

Town of Shelby, Arbor Hills Well Project



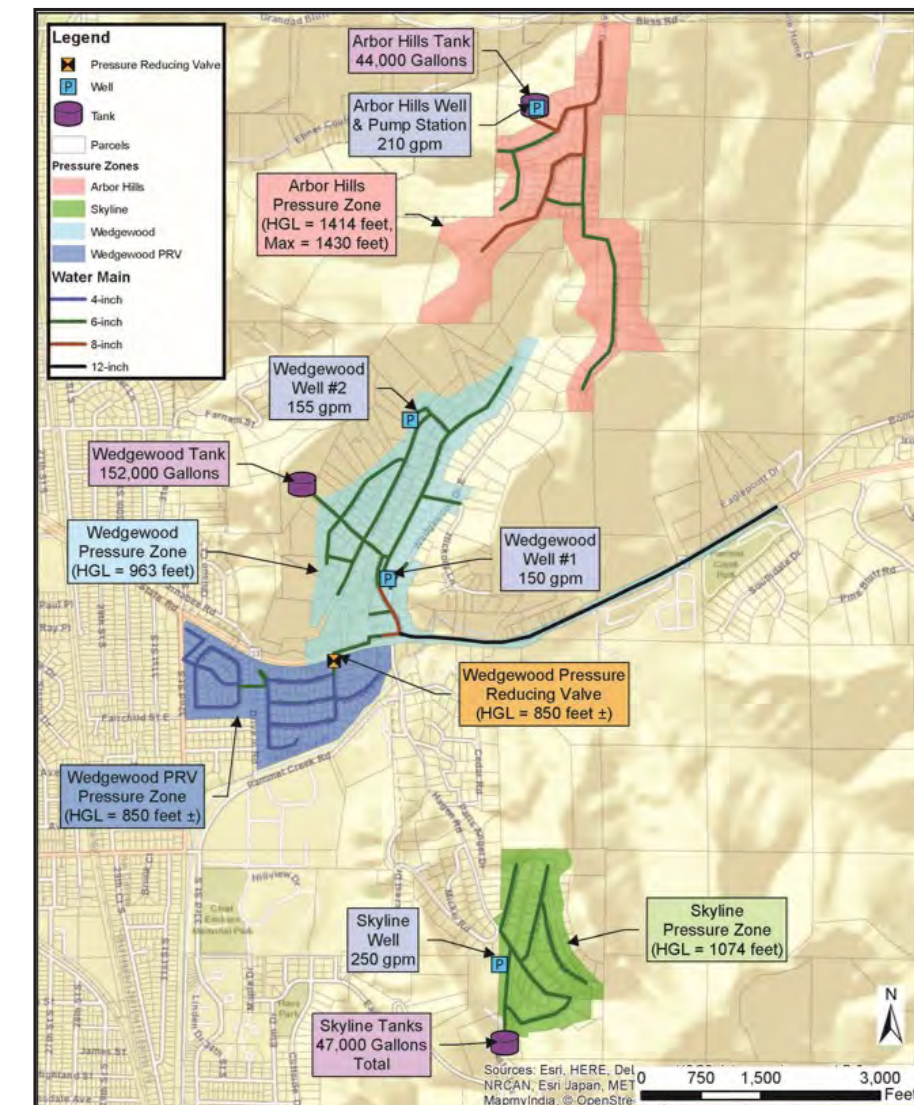
The Town of Shelby and the Shelby Sanitary District #2 is exploring the possibility of drilling and installing a second well within the Arbor Hills Pressure System, on a Town owned property along Briarwood Avenue.

The Town of Shelby Sanitary District #2 recently completed a Water System Master Plan for its water system infrastructure including an outline of its current condition and future needs. As the Town is interested in maintaining and improving its system to provide reliable quality water to its residents, the Town is considering rehabilitating its existing well #1 and adding a new water supply well (Well #2) in the Arbor Hills area.

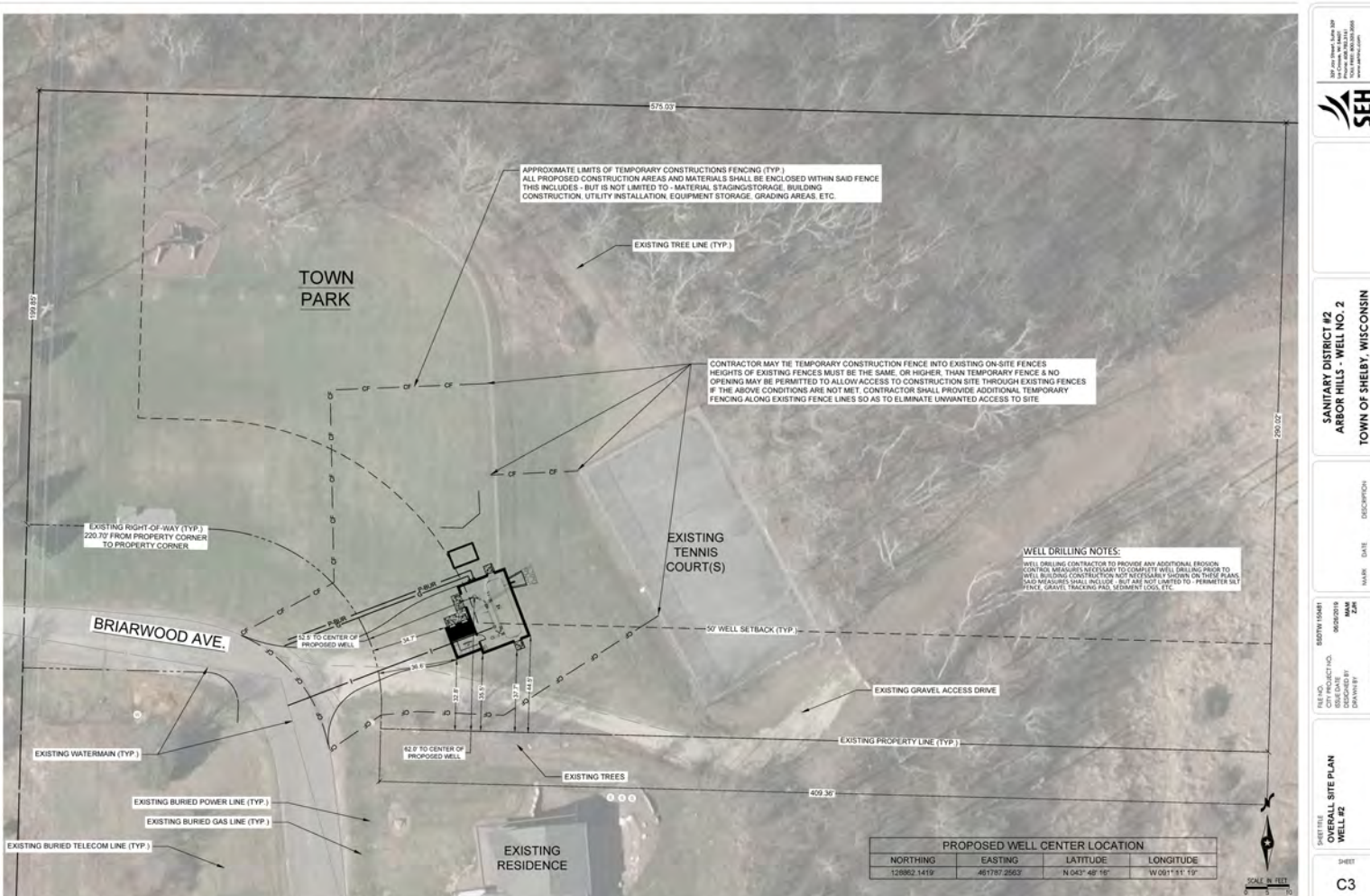
The Town of Shelby's water system is currently comprised of three separate pressure zones; Arbor Hills, Wedgewood, and Skyline. The three pressure zones operate at three different hydraulic grade lines and cannot be interconnected without additional pumping facilities and/or pressure reducing valves. The Water System Master Plan recommends a new well in Arbor Hills with a phased connection to Wedgewood. The new well would serve to provide additional capacity and provide redundancy and reliability to both pressure zones.

The Arbor Hills Pressure Zone only has one well currently, Arbor Hills Well #1, which operates 24-hours per day without backup. Well #1 is in need of electrical updates, a permanent generator, and drinking water storage capacity to serve the water system users if/when the system is down. Well #1 also does not have electronic alarms or communications with the Town's control system.

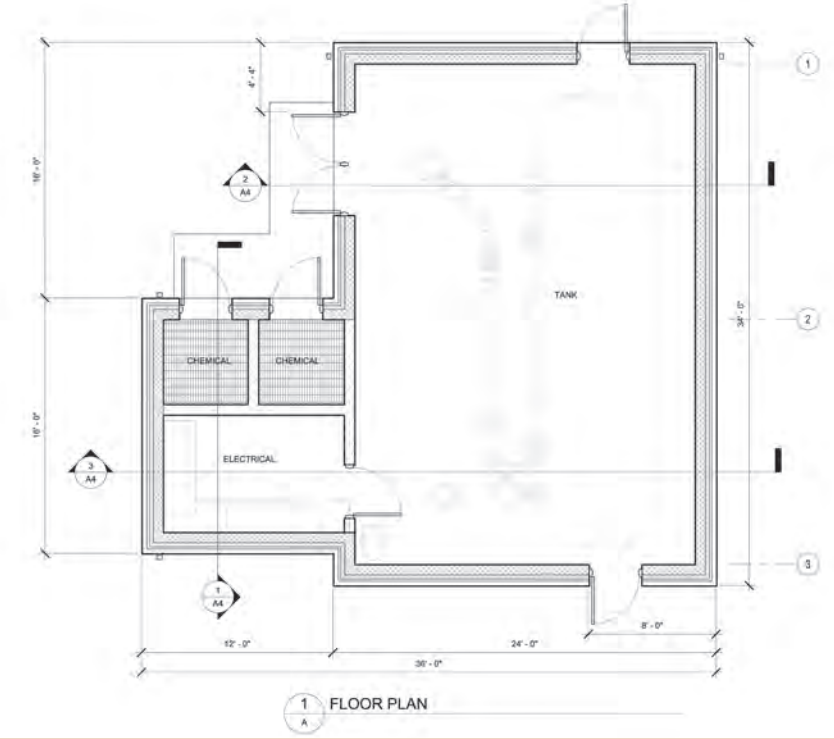
Prior to construction of any permanent well, a test well will be constructed at the same location as the proposed permanent well. A test well will provide verification of the available quantity and quality of the water supply prior to construction of the permanent well. The test well and proposed new well site is located on the southern end of the Town Park on Briarwood Avenue. This Town Park is south of the Heatherwood Place and Briarwood Avenue intersection. (Please see page 2 for a map.)



Existing water systems pressure zones map.



Site Plan and Floor Plan for Well #2 and associated well house.



What does the Arbor Hills Well Project include?

This project will include the drilling of Well #2 within the Arbor Hills Pressure Zone to provide backup water supply. Arbor Hills Well #2, will be constructed in two phases, a pilot hole to provide verification of the available quantity and quality of the water supply. Then the pilot hole will be enlarged and a permanent production well will be completed.

This new well will also include well house facilities including an 8,000 gallon hydropneumatic tank (with 1,150 gallons of effective storage), chemical feed systems for chlorine and fluoride, a permanent standby generator, a water main connection to the existing water system, and SCADA (communication) connection between Well #1 & Well #2 to allow sharing of the hydropneumatic tank and alternation of pumping duty.

The Arbor Hills Well #1 site contains a supply well with a submersible pump, a buried reservoir, booster pumps, one very small hydropneumatic tank within a well house, and one portable electric generator. This project will make the following improvements to Well #1:

- Remove the down hole pumping equipment then inspect and clean the well.
- Replace pumping equipment as needed.
- Replace the booster pumps with new pumps and VFD drives.
- Remove and abandon the small hydropneumatic tank. (The new larger tank will be used at Well #2 for storage.)
- Replace the aged electric switch gear.
- Either permanently mount the existing portable generator or provide a new stationary generator. (Both options would have an automatic transfer switch.)



Project Timeline

- April / May 2019 - Preliminary plans were submitted to the Wisconsin Department of Natural Resources for review and authorization to drill a test well.
- Late Fall 2019/ Winter 2019-2020 - An initial test well is planned to be drilled.
- Winter 2019-2020 - Final engineering plans will be created and project will be bid out.
- Summer 2020 - Construction start for final Well #2, well house, and improvements to Well #1.

Arbor Hills Well #2 Site

The Arbor Hills Well #2 site was selected by the Town after review and consideration of three possible sites within the Arbor Hills Pressure Zone.

With improvements, Well #1 will continue to operate to provide redundancy and increased reliability to this pressure zone.

Project Cost & Funding

- Based on preliminary design, construction costs are estimated at \$1,300,000 for new Well #2 facilities and \$400,000 for the rehabilitation of existing Well #1.
- A rate increase for the Town of Shelby water system users is anticipated. Preliminary financial scenarios indicate a two-step rate increase may be necessary. Over the months ahead, the Town of Shelby Sanitary District #2 will refine project plans, costs and funding sources. The Public Service Commission (PSC) will hold a public hearing prior to any rate increase to the water utility.
- The Town of Shelby Sanitary District #2 has applied for Wisconsin Department of Natural Resources (WDNR) Safe Drinking Water Loan Program that offers loan rates of 1.65%.



Briarwood Avenue Park with schematic of Well #2 well-house design and site layout.

Future Phases of Shelby's Water Utility System

The Water System Master Plan identified several strengths and deficiencies of the Town of Shelby's water system. Incrementally, the Town is planning to address the deficiencies over the next 5-10 years. A second well in the Arbor Hills Pressure Zone will establish redundancy in this zone with a back-up supply source for Well #1, reducing the need that Well #1 run continuously.

In the next phase of system improvements, over the next 3 years, the Arbor Hills Pressure Zone, with its two wells, will be connected into the Wedgewood Pressure Zone. This will give the Wedgewood Pressure Zone redundancy and allow additional customers to be served with these water supplies. Ultimately the Arbor Hills and Wedgewood Pressure Zones will be connected to the east to accommodate additional subdivisions and new development.

As the Arbor Hills Well Project will ultimately provide water throughout an expanded and connected system, all water customers will be required by the Public Service Commission (PSC) to share in the water system project costs.

The subsequent phase of the improvements plans over the next 5 years is a 150,000 gallon elevated storage tank. This tank will be constructed somewhere within the Arbor Hills Pressure Zone and will improve fire flow, energy efficiency and reliability.