

PROPOSED REGIONAL WATER SYSTEM PLAN

by

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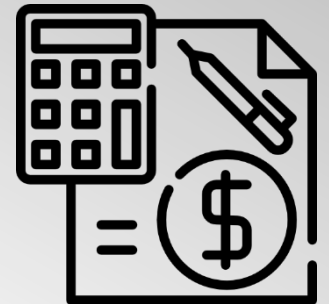
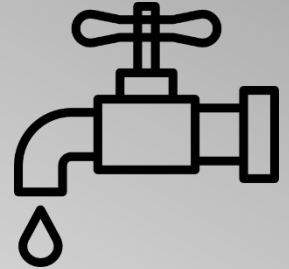
JUNE 28, 2018



WHAT IS JCPSD?

JEFFERSON COUNTY PUBLIC SEWER DISTRICT

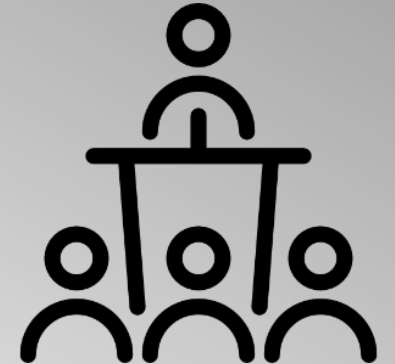
- a. Organized by the County Commission in 2000 with a territory that encompassed all of unincorporated Jefferson County not within an existing district to serve the many areas of the County that were without sewer and water
- b. In 2013, JCPSD converted to a Chapter 204 public sewer district to give it greater ability to publicly finance improvements



WHAT IS JCPSD?

JEFFERSON COUNTY PUBLIC SEWER DISTRICT

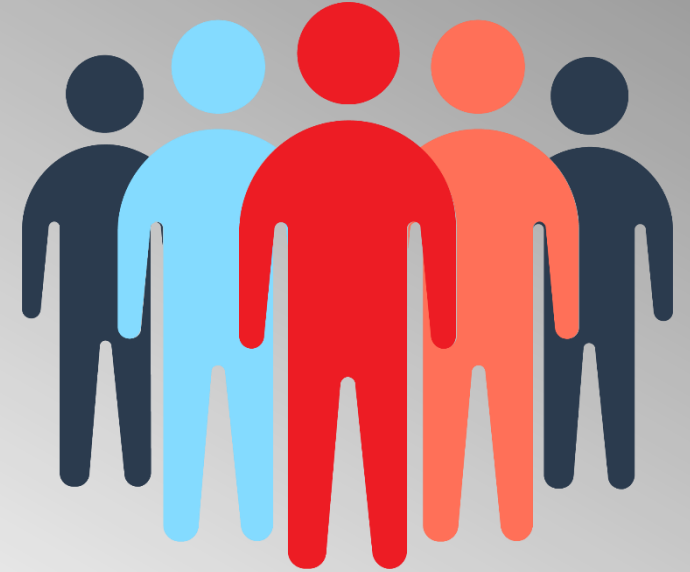
- The District is a public entity / political subdivision of the state (like the City)
 - Board Members serve on behalf of citizens (uncompensated)
 - As a governmental entity, not concerned with profit, but public interest
 - Meetings open to the public / subject to the sunshine law
 - It is accessible and accountable to the citizens it serves.



WHAT IS JCPSD?

JEFFERSON COUNTY PUBLIC SEWER DISTRICT

- Among the citizens served are those just south of Eureka in Jefferson County
- Currently serves Mirasol with water (via wells and storage tanks) and sewers
- Will serve Windswept Farms in the near future
- The District will serve nearly 1,000 customers with this development



WHAT IS JCPSD?

JEFFERSON COUNTY PUBLIC SEWER DISTRICT

- In serving its citizens, JCPSD has experienced many of the problems that the citizens of Eureka have experienced, including:
 - water quality;
 - taste; and
 - sufficiency of supply.
- In its communications with other public entities, similar problems exist in other areas of Jefferson County.



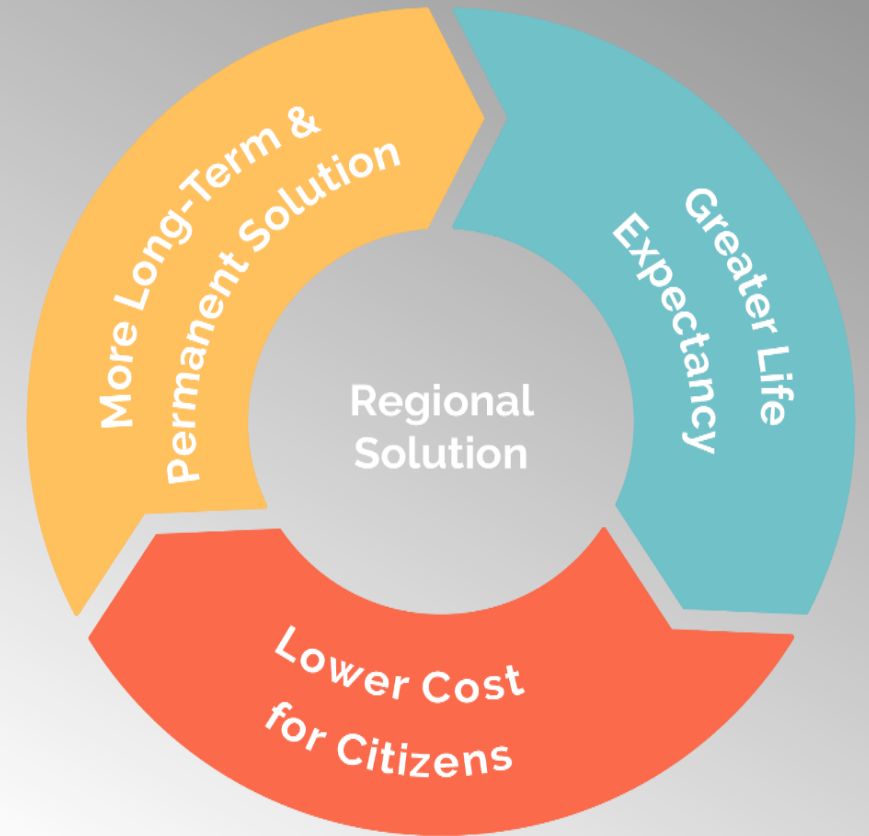
WHAT IS THE SOLUTION TO A REGIONAL PROBLEM?

- This led the District, in conversation with other public entities, to conclude that a regional approach was needed to address the shared issues and problems being faced by residents of Eureka and neighboring Jefferson County.



WHAT IS THE SOLUTION TO A REGIONAL PROBLEM?

- a. By utilizing a regional approach:
 - i. There are significant economies of scale that can be realized. Costs can be borne by a larger number of citizens, thereby reducing the overall costs to each individual user
 - ii. A regional solution, such as what will be discussed in a moment, is a more long-term / permanent solution, with a greater life expectancy – thereby lessening the future costs on the citizens.

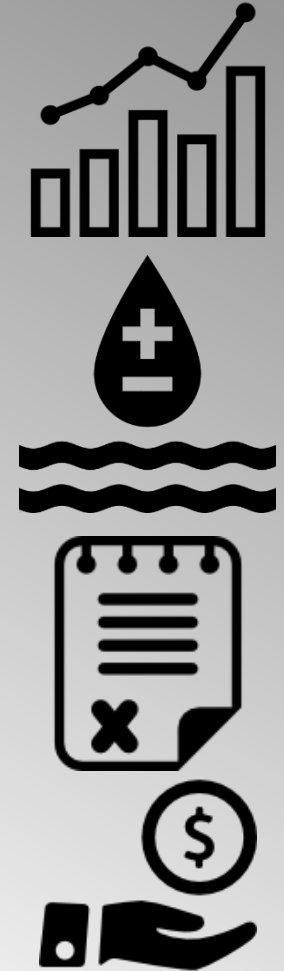


WHAT IS THE SOLUTION TO A REGIONAL PROBLEM?

- i. A regional solution provides greater opportunities for growth both in and around Eureka because it provides an adequate supply of water for the future needs of the community. As a result, development costs for future development will be reduced (because there is no longer the need for drilling additional wells). Regional system can be easily expanded.
- ii. Finally, in adopting the regional approach, the City of Eureka, and its citizens, will not have to borrow large amounts in an effort to temporarily solve the current water problems as the District will be the owner and operator of the system.

WHY DO WE NEED A REGIONAL WATER SYSTEM?

- Rapid growth in northern Jefferson County/western St. Louis County
- Public desire for high quality affordable water supply
- Challenges with water treatment at individual deep rock well sites
- Long-term economically viable solution is needed to meet demand



WATER QUALITY ISSUES: JEFFERSON COUNTY

- Deep rock well source, hard water (300 to 400 mg/l Total Hardness)
- Hard water impacts on appliances and water heaters
- Iron and manganese in some wells in Jefferson County
- Conventional ion exchange softening adds sodium to the water



WATER QUALITY ISSUES: EUREKA, MO

- Water is much more saline than Jefferson County
- High TDS on well supply and finished water
 - 2 to 3 times 500 mg/l secondary standard
- Corrosive water: pH <7
- High Chlorides: >> secondary standard of 250 mg/l
- Radionuclides in one well (#10) necessitated treatment
- Taste complaints: salty/metallic taste



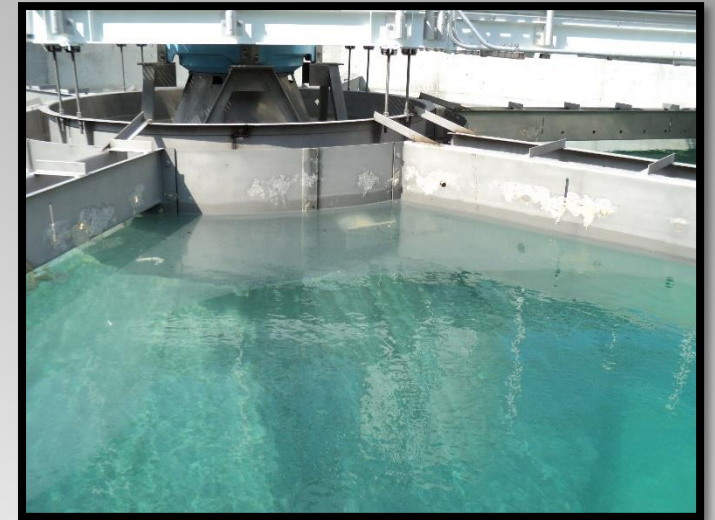
HOW DOES THE REGIONAL WATER SYSTEM SOLVE YOUR WATER QUALITY ISSUES?

- Starts with a better water source and central treatment
- Proposed new alluvial wells
 - High supply volume potential
 - No saline water (sodium and chlorides)
 - 200 to 225 mg/l total hardness alluvial wells



HOW DOES THE REGIONAL WATER SYSTEM SOLVE YOUR WATER QUALITY ISSUES?

- Lime softened water-new central water plant
 - easily removes iron and hardness
 - simply lime dose adjustment
 - hardness level can also be customized
 - typical target would be 140 mg/l total hardness
- Taste and water quality profile very similar to regional major and minor suppliers
 - City of St. Louis
 - St. Louis County-Missouri American Water Company



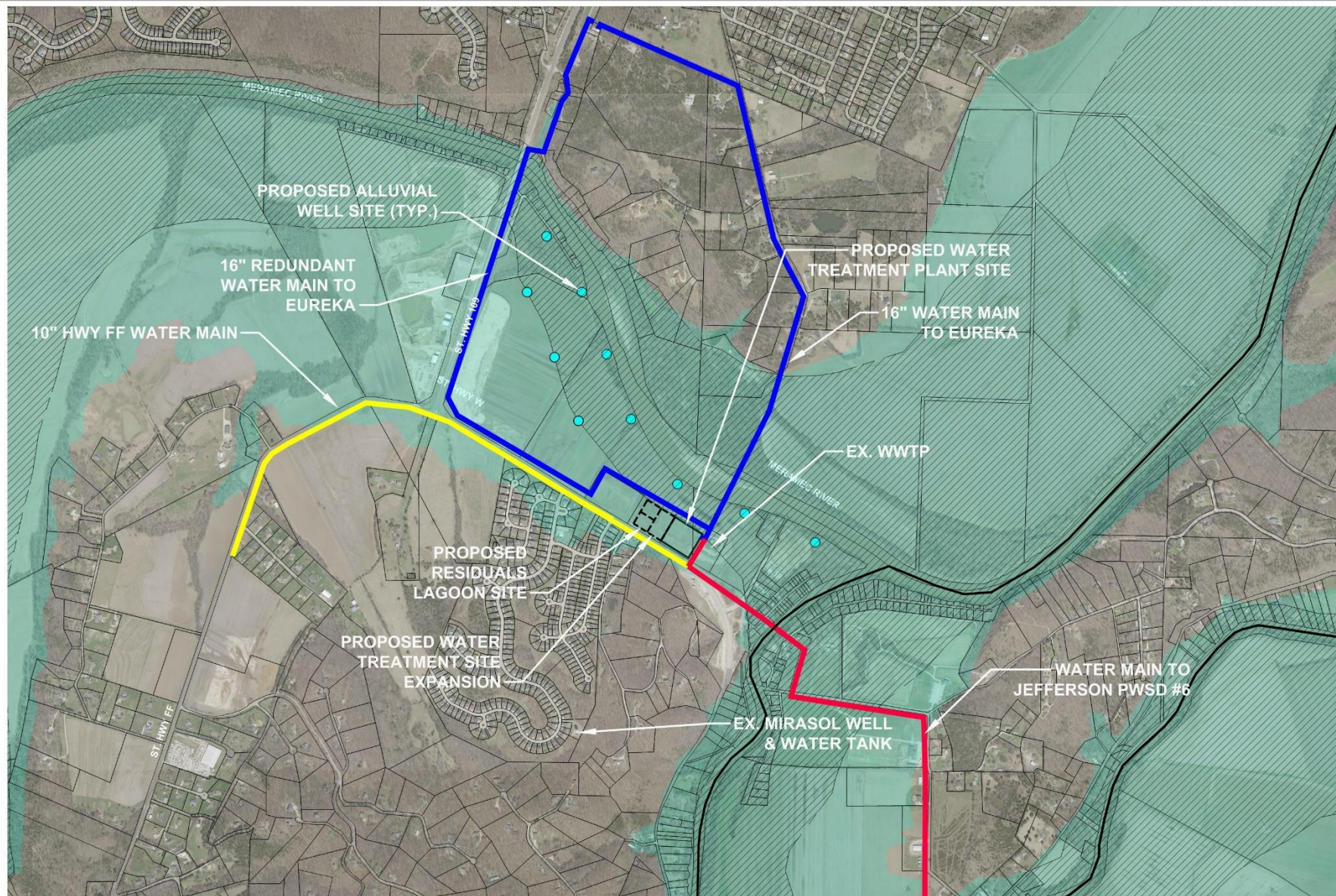
PROPOSED NEW WATER SYSTEM DESCRIPTION

- **(SEE FIGURE 1)**
- **New well source-alluvial wells along the Meramec River**
 - **Alluvial wells will located on the bank of the Meramec River in the floodplain**
 - **Alluvium typically has thick gravel and sand layers over bedrock**
 - **River replenishes groundwater that is pumped out of wells**
 - **Groundwater is stored in pores between rock and sand grains**

PROPOSED NEW WATER SYSTEM DESCRIPTION

- (SEE FIGURE 1)
- New central water treatment plant
 - Aeration
 - Lime softening
 - Recarbonation
 - Filtration
 - Clearwell Storage
 - High service pumping to customers





**FLOOD
ZONE**

**FLOOD
WAY**

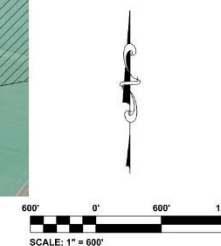
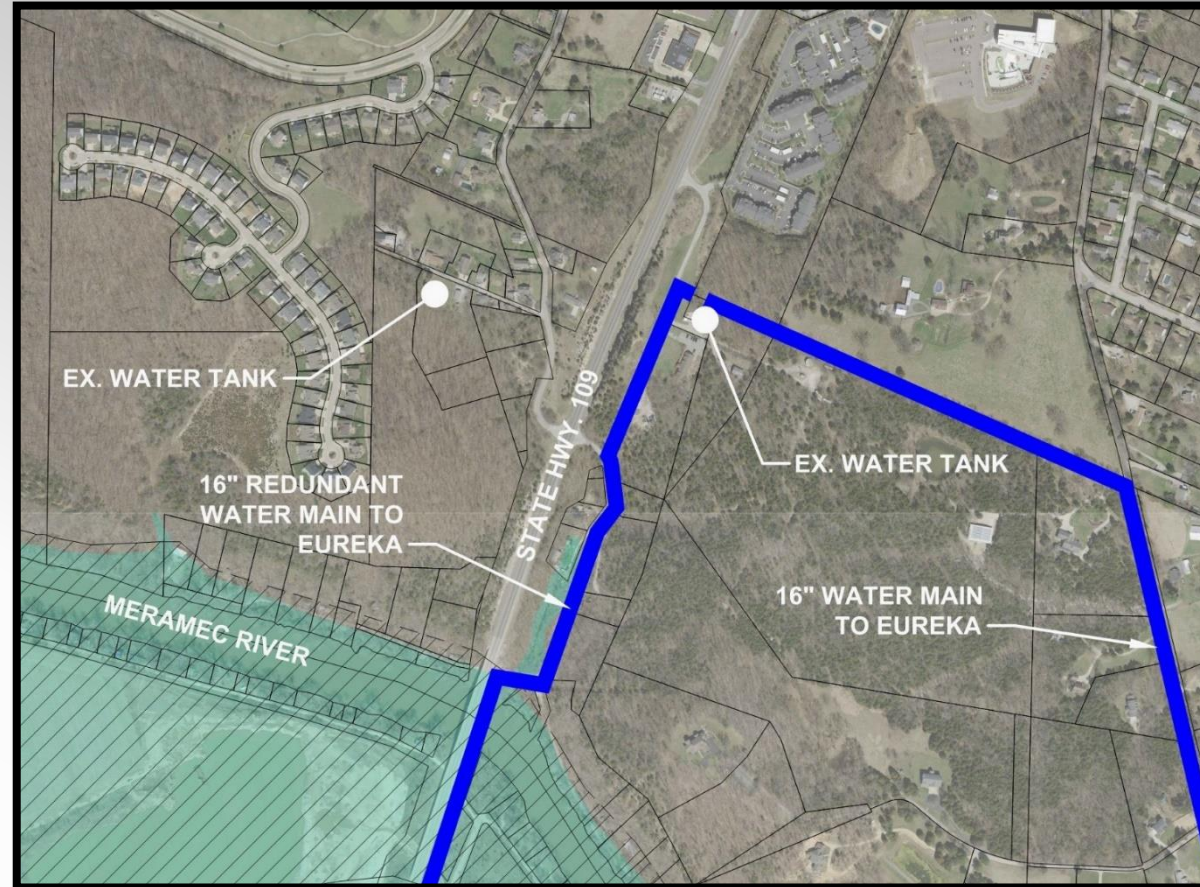


FIGURE 1

PROPOSED NEW WATER SYSTEM DESCRIPTION

- **Transmission pipe mains to Eureka and Jefferson County customers**
- **Two existing City tanks at point of proposed connection**
- **City operations staff notes water can move easily around their system**
- **Needs engineering review to check bulk feed location hydraulics**
- **Will look at secondary feed line for redundancy**

PROPOSED NEW WATER SYSTEM DESCRIPTION



PROPOSED PROJECT PLANNING SCHEDULE

- (SEE PRELIMINARY SCHEDULE in Handout)
- Schedule shows conventional design-bid-build
- Approximately 3.5 years to complete
- Design-build project delivery could shorten timeline



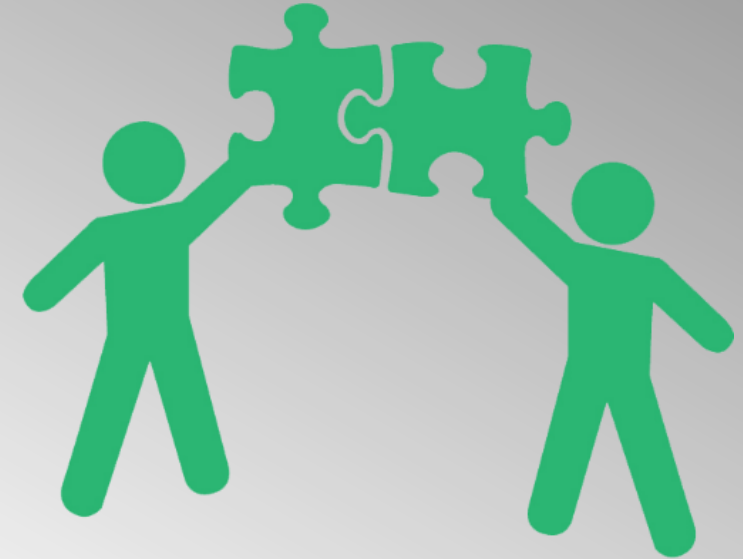
PROPOSED PROJECT PLANNING SCHEDULE

Jefferson County Sewer District
Proposed New Regional Water System
Preliminary Project Schedule
12-Jan-18

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Item																																										
Facility Plan/Engineering Report																																										
Well Field Hydrogeologic Investigation																																										
MDNR Review of Engineering Reports																																										
Surveying																																										
Property Acquisition/Easements																																										
Design (Wells, Plant, Transmission)																																										
Geotechnical Investigation Plant Site																																										
MDNR Review of Design Documents																																										
Bid Phase (3 Projects - Wells, Plant, Transmission)																																										
Close on Financing																																										
Construction Phase (3 Projects - Wells, Plant, Trans.)																																										

BENEFITS OF REGIONAL COLLABORATION

- Regional partners will contribute to the cost of construction, operations and maintenance.
- Water supply will contribute to economic development by providing quality water to new developments.
- Avoids need for softening systems at current and future well sites



FEATURES AND BENEFITS OF PROPOSED NEW WATER SUPPLY

Key Feature: Soft water supply

Key Benefits:

- **No need for water softeners, whole house filters or expensive Reverse Osmosis filters**
- **Appliances last longer**
- **Healthier living-no sodium**
- **Long-term line maintenance costs are reduced.**
- **50-year fix vs. continued struggle w/ wells**

FEATURES AND BENEFITS OF PROPOSED NEW WATER SUPPLY

Economic Features

- Government entity with local control
- JCPSD does not pay a 10% dividend to shareholders
- JCPSD does not have a 15% bottom line net income

Economic Benefit

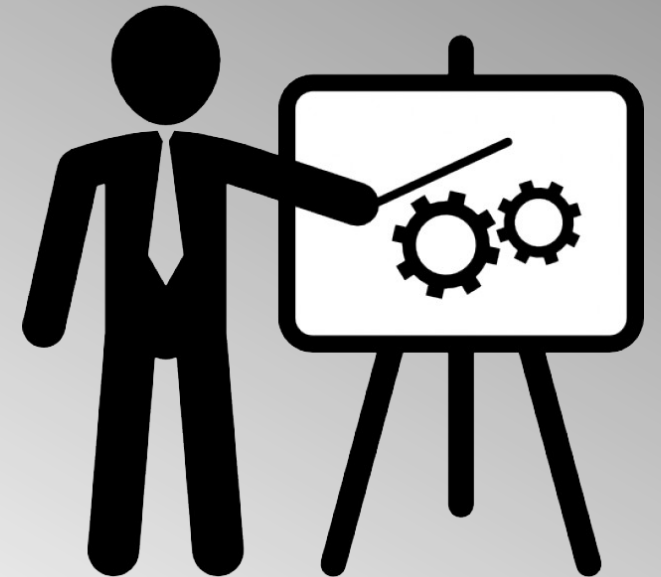
- Lower overall cost of water

RATE COMPARISON

Test Rate	6000.00	Gal			
	Typical	¾ in Service			Monthly Charge
PWSD#C-1	\$20.75	First 1,000	\$6.14	/1,000	\$51.45
Pevely	\$15.71	First 2,000	\$3.94	/1,000	\$31.47
Festus			\$11.81	/1,000	\$70.86
Crystal City	\$4.91	Base	\$16.22	/1,000	\$102.23
PWSD#2	\$18.70	First 2,000	\$6.51	2,000 – 10,000	\$44.74
PWSD#6	\$13.03		\$5.42	/1,000	\$40.13
Hillsboro	\$14.30	First 2,000	\$3.36	Next 4,000	\$27.74
Outside City	\$21.44	First 2,000	\$4.48	/1,000	\$39.36
PWSD #1	\$18.80	First 2,000	\$9.11	Per Gal 2,000 – 3,000	\$54.64
(Arnold)			\$8.91	Per Gal 3,000 – 5,000	
MoAmerican Fenton	\$9.00	Fixed Charge	\$4.78	/1,000	\$37.68
Raintree Plantation	\$33.05	Base	\$5.32	/1,000	\$64.97
Mirasol	\$23.48	Base	\$2.30	/1,000	\$37.28

CRITICAL NEXT STEPS

- **Facility Plan/Engineering Report**
 - Project technical and cost evaluation
 - Necessary for MDNR approval of the project
 - Necessary to explore financing options
- **Well Field Study**
 - Confirm well size, capacity and spacing



CLOSING COMMENTS

- a. So, to move this project to the next stage, a feasibility study is needed. Horner Shifrin estimates the feasibility study will cost approximately \$100,000 to prepare.
- b. The District is willing to split the cost of this study with the City.
- c. The study will provide greater technical information and information on costs
- d. Necessary for DNR approval and financing
- e. In the event the plan is implemented and the plant is built, the District would be willing to return the amount expended by the City on the feasibility study.

QUESTIONS?



ST. LOUIS POST-DISPATCH

Jun 30, 2017

Missouri American files for \$74.7 million in annual rate increases

ST. LOUIS POST-DISPATCH

Jan 30, 2018

Hearings wrapped up for public comment on proposed Missouri-American rate increases

ST. LOUIS POST-DISPATCH

Feb 2, 2018

Big rate increase proposal for water and sewer service in St. Louis County attracts criticism, skepticism

ST. LOUIS POST-DISPATCH

May 3, 2018

Water rates in Missouri could increase under measure sent to governor

ST. LOUIS BUSINESS JOURNAL

May 3, 2018

New Customer Rates for Missouri American Water Approved by Missouri Public Service Commission

ST. LOUIS POST-DISPATCH

May 7, 2018

New Missouri-American Water Company rates expected to take effect later this month

ST. LOUIS BUSINESS JOURNAL

May 7, 2018

New water rates proposed in St. Louis County



Missouri

Public Service Commission

May 7, 2018

New Water and Sewer Rates Filed by Missouri-American Water Company

