

*Serving our customers*

# Cowlitz Trout Hatchery Remodel

April 24, 2024

# Cowlitz Fishery Program



# Cowlitz Fishery Rearing Program

## 35 Year FERC License Obligation - Mitigate for Resource Impacts

- 1) Restore native fish runs **and** provide harvest opportunity
- 2) Grow up to 650,000 pounds of fish in the hatcheries
  - With capacity for 800,000 pounds

Cowlitz Trout Hatchery



Cowlitz Salmon Hatchery



# Importance of Trout Hatchery



## Annual Production Plan - up to 650,000 lbs.

Facility	Stock	Ibs. of Fish
Salmon Hatchery <b>63%</b>	Fall Chinook	43,750
	Spring Chinook	219,630
	Coho	145,200
Trout Hatchery <b>37%</b>	Winter Steelhead	92,428
	Summer Steelhead	118,181
	Cutthroat Trout	24,443
Total		643,632

# How a Hatchery Works

## Clean and Reliable Water Sources



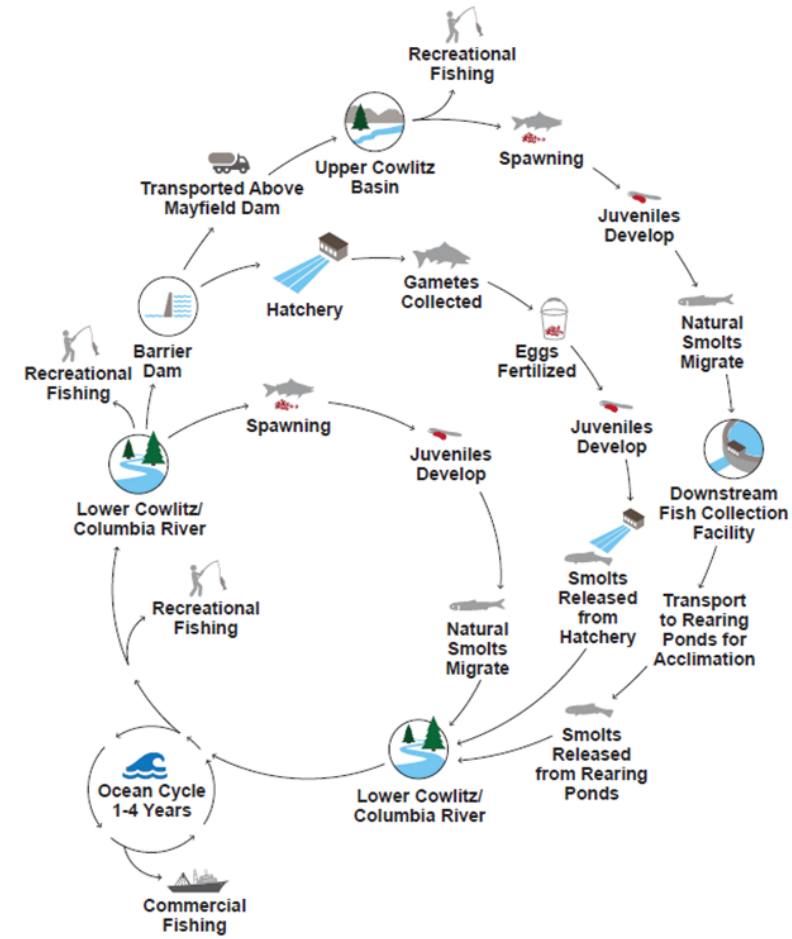
## Incubation Space and Water



## Early Rearing Space, Water, Food, Marking and Cleaning



## Grow out and Release Predation control, monitoring



# Trout Hatchery Today vs. Future

## Current

Risk of Major  
Failure/Fish Kill

Shortfall on FERC  
Obligations

Inflexible and  
Outdated Industry  
Operations



## Future

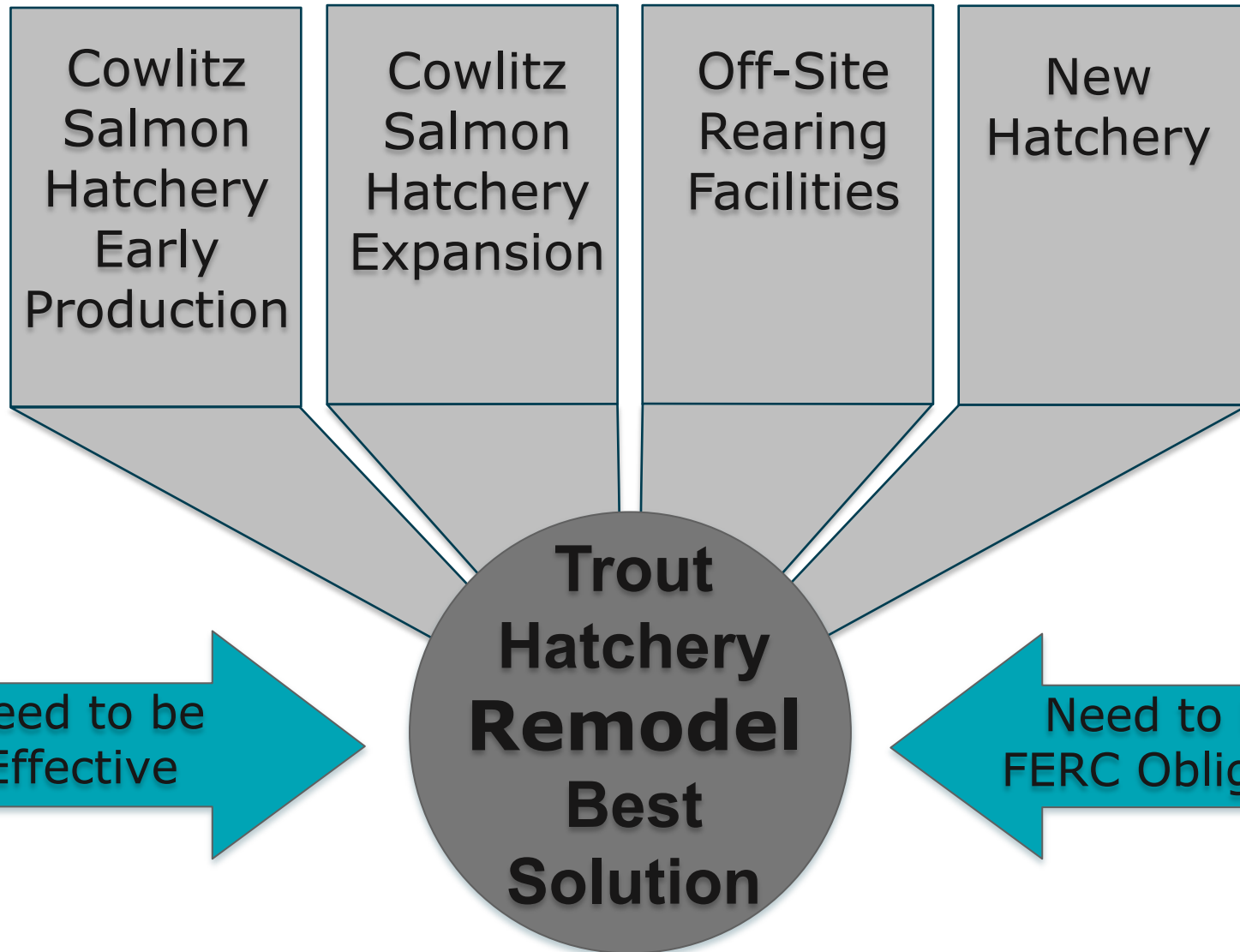
Reliable  
Infrastructure –  
Disease Control

Foundational  
Component of  
Recovery and Harvest

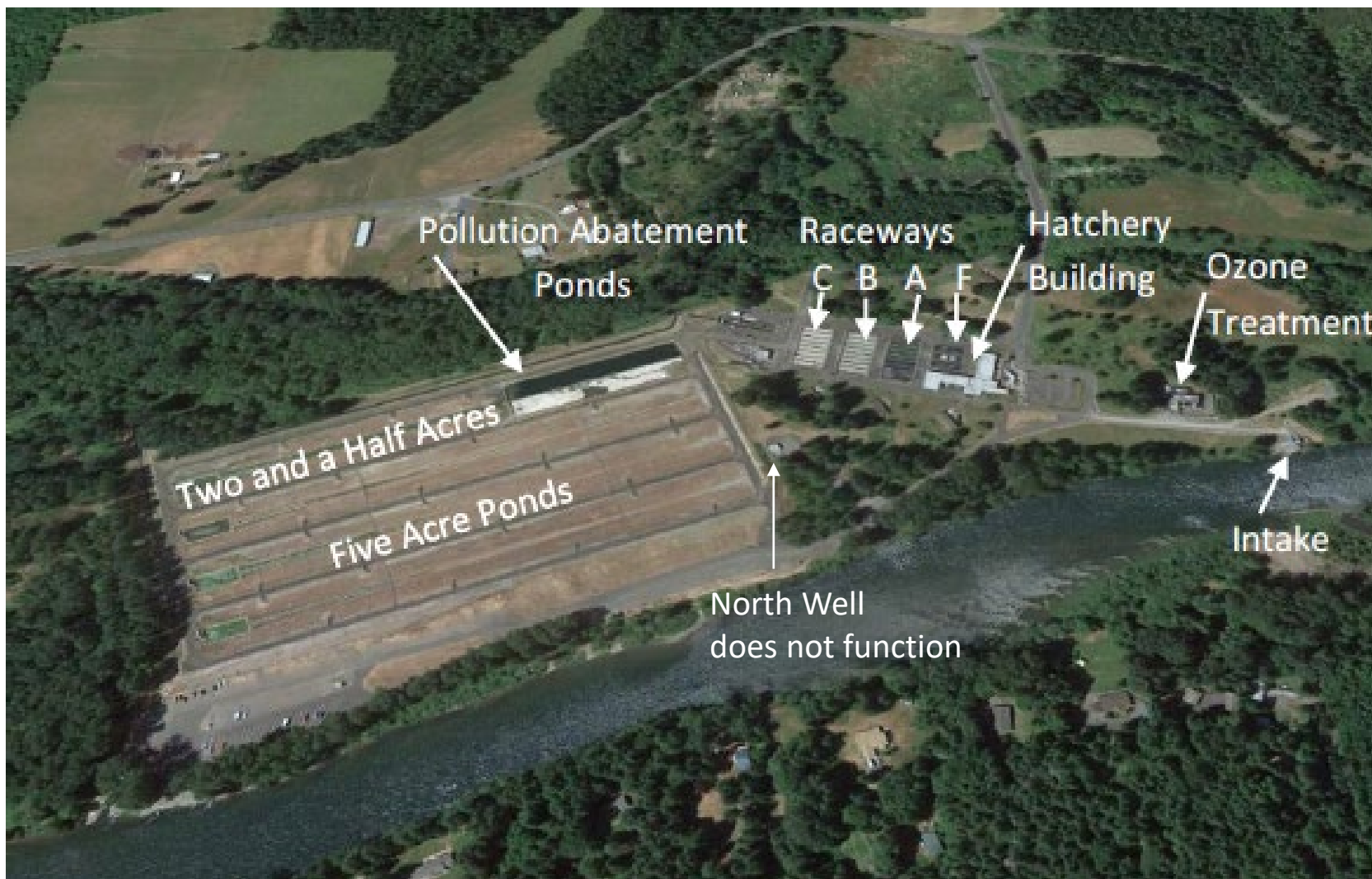
Increased In and  
Outside Facility  
Survival

Facility Flexibility –  
Program  
Advancement

# What Options Were Considered?



# Our Trout Hatchery





# Our Trout Hatchery



# Current State of Trout Hatchery

## Facility unable to meet obligations

- Aging and Failing Infrastructure
- Past its useful life
- Not designed to meet current needs
- Built in the late 1960's



Head Tank



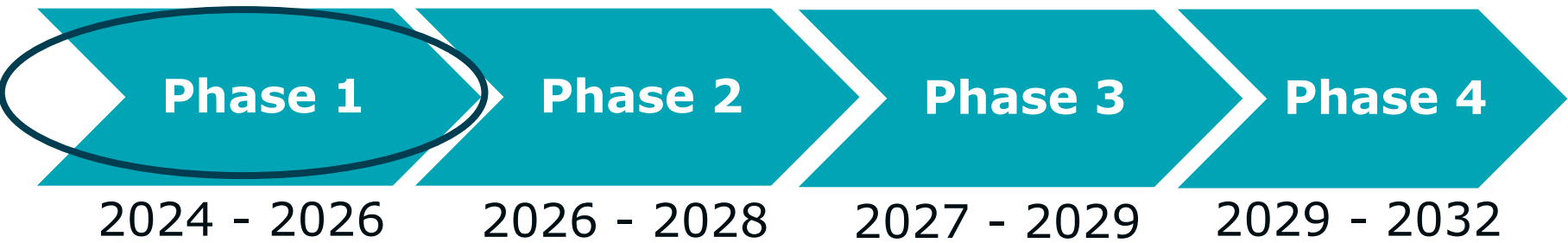
Rearing Ponds



Incubation

# Trout Hatchery Program Phases

- **Phase 1: Planning to 10% Design**
- **Phase 2: Design & Permitting**
- **Phase 3: Go/No Go for Construction Phasing**
- **Phase 4: Phased Construction/Commissioning**



★ **We are  
here**

**Trout Hatchery 8-Year Program**

# Phase 1: Planning to 10% Design

## Major Activities

Ground Water Study

Bioprogramming

Hatchery Flow:  
Groundwater vs.  
Surface Water &  
Ozone

Hatchery  
Component  
Alternatives

## Decisions

Select Water Supply

Select Hatchery Components & Early Rearing

## Outputs

10% Design Plans

Interim Operations Plan

Bioprogram

Costs

Construction Phasing During Operations

# Anticipated Program Schedule & Costs



2023-2024	2025-2026	2027-2028	2029-2030	2031- 2032
Form Consultant & TPU Design Team	Initiate Permitting	Finalize Permitting	Construction (Phase 3)	Construction (Phase 4)
Survey & Data Collection	Survey	Final Design	Interim Operations Plan	Interim Operations Plan
Major Studies & Decision Points on Water Supply	Continued Alternative Analysis & Major Studies	Final Cost and Interim Construction Phasing	Commission and Close out	Commission and Close out
Long Term Husbandry Plan (Bioprogram)	Long Term Husbandry Plan (Bioprogram)	Interim Husbandry Plan (Bioprogram)		
Alternative Analysis of Hatchery Components	<b>Major Go/No Go for Hatchery Alternatives</b>	Break Ground Construction (Phase 1)		
	10% Design Interim Construction Phasing	Early Phased Construction (Phase 2)		
	Construction Costs Interim Phasing Costs	Budget Construction Phase 3 & 4		
	Budget Final Design <b>Begin Final Design</b>	Interim Operations Plan		
	Budget Construction Phase 1 & 2	Commission and Close out		
<b>\$4.2M</b>	<b>\$10.5M</b>	<b>\$26.5M</b>	<b>6.5M</b>	<b>TBD</b>

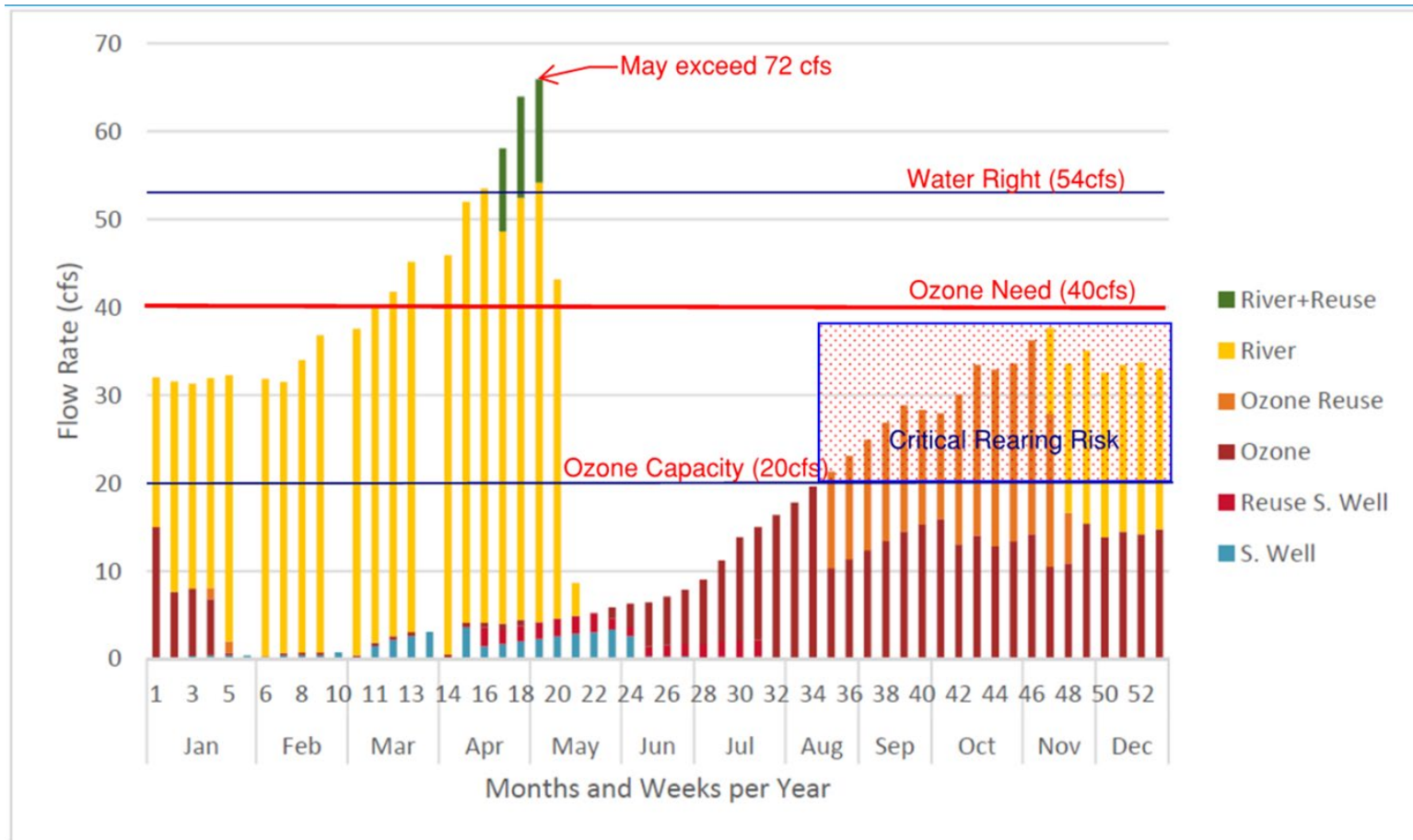
**Anticipated program estimate is \$47.7M.**

**Above is the expenditure cash flow for all contracts and labor.**

# Questions?



## Types of Water for a Bioprogram



## Major Scope, Decisions, and Task Elements

- Consultant Program/Project Management
- Environmental Permitting
- Survey
- Basis of Design Part 1
- Hydraulic Analysis and Hydraulic Gradeline
- Bioprogramming Initiation Decision Point
- Ground Water Rehabilitation Report
- Hatchery Flow, Groundwater Vs. Surface Water and Ozone
- Bioprogramming
- Climate Change Study
- Water Supply Alternatives
- Hatchery Incubation Alternatives
- Outdoor Rearing Alternatives
- Hatchery Building Analysis Technical Memorandum build new or remodel
- Rearing Pond and Pollution Abatement Pond Alternatives
- Outlet Structure Alternatives
- Fish Facility Transfer Monitor and Evaluate Alternatives
- Total Hatchery Facility Preferred Alternative
- Stormwater Site Development
- Final Hydraulic Analysis Report
- 10% Design Plans and Basis of Design Part 2
- Full Opinion of Probability of Construction Costs