

## **The Backyard Sewer Replacement Project**

The Backyard Sewer Replacement Project (BYSP) was conceived about 1987 by then-District Manager Mike Embley. After years of discussion, and input from a blue-ribbon committee assembled to address the issue, the Board of Trustees approved pursuing this project.

The need for the project arose from the fact that in the older part of the Kearns Improvement District (KID), the sewer lines had been located near the common rear property lines of each of the building lots. Over the years alleys, if they had ever existed, disappeared; fences were installed; trees were planted; sheds were built; and even above-ground swimming pools installed – all on top of or adjacent to our sewer lines. The concrete or clay sewer lines lent themselves to root problems, which were exacerbated by the trees planted on top of the lines. Even with the use of easement machines, maintenance became more and more difficult. The blue ribbon committee made the recommendation to install new sewer lines in the streets in front of the homes and reconnect the sewer laterals with the new lines. A side benefit of this would be to have the customers' sewer laterals replaced. This was especially timely as most of the sewer laterals utilized Orangeburg pipe, which had reached the end of its useful life in many cases.

The area covered by this project is from 4015 West to as far as 5020 West, and from 4715 South to 5780 South – almost the entire area east of the railroad tracks in the District. It entails 3,605 homes and about 29 miles of new sewer line. Work was begun in August of 1997, and proceeded very slowly and inefficiently for a few years. After three years, barely 10% of the mainline was in, less than 20% of the laterals had been installed and less than 5% of the homes were connected. For a project that had originally been planned for eight to ten years, this was unacceptable. Changes in personnel, leadership, and technical approaches were made, and by 2004, the work began to progress very well. We now have 97% of the mainline in, 87% of the laterals, and 63% of the homes connected. We are on target for substantial completion by the end of 2018.

The bulk of the work is being done by KID crews, although we do contract out portions of the work, where the work involves more complex or unusual issues. Where possible we utilize underground directional drilling to install the laterals. This is the preferred approach as it enormously reduces the cost of making the final connection, and it is least disruptive to the customer's property. However, the extremely variable subsurface conditions make the success of directional drilling unpredictable. Soil conditions can change from clay to sand to cobbles to conglomerate from one lot to the next. Poor soil conditions require us to revert to conventional open trench techniques, although we utilize pneumatic missiles effectively wherever possible. The mainline is installed by conventional cut and cover methods.

This project has been our primary focus in terms of asset management, and upon its completion, other asset management projects, of a far smaller scale, will become the focus. It is planned that a reduction in sewer fees will, at that time, be implemented.

# Kearns Improvement District Backyard Sewer Project

