

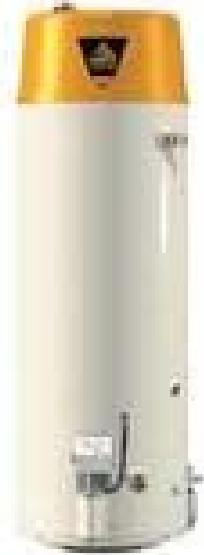


# **WATER-ENERGY RESEARCH WORK GROUP**

**JULY 30, 2012**

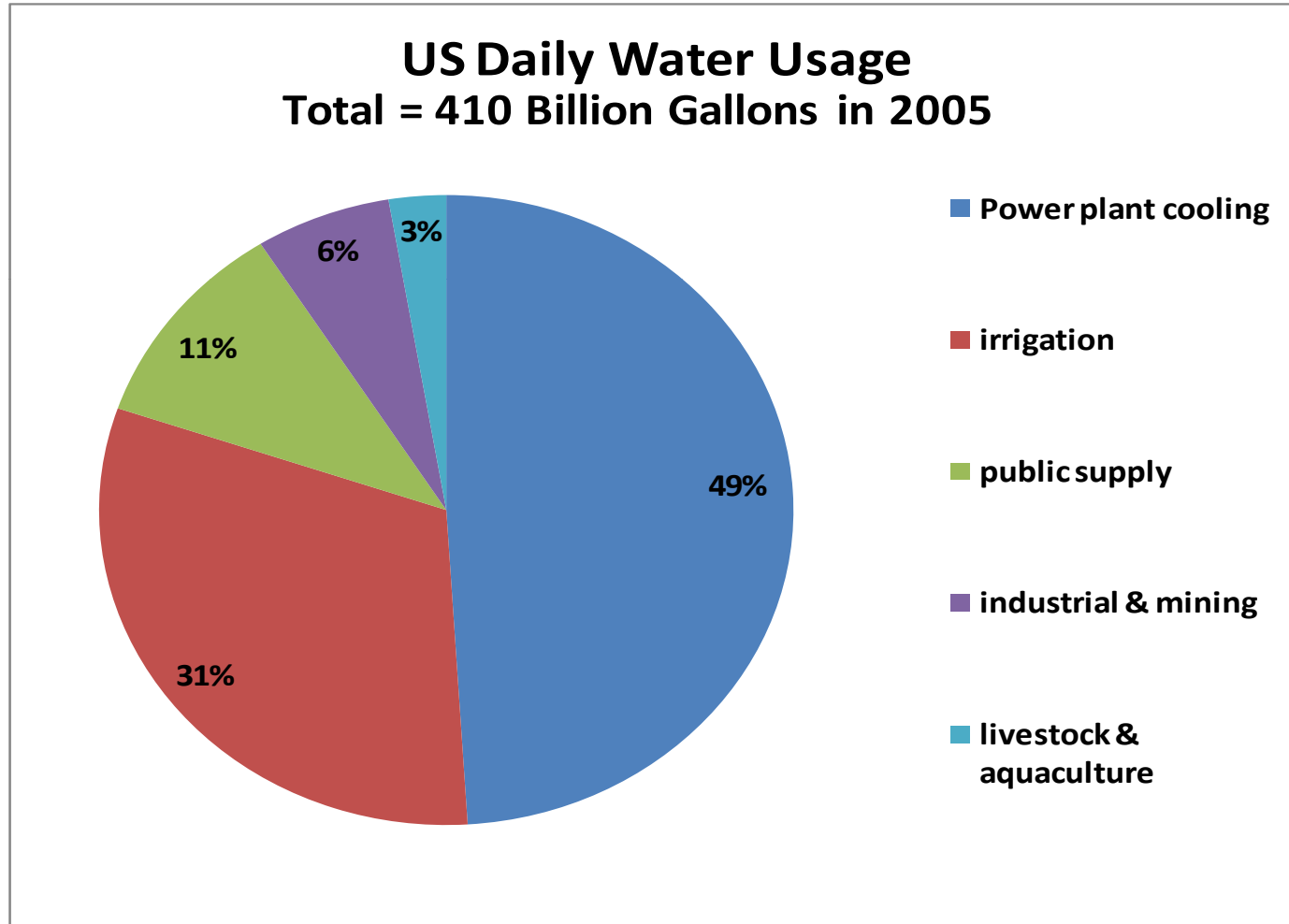


# Water and Energy are linked



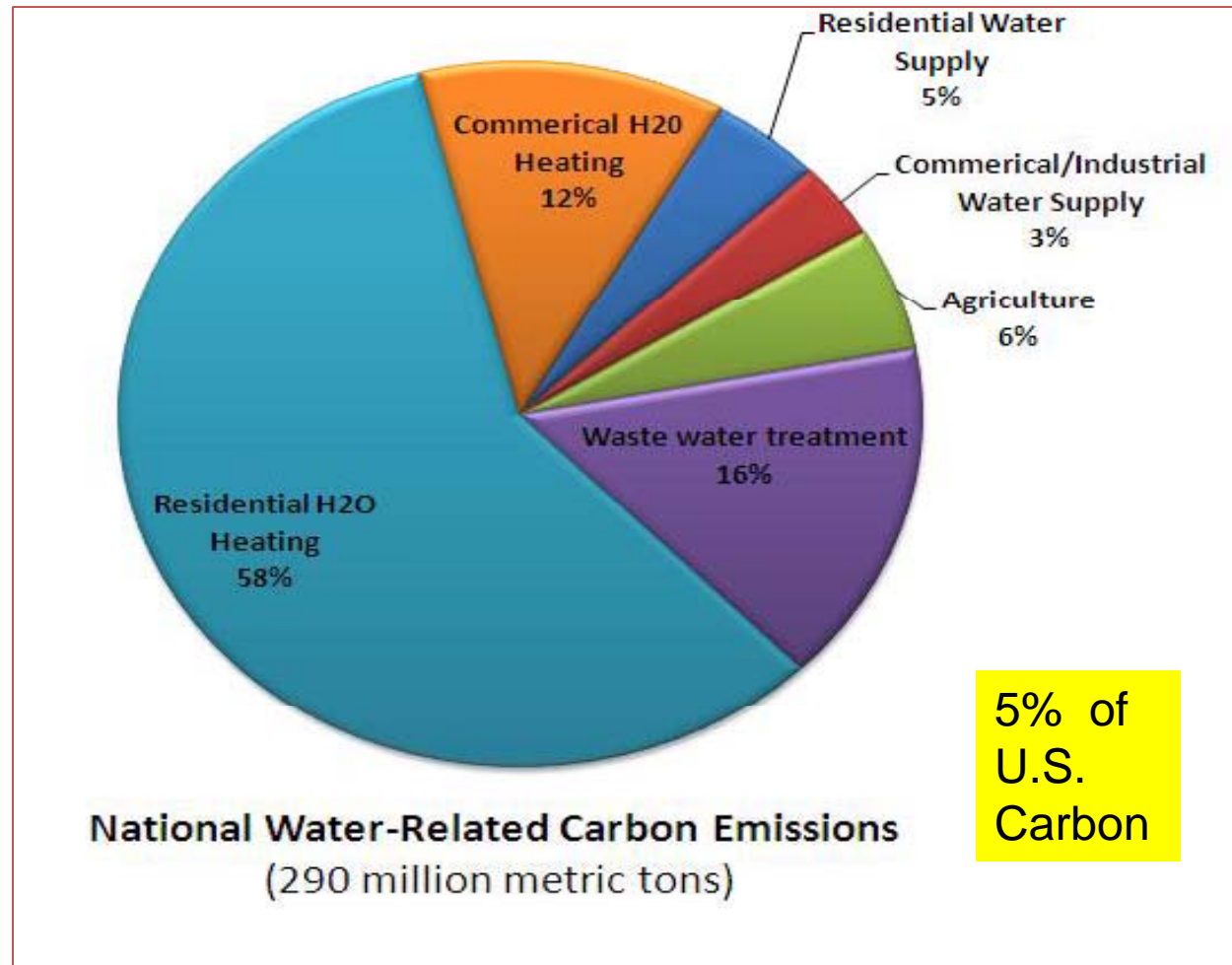


# US Daily Water Withdrawals

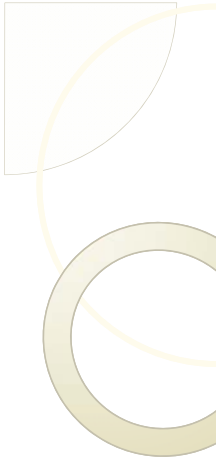


Source: US Geological Survey 2005

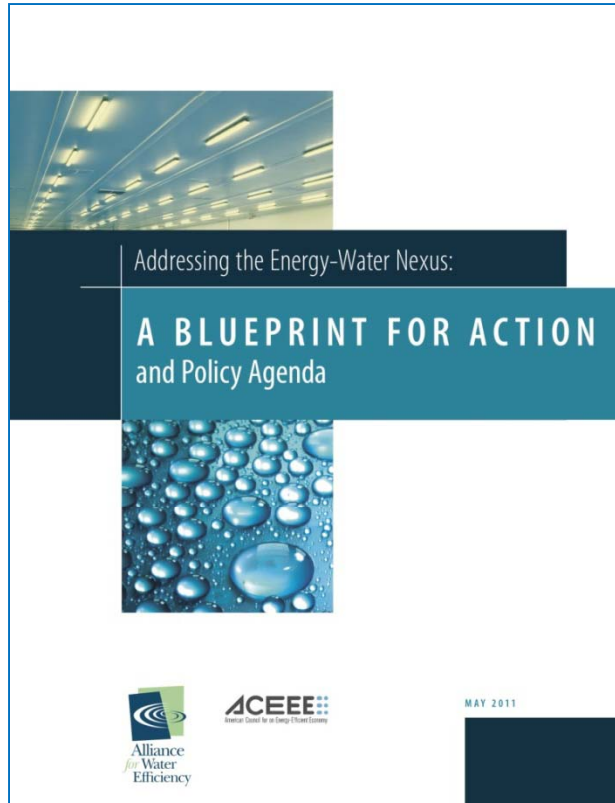
# The Carbon Footprint of Water



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.

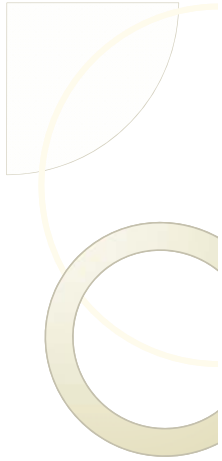
<http://www.allianceforwaterefficiency.org/blueprint.aspx>



# December 9, 2010 Workshop

- Over 75 organizations in the water/energy communities invited.
- 54 individuals from 41 diverse organizations attended workshop.
- 8 Main Themes with recommendations.
- 5 Priority areas for immediate action.





## 8 Themes of Recommendations

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.





## 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 codes and mandatory standards that address the energy-water nexus.
8. Pursue education and awareness opportunities for various audiences and stakeholders.





## 9 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.



## 9 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.



# 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. Survey existing programs for best practices.
4. Prepare a report for local and state policymakers addressing the rate-related barriers and pricing disincentives for efficiency in water.
5. **Establish ongoing water and energy workgroups.**



# 2012 Joint Working Groups

1. Codes, standards and tax incentives.
2. Water utility disincentives and ways to address them.
3. Joint energy and water-saving programs.
4. **Research on energy-use connected to water and water use connected to energy.**
  - ✓ Blueprint high priority and needed first input for other program development



# Goals for Water-Energy Research

- Develop a comprehensive database on water embedded in energy and energy embedded in water.
  - Recommend consistent and comparable methodology for measuring embedded water and energy.
  - Develop consistent water & energy factors to drive programs, policies, and technology development & implementation.
  - Add regional and state-by-state data.
  - Develop credible national estimates based on the compiled local and regional data.
  - Develop baseline of total energy use by water and wastewater utilities and water use by electric utilities.



# Goals for Water-Energy Research

- Create a tool for ensuring that this information will be readily available to inform future actions.
- Inventory and assess current work related to green infrastructure and water-energy efficiency.
- Inventory water and energy efficiency studies, research priorities and assessments on water-related energy consumption.



# Goals for Work Group

- Inventory work already undertaken on embedded water in energy and embedded energy in water.
- Inventory and assess current work related to green infrastructure and water-energy efficiency.
- Inventory water and energy efficiency studies, research priorities and assessments on water-related energy consumption.
- Investigate consistent methodology for measurement
- Recommend steps for national and regional research





# Work Group Logistics

- Alliance for Water Efficiency managing this work group.
- Mary Ann Dickinson and Bill Christiansen principal staff.
- [maryann@a4we.org](mailto:maryann@a4we.org) and [william@a4we.org](mailto:william@a4we.org)
- Meeting every two months?
- This first meeting is a discussion of research work in embedded energy in water, and a discussion of logistics of replicating this work nationwide.
- Next meeting could look at research work undertaken in embedded water in energy.