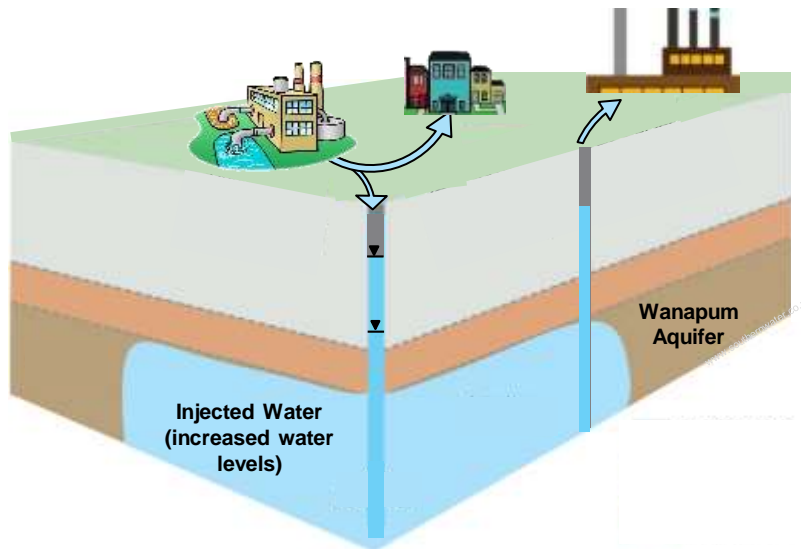




# City of Othello ASR: *Addressing Supply Needs in the Columbia Plateau*

April 27, 2018

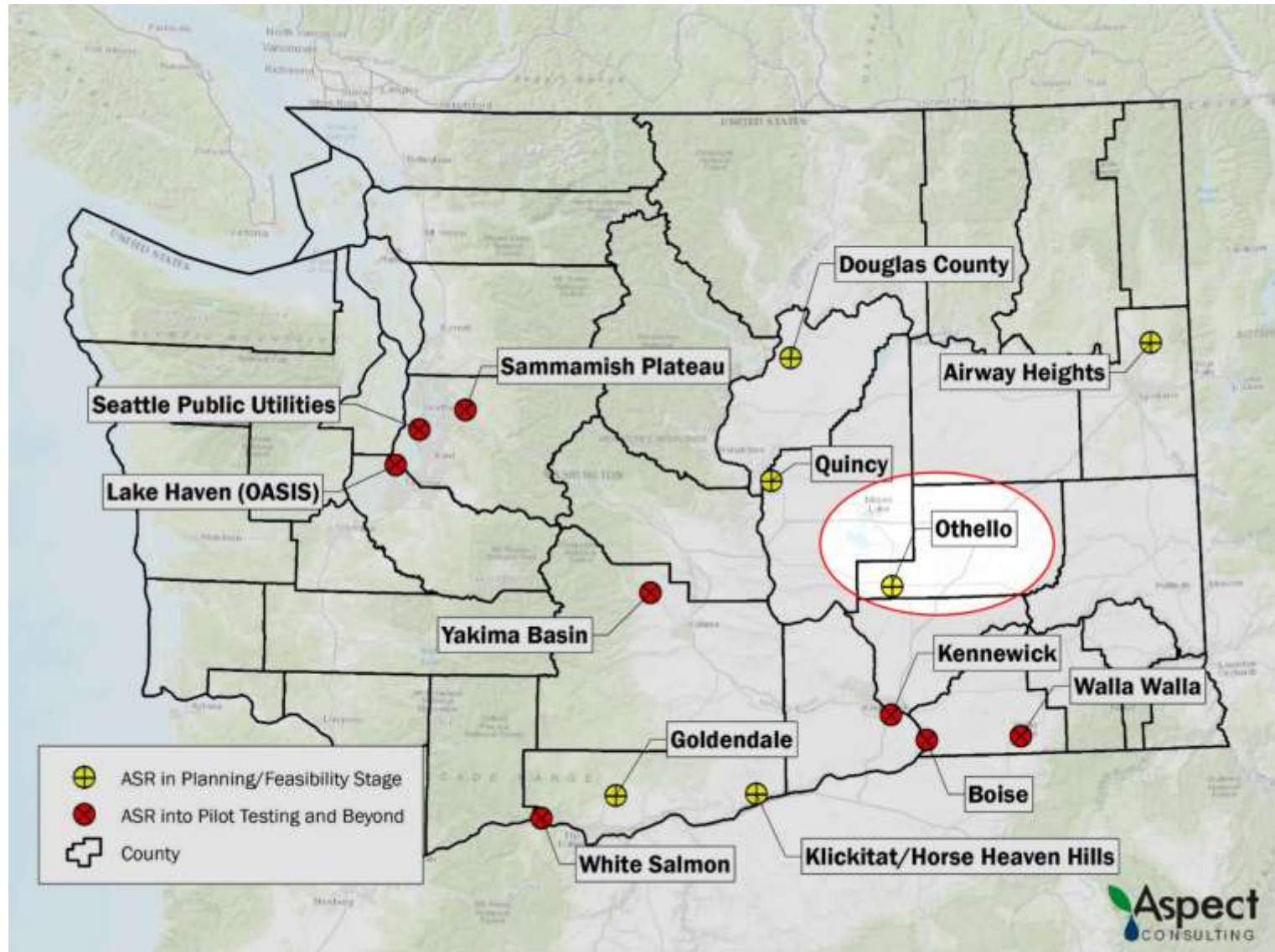


Presented by  
Tim Flynn, CGWP, LHG



Funded by **Office of Columbia River** Grant No. WROCR-VER1-Othell-00005

# ASR in Washington



# Presentation Outline

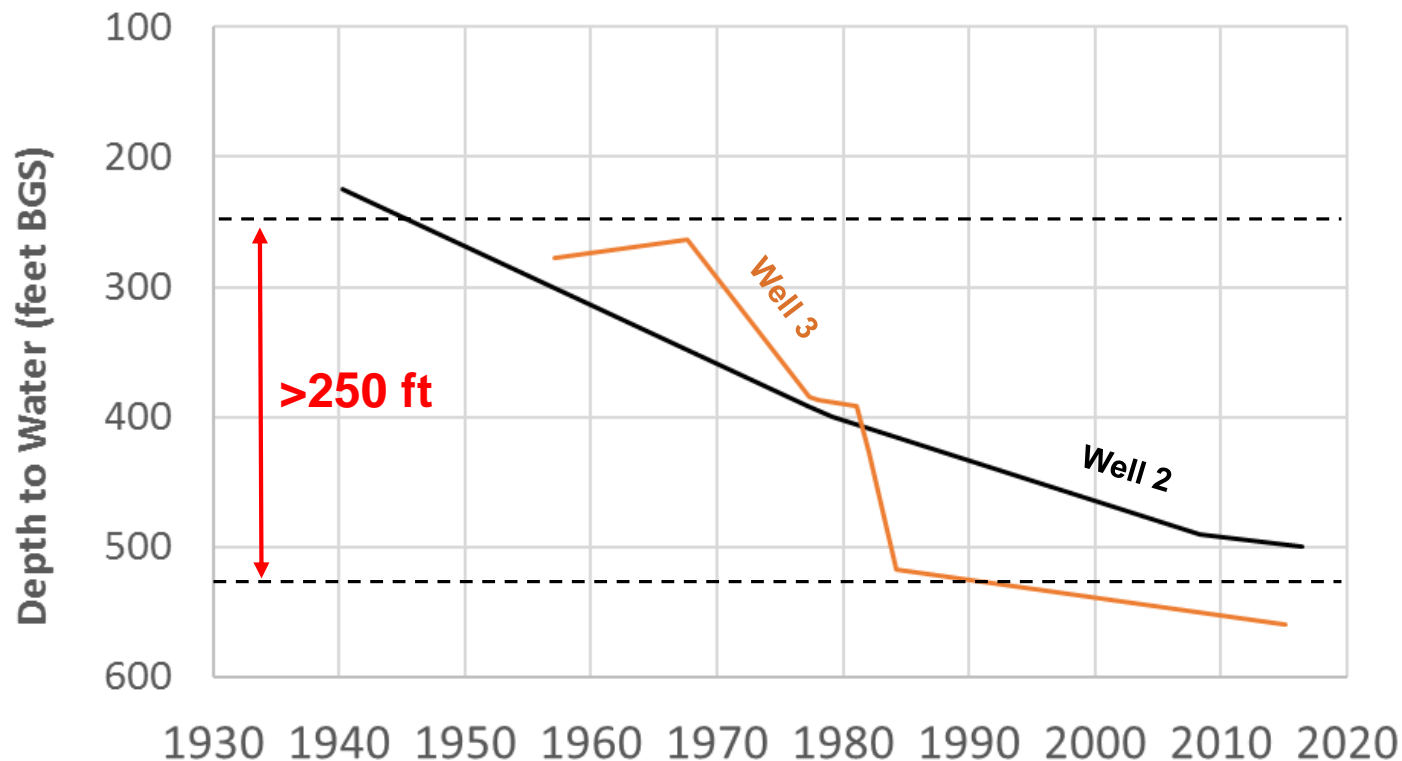
- **Background & Motivation for ASR**
- **Hydrogeology & Limiting Factors**
- **Othello's Approach**
- **Operational Scenarios**
- **Industrial Reuse Water**
- **Streamlining ASR Permitting**



# Othello Water Supply Background

## ■ Othello's Well Field Taps the Wanapum Basalt

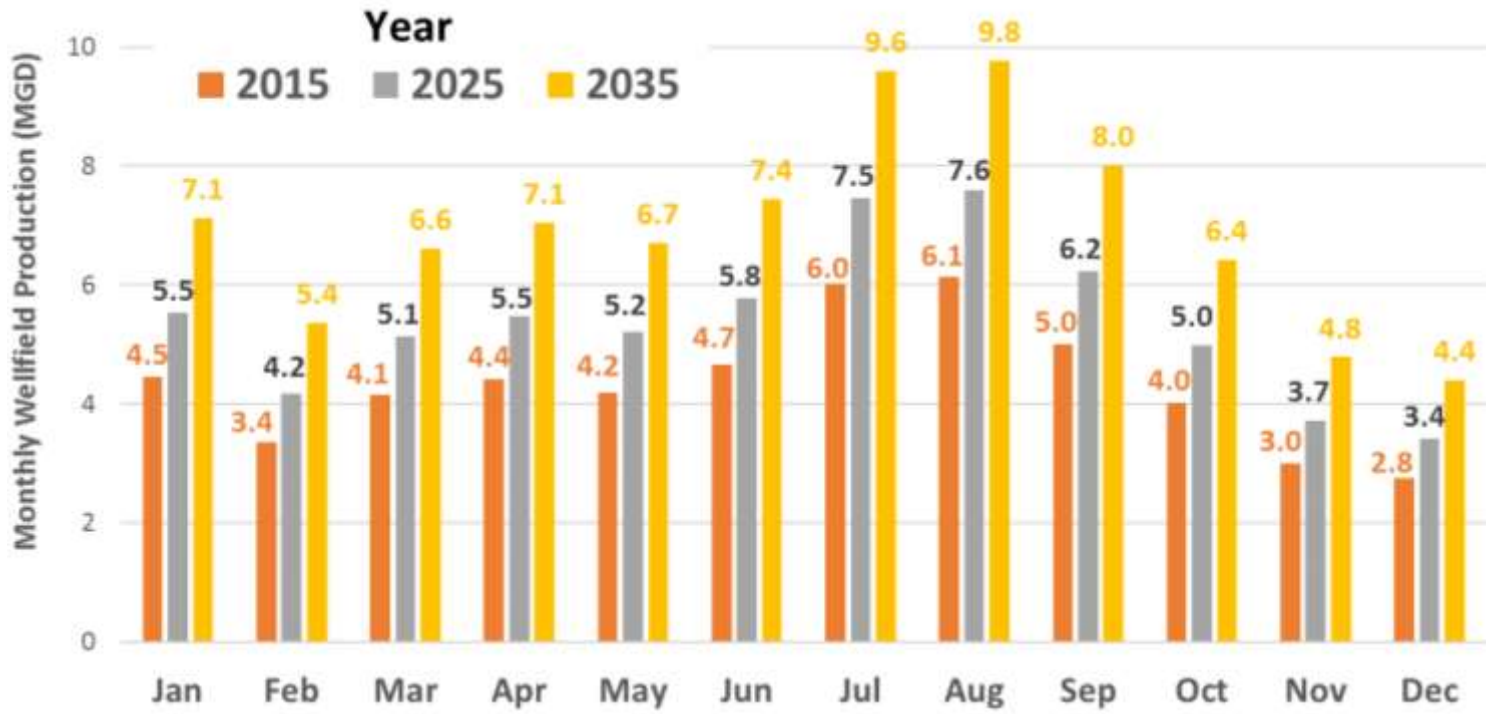
- Significant loss in wellfield capacity
- Diminishing return on new sources



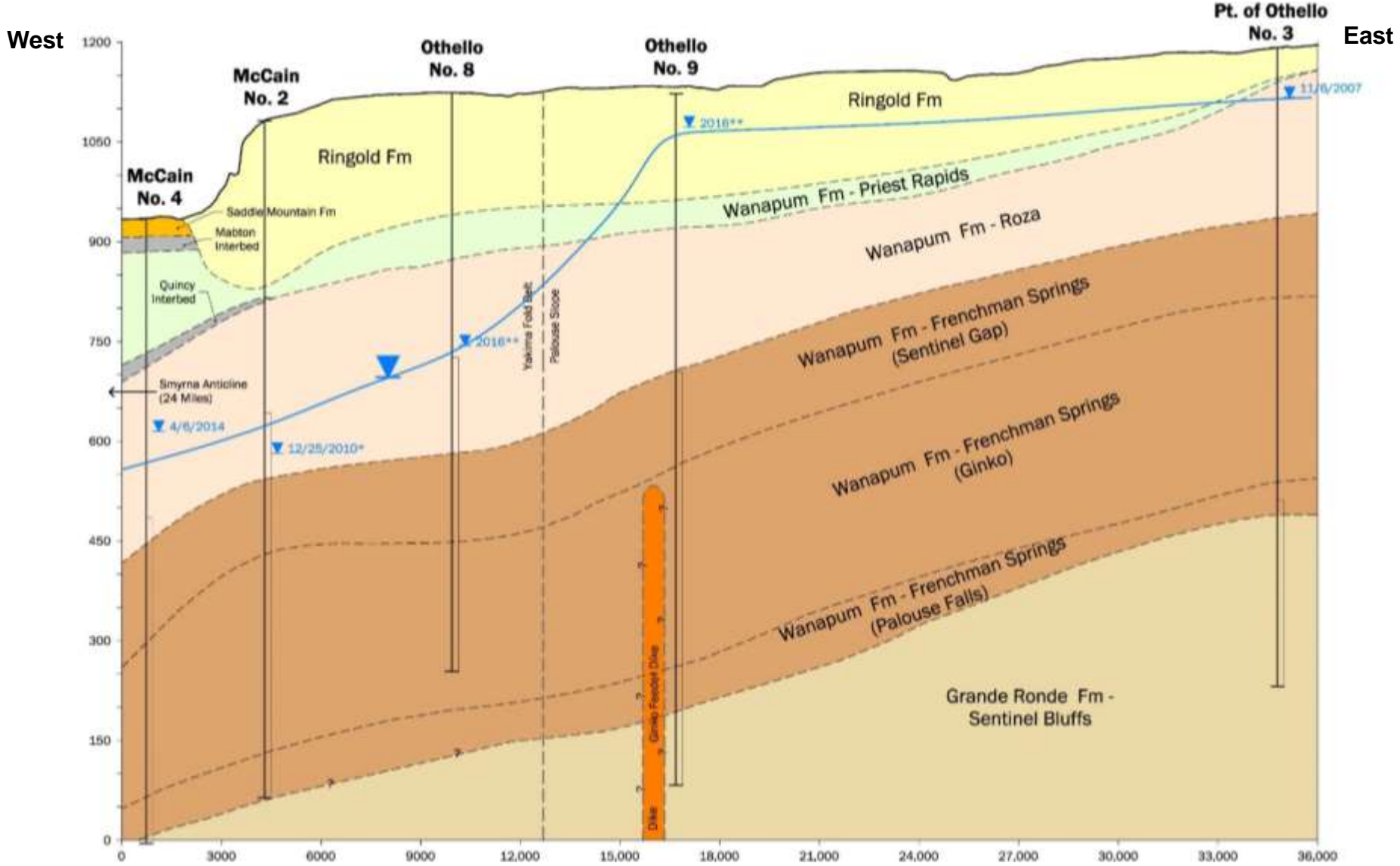
# Motivation for ASR: Projected Demands

2016 Demand  $\approx$  4,900 af  
 New food processor  $\approx$  2,200 afy

Existing City Water Rights  
 $Q_a = 7,100$  afy  
 $Q_i = 13.75$  MGD



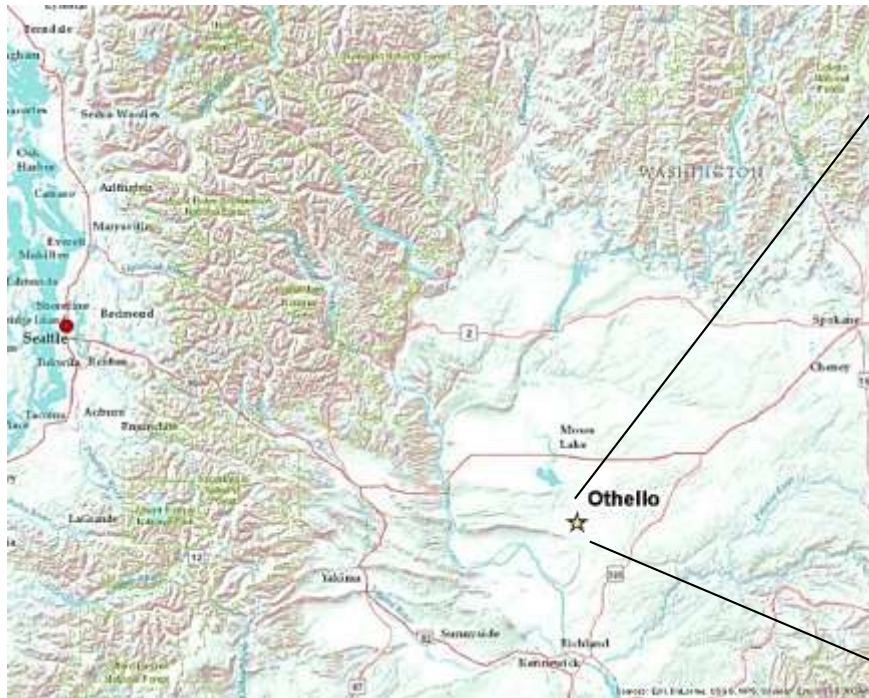
# Feasibility Study: *Hydrogeologically Suitable*



# Limitations to ASR: *Source Water*

## CBP Irrigation Canals (Apr. – Oct.)

- Use Authorized through M&I Contract
- Provide Direct Supply & Recharge



# Feasibility Study: *Source Development*

## Potholes and EL-68 Canals



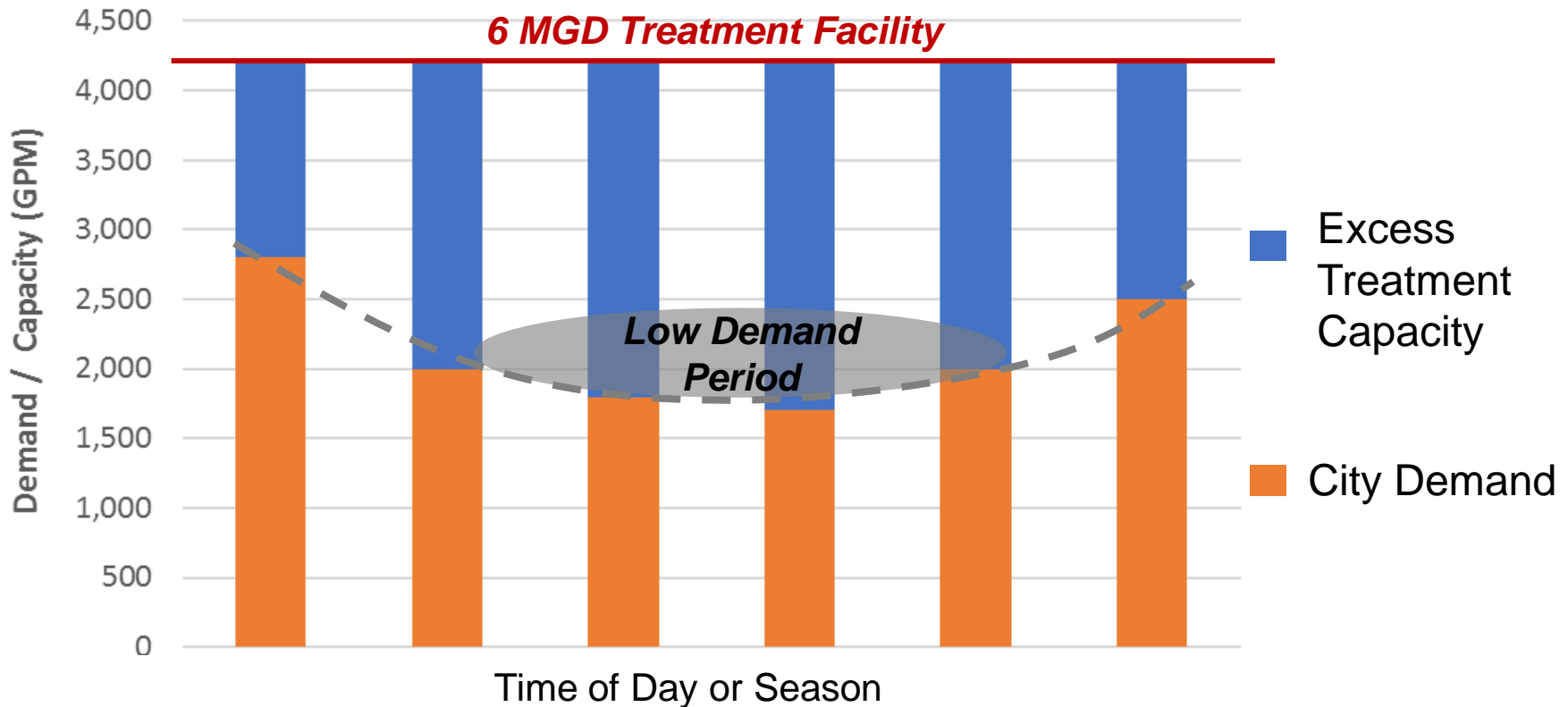
- 8,500 afy of M&I water available
- Can supply up to 12 MGD (19 cfs) over most of irrigation season
- Canal water quality good but still requires treatment (disinfection)



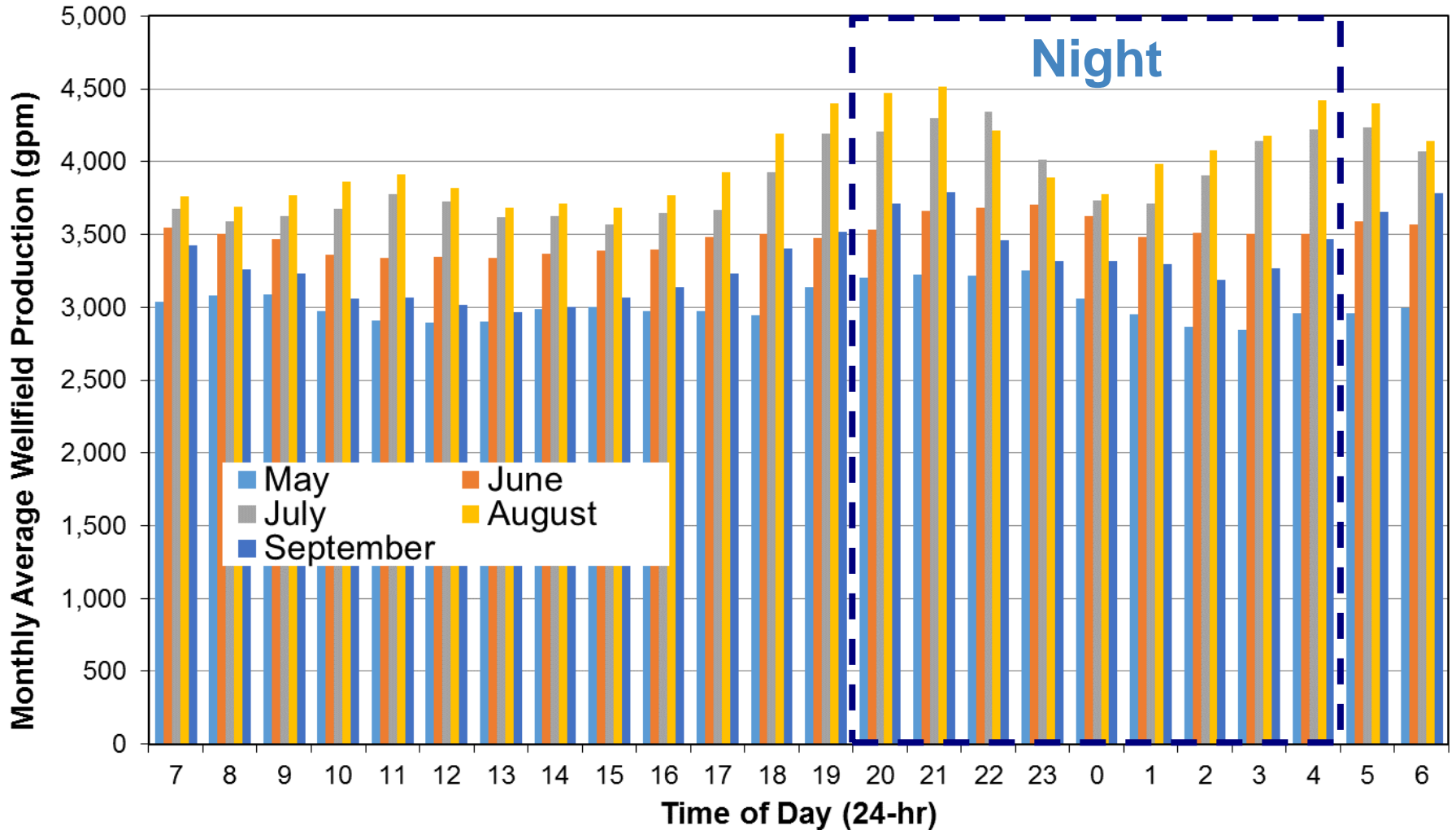
# Source Water: *Excess Treatment Capacity*

= **Source Capacity – Demand**

- Recharge typically aligned with low demand periods



# Source Water: *Excess Capacity*



# M&I Source Water: *Annual Costs*

## For 6 to 12 MGD (*direct supply + recharge*)

- 2,800 to 5,600 afy (5 months)
- Reclamation Fees (*2012 rates*): \$48/AF
- Irrigation Districts (*2016 rates*): \$22/AF

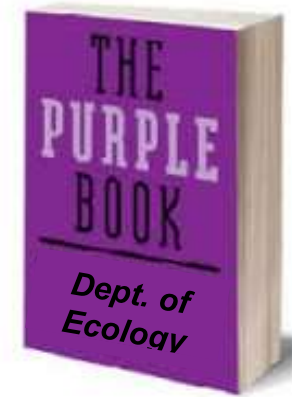
**= \$70/AF (\$215/MG)**



# Future Source Water: *Reclaimed Water*

## Reuse Water from Industrial Food Processors

- ~ 4,300 afy (year-round!)
- Purchase 5,000 afy M&I for blending



## Permitting Process

- WAC 173-219 (January 2018)
- Recharge, Store & Recover
- Waste Discharge permit



# ASR in Othello: *Summary & Conclusions*

- **Growth Limited by Physical Availability of GW**
- **Unique Water Use Trends** (*industrial processing*)
- **ASR is Technically Feasible**
  - Favorable Hydrogeology & Geochemistry
- **M&I Water Available (\$\$)**
- **Reclaimed / Reuse Water Available All Year**
- **Pilot Testing is planned for 2018/2019**

*ASR is the best option to extend benefits of seasonal canal water to year-round use....*

# Streamlining ASR Permitting

## Address Permitting Uncertainty to Encourage ASR

- Alternative to Use of OPI to Comply with GWQS
- Recovery Efficiency based on Water Budget/Impairment Standard
- Incorporate Carry-Over (wet water banking)

*Need to clarify and streamline permitting to promote ASR in State of Washington*

# Questions?



**Tim Flynn**

[tflynn@aspectconsulting.com](mailto:tflynn@aspectconsulting.com)

206-780-7730