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Energy Down the Drain: The Water-Energy-Climate Nexus

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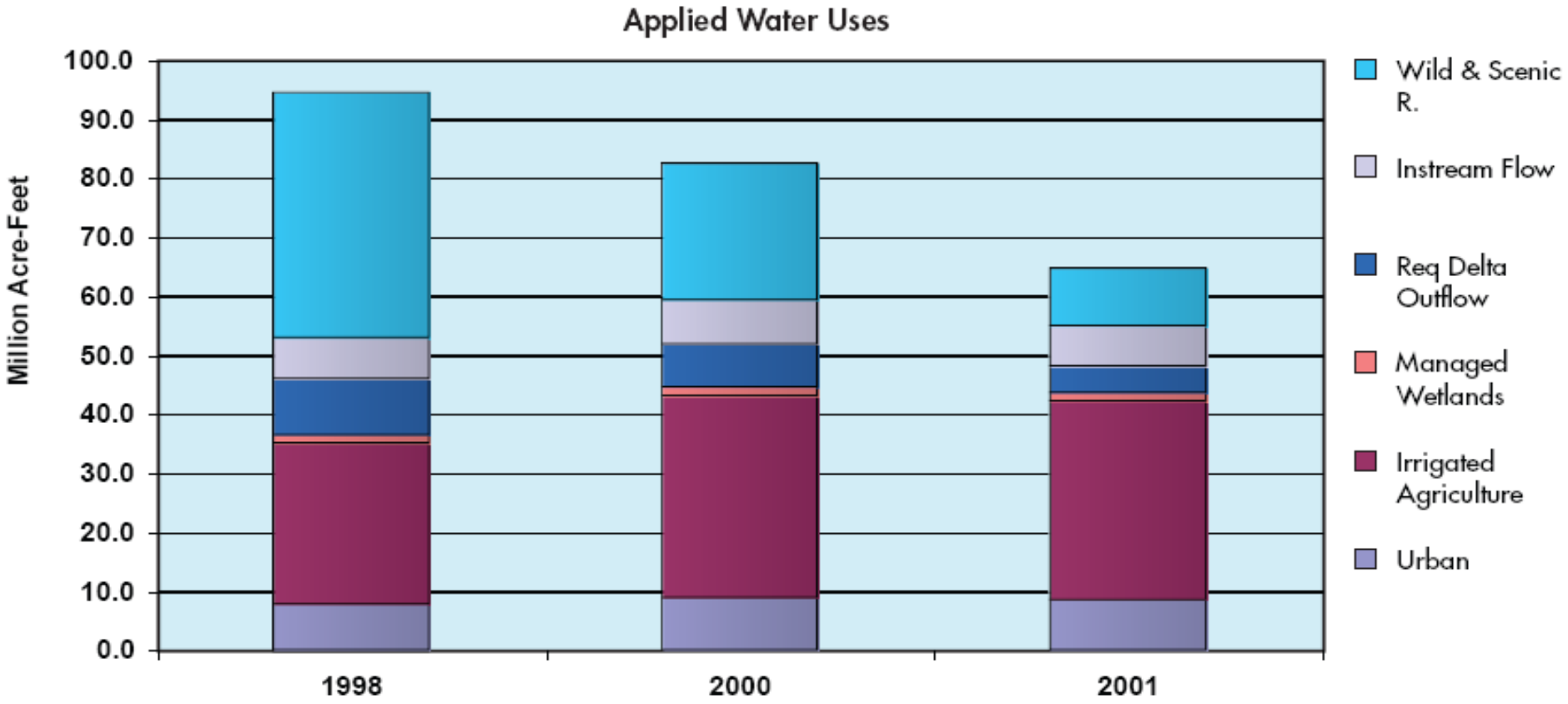
Water use in California – where does it go?



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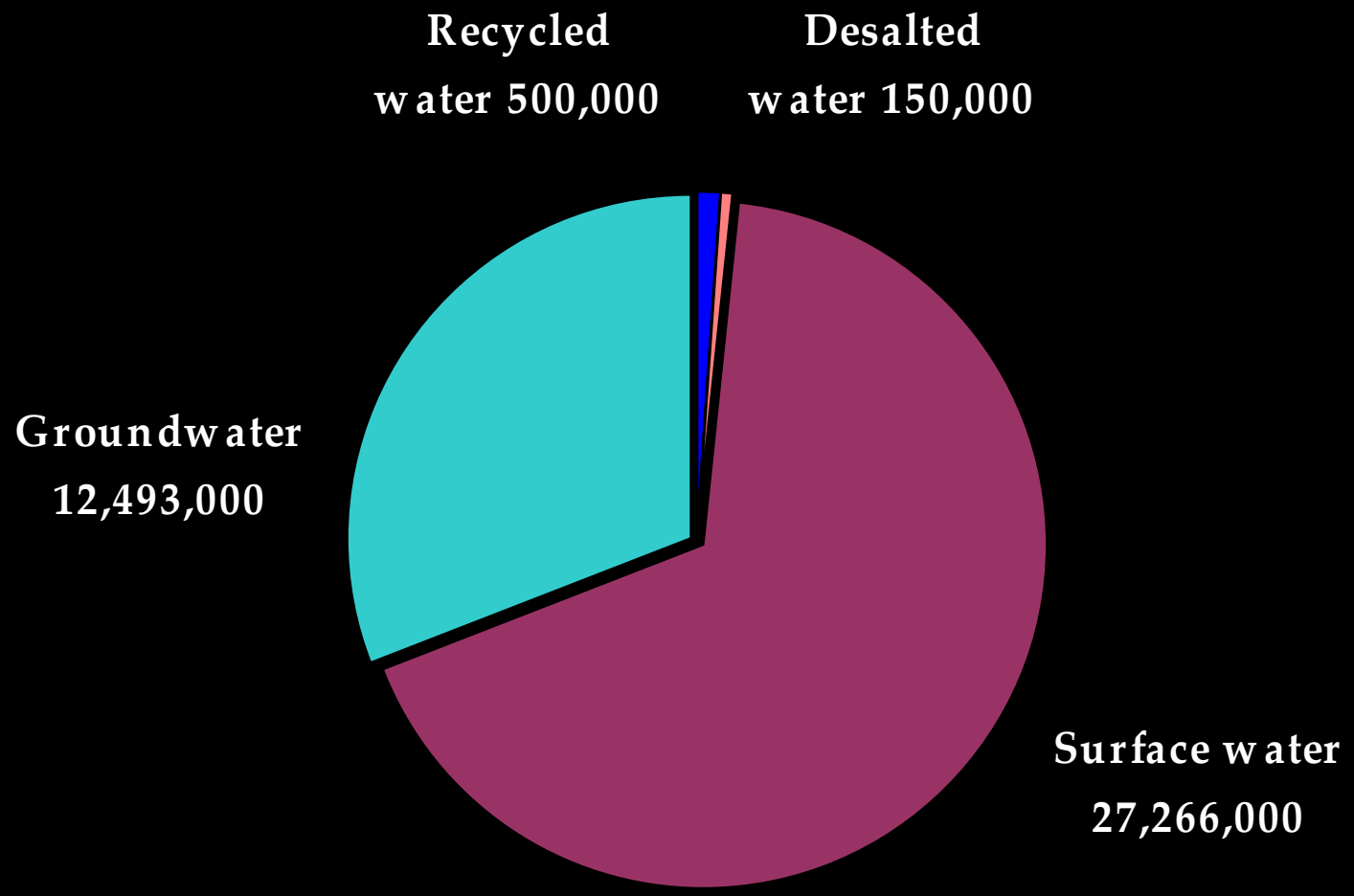
Primary Sources of Water in California in Acre-Feet per Year



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Energy Use in California Associated with Water Use

- Water is the single largest energy user in the state
- The State Water Project represents 2-3 % of California's electricity consumption
- 19% of California's electricity consumption is used on water
- Water uses over 30% of non power plant natural gas

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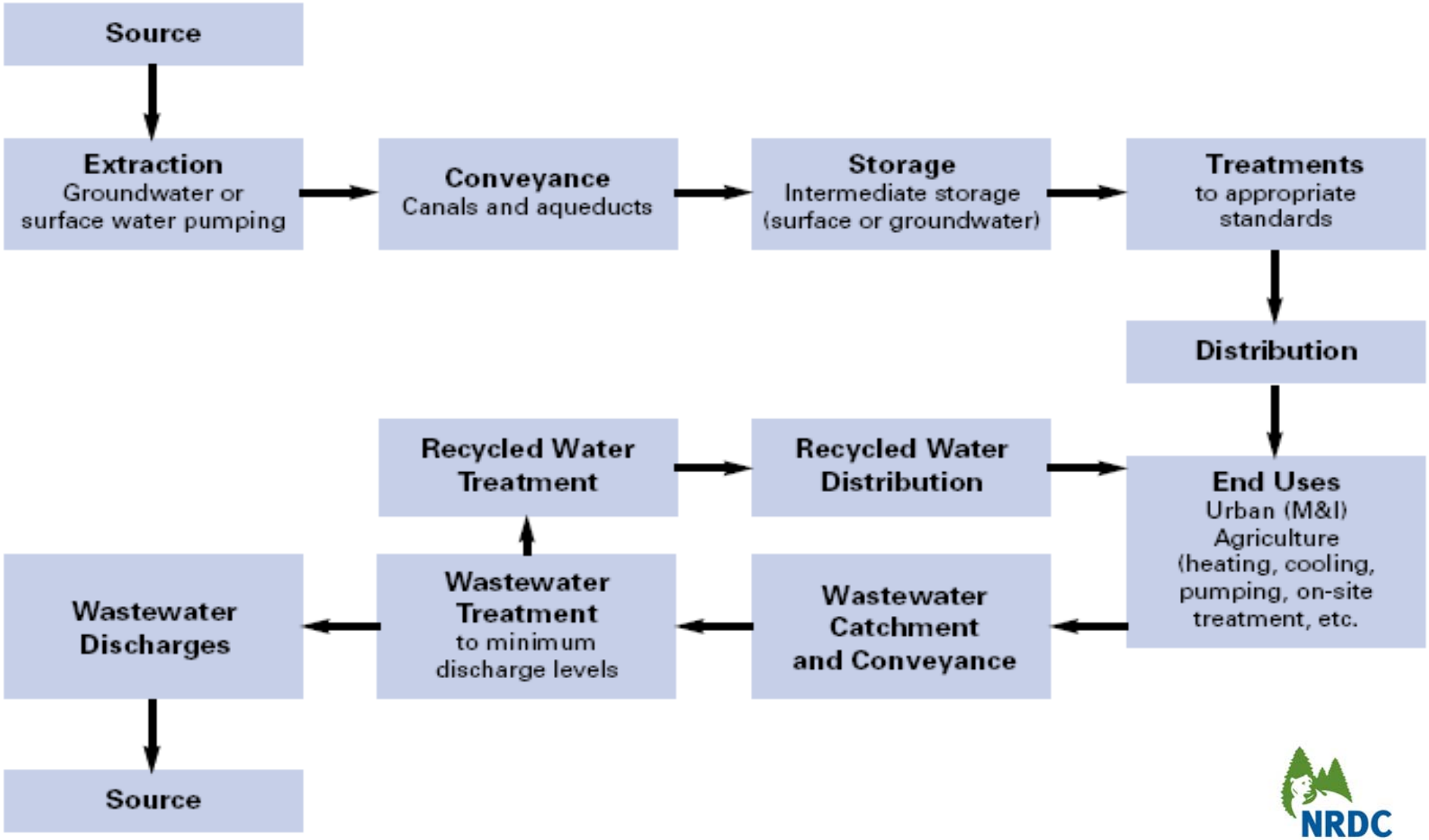
Energy Inputs to Water Systems



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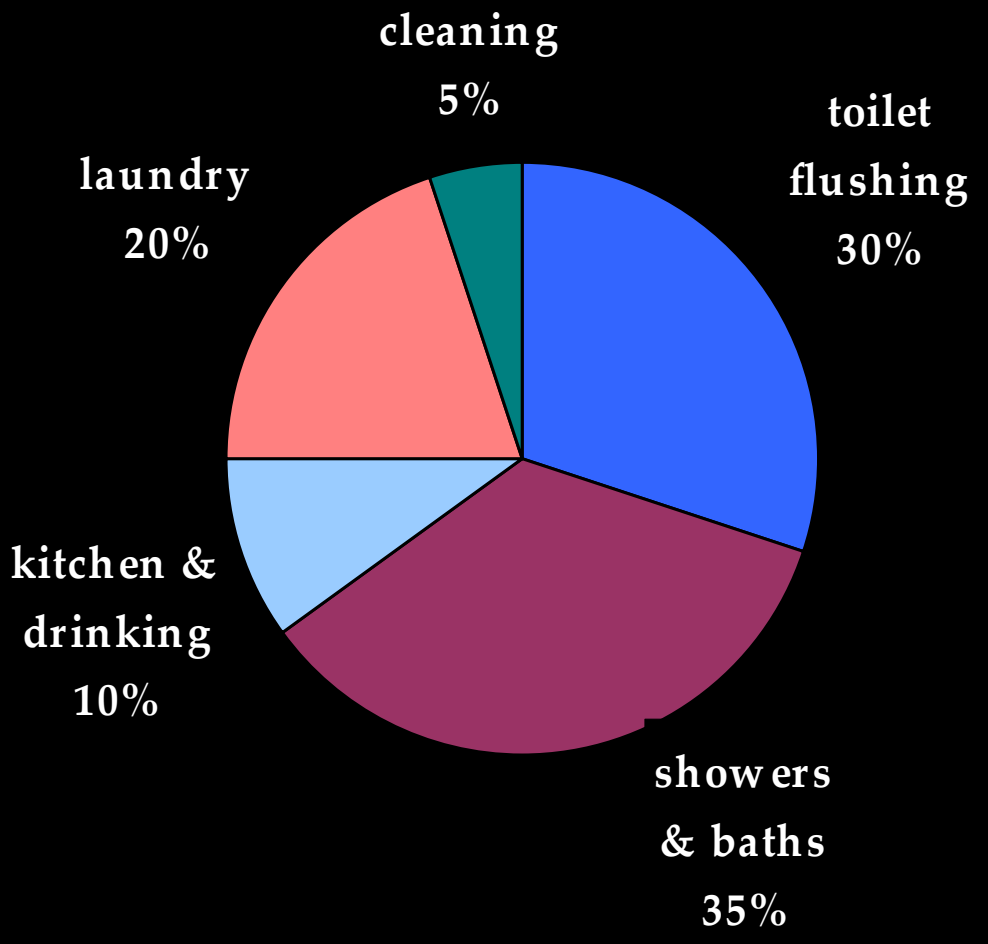
Residential – How much energy associated with indoor water use

- toilets
- showers
- clothes washer



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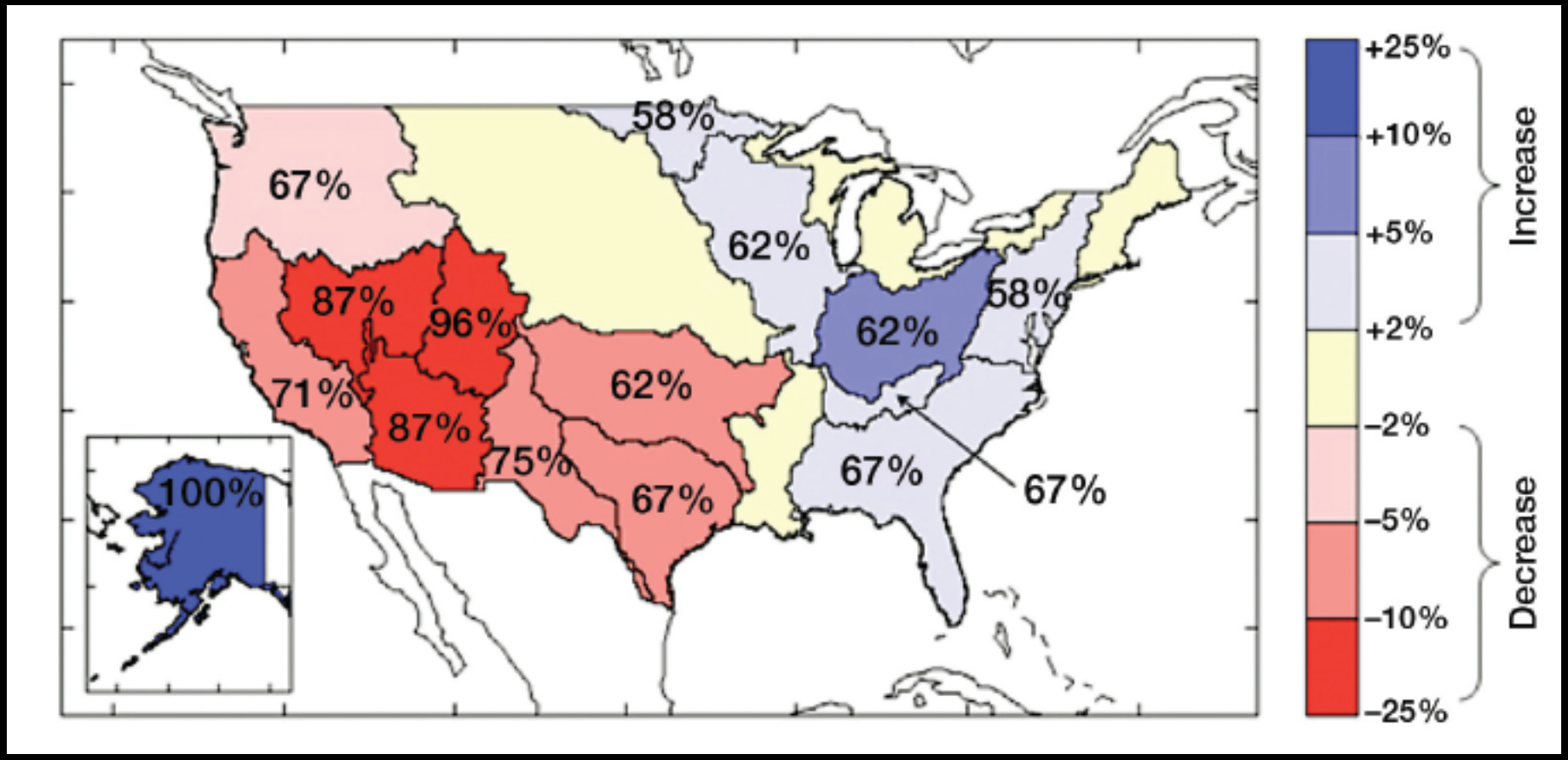
Climate Change in the West



Median Decreases in Annual Runoff

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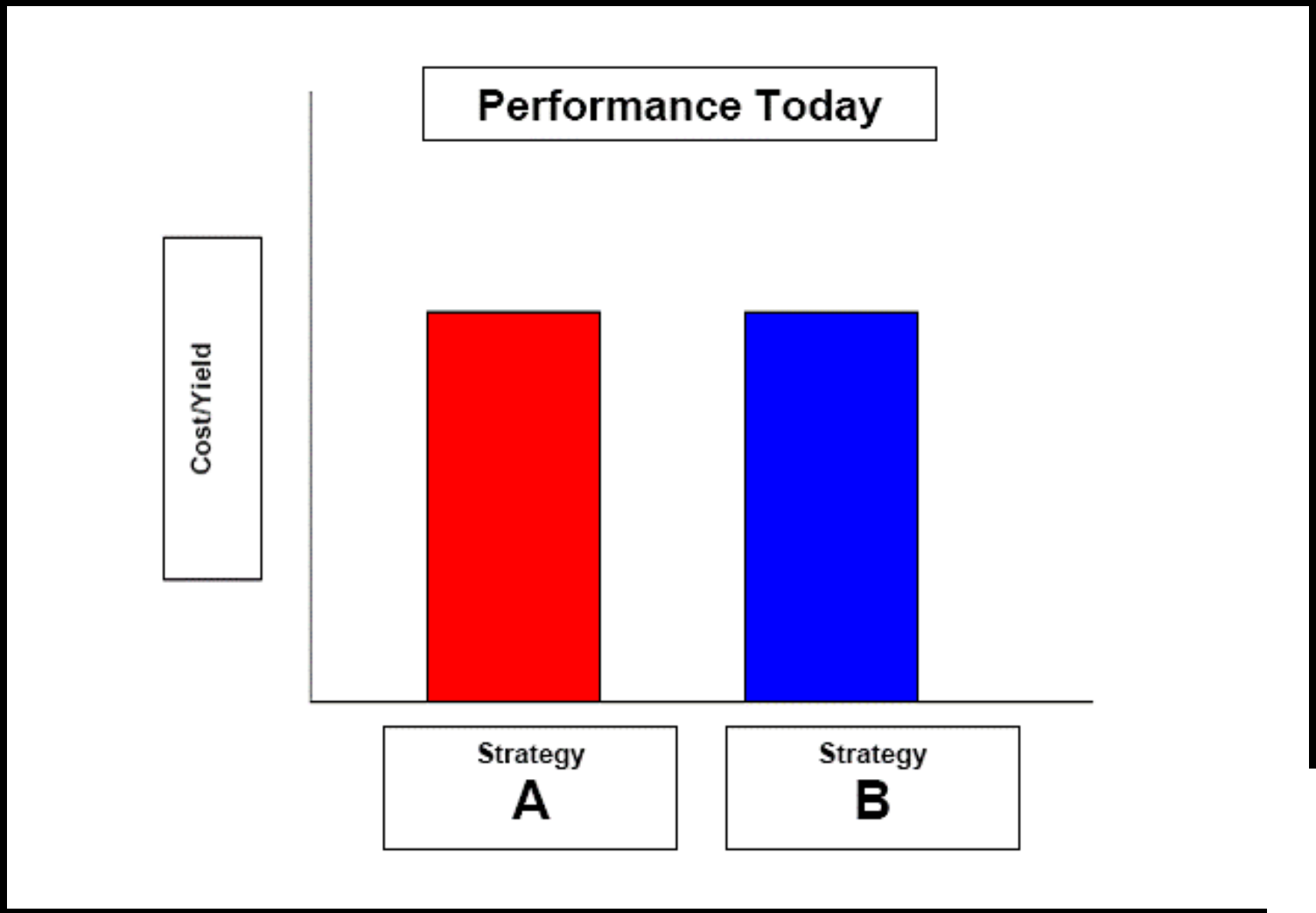
Performance of Water Management Tools Today



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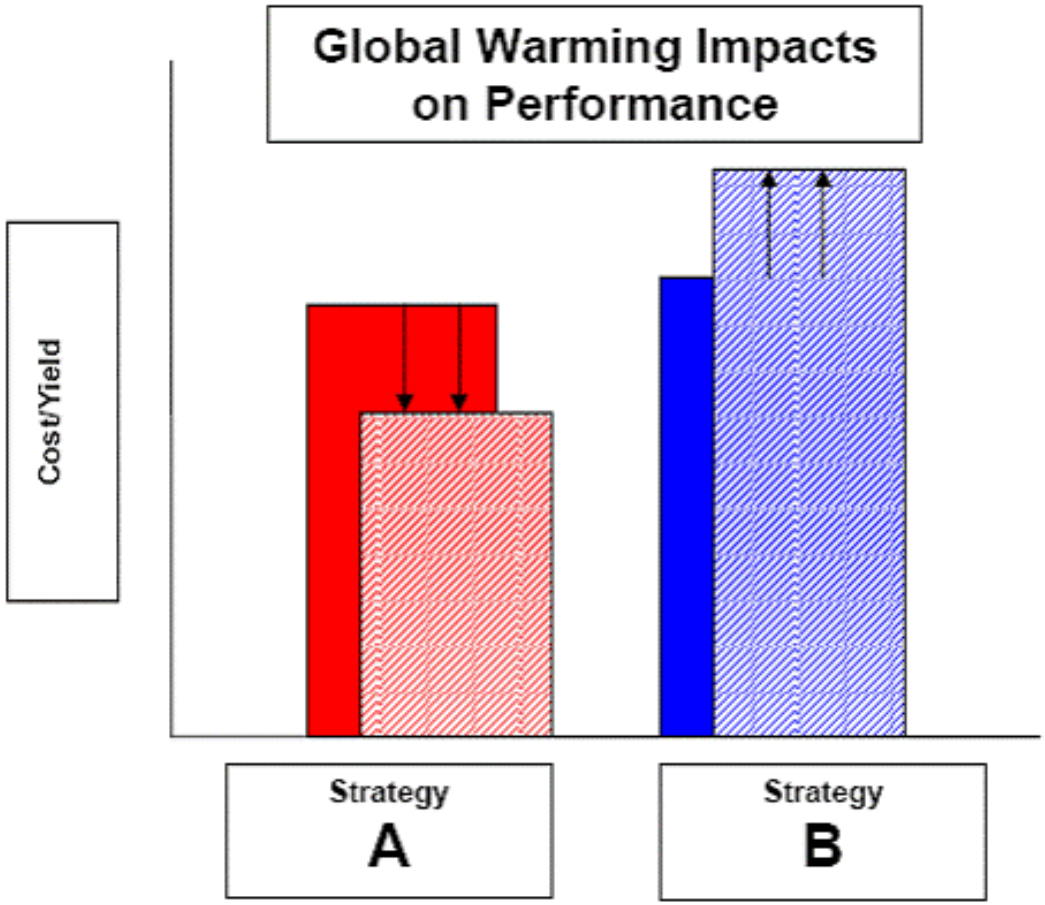
Climate Change Impacts on Performance of Water Tools



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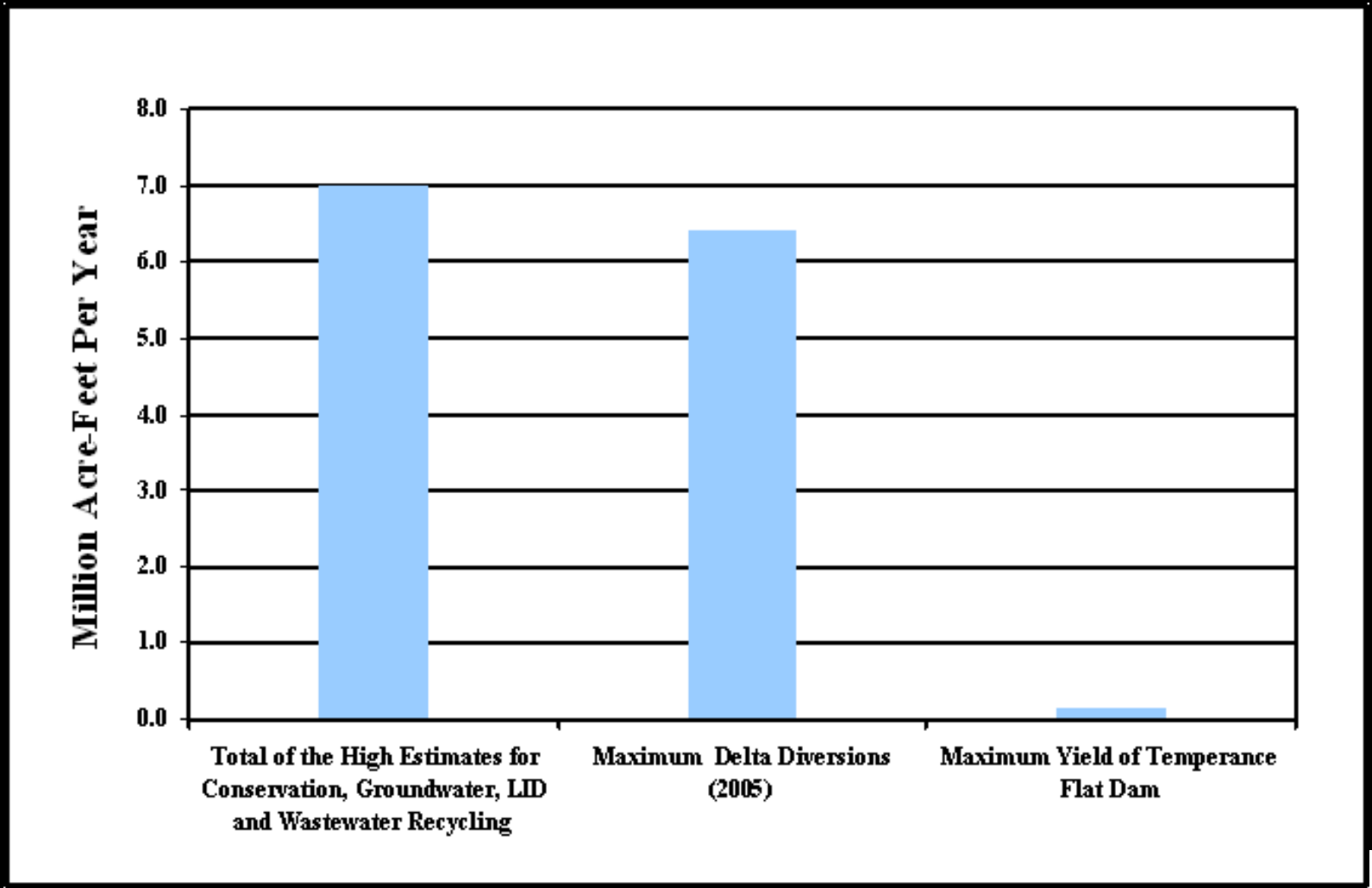
The Virtual River



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LID in practice

Potential Savings in Southern California:

200,000 to 340,000+ acre-feet of water/year

415,000 to 935,000 megawatt-hours/year

130,000 to 292,000 metric tons of CO_2 equivalent/year

That's the equivalent of 19,700 to 44,250 cars off the road each year, or…

…Enough electricity for 16,900 to 38,000 single family homes.

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LID in Practice

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Recycled Water

- **CA has 800,000 to 1.4 million acre-feet of recycled water**
- **500,000 acre feet of recycled water could potentially meet the needs of southern California**
- **Value of the energy and carbon benefit of recycled water is approximately $270/acre foot**

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The Solution:

Reducing water use reduces energy use, which has a direct impact on reducing greenhouse gas emissions, improves fisheries by leaving more water in our river systems, and improving a reliable water supply for agriculture, residents, and wildlife

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Strategies and Recommendations

- **Adopt a water resources loading order and supporting programs that prioritize water efficiency. Adopt a public goods surcharge to fund climate smart water strategies. Of all of our resource options, water conservation and water use efficiency, reducing water consumption is the most beneficial option from an energy and carbon perspective.**

- **Work with Water Managers around the West to secure water agency support for strong state and federal caps on greenhouse gas emissions and to promote use of climate smart water strategies.**

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Strategies and Recommendations

- **Promote integrated climate, energy and water planning.**
- **Create incentives and compensation for incremental investments in recycled water similar to energy efficiency programs.**
- **Promote Low Impact Development throughout the state.**

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