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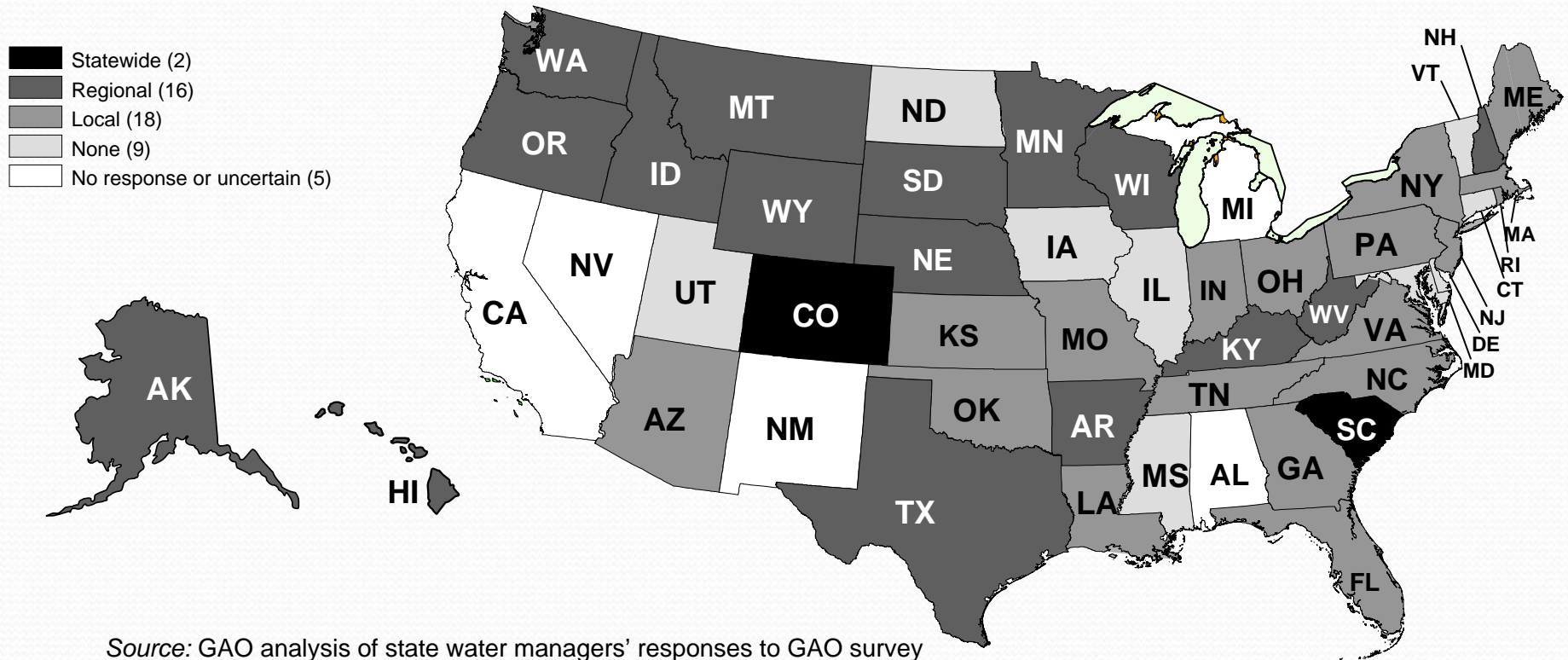
Facilitating the Implementation and Installation of New Water Efficient Technologies

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Anticipated Water Shortages

- While water is a renewable resource, it is also a finite resource
- According to the US EPA, 38 States will experience non-drought related water shortages by the year 2015



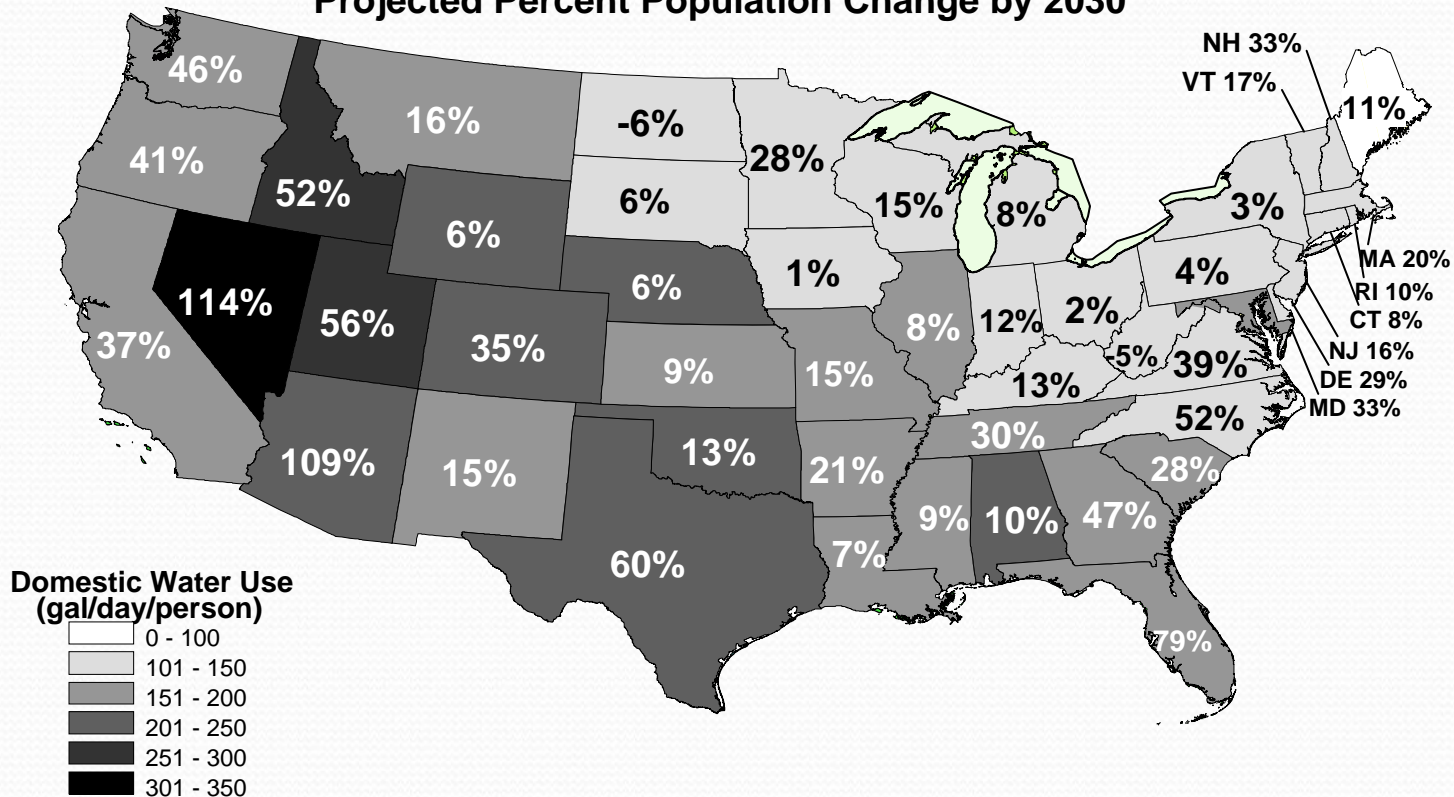
Source: GAO analysis of state water managers' responses to GAO survey

- Extent of state shortages likely over the next decade under average water conditions
- White & light gray states expect some shortages

Regional Water Impacts

- Anticipated growth is generally highest in states with anticipated future shortages and high per capita water use and where water resources are already strained

Domestic Water Use in Gallons per Day per Person and Projected Percent Population Change by 2030



Utilities, Manufacturers, Engineers and the Government Respond

- Manufacturers and entrepreneurs – new innovations; better performing fixtures and fittings, more efficient appliances and irrigation equipment, water re-use systems
- Utilities - \$\$ are being spent; providing incentives for new product development and to encourage installation
- Plumbing engineers are embracing water efficiency technology and helping to find solutions to implementation problems – more efficient system designs
- Government - The US EPA develops the WaterSense Program, add water usage requirements for appliances in the Energy Star program



Code Acceptance Issues

- Manufacturers and entrepreneurs – invest \$\$ in product development and marketing of products only to get “red tagged” at installation
- Utilities – Unsure of which technologies to recommend and provide incentives for
- Plumbing Trades – May be unfamiliar with newer technologies and unsure about systemic implications
- Government – Reluctant to develop incentive labeling programs for products or systems that have not demonstrated code compliance



Code Acceptance Issues

- Code Inspectors – Do not want to reject water efficient technologies but require information and data on new technologies before they can allow installation
- Ensuring health and safety - paramount issues
 - Prime directive of codes
 - Clean, safe drinking water
 - Clear identification of non-potable water sources
 - Separation of potable and non-potable systems
 - Efficacy of plumbing system performance
 - Safe and reliable mechanical systems
- For some technologies little or no history or data is available
- How do we go about codifying worthy emerging technologies?



The Plumbing & Mechanical Code Agencies Respond

- The IAPMO Group: Bringing together industry experts of diverse interests to address the codification of green technologies
 - Water efficiency consultants
 - Utilities
 - Plumbing trade representatives
 - Contractors
 - Manufacturers
 - Engineers
 - Code inspectors
 - Plumbing and mechanical disciplines

The Plumbing & Mechanical Code Agencies Respond

Two committees formed

- C.A.U.S.E. Committee

- “Committee for the Awareness and Understanding of the Sustainable Environment”
- Oversee the development of materials, such as informative appendices, handbooks or other support documents that provide guidance, recommendations and common practices related to sustainable construction.
- Evaluate various sustainability activities or initiatives for currency and relevance.
- Provide the membership with information and education on sustainable construction activities.

The Plumbing & Mechanical Code Agencies Respond

Two committees formed

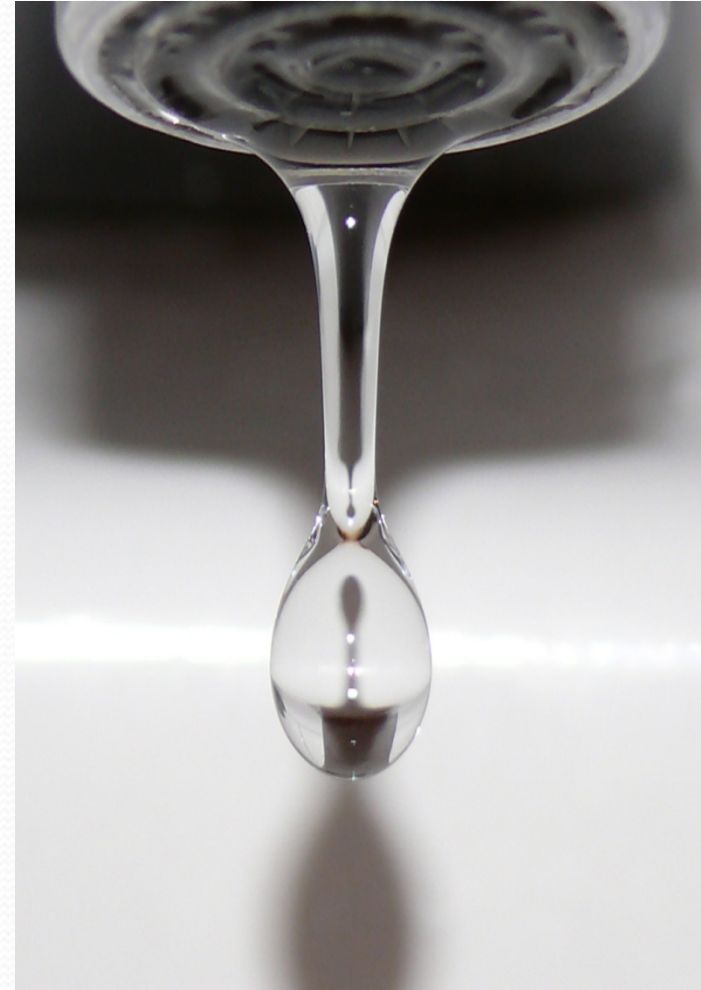
- C.A.U.S.E. Committee (continued)
 - Coordinate sustainability initiatives among the various industry organizations and stakeholders.
 - Work with strategic partners to share information and to identify and implement cooperative efforts, such as joint publications and training.
 - Review and evaluate local and national sustainability legislation and regulations.
 - Identify opportunities for further research and study.



The Plumbing & Mechanical Code Agencies Respond

Two committees formed

- Green Technical Committee
 - Identify opportunities to make the Uniform Codes more sustainable
 - Support comprehensive code changes that improve sustainability
 - Develop stakeholder consensus among committee members on emerging technologies
 - Develop a Green Plumbing and Mechanical Supplement



The Plumbing & Mechanical Code Agencies Respond

The Green Plumbing and Mechanical Supplement

- Will be a separate document from the Uniform Plumbing and Mechanical Codes and will establish requirements for green building and water efficiency applicable to plumbing and mechanical systems.
- Will serve as an adjunct to the Uniform Codes or ANY of the plumbing and mechanical codes used in the US.
- Will serve as a repository for provisions that ultimately will be integrated into the Uniform Codes. The Green Supplement is a logical transitional home for green requirements until they mature and are ready to be included into the code
- Will serve as a resource for progressive jurisdictions that are implementing green building and water efficiency programs.
 - Enforcement aid for existing green ordinances
 - Model for jurisdictions implementing green ordinances.

The Plumbing & Mechanical Code Agencies Respond

The Green Plumbing and Mechanical Supplement

- Serve as a resource for code officials, plumbers, contractors, engineers and manufacturers in designing, installing and approving green plumbing and mechanical systems.
- Be written in mandatory language and in a format similar to the Uniform Codes.
- Maintain IAPMO philosophy of an all-inclusive, turnkey document to minimize the need for additional codes and standards.
- Coordinate and resolve conflicts among other green building and water efficiency program requirements.



The Plumbing & Mechanical Code Agencies Respond

The Green Plumbing and Mechanical Supplement

- Where applicable, the Green supplemental code will establish:
 - Minimum sustainability provisions – “Raise the bar”
 - Health and safety provisions to ensure green practices are safe and reliable
 - Minimum performance, design, installation and maintenance requirements.
- Target completion date for the Green Plumbing and Mechanical Supplement: January 2010.

