

Serving our customers

Integrated Resource Plan Update

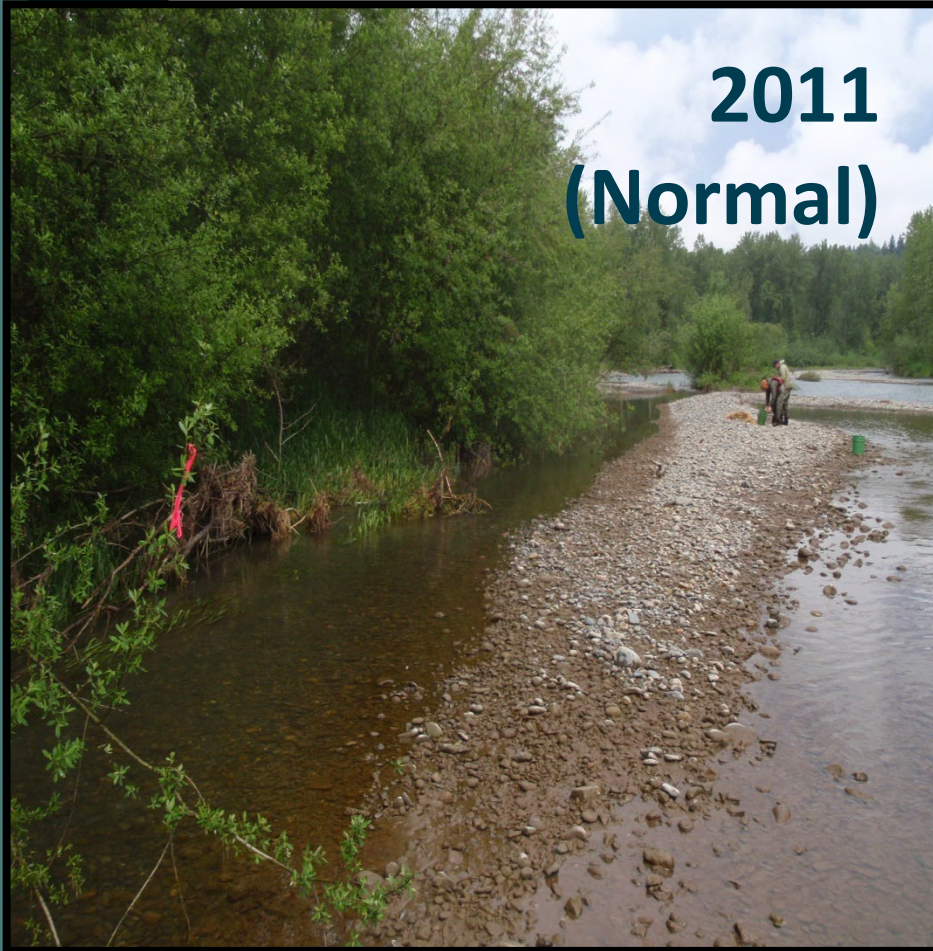
November 13, 2024



Why do Integrated Resource Planning (IRP)?



June Green River



We completed our first IRP in 2018

Why update the IRP now?

Board's Guiding Principle 14 – due in 2024 (6 years)

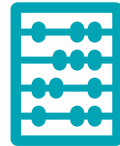
Additional wholesale opportunities may be emerging

Groundwater questions & concerns have been expressed

Regional Modeling (Corps – Forecast Informed Reservoir Operations (FIRO), USGS – Groundwater Report)

Many changes to our system operation (WestRock, PFAS, . . .)

Outline – Updates for 2024 IRP



**Water Yield Supply
and Demand Model
(WYSDM)**



**Groundwater
Modeling Assessment**



**Wellhead Protection
Program Assessment**



**Climate Change
Assessment**



**Public Advisory
Committee**

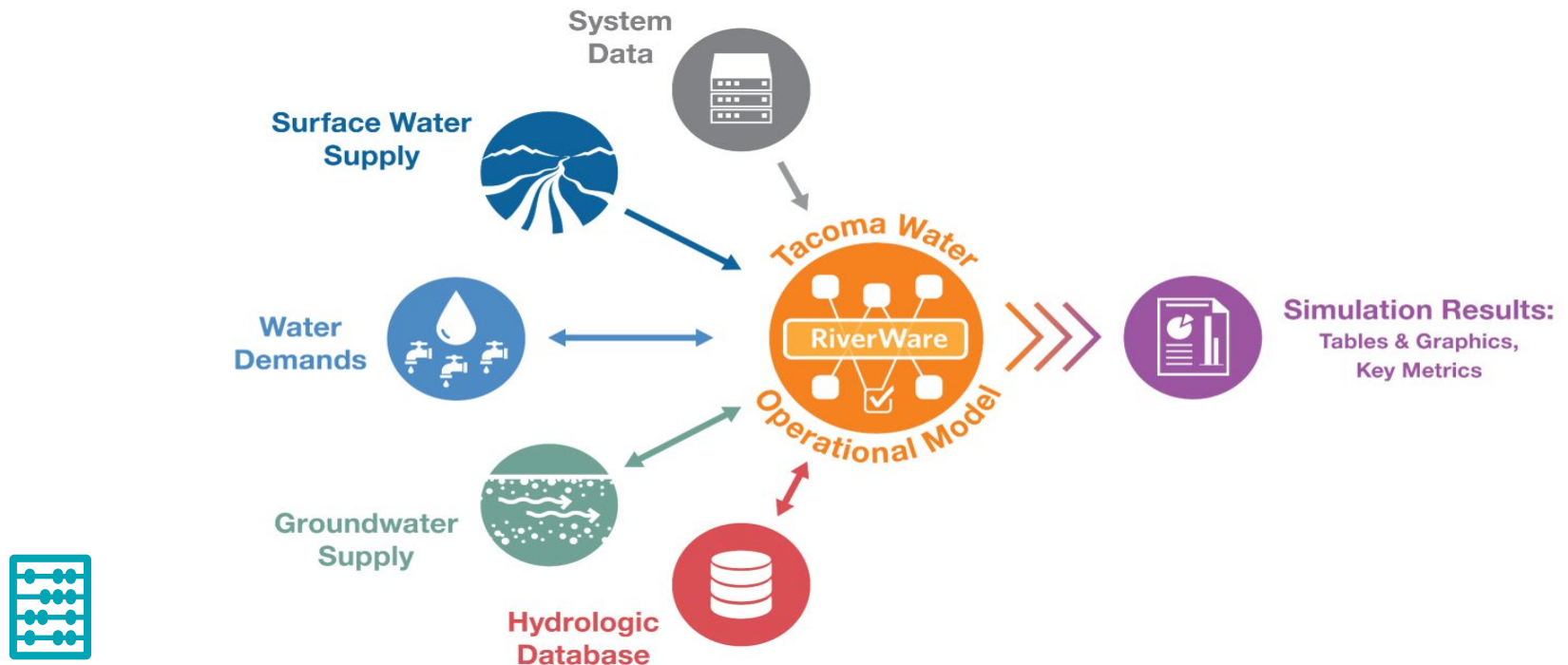
Water Yield Supply and Demand Model (WYSDM) Updates



Key Model Element Updates To-Date

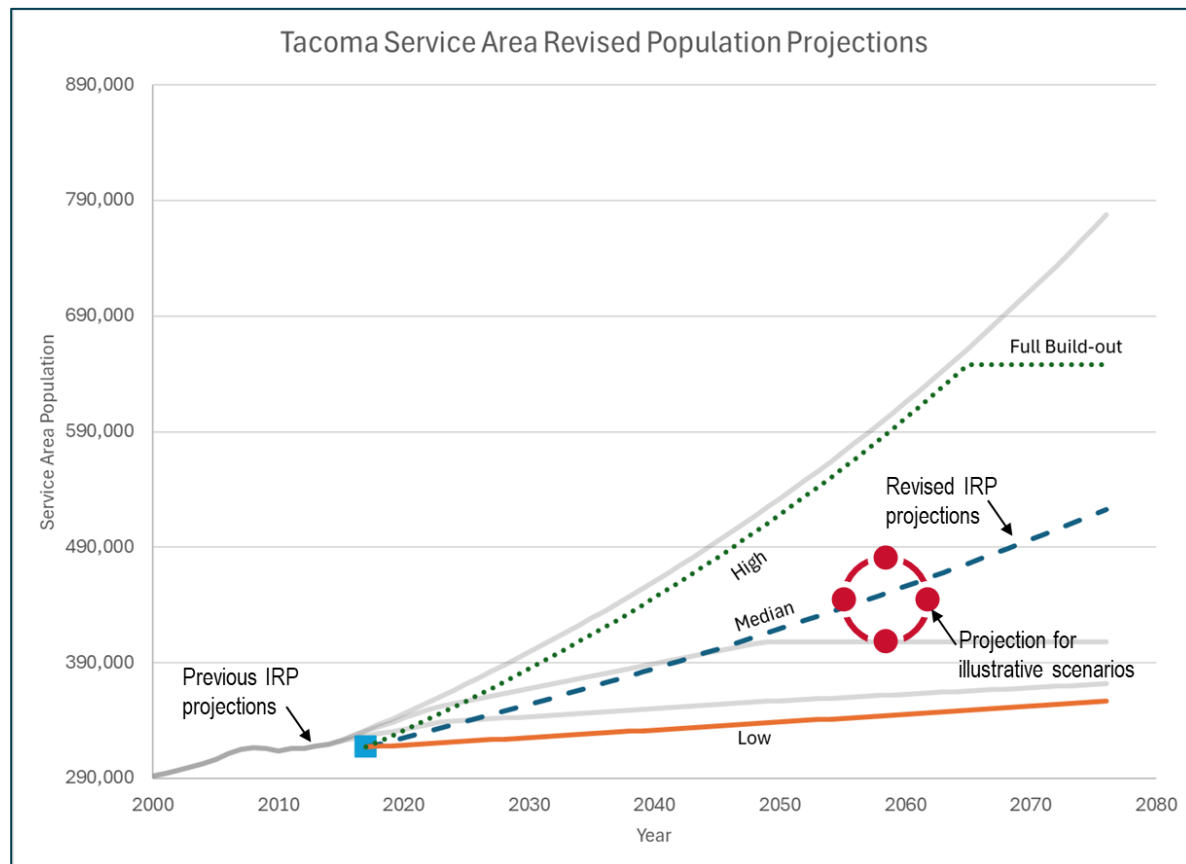
All of these will be covered in the next several slides:

- Water demand forecast(s)
- Climate change
- Changes to storage management at Eagle Gorge Reservoir
- Groundwater supply



Tacoma Retail Demand

- Demand forecast developed by TW staff
- 2021 Pierce County Coordinated Water System growth rates
- Incorporates future conservation
- Currently being updated to reflect PSRC Vision 2050 growth and customer class specific usage patterns

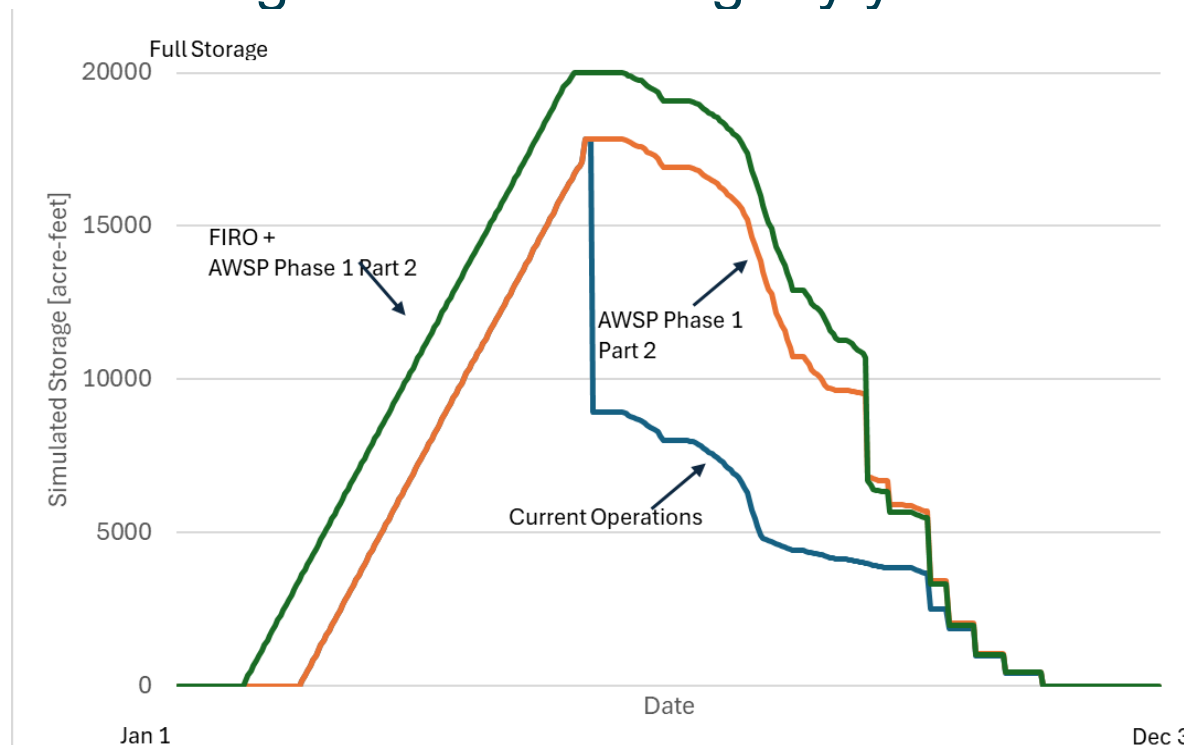


- **WestRock demands have been ramped down**
- **Wholesale contracts**
 - Current Contractual Obligations: 18.24 mgd
 - Typical usage: 2.5 mgd
 - Potential large additional future wholesale demands starting in early 2040s, peaking in early 2060s
- **Regional Water Supply System (RWSS) Partners**
 - Have discussed model assumptions with Partners
 - Recent historical usage assumed for future years



Storage Management changes

- **Additional Water Storage Project Phase 1 – Part 2**
 - Downstream fish passage improvements reduces storage “donation” in spring
- **Forecast-Informed Reservoir Operations**
 - FIRO study likely to result in ability to fill storage sooner and to a larger volume during dry years



Groundwater Supply



- Adding scenarios that modify the amount of groundwater supply to meet future needs
- Will require rehabilitation improvements to the wells, and additional booster pumping infrastructure
- Coordination with PFAS Master Planning effort

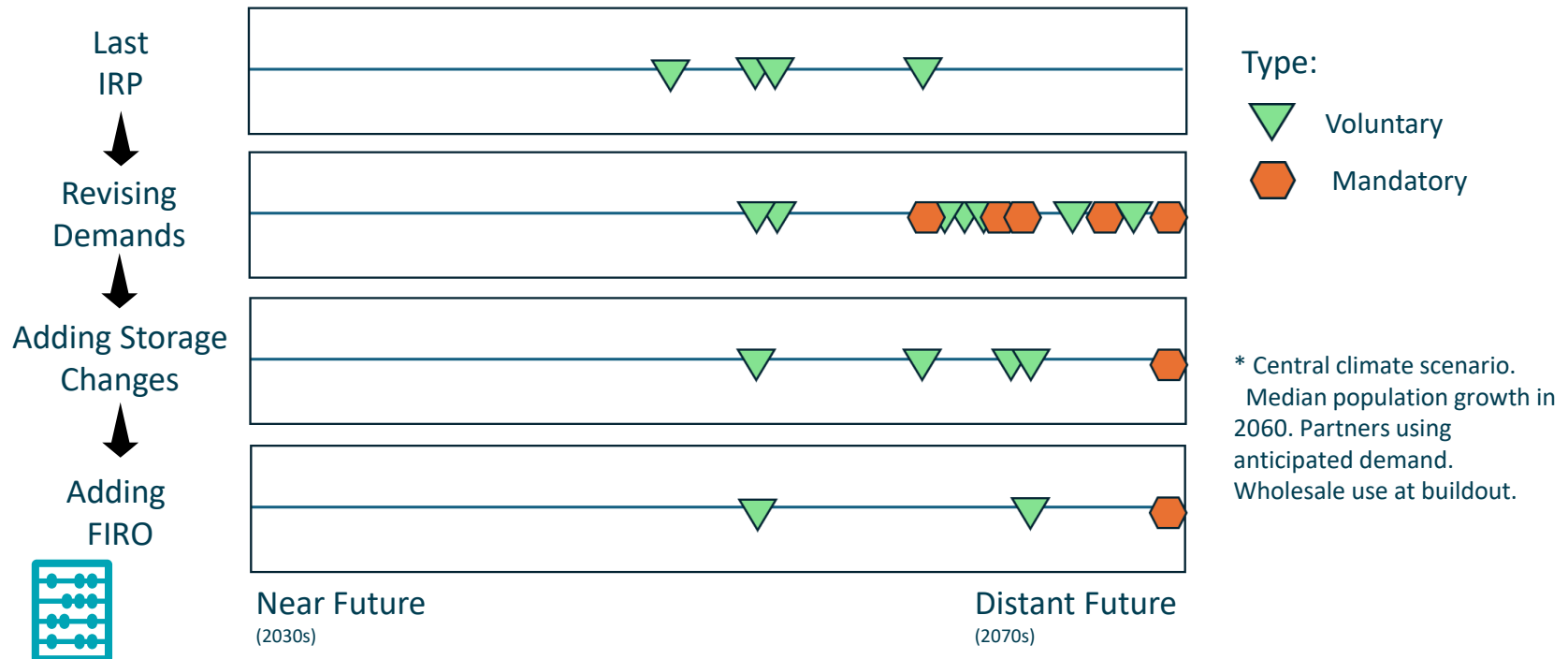


Preliminary Results: Resource Adequacy Standard (RAS)



- Based on number of mandatory curtailments
 - IRP-defined success: Mandatory demand management no more than 1 in 25 years (4% annual chance)
 - Investigate demand, operational, and/or capital projects, as needed

Current RAS Example – Single Draft Scenario*



Continued WYSDM Work Underway



- Apply range of climate change scenarios to key future time periods (2040s and 2060s)
- Characterize probabilities of range of outcomes



Groundwater Modeling Assessment



- Currently assessing the recently produced USGS Southeast Sound groundwater model
- Evaluating accuracy of Tacoma Water elements in the model
- Examining ability of model to evaluate South Tacoma aquifers and potential impacts of urbanization/development
- New key understandings will produce model refinements



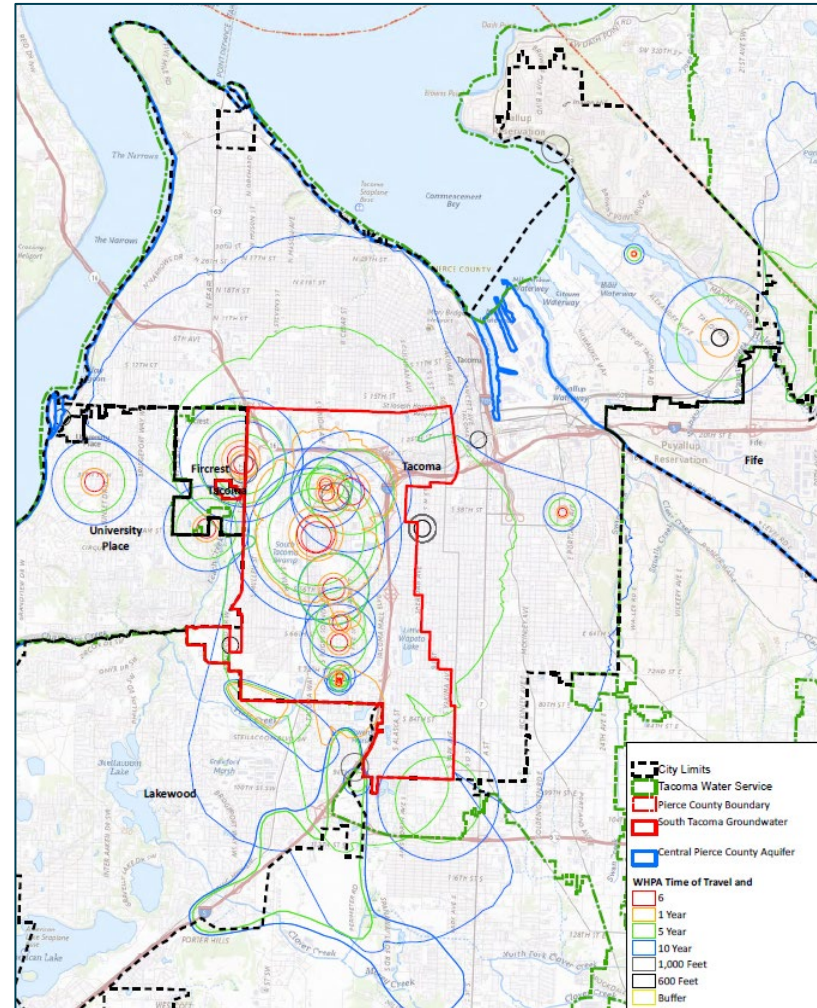
Wellhead Protection Program Assessment



South Tacoma Groundwater Protection District (STGPD) Code Review



- Joint effort with Tacoma Planning and Development Services and Environmental Services
- Comparing approach to high-impact uses with other jurisdictions
- Stormwater infiltration policy review
- Jurisdictionally complex
- Initial findings being presented to IPS committee on November 20

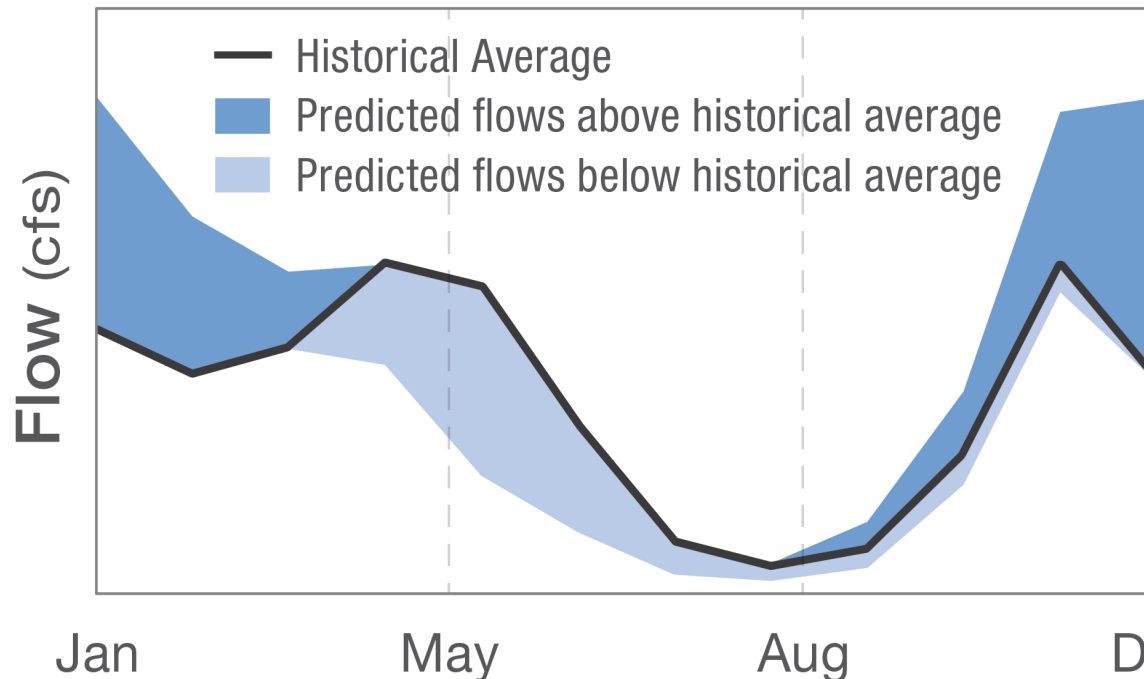


Climate Change Assessment



Approach

- Discussions were held with others (Tacoma Power, CWA) about their recent/current approaches
- Currently the IRP update is using the same range of climate model results, as it remains reflective of expected impacts in this area



Average Monthly Simulated Inflows – Eagle Gorge Reservoir

Public Advisory Committee



- **Have engaged with PAC in 3 meetings thus far**
 - 1st meeting – May 21st
 - 2nd meeting – September 27th
 - 3rd meeting – October 28th
 - 4th meeting upcoming on December 4th
- **Presented assumptions and preliminary results and solicited feedback on methods**
- **Have helped us with:**
 - Approach to display of WYSDM results
 - Confirmation of growth assumptions
 - Confirmation of partner demand assumptions
 - Approach to display of groundwater protection benchmarking information

