



# *Belton 'Works' Year in Review FY 2015 Annual Report*



## *Our Mission*

*Provide the safest and most reliable infrastructure and services possible for Belton residents, businesses, and visitors by questioning, listening, planning, and measuring results with a great deal of care.*

## *Our Values*

*Leadership, Integrity, Trust, Customer Service, Teamwork, Communication, Positive Attitude, Dedication, Devotion*



## *Our Vision*

*To be the best we can be at everything we do.*

*Jeff Davis, Mayor*



# Administration



## Director's Message

This is the kind of year that makes public service such a rewarding profession. It was filled with great challenges that the Public Works team met with excellent results, and a few lessons were learned as well. The new Markey Parkway was a highly anticipated project for the community that is wrapping up as I write this message. The construction of the 3 million gallon water tower is well underway, and the bowl should be raised by the time this report is published. The Department completed the first phase of the water line replacement program and will continue to replace old cast-iron water lines in phases every two years. In the near term, street preservation will take place every two years to bundle dollars and leverage them for better unit rates. The list is long, and the team is working diligently.

The use of new technology has really begun to blossom in the maintenance divisions that will help them be more efficient in the field and track work activities to build a history of maintenance that can be used in the future to make excellent decisions. There is now public access to webGIS on the City's web site where folks can find information regarding parcels, street names, and voting wards, just to name a few. The Engineering Division is using new project management tools to streamline work, improve communication and sharing, simplify the work, and improve document storage.

The issue that made all of this extremely challenging is a higher than normal level of turnover in all divisions. A small amount of the turnover was intentional, but the majority was good employees moving for another opportunity. The Department is working to stabilize that issue through various measures, but the exciting part is that this team stepped up and, although not quite as productive, maintained a very workman-like attitude to get through it. There was no feeling sorry or using it as

an excuse; we stayed positive and worked together to get the work done. It has been said that "adversity does not build character, it reveals it," and this team continues to show excellent character under challenging circumstances.

The City Council has been very supportive of the Department's initiatives resulting in appropriate updates to the fleet and other important resources that enable the team to be effective and do their job the best they can.

In summary, the Department had a good year. It is listening to the public through the citizen advisory committee and ad-hoc groups like the one that helped with the strategic planning process; Facebook, the City Council, and simple every day contacts with the public. We will continue to work for the public and be the best we can be. Thank you for your support.

Sincerely,  
Jeff Fisher  
Director of Public Works



## Shout Out to the Public Works Committee!

We want to thank Randy Hendricks, Chris Stewart, Steve Bennett, Kevin Fox, and Councilman Trutzel for their time and sacrifice to help the team develop sensible solutions for the welfare of the community.



**PUBLIC WORKS**

# Engineering



## *Markey Parkway from Academy Sports+Outdoors to Mullen Road*



The expedited Markey Parkway was open to the public in February 2014 and completed in the summer of 2014. Just following in

the fall of 2014, Academy Sports+Outdoors opened their new store in Belton located between the new Markey Parkway and Interstate 49. The other end of Markey Parkway, connecting to Mullen Road and Towne Center Drive, was open to the public in April 2015. The ribbon cutting featured Congresswoman Vicky Hartzler holding the scissors and joining the City in celebration of the roadway opened to the public.



## *Cedar Tree Lift Station Removal*

The Cedar Tree Lift Station Improvements Project includes abandoning the existing lift station structure and constructing approximately 2,600 feet of gravity sanitary sewer. The project is part of a series of sanitary sewer and lift station upgrades taking place within the City. The design of this project is nearly complete and construction is expected to start in the summer of 2015.

## *155th Street Widening*

The Cities of Belton and Grandview are working together on improvements to 155<sup>th</sup> Street from the South Outer Road (East Frontage Road) of I-49 to the bridge over Oil Creek located east of Terry Avenue. The preliminary design is underway and construction is expected to start in 2016.

## *613 Mill Street Sanitary Sewer Improvements*



This project included the relocation of a sanitary sewer line north of Sunrise Drive and south of Mill Street. The sewer was adjacent to a stream and was exposed due to natural stream erosion. In general, the project included

realigning the sewer line further west from the stream, installing new manholes, stabilizing the stream bank at crossings, and seeding the construction site to decrease the amount of rainwater infiltration into the sewer system. This project was completed in the spring of 2014 as part of a FEMA Disaster Relief program from 2010.

## *Markey Parkway Sanitary Sewer Phase II*

Existing sanitary sewers from west of 163<sup>rd</sup> Street to I-49 running through Markey Parkway are undersized for future development. This was determined in the 2007 Collection System Master Plan. The first phase of sewer repairs has been completed as part of construction of Markey Parkway. The second phase includes sewer on both sides of 163<sup>rd</sup> Street near Givan Avenue. Construction is anticipated to begin in the summer of 2015.

## *Wastewater Treatment Plant*

Construction is almost ready to begin on improvements to the City's Wastewater Treatment Plant. This project involves upgrades to several elements of the plant to provide greater capacity and allow for growth and development in the City. Improvements include construction of a parallel lift station and a new headworks facility for screening of influent sewage.

Funding for this project is provided by a bond approved by the voters in April 2013. In addition, the City is leveraging a low-interest loan from the Missouri Department of Natural Resources' State Revolving Fund (SRF) Program.



## PUBLIC WORKS

# Transportation



## *Past Winter At A Glance*

What did you think of this past winter? Was it too cold? Not enough snow? Too much snow? For the Public Works Department, this past year's winter was fairly mild. The winter season started back on November 15<sup>th</sup> and ended with the largest snow of the season on February 28<sup>th</sup> when the City received 3.5" of the white stuff. In total, the Public Works Department staffed for 10 winter events with total snow fall for the season at just under 10". The total cost for labor, equipment, and material was \$147,000. In Public Works, this was a simple season; let's just hope next year's will be just as easy!



## *New Equipment Purchases*

The City Council approved the purchase of three pieces of equipment vital to the future of maintenance activities for the City of Belton. A new Street Sweeper was purchased in July 2014 to replace a 1999 Elgin Pelican that was becoming unreliable. Although expensive, at \$190,000 this sweeper allows the division to provide a better service in a more efficient and cost-effective manner. It also serves as a unit to assist crews in cleaning the inside of storm sewer inlets and grates. For more information on the sweeping program, use the search window on the City of Belton home page and type "Street Sweeping Policy."

A new Pothole Patcher was added to the fleet in March 2015 for the price of \$139,000. This piece of equipment is a self-contained unit that has all the tools necessary to fill potholes permanently. It is equipped with a heated 6-ton capacity hopper, tack oil tank, hydraulic jack hammer, and a small plate compactor. In the short time we have used it, the crews have saved time and money

by eliminating extra trips to the asphalt plant and continue to look for more efficient ways to improve this service. To report a pothole, you can use the City of Belton web site or call 816-331-9455.

Not yet received, the City of Belton also approved the purchase of a new single axle dump truck for the Water Services and Transportation Divisions in the amount of \$146,000. This truck will replace two 1991 Ford L8000's, thus reducing the fleet by one. A plow, wing plow, and spreader were also included in the purchase that will allow the snow plow driver the ability to clean an additional 8' of snow with one single pass.

All of these purchases were needed resources for the Public Works Department to provide efficient and cost-effective maintenance activities to all citizens, businesses, and visitors.





## **PUBLIC WORKS**

# *Water Services*



## *3 Million Gallon Water Tower*



The new tower project is progressing on schedule. The steel fabrication portion of the tank was completed in February 2015. The paint crews have started prepping surface for paint. Once

the painting is completed, the tower will be raised to its proper elevation. Notification for the tower raising event will be listed on our web site ([www.belton.org](http://www.belton.org)) and on Facebook. This process should take about 4 to 6 hours and should be interesting to watch. Tower completion is scheduled for spring 2016. The City's contractors on the project are Ponzer-Youngquist Engineers, Alfred Benesch & Company, and Landmark Structures.



## *Small Water Line Replacement*

This program is a multi-year program to replace aging water lines throughout the City. This also allows for the upsizing of water mains, installation of new fire hydrants, and system reliability. During the first two phases completed this past year, about 5,600 feet of 4" cast iron water main was replaced with 8" PVC. This will allow for higher water volume and assist in maintaining fire protection needs. The areas completed were on King Street, Chadwick Street, Canterbury Lane, Belton Avenue, and Myron Avenue. The City's partners on the project were Alfred Benesch & Company and Wiedenmann, Inc.

## *16" / 24" Water Transmission Main*

This project installed new water main to connect the new water tower to State Highway 58 and Cherry Hill Road to Markey Road. It consisted of 8,400 feet of 16" ductile iron (DI), 100 feet of 24" DI, and 109 feet of 8" DI water main. The City's partners on the project were Alfred Benesch & Company and Beemer Construction Company, Inc.

## *UV Disinfection Facility Performance*

The Ultra Violet (UV) Disinfection Facility has completed three seasons of disinfection. The City's permit requires the facility to be in operation from April 1<sup>st</sup> thru October 31<sup>st</sup> each year. This is considered the Recreational Season for fishable and swimmable waters in the State of Missouri. The purpose of disinfection is to eliminate bacteria or reduce its ability to reproduce in these waterways.

During final construction of the UV Facility Plant, staff conducted validation testing on the system. This helped establish operating parameters and verified a successful installation. The key indicator for this testing is E.coli. Plant staff sampled and tested the plant Effluent prior to the disinfection system at the end of the 2014 season to gauge the systems efficiency. The result was >2419.6 cu/ 100 ml (colony units per 100 milliliters of sample). The average result reported to the Department of Natural Resources over the last three seasons was 1.6 cu/100ml. The City's permit

limit is 206.

This project was funded by a voter approved bond issue in 2009. Carollo Engineers were retained for design and the David E. Ross Company completed construction in December 2011. There have been a few mechanical, electrical, and programming issues but were corrected and are normal for these types of systems. Some of these issues were repaired under warranty. Plant staff follows a preventative maintenance program for the facility to keep the system running efficiently.





# Water Services



## *Drinking Water and Sewer Main Improvements*

A water system improvement on East Cambridge Road from South Cleveland Avenue to Kendi Lane was constructed to assist with water system reliability and water quality. It consisted of 1,300 feet of 12" DI water main. The City's partners on the project were Alfred Benesch & Company and Beemer Construction Company, Inc.

A water system improvement on East Cambridge Road from Pawnee Lane going west for about 110 feet was completed for water system reliability and water quality. The City's partners were Alfred Benesch & Company and Beemer Construction Company, Inc.

A water system improvement on Cunningham Parkway was completed to lower a 12" water main for system security and growth. About 300 feet of 12" PVC water main was found to be about 12" deep. The new 12" DI water main was installed at a depth of 5 feet to allow for development in the area and to secure the drinking water leaving the water tower located on Cunningham Parkway. The City's partner

on the project was Wiedenmann, Inc.

A sewer transmission main project began this past December 2014 and is projected to be completed by May 2015. This project consists of installing a PVC liner inside the older concrete sewer transmission main. This main is 36" in diameter and is about 14,000 feet long. This main conveys the City's wastewater to the treatment plant for processing. This project will also lower the amount of rainwater entering the older concrete pipe, which means less water needing treatment and lower treatment cost. The City's partners on this project are Trekk Design Group, LLC and Insituform Technologies USA.



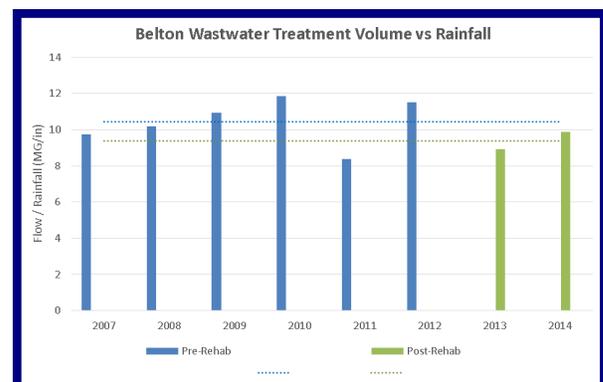
## *Inflow and Infiltration Programs Reduce Lift Station and Treatment Facility Storm Flows, Problems and Costs*

The City of Belton currently operates and maintains approximately 123 miles of sanitary sewer. In 2007, the City completed a sanitary sewer Wastewater Master Plan (WMP) that recommended a three phased approach for studying all 12 sewer basins. The City initiated the studies (comprehensive manhole inspections, visual pipe inspections, smoke testing of sewer lines, and main line CCTV and dye testing) in 2009 and by the end of 2015 will have evaluated over 66% of their collection system. In 2013, the City completed the Phase 1 Public Rehabilitation Program consisting of 135 manholes and 12,423 linear feet of sanitary sewer.

The City continues to be proactive with their approach to identifying and eliminating inflow and infiltration (I&I) sources with the implementation of their pilot private I&I inspection and elimination program in west Belton in September of 2014.

The graph below shows the flow volume per inch of rainfall since 2007. The blue columns represent the pre-rehabilitation years and the green columns

represent the Phase 1 public post-rehabilitation years. The reduction of flows during storm events causes less stress at the treatment facility, reduces wear on pumps, and reduces the potential of flooding in basements from sewer lines filling up with rain water. It is the City's goal to reduce I&I by at least 40%. A metering program is in the FY16 budget and will provide data to assist in evaluating progress.





## CITY COUNCIL

### Ward 1

Scott VonBehren

Jeff Fletcher

### Ward 2

Chet Trutzel

Dean VanWinkle

### Ward 3

Albert Hoag

Robert Newell

### Ward 4

Gary Lathrop

Tim Savage

**Public Works...**  
**Always There For You...**  
**every DAY...every HOUR...**  
**every MOMENT**

### *Public Works Contact Information:*

#### **Admin & Engineering: 816-331-4331**

Charlotte Berry, Administrative Assistant  
cberry@belton.org

Jeff Fisher, Director of Public Works  
jfisher@belton.org

Zach Matteo, City Engineer  
zmatteo@belton.org

#### **Transportation: 816-331-9455**

Jaime Crow, Administrative Assistant  
jcrow@belton.org

David Frazier, Transportation Superintendent  
dfrazier@belton.org

Don Bays, Transportation Foreman  
dbays@belton.org

#### **Water Services: 816-322-1885**

Linda Beard, Administrative Assistant  
lbeard@belton.org

Chuck McCulloh, Water Services Manager  
cmcculloh@belton.org

Don Tyler, Water Services Foreman  
dtyler@belton.org

**Website: [www.belton.org](http://www.belton.org)**

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