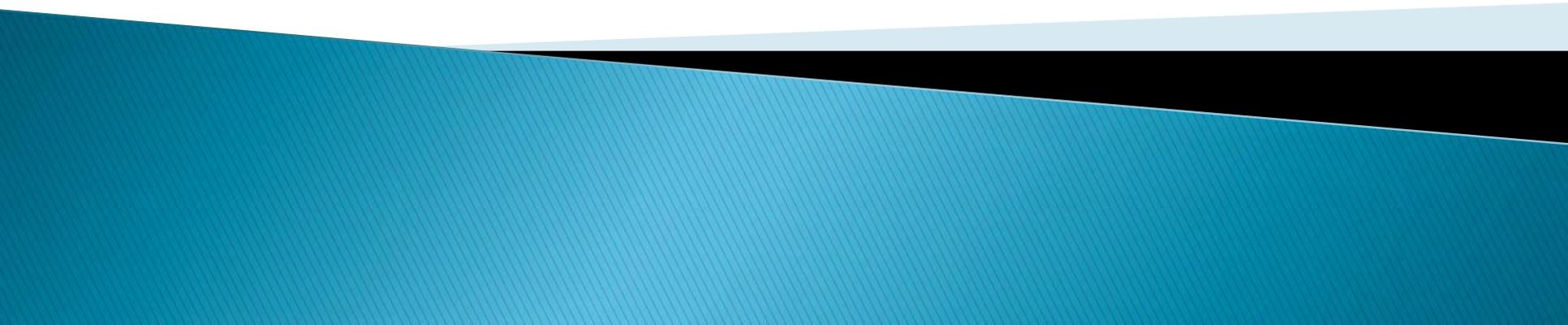
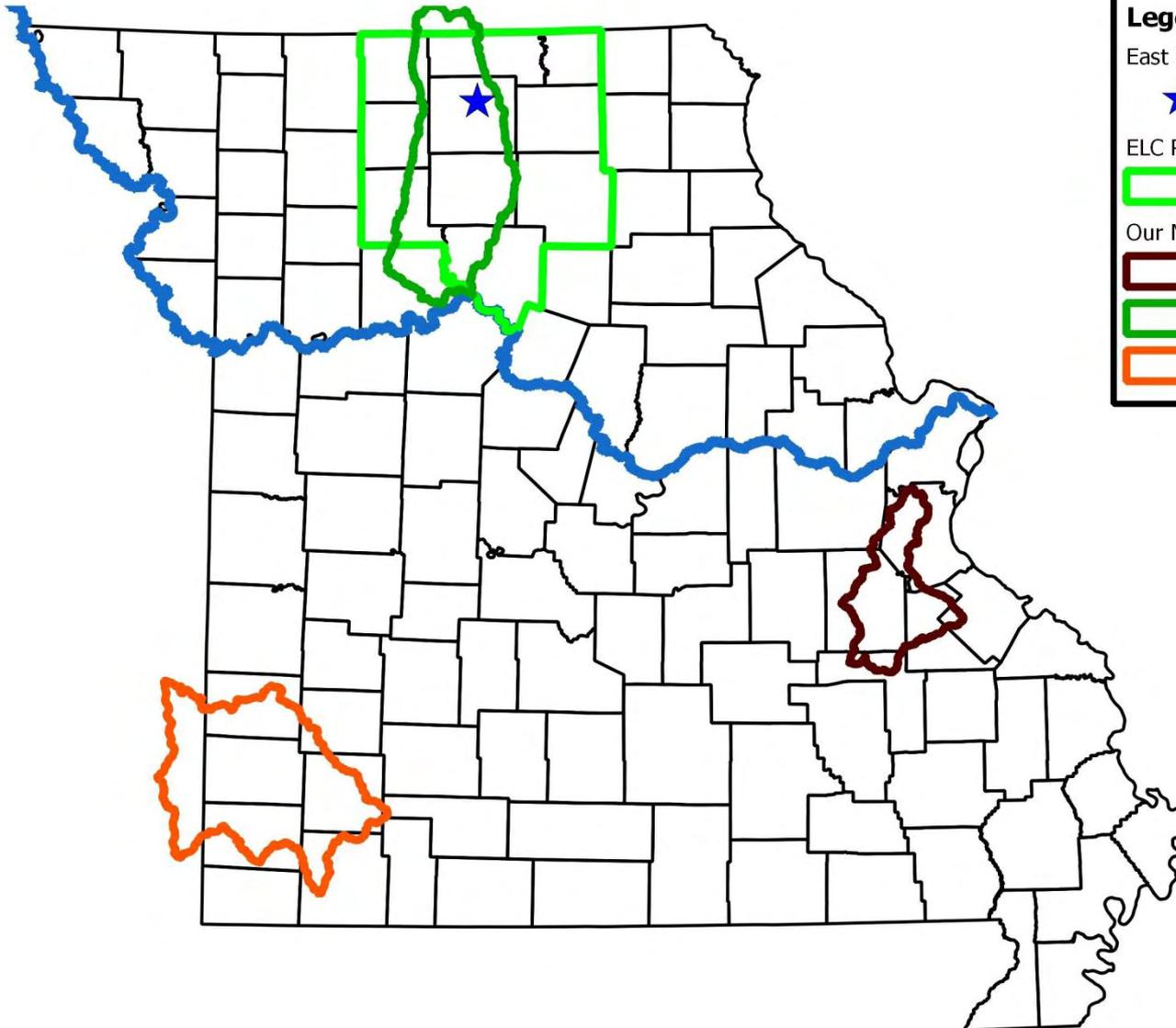


East Locust Creek Reservoir

A Public/Private Approach to Public Works
Development – A Smart Lake



Our Missouri Waters Pilot Projects



Legend

East Locust Creek Reservoir



ELC Reservoir 10 County Service Area



Our Missouri Waters Pilot Projects



Big River OMW Pilot Project



Lower Grand OMW Pilot Project



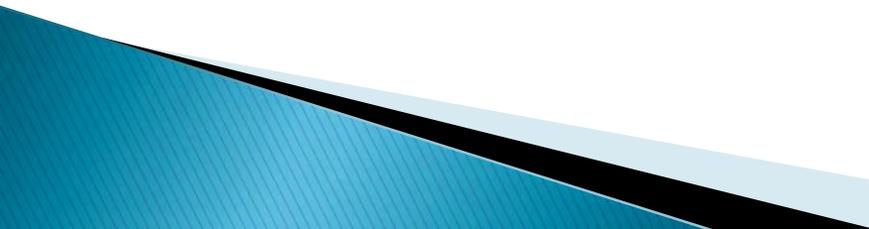
Spring River OMW Pilot Project



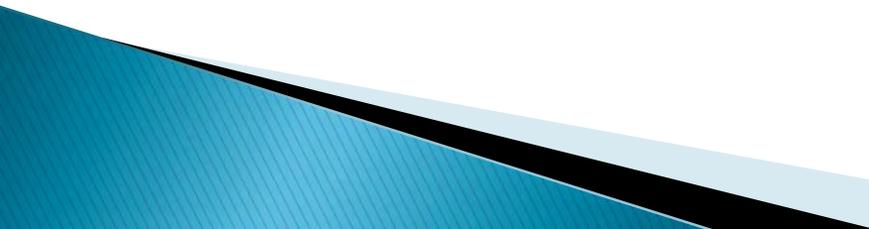
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North Central Missouri Regional Water Commission –

- ▶ Wholesale Water Provider – 622,000 GPD of Treated Water & 1 Million GPD Raw Water From 200 Acre Elmwood Reservoir
 - ▶ Customer/Members include Milan, Green City, Green Castle, Sullivan PWSD#1 (Farmland) – 12 Members
 - ▶ Result of DNR's Strategic Initiative
 - ▶ Mission to Create Ultimate Solution to Acute Water Shortage (3 Emergency Lines)
- 

Facts About East Locust Creek Reservoir

- ▶ Address Acute Water Shortage – Level 4
 - ▶ 3 Augmentation Lines to Current Reservoir
 - ▶ Largest NRCS Cost-Shared Project in Nation
 - ▶ 2,235 Acre Water Supply Reservoir
 - ▶ 4,300 Acre Land Acquisition Footprint
 - ▶ \$79 Million Estimated Project Cost –
 - ▶ Can Produce 7 Million Gallons Per Day
 - ▶ Capacity – 54,000 Customers in 10 counties
 - ▶ Follows MDNR Strategic Consolidation Plan
- 

Project Description

▶ Purpose

- Water Supply (45,045 ac-ft) (90% of pool volume)
- Flood control (8,863 ac-ft above pool)
- Recreation (1,400 ac-ft) (3% of pool volume)
- Sediment (3,500 ac-ft) (7% of pool volume)

▶ Reservoir Size – 2,352 acres

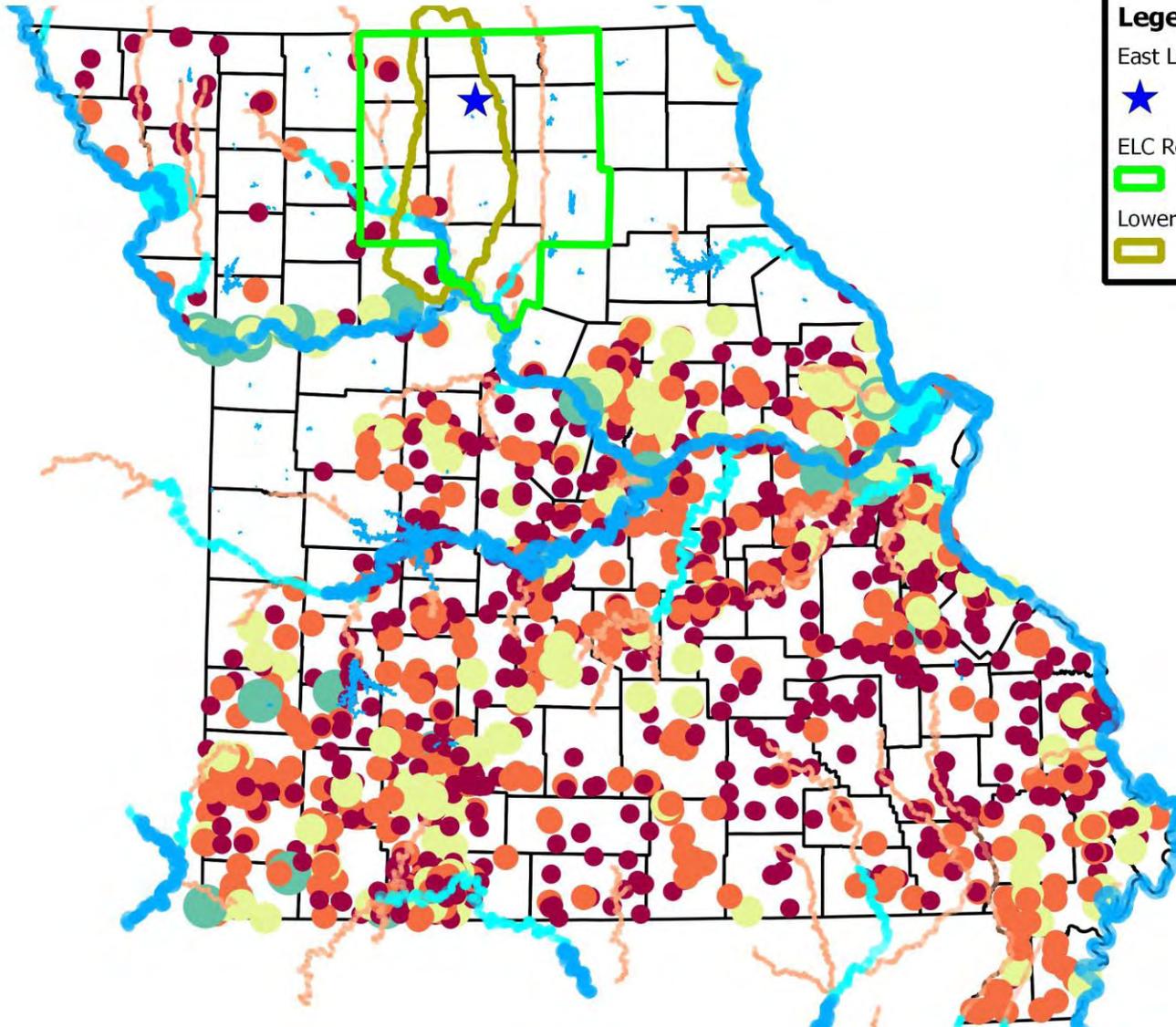
- Similar in size to Long Branch Lake
- will be the 26th largest major lake out of 583 in the state.
- Largest lake in Missouri ever permitted under the current rules

▶ 82 Miles of Shoreline

▶ Max Pool Depth – 60'

▶ Dam Height – 79'

Water Sources of Missouri



Legend

East Locust Creek Reservoir



ELC Reservoir 10 County Service Area



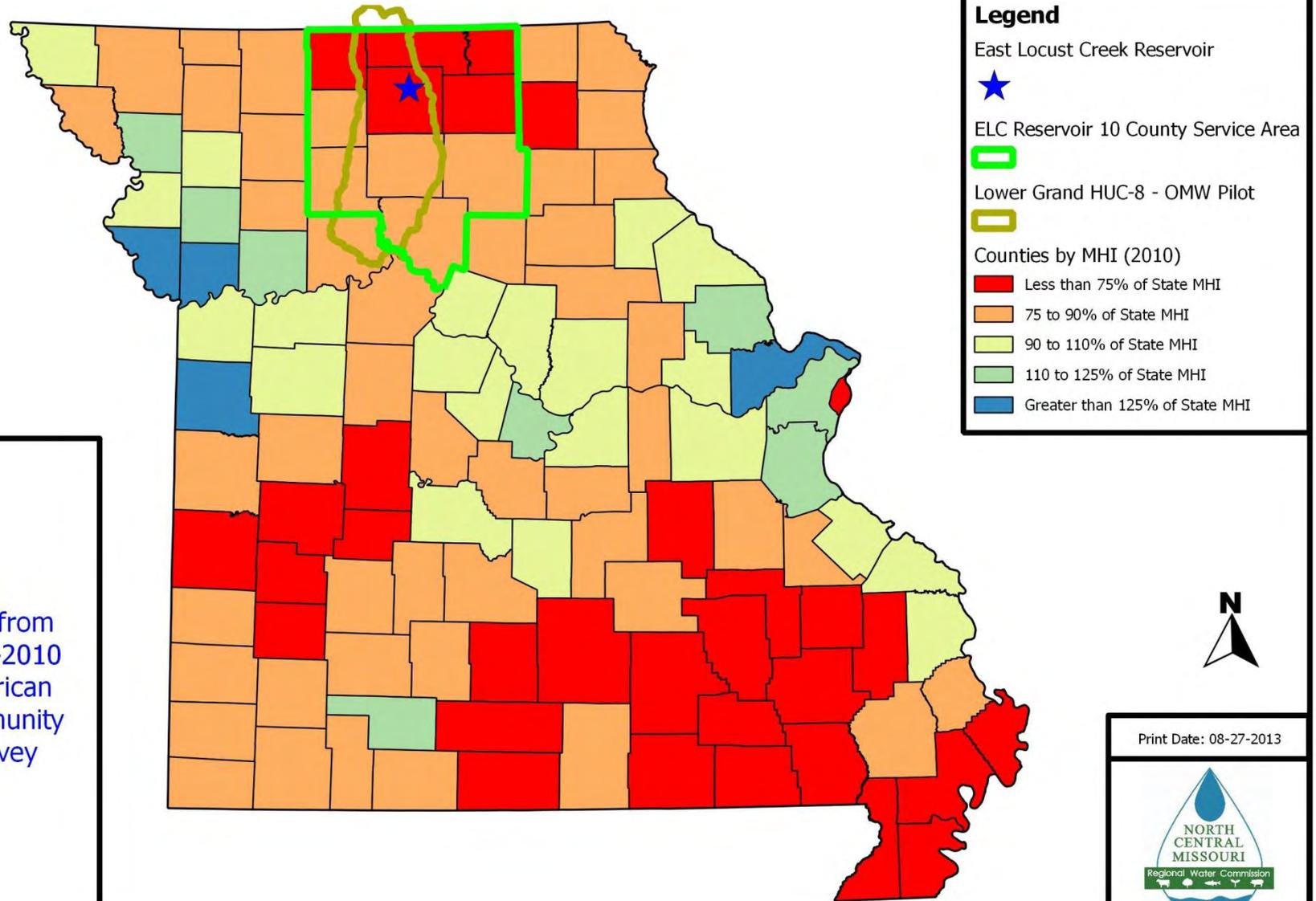
Lower Grand HUC-8 - OMW Pilot



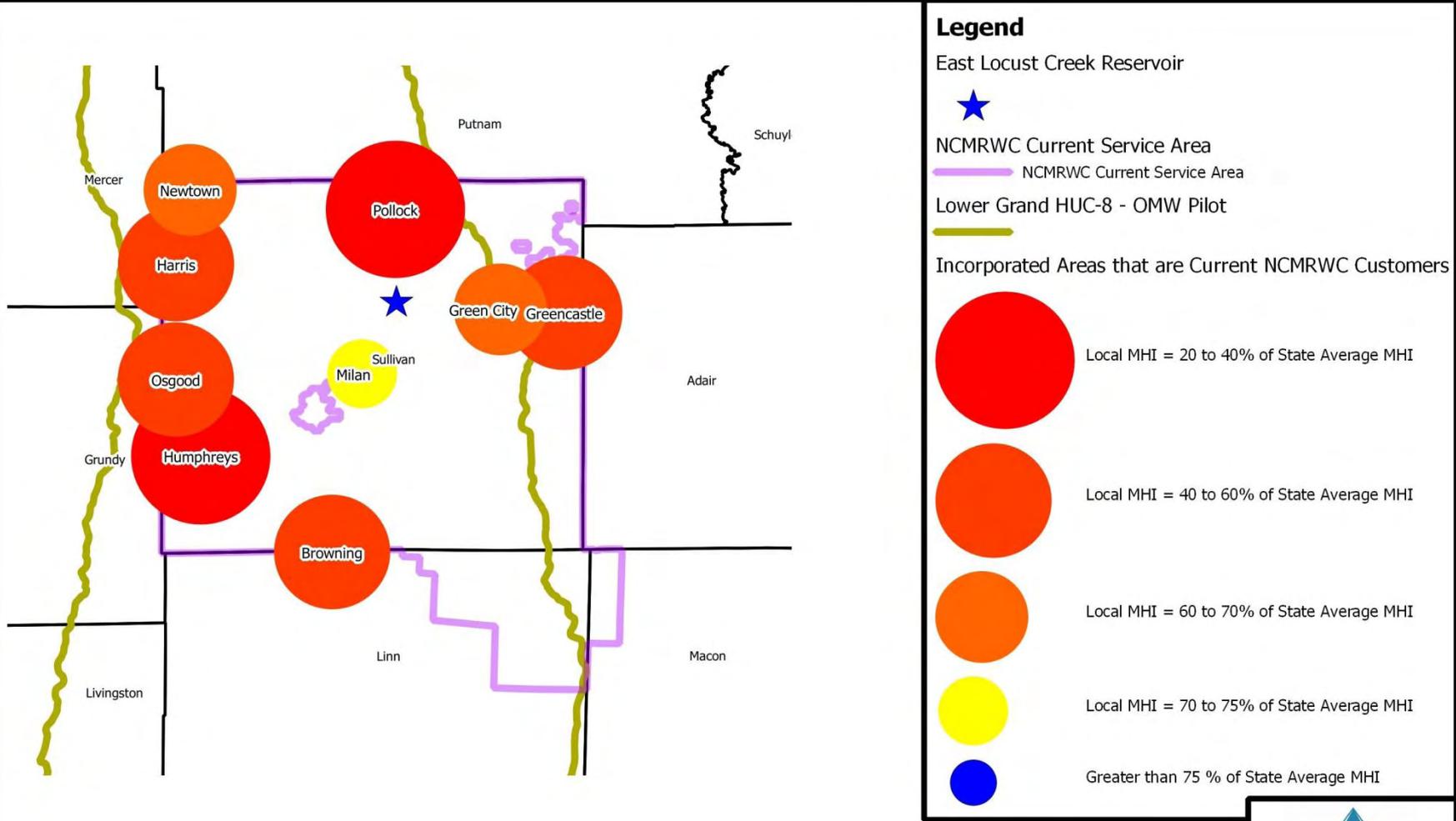
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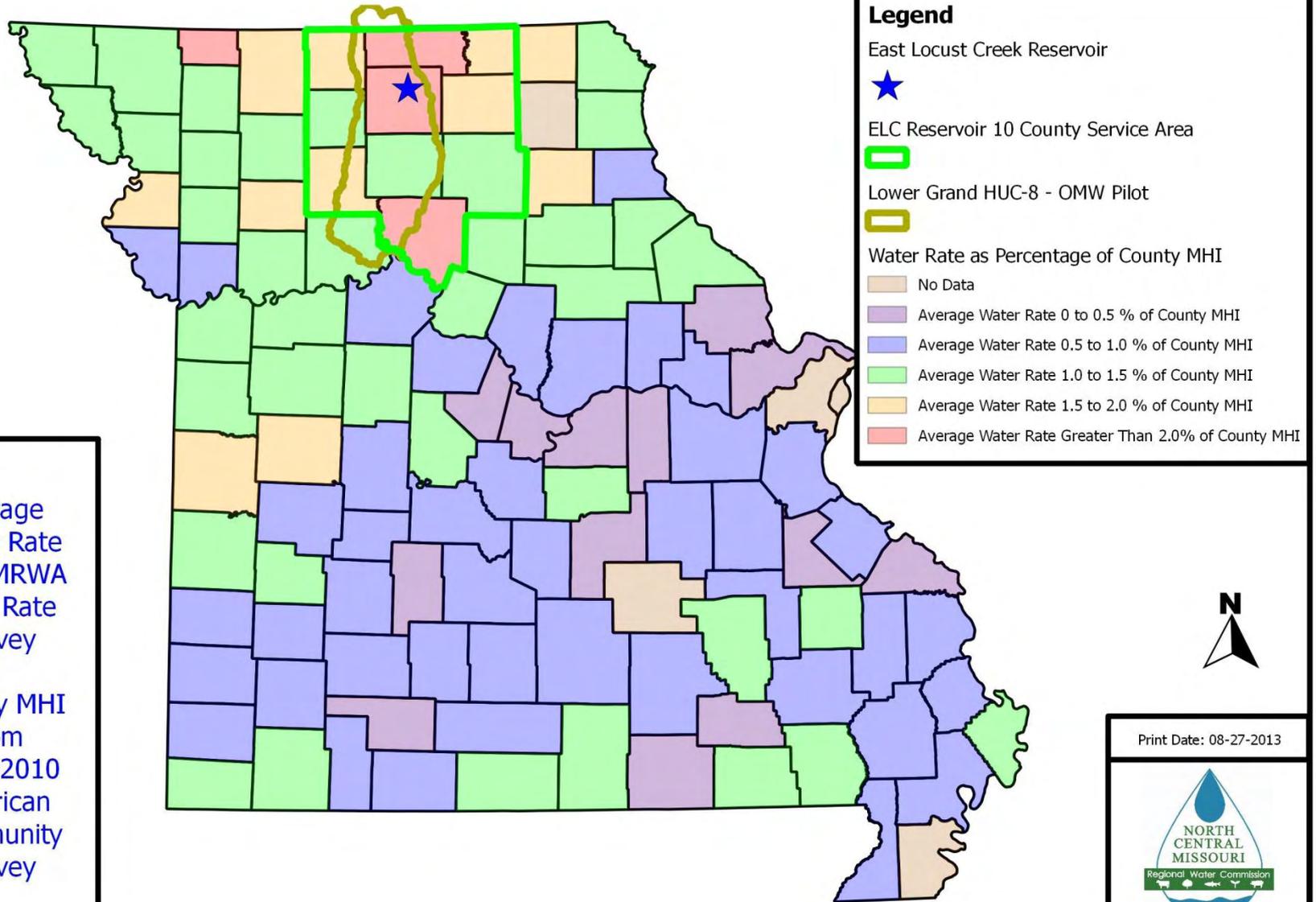
Median Household Income by County as a Percent of State Average



Median Household Income of Communities in Current Service Area



Water Rates as a Percent of County Median Household Income



Average
Water Rate
from MRWA
2012 Rate
Survey

County MHI
from
2006-2010
American
Community
Survey

Print Date: 08-27-2013



Economic Development Engine

- ▶ \$23 million during construction (6 years)
 - ▶ 831 jobs during construction (6 years)
 - ▶ \$49 million total project
 - ▶ 1,969 jobs total project
 - ▶ Permanent economic engine
 - ▶ Capacity for industry expansion
 - ▶ \$265,000 in agricultural flood mitigation
 - ▶ \$8.3 million to be dropped into economy
 - ▶ Will spawn follow-on land purchases & activity
- 

Ballot Authority & Language

- ▶ Shall the County Commission of Sullivan County, Missouri be authorized to impose a county wide sales tax in the amount of one half of one percent for the purpose of providing funding for the acquisition of land for and construction of the East Locust Creek Watershed Reservoir as a storm water control and park project for the County?
- ▶ ½ Cent Sales Tax – Passed With 81.25% of the Vote

Lake Authority Legislation

- ▶ *Missouri Revised Statutes*

- ▶ Chapter 67

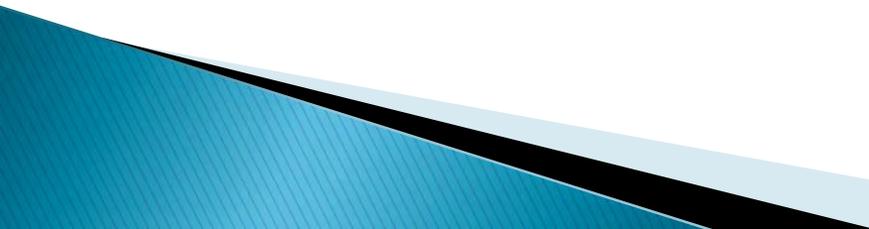
Political Subdivisions, Miscellaneous Powers

Section *67.4500*

August 28, 2011

- ▶ Enables control of ELCR watershed
- ▶ Prevents contamination of reservoir
- ▶ Establishes ability to zone
- ▶ Allows, then, private property ownership nearer principle pool
- ▶ Allows for Comp Plan & TIF District

Lake Authority Enabled Activities

- ▶ Removed 1500 acres, \$3 million from Project
 - ▶ Property Proximity–100 ft from Principle Pool (DNR) or Above Top of Dam (NRCS)
 - ▶ Easement across Commission Property
 - ▶ Dock sales & licensure
 - ▶ Private development around Reservoir
 - ▶ Ongoing leases
 - ▶ Comprehensive Plan development
 - ▶ TIF District Formation
 - ▶ PROPERTY VALUATION INCREASES
 - ▶ RETAIL SALES TAX GENERATION
- 

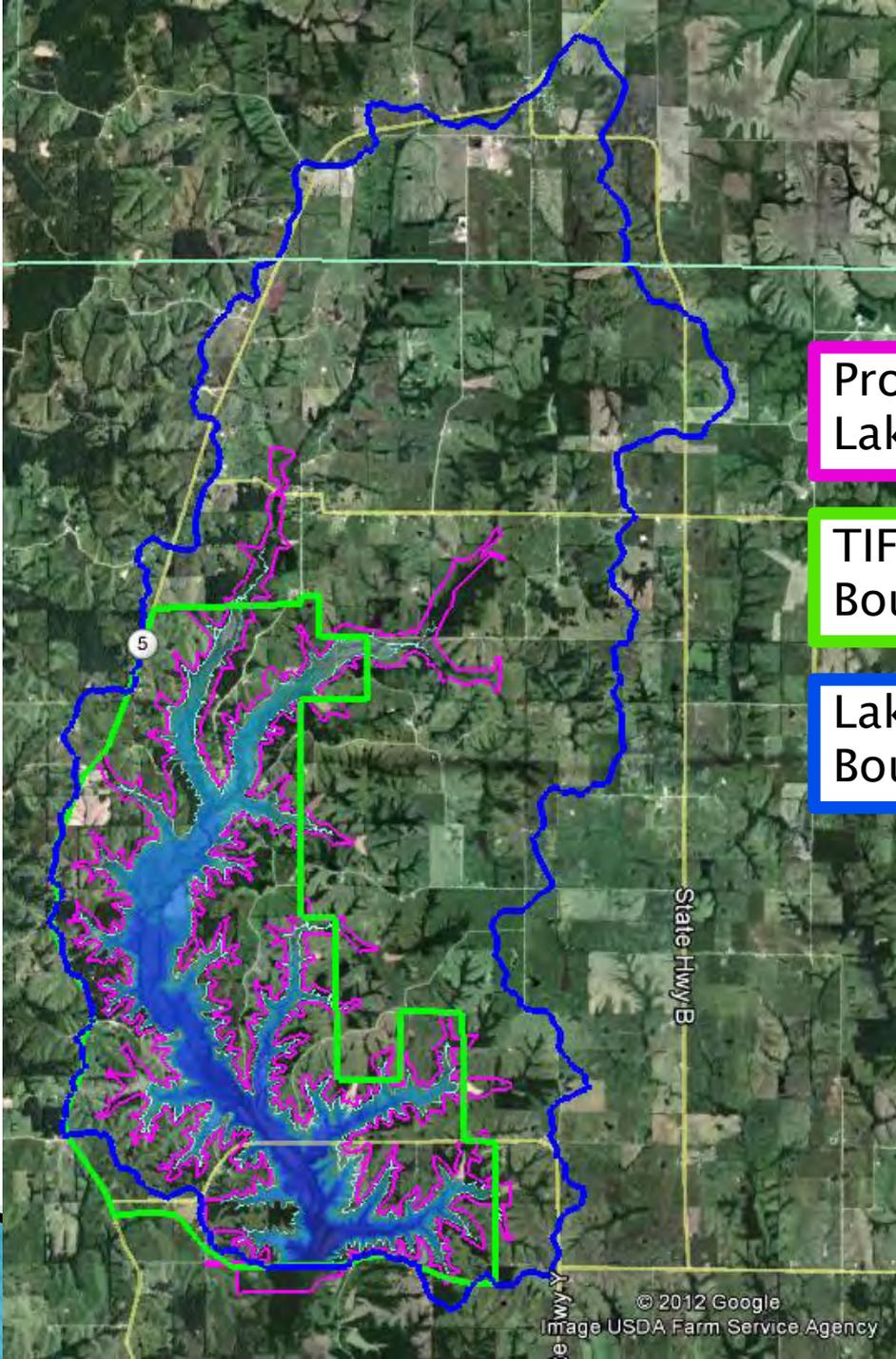


Originally
Proposed Lake
Boundary

Top of Dam

100' Lake
Buffer

Proposed
Lake Boundary



Proposed
Lake Boundary



TIF District
Boundary



Lake Authority
Boundary



TIF DISTRICT

Minimum Projections

Tax Revenue Projections Conservative Assumptions

Year	Real Property	Personal Property	Sales Tax	Total	Available for Project Funding ¹	for the Tax Districts ²
1	-	-	-	-	-	-
2	-	-	625	625	313	313
3	92,499	8,064	33,880	134,443	109,439	25,004
23	552,697	91,267	110,257	754,221	607,825	146,396
Total	7,541,182	1,256,027	1,768,571	10,565,781	8,425,468	2,140,313

Project Fund³ **3.25%** \$5,304,877.47

1) Project funding assumes the capture of 100% of the increase in local real property tax and 50% of the increase in sales tax. These are the funds committed to the reservoir debt reduction.

2) Taxing District funding assumes the capture of 100% of all the base taxes (real, personal and sales), 100% of the increase in personal property taxes and 50% of the increase in sales tax. These are the funds available to the Local Taxing Districts.

3) This model is based on the following assumptions: 125 units of 1500 sq ft housing built over 20 years, a 100 site campground, a 2000 sq ft C Store, a 3000 sq ft marina, a 50,000 sq ft storage facility and mechanics shop and a 2000 sq ft fast restaurant.

Federal & State Stakeholders

- ▶ NRCS
- ▶ USDA–RD
- ▶ Corps of Engineers
- ▶ EPA
- ▶ USFWS
- ▶ MDNR – 7 Divisions
- ▶ MDC
- ▶ MoDOT
- ▶ Dept. of Health & Senior Services
- ▶ Dept. of Revenue
- ▶ Dept. of Economic Development



An Ecological Engine for North Central Missouri: A Holistic Approach to Reservoir Design - “The Smart Lake”

- ▶ The Smart Lake approach seeks balance between ecological restoration, preservation economies and economic generation.
 - ▶ It is a balance, but a balance on a higher paradigm that subsequently limits (and hopefully eliminates) inherent conflicts and bridges gaps between oversight agencies.
 - ▶ It requires coordination cooperation and an open mind to a new approach.
 - ▶ It requires discretion and flexibility.
 - ▶ Emphasizes understanding the “goals” of each governing agency as much as understanding their requirements
 - ▶ Finally, it requires progressive design and the employment of technology.
- 

Ecological Engine

- ▶ “Comprehensively sustainable” not “Meets minimum requirements”
- ▶ Smart Lake
 - Design outlet structure to address LOW DO problems
 - Independently control lake levels in branches
 - Coordinated planning for in-lake mitigation, infrastructure and economic development
 - Lake Authority
 - Pollock sewer system
- ▶ Addresses half of the Low DO 303D list in Lower Grand
- ▶ Directly improves 12% of Bacteria 303D list in Lower Grand
- ▶ 3,490 Acre-FT of sediment captured over lifetime
- ▶ Our Missouri Waters

“The Smart Lake” approach is expected to address:

- ▶ **Water quality** – enhancing reservoir water quality and the benefits of quality water in the reservoir and in contributing and receiving streams.
- ▶ **Runoff quantity** – minimizing changes in the total quantity of storm runoff that occur as a result of this project
- ▶ **Hydrology** – attempting to mimic pre-project hydrology to the best of our ability through low impact development in the benefit district, best management practices applied to reservoir inputs and technologically advanced reservoir outflow control.
- ▶ **Channel stability** – managing the impacts of the reservoir on the geomorphology of Locust Creek.
- ▶ **Energy usage** – managing the energy required for construction and operation of the reservoir and using renewable energy where possible.
- ▶ **Erosion** – controlling erosion and preventing sediment from entering streams will be crucial elements during construction of the reservoir, construction of facilities within the benefit district and after construction is complete. As opportunities arise, the project may also contribute to soil conservation efforts.
- ▶ **Limnological health** – considering the impacts of all project decisions on the aquatic health in the reservoir.
- ▶ **Stream health** – Considering the impacts of all project decisions on the aquatic health in the contributing and receiving streams.
- ▶ **Lake access** – allowing human access to the reservoir in ways that minimize pollutant entry.

“The Smart Lake” approach is expected to address (continued):

- ▶ **Human health** – providing a facility that encourages active lifestyles.
- ▶ **Water temperature** – considering the impacts of project decisions on temperature in the reservoir and on Locust Creek.
- ▶ **Greenhouse gases** – managing the production of greenhouse gases during construction and operation of the reservoir. Developing the water distribution system to minimize pumping energy needed.
- ▶ **Life-cycle costs** – calculating and accounting for the life cycle costs in all significant project decisions from pavement selection to landscaping design.
- ▶ **Reservoir density** – Because there are some reservoir impacts which can’t be avoided, it would be inappropriate to create a reservoir on every stream the size of East Locust Creek in the region. Insofar as is possible, we will configure this reservoir to negate the need for a high density of reservoirs in north-eastern Missouri. In other words, this reservoir will be configured to meet the needs for a large enough area (10 counties) to keep the total density of reservoirs in the region low. This will help keep the overall level of unavoidable impacts to an acceptable level and will be viewed as a tradeoff between an acceptable level of reservoir density and acceptable water distribution impacts.
- ▶ **Social aspects** – the project is being considered as an amenity which can be utilized by the community for social activities.
- ▶ **Light pollution** – the project will consider placing reasonable limitations on the amount of unnecessary lighting that escapes the site to help in keeping the night time skies dark for wildlife, campers and star-gazers.
- ▶ **Project costs and funding** – all project decisions will involve consideration of costs and benefits. The project has a limited budget and will have to be developed within the budget.

Environmental Impacts Permitting

- ▶ FEMA
- ▶ Dam Safety
- ▶ Water Supply

▶ 404 / 401

- ▶ Land Disturbance
- ▶ Endangered species
- ▶ Sustainability
- ▶ Etc.

Streams & Wetland Mitigation

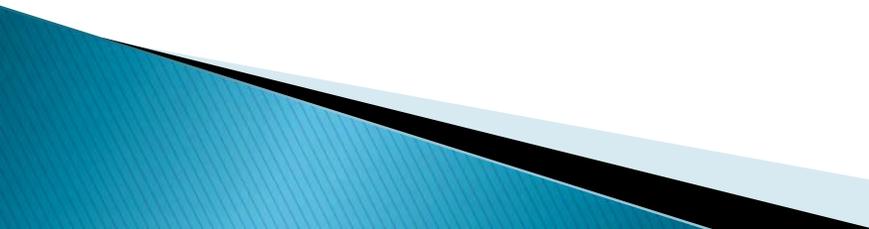
Impacts

- ▶ Estimated 42 miles of Jurisdictional Stream (18.7 Miles of NHD Plus out of 3,514 in Lower Grand)
- ▶ 230 Acres of NWI Wetland

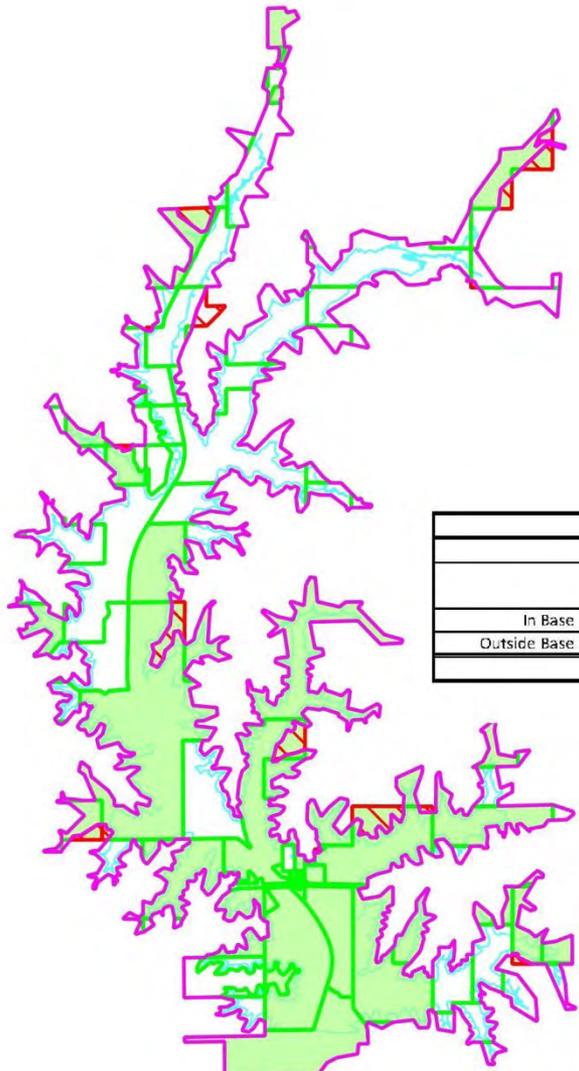
Mitigation Approach

- ▶ In Project Mitigation – the Smart Lake
- ▶ Pershing Park Initiative – DNR, NCMRWC, USACE
- ▶ Public Private Partnership to purchase credits within the Locust Creek Watershed

Source Water Protection Challenges

- ▶ Boynton –un–sewered and inundated
 - ▶ Pollock – un–sewered
 - ▶ Inundated Land
 - 41% Pasture
 - 14% Row Crop
 - 33% Forest
 - ▶ Contributing Drainage Area
 - 66% Pasture (grazed and ungrazed)
 - 2% Row crop
 - 20% Forest
- 

Current Land Acquisition Status (August 2013)



Legend

Current Base Boundary



Normal Pool



Parcels to be Acquired

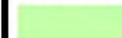


Parcels to be Acquired



Remnants that need to be Acquired

Parcels Acquired



Y

Land Acquisition Status as of August 28, 2013

	Total to be Acquired		Acquired So Far		Remaining		Percent Complete	
	(acres)	Number of Owners	(acres)	Number of Owners	(acres)	Number of Owners	(acres)	Number of Owners
In Base Boundary	4,274	83	2,296	27	1,978	56	53.7%	32.5%
Outside Base Boundary	134	NA	120	NA	14	NA	NA	NA
Total	4,407	83	2,416	27	1,991	56	NA	NA

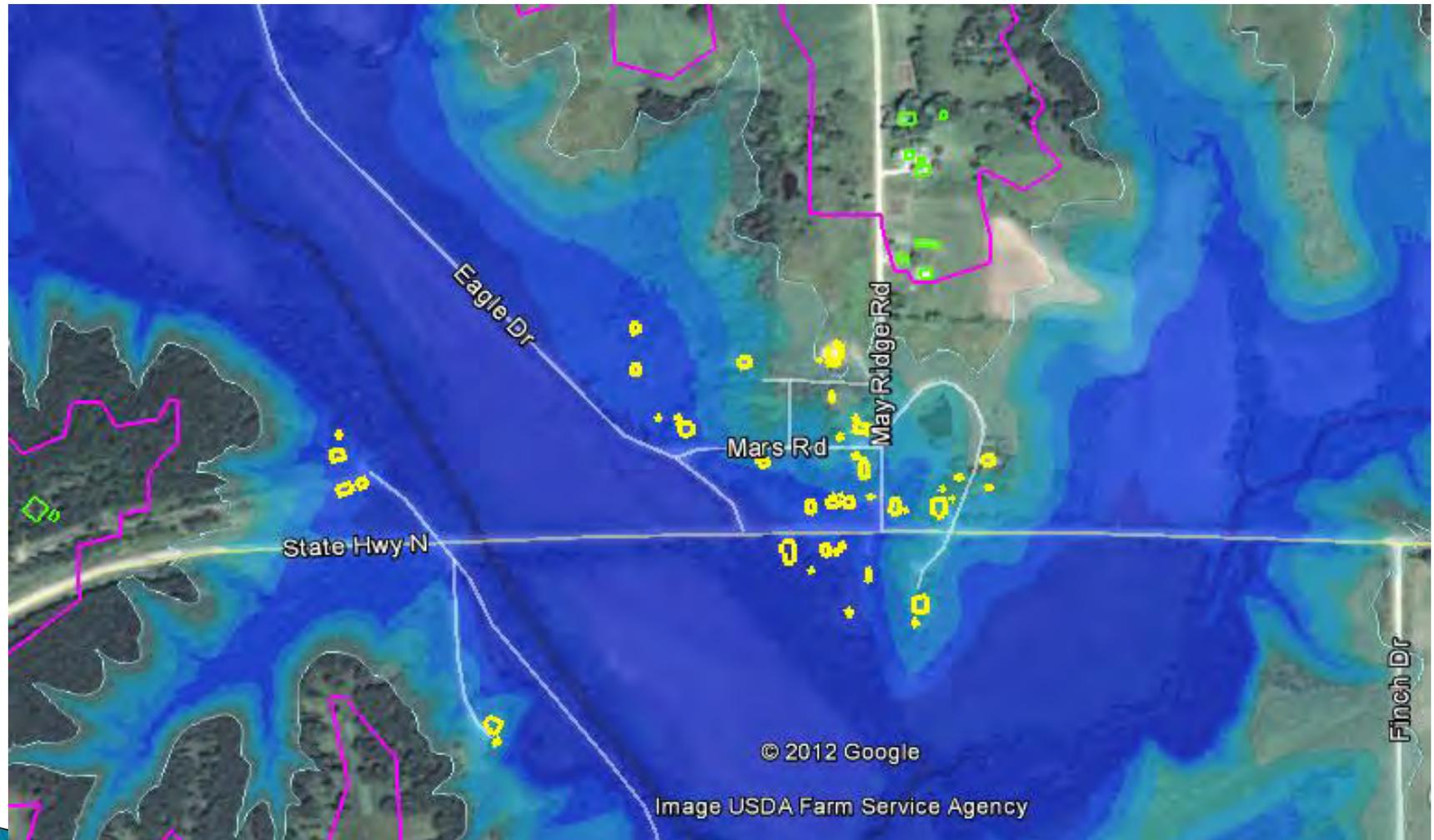
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Boynton, MO



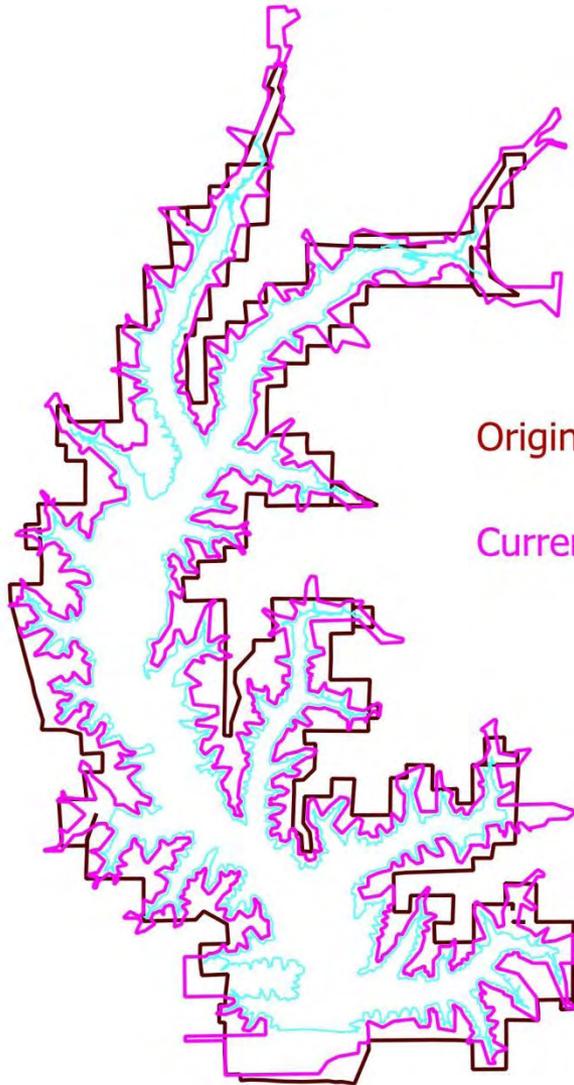
Buildings in Lake Boundary

Buildings Outside Lake Boundary

Infrastructure

- ▶ 3.8 miles of inundated roads
 - ▶ 2.1 miles of water lines
 - ▶ Cable
 - ▶ Overhead Electric
 - ▶ Fiber Optic
 - ▶ Sanitary Sewer (new)
- 

Revised Land Acquisition



Legend

Normal Pool



Current Base Boundary



Original Proposed Property Boundary



Original Boundary - 5,871 Acres and 308 Vertices

Current Proposed Boundary - 4,277 Acres and 1615 Vertices

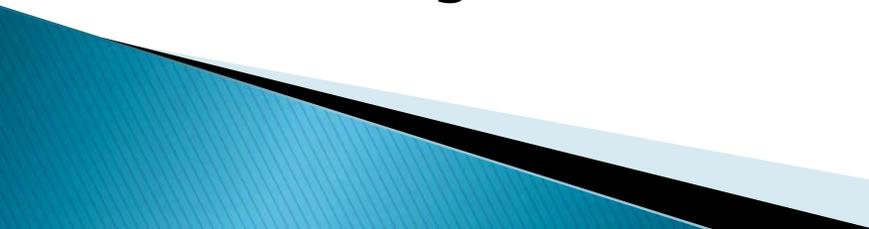
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What's Unique About ELCR

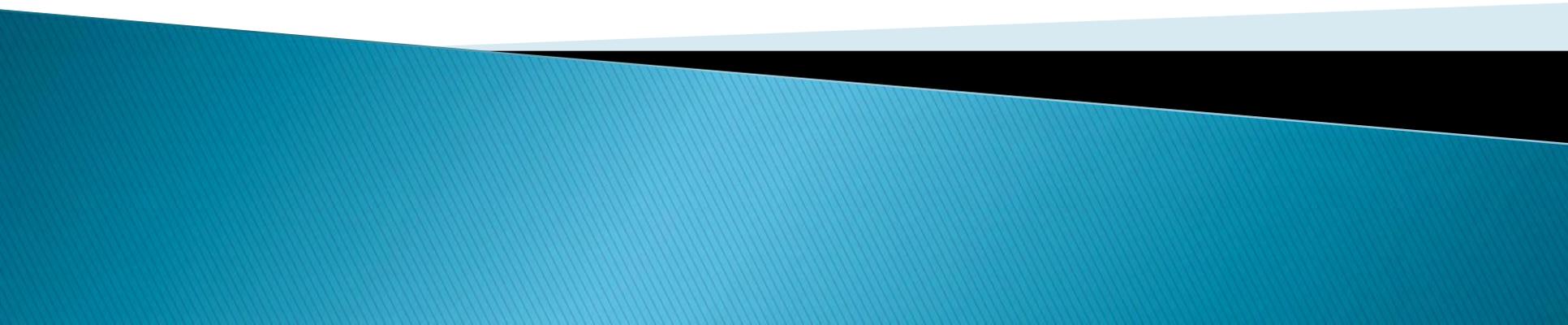
- ▶ Overwhelming Local Support
 - ▶ Largest NRCS Watershed Project in Nation
 - ▶ Special Authorization & Cost Share
 - ▶ ½ Cent County Wide Sale Tax (81.25% Favor)
 - ▶ Legislation Creating Lake Authority
 - ▶ Control of Reservoir Watershed – Zoning
 - ▶ Property Owners Near Water/Lake Access
 - ▶ TIF District Funding 100% & 50%
 - ▶ Pollock Sewer Project – 100% Cost Coverage
 - ▶ Smart Lake Design – Ecological Engine
 - ▶ Pershing Park Initiative– State Mitigation Bank
- 

Keys To Project Success To Date

- ▶ County & Commission Support
- ▶ Outreach, Advocacy, Communication
- ▶ Landowner Support
- ▶ Congressional Delegation Support
- ▶ Creative & Workable Plan
- ▶ Comprehensive Planning
- ▶ State Delegation Support
- ▶ Smart Lake Design
- ▶ Early Stakeholder Recruitment
- ▶ Understanding Disparate Goals
- ▶ Non-Linear Project Planning
- ▶ Addressing Issues Out of Order
- ▶ IDIQ Engineering Contract
- ▶ Committed Team



Thank You

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