

Duck River Watershed Planning Partnership Presentation

REGIONALIZATION OF UTILITIES

**Pure and Plentiful Water for Our Communities,
Now and For the Future**

March 5, 2025



What is Utility Regionalization?

- Informal Cooperation: Agreement made to engage in collaborative activities without a contract.
- Contractual Assistance: Formalized cooperation involving a contract
- Joint Powers Agencies: A new regionalized entity is created to serve multiple systems.
- Ownership Transfer: Merger or Acquisition
- Combination: Merge under new entity

Why Regionalization?

- Human Capital: Improved or leveling up of Technical, Managerial, and Financial Capabilities. Ability to attract and retain skilled engineers, managers, and operators.
- Environmental: Improved or leveling up of planning, risk management, compliance, source water protection, fewer withdrawal points, less land utilization, and fewer discharge points for wastewater effluent.

Why Regionalization?

- Economic: Economies of scale and operating efficiencies, increased access to capital at a lower cost, lower/equal customer rates, revenue stability, improved financial capacity, improved asset management, achieve full cost pricing.
- Social: Improved water quality/public health measures, increased opportunities for economic development, operational resilience, more robust staffing, improved levels of service and customer management, and better emergency response.

Regionalization Challenges

- Community loss of control or ownership
- Lack of funding for the initial investment
- Geographical constraints
- Single source of supply
- Political - Equal representation
- Need a champion for regionalization \$\$\$\$

Past Regionalization Efforts

- Duck River Utility Commission - 1976
- Hiwassee Utilities Commission - 1982
- Cumberland Plateau – Attempted in 2000
- Water Authority of Dickson County - 2002
- Watauga River Regional Authority
- Anderson County Water Authority
- West Stewart Utility Authority

Recent Regionalization Efforts

- Cold Springs UD consolidated with Mountain City WD
- New Canton UD consolidating with First UD of Hawkins County
- First UD of Hawkins County #2 consolidating with First UD of Hawkins County (planned)
- North Greene UD and Cross Anchor UD discussing merger
- Anderson County Water Authority combined from North Anderson UD and Anderson County UD
- Lenoir City Utilities Board absorbed Martel UD
- Plateau UD absorbed Sunbright UD
- Tarpley Shop merged South Giles
- Wayne County #3 merged with West Lauderdale, AL
- Petersburg merging with Fayetteville (pending)
- White House UD is looking at Portland Water System
- Adams/Cedar Hill UD forming West Robertson Water Authority

Duck River Utility Commission

Regional Water Authority

- Local communities needed more capacity
- Local utilities started on individual solutions
- Tullahoma Board of Public Utilities
- Manchester Water and Sewer Department
- Appalachian Regional Commission \$\$\$\$



Duck River Utility Commission

Regional Water Authority

- Commission created in 1976
- Public Agency / Local Government -1978
- Interlocal Cooperation Act -1967; T.C.A., § 12-801
- TN Code § 12-9-101 (2024)
- Six member board appointed by cities
- Bought intake facility and built plant – August 1981



Duck River Utility Commission

- Organizational Issues
 - Prohibited from issuing bonds
 - Prohibited from exercising eminent domain
 - Prohibited from any taxes
- Wholesale Water Supplier Only
- Direct supply to Manchester and Tullahoma
- Also supply Hillsville Utility District, Wartrace, Bell Buckle, Shelbyville Flat Creek, Metro Moore County #2
- Backup supply for additional small systems
- Population Served ~ 76,000



Current Facility



Mission and Performance

- Highest possible quality at lowest practical cost.
- Average TDEC inspection score of 99.5 out of 100 over the last three plus decades.
- Water rates adjusted for inflation have decreased over 30% over the last thirty years.
- Low water rate of \$1.50 per 1000 gallons.



Best Tasting Water – Kentucky/Tennessee



Award of Excellence



Safe Drinking Water Award



Advanced Treatment Process

- Pre-oxidation
- Chemical Coagulation
- Tubular Sedimentation System
- Membrane Ultra-Filtration System
- Granular Activated Carbon Contactors



Membrane System

- ZeeWeed® 1000
- Immersed Ultra Filtration
- 0.02um nominal pore
- Low pressure design
- Low power consumption



Membrane Filter Modules

2004 - 10 MGD

- 900 V2 Modules @ 400 ft²
- 360,000 ft²

2011 - 12 MGD

- 864 V2/V3 Modules @ 400 ft²
- 189 V4 Modules @ 450 ft²
- 430,650 ft²

2026 - 15 MGD (N-1)

- 1080 V4 Modules @ 450 ft²
- 300 V4 Modules @ 550 ft²
- 651,000 ft²



Normandy Reservoir



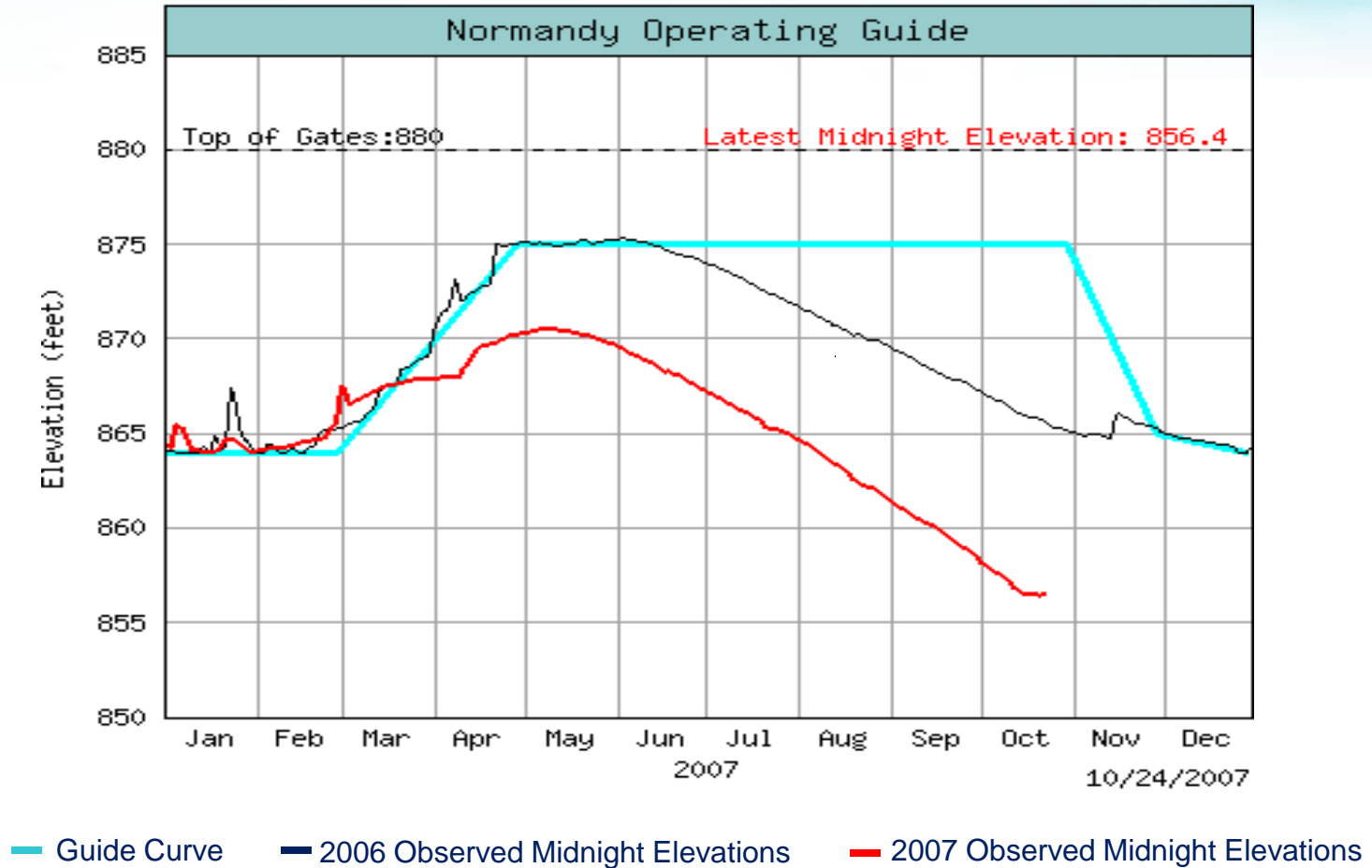
Rainfall Records: NOAA Stations

Total Rainfall in Inches

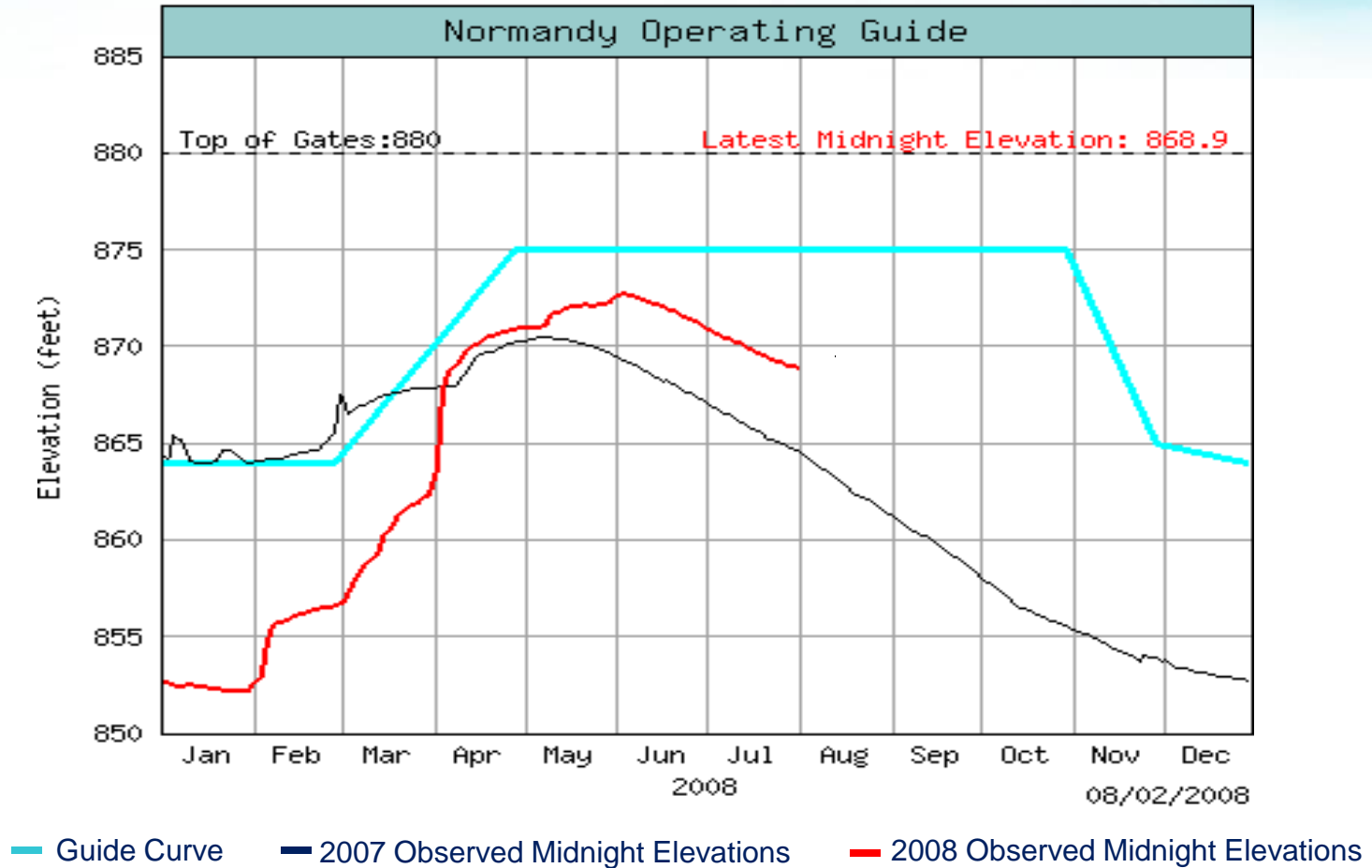
	Tullahoma	Manchester
2004	73.0	70.9
2005	39.3	41.4
2006	49.3	48.5
2007	34.3	26.2

Average Year = 56 inches

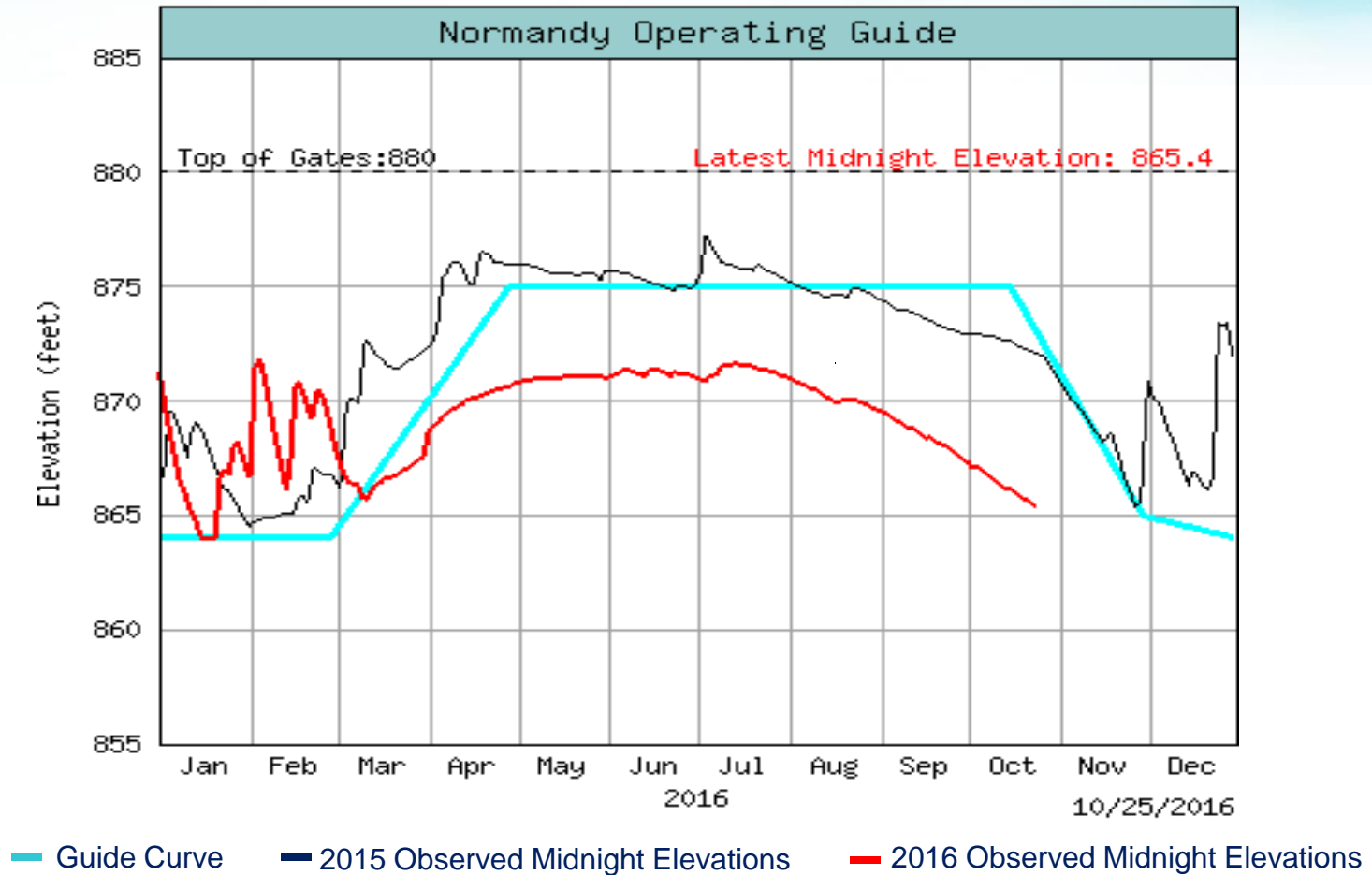
Normandy Reservoir Operating Guideline As of October 24, 2007



Normandy Reservoir Operating Guideline As of August 2, 2008



Normandy Reservoir Operating Guideline As of October 25, 2016



Drought Conditions



Drought Conditions



Normandy Reservoir - 2007



Drought Conditions



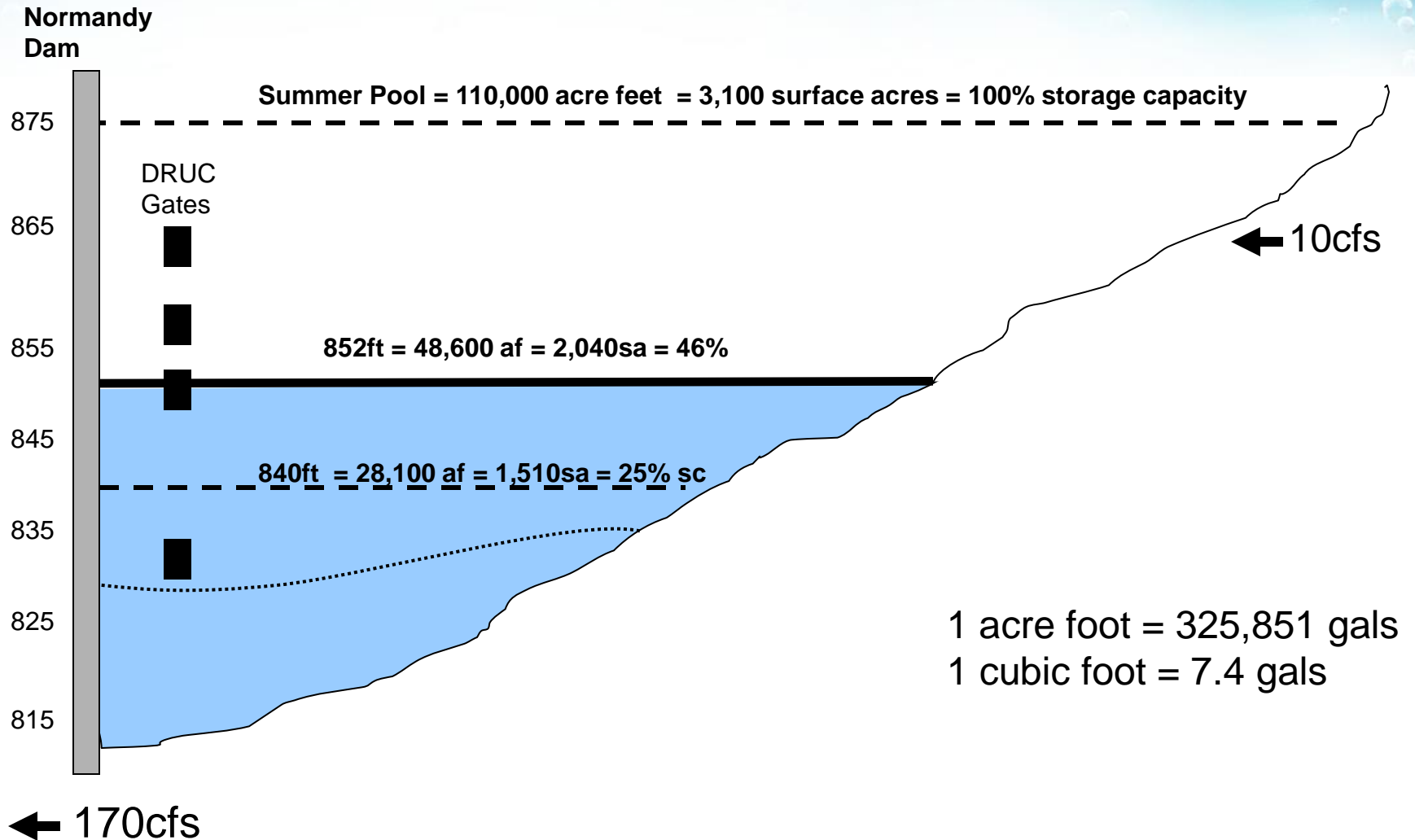
Water Intake Station - 2007



Water Intake Station - 2007



Normandy Reservoir Storage Capacity



DRUC Drought Mitigation Projects

Intake Pumping Capacity Improvements

- New Higher Head Pumps
- New Variable Frequency Drives
- New Generator Switchgear

Pretreatment Process Improvements

- Additional Flocculation and Sedimentation Basins
- Additional Granular Activated Carbon Contactors

Membrane Filtration System Upgrade

- Replace Existing Membrane Filter Modules
- Additional Membrane Filter Modules

Estimated Construction Cost: \$12,500,000

FINAL REPORT

Maury County Regional Water Supply Feasibility Study



Tennessee Duck River Development Agency

April 17, 2014

FINAL REPORT

Maury County Regional Water Supply Strategic Plan



Tennessee Duck River Development Agency

September 10, 2015

FINAL REPORT

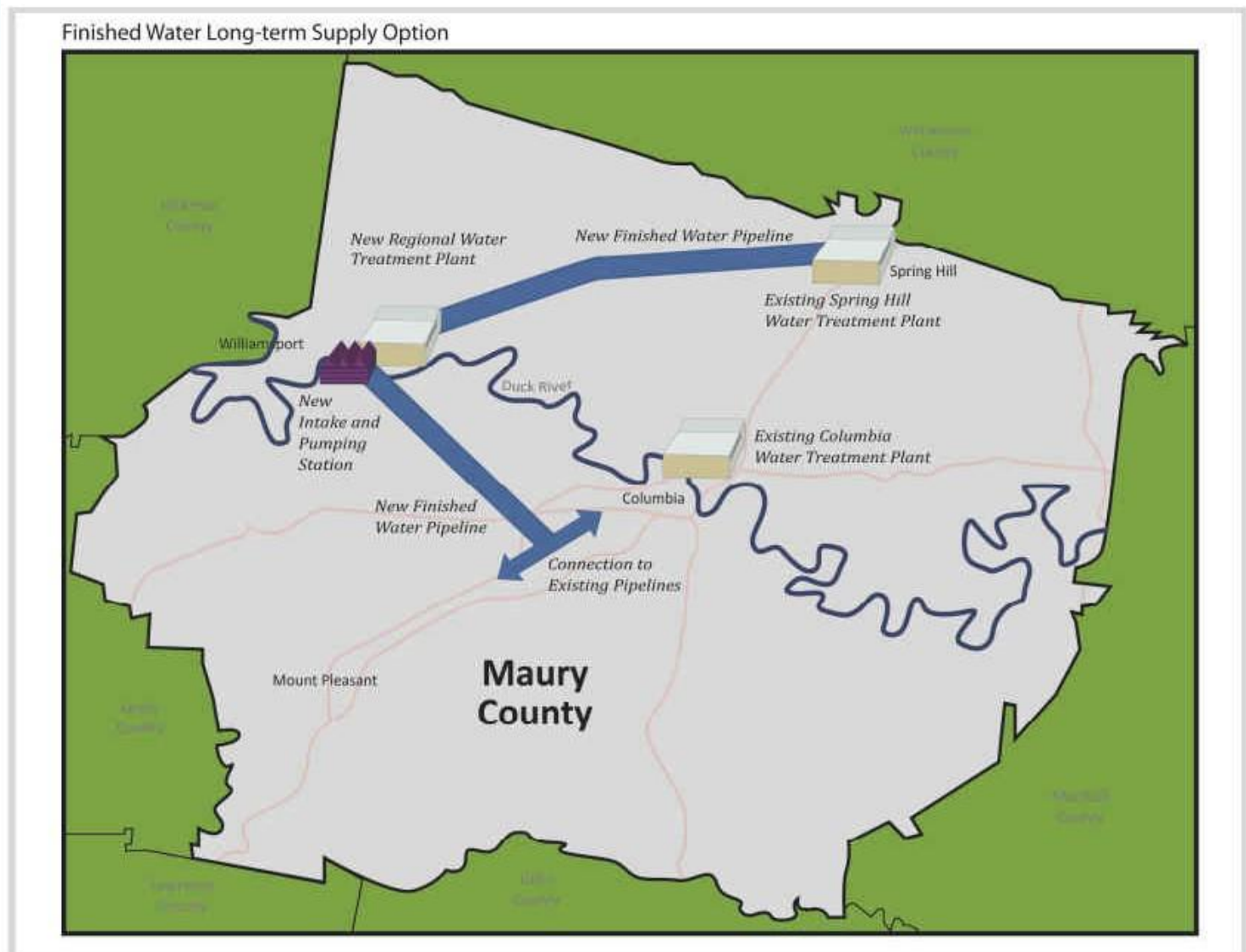
Maury County Regional Water Supply Intake and Pumping Station Siting Study



Tennessee Duck River Development Agency

August 31, 2017

Example Regional Water Supply



Contact Information

- Randal J. Braker, P.E.
- Duck River Utility Commission
- Phone (931) 455-6458
- Email: manager@druc.org
- www.druc.org

