This presentation premiered at WaterSmart Innovations

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Alliance for Water Efficiency
American Council for an Energy-Efficient Economy

MERGING WATER & ENERGY EFFICIENCY: A PROJECT OF COLLABORATION

Part 1. Developing a Common Agenda

Background

- 30 years of energy conservation and increases in efficiency of energy use.
- 20 years of water conservation and increases in efficiency of water use.
- Saving a drop of water saves energy; saving a unit of energy saves water.
- Yet the two communities have historically not worked much together.
- It is time to change that!

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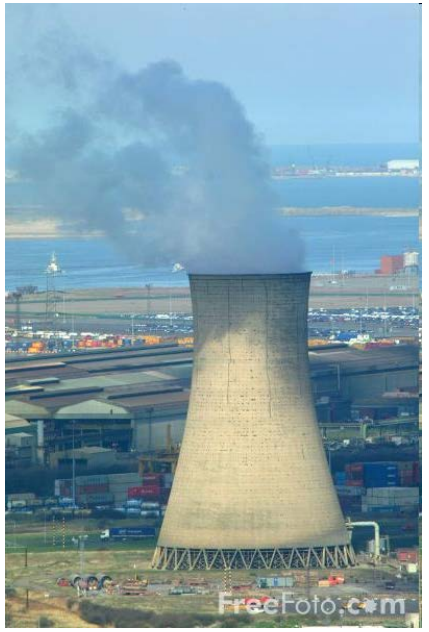
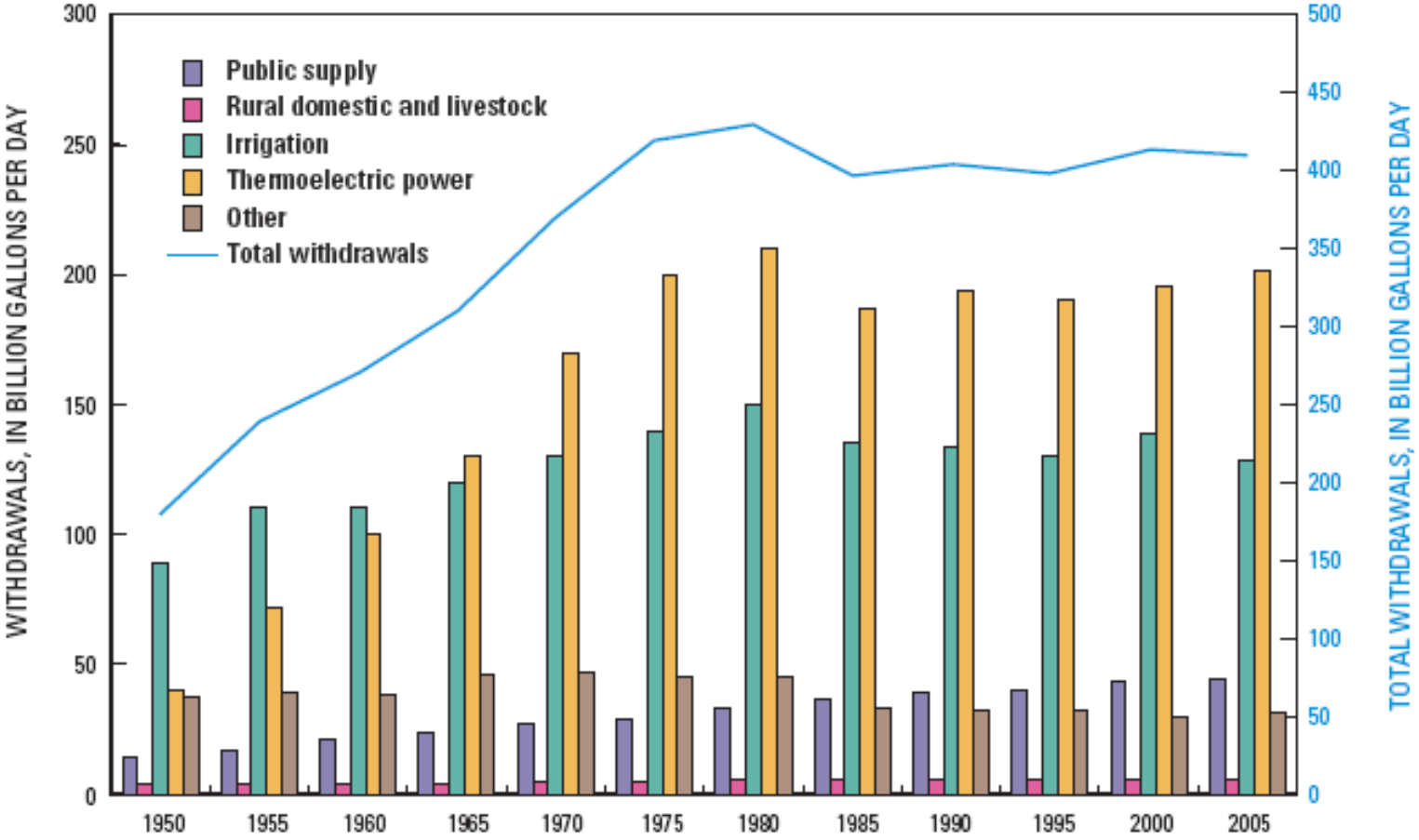
Water and energy are linked

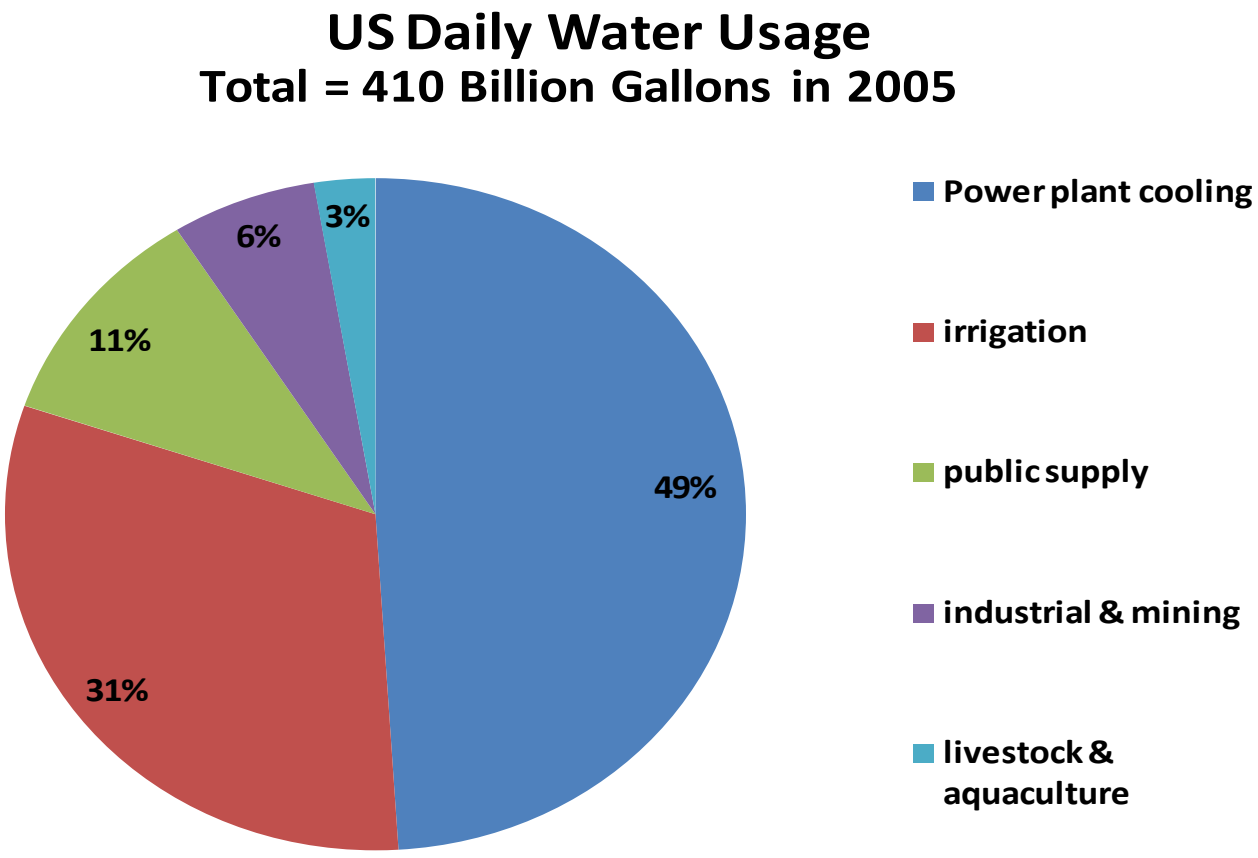


National Water Withdrawals



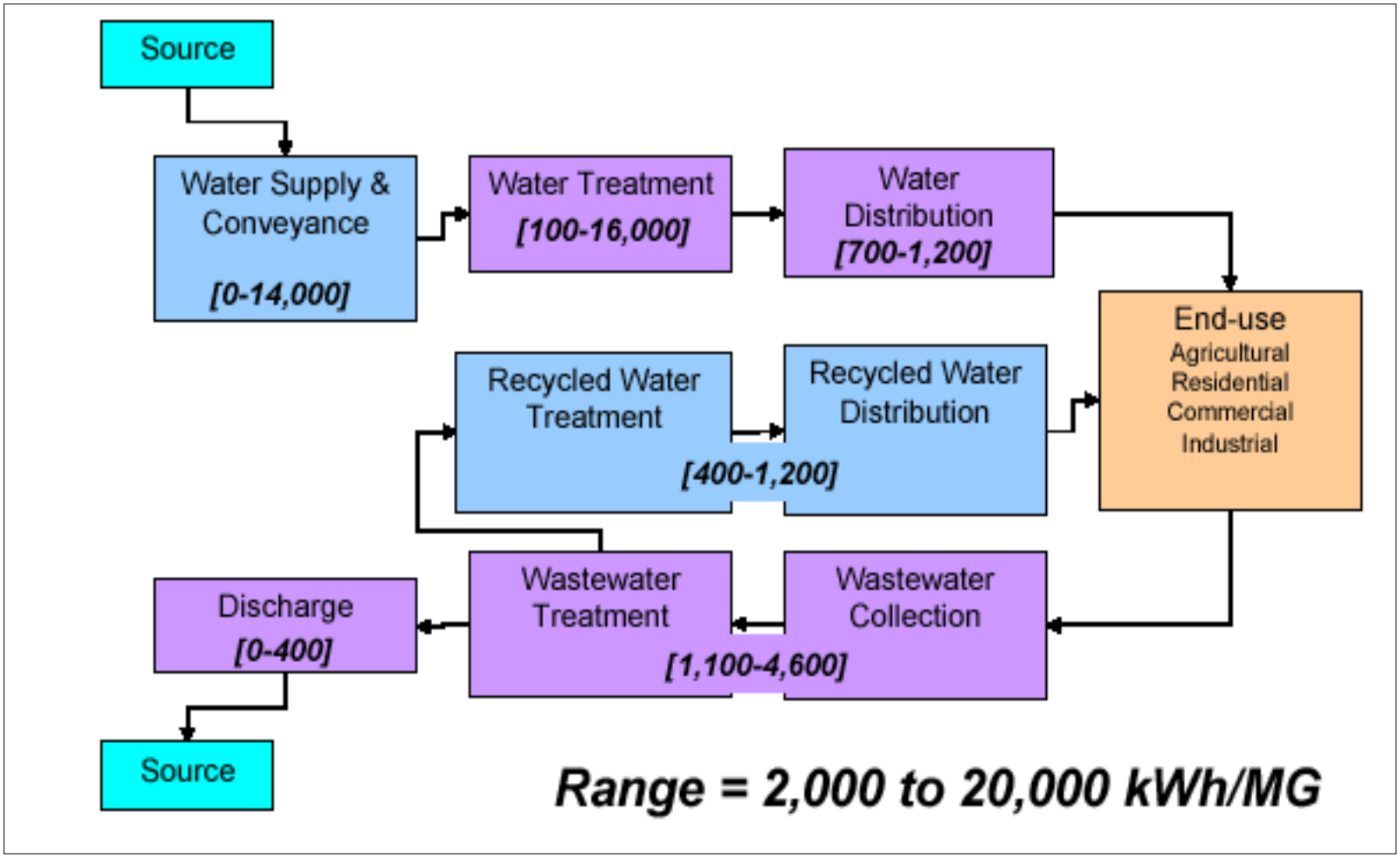
Source: US Geological Survey 2005

US Daily Water Withdrawals



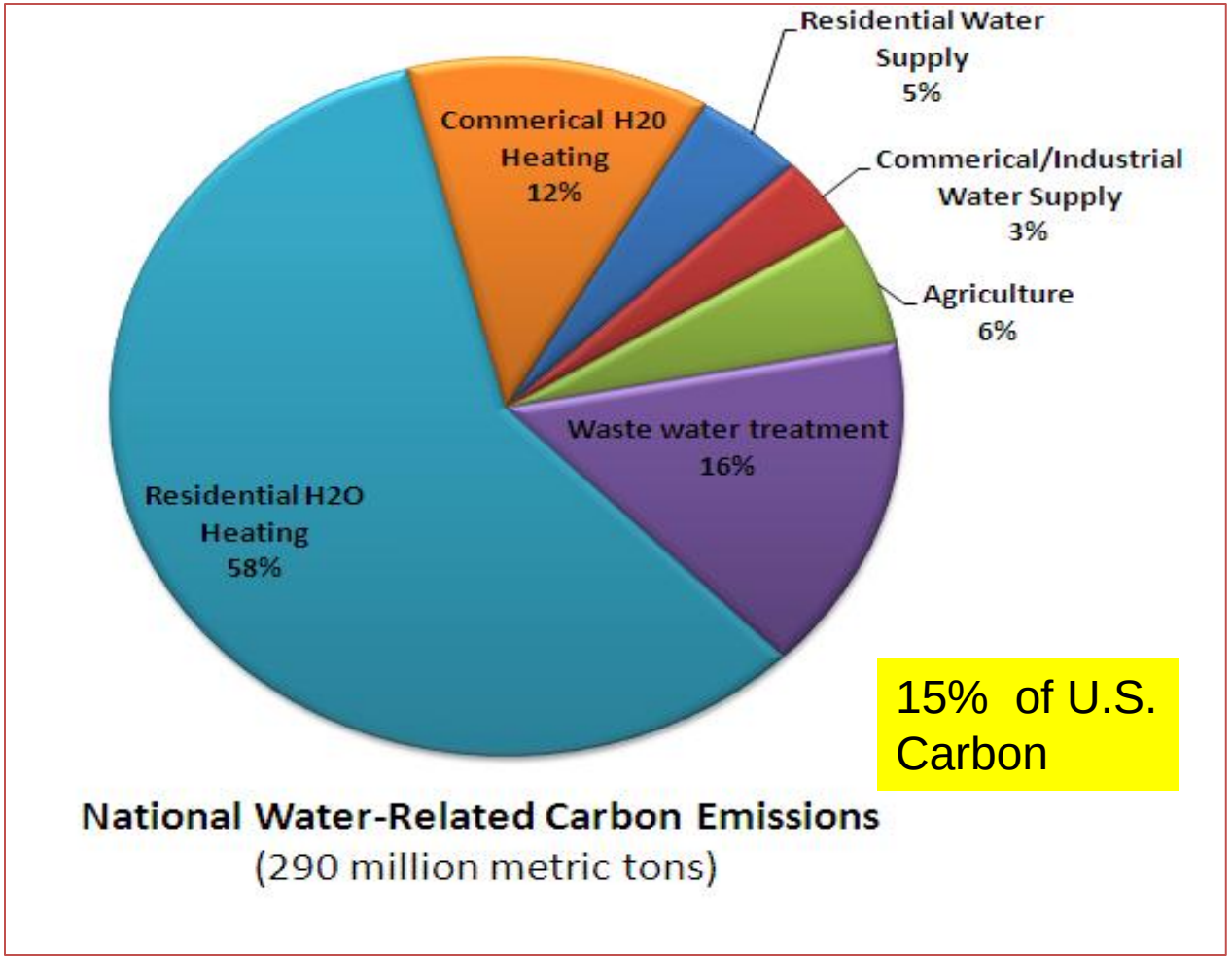
Source: US Geological Survey 2005

Energy Intensities of Water



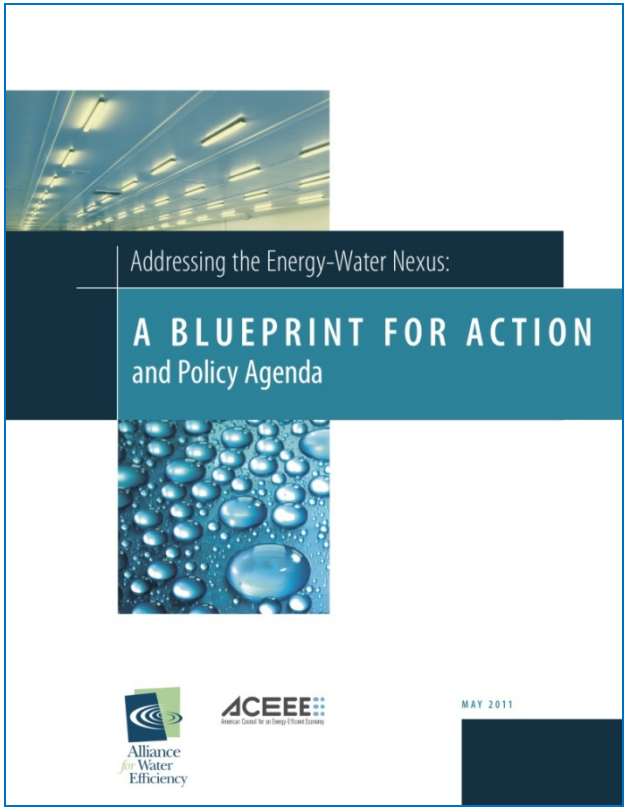
Source: California Energy Commission, 2005

The Carbon Footprint of Water



River Network 2009

The Project



- Joint effort of AWE and ACEEE.
- Supported by funding from the Turner Foundation.
- Purpose: to identify the major research, program, and policy needs of the water-energy nexus for decision-makers and funders.
- Establish the beginning of a national long term energy-water community.

http://www.allianceforwaterefficiency.org/blueprint.aspx

“Blueprint” Concept

- Pull together key decision-makers into a strategic planning discussion.
- Identify issues and areas of mutual future endeavor.
- Facilitate discussion in four key areas: programs, policies, research, and codes and standards.
- Gather recommendations.
- Publish report of stakeholder findings.
- Identify areas of immediate needed action.

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December 9, 2010 Workshop

- Over 75 key organizations and individuals in the water and energy communities were identified and invited.
- Broad spectrum of interest groups were desired.

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December 9, 2010 Workshop

- All 75 invited to a pre-workshop survey of issues.
- 54 individuals representing 41 diverse organizations attended a day-long workshop in Washington DC.
- 31 themes identified with votes on priority areas.
- 8 Main Themes emerged with recommendations.
- 5 Priority areas for immediate action identified.

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8 Recommendation Themes

1. Increase the level of collaboration between the water and energy communities in planning and implementing programs.
2. Achieve a deeper understanding of the energy embedded in water and the water embedded in energy.
3. Learn from and replicate best practice integrated energy-water efficiency programs.
4. Integrate water into energy research efforts and vice versa.

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8 Themes of Recommendations

5. Separate water utility revenues from unit sales, and consider regulatory structures that provide an incentive for investing in end-use water and energy efficiency.
6. Leverage existing and upcoming voluntary standards that address the energy-water nexus.
7. Implement mandatory codes and standards that address the energy-water nexus.
8. Pursue education and awareness opportunities for various audiences and stakeholders.

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1: Increase Collaboration

1-A: Establish ongoing water & energy working groups to increase cooperation and to share best practices.

1-B: “Just add water”: integrate water & wastewater into existing energy efficiency programs.

1-C: Incentivize residential & business efficiency programs to gain additional savings related to embedded water & energy, and develop methodologies that fairly attribute the savings and costs.

1-D: Integrate energy & water audit practices, and provide integrated retrofitting recommendations, rebate programs and outreach & education efforts.

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2: Embedded Energy & Water

2-A: Develop methodologies for measuring embedded water and energy and for developing water and energy factors to help drive programs, policies, and technology development & implementation. A national database is needed!

2-B: Develop baseline estimates of total energy use by water and wastewater utilities and estimates of water use by electric generation technologies.

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3: Replicate Best Practices

3-A: Survey existing programs to identify examples of best practices programs exploring the water-energy nexus. Identify elements of success and replication potential.

3-B: Develop framework for collecting integrated data on energy and water savings, including a uniform format and metrics.

3-C: Inventory and assess current work related to green infrastructure and water efficiency.

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4: Integrate Water & Energy

4-A: Identify high priority research needs by building a database of existing nexus-related research to identify gaps.

4-B: Assess the need for combined water and energy efficiency in various regions of the country depending upon resource constraints.

4-C: Develop water and energy foot printing methods for facility management, land use planning, and new development permitting.

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5: Water Pricing Reform

5-A: Prepare a report for local and state policymakers and water utilities on lessons learned from energy experiences and on rate-related barriers to efficiency program implementation.

5-B: Conduct an energy-water decoupling pilot study for assessing options and issues for separating revenues and sales volumes.

5-C: Provide technical assistance related to rate setting.

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6: Leverage Voluntary Standards

6-A: Leverage existing and upcoming national standards that fully link energy and water management.

6-B: Develop recommendations for better integrating water and energy efficiency into green codes, long-term building maintenance, and whole building rating systems.

6-C: Develop model land-use and planning codes.

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7: Implement Mandatory Codes

7-A: Explore opportunities to expand products covered by DOE equipment standards to include more water-using products and to take into account direct and indirect water impacts when assessing efficiency opportunities.

7-B: Modify national model building codes to better incorporate water efficiency.

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8: Pursue Education and Awareness

8-A: Undertake utility education, outreach, technical assistance and training programs to educate water and wastewater professionals on energy efficiency tools and technologies.

8-B: Create partnerships between energy and water utilities, industry organizations, and NFPs for joint public messaging.

8-C: Development knowledge-sharing programs on high-performance systems and designs for system operators, land use planners, and engineers to help them optimize energy and water efficiency.

8-D: Convene seminars for policymakers.

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The Policy Agenda

- Implementing the preceding recommendations will require intense collaboration among stakeholders and advocates.
- Also will require government engagement and leadership.
- Blueprint contains 9 needed policy directions for the national, state, and local levels.

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Policy Needs

1. Regulatory structures and incentives that reward water and energy efficiency.
2. DOE Appliance and Equipment Standards for water-using appliances and equipment.
3. Building Codes that recognize water and energy efficiency.
4. Specific energy-water elements to add to existing legislation.
5. Tax incentives for water and energy efficiency.

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Policy Needs

6. Collection of water and energy end-use data by federal agencies.
7. Better communication between regulatory and governance bodies.
8. Collaboration among federal, state, and local agencies in integrating water and energy in grant funding research, regulation, and technical assistance.
9. Coordination in new power plant siting or significant expansion of existing plants.

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Moving Forward: 5 Key Priorities

1. Develop baseline of total energy use by water & wastewater utilities and water use by electric utilities.
2. Incorporate cost-effective energy/water measures into building codes, equipment standards, and tax credits.
3. Prepare a report for local and state policymakers addressing the rate-related barriers in water.
4. Survey existing programs for best practices.
5. Establish ongoing water and energy workgroups.

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Any Questions?

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Download the Blueprint at:

http://www.allianceforwaterefficiency.org/blueprint.aspx

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