PTAGIS

PIT Tag Information System

Columbia Basin

Recent Accomplishments of the PTAGIS Program

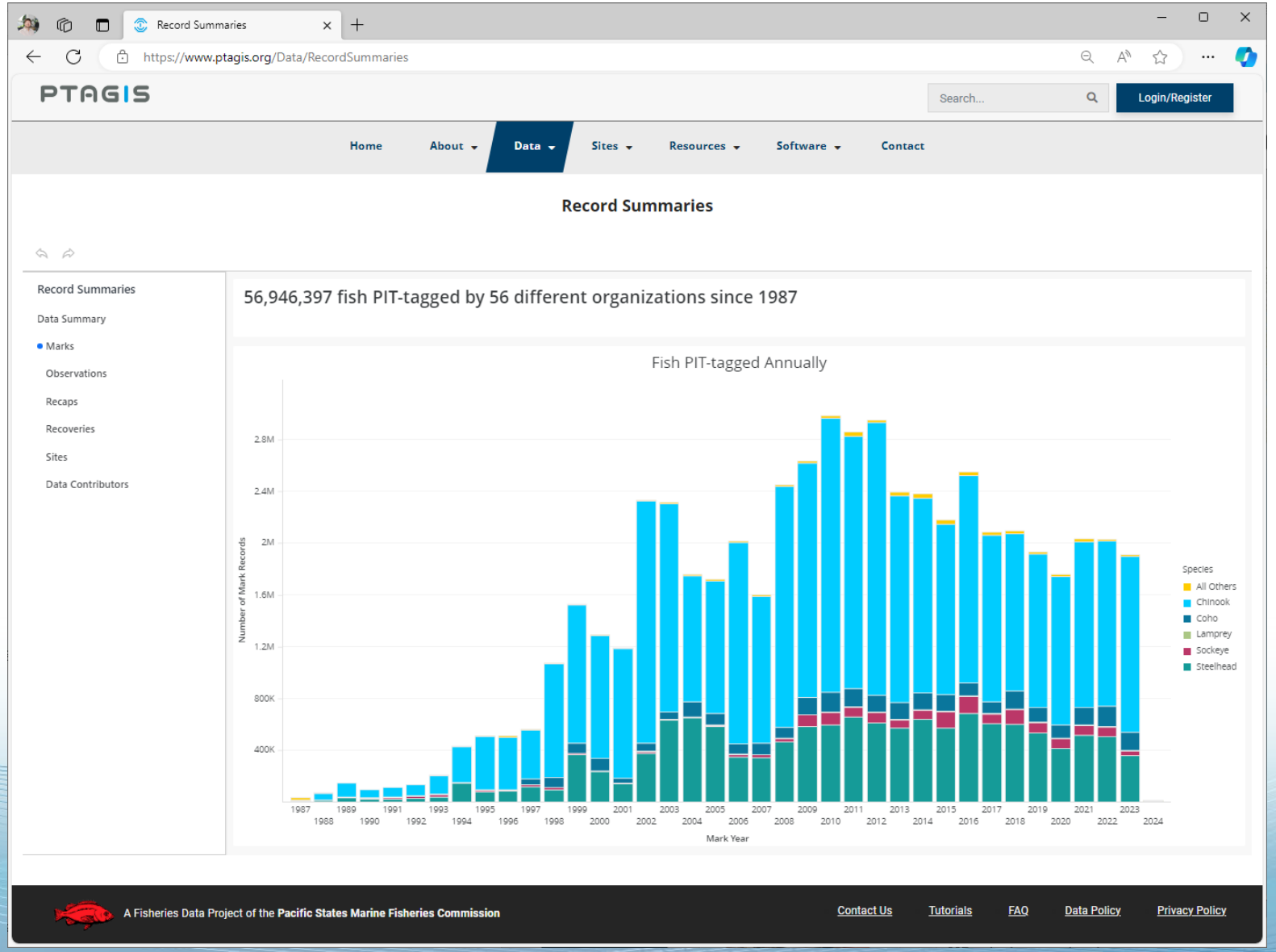
John Tenney, Don Warf, and Nicole Tancreto, PSMFC

A presentation for the
2024 PIT Tag Workshop
(photos and drawings provided by PSMFC staff unless otherwise noted)

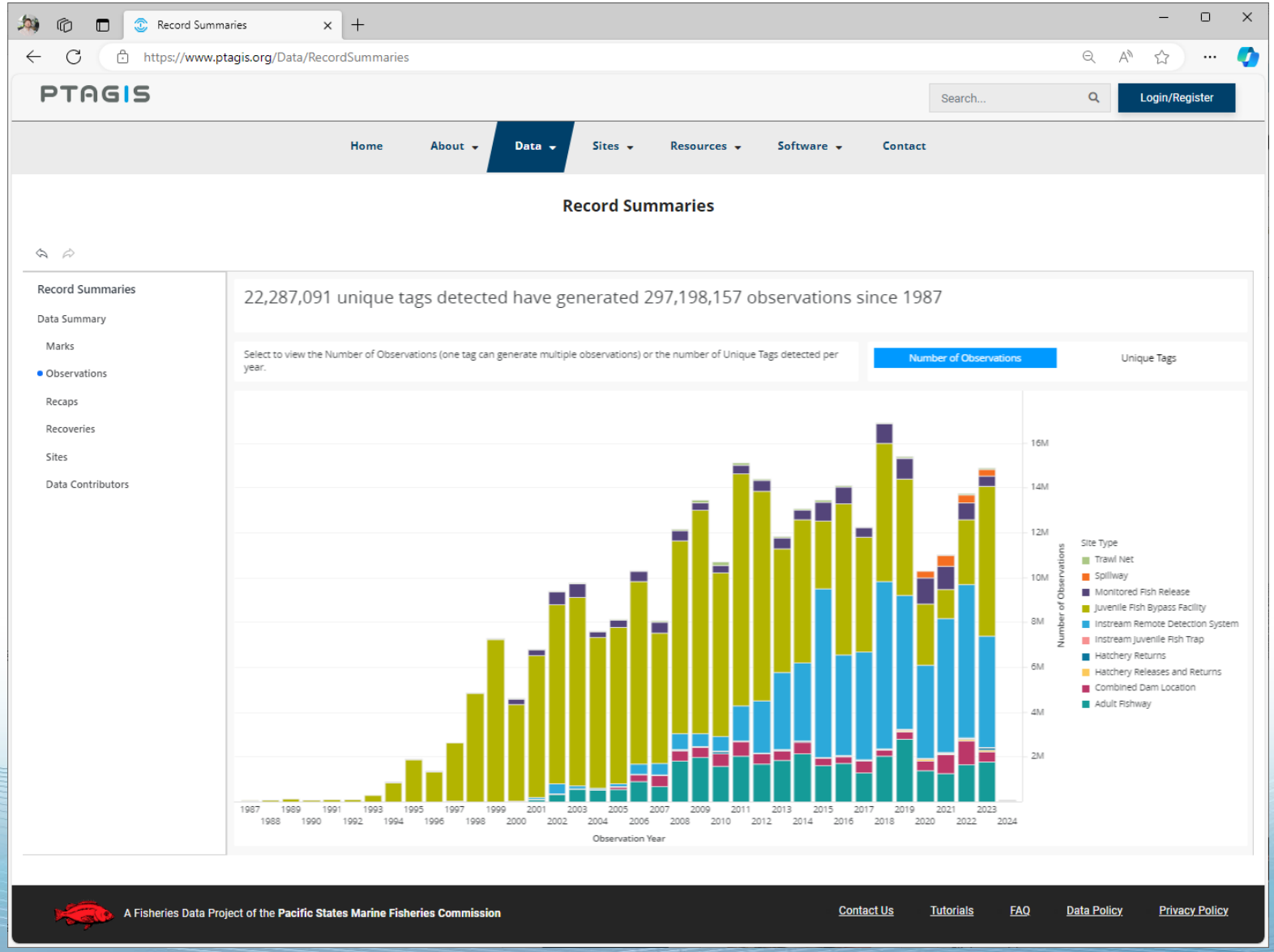
PTAGIS Program Overview

- PSMFC Fisheries Data Project started in 1991
- Funded by BPA via *Columbia Basin Fish & Wildlife Program*
- Regional database of PIT tag data in Columbia River basin
- Data contributed from regional agencies, available to anyone
- PTAGIS doesn't perform analysis (RM&E) of the data
- Install, Operate & Maintain (O&M) large scale interrogation sites
- Governed by the PIT Tag Steering Committee (PTSC)
  - Instream PIT Tag Detection System (IPTDS) Subcommittee
- Provide regional coordination

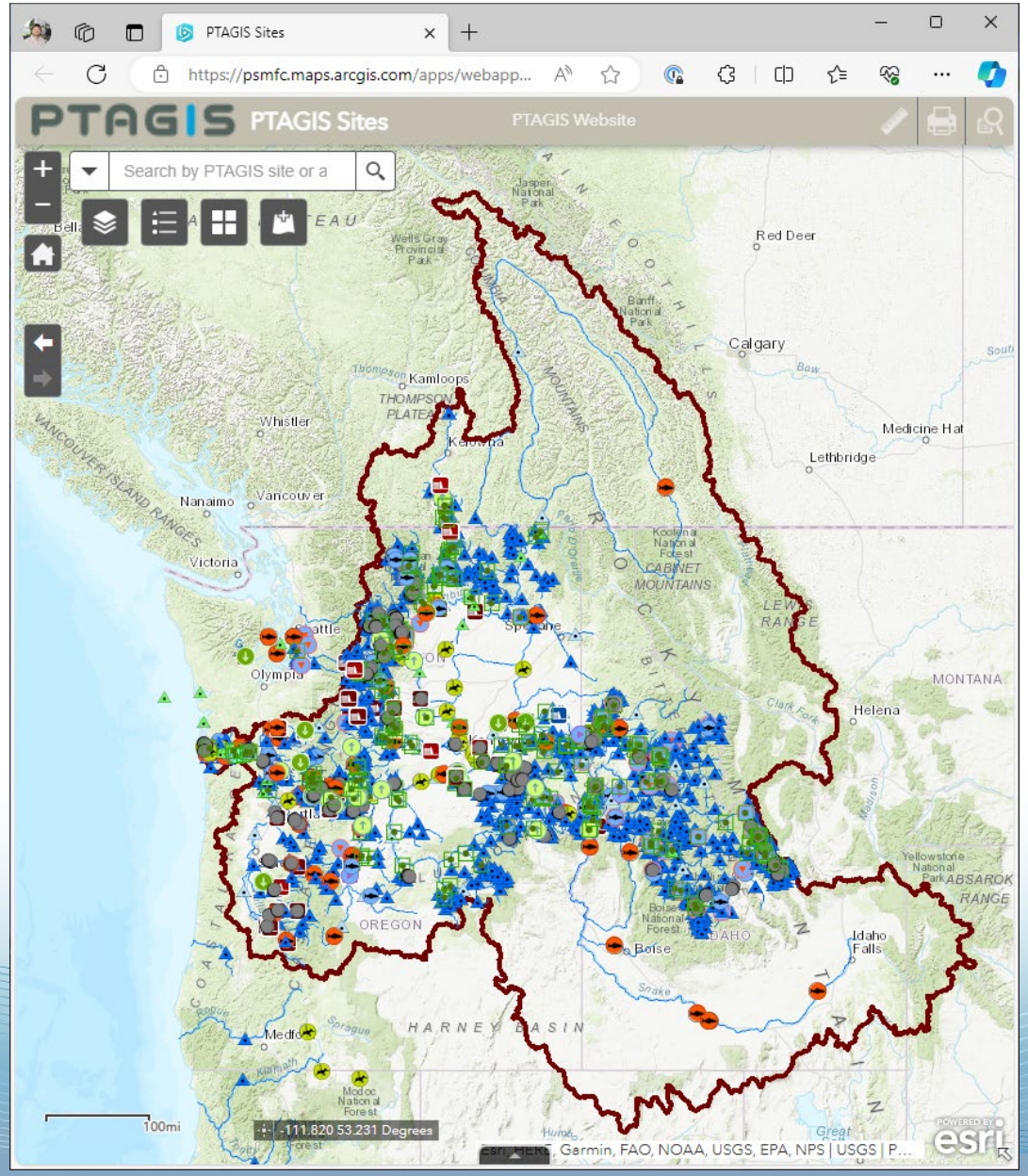
PTAGIS Program Overview: Data



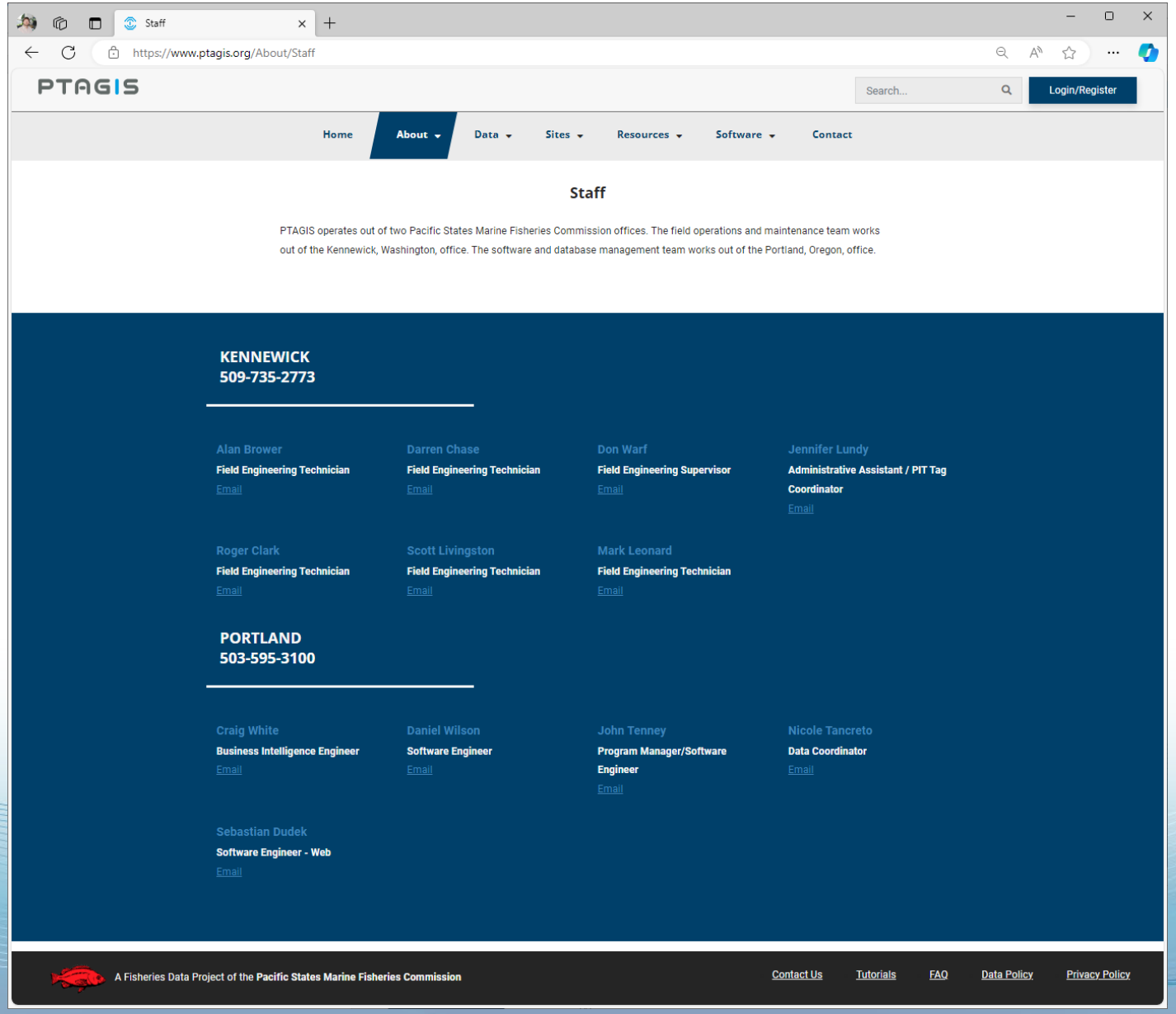
PTAGIS Program Overview: Data



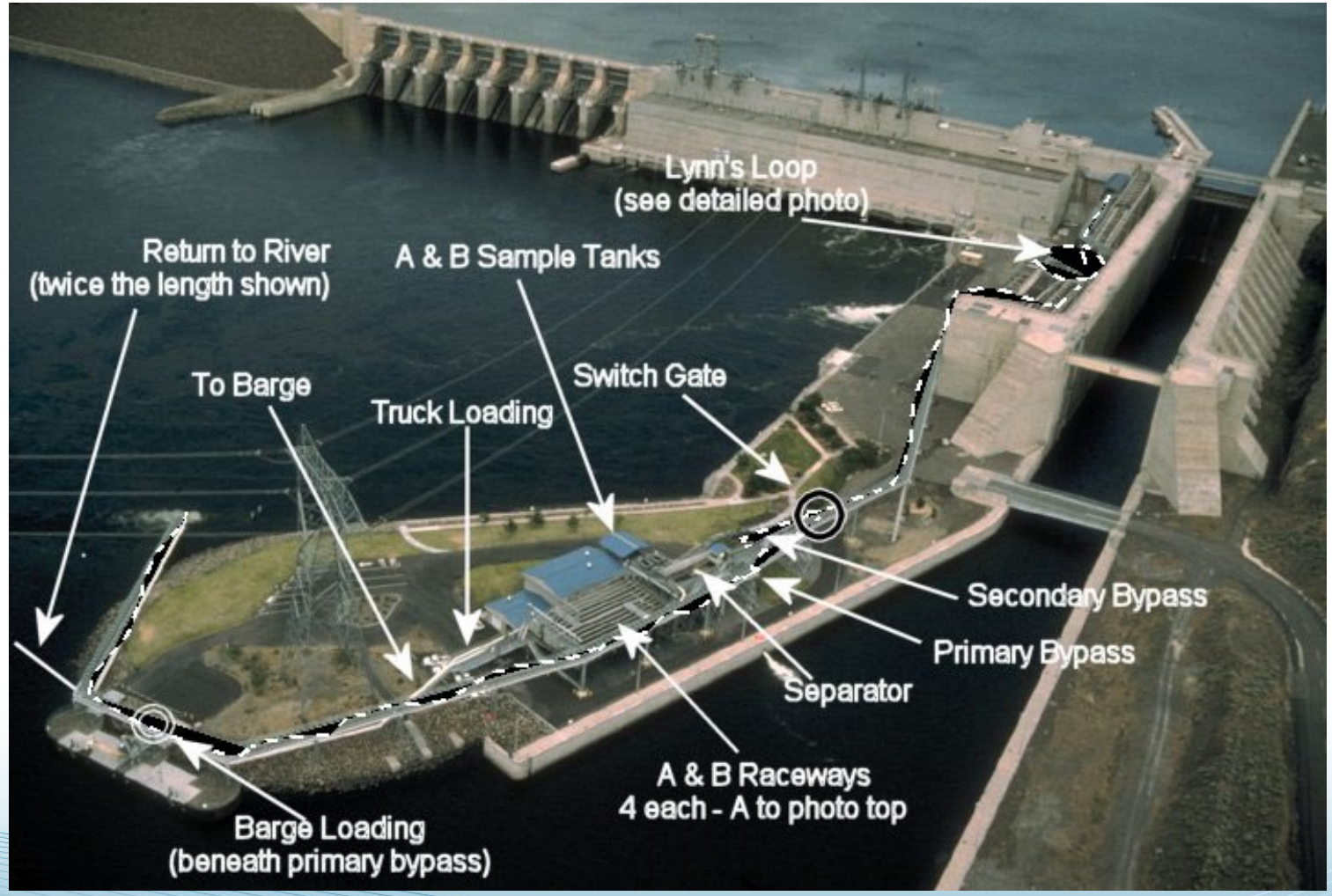
PTAGIS Program Overview: Data Collection Sites



PTAGIS Program Overview: Staff and Offices



PTAGIS Program Overview: Large Scale Interrogation Site



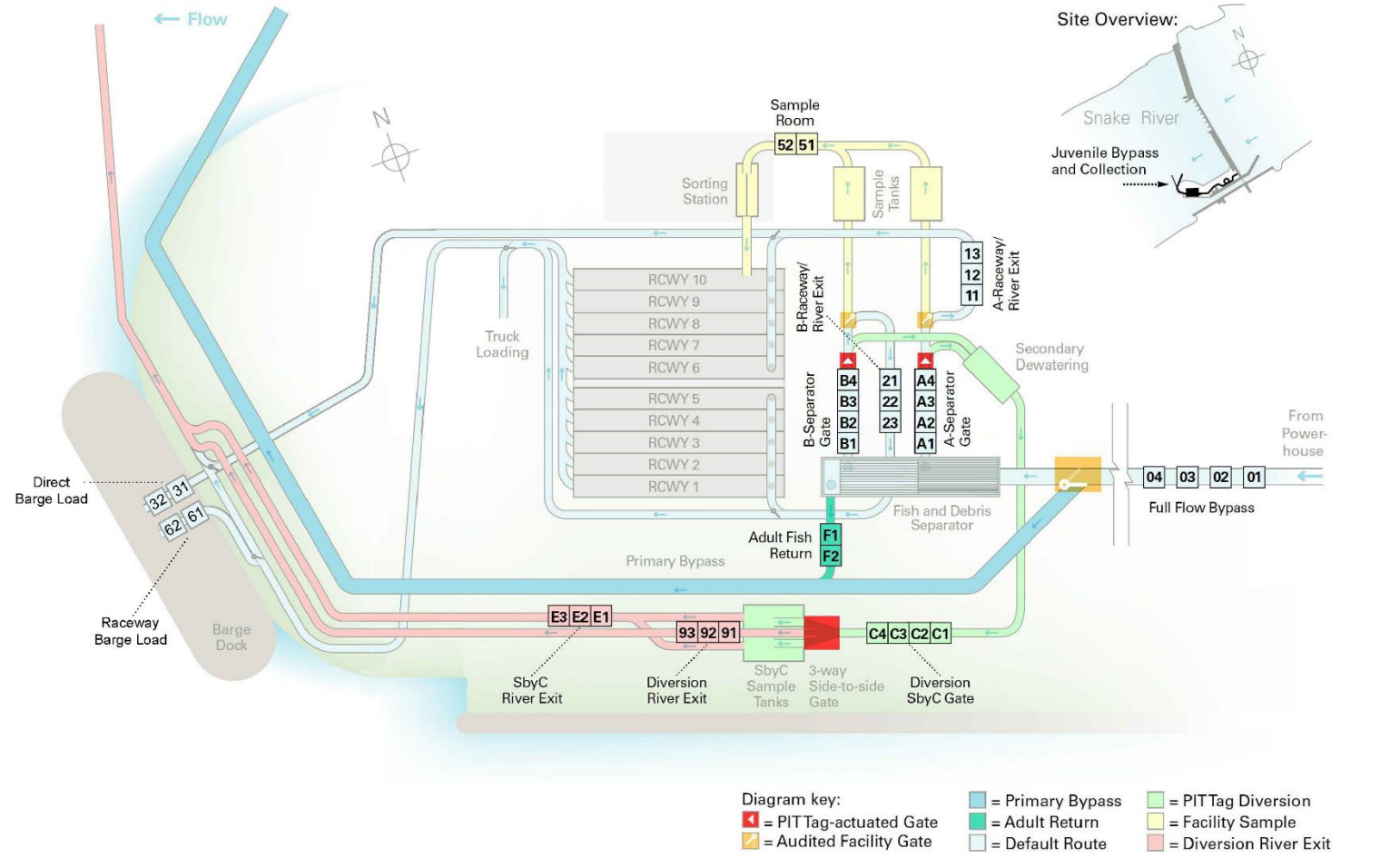
GOJ - LITTLE GOOSE DAM JUVENILE

PTAGIS Program Overview: Large Scale Interrogation Site O&M

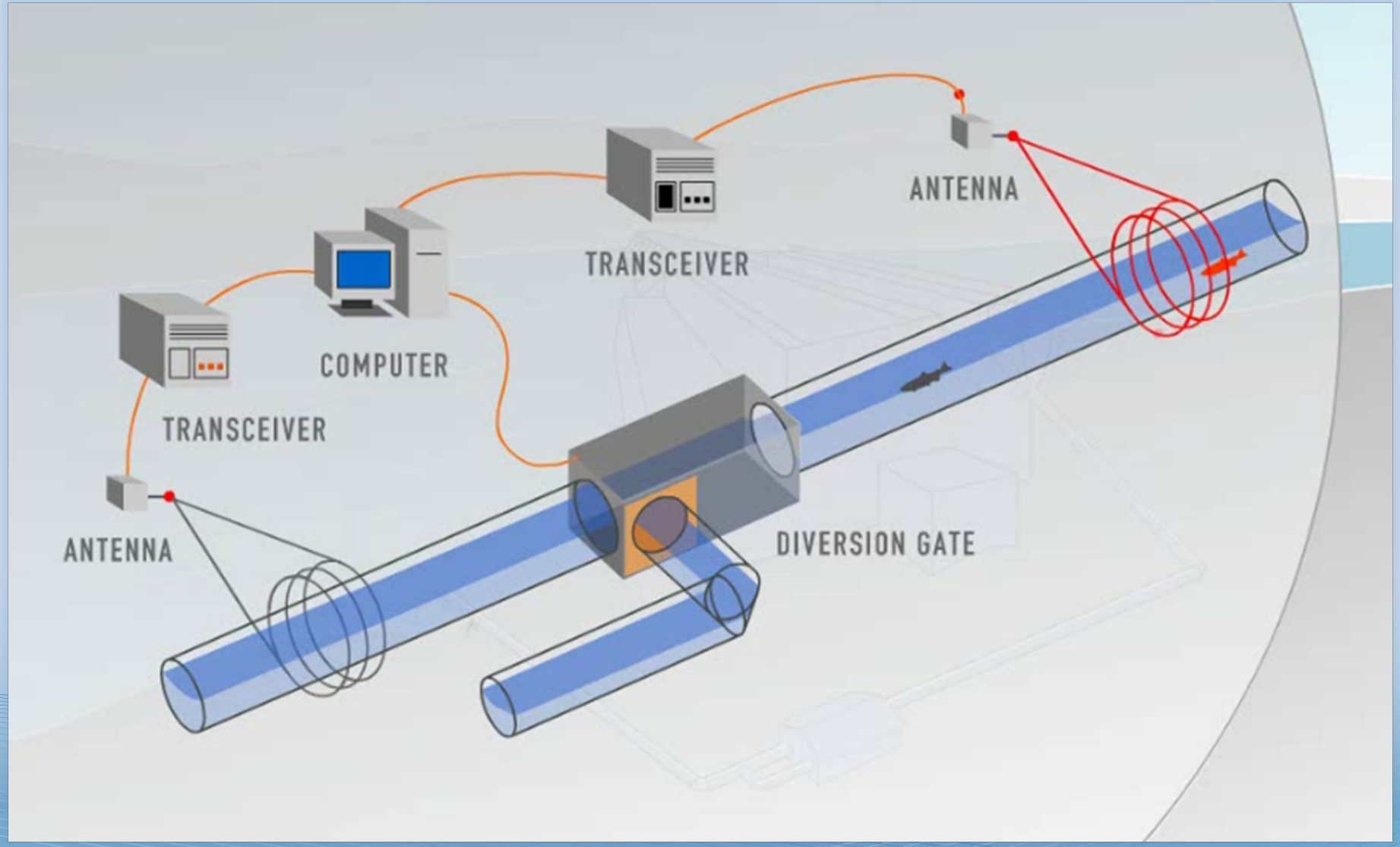
PTAGIS PIT Tag Information System
Columbia Basin | ptagis.org

Little Goose Dam Smolt Bypass and Collection (GOJ)

Interrogation Site Configuration 160. Drawing Rev 1.



PTAGIS Program Overview: Separation-by-Code (SbyC)



*graphic provided by Michael Reardon Design

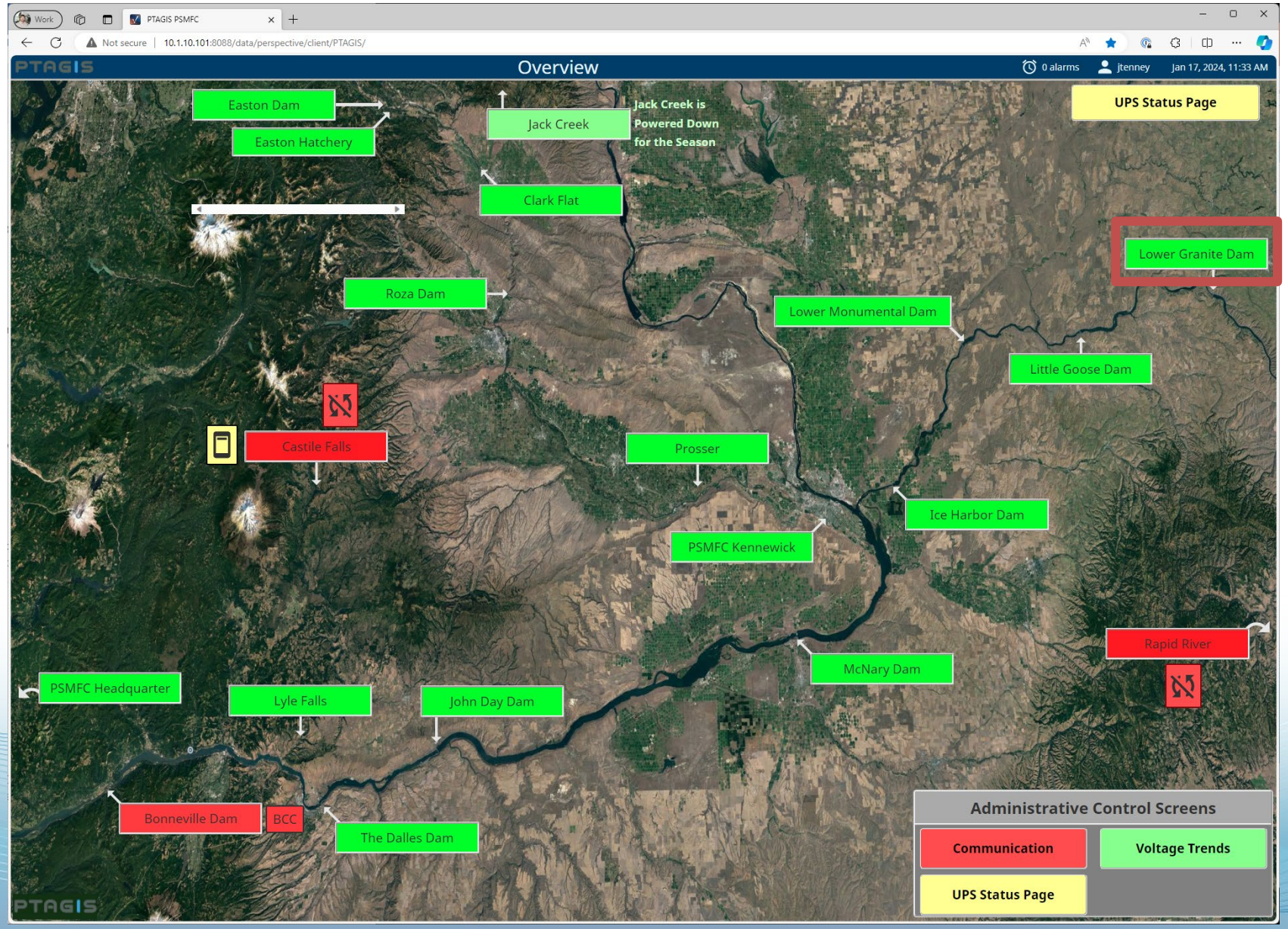
Kennewick Team Update: Electronic Slide Gate Upgrades

LMJ Electric Slide Gate Actuator

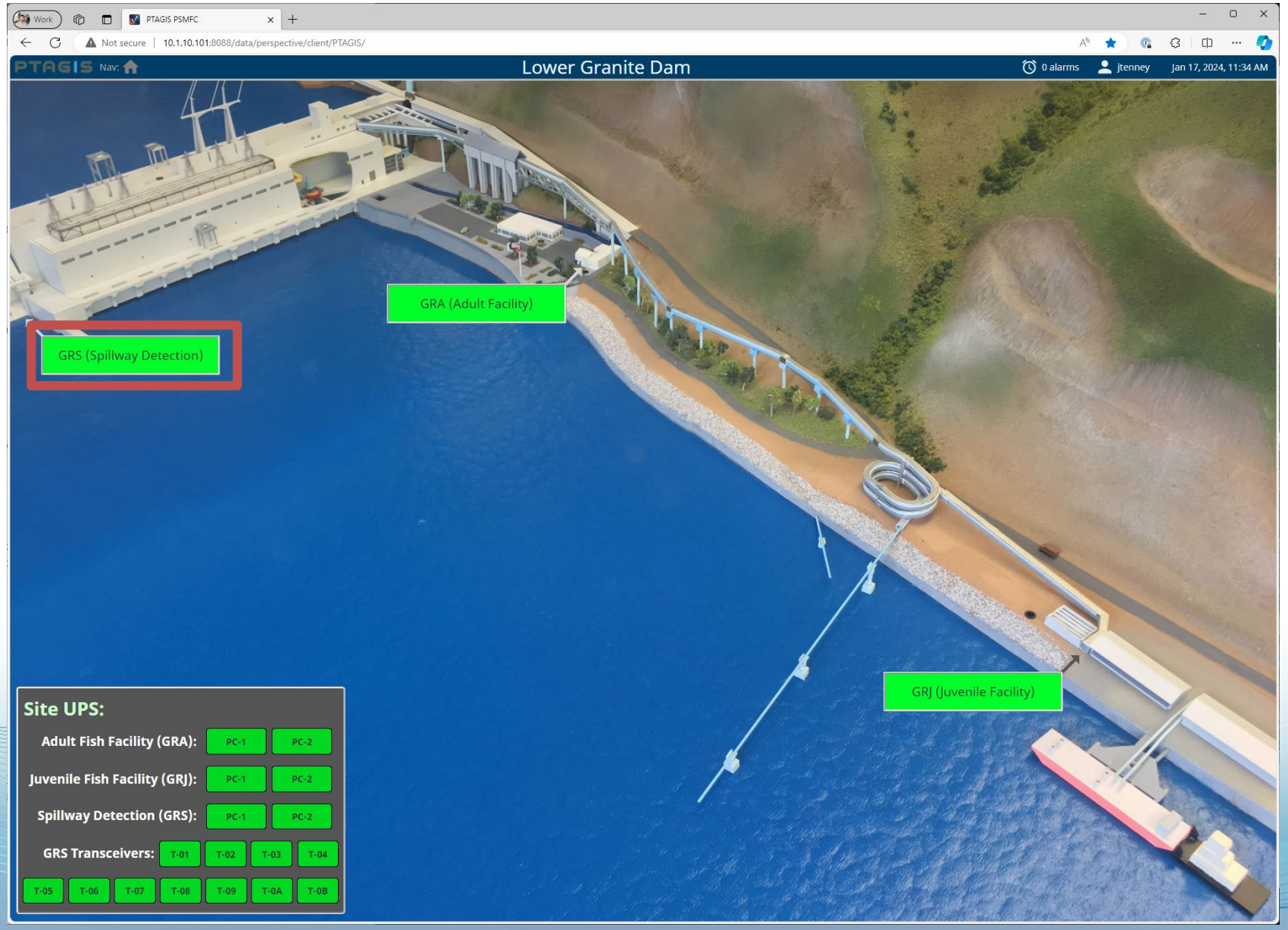
LMJ Slide Gate Drive and HMI

- Upgraded pneumatic slide gates to electronically-activated counterparts at LMJ
  - More durable
  - Require less maintenance
  - Quiet
- Slide gates at GRJ and GOJ to be upgraded next winter

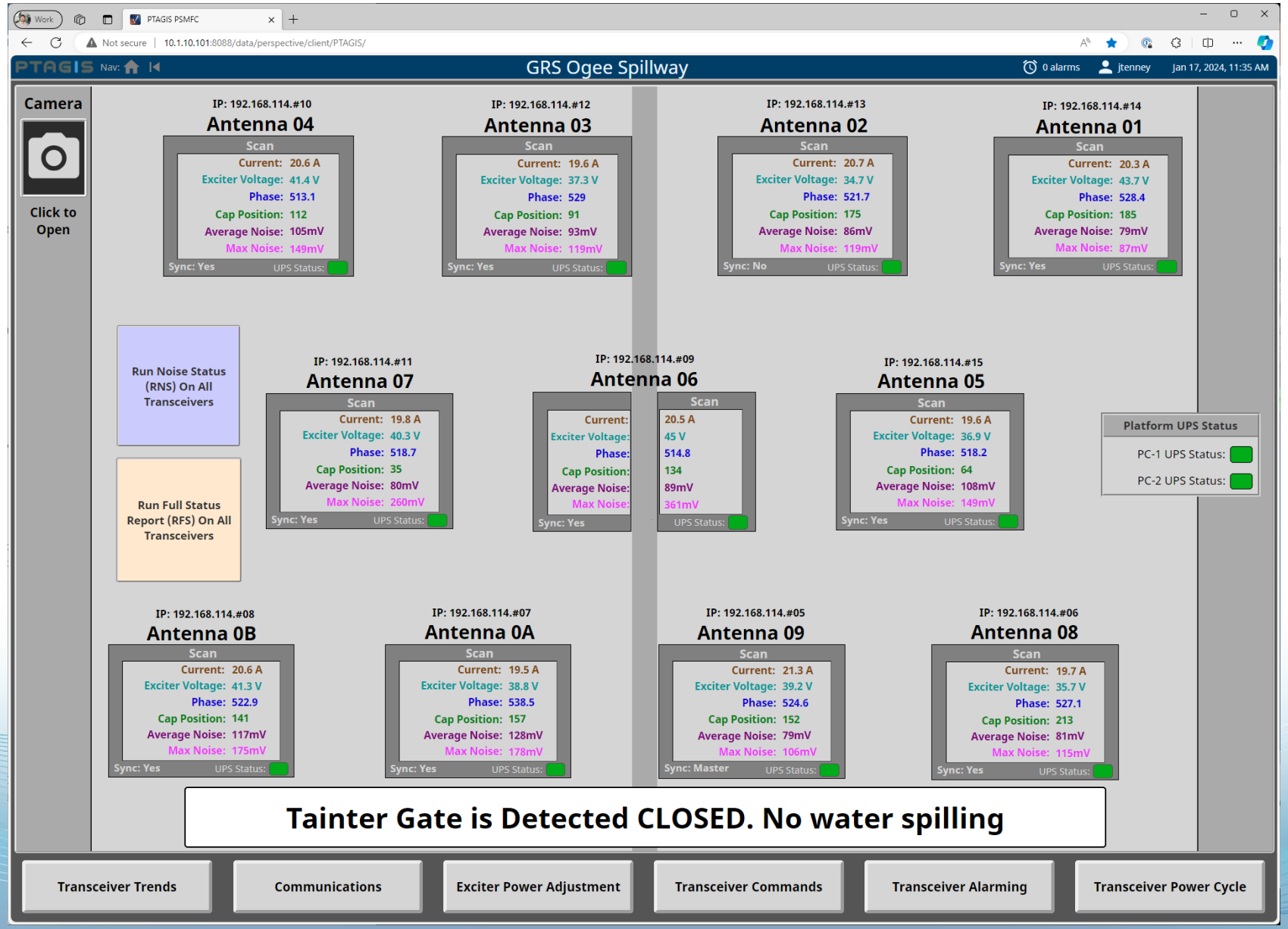
Kennewick Team Update: SCADA Integration for real-time O&M



Kennewick Team Update: SCADA Integration for real-time O&M



Kennewick Team Update: SCADA Integration for real-time O&M

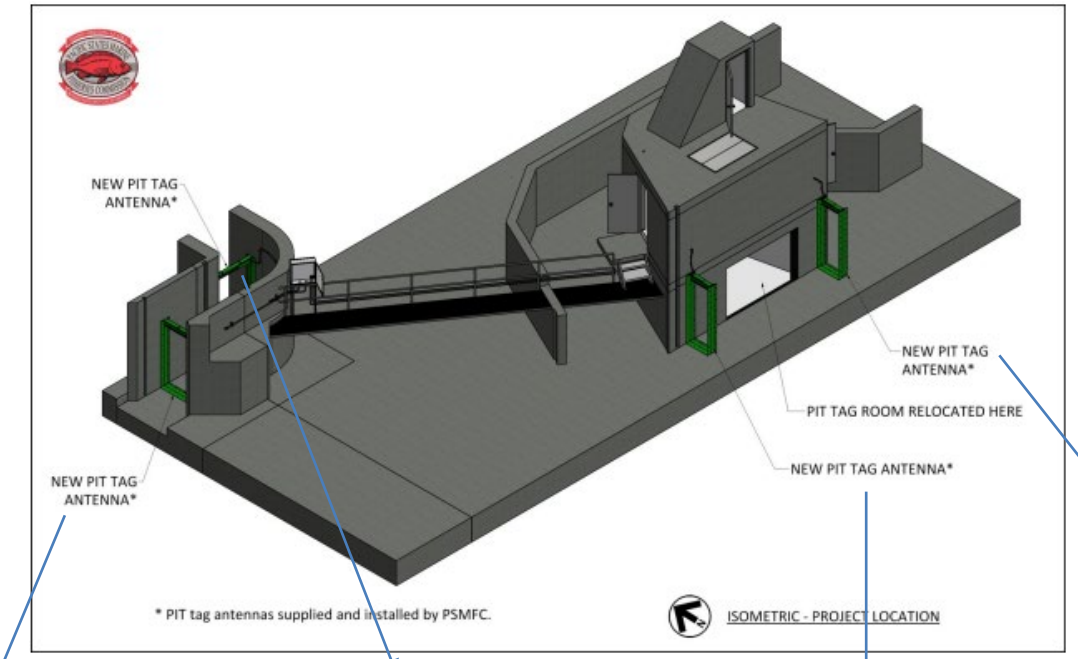


Kennewick Team Update: GRS Installation and O&M

Kennewick Team Update: GRS Installation and O&M

Kennewick Team Update: Bonneville Dam

Kennewick Team Update: BO2 - Bonneville Cascades Is. Ladder

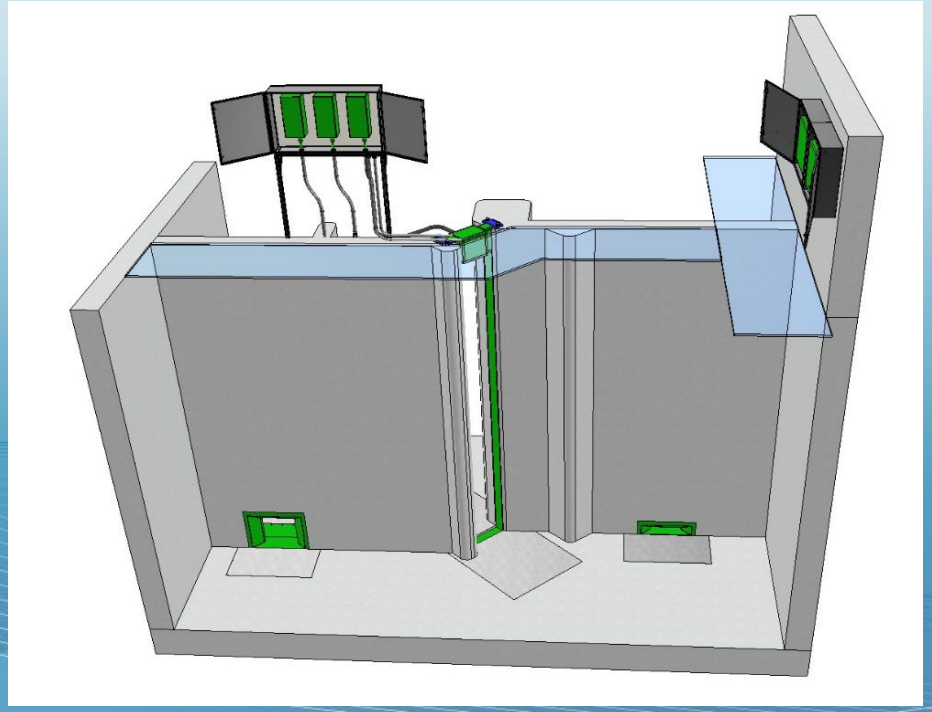


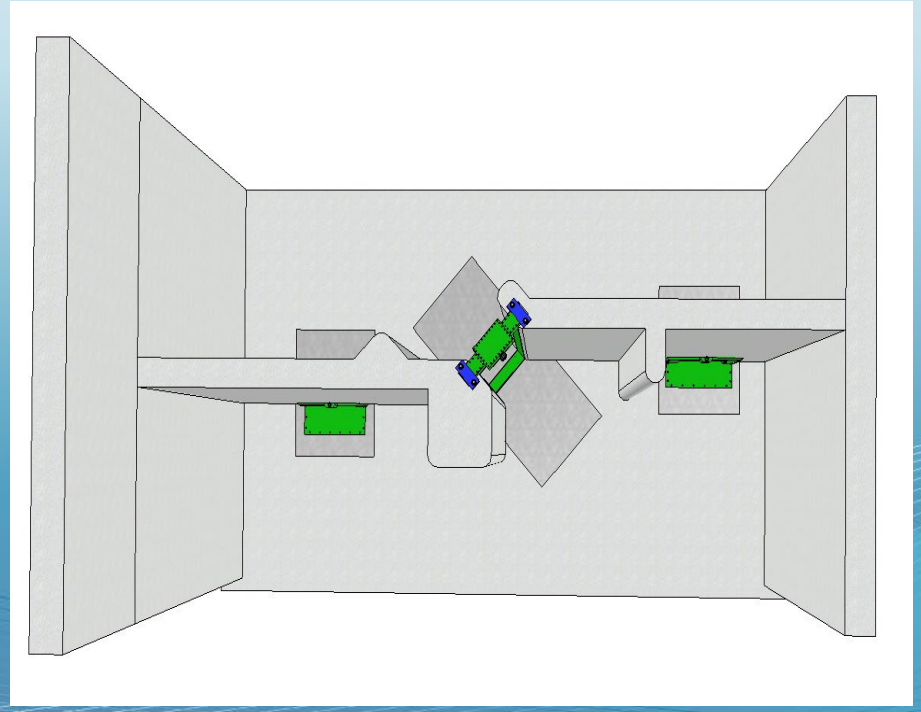
Fully operating in 2022

Kennewick Team Update: Bonneville Dam

Kennewick Team Update: BO4 Serpentine Section Remodel

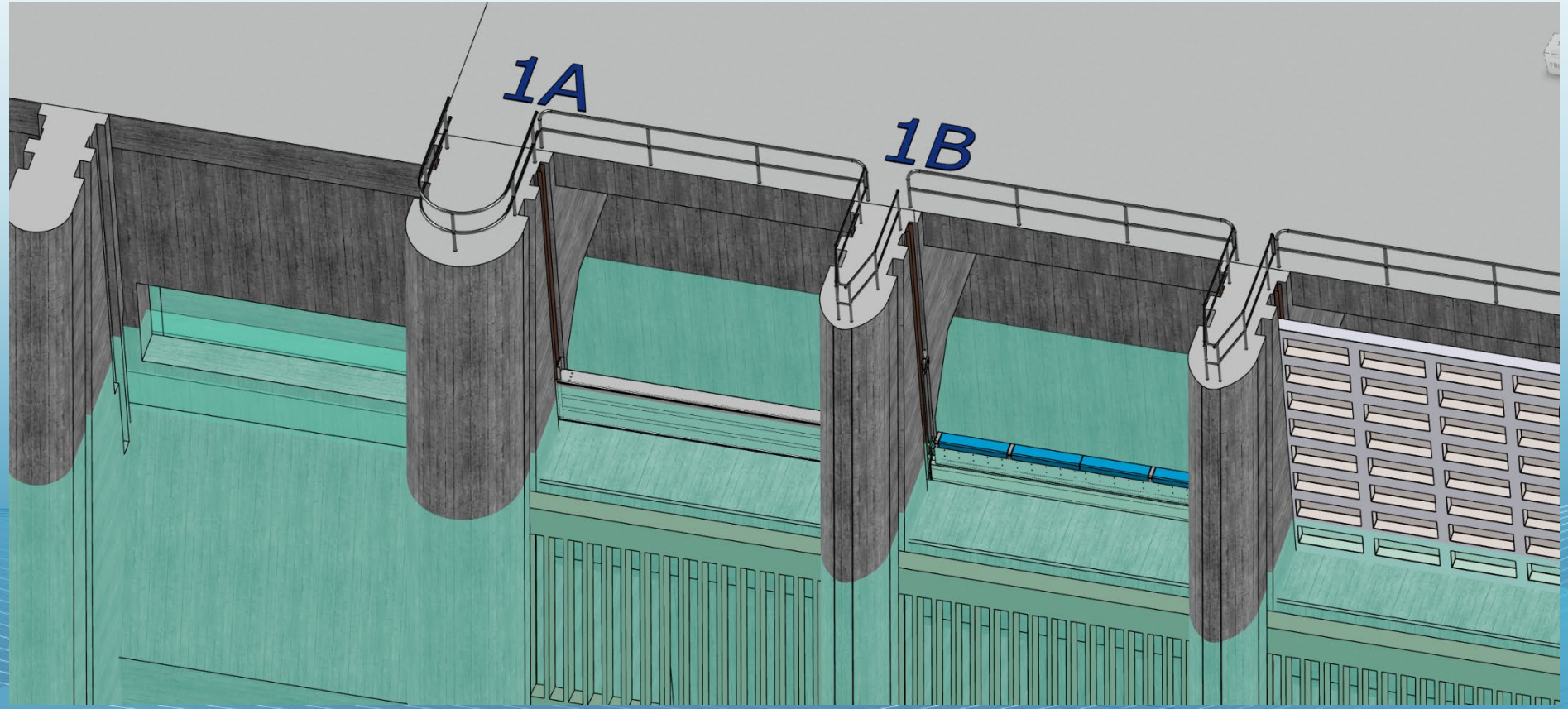
- Redesign started in 2022 with USACE Portland District
- 4 weir walls, each with 3 antennas, including lamprey slot
- Remodel to be completed next winter, 2025





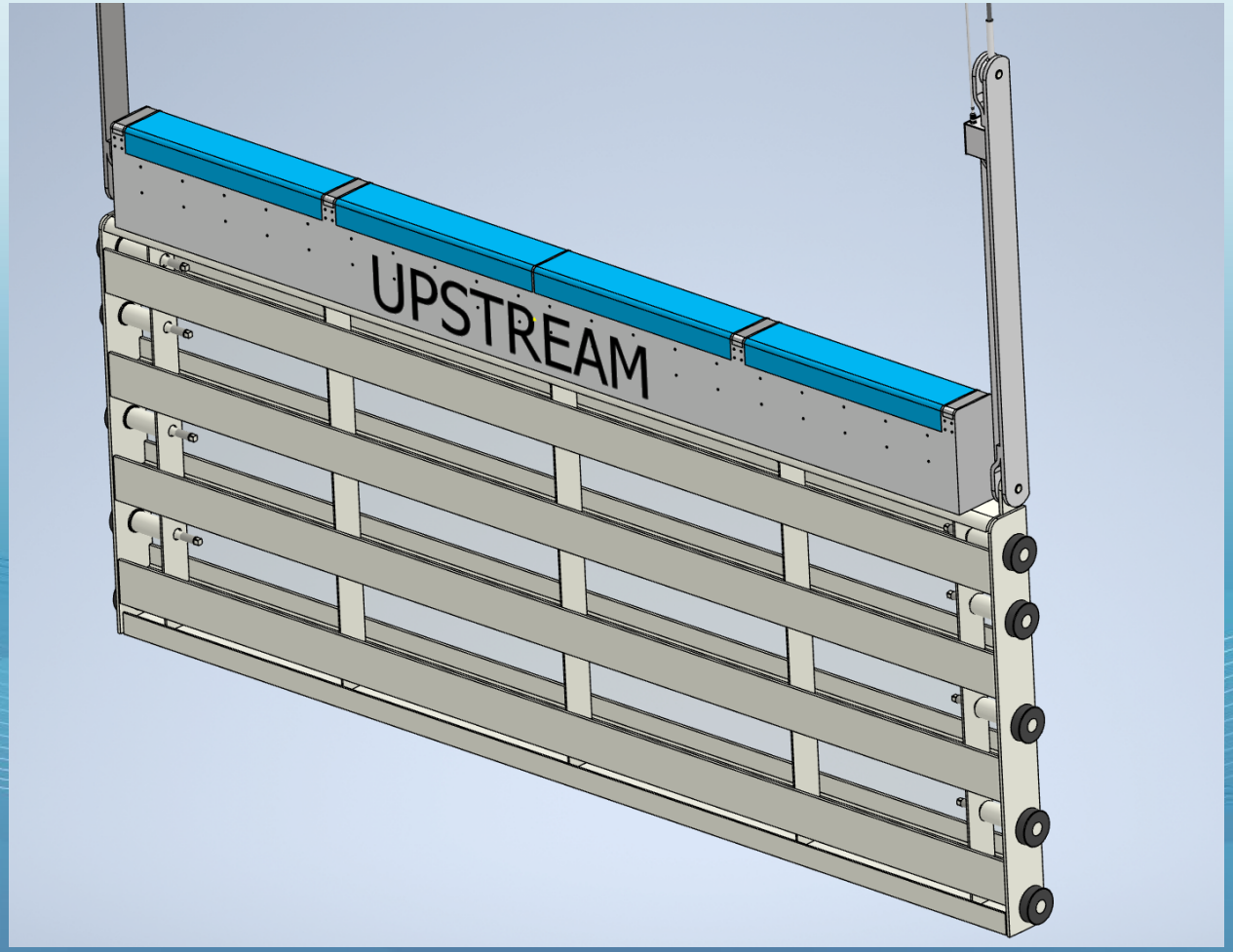
Kennewick Team Update: B1 Ice and Trash Sluiceway

Kennewick Team Update: Bonneville Ice and Trash Sluiceway Site

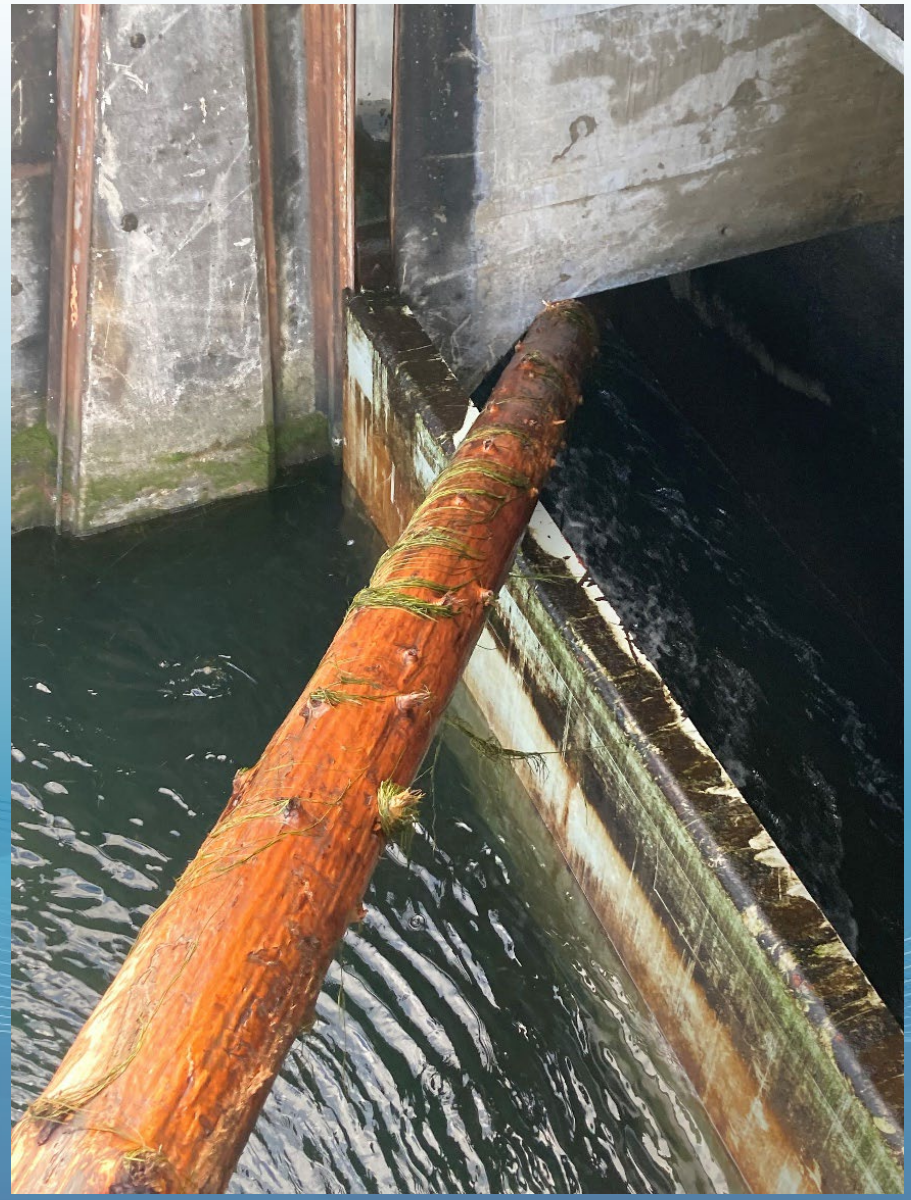


Kennewick Team Update: Bonneville Ice and Trash Sluiceway Site

- Ongoing project for past few years
- Conceptual design currently under USACE review



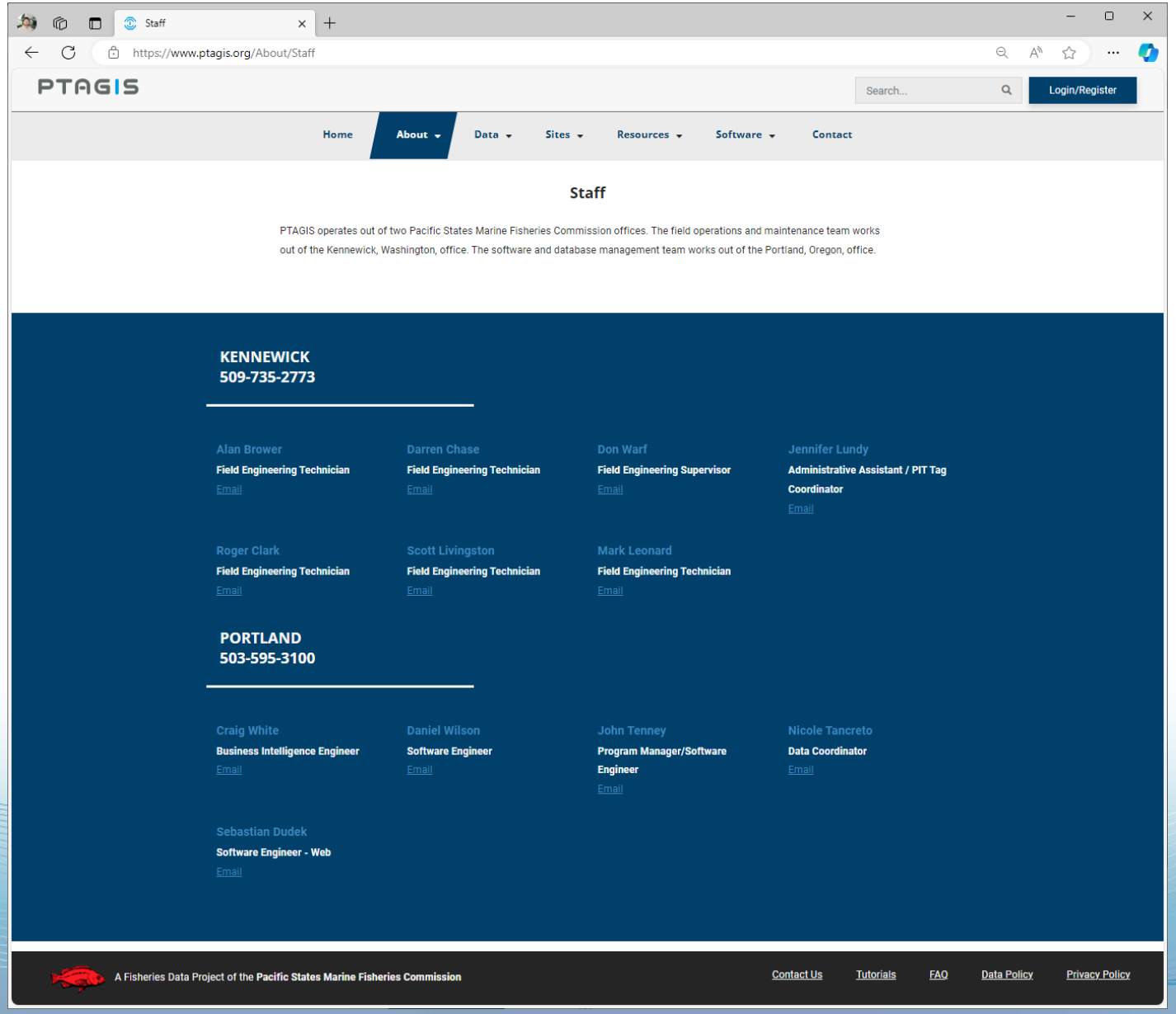
Kennewick Team Update: Bonneville Ice and Trash Sluiceway Site



Kennewick Team Update: Added PIT Tag Detection on Barge Load Lines

- Installed 2021 at active transportation sites: GRJ, GOJ, and LMJ

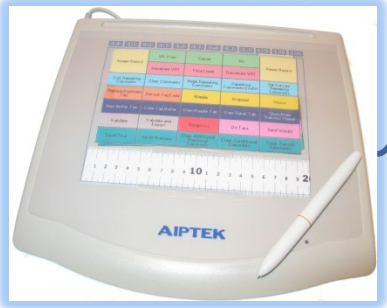
PTAGIS Program Overview: Staff and Offices



Portland Team Update: P4 Tagging Software

PIT Tag Reader

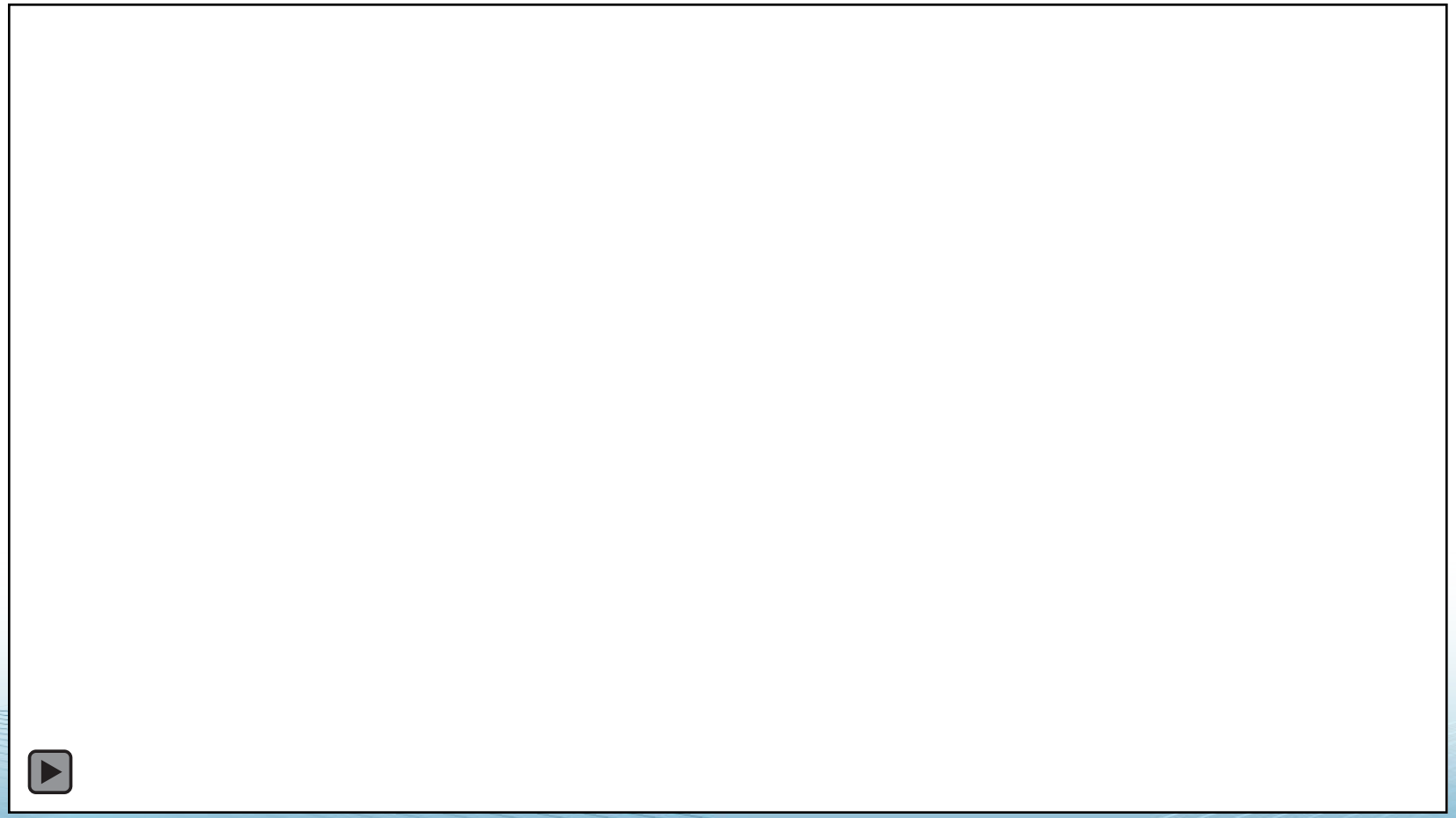
Digitizer (graphics) Tablet



Digital Balance

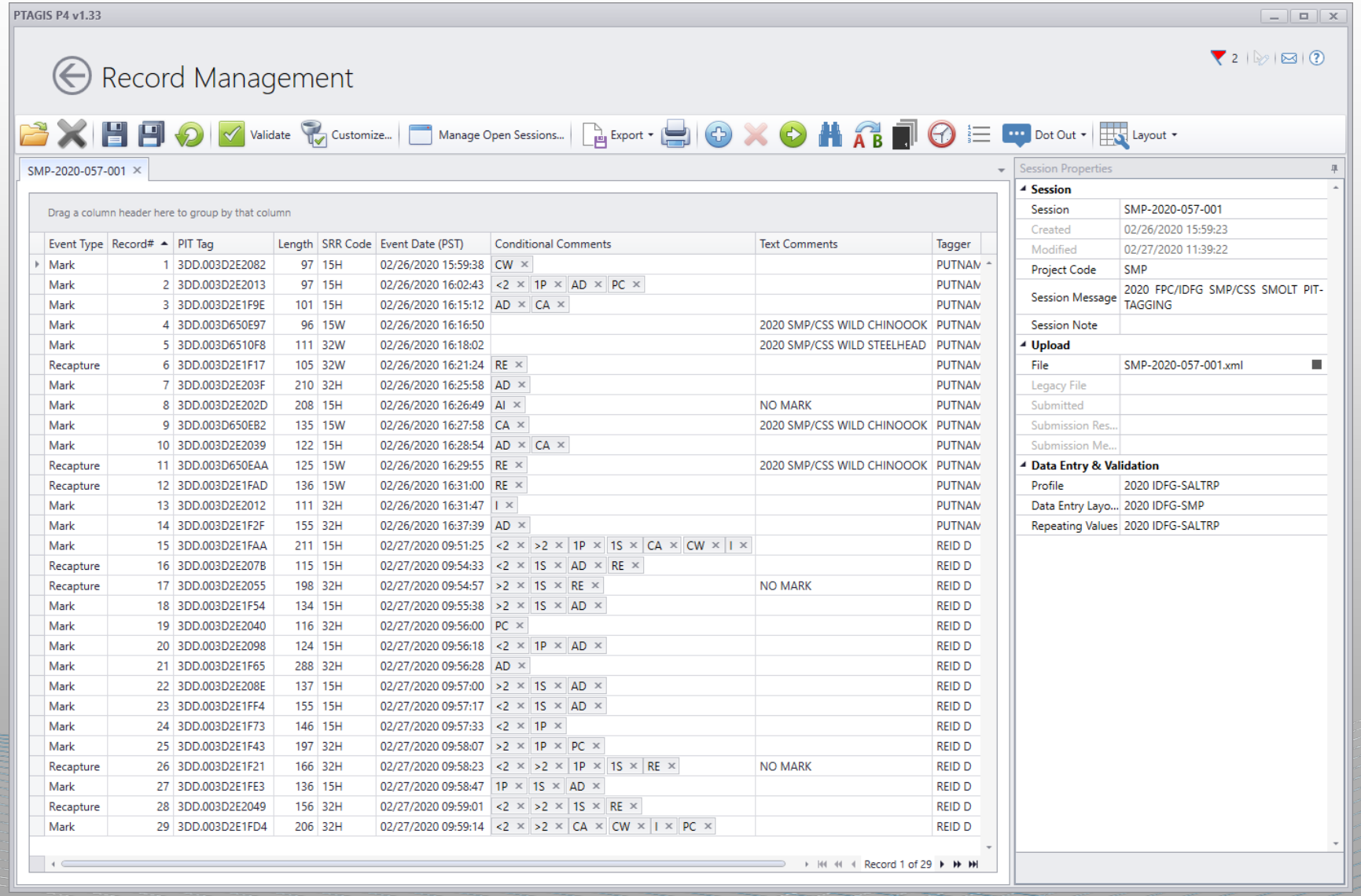
Serial to USB

Portland Team Update: P4 Tagging Software



*video provided by Scott Putnam, IDFG

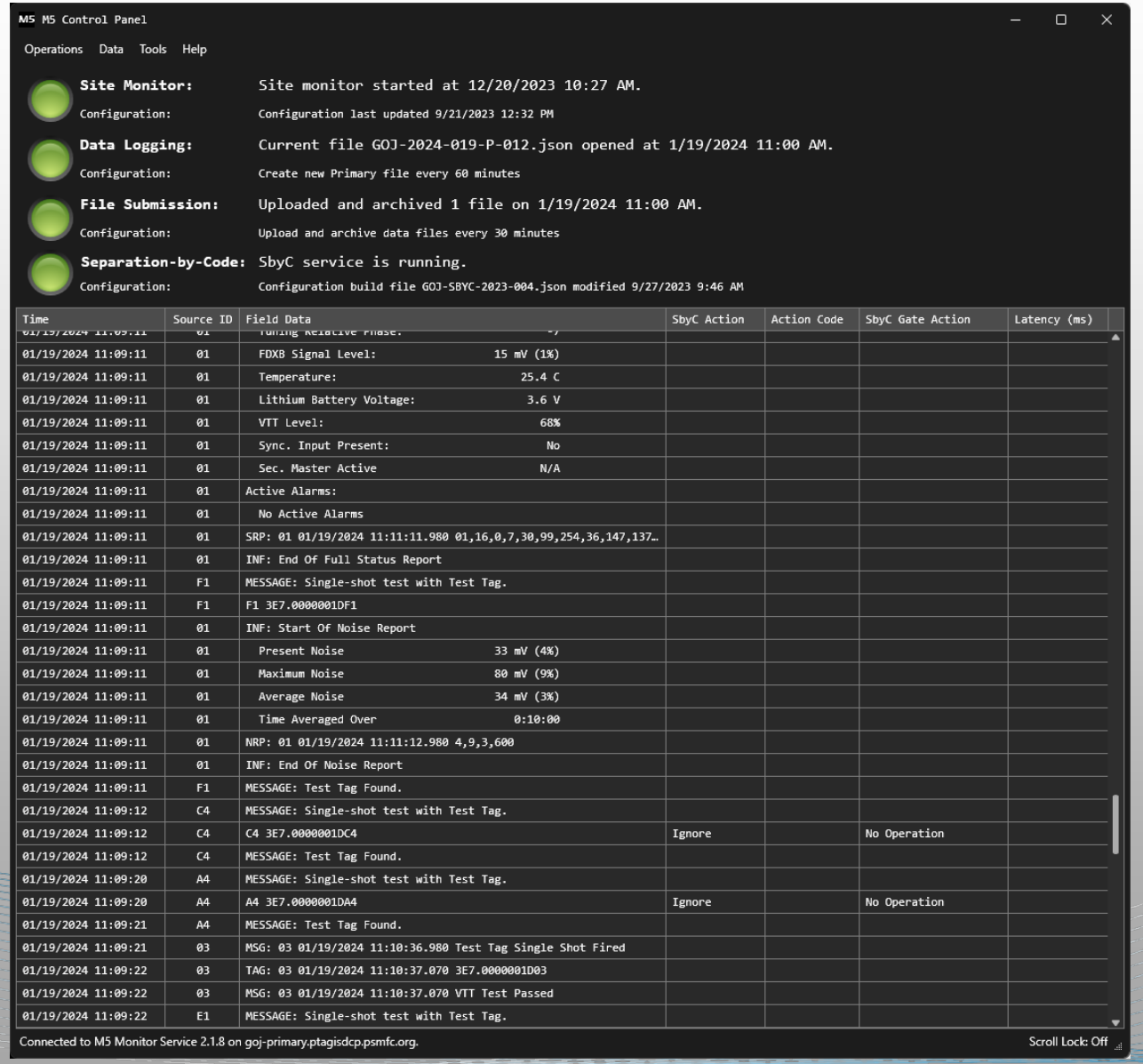
Portland Team Update: P4 Tagging Software



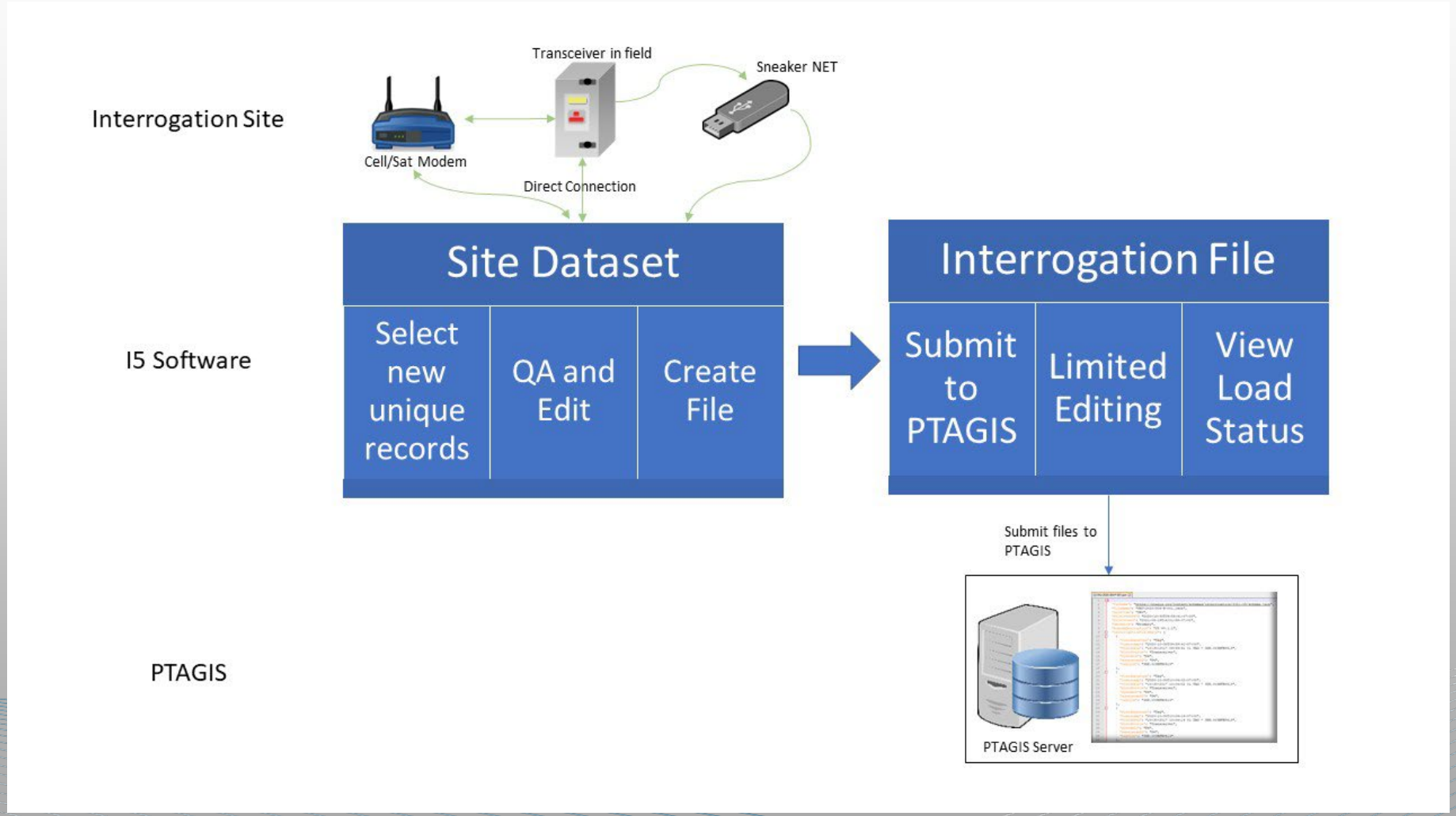
Portland Team Update: P4 => P5 Tagging Software

- P4 first released in 2016 with 26 updates since then
- Currently developing next-gen tagging software: P5
- Focus user group to receive beta release of P5 soon
- Production release of P5 in later half of 2024
- Upgraded technology + additional features

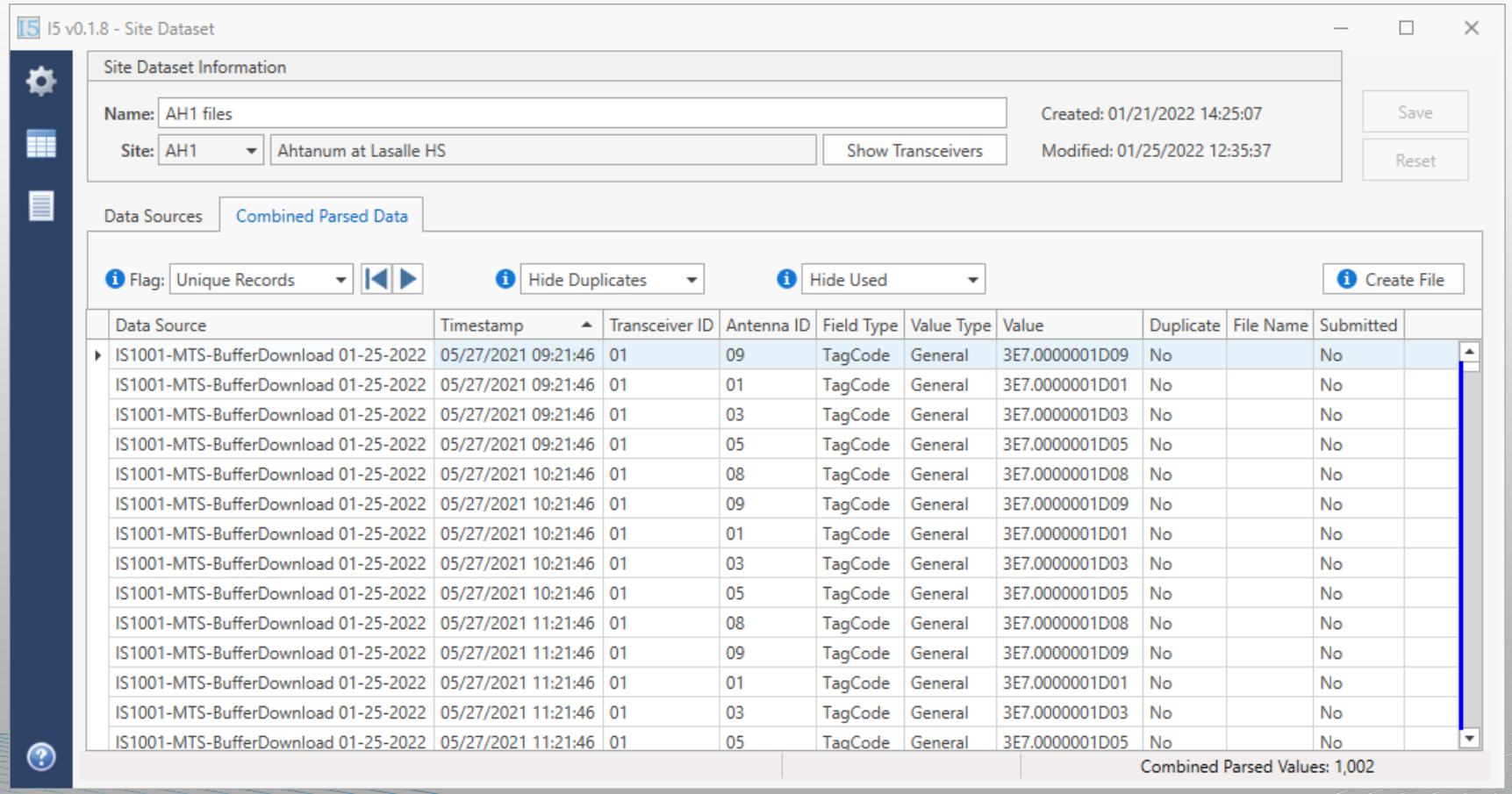
Portland Team Update: M5 Interrogation Software



Portland Team Update: I5 Interrogation Software



Portland Team Update: I5 Interrogation Software



Portland Team Update: PTAGIS Website

PTAGIS Data Specification

ptagis.org/content/DataSpecification/index.htm?context=10

PTAGIS Data Specification

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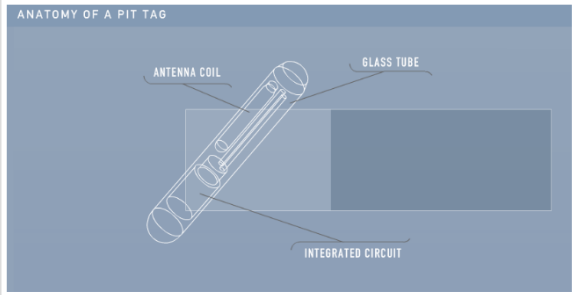
Introduction

Email Comments

Passive Integrated Transponder (PIT) tags have been used to monitor the movement and behavior of anadromous salmonids in the Columbia and Snake River basins since 1987. The Columbia Basin PIT Tag Information System (PTAGIS) was implemented in 1991 to manage and serve PIT tag data collected in the Columbia Basin. PTAGIS develops software used to collect and contribute PIT tag data; validates, stores and makes those data available for download via the PTAGIS website; and operates large scale PIT tag detection sites throughout the Columbia Basin. In 2002, the scope of the PTAGIS program expanded to include resident and semi-anadromous stocks of rainbow and cutthroat trout, bull trout, lamprey, sturgeon, and other species. This project is an important prerequisite component of all PIT tag research conducted for the Bonneville Power Administration (BPA) Fish and Wildlife Program.

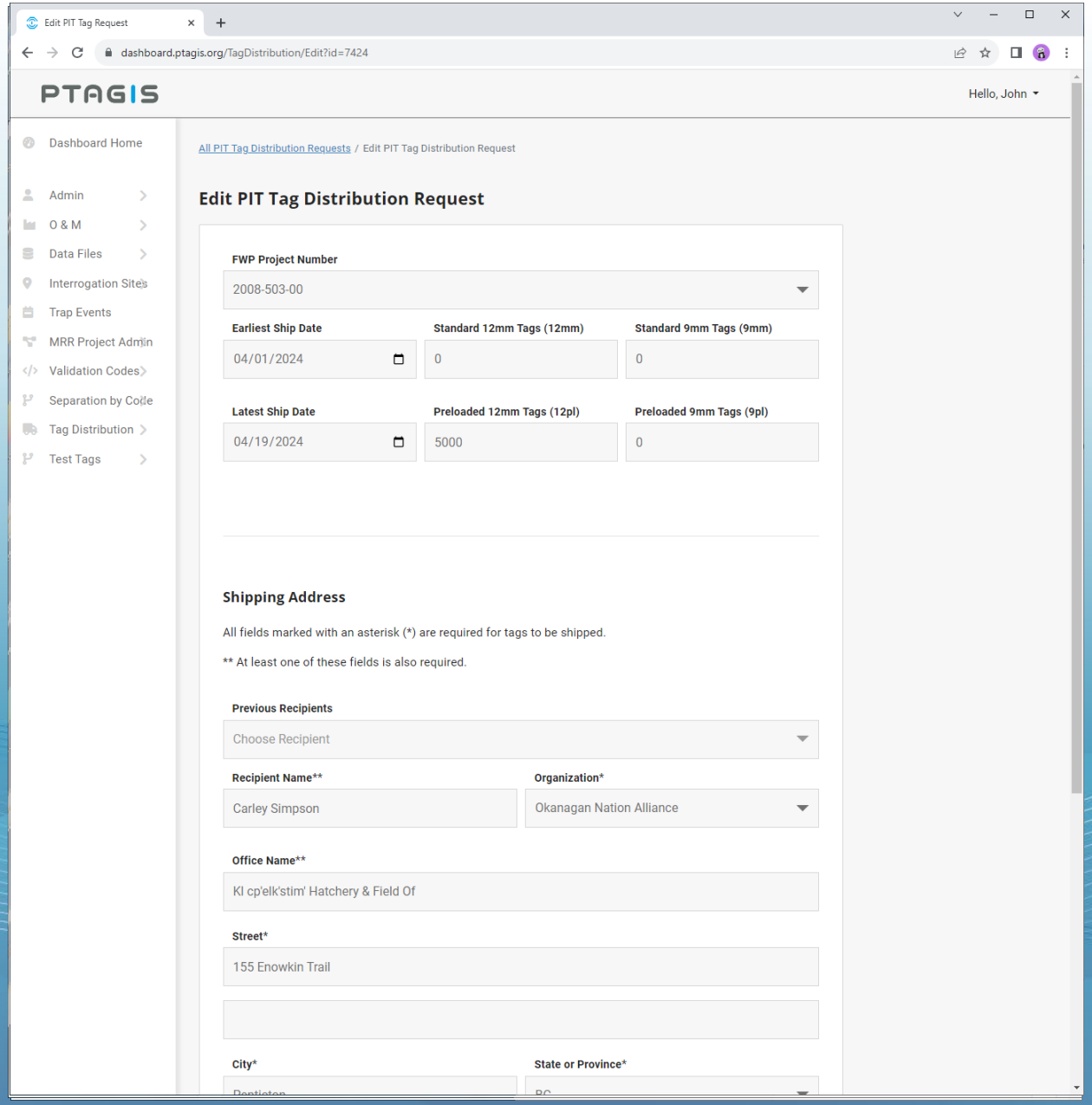
PTAGIS is a regional data system for the Columbia River Basin.

The PIT tag is an RFID tag typically measuring 9 to 12 mm long coded with one of 35 billion unique codes. The tag can be automatically detected and decoded in situ – eliminating the need to sacrifice, anesthetize, handle, or restrain fish after the initial tagging event. The PIT tag was developed in 1987 as a research and management tool for monitoring the movement of juvenile and adult salmonids in the Columbia River Basin.

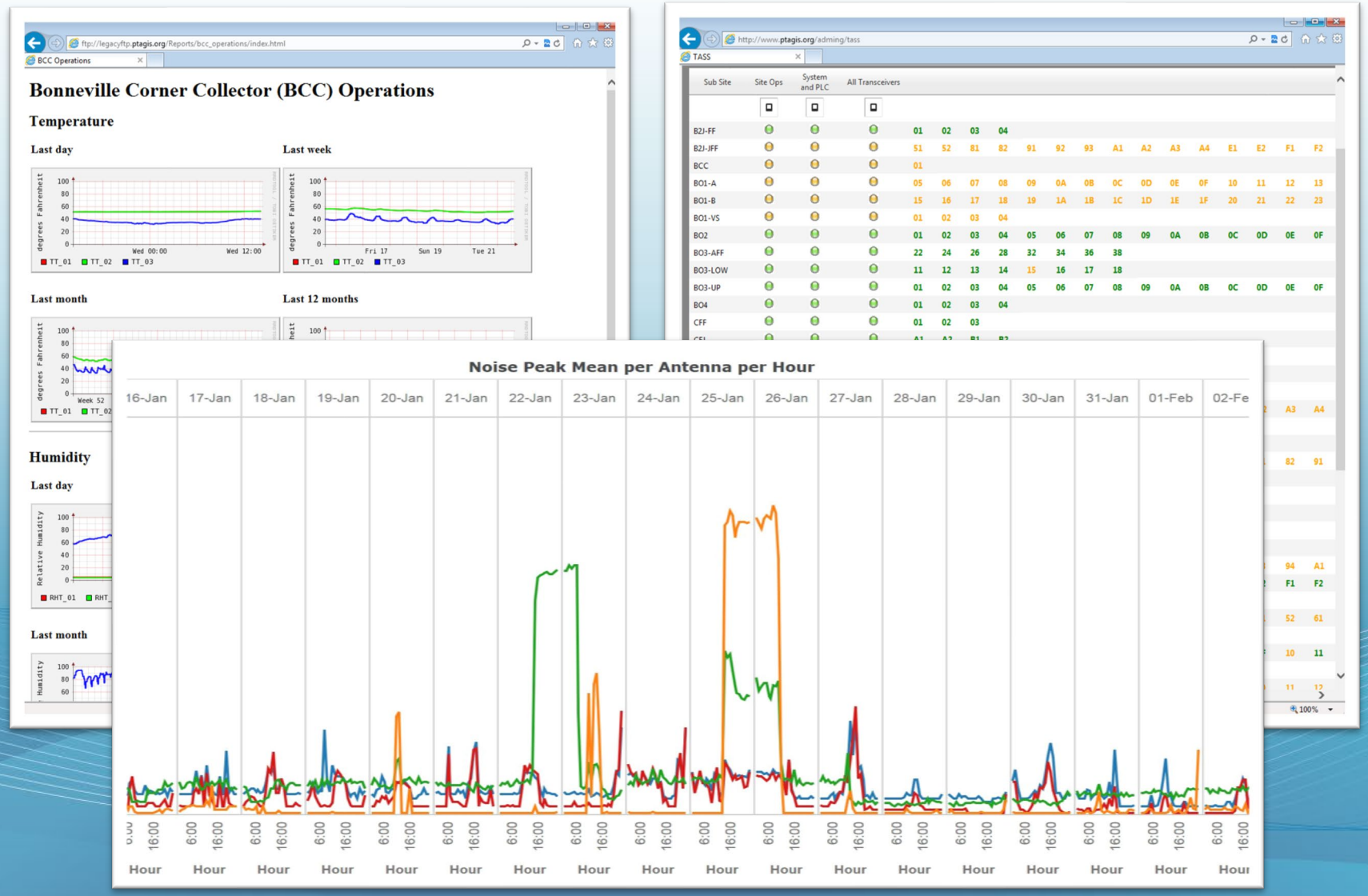


PTAGIS
Version: 1.07
Published: 9/6/2023

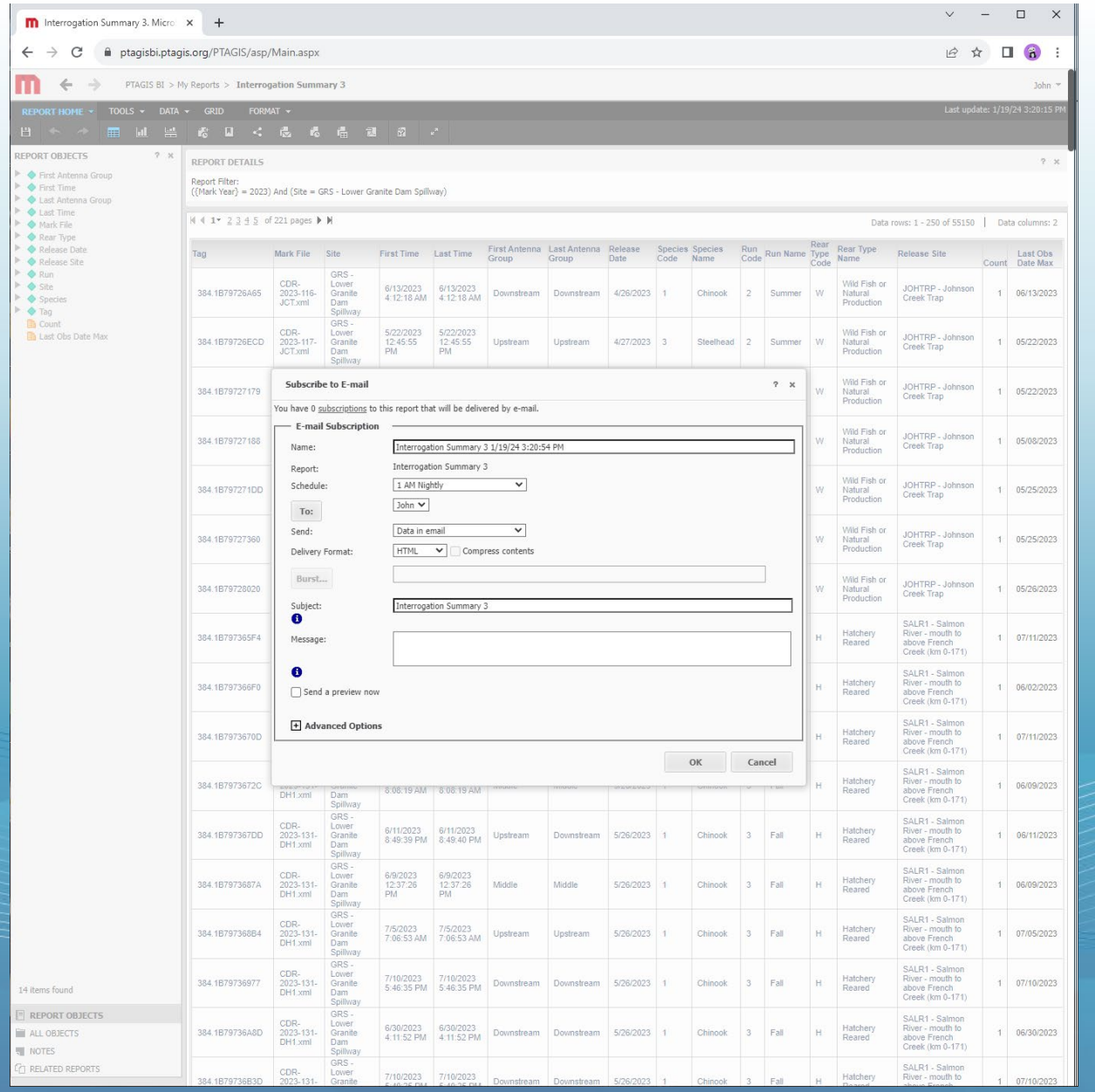
Portland Team Update: PTAGIS Dashboard Website



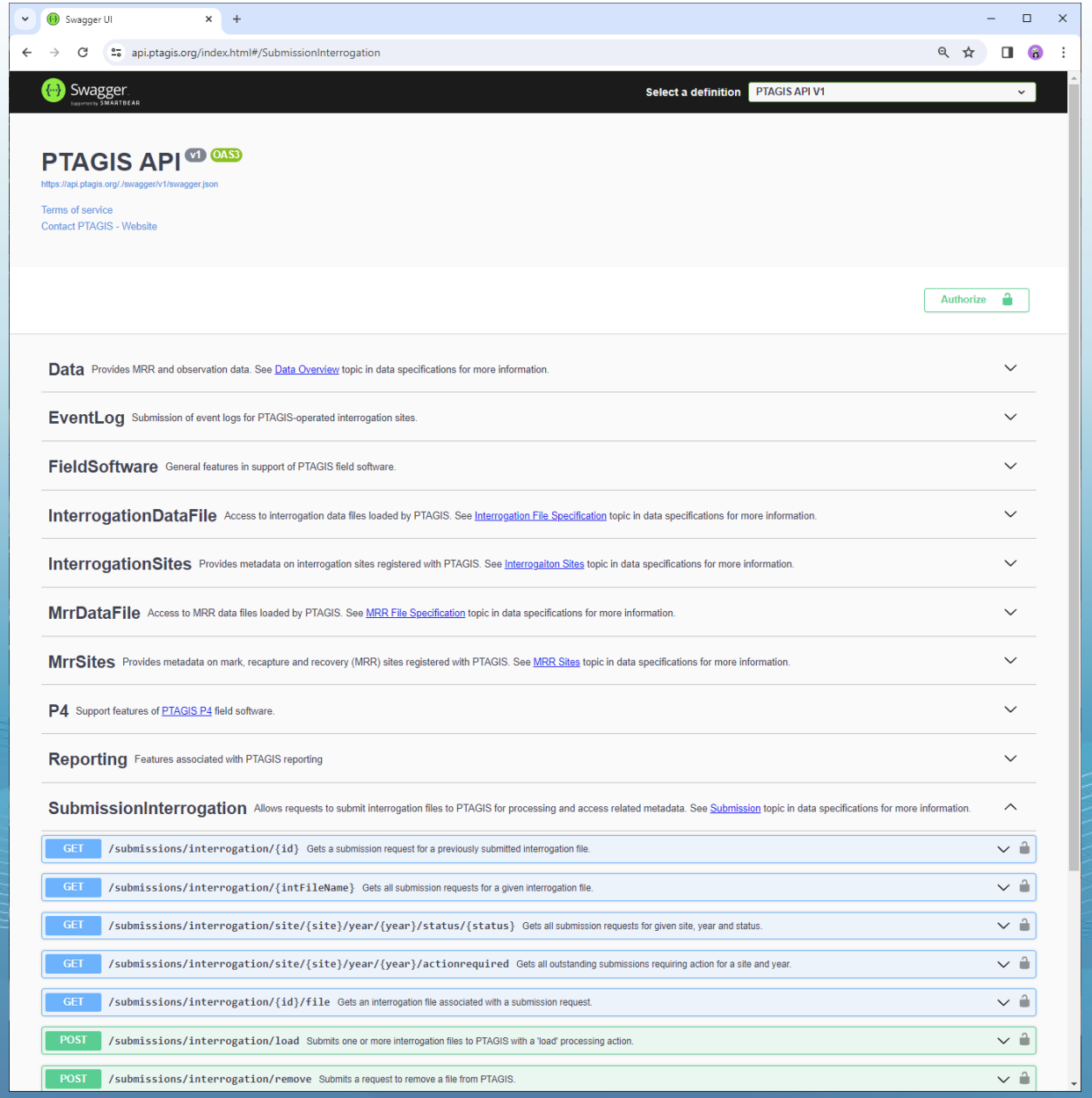
Portland Team Update: PTAGIS Dashboard Website – O&M Reports



Portland Team Update: PTAGIS Advanced Reporting

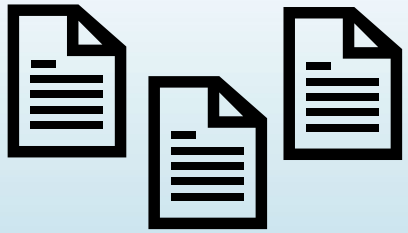


Portland Team Update: PTAGIS API

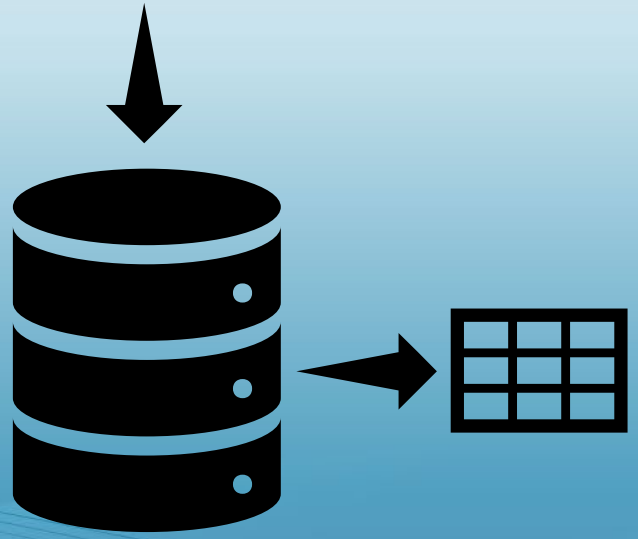


Portland Team Update: PTAGIS Database Utilization

Data input into database in 2023:



925,497 data files



711,096,655
data and diagnostic records
(81,175 records/hour avg.)

Portland Team Update: PTAGIS Database Utilization

Data output from database in 2023:

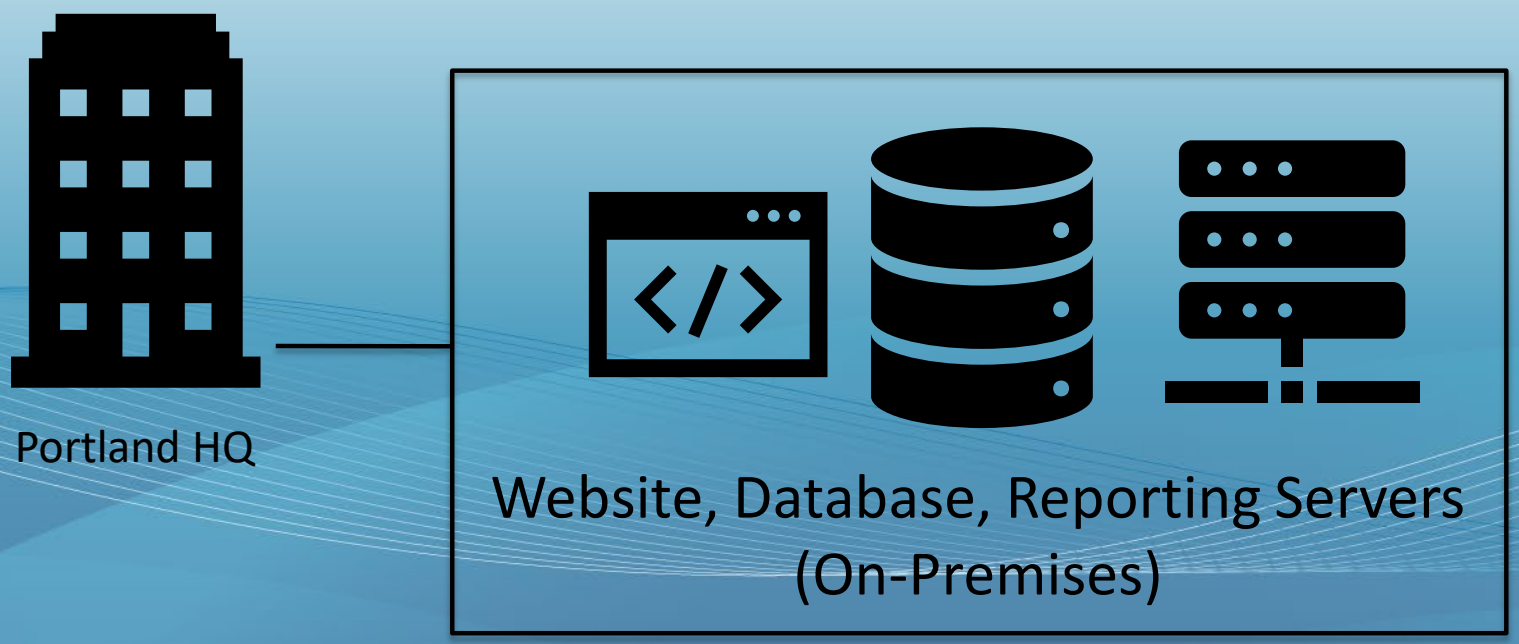
603,683 data reports

27,655,698,318

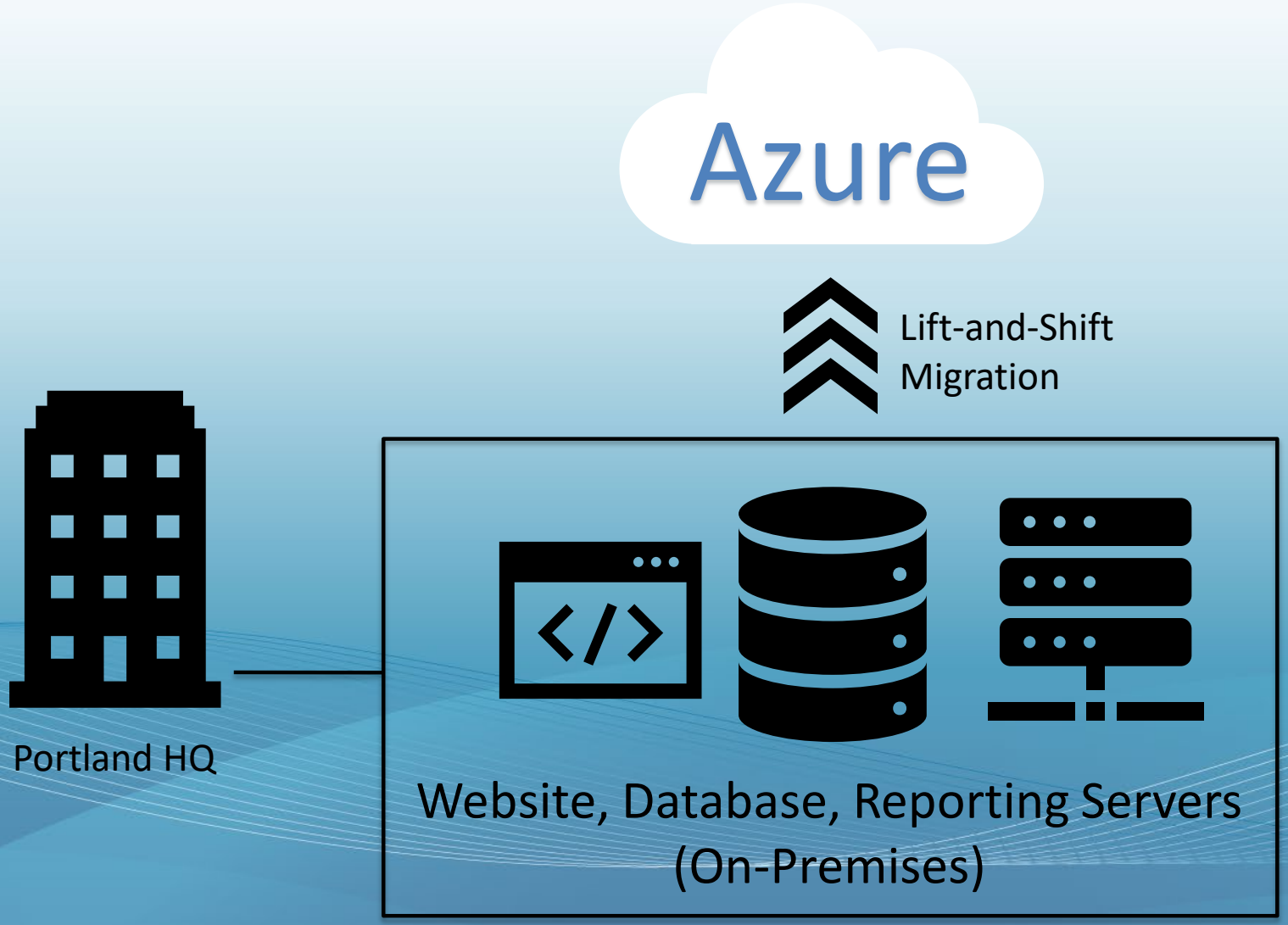
data and diagnostic records

(3,157,043 records/hour avg.)

PTAGIS to the Cloud…and Back



PTAGIS to the Cloud…and Back



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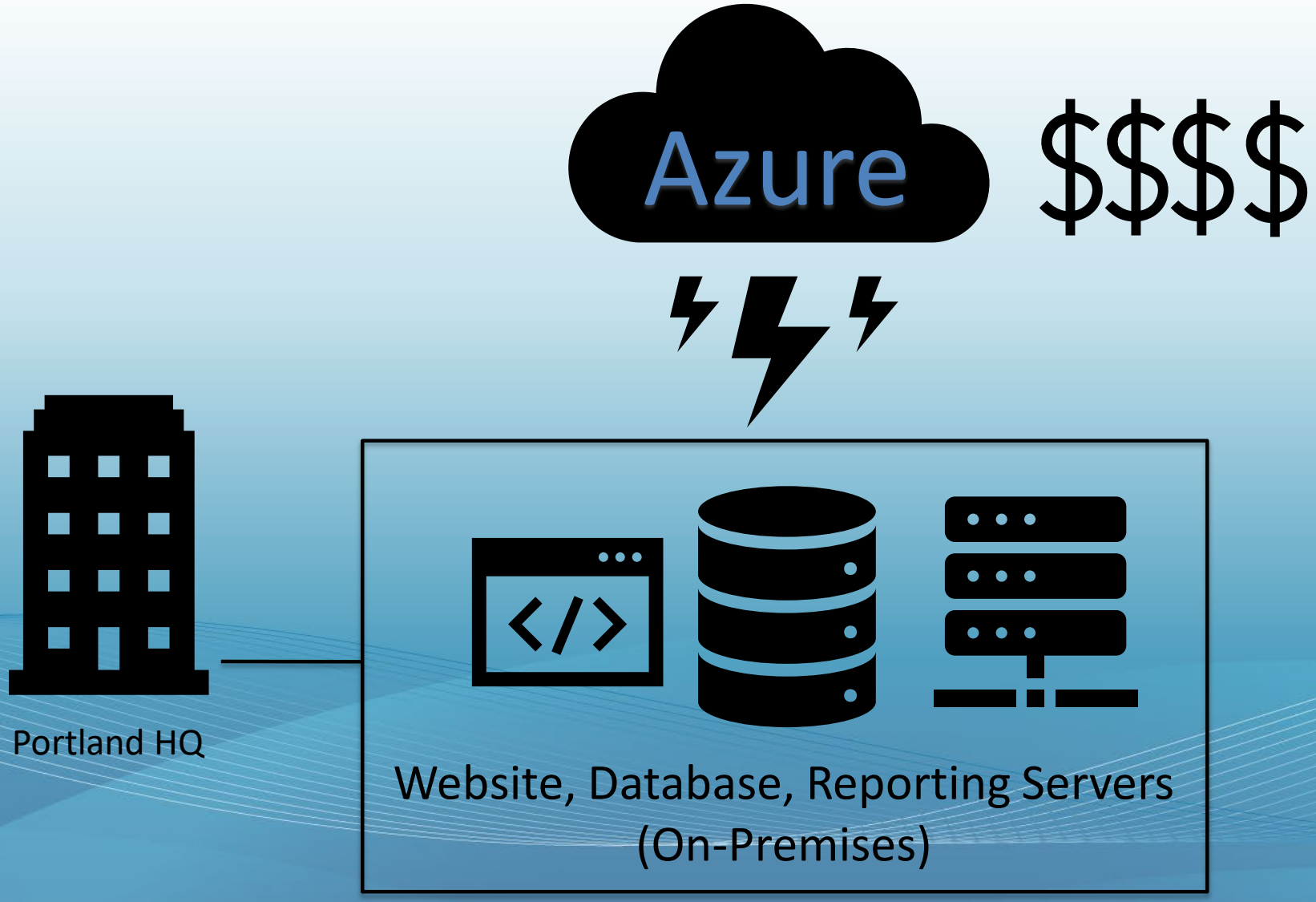
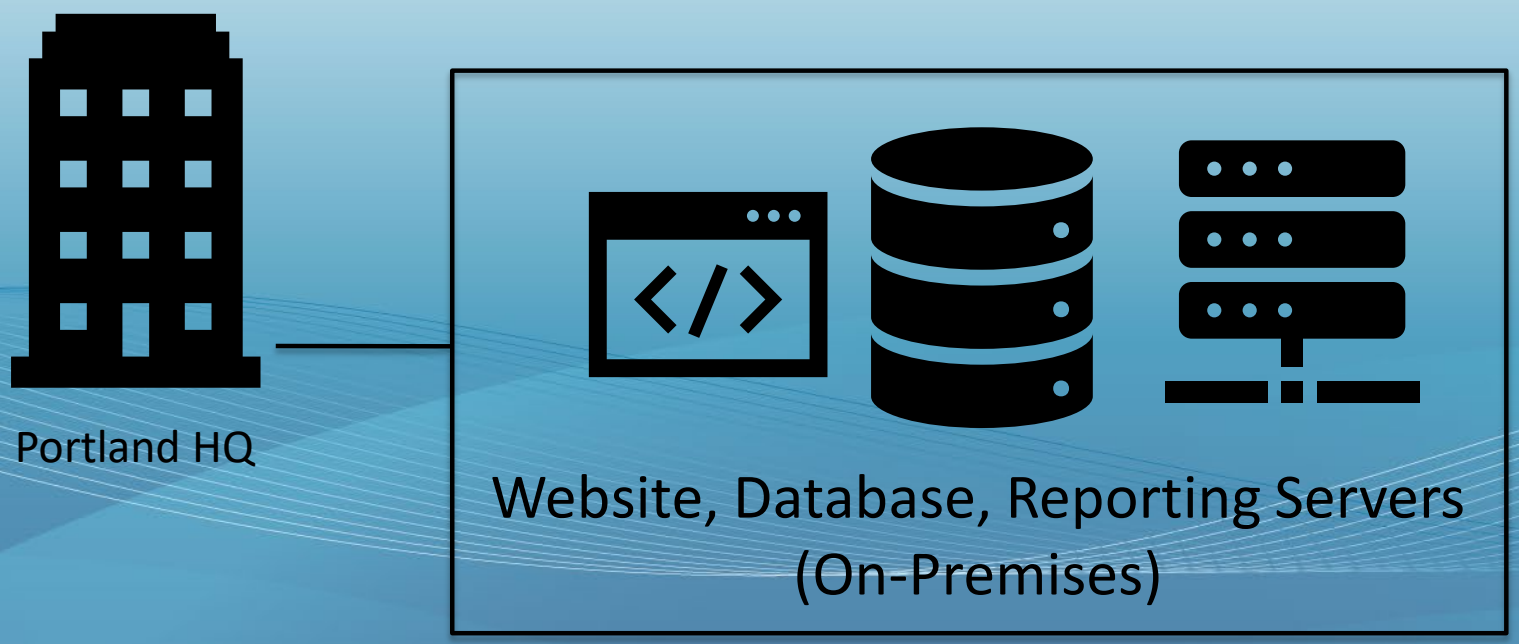
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