

Water for a Growing Bay Area:

How the Bay Area Can Grow Without Increasing Water Demand

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Introduction

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Motivation

The Bay Area is projected to

- Add 2.1 million new jobs
- Attract as many as 6.8 million people
- Needs to build at least 2.2 million new housing units just to prevent housing affordability from getting worse

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Motivation

Can the Bay Area grow and build the housing it needs without using more water?

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Why Should We Build More Housing?

- From 2011-2017, the Bay Area added 4.7 jobs for every new home
- People of color are more likely to rent, and to be rent-burdened
- 35,000 people are unhoused, or live in substandard housing

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Where the Bay Area Gets it Water

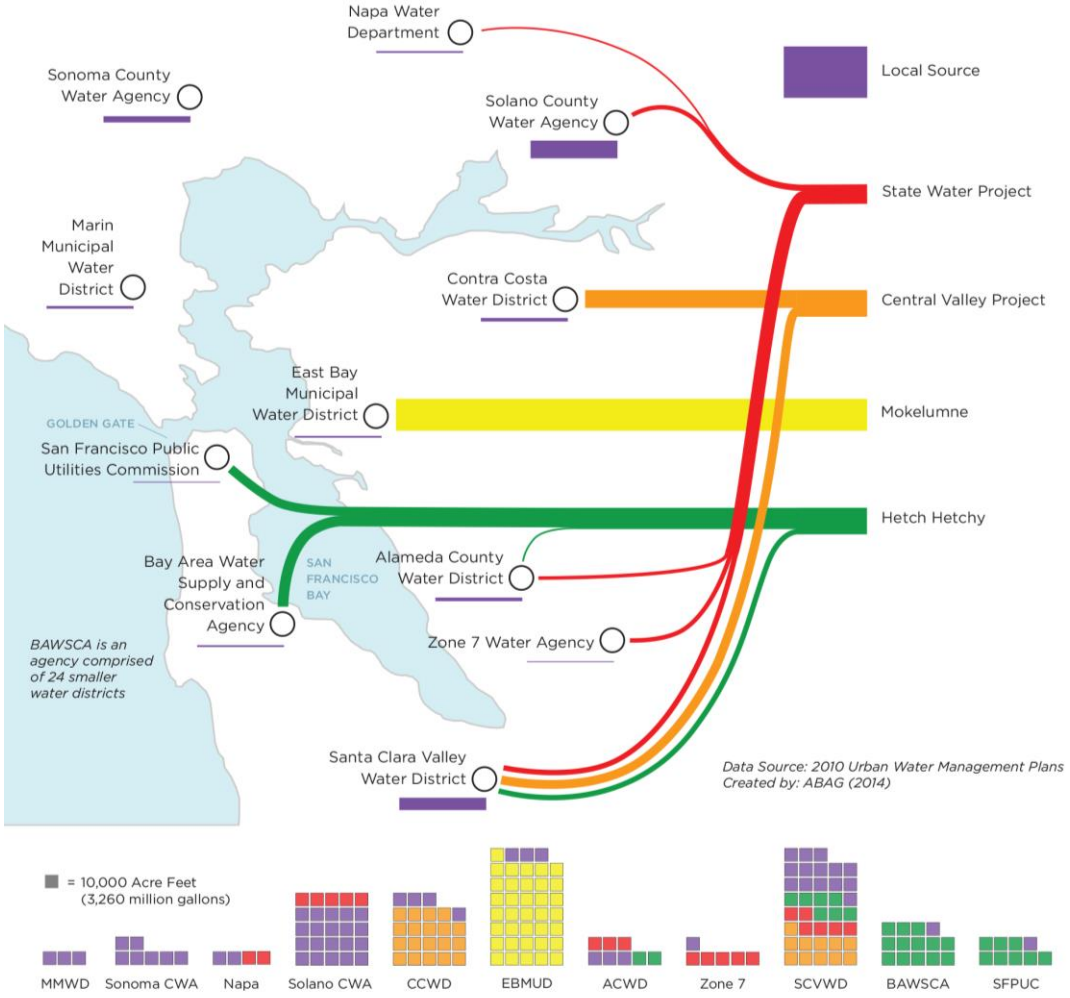
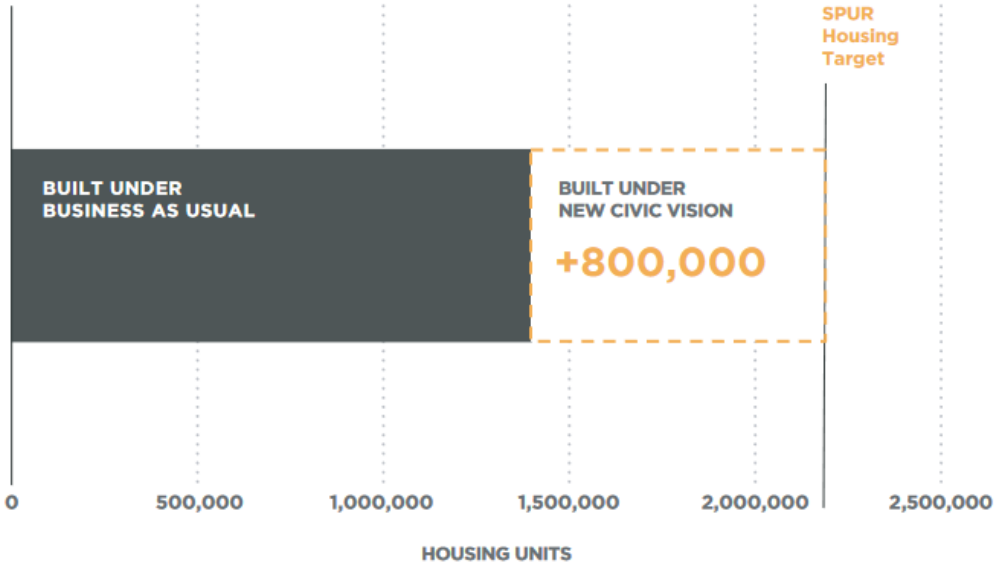


Image Source: [Association of Bay Area Governments](#) (ABAG)

Why is Infill Development Important?

- Key to meeting housing need
- Integrating historically white, high-opportunity neighborhoods
- Reducing driving distances
- Preserving open space
- Reducing exposure to hazards



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Why is Water Key to Addressing Housing and Land Use Problems?

Droughts are projected to be more frequent and severe by end of century

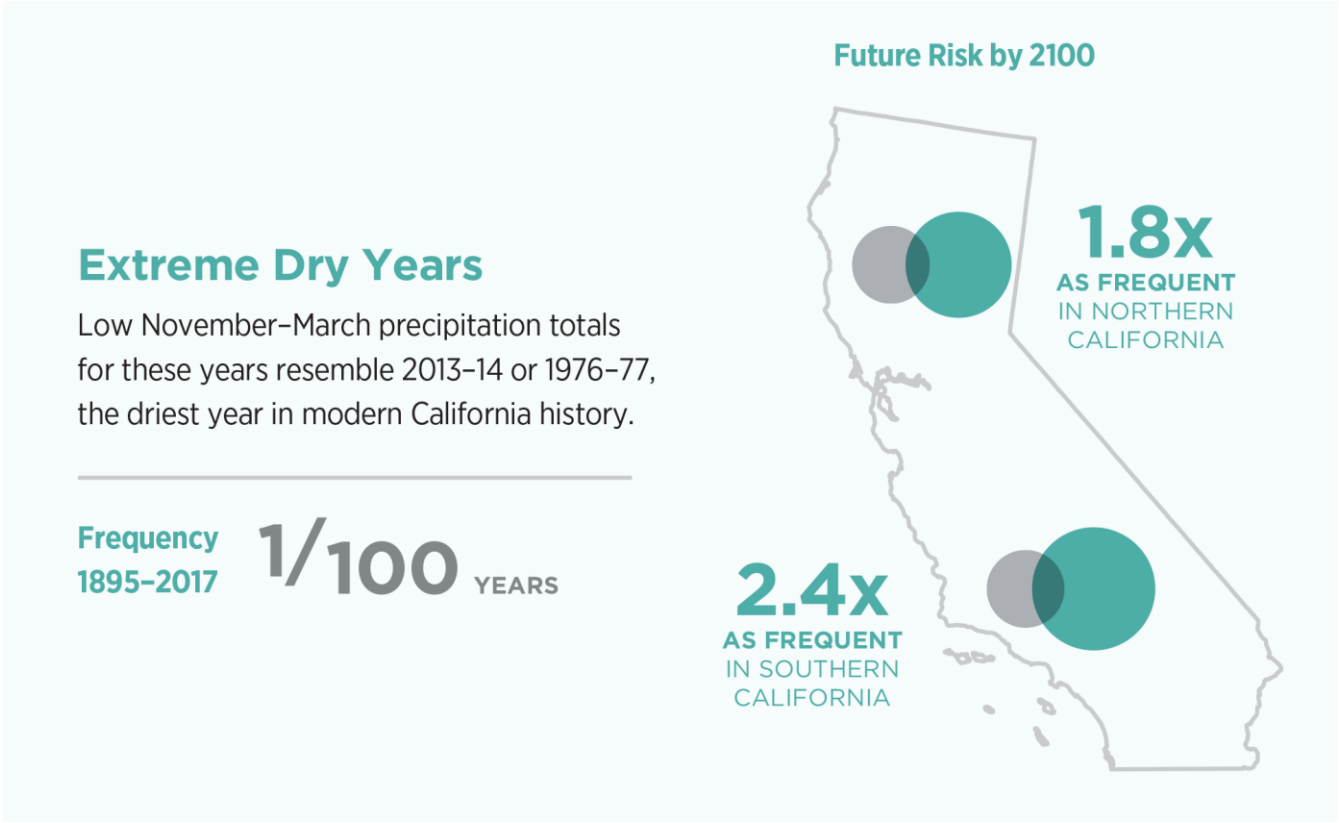
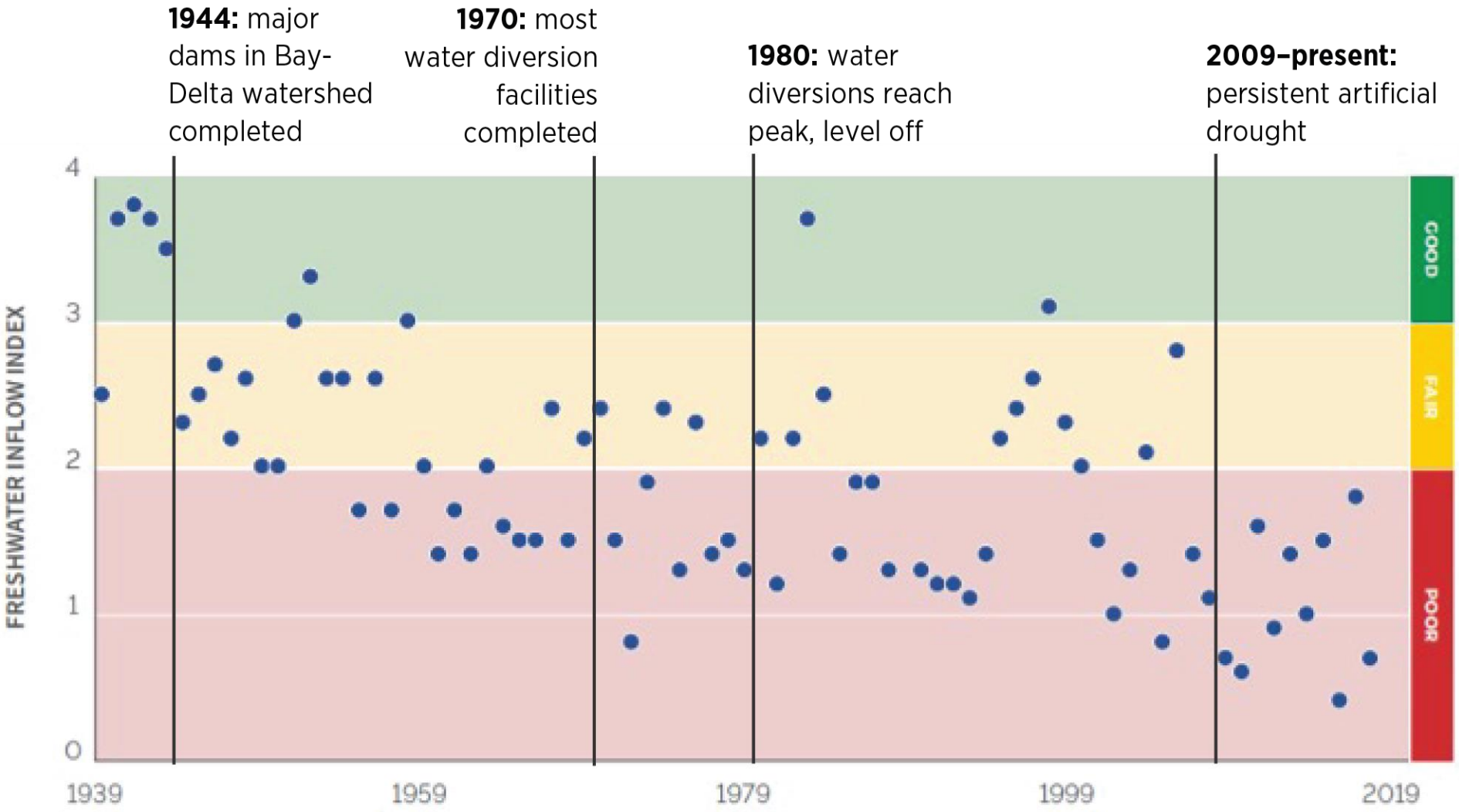


Image Source: Redrawn from UCLA Institute of the Environment

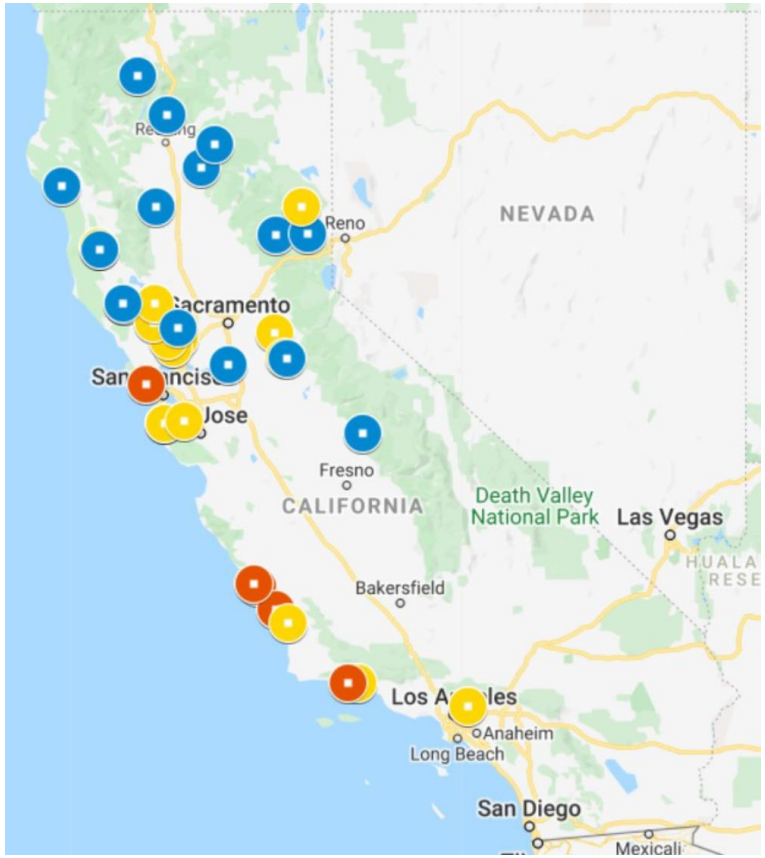
The Bay-Delta is In Crisis



Water Could Limit High-Priority Development

Without careful long-term planning, water limitations could prevent us from building housing in the right places.

Map shows thirty-seven communities that have or had building moratoriums because of water limitations



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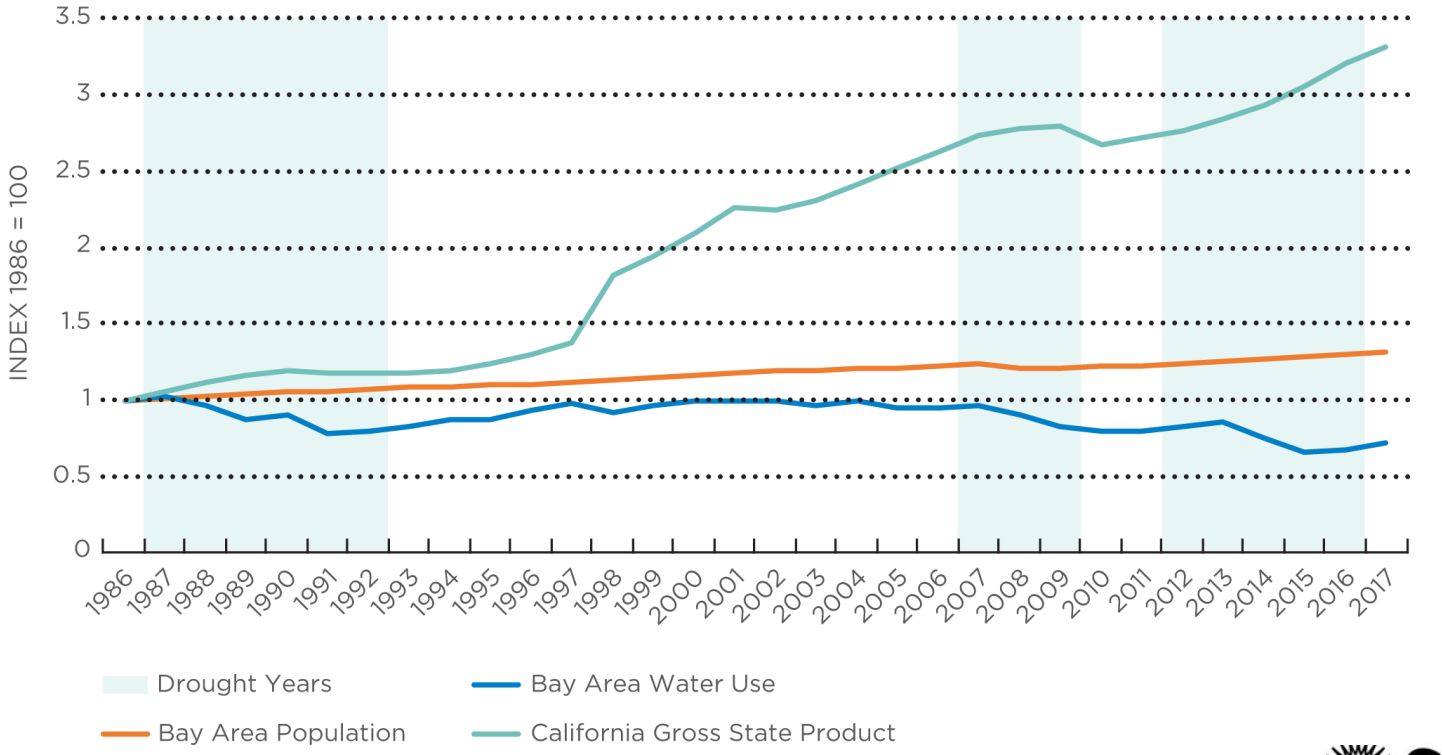
Water Could Limit High-Priority Development

Sixteen of the twenty-eight cities appealing their Regional Housing Needs Allocation pointed to water supply limitations

Growth Doesn't Always Mean More Water Use

Over the past 30 years, the Bay Area's population grew by a third – yet total water use fell by a third



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Question:

Can the Bay Area Grow, and Build the Housing it Needs, Without Increasing Water Demand?

	INEFFICIENT WATER USE	EFFICIENT WATER USE	HIGHLY EFFICIENT WATER USE
2070 NEW CIVIC VISION GROWTH: DENSE INFILL HOUSING, HIGH SHARE OF MULTIFAMILY BUILDINGS	**Scenario 1:** Compact & Inefficient	**Scenario 3:** Compact & Efficient	**Scenario 5:** Compact & Highly Efficient
2070 BUSINESS AS USUAL GROWTH: SPRAWLING GREENFIELD DEVELOPMENT, HIGH SHARE OF SINGLE FAMILY HOMES	**Scenario 2** Sprawl & Inefficient	**Scenario 4:** Sprawl & Efficient	**Scenario 6:** Sprawl & Highly Efficient

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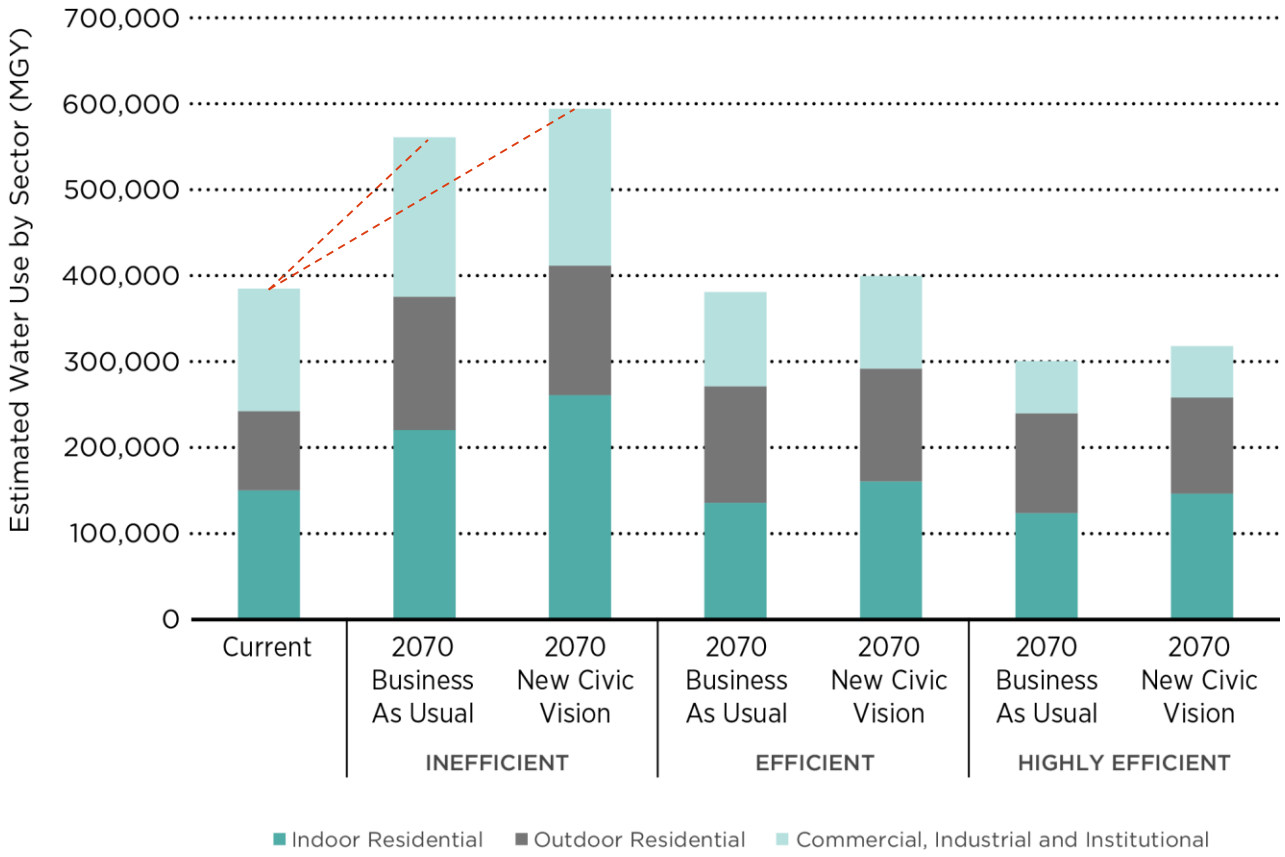
A Preview of our Findings

- Water use could increase dramatically if per-capita consumption doesn't decline substantially



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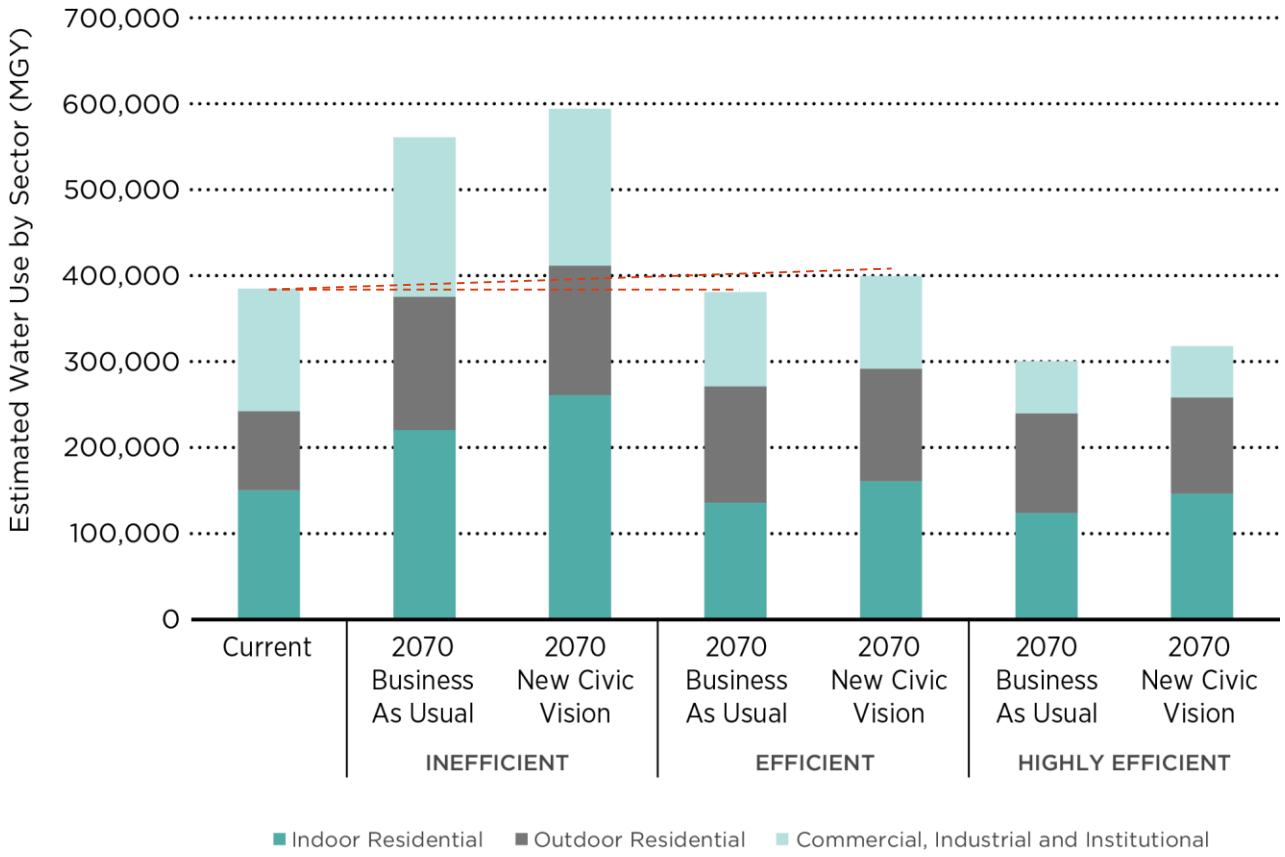
A Preview of our Findings

- Relatively modest estimates of future increased efficiencies allows the region to grow as needed without increasing water use



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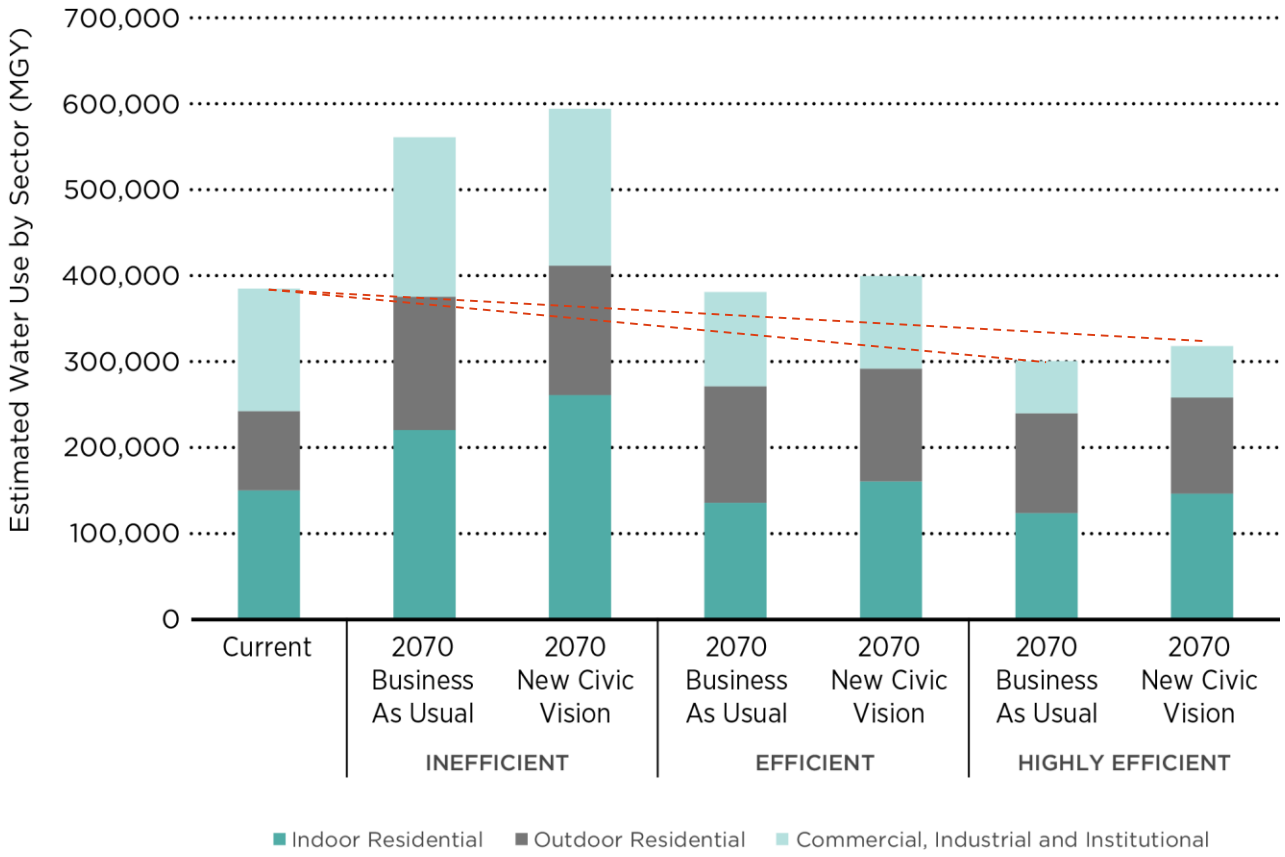
A Preview of our Findings

- More ambitious estimates of future increased efficiencies allow the region to grow as needed and actually decrease its total water use



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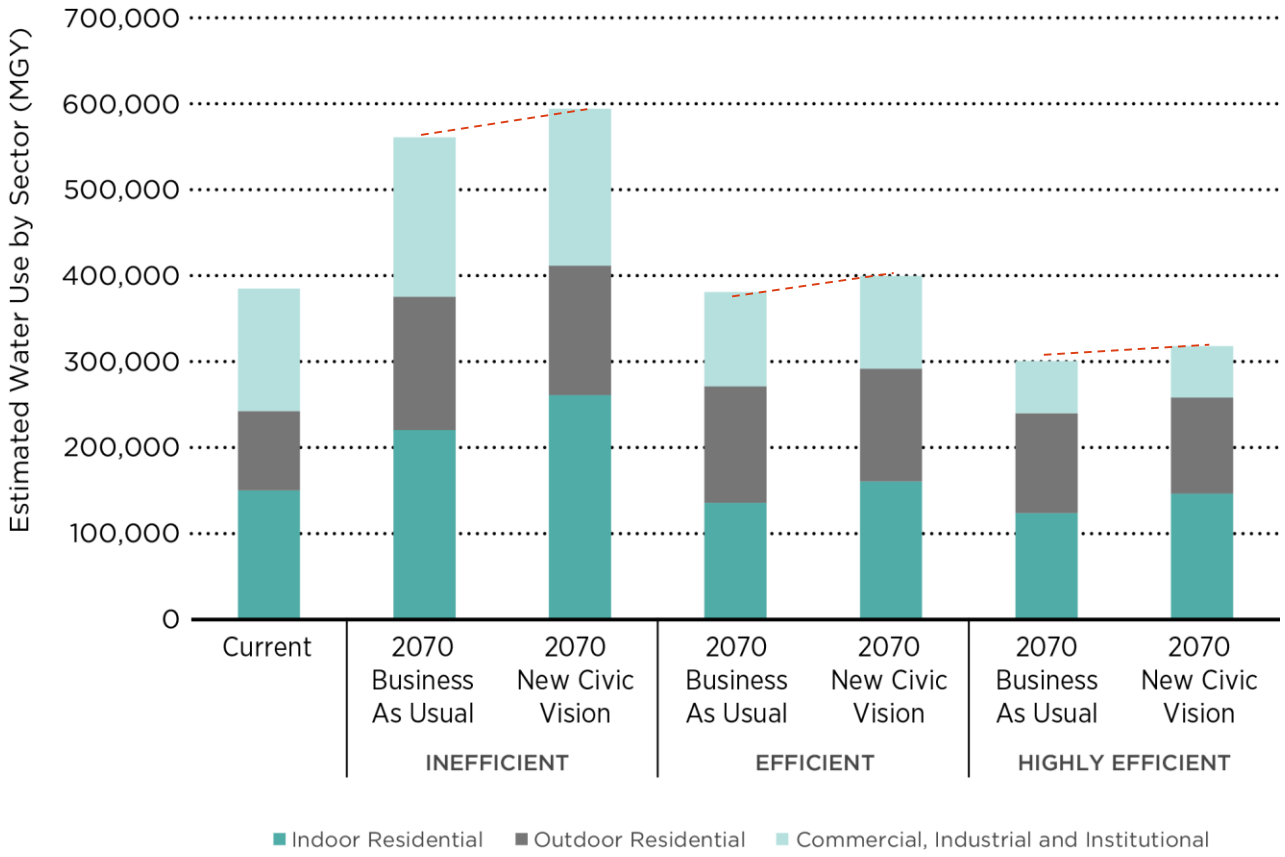
A Preview of our Findings

- More compact growth (New Civic Vision) results in slightly higher total water use because it accommodates 800,000 more housing units than Business as Usual growth.



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Water Use Projections

Recommendations:

How the Bay Area Can Grow Without Increasing Water Demand

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Three Strategies, Sixteen Recommendations

Strategy 1. Decrease demand with conservation and efficiency.

Strategy 2. Pursue compact land use strategies with a high share of multifamily housing.

Strategy 3. Invest in alternative water supplies, strengthen mechanisms for cooperation to share water regionally and ensure a portion of water saved through conservation and efficiency is returned to ecosystems.

For all sixteen recommendations, please see the report.

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Strategy 1. Decrease demand with conservation and efficiency

Recommendations on Decreasing Outdoor Water Use; or, what are we to do about the Model Water Efficiency Landscaping Ordinance

Model Water Efficient Landscape Ordinance Implementation Annual Reporting 2019

This form is provided to help local agencies comply with Section 495. The use of this form is not required.

Section Cited		
	Agency Name:	City of Oakland
	Address:	250 Frank H Ogawa Plaza, Suite 2114, Oakland
	Contact Name:	[redacted]
	Title:	
	Phone Number and Extension:	
	Email:	

Number of WELO projects permitted in 2019: 19 (0 retrofits)
"Due to the lack of adequate planning and building staff as well as budgetary and resource constraints, the City believes that enforcement of water limitations devoted to landscaping should be done through water utilities."

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Strategy 1. Decrease demand with conservation and efficiency

Recommendations on Decreasing Outdoor Water Use

Recommendation 4. Increase enforcement and compliance with California's Model Water Efficient Landscape Ordinance by simplifying the requirements and increasing oversight and technical support.

Recommendation 5. Increase funding to incentivize property owners to install water-efficient landscaping in existing properties.

Recommendation 6. Ban nonfunctional turf.

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Strategy 1. Decrease demand with conservation and efficiency

Indoor Residential Water Use

DEVICE	SUBTYPE	UNITS	CALIFORNIA STANDARD FLOW RATE	CUTTING-EDGE TECHNOLOGY FLOW RATE	Δ
Bathroom faucet		gallons per minute	1.2	1	-0.20
Kitchen faucet		gallons per minute	1.8	NA	NA
Showerhead		gallons per minute	1.8	0.75	-1.05
Toilet		gallons per flush	1.28	0.79	-0.49
Clothes washer	Front-loading, compact	gallons/cycle/cubic foot	8.3	2.6	-5.70
Clothes washer	Front-loading, standard	gallons/cycle/cubic foot	4.7	2.6	-2.10
Clothes washer	Top-loading, compact	gallons/cycle/cubic foot	12	2.6	-9.40
Clothes washer	Top-loading, standard	gallons/cycle/cubic foot	6.5	2.6	-3.90
Dishwasher	Compact	gallons/cycle	3.5	1.95	-1.55
Dishwasher	Standard	gallons/cycle	5	1.95	-3.05

Strategy 1. Decrease demand with conservation and efficiency

Indoor Residential Water Use

Recommendation 7. Update California's legal definition of "non-compliant" water fixtures, and address leaks during alterations and improvements.

Recommendation 8. Require that alterations and improvements requiring a building inspection also trigger an inspection for compliant fixtures and leaks.

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Strategy 1. Decrease demand with conservation and efficiency

Indoor Residential Water Use

Recommendation 9. Make incentive programs for water-wise home improvements more accessible to low-income households.

Strategy 1. Decrease demand with conservation and efficiency

Commercial, Industrial and Institutional (CII)

Recommendation 10. Develop a local baseline understanding of CII water use and estimate conservation and efficiency potential in the CII sector.

Strategy 2.

Pursue compact land use strategies with a high share of multifamily housing.

Recommendation 12. Change land use laws to encourage denser development in infill areas and stop sprawl development in existing open space.

Recommendation 13. Prioritize conservation, efficiency and alternative supplies over moratoriums on new connections. Only apply building moratoriums to infill housing as a last resort.

Recommendation 14. Require communities to demonstrate low water use and investment in alternative supplies before they can lower housing allocations based on water limitations.

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Strategy 3.

Invest in alternative water supplies, strengthen mechanisms for cooperation to share water regionally and ensure a portion of water saved through conservation and efficiency is returned to ecosystems.

Recommendation 16. Grow and strengthen mechanisms for water transfers and exchanges.

Recommendation 17. Look for opportunities for urban systems to invest in efficiency in agricultural districts to facilitate transfers or exchanges of excess water.

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Strategy 3.

Invest in alternative water supplies, strengthen mechanisms for cooperation to share water regionally and ensure a portion of water saved through conservation and efficiency is returned to ecosystems.

Recommendation 18. Strengthen mechanisms to ensure that a portion of water saved through conservation and efficiency is restored to the environment.

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For the Full Report

spur.org/bayareawater

Thank you to our supporters, Silicon Valley Community Foundation and Mary Crocker Trust, and many people who helped along the way!

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