212
Electric City	465	111	354
Ephrata	3,966	1,033	2,933
George	662	524	138
Grand Coulee	502	79	423
Hartline	130	53	77
Mattawa	2,145	1,325	820
Moses Lake	12,638	5,682	6,956
Quincy	2,824	811	20,13
Royal City	1,304	823	481
Soap Lake	1,453	873	580
Stratford	37	37	0
Warden	546	20	526
Wilson Creek	103	9	94
TOTAL	27,379	11,661	15,718

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Fiber Subscriber Participation Report as of 05/31/23				
Area	Potential Subscribers	Actual Subscribers	Participation Goal	Participation Actual
Coulee City	985	563	70.0%	57.16%
Desert Air	1142	1100	70.0%	96.32%
Electric City	767	508	70.0%	66.23%
Ephrata	5309	3868	70.0%	72.86%
Grand Coulee	663	430	70.0%	64.86%
Hartline	181	118	70.0%	65.19%
Mardon	683	460	70.0%	67.35%
Mattawa	1859	1458	70.0%	78.43%
Moses Lake	18614	13021	70.0%	69.95%
Quincy	4036	2895	70.0%	71.73%
Royal City	1398	944	70.0%	67.53%
Soap Lake	2541	1605	70.0%	63.16%
Warden	961	600	70.0%	62.43%
Wilson Creek	163	95	70.0%	58.28%
George-Burke	1052	877	70.0%	83.37%
	40,354	28,542	70.00%	70.73%

Service Provider News

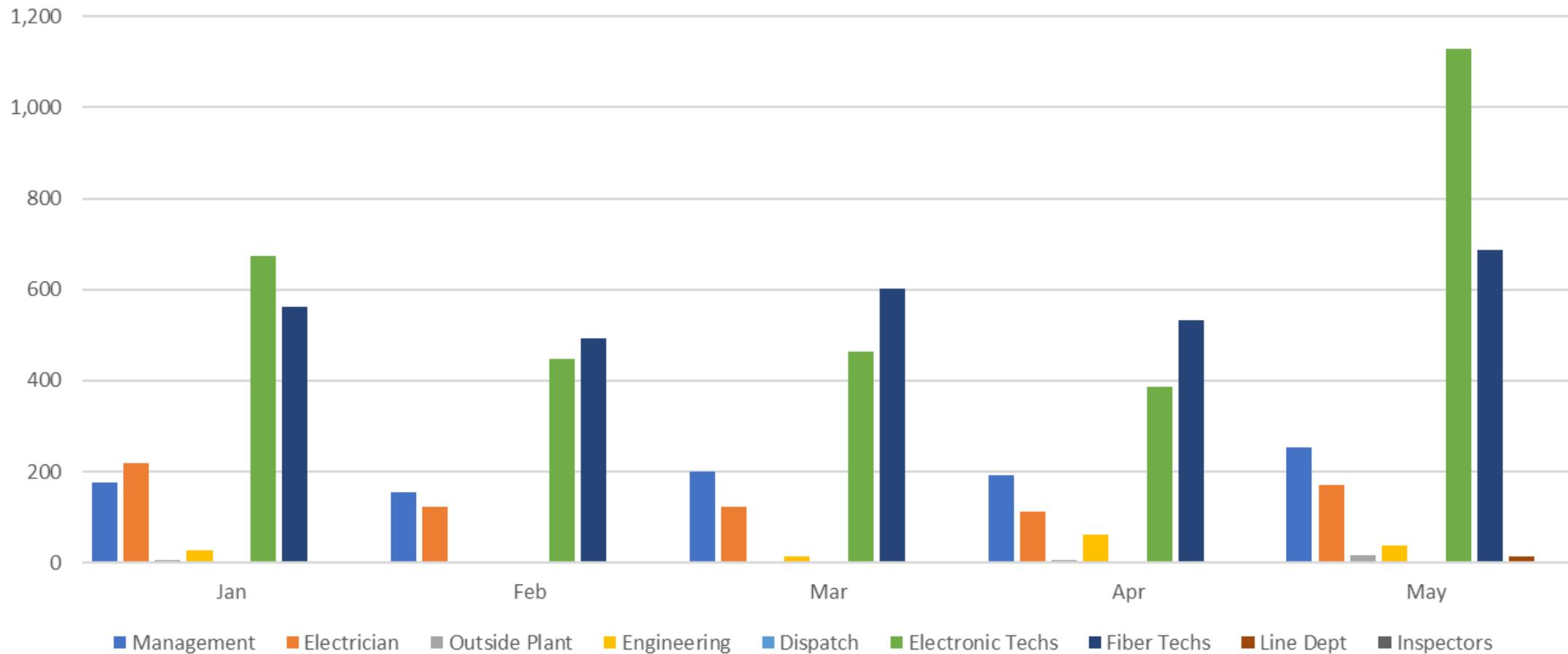
- IFiber
 - Marketed newly released areas (Quincy and Warden) and existing gateways without service between June 21 – 25.
 - Existing gateways - 16
 - New gateways - 32
- New service providers onboarded
 - Advanced Stream
- Rate Schedule 100 changes
 - Special VLAN
 - Basic Access

March – May Call Outs 2023

Call Out Type	Electric	Wholesale Fiber
March		
Service Provider call in, customer outage		1
Eastmont Fiber Network Issues		1
Premium Customer		3
April		
Contractor at Hydro, Fish Count Internet	2	
ELAN service outage		1
High temperature alarm, facilities called out		3
Interface at Ephrata to Eastmont outage		2
Zabbix alarm, power outage		2
Service Provider equipment change out		1
Zabbix alarm		1
May		
Contractor at Hydro, Fish Count Internet	1	
High temperature alarm, facilities called out		6
Pull wire in the data center	2	
Service Provider network issue, assistance from electronic techs required		4
Switch component failure		2
Zabbix alarm, power outage		3
Total	5	30

2023 O&M Labor

Wholesale Fiber



Questions



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Enterprise Risk Management

2023 ERM Semi-Annual Report

July 11, 2023



Powering our way of life.

- Executive Summary
- What's New in 2023
- Newly Completed Top 10 Risks for Key Business Units
- Grant PUD Evolving Risks



Executive Summary

- ERM Triad – Consistent / Personal / Useful
- Top Near-Term Evolving Risks So Far in 2023
 - Climate Commitment Act
 - Wildfires
 - Retirements
 - Evolving Electricity Marketplace
 - Inflation and Raising Commodity Costs
 - El Nino and Other Unusual Weather
- Wholesale Marketing Support:
 - Automation of modeling key processes
 - Value-at-Risk and other new standard reports
- Insurance Inspections and Renewals
 - Power Delivery Liability Loss Inspection
 - Preparations for Upcoming Property Inspections
 - Claims Management Automation
- Risk Register Updates for Top Risk Business Units
 - Large Power Solutions
 - Maintenance Center/Ditch Plants
 - Human Resources
 - Line Maintenance
 - External Affairs – *in process*
 - Treasury – *in process*
 - Wholesale Marketing Supply – *in process*
 - Financial Planning & Analysis – *in process*

Key Conclusion: We are seeing a significant increase in accountability of risks by business units, and our ability to connect risks across all business units resulting from the enhanced enterprise risk culture we are promoting.



What was new for Grant PUD Risk Management in the 1st Half of '23?

Improvements made in ERM
process



What's New in 2023

- Key work initiatives that were added this year to improve the ERM process:
 - Our team includes Tracy Johnson – ERM Lead, Michael Reimers – Insurance Risk Lead, and Jerrod Estell – Quantitative Risk Analysis Lead
 - Risk Register development in 8 key business units
 - Positive liability insurance inspection of Power Delivery resulting in a good report
 - Automation and augmentation of Wholesale Portfolio Modeling
 - Personalized ERM approach to GCPUD needs – Contract risk management, ERM support of policy/procedure development, business case support, GCPUD site visits, and risk analytics
- Upcoming work initiatives that will be the focus for ERM during the 2nd half of 2023:
 - Continued practical engagement with Risk Owners to improve awareness of risk management techniques
 - Complete next round of key business unit Risk Register development
 - Complete the Automation of *Insurance Claim Management* and *Market Risk Reporting* processes
 - Continue expanding our team's risk assessment capabilities used to support risk-based business unit initiatives

By Business Unit

Top 10 Residual Risks



Know what's below.

811 before you dig.

Large Power Solutions



Risk Category	Risk Subcategory	Risk Indicator	Inherent Index	Residual Index
Information Reporting Risks	Budgeting Risk	Reliance on data that lacks integrity	70 I: 7 / L: 10	70 M: 10
Information Operational Risks	Economic Decision Risk	Data collection is not practical	72 I: 8 / L: 9	64.8 M: 9
Information Operational Risks	Economic Decision Risk	Data collection is incomplete	60 I: 6 / L: 10	54 M: 9
Information Operational Risks	Economic Decision Risk	Assumptions and estimates are not verified	56 I: 7 / L: 8	44.8 M: 8
Operations Compliance Risks	Third Party Risk	Errors or task midperformance	54 I: 6 / L: 9	43.2 M: 8
Information Operational Risks	Economic Decision Risk	Reliance on data that lacks integrity	48 I: 6 / L: 8	43.2 M: 9
Information Operational Risks	Performance Measurement Risk	Inaccurate or incomplete market data	56 I: 7 / L: 8	39.2 M: 7
Information Reporting Risks	Budgeting Risk	Inaccurate or incomplete market data	48 I: 6 / L: 8	38.4 M: 8
Information Reporting Risks	Budgeting Risk	Incomplete data and/or inaccurate financial modelling	48 I: 6 / L: 8	38.4 M: 8
Finance Treasury Risks	Financing Risk	Lack of partnership opportunities for the capitalization of infrastructure	48 I: 6 / L: 8	38.4 M: 8

Top risks include budgeting, economic decision, and performance measurement risks.

Maintenance Center & Ditch Plants

Risk Category	Risk Subcategory	Risk Indicator	Inherent Index	Residual Index
Operations Compliance Risks	Health and Safety Risk	Non-compliance with safety procedures	49 I: 7 / L: 7	29.4 M: 6
Operations Compliance Risks	Health and Safety Risk	No management action when trends are unfavorable	49 I: 7 / L: 7	24.5 M: 5
Operations Compliance Risks	Health and Safety Risk	Inadequate or insufficient written policies and procedures for monitoring/reviewing	40 I: 5 / L: 8	24 M: 6
Operations Compliance Risks	Health and Safety Risk	Physical Hazards	42 I: 7 / L: 6	21 M: 5
Operations Process Risks	Infrastructure Risk	Underutilized facilities and resources	42 I: 6 / L: 7	21 M: 5
Operations Compliance Risks	Health and Safety Risk	Inadequate analyses and corrective actions for handling performance or control deficiencies	30 I: 5 / L: 6	18 M: 6
Operations Compliance Risks	Environmental Risk	Hazmat spills	36 I: 6 / L: 6	18 M: 5
Operations People Risks	Authority Risk	Task misperformance, inadequate levels of performance, and errors	36 I: 6 / L: 6	18 M: 5
Operations People Risks	Human Capital Risk	Task misperformance, inadequate levels of performance, and errors	36 I: 6 / L: 6	18 M: 5
Operations Compliance Risks	Environmental Risk	Lack of well defined & readily accessible policies, procedures, standards, etc. to meet regulatory requirements	64 I: 7 / L: 6	32 M: 4

Key to scoring shown on slides 18 and 19



Top risks are operation risks including health and safety, infrastructure and environmental risks.

Human Resources

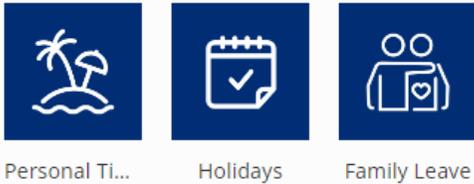
HEALTH & WELLNESS



DISABILITY



TIME OFF



Top risks are human performance, human capital, industry and governance risks

Risk Category	Risk Subcategory	Risk Indicator	Inherent Index	Residual Index
Operations People Risks	Performance Risk	Overworked staff	63 I: 7 / L: 9	56.7 M: 9
Operations People Risks	Human Capital Risk	Absence of necessary skillsets and experience	63 I: 7 / L: 9	50.4 M: 8
Operations People Risks	Human Capital Risk	GCPUD unable to attract skilled trades labor	72 I: 8 / L: 9	50.4 M: 7
Operations People Risks	Human Capital Risk	Lack of diversity	49 I: 7 / L: 7	44.4 M: 9
Operations People Risks	Governance Risk	Ineffective key risk and performance metrics	48 I: 6 / L: 8	43.2 M: 9
Strategic External Risks	Industry Risk	Market salaries increasing faster than revenues	48 I: 6 / L: 8	43.2 M: 9
Strategic Internal Risks	Corporate Support Risk	Unauthorized actions or decisions	54 I: 6 / L: 9	43.2 M: 8
Information Technological Risks	Cybersecurity Risk	Inadequate data storage	48 I: 6 / L: 8	38.4 M: 8
Operations People Risks	Human Capital Risk	Insufficient staffing	64 I: 8 / L: 8	38.4 M: 6
Operations People Risks	Human Capital Risk	Ineffective succession planning	54 I: 6 / L: 9	37.8 M: 7

Key to scoring shown on slides 18 and 19

Line Maintenance



484

Miles, transmission lines

3,922

Miles, distribution lines

Top risks include infrastructure, performance measurement, and environmental risks.

Risk Category	Risk Subcategory	Risk Indicator	Inherent Index	Residual Index
Operations Process Risks	Infrastructure Risk	Inadequate Distribution Transformer availability	80 I: 8 / L: 10	64 M: 8
Information Operational Risks	Performance Measurement Risk	Non-compliance with safety procedures	64 I: 8 / L: 8	51.2 M: 8
Operations Compliance Risks	Environmental Risk	Hazmat spills	54 I: 6 / L: 9	32.4 M: 6
Operations People Risks	Human Capital Risk	Absence of necessary skillsets and experience	49 I: 7 / L: 7	29.4 M: 6
Operations Process Risks	Supply Chain/Sourcing Risk	Failure to establish action plans to treat identified risks	49 I: 7 / L: 7	29.4 M: 6
Operations Compliance Risks	Environmental Risk	New WA State regulatory requirements	48 I: 6 / L: 8	28.8 M: 6
Operations Process Risks	Infrastructure Risk	Aging or obsolete equipment	48 I: 6 / L: 8	28.8 M: 6
Information Operational Risks	Performance Measurement Risk	Inadequate safeguarding of assets	36 I: 6 / L: 6	28.8 M: 8
Operations Process Risks	Business Interruption Risk	Inadequate Business Impact Analysis for key disruption risks and unknown tolerance to key disruptions	40 I: 8 / L: 5	28 M: 7
Information Operational Risks	Performance Measurement Risk	Unable to proactively identify safety concerns	42 I: 6 / L: 7	25.2 M: 6

Key to scoring shown on slides 18 and 19



Grant PUD Evolving Risks

Our Look Ahead

Top 5 Evolving Risks - Affirmed

■ Load Uncertainty

- Causes uncertainty in quantifying our future resource needs
- Planning needs to consider multiple forecast load scenarios

■ Changing State Regulations

- Creates significant risks to the stability of Grant PUD's rates
- Proactive planning is needed on rate pricing, wholesale market, resource procurement & deliverability

■ Global Market Uncertainty

- Increases uncertainty in wholesale activities, contracts, costs of debt
- Planning for variability in our O&M costs, capital project costs, and delays due to supply chain disruptions

■ Resource Adequacy and the Reliability

- Affects our reserves to balance supply & demand across the grid
- Mitigation strategy may include joining WRAP upon the expiration of our pooling agreement

■ Our Changing Climate

- Impacts water availability, load requirements and power delivery reliability
- Risk mitigation including asset hardening, redundancy, and increased capacity are likely to be needed

Other Evolving Risks Closer to Home - Updated

■ Embankment Work

- We are halfway through the Priest Rapids' right embankment improvement project and are in the process of evaluating Wanapum's right embankment for potential mitigations - **in progress**
- Projects of this complexity present Grant PUD with significant risks in many categories including cost variances, regulatory uncertainty, financing risks, and numerous operational risks – **we are realizing higher costs and operational challenges**

■ Physical Asset Security

- Recent grid vandalism/attacks clearly show the risks utilities, and their customers, face when people destroy transmission grid assets – particularly transformer assets – **We face significant growing negative exposures associated with efforts to breach lower Snake River dams.**
- Key risk owners are developing mitigations to address issues such as security, asset hardening, and equipment redundancy to reduce the likelihood of a single point of failure that can be exploited

■ Recreation Liability

- Grant PUD is working with legislators to clarify liability protections associated with public recreation use of land or waters under a hydroelectric license issued by FERC – **Successful risk mitigation for GCPUD!!!**
- The LCLS business unit is organizing its inventory of known man-made structures contained within the Priest Rapids project boundaries and are evaluating them for risk significance and potential mitigation – **Good progress here.**

Thank You



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APPENDIX



ERM Key Concepts

2022 ERM process

Key concepts

- Inherent vs Residual risk
 - **Inherent Risk** – risks that are accepted as a result of the intrinsic nature of operations, materials, features, or activities being undertaken and for which no mitigation has yet been applied
 - **Residual Risk** – those risks that remain after mitigations have been implemented
- Measuring Risk
 - **Impact** (Consequence or Severity) – financial, operational, reputational, health & safety, objectives
 - **Likelihood** (Probability or Frequency) – How likely to happen in next 5 years
 - **Mitigation** (Assurance) – How effective the current mitigations are for lowering Impact/Likelihood
- Risk Categories
 - **Strategic**: Events or circumstances impacted from our strategic vision/priorities
 - **Operations**: Events or circumstances relating to the day-to-day business
 - **Finance**: Events or circumstances relating to financial controls, investments, capital & cash management
 - **Information**: Events or circumstances impacted from how data is gathered, stored, analyzed, checked, & shared

Impact from Occurrence (e.g., consequence or severity)

Rating	Generic Meaning	Financial Loss	Legal/Compliance	Reputation
1-2 – Insignificant	Little or no impact on the achievement of goals or capability	< \$500K	Minor legal & compliance issues. Unsubstantiated, or substantiated, low impact, low profile	Minor, adverse local public attention or complaints
3-4 – Minor	May degrade the achievement of some goals or capability	\$500K - \$2.5M		Attention from media and/or heightened concern by local community
5-6 – Moderate	Will degrade the achievement of some goals or capability	\$2.5M - \$30M	Serious breach of regulation with investigation or report to authority and/or moderate fine possible	Significant adverse national media/public/NGO attention
7-8 – Major	Significantly degrades the achievement of goals or capability	\$30M - \$100M	Major breach of regulation or major litigation	Serious public or media outcry, loss of customer/investor confidence
9-10 – Catastrophic	Significant capability loss and the achievement of goals is unlikely	> \$100M	Significant prosecution and fines. Very serious litigation including class action.	Complete loss of public, customer, and/or investor confidence

Effectiveness of Mitigations Table (e.g., assurance)

Rating	Generic Meaning	Effectiveness	Quality	Controls	Accountability
10-9 – Ineffective	Mitigation effectiveness is not driven by the PUD but is dependent on each individual's background & standard	Ineffective and fragmented mitigations	No written guidance for performing tasks	Controls are mostly manual	No documented accountability/ownership
8-7 – Poor	Values & behavior expectations are not well defined or consistently understood beyond management	Mitigations are only partially effective & the area copes as best they can	Some written task guidance in various forms, but may not be immediately available due to inconsistent format and unapproved status		
6-5 – Could be Improved	Policy statements on values and behavior expectations are published to all	Some written standards exist, but may not be comprehensive	Written task guidance for important aspects	Controls are mostly manual and hybrid	Accountability/ownership is not enforced
4-3 – Good	Cultural norms ensure compliance with PUD values and policies at all levels	Mitigations are effective and followed on most occasions	Written task guidance is comprehensive, including (i) how and when to perform tasks; (ii) what tasks are supposed to achieve; (iii) how to handle exceptions	Controls are a combination of automated, hybrid and manual	Clear ownership of mitigation responsibility
2-1 – Effective	Board, management, & employees demonstrate through actions that behavior outside of organizational values is unacceptable	Mitigations are effective, followed & documented		Controls are primarily automated and hybrid	Accountability/Ownership at all levels is culturally driven

Grant PUD Risk Universe

Strategic Risks

Events or circumstances impacted from Grant PUD's strategic vision/priorities

Internal Risks: Corporate Support, Partnering/Alliances, Governance, Product Development

External Risks: Industry, Economy, Regulatory, Environmental Volatility, Competitor, Customer Needs

Operations Risks

Events or circumstances relating to the day-to-day business of Grant PUD

Process Risks: Infrastructure, Supply Chain, Business Disruption, Quality, Customer Satisfaction, Security

Compliance Risks: Regulatory, Environmental, Health & Safety, Litigation, Third Party

People Risks: Governance, Authority, Performance, Integrity, Human Capital, Leadership

Finance Risks

Events or circumstances relating to financial controls, investments, capital & cash management

Treasury Risks: Financing, Cash Flow, Foreign Exchange

Credit Risks: Bank Covenants Compliance, Collateral, Default, Capital Market

Price Risks: Commodity Price

Information Risks

Events or circumstances impacted from how information is gathered, stored, analyzed, checked, and shared within Grant PUD

Reporting Risks: Accounting, Budgeting, Financial Reporting, Taxation

Operational Risks: Commitment, Performance Measurement, Operational Reporting, Economic Decision

Technological Risks: Cybersecurity, Data Integrity, Technology Relevance/Availability/Infrastructure

Priest Rapids Turbine Generator Business Case – Units 9 & 10

June 20, 2023



Powering our way of life.

Contents

1) Situation/ Background

2) Analysis

- FP&A

3) Recommendation

- FP&A
- ERM

Situation/ Background

History

The Priest Rapids Project Turbine/Generator work effort began with design work in 1996.

- Turbine/Generator work for all 10 units at Wanapum Dam was completed in October 2020.
- Turbine/Generator work is in process at Priest Rapids Dam, currently focused on unit's 6-8.
- The current analysis is focused on the decision to move forward with unit's 9-10

Current

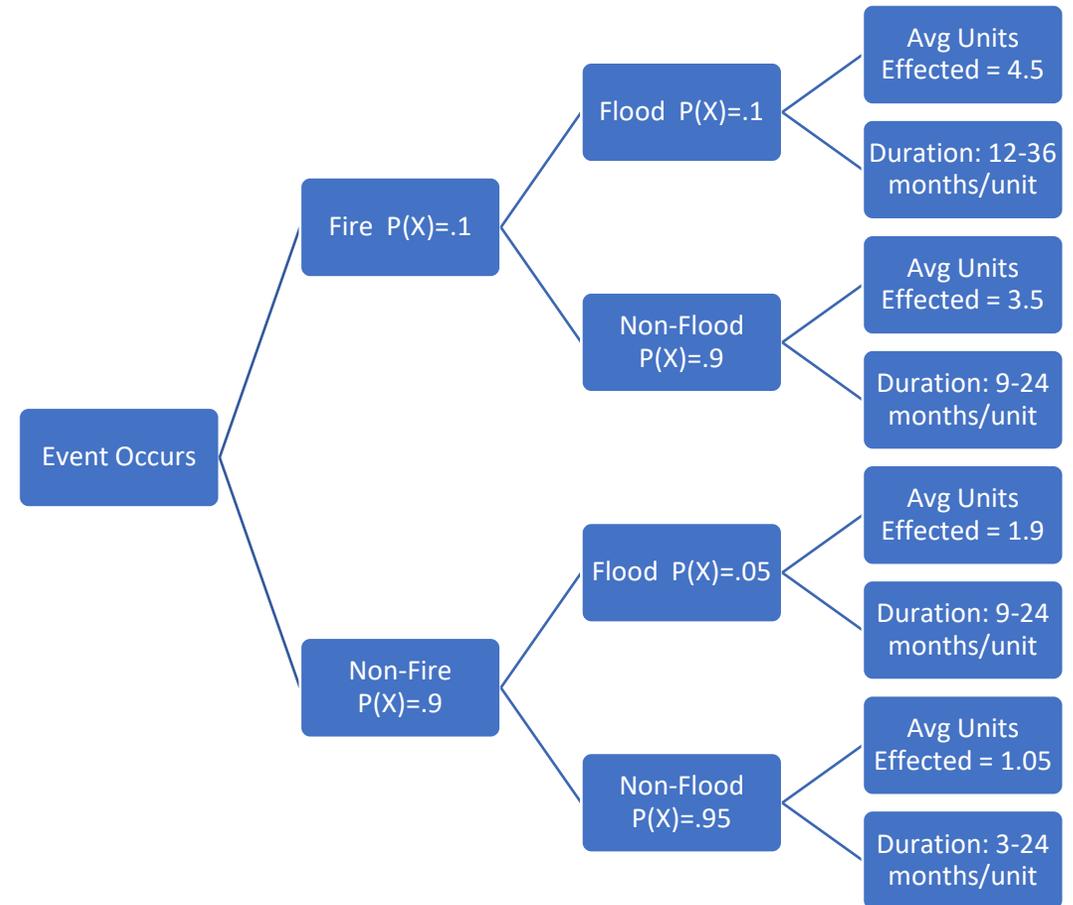
- The general practice has been to evaluate economics prior to the turbine manufacture decision.
- Also, since the last valuation, project costs have increased the per unit cost significantly. This has obliged us to change the analytical approach for valuing the units.
- The increase of capacity (5.0 MW), energy and efficiency (~3.6 aMW), is still part of the study, but the focus for the current analysis is the benefit of risk mitigation.

Analysis – Approach & Methodology

- Monte Carlo Simulation is the primary driver of the analysis
 - There is little confidence that the true cost will exactly equal our projected cost.
 - However, we can be significantly more confident that the true cost lies within a range of projected costs.
 - Simulation enables analysis on the range of costs to determine how often the project is in-the-money or not.
- Simulation also allows complex problems to be broken down into smaller problems.
 - A failure event is impossible to predict (when, what, how, why).
 - We can specify inputs to simulate on that can be reasonably estimated.
 - What type of event, the repair duration, and the magnitude.
- US Army Corps of Engineers follows a similar methodology in their analyses.

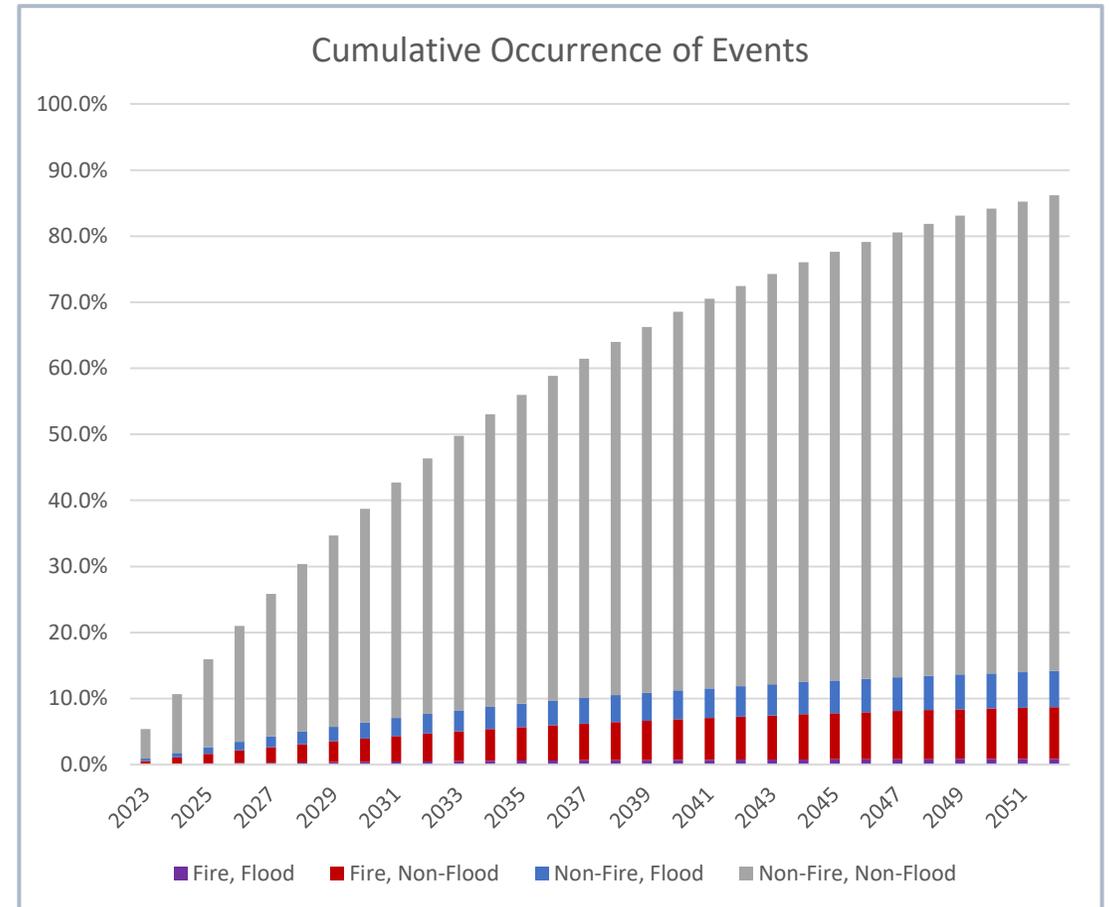
Analysis – Assumptions

- A probability tree was employed to guide the inputs used within the simulation based on engineering estimates.
- The determination of when an event occurs utilized the Weibull probability distribution which is frequently used in risk analysis.
- The event type is determined by the probability tree.
- The number of units affected is drawn from a Poisson probability distribution and is dependent on the event type.
- The duration is drawn from a uniform distribution and is dependent on the event type.



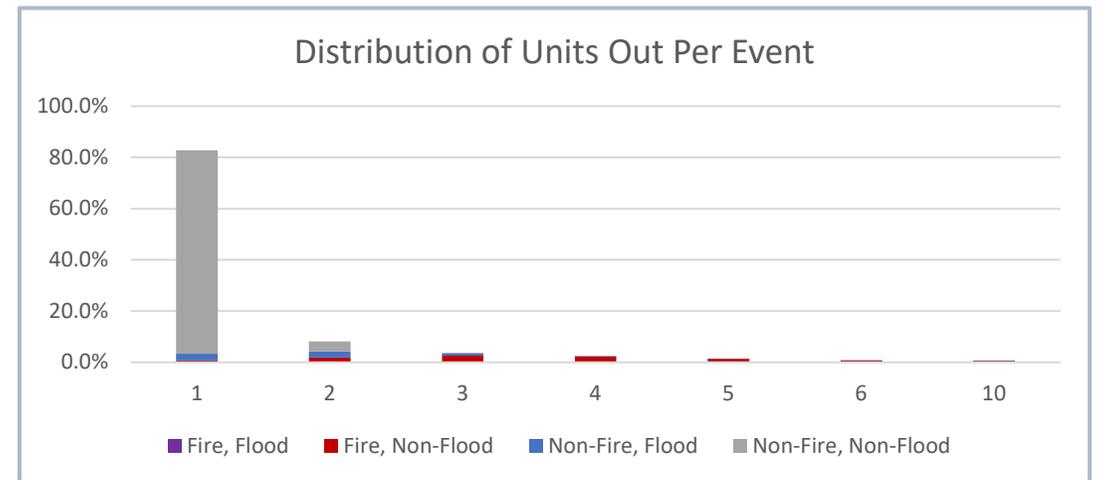
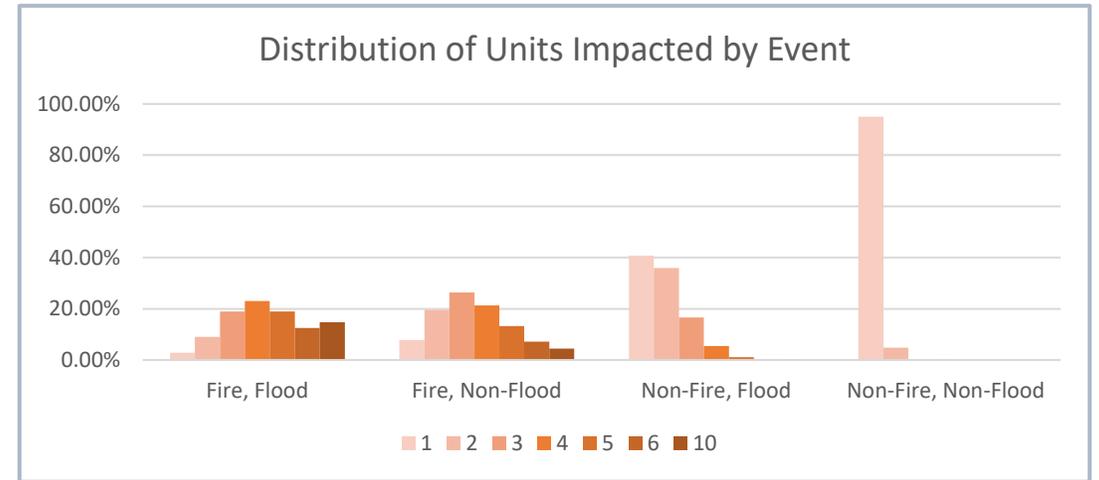
Analysis – Frequency of Events

- By 2052, only 14% of simulations did not have a failure event.
- A non-fire, non-flood event accounted for 72% of all events.
- Fire, non-flood accounted for 8%.
- Non-fire, flood accounted for 6%.
- Fire, flood accounted for 1%.
- 34% of simulations had a failure event before 2030.



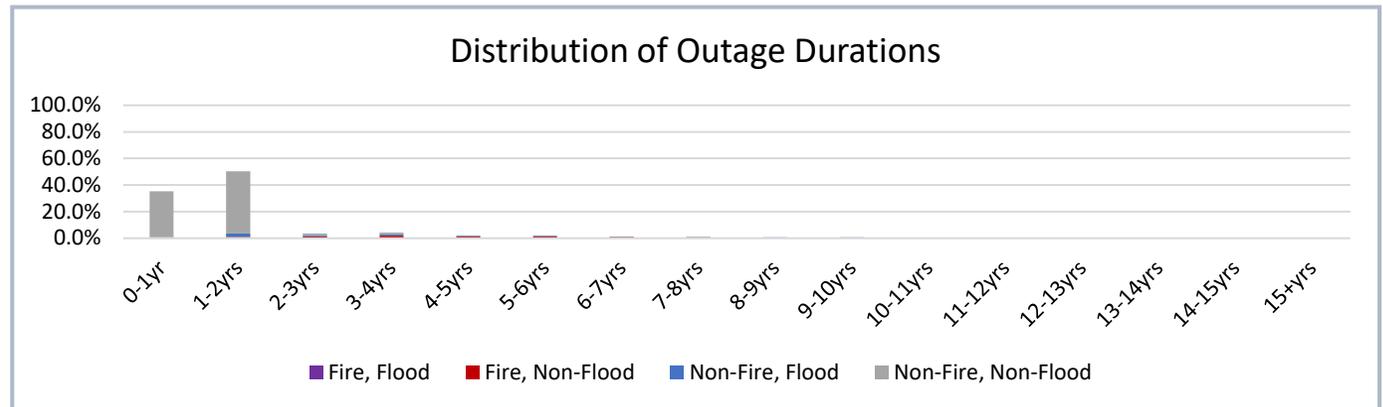
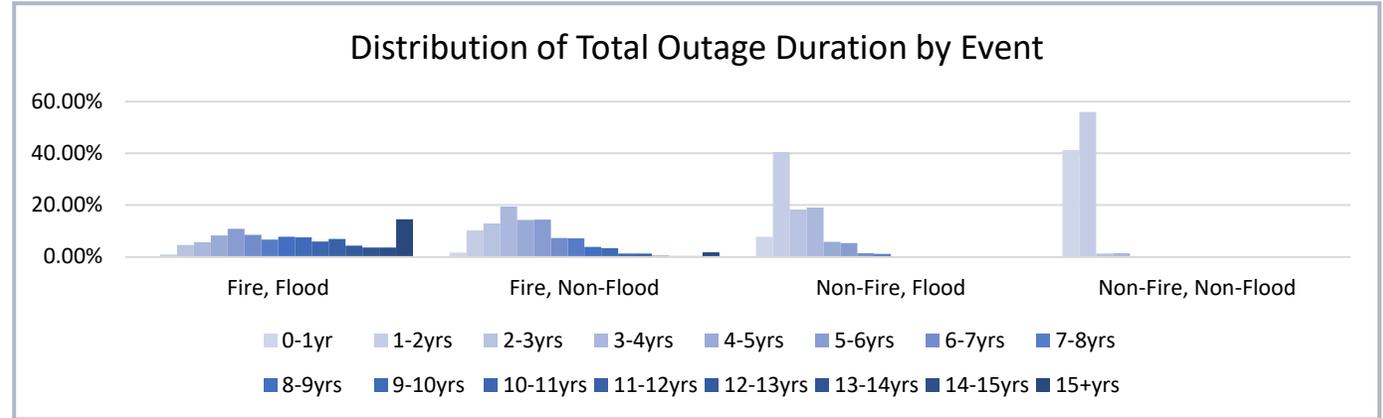
Analysis – Magnitude of Events

- 83% of failure events involved only a single unit.
 - 80% of the 83% are non-fire, non-flood events.
 - 8% involved two units, 4% for three units, 3% for four units.
- Events involving a fire or flood affect a single unit 20% of the time, two units 25% of the time, three units 22% of the time.
- Events involving a fire have more uncertainty as demonstrated by the wider variance of magnitude.



Analysis – Duration of Events

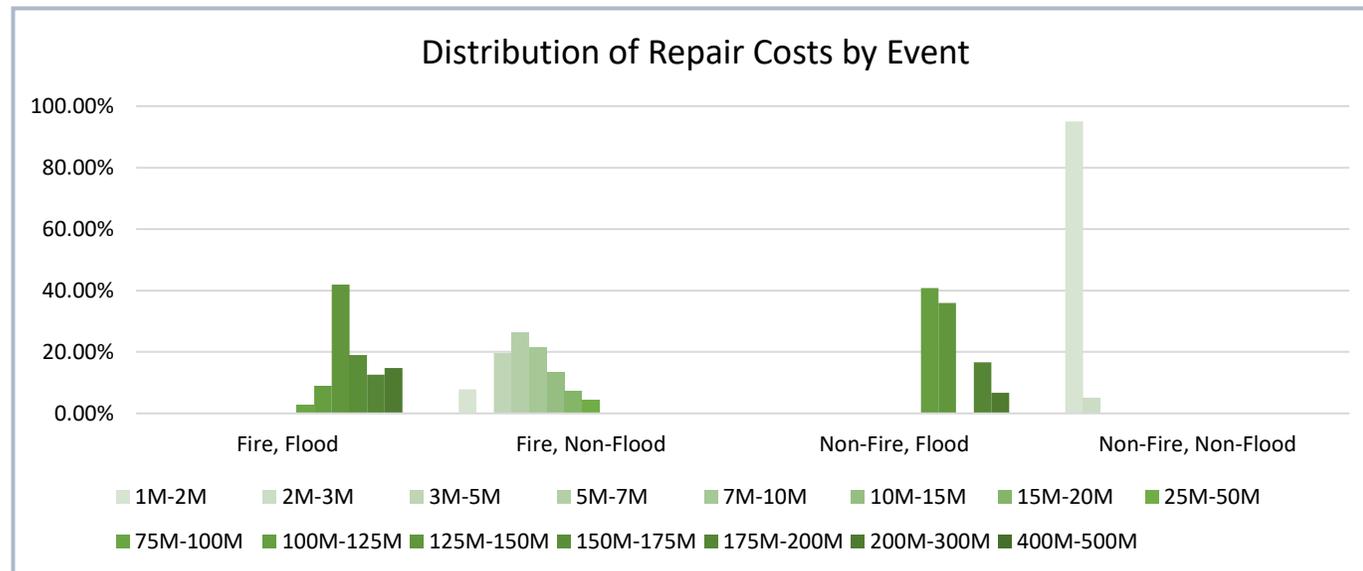
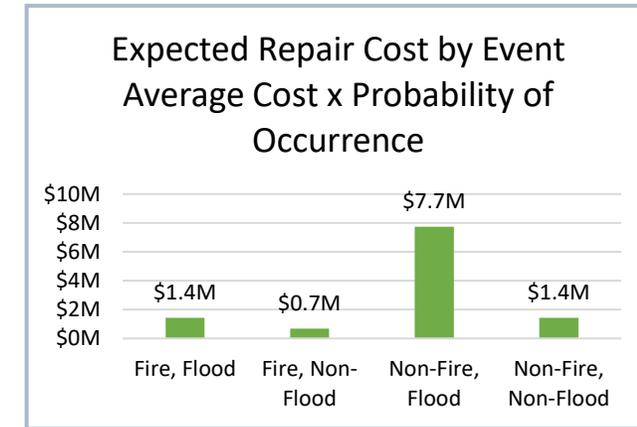
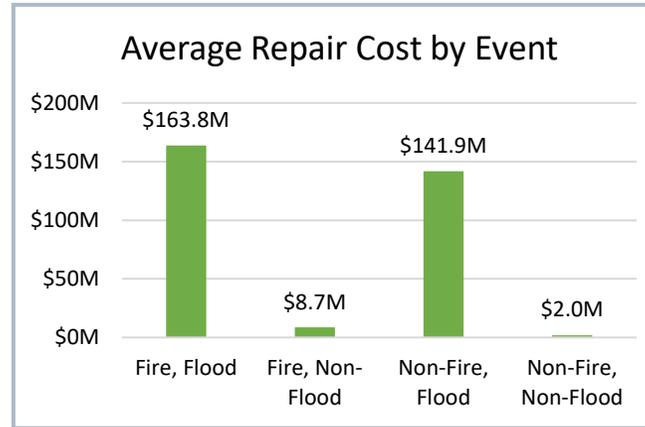
- The outage is determined by two variables: the uniformly distributed months out per unit and the Poisson distributed number of units affected.
- The total duration is the product of these two values.
- The variance of outage duration similarly depends greatly on the event. Fire and/or flood events have far more possibilities than a non-fire, non-flood event.



	0-1yr	1-2yrs	2-3yrs	3-4yrs	4-5yrs	5-6yrs	6-7yrs	7-8yrs	8-9yrs	9-10yrs	10-11yrs	11-12yrs	12-13yrs	13-14yrs	14-15yrs	15+yrs
Fire, Flood	0.0%	1.0%	4.6%	5.7%	8.3%	10.9%	8.5%	6.7%	7.8%	7.5%	5.9%	6.9%	4.3%	3.7%	3.7%	14.5%
Fire, Non-Flood	1.7%	10.2%	12.9%	19.4%	14.3%	14.4%	7.3%	7.2%	3.8%	3.4%	1.3%	1.3%	0.4%	0.3%	0.3%	1.7%
Non-Fire, Flood	7.8%	40.6%	18.4%	19.1%	5.8%	5.3%	1.5%	1.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Fire, Non-Flood	41.3%	56.0%	1.3%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grand Total	35%	50%	3%	4%	2%	2%	1%	1%	0%							

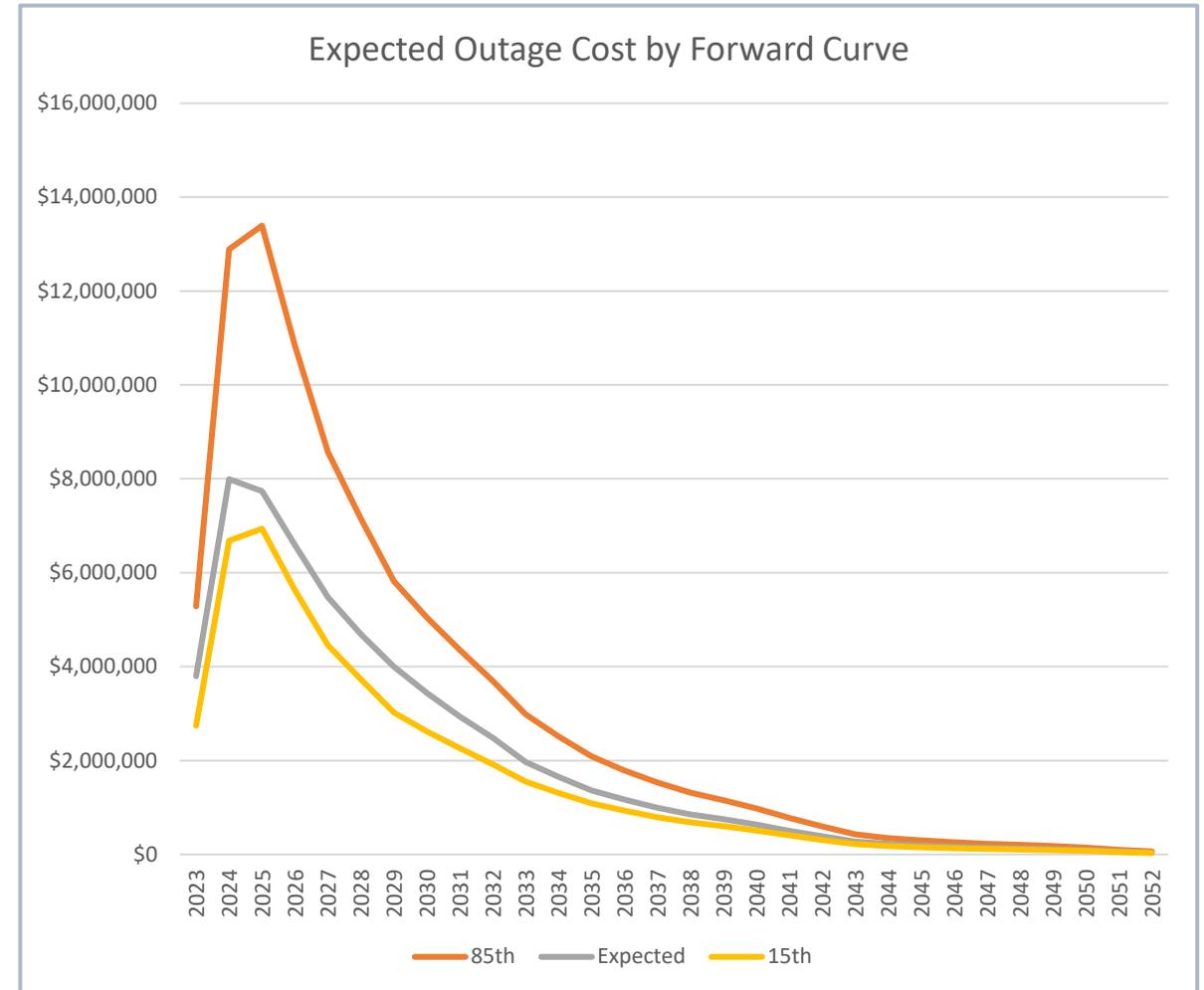
Analysis – Repair Cost

- The average cost is what an event would likely cost given that it occurs.
- The expected cost is the average cost weighted by the probability of occurrence.
- 80% of events are expected to cost between \$1-2M. Though the average cost of the top 5% would be expected to be \$162M, and the top 1% to be \$213M.
- The total expected repair cost of keeping the unit as-is is \$11.3M.



Analysis – Outage Cost

- The other component to these simulated events are the generation and capacity value lost.
- The generation is calculated as the lost aMW generation for those units out multiplied by the market price during that period.
 - The value of this lost generation is \$60.9M at expectation, with a range of \$50M-\$95M.



Analysis – Adjustments

- **Uncertainty Adjustment**
 - A 2% margin of error adjustment is added to the bottom-line.
 - This value is how much the analysis changes on average when the original model inputs are altered by 2%.
- **Unit Scalar**
 - Due to the probabilistic approach undertaken, there will be significant correlation between the analysis taken for unit 9 and for unit 10.
 - To accommodate this interdependency, a factor of 1.71 was used to scale the results.
- **Forward Price Curve**
 - One of three forward curves can be toggled to analyze their impact on the analysis.
 - LT-Expected: the long-term average.
 - Budget: average of forward curves when the budget was finalized.
 - 2023-Q1: an average over 2023-Q1 forward curves.

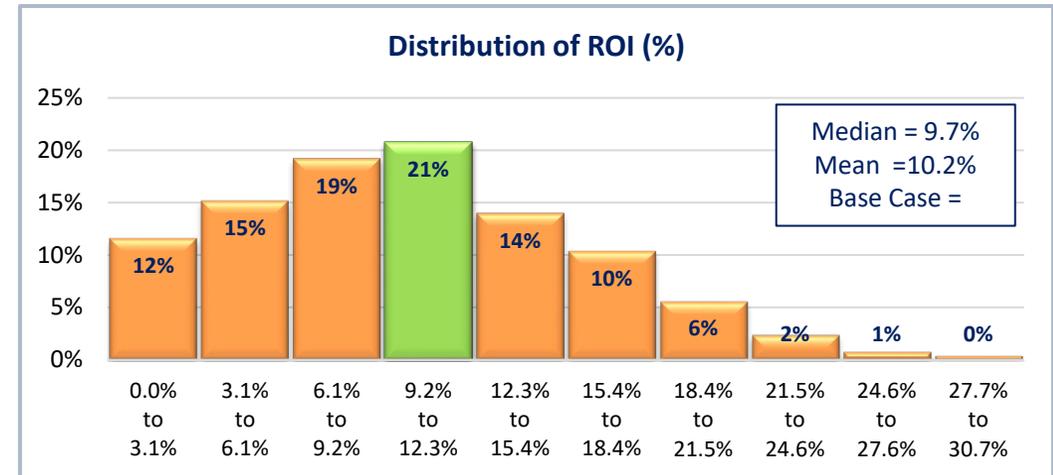
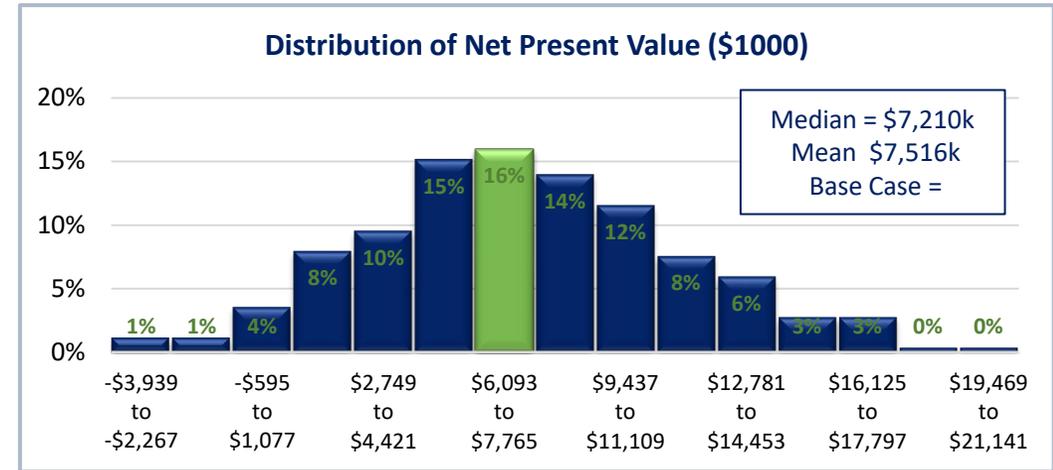
Recommendation – FP&A

- This project has a net present value of \$7.5M.
- The expected ROI is 10.2%.
- 94% of cases show this project to be in-the-money.
- The payback period is 25 years (occurring before project relicensing).

FP&A recommends the business’ proposal to upgrade these units.

Recommendation – ERM

Enterprise Risk Management has reviewed this analysis and concurs with FP&A's recommendation to move forward with the proposal to upgrade Priest Rapids' units 9 and 10.



Benefits % on Base Case of \$7.6M	
7.5%	Ancillary Services
0.1%	Efficiency Gain
51.8%	Failure event outage costs
15.1%	Failure event repair costs
9.9%	Incremental Hydro Value
15.6%	Reduced O&M costs

Questions?

Reliability Compliance

July 11, 2023

Gene Austin
Compliance Manager



Powering our way of life.

Agenda

- **GCPD Reliability Organization**
- **2023 NERC Audit**
- **Big 3 Initiatives**
 - Internal Controls
 - Audit Readiness
 - Separation/Transfer Notification
- **Reliability Compliance**
 - Work Plan for balance of '23
- **'Potential Non-Compliance' Status**

GCPD's Reliability Organization



Reliability Council

Chief Compliance Officer* (CFO/ CCO) – Bonnie Overfield
CIP Senior Manager* (GM/ CEO) – Richard Wallen
 O&P Senior Manager/ COO – Jeff Grizzel
 Chief Customer Officer (CCO) – Ty Ehrman
 Chief Administrative Officer (CAO) – Julie Pyper
 Managing Director Power Delivery – Ron Alexander
Primary Compliance Contact* (Chair) – Gene Austin

*** NERC Registered Positions**

Reliability Council – provides the leadership, guidance, and direction for GCPD’s NERC Reliability Program

Chief Compliance Officer has overall responsibility for achieving NERC expectations

CIP Senior Manager is the executive responsible for Compliance with NERC CIP Standards

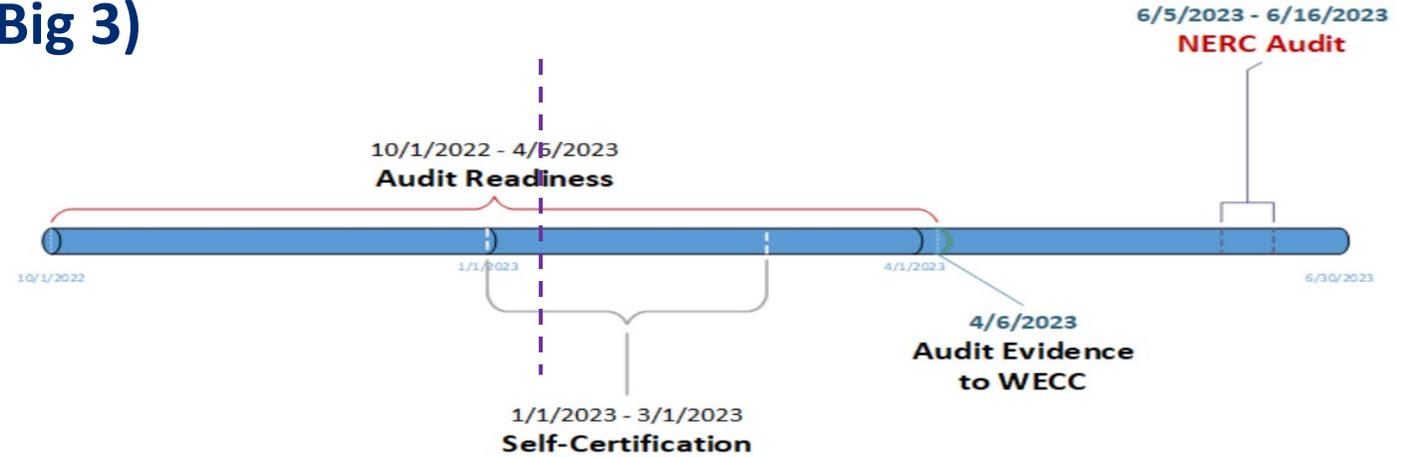
O&P Senior Manager is the executive responsible for Compliance with NERC O&P Standards

Reliability Compliance Office implements the direction set by the *Reliability Council*

2023 NERC Audit (Big 3)

Highlights

- June 5th – June 16th
- Eight months preparation
- Scope – Reduced from 71 Requirements to 20
- What changed – Fully Remote
- Audit Results:
 - Zero Findings or Non-compliance;
 - Three Recommendations
 - Zero Areas of Concern
 - One Positive Observation
- New Audit Period February 4, 2023 thru (February 2026)
- Next Audit Q2-2026



Work Plan – Balance of 2023

1) Big Three Initiatives

- Internal Controls Program ✓
- Audit Readiness ✓
- Separation/ Transfer Notification Process

2) NERC Compliance Deliverables

- Annual CIP Training
- CIP-014 On-site Review
- New EMS System – Compliance Commissioning
- Continued work on Internal Controls development
- Internal Compliance Program Document
- Routine tracking, monitoring, and reporting
- On-Boarding of Joanne Anderson

Separation/ Transfer Notification

(Big 3)

Standardize the process used to provide notification of employees who transfer within or separate from the District.

'Potential Non-Compliance' – PNCs

7 Open PNC's

- 2 Audit Findings PNCs – 2020 awaiting final disposition
- 2 Self-Reported PNCs – 2020 awaiting final disposition
- 2 Self-Reported PNCs – 2019 awaiting final disposition
- 1 Self-Reported PNC – 2022

7 'Potential Non-compliances'

QUESTIONS