

# This presentation premiered at WaterSmart Innovations

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**Pacific Northwest**  
NATIONAL LABORATORY

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# Army Net Zero Water Pilot Initiative

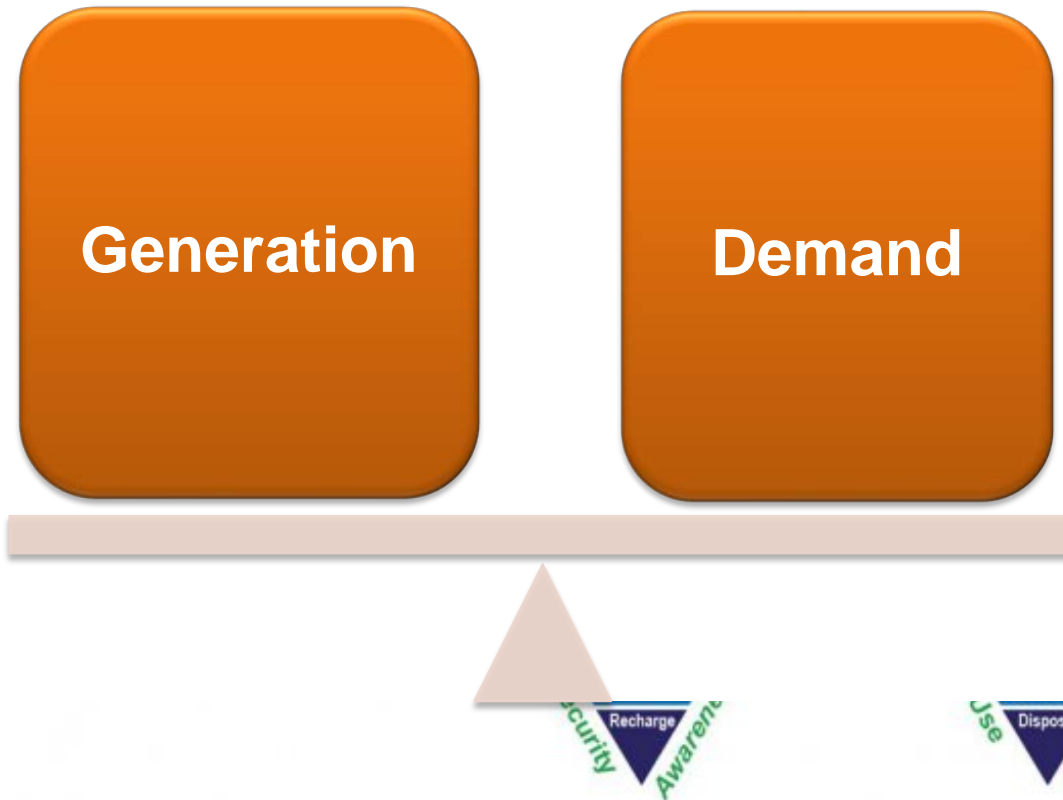
KATE MCMORDIE STOUGHTON

Pacific Northwest National Laboratory

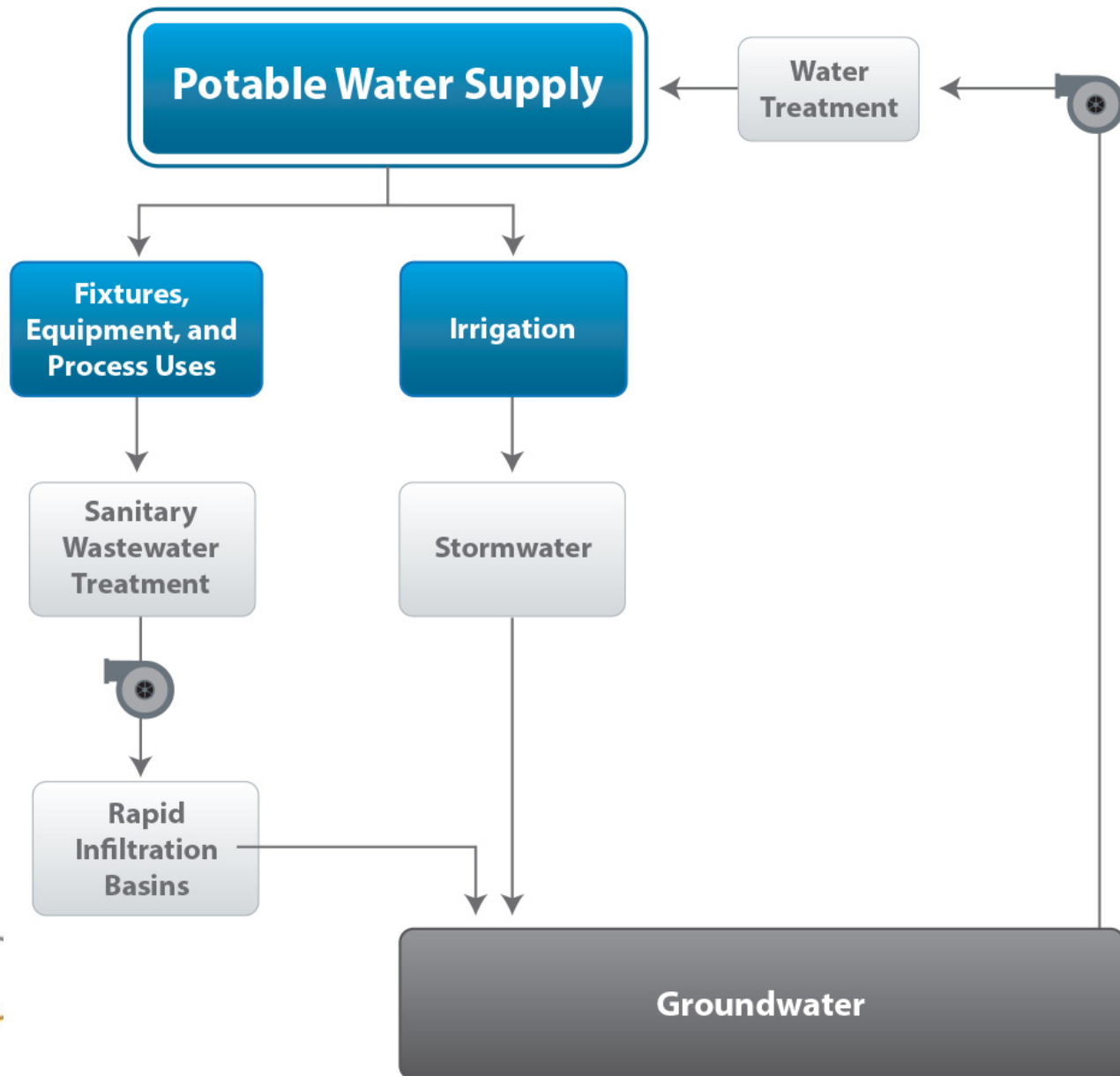
Richland, WA

# What is “Net Zero”?

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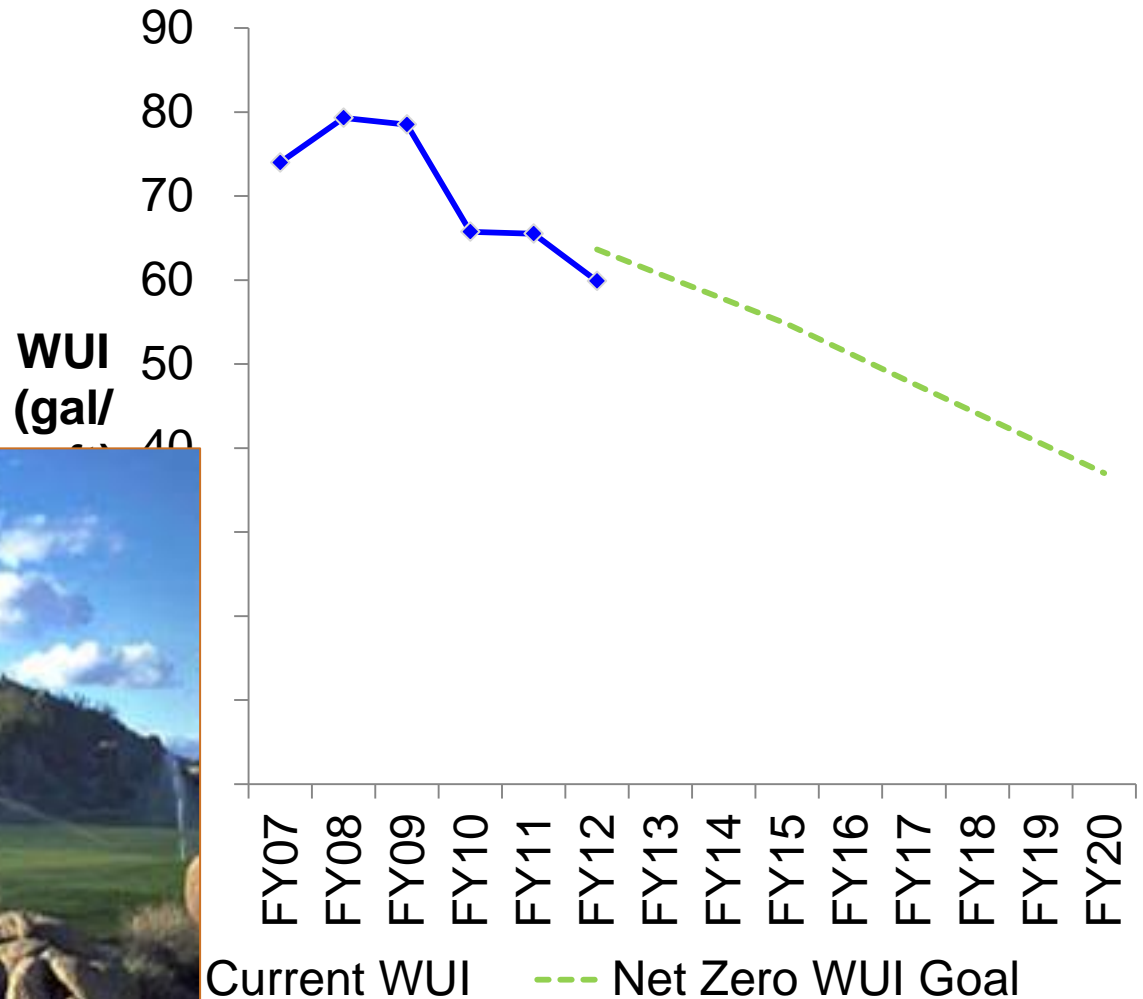
# Net Zero Water: Watershed Concept





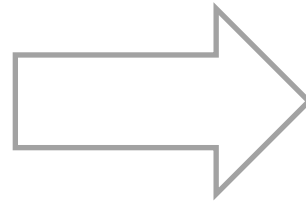
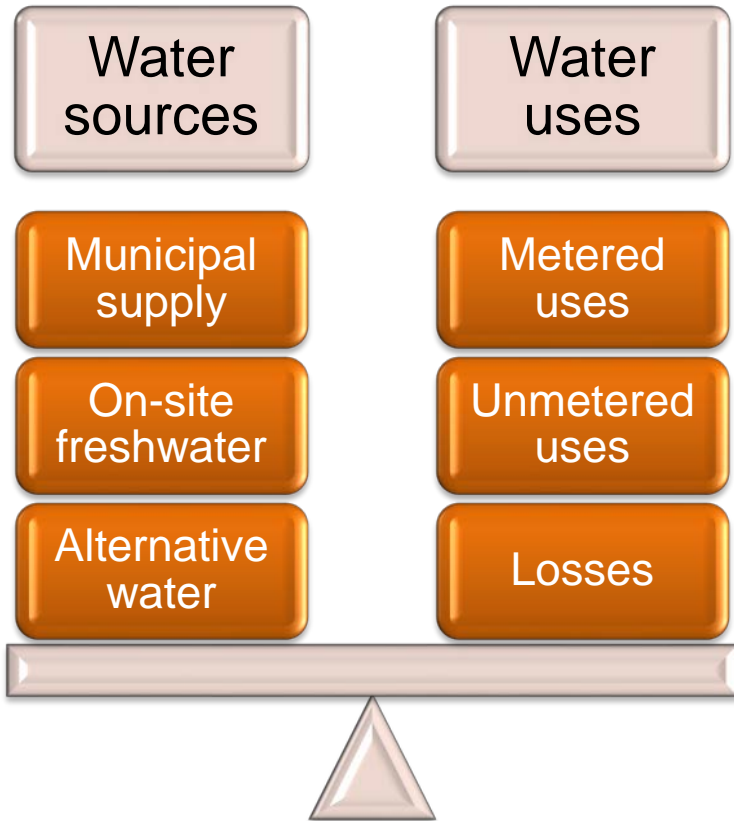
# Net Zero Water Goals for Pilot Installations

- ▶ Potable Water Use Intensity (WUI) Reduction of *50% reduction by fiscal year (FY) 2020 from FY 2007 baseline*

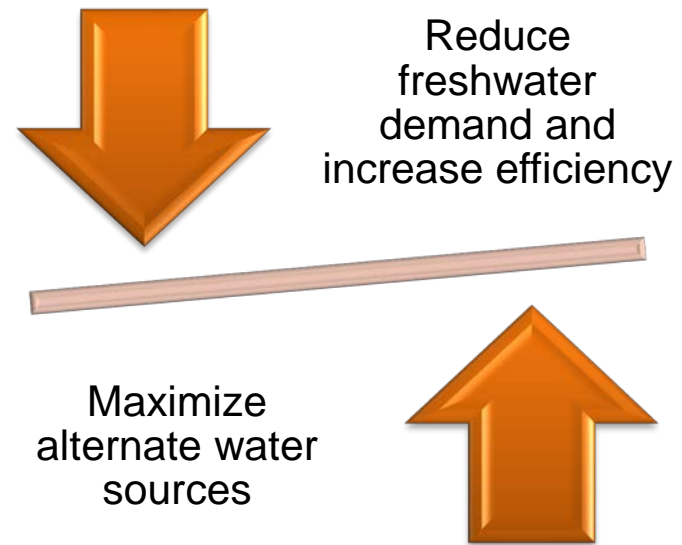


# Net Zero Assessment Process

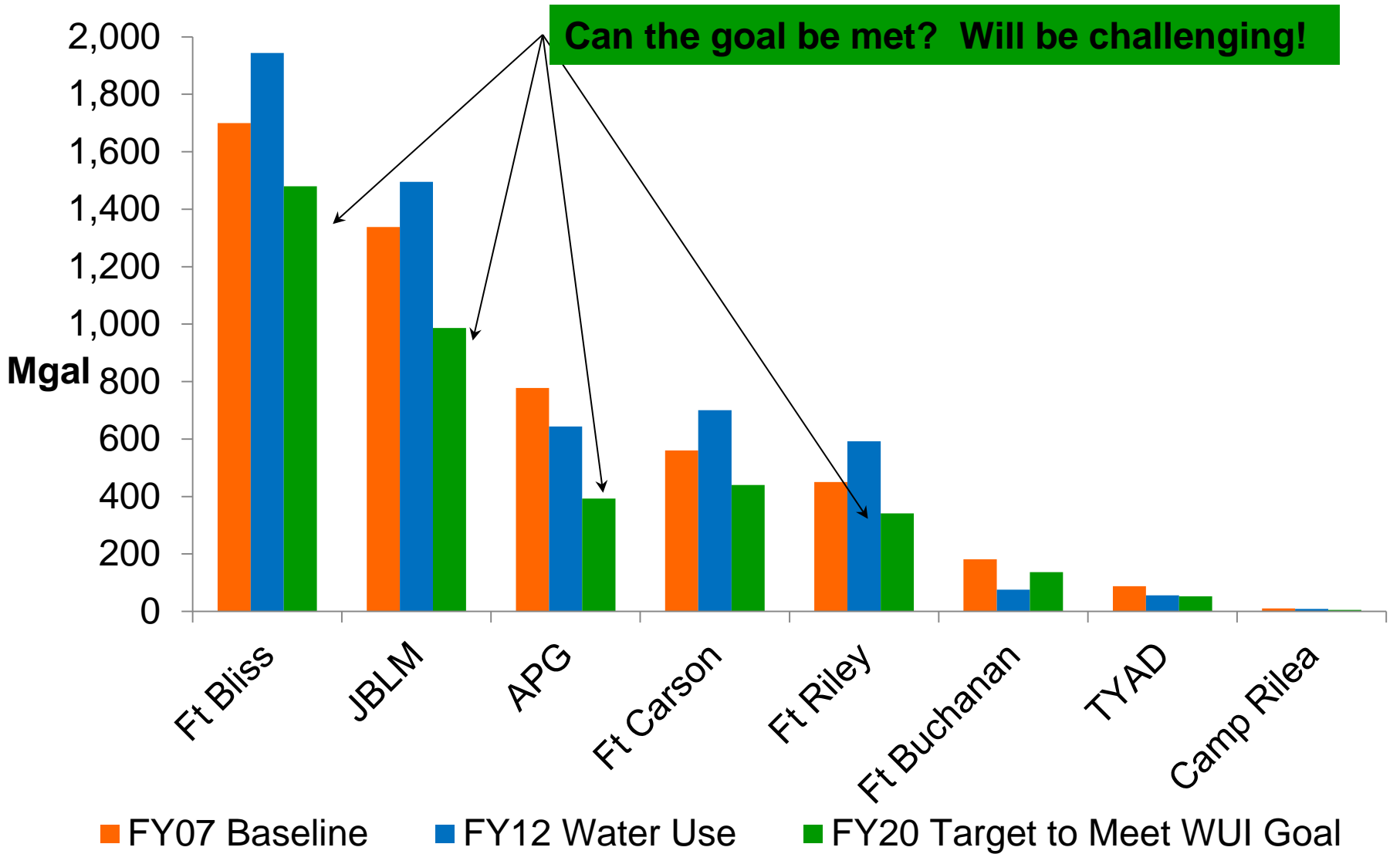
## Water Balance



## Roadmap

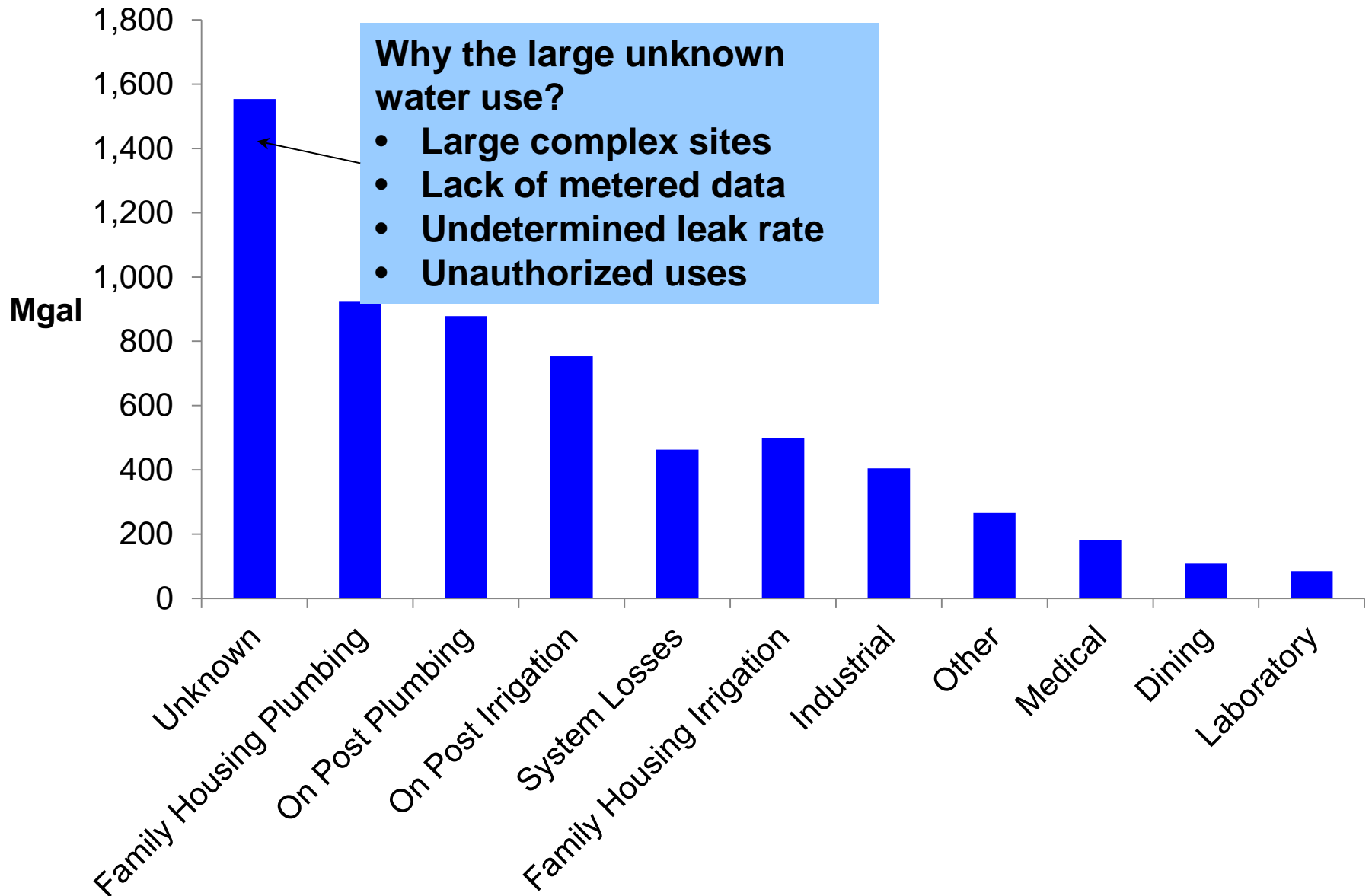


# Water Balance Assessment Results





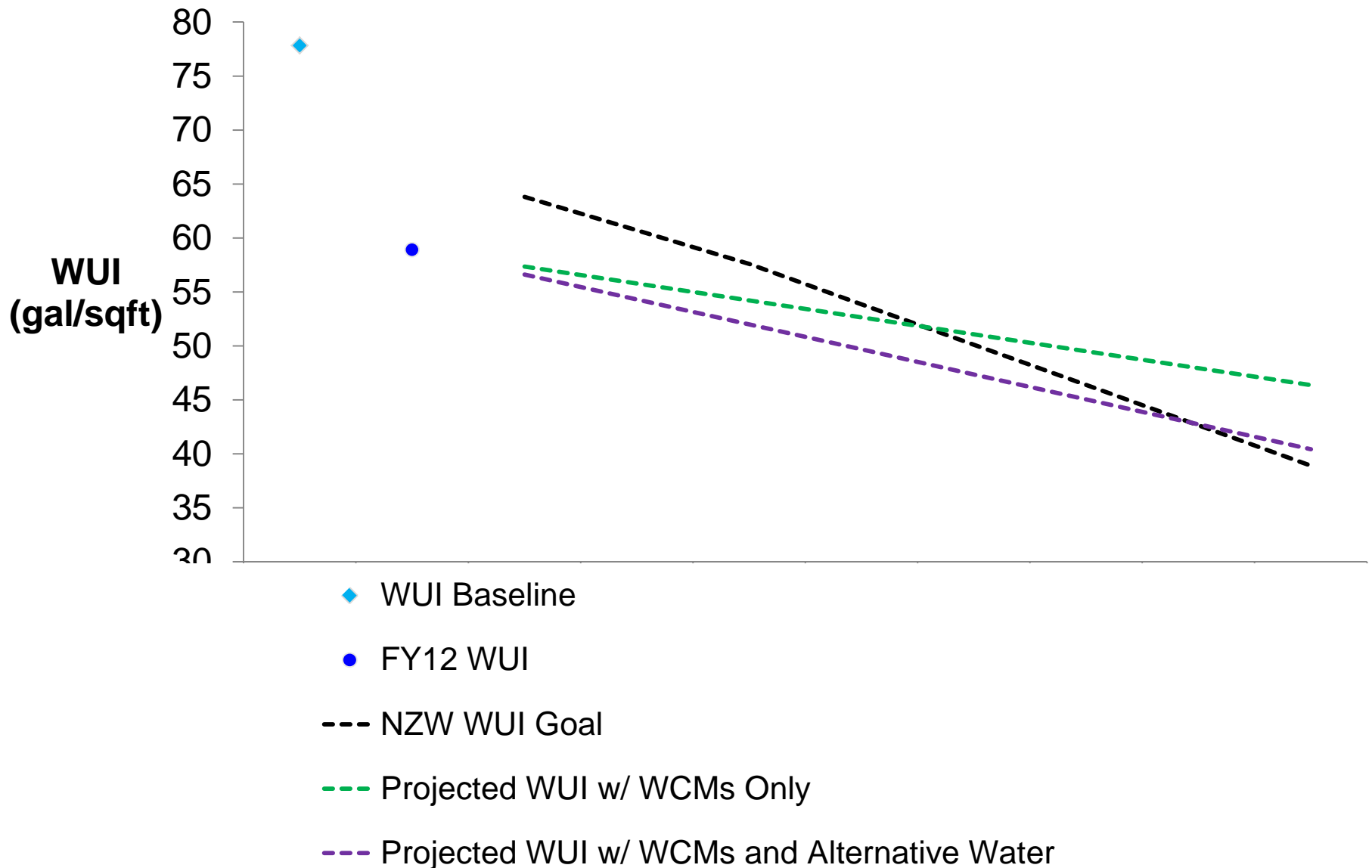
# End-Use Breakout Results



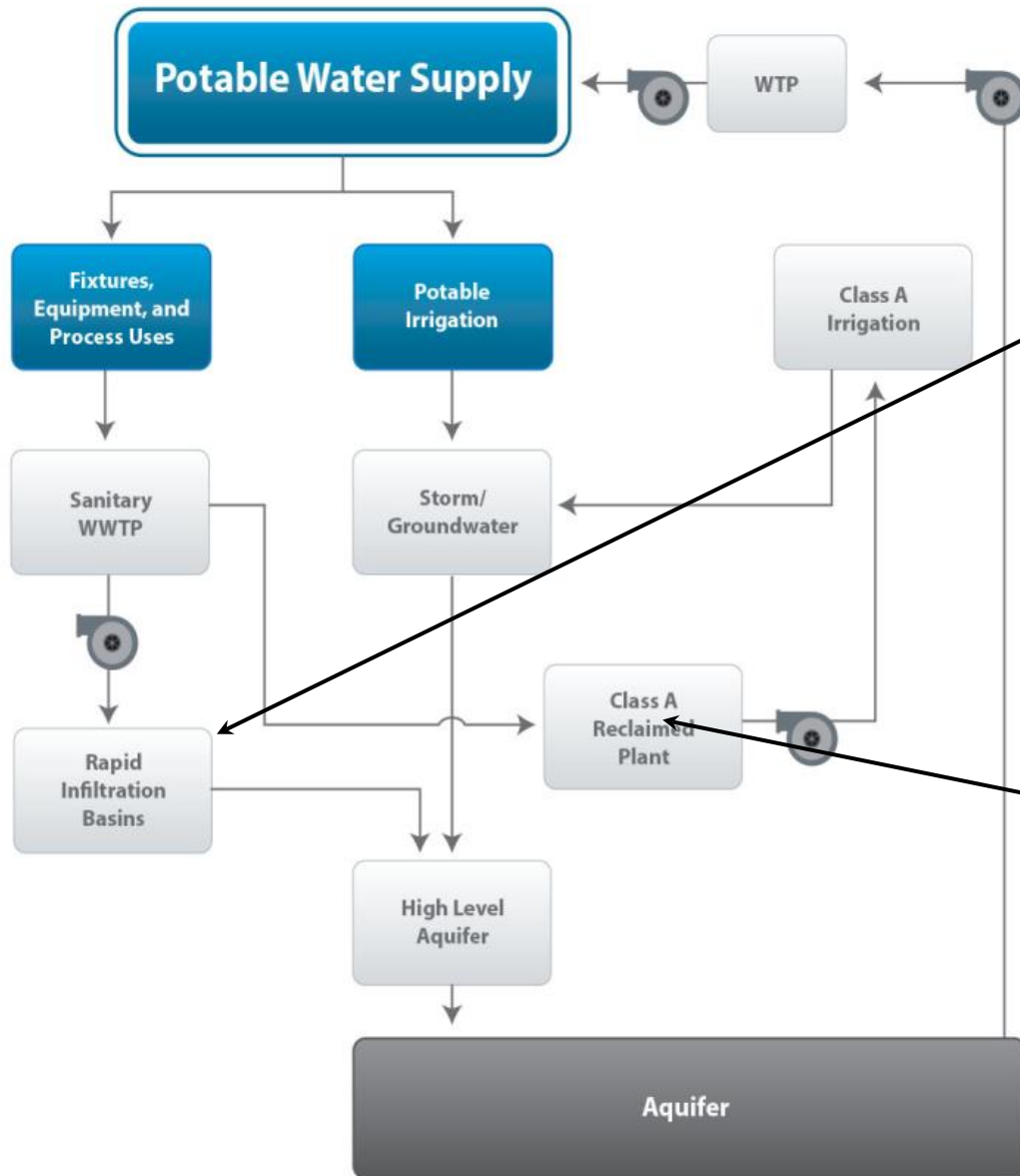
# Water Conservation Measures

- \$ ▶ High efficiency faucets and showerheads
- \$ ▶ High efficiency toilets and urinals
- \$ ▶ Irrigation system improvements
- \$ ▶ Native landscaping conversion
- \$ ▶ Leak detection and repair
- \$ ▶ Commercial kitchen equipment
- \$ ▶ Medical and laboratory equipment

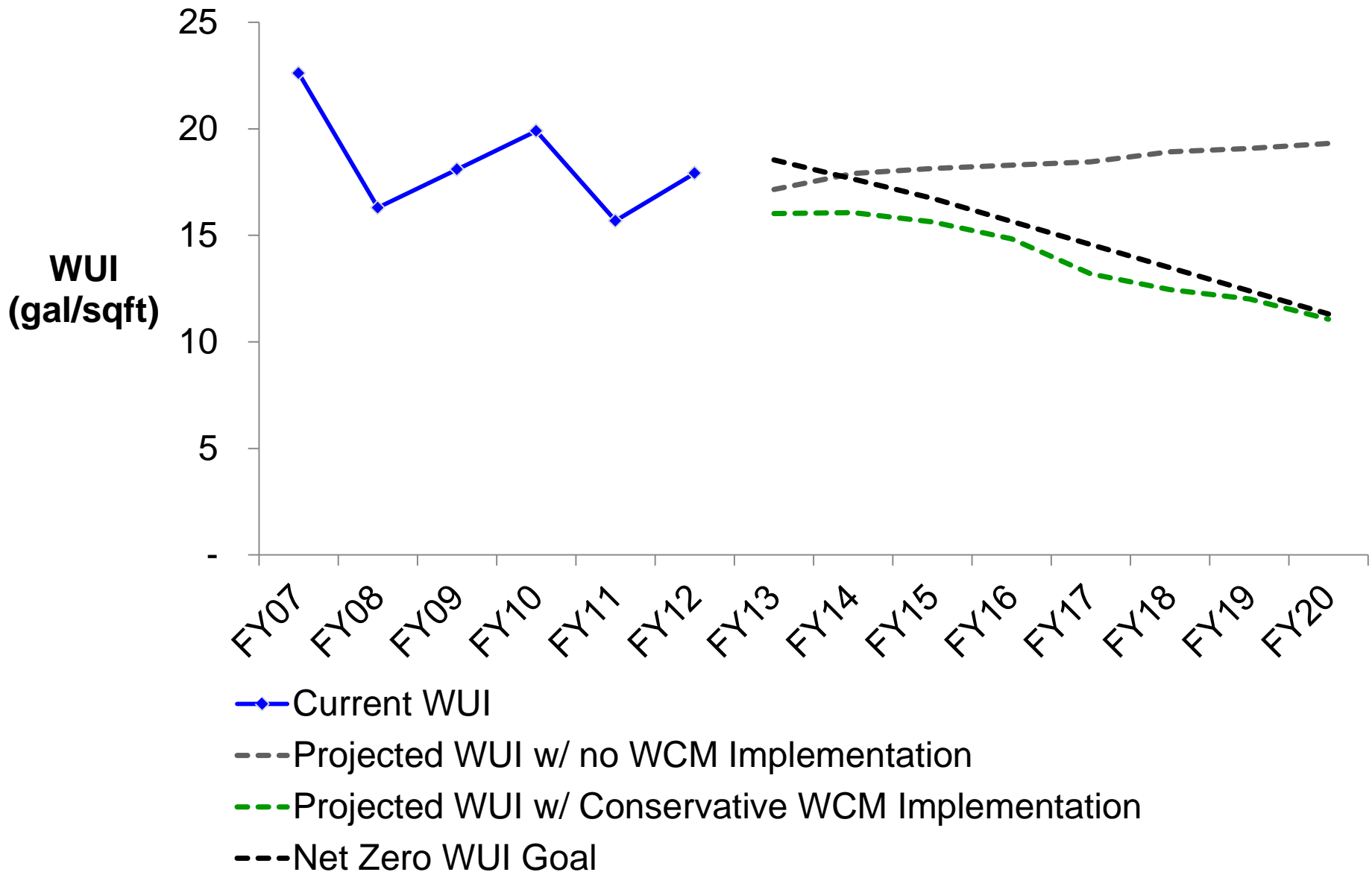
# Net Zero Water Reduction Goal Projection



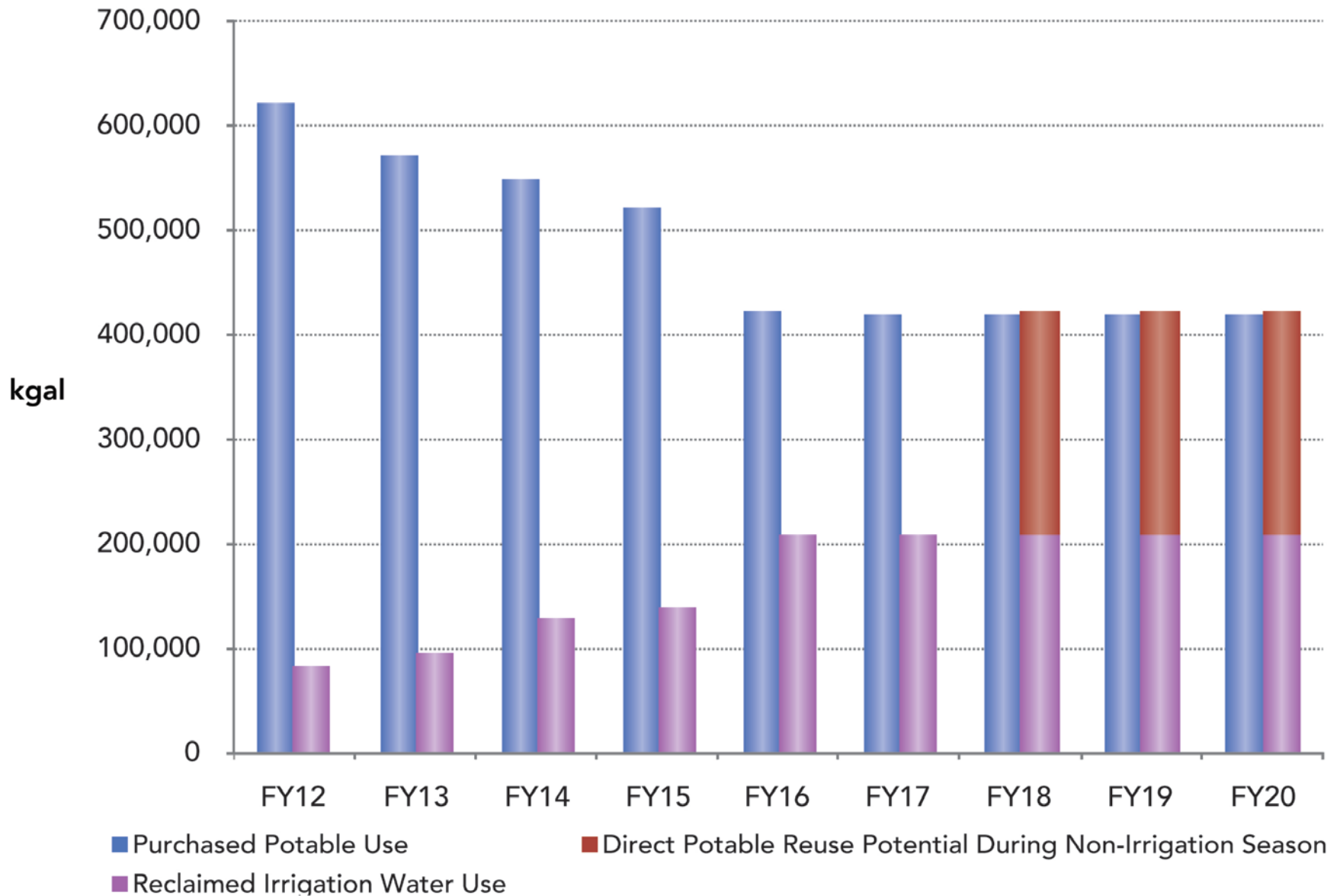
# Installation Example: Camp Rilea, OR



# Installation Example: Camp Rilea, OR



# Installation Example: Fort Carson, CO



# Common Practices and Lessons Learned

- ▶ **Alternative water sources are key** to meeting net zero water goals and objectives
- ▶ **Bundling measures is critical** to creating economically attractive projects
- ▶ Distribution system **leaks can be a significant** source of water loss
- ▶ Installations need to **re-evaluate landscape irrigation** practices
- ▶ Installation of meters and validation of **meter accuracy is essential**

**Thank you!**

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# Camp Rilea Projected Water Use Intensity

