

Little Axe Rural Water Project

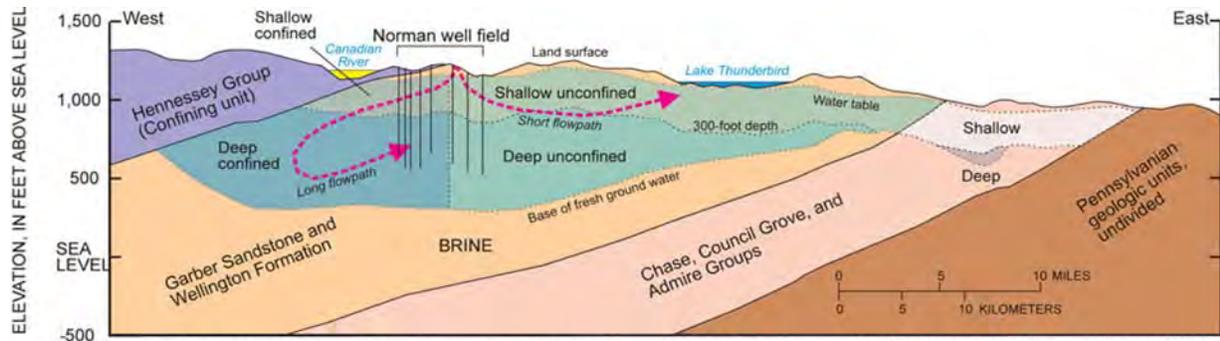
For the past year and a half, ASED A has been doing their research in the Little Axe Community to see if it's feasible to coordinate and orchestrate a Rural Water District. This is a brief summary of what we found and the suggested solutions for this project.

The project's principal focus is on quantifying the water needs of the Little Axe community and identifying water sources. The following analysis considers the availability of funding, access issues such as rights of way, easements and intangible issues, such as what options for water improvements are available to the community. This study will present alternative solutions for improving the water sources and water quality in and around the community, and it will provide the community with a better understanding of the costs associated with developing this project.

The intent of this study is to enable ASED A to decide how it will own, manage and operate water infrastructure improvements for the Little Axe Community. The scope of work includes sources of water, requirements for delivery of the water to the site, definition of the area to be served and analysis of "choice of entities", followed by a general discussion of infrastructure required to serve the community, and possible grants and financing sources available for quality improvement and supply.

As of now, residents rely on shallow individual domestic wells. Contamination is a concern because of open pits during the early days of the oil and gas industry, naturally occurring toxins in the ground water. Little Axe is experiencing a moderate growth both by the Absentee Shawnee tribe, residents, commercial businesses. It is estimated that the population will grow up to 20% in the next 10 years.

Developing a community well water supply system with the implementation of a water treatment plant and water storage facilities is favorable in meeting all of the project goals. The most efficient and cost effective plan is a central water supply system, using deeper wells with a central treatment plant. The community well water supply system will provide water quality and quantity solutions to Little Axe Community residents and is less expensive than the alternatives of a water line extension of treated water to the community from the city of Norman, or the treatment of individual wells.



Note: The rock layers of the aquifer are nearly horizontal. They appear to dip steeply to the west because of vertical scale exaggeration. Vertical scale greatly exaggerated. Modified from Schlottmann and others (1998)

Figure 1: Generalized hydrogeologic-section of the Central Oklahoma aquifer near Norman. The Norman well field produces water from the Garber Sandstone and Wellington formation in the deep confined and deep unconfined part of the aquifer

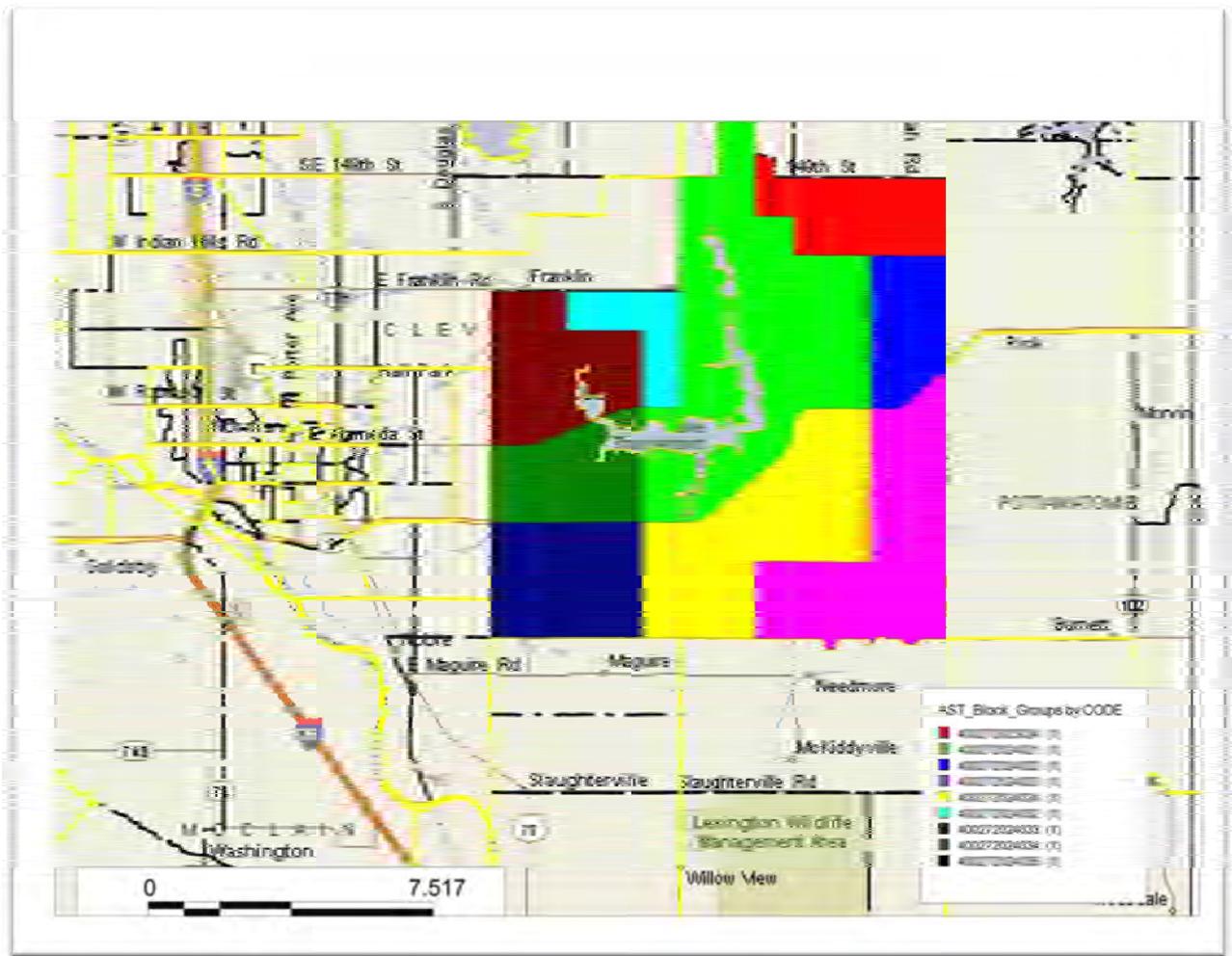


Figure 1: The yellow block (4024) and the light-green block (4021) are the initial service areas with an estimated 1,500 housing units.

Cost for Little Axe Community Water and Phase II (Wastewater System) is estimated to be between \$8,000,000 and \$20,000,000 depending on design, services offered and service area. This includes design costs and associated costs such as formation of district. Grants and Bond financing are an option for subsidizing the cost of improving water quality to members of the community. The development of the infrastructure also improves the fire protection in the community.

Average monthly rates will be a method to pay for any bond financing which will be somewhere around \$40.00 to \$50.00 dollars based on 10,000 gallons of residential use. Commercial rates will be higher based on higher usage-50,000 gallons will be approximately \$220.00.

Implementation

- Absentee Shawnee Economic Development Authority (ASEDA) will need to form a rural district
- Seek Subsidy for portions that go directly to tribe and community
- Issue Tribal Economic Development Bonds (TED) to finance the project
- Lease wells and storage districts from Tribal properties
- Build system to service residence in service area as defined by district
- Rates to be determined by operation, maintenance and capital divided by cost of bonds
- If necessary, negotiate Intergovernmental agreements with city of Norman and Cleveland county for provision of service

Conclusion

The Absentee Shawnee Tribe has an adequate water supply. The source of the water is the Garber-Wellington aquifer, a part of the Central Oklahoma Aquifer. Implementation of the community water supply system, water storage facilities and a water treatment plant will ensure an adequate and quality water supply for the Little Axe community.

ASEDA has held two open community meetings to inform the community members. ASEDA has also kept the City of Norman informed of the project and have their support. ASEDA will continue to inform the Executive Committee, City of Norman, and any organization in the Little Axe community. The timeline of this project is ongoing with proposal of two years of construction.