Water Resources Regional Planning

North Central Pilot Area

Community Meeting
October 13, 2009
Gallatin, Tennessee

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What is the purpose of this community meeting?

- Inform the community of the need for the pilot and the process
- Encourage public participation throughout the process by:
  - Commenting on the process
  - Providing suggestions on alternatives to be considered

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Who are our technical partners in this regional planning pilot?

US Army Corps of Engineers
Nashville District

Tennessee Advisory Commission on Intergovernmental Relations

Tennessee Association of Utility Districts

TENNESSEE DEPARTMENT OF ECONOMIC & COMMUNITY DEVELOPMENT

The Nature Conservancy
Protecting nature. Preserving life.™

Tennessee Tech University

Tennessee Duck River Development Agency
March 3, 1965

TVA

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Life. Land. Legacy.

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What is the water resources regional planning pilot?

- Sustainably matching water sources with current & future needs
- Regional approach and multi-utility district focus
- Collaborative effort
- Areas selected based on 2007 drought stresses

Photo of Old Hickory Lake

From
livingonoldhickorylake.com

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What are the objectives / goals of the pilot?

- Ensure ability of water resources to sustain all uses
- Recommend source, conservation, efficiency and delivery alternatives to address water supply needs for a minimum of twenty years
- Provide information useful to capital financing source and management planning
- Provide information useful for development and growth decisions
- Serve as model for statewide water resources regional planning

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What are the benefits of water resources regional planning?

- Utilities, municipalities and counties work together to address water resource / supply issues
- Addresses needs of the region while minimizing demand on resources
- Funding advantages
- More immediate, effective drought response
- Increases sustainability by eliminating duplicate solutions and promoting efficiencies

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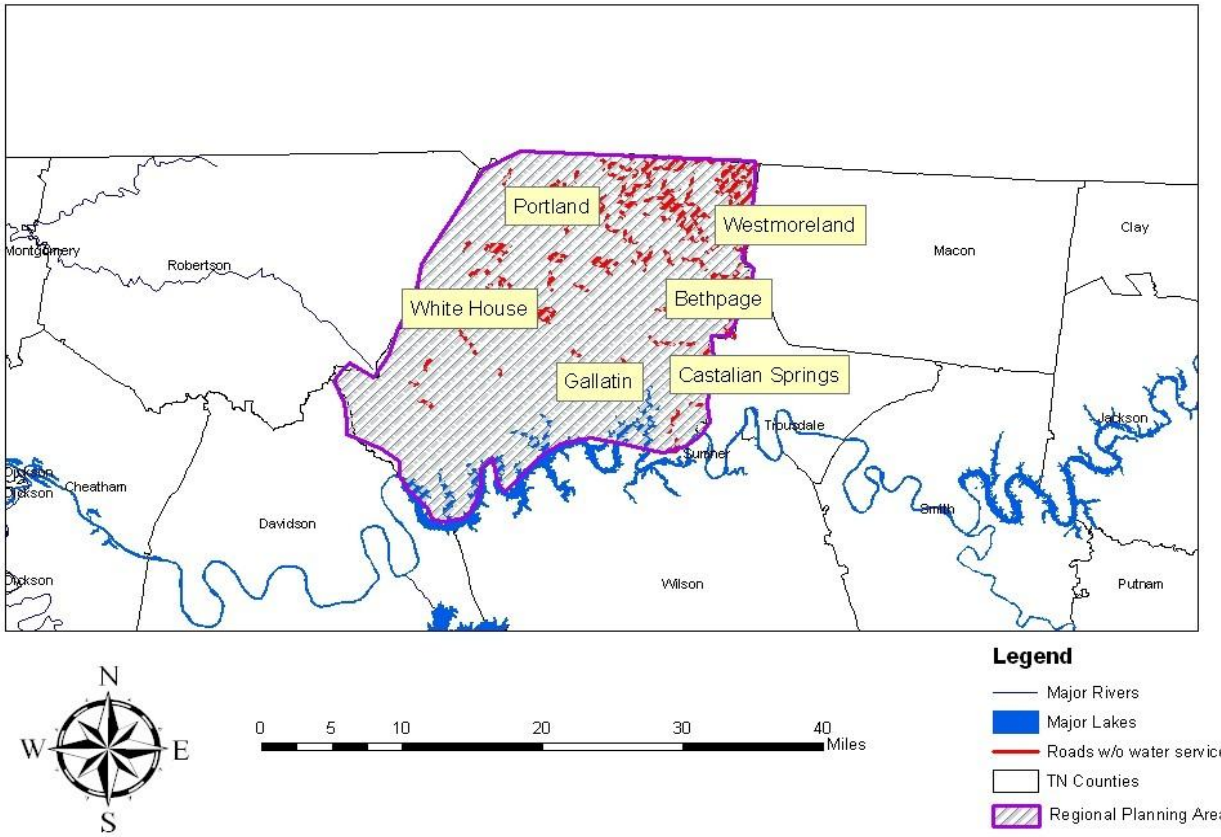
North Central Pilot Area



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Elements of the water resources regional planning pilot

- Baseline information on the pilot area
- Assessment of the environment and ecological sensitivities
- Identification of the current water use and the structural capacities of the water systems
- Land use patterns

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Current Water Sources in the Pilot Area

Utility	Water Supply Source	Storage Capacity (MG)
Gallatin	Cumberland River – Old Hickory Lake	152,000
Portland	West Fork Drakes Creek (Primary)	-
	Portland City Lake (Emergency)	115.7
White House	Cumberland River – Old Hickory Lake	152,000

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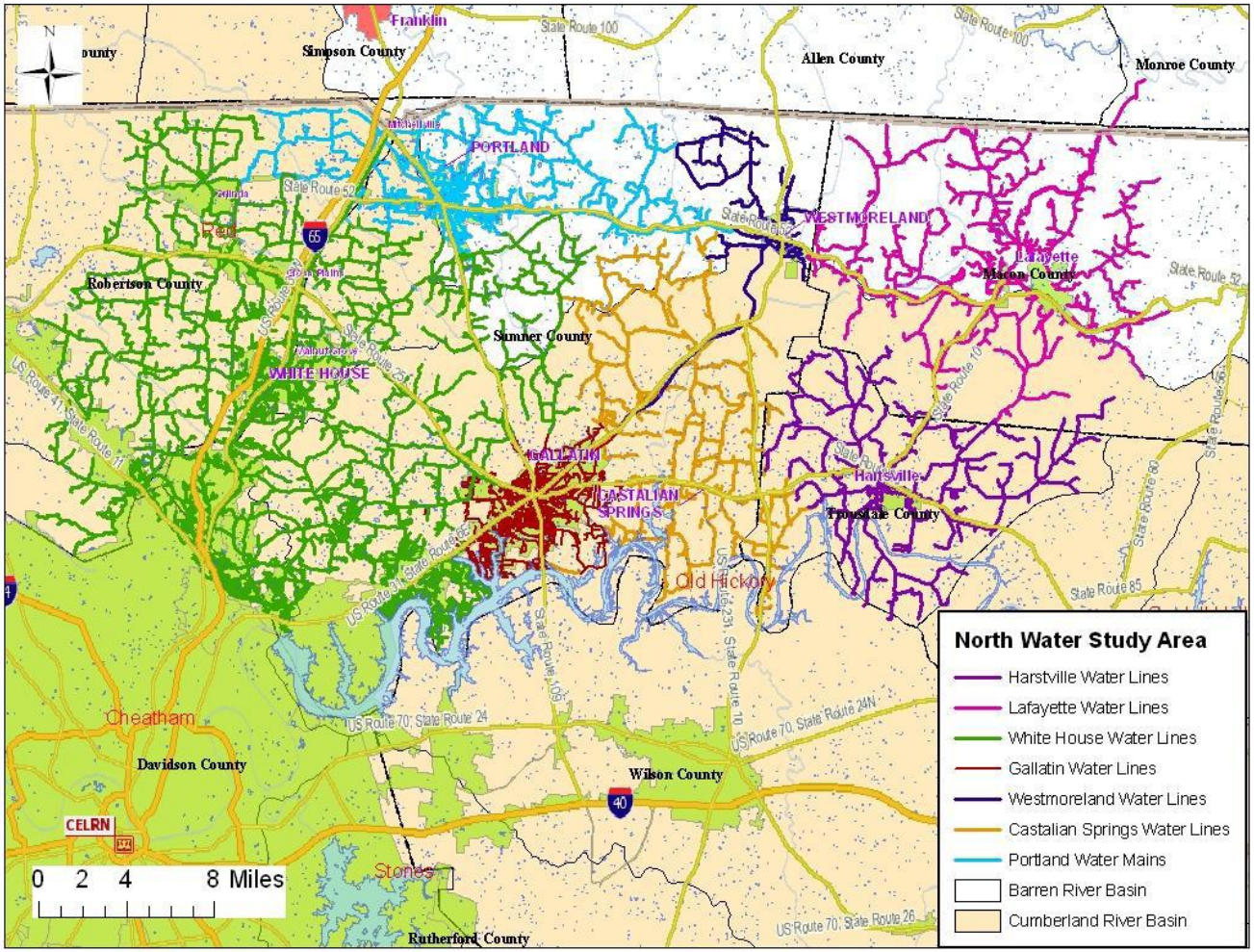
Utility Districts' Distribution Systems



Elements of the water resources regional planning pilot (Cont.)

- Population and water demand projections
- Alternative(s) recommendation
- Economic assessment

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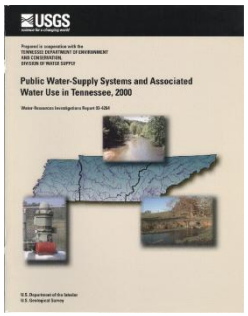
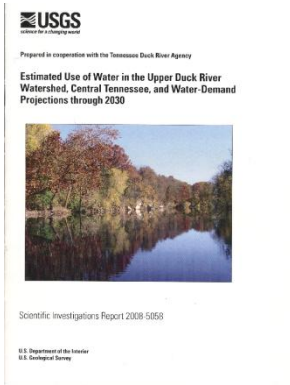
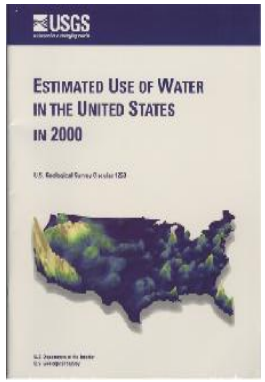
U.S. Geological Survey Water-Use Information

- Work with states to collect, QA/QC, and analyze water-use information nationwide
- Publish 5-year summary reports
- Study how much water is available; how much is used?
- What activities affect water availability?
- How does water-use affect surface or groundwater systems?
- What improvements can be made in how water use information is collected, stored, analyzed, and published?







USGS science for a changing world

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USGS Water-Use Information for Supply Planning

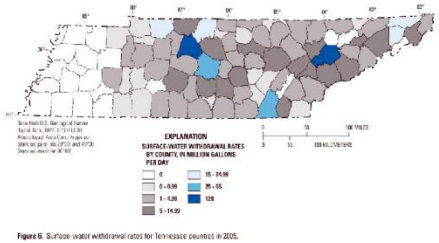

Figure 6. Surface-water withdrawal rates for Tennessee counties in 2005.

- Checking and verifying information, QA/QC, analysis of public supply records.
- Historical comparisons and analyses for trends in public supply records
- Comparing and validating public supply records against billing records by survey for 2005
- Estimating water use for agriculture irrigation and golf courses
- Collating input sets for demand forecast models.
- Gathering other explanatory information

USGS science for a changing world

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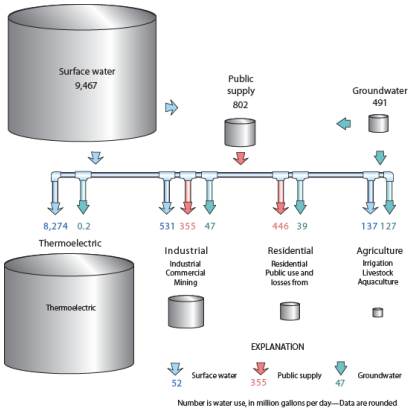
USGS Water-Use Demand Forecasting

- Forecast demand using model (IWR-MAIN)
- Key drivers include population, employment, and climate
- Forecasting method based on constant use rates for residential, commercial and industrial sectors
- Assumption: 2005 water system survey data includes all types of water use
- Projections for a period 20-50 years into future
- Develop and evaluate conservation scenarios



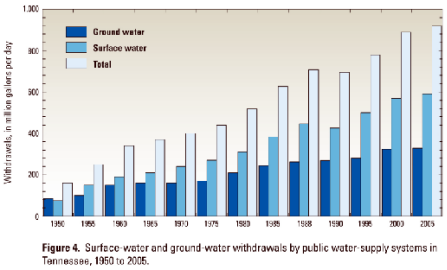


Figure 4. Surface-water and ground-water withdrawals by public water-supply systems in Tennessee, 1950 to 2005.

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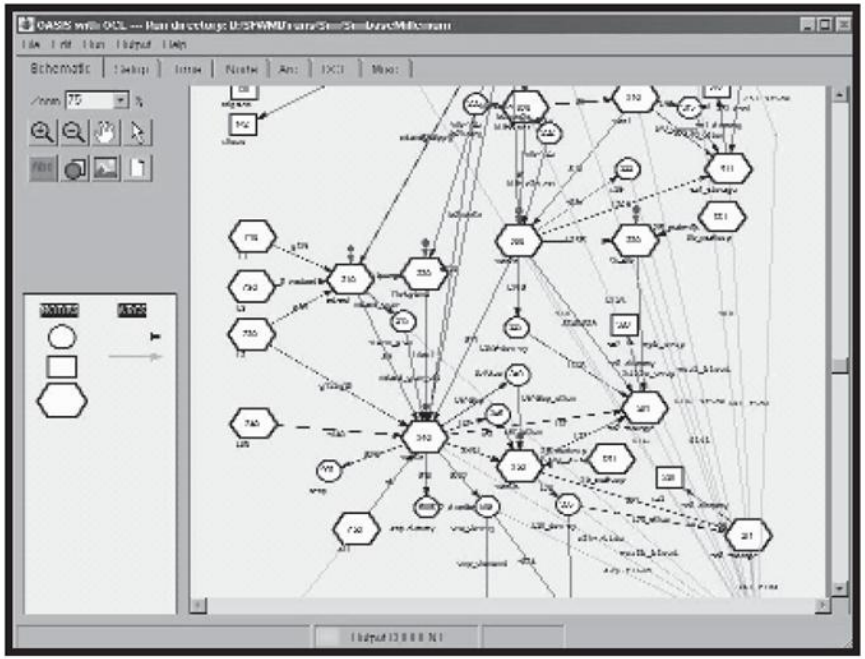
A context for decision making: OASIS

- Define hydrology
- Sources and sinks
- Inter-connections



Example of the Graphical User Interface (GUI) from OASIS

Microsoft Access

File Edit View Insert Format Records Tools Window Help

Reservoir S-A-E : Table

rowID	Node Number	Elevation	Elevation Units	Storag
1	120	100	feet	1
2	120	105		6
3	120	110		17
4	120	115		37
5	120	120		73
6	120	125		132
7	120	130		229
12	120	131		5000
8	150	0	feet	
9	150	1		
10	150	45		9
11	150	45.1		9
13	150	170		4870

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Static data is kept in a relational database such as Microsoft Access

- Optimize system design

Status of the Pilot

Preferred alternative

Spring 2010

- Multi-agency team working on specific assignments
- Baseline study final and posted on website
- Two meetings held with UDs and some elected officials
- Alternative evaluation in late 2009 / early 2010

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Water Resources Regional Planning

Website / Email address

http://tn.gov/environment/regionalplanning/

For any comments or questions related to the pilot contact us at: regional.planning@tn.gov

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Questions?

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