

# Assessing 2070 Water Demand in the Bay Area

Meeting the Bay Area's Water Demand  
SPUR Digital Discourse  
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# Background

**Report:** Water for a Growing Bay Area (Summer 2021)

**Partners:** SPUR + Pacific Institute + Greenbelt Alliance

## **Motivating Questions:**

- What would water demand be in 2070 for six scenarios of development and efficiency?
- Will water demand inevitably increase if the Bay Area adds the housing it needs?
- Can the Bay Area continue to grow and divert less water from sensitive ecosystems?

## **Presentations:**

- Demand Analysis Results
- Planning and Policy Recommendations
- Tomorrow @ 12:15: SPUR Digital Discourse | Water-Wise Development for the Bay Area

# Scenario Analysis: Estimating Water Demand in 2070

## Three Classes of Water Use

- Indoor Residential
- Outdoor Residential
- Commercial, Industrial, and Institutional (CII)

**3 Efficiency x 2 Development Scenarios  
= 6 Scenarios Per Water Use Class**

## Two 2070 Development Scenarios

- Current (Baseline) →
- 2070 Business as Usual (BAU) →
- 2070 SPUR →

Housing	Population	Jobs
3.0 M	8.2 M	5.5 M
+1.4 M	+4.5 M	+2.1 M
+2.2 M	+6.8 M	+2.1 M

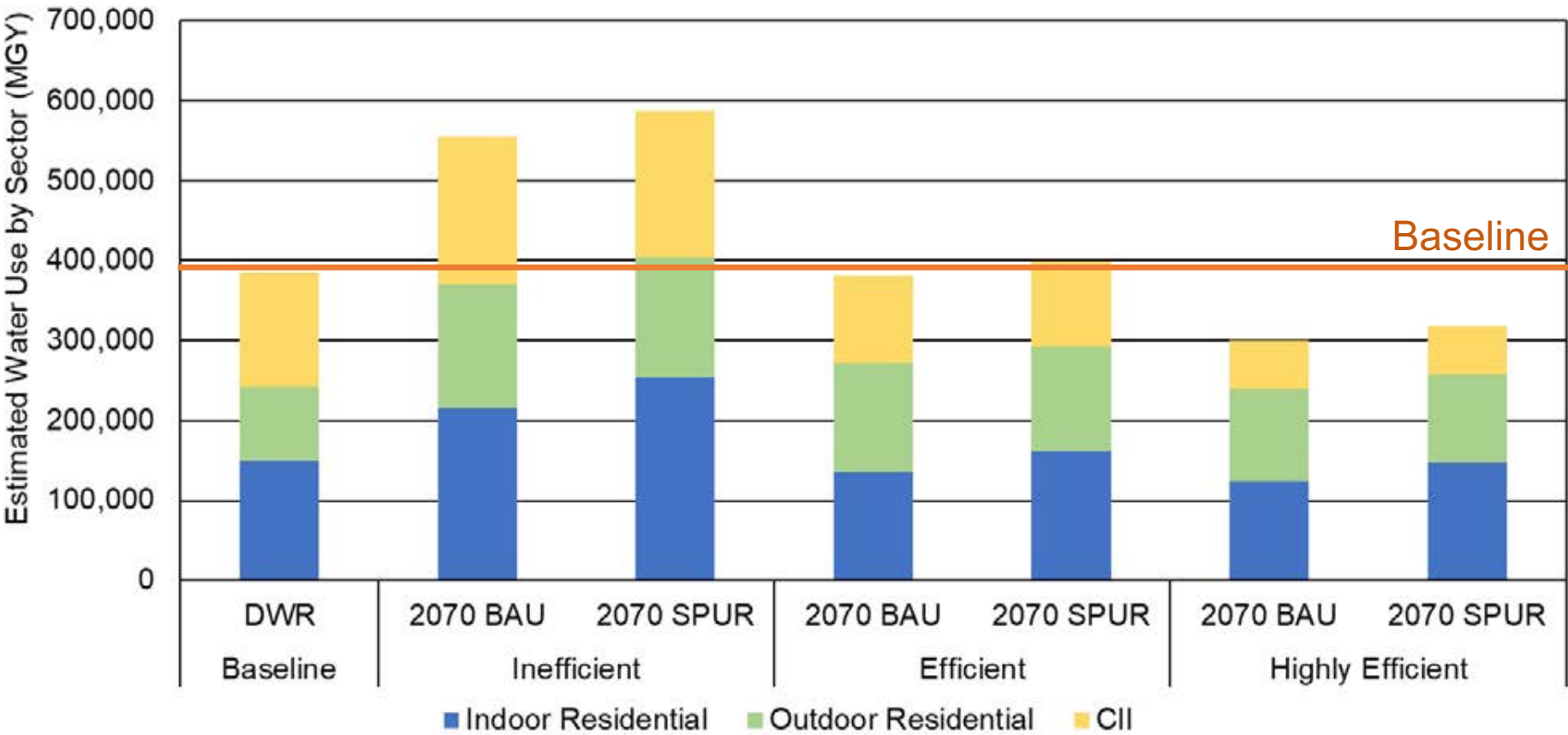
## Three Efficiency Scenarios

- Inefficient
- Efficient
- Highly Efficient

# Key Findings

1. 2070 regional water demand holds steady or declines with modest improvements in efficiency
2. Local water demand may increase in counties where population or job growth is concentrated
3. Managing CII water demand is critical in offsetting increases in residential water demand, but poorly understood
4. Outdoor water use drives variation in residential water demand associated with different development scenarios
5. Pairing efficiency with a broad portfolio of policy, planning, management, and technical options can help further manage future water demand

# 2070 regional water demand holds steady or declines with modest improvements in efficiency



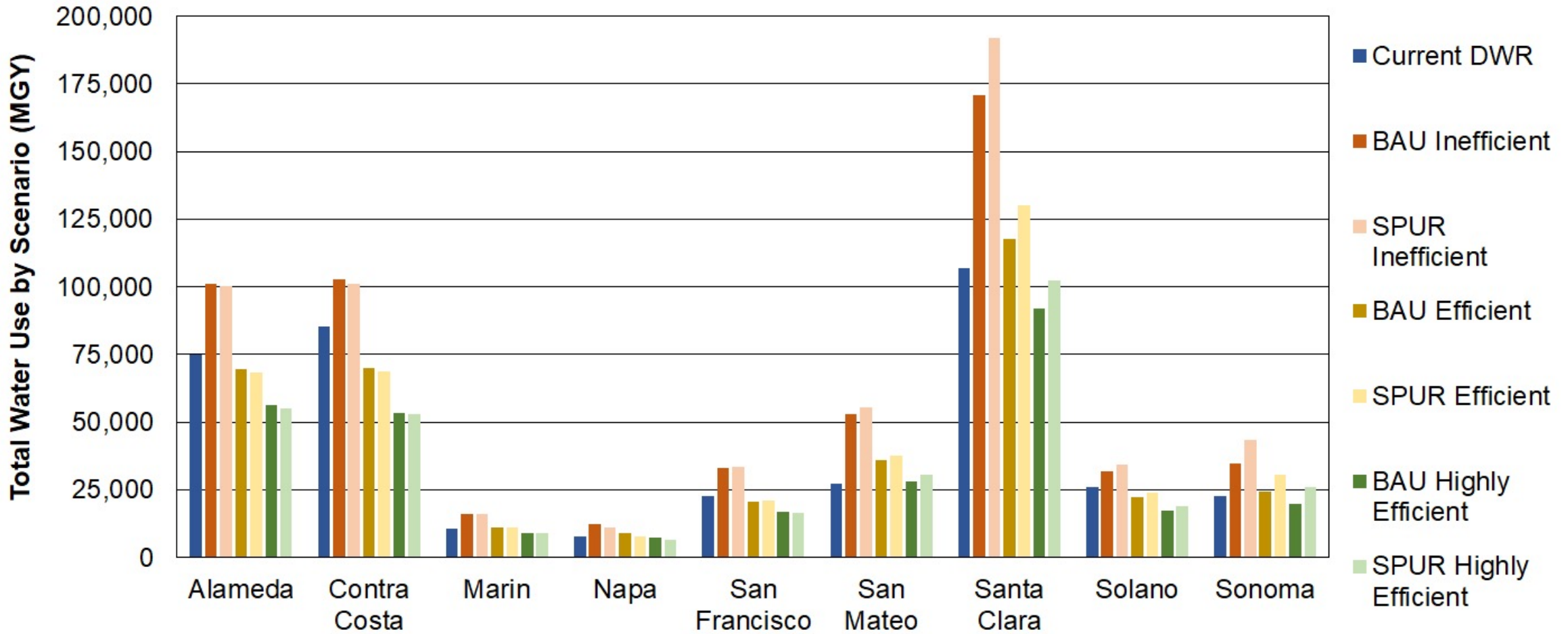
2070 SPUR Scenario adds 2.2M additional units of housing vs. 1.4 M in 2070 BAU



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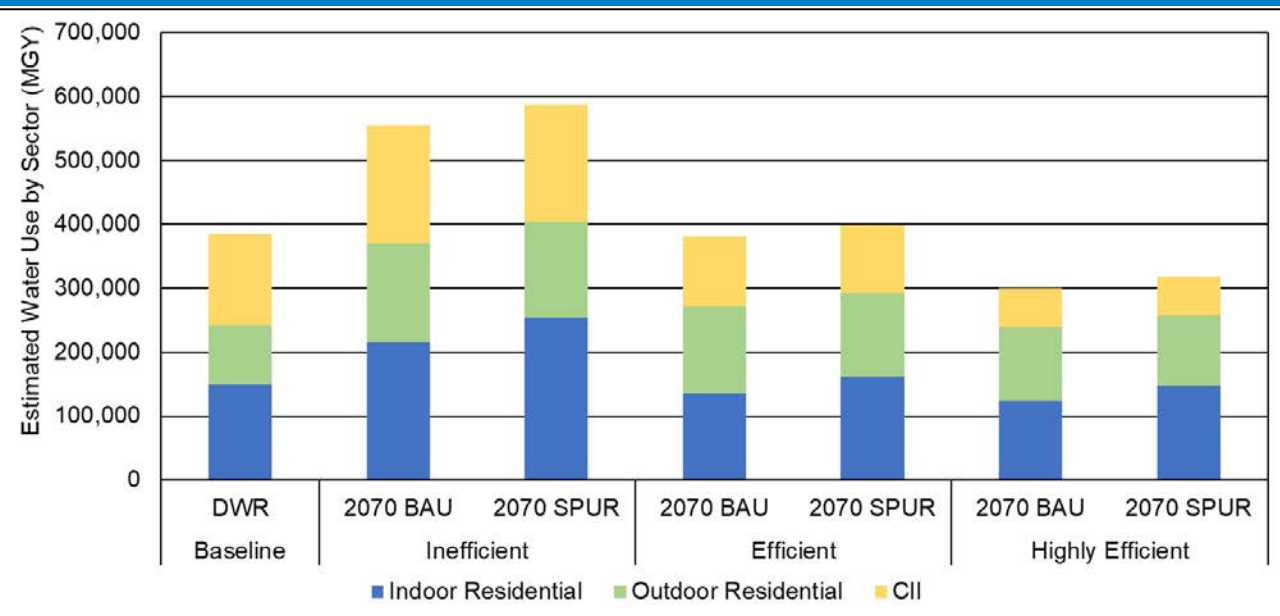


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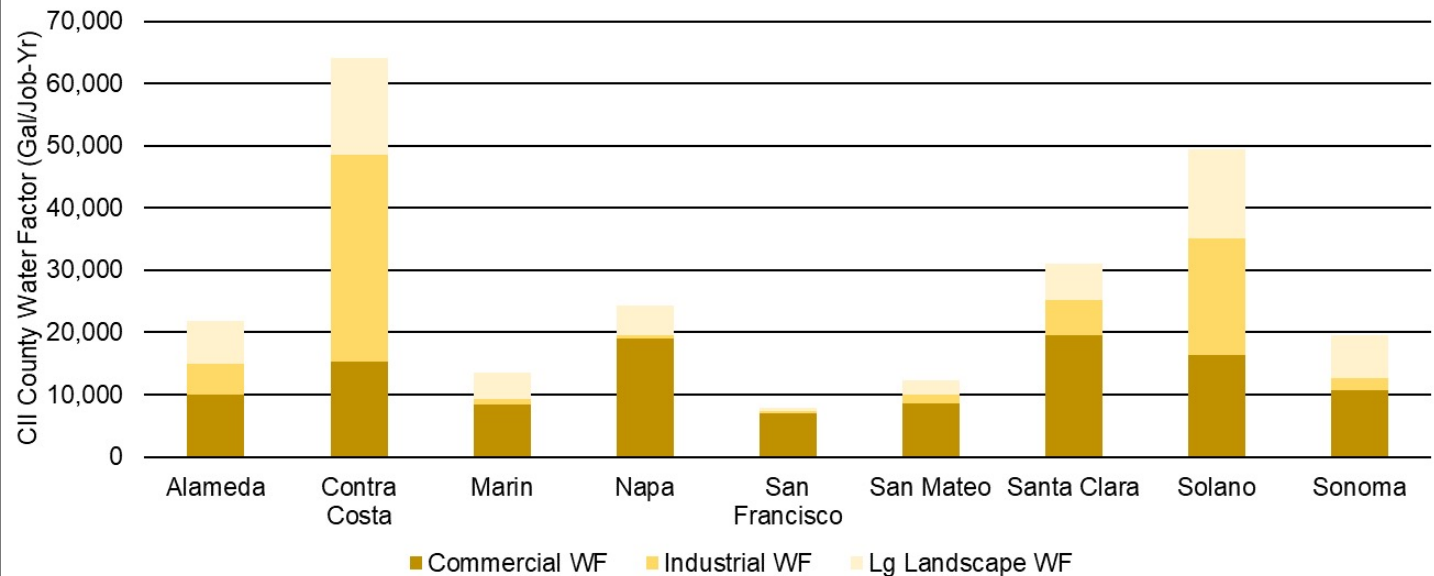


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Decreasing CII water demand accounts for substantial reduction in 2070 water demand

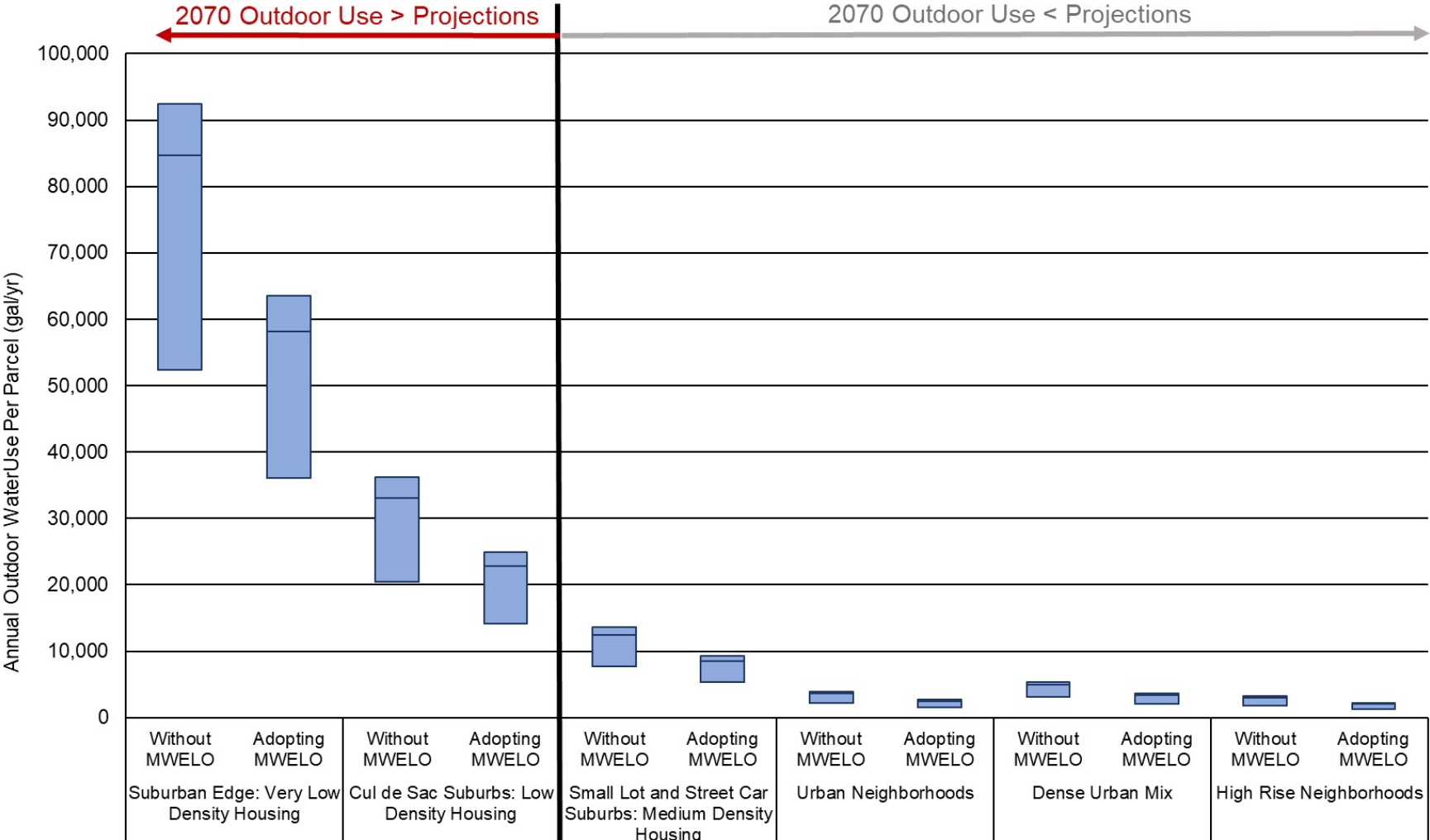
Spatial variation in CII water factors across Bay Area counties



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# Outdoor water use drives variation in residential water demand associated with different development scenarios



- Drivers of Reduced Outdoor Water demand:
- Low-water use landscaping
  - Efficient irrigation
  - Reducing irrigated landscape area per housing unit

MWELo – Model Water Efficient Landscape Ordinance



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# Thank You

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# Efficiency Scenarios

Water Use	Inefficient	Efficient	Highly Efficient
<b>Indoor Residential</b>	2017 standards stay in place through 2070	Passive uptake of efficient fixtures; Cut leaks by 50%	Universal uptake of efficient fixtures; Cut leaks by 75%
<b>Outdoor Residential</b>	Only new housing adopts outdoor efficiency standards (MWELO)	50% of existing and all new housing adopt outdoor efficiency standards	All existing and new housing adopt outdoor efficiency standards
<b>Commercial, Industrial, and Institutional</b>	No change from existing water factors	10% gain in efficiency per decade	20% gain in efficiency per decade

# Development Scenarios Evaluated

<b>Scenarios</b>	<b>Housing Units (Million)</b>	<b>Estimated Population (Million)</b>	<b>Jobs (Million)</b>
<b>Current (Baseline)</b>	2.98	8.20	5.52
<b>2070 Business as Usual (BAU)</b>	4.38	12.65	7.62
<b>2070 SPUR</b>	5.18	14.98	7.62

# Estimating Water Demand in 2070: Scenario Analysis

## 6 Efficiency and Development Scenarios (+ Baseline)

<b>Scenario 1</b> <b>“Dense+Inefficient”</b>  Inefficient Water Use  +	<b>Scenario 3</b> <b>“Dense+Efficient”</b>  Efficient Water Use  +	<b>Scenario 5</b> <b>“Dense+Highly Efficient”</b>  Highly Efficient Water Use  +
SPUR 2070 growth: Dense infill housing with a high proportion of multifamily buildings		
<hr/> BAU 2070 growth: Sprawling greenfield development with a high proportion of single family homes		
+  Inefficient Water Use  <b>Scenario 2</b> <b>“Sprawl+Inefficient”</b>	+  Efficient Water Use  <b>Scenario 4</b> <b>“Sprawl+Efficient”</b>	+  Highly Efficient Water Use  <b>Scenario 6</b> <b>“Sprawl+Highly Efficient”</b>



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