

# WATER RESOURCES BOARD

Tuesday, January 28, 2020  
Operations & Maintenance Facility  
1725 South Church Street  
3:30 PM

## AGENDA

---

1. Consent Agenda:
  - A. Consider Walter Hill Dam Rehabilitation Change Order No. 3 ..... 2
  - B. Consider Glenwood & Lawndale Drive waterline replacement bids ..... 5
  - C. Consider 2018/19 Sanitary Sewer Rehab Contract Change Order No. 1..... 9
2. Consider minutes from the December 10, 2019 meeting ..... 14
3. Consider Mill Street, Tiger Hill & Halls Hill Storage Tank Repair/Recoating bids ..... 27
4. Consider SSR Engineering Task Order 1941021.0, SRWTP High Service Pump Station and Membrane Feed Pumps Improvements ..... 32
5. Consider ELI Engineering Work Authorization for Thompson Lane Widening Utility Design Improvements..... 44
6. Consider JB&S Task Order 19-05, Aerator Gearbox Installation @ WRRF..... 50
7. Review CY19 Recoupment of Special Sanitary Sewer Assessment Districts ..... 55
8. Dashboard
9. Financials
10. Other business
11. Adjourn



*... creating a better quality of life*

# MEMORANDUM

**DATE:** January 3, 2020  
**TO:** Water Resources Board  
**FROM:** Alan Cranford  
**SUBJECT:** Walter Hill Dam Rehabilitation Project Change Order No. 3 - FINAL  
Stones River Water Treatment Plant

---

## **Summary**

Recommend approval of final balancing change order with Haren Construction Company, Inc. (HCCI) for the repairs to the Walter Hill Dam.

## **Background**

Haren Construction Company, Inc. (HCCI) has completed the repairs of the Walter Hill Dam. In addition, the Tennessee Department of Environment and Conservation has inspected the dam and states that it is in compliance with the Safe Dams Act.

Change Order No. 3 is to modify the contract amount by decreasing the amount by \$60,940.50. The deduction comes from quantity adjustments from both Change Order No. 1 and Change Order No. 2. The first adjustment in the amount of \$30,400.00 is for an unused coating system originally proposed in Change Order No. 1. The divers originally proposed two Five Star products as an underwater substitute for the two Sika products originally specified. After discussion with the manufacturer rep from Five Star, it was determined the first product applied to wall (Underwater Handpack Structural Concrete) functions as a standalone waterproofing system and does not need the second coating (Splash Zone Epoxy) as originally proposed. The remaining \$30,540.50 is for time, material, and labor not needed for the pressure grouting associated with Change Order No. 2. Because the weather cooperated with the Contractor and the subcontractor's schedule, the pressure grouting was able to be completed than the maximum time proposed in Change Order No. 2.

## **Fiscal Impact**

The contract price prior to this change order was \$631,958.54 and if Change Order No. 3 is executed, the revised contract price will be \$571,054.04. This is \$60,940.50 below what was approved.

## **Recommendations**

Staff recommends the Water Resources Board recommend to the City Council approving Change Order No. 3 for Haren Construction Company, Inc. closing out the project.

## **Attachments**

SRWTP Walter Hill Dam Maintenance Project Change Order No. 3 Closeout



December 18, 2019

Mrs. Valerie Smith  
Assistant Director of Engineering  
Murfreesboro Water Resources Department (MWRD)  
220 NW Broad Street  
Murfreesboro, TN 37130

**RE: Walter Hill Dam Maintenance  
Murfreesboro, TN  
Proposed Change Order No. 3**

Dear Mrs. Smith:

Attached is a copy of proposed Change Order No. 3. The following summarizes the change items and provides recommendation for their approval.

Change Order No. 3 modifies the contract amount via a decrease of \$60,940.50. The deduction comes from quantity adjustments from both Change Order No. 1 and Change Order No. 2. The first adjustment in the amount of \$30,400.00 is for an unused coating system originally proposed in Change Order No. 1. The divers originally proposed two Five Star products as an underwater substitute for the two Sika products originally specified. After discussion with the manufacturer rep from Five Star, it was determined the first product applied to wall (Underwater Handpack Structural Concrete) functions as a standalone waterproofing system and does not need the second coating (Splash Zone Epoxy) as originally proposed. The remaining \$30,540.50 is for time, material, and labor not needed for the pressure grouting associated with Change Order No. 2. Because the weather cooperated with the Contractor and the subcontractor's schedule, the pressure grouting was able to be completed than the maximum time proposed in Change Order No. 2.

The contract price prior to this change order was \$631,958.54 and if Change Order No. 3 is executed, the revised contract price will be \$571,054.04.

SSR has reviewed the proposed changes and recommends they be approved. Please review the enclosure and if acceptable to you, execute and forward one (1) signed copy to me.

If you have any questions, please feel free to contact me.

Sincerely,

**SMITH SECKMAN REID, INC.**

A handwritten signature in blue ink that reads "Luke Williams".

Luke G. Williams, PE  
LGW/lgw  
Enclosures

cc: Alan Cranford (w/encl) - MWRD

T:\Team41\2017\17410290\CA\Chg Order CCF\Change Order No. 3\LGW20190926\_LTR\_WalterHill\_CO3.doc





..... creating a better quality of life

## MEMORANDUM

**DATE:** December 30, 2019  
**TO:** Water Resources Board  
**FROM:** Donald Hughes  
**SUBJECT:** Sealed Material Bids - Glenwood & Lawndale Dr.  
(Water Line, Pipe, Valves, Fittings)

### BACKGROUND

MWRD Operations and Maintenance requested sealed bids for the materials necessary for the water line replacement on Glenwood & Lawndale Drives. The bid opening was held at Operations & Maintenance on Monday, December 9th, 2019. The table below shows the bid results.

| Bid Results                       |                    |
|-----------------------------------|--------------------|
| Company                           | Total              |
| <b>Core &amp; Main Waterworks</b> | <b>\$30,539.45</b> |
| Fortiline                         | \$31,059.88        |
| Hayes Pipe                        | \$31,594.18        |
| G&C Supply Co Inc.                | \$32,409.20        |
| Consolidated Pipe                 | \$33,296.00        |

### RECOMMENDATION

Staff recommends the Board recommend to City Council approval to purchase the materials for the water line replacement, from the lowest bidder, Core & Main.

### FISCAL IMPACT

The overall material costs associated for the referenced project is \$30,539.45. Funds are available in the Capital Budget Expenditures – Account 320 Water Lines approved by the Water Resources Board and City Council in the 2019-2020 (FY20) budget.

### ATTACHMENTS

Core & Main Itemized Bid

**PURCHASING DEPARTMENT  
BID FORM**

You are invited to bid on the following:

Title: Piping Materials for Glenwood and Lawndale Dr.

**INSTRUCTIONS:**

All prices must include all costs. Costs included in the bid prices shall include services rendered and parts, labor, accessories and any other standard equipment necessary provide this service, freight and delivery. Pricing for each component shall be effective for one (1) year from date of bid award. The City is not subject to sales tax.

| ITEM NO. | QUANTITY (ESTIMATED) | UNIT       | DESCRIPTION                                                                                                                                   | TOTAL                          |
|----------|----------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 1        | 2000                 | Linear Ft. | PVC C900 DR18 CL150 PC235 Water Line<br>Must Be: Diamond, National, Napco, Royal, Pipe Life Jet Stream "No Mixed Brands"                      | \$ <u>12,620.<sup>80</sup></u> |
| 2        | 1                    | Ea.        | 6" x 6" Mueller Tapping Sleeve BLK—F/DI W/Accessories                                                                                         | \$ <u>828.<sup>57</sup></u>    |
| 3        | 1                    | Ea.        | 6" Tapping Valve MJ--O/L--W/Nut                                                                                                               | \$ <u>702.<sup>20</sup></u>    |
| 4        | 5                    | Ea.        | 6" Gate Valve MJ-MJ O/L RS W/OP Nut W/Accessories                                                                                             | \$ <u>268.<sup>40</sup></u>    |
| 5        | 2                    | Ea.        | 8"x8" Mueller Tapping Sleeve BLK—F/DI W/Accessories                                                                                           | \$ <u>2203.<sup>24</sup></u>   |
| 6        | 2                    | Ea.        | 8" Tapping Valve MJ—O/L—W/Nut                                                                                                                 | \$ <u>2084.<sup>54</sup></u>   |
| 7        | 1                    | Ea.        | 6" pe X 8" MJ Reducer                                                                                                                         | \$ <u>48.<sup>00</sup></u>     |
| 8        | 5                    | Ea.        | 8" x 6" Anchor Tee                                                                                                                            | \$ <u>599.<sup>15</sup></u>    |
| 9        | 5                    | Ea.        | 5-1/4 Fire Hydrant / 3-Way / 42" Bury / 6" MJ Shoe / Yellow B62B, Mueller Equivalent, or M&H – Must be American Flow Control, Mueller or M&H. | \$ <u>8772.<sup>35</sup></u>   |

**GRAND TOTAL:** 30,539.<sup>45</sup>

NOTE: All prices quoted shall remain firm for period of one (1) year (365 calendar days) after the due date of the quotation submittal, unless a longer period has been agreed upon by both parties.



# Bid Proposal for MWSD Piping Materials for Glenwood and Lawndale Drive

CUSTOMER

**MURFREESBORO WTR & SEWER DEPT**  
STOCK  
1725 S CHURCH ST  
MURFREESBORO, TN 37130

**Job**  
MWSD Piping Materials for Glenwood and  
Lawndale Drive  
Bid Date: 12/09/2019  
Bid #: 1143893

CONTACT

**Sales Representative**  
Tanner Cole  
(T) 615-893-0900  
(F) 615-893-1238  
Tanner.Cole@coreandmain.com

**Core & Main**  
2353 South Church St  
Murfreesboro, TN 37130  
(T) 615-893-0900

NOTES



**Bid Proposal for MWSD Piping Materials for Glenwood and Lawndale Drive**

**MURFREESBORO WTR & SEWER DEPT**

**Bid Date:** 12/09/2019

**Core & Main** 1143893

**Core & Main**

2353 South Church St

Murfreesboro, TN 37130

**Phone:** 615-893-0900

**Fax:** 615-893-1238

| Seq# | Qty  | Description                                                                                                                        | Units | Price            | Ext Price        |
|------|------|------------------------------------------------------------------------------------------------------------------------------------|-------|------------------|------------------|
| 20   |      | <b>PVC PIPE PRICE GOOD THROUGH</b>                                                                                                 |       |                  |                  |
| 30   |      | <b>1/9/20. MUST BE SHIPPED BY</b>                                                                                                  |       |                  |                  |
| 40   |      | <b>2/9/20.</b>                                                                                                                     |       |                  |                  |
| 60   | 2000 | 8 C900 DR18 PVC PIPE (G) 20' PC235                                                                                                 | FT    | 6.31             | 12,620.00        |
| 70   | 1    | 6X6 H615 MJ TAP SLV BLK F/DI OD 6.90                                                                                               | EA    | 828.57           | 828.57           |
| 80   | 1    | 6 T2361-19 MJ RW TAP VLV OL ON                                                                                                     | EA    | 702.20           | 702.20           |
| 90   | 5    | 6 A2361-23 MJ RW GV OL L/ACC                                                                                                       | EA    | 502.84           | 2,514.20         |
| 100  | 10   | 6 MJ REGULAR ACC SET (I)                                                                                                           | EA    | 16.72            | 167.20           |
| 110  | 2    | 8X8 H615 MJ TAP SLV BLK F/DI 0808H615 OD 9.05                                                                                      | EA    | 1,101.62         | 2,203.24         |
| 120  | 2    | 8 T2361-19 MJ RW TAP VLV OL ON                                                                                                     | EA    | 1,042.27         | 2,084.54         |
| 130  | 1    | 8X6 LEMJ RED C153 IMP                                                                                                              | EA    | 48.00            | 48.00            |
| 140  | 5    | 8X6 MJ ANCH TEE C153 IMP                                                                                                           | EA    | 119.83           | 599.15           |
| 150  | 5    | A423 4' OPEN LEFT W/A 1 1/2" PENT,3WAY,NST-HOSE & PUMPER NOZZLE<br>THREAD,YELLOW,OPEN DRAINS. 423-500086<br>DOES NOT INCLUDE STORZ | EA    | 1,754.47         | 8,772.35         |
|      |      |                                                                                                                                    |       | <b>Sub Total</b> | <b>30,539.45</b> |
|      |      |                                                                                                                                    |       | <b>Tax</b>       | <b>0.00</b>      |
|      |      |                                                                                                                                    |       | <b>Total</b>     | <b>30,539.45</b> |

**Branch Terms:**

UNLESS OTHERWISE SPECIFIED HEREIN, PRICES QUOTED ARE VALID IF ACCEPTED BY CUSTOMER AND PRODUCTS ARE RELEASED BY CUSTOMER FOR MANUFACTURE WITHIN THIRTY (30) CALENDAR DAYS FROM THE DATE OF THIS QUOTATION. CORE & MAIN LP RESERVES THE RIGHT TO INCREASE PRICES UPON THIRTY (30) CALENDAR DAYS' NOTICE TO ADDRESS FACTORS, INCLUDING BUT NOT LIMITED TO, GOVERNMENT REGULATIONS, TARIFFS, TRANSPORTATION, FUEL AND RAW MATERIAL COSTS. DELIVERY WILL COMMENCE BASED UPON MANUFACTURER LEAD TIMES. ANY MATERIAL DELIVERIES DELAYED BEYOND MANUFACTURER LEAD TIMES MAY BE SUBJECT TO PRICE INCREASES AND/OR APPLICABLE STORAGE FEES. THIS BID PROPOSAL IS CONTINGENT UPON BUYER'S ACCEPTANCE OF SELLER'S TERMS AND CONDITIONS OF SALE, AS MODIFIED FROM TIME TO TIME, WHICH CAN BE FOUND AT: <https://coreandmain.com/TandC/>



*... creating a better quality of life*

# MEMORANDUM

DATE: January 23, 2020  
TO: Water Resources Board  
FROM: Valerie H. Smith  
SUBJECT: Sanitary Sewer Rehabilitation  
Change Order #1  
Project File #18043

---

## SUMMARY

Recommend approval of Change Order #1 to the 2018/19 Sanitary Sewer Rehabilitation Contract.

## BACKGROUND

At the December 6, 2018 Board meeting the Board approved the Engineering, Construction Administration & Resident Inspection necessary for this next sanitary sewer rehabilitation project with S&ME. Bids were received July 11, 2019 and the project was award to SBW Constructors in the amount of \$3,842,301.

At this time, staff requested S&ME to prepare Change Order #1 for the project to add additional open-cut sewer point repairs, costs associated for exploratory digging just east of the Northfield Kroger, additional sewer main replacement within the intersection of W. Clark Blvd. and NW Broad Street, other miscellaneous work and associated paving. This additional work was determined as necessary either through field verification by SBW prior to performing work, pre-rehab videos performed by a sub-contractor to SBW and/or recent video by Operations & Maintenance.

## RECOMMENDATION

Staff recommends that the Board recommend to the City Council approval of Change Order #1 in the amount of \$150,812 to be added to the project along with an additional 73 days for the construction.

## FISCAL IMPACT

Funding for the Engineering, Construction Administration, Inspection and Construction was approved from a combination of 2018/2019 and 2019/2020 Budget & Working Capital Reserves.

| <b>Funding Source</b>                       | <b>Budgeted Amount</b> | <b>Engineering Expenditures</b> | <b>Construction Expenditures</b> | <b>Remaining</b> |
|---------------------------------------------|------------------------|---------------------------------|----------------------------------|------------------|
| <b>Rate Funded Operating Budget 2018-19</b> | \$1,000,000            | \$(432,000)                     | \$0                              | \$568,000        |
| <b>Working Reserves 2018-19</b>             | \$1,500,000            |                                 | \$0                              | \$1,500,000      |
| <b>Rate Funded Operating Budget 2019-20</b> | \$1,000,000            | \$0                             | \$(3,842,301)                    | \$1,000,000      |
| <b>Working Reserves 2019-20</b>             | \$1,000,000            | \$0                             |                                  | \$(2,842,301)    |
| <b>Change Order #1</b>                      |                        |                                 | \$(150,812)                      | \$(150,812)      |
| <b>Total</b>                                | <b>\$4,500,000</b>     | <b>\$(432,000)</b>              | <b>\$(3,993,113)</b>             | <b>\$74,887</b>  |

The total contract amount with this change order will be \$3,993,113.

## **ATTACHMENTS**

S&ME Recommendation  
Change Order #1



January 21, 2020

Ms. Valerie Smith, PE  
Assistant Director  
Murfreesboro Water Resource Department  
220 NW Broad Street  
Murfreesboro, TN 37130

**RE: Murfreesboro 2019 Rehabilitation Project  
Murfreesboro, Tennessee  
Proposed Change Order No. 1**

Dear Ms. Smith:

As part of the open cut work currently being performed, additional repairs not originally in the contract scope have been identified. This additional work is summarized below.

- Add footage of point repairs beyond 20-feet for segments 017B0050\_017B0040 and 081M0040\_081M0030 to replace additional pipe in disrepair.
- Installation of a CIPP sectional liner to patch over two laterals that have been identified as abandoned during inspection.
- Exploratory excavation efforts to inspect pipe segments with 45-degree bends (segment 002A0030\_002A003B) along W Northfield Blvd. Based on the results of the inspection, two additional manholes will be installed at each 45-degree bend.
- Installation of a manhole just upstream of open cut sectional repair noted below on segment 004A001C\_004A001B at the intersection of Broad and Clark.
- Revised asphalt paving quantities on TDOT highways for open cut excavation and required traffic control.

Additional items have also been identified by MWRD staff that should be addressed and added to the project scope based on recent findings (excessive wet weather I/I observed and an emergency repair). This additional work is summarized below.

- Open cut sectional repair on segment 004A001C\_004A001B at the intersection of Broad and Clark.
- Point repair on segment 062D003A\_062D0030 along Halls Hill Pike.
- Manhole lining on MH ID 088C0030.
- Manhole lining on 3 water and oil separators at Fleet Management just off Florence and Singer Road.



The total net change of work added is an increase of \$150,812.00 as shown in the attached change order. S&ME staff recommends approval for Change Order No. 1. If you have any questions regarding this change order, please contact me to discuss at your convenience.

Sincerely,

**S&ME, INC.**

A handwritten signature in blue ink that reads "Travis E. Wilson".

Travis E. Wilson, PE  
Principal Project Manager

Cc: Mr. Darren Gore, PE – Director, Murfreesboro Water Resource Department

Attachment – Proposed Change Order No. 1

CHANGE REQUEST FORM (CRF)

Owner Contract No. **Project No. 18043**  
 Project Name: **Murfreesboro 2019 Rehabilitation Project**  
 Engineer: **S&ME, Inc.**  
 Contractor: **SBW Constructors, LLC**

Requested By: **Murfreesboro Water Resource Department**  
 Drawing:  
 Problem Desc: **This CRF is to add additional quantities to repair defects and resolve unforeseen conditions in the field during construction and to incorporate additional items into the project scope per MWRD staff .**

Revised Scope Description/Details

| Item No.   | Description                                                                                                                                  | Qty   | Unit | Unit Price  | Item Total  |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------|------|-------------|-------------|
| <b>ADD</b> |                                                                                                                                              |       |      |             |             |
| 4f         | 12-inch Mainline Sewer Point Repair 0-foot to 6-foot depth - Open Cut Repair beyond First 20-Linear Feet - Unpaved                           | 5     | LF   | \$190.00    | \$950.00    |
| 5k         | 10-inch PVC SDR 26 Mainline Sewer Section Open Cut Replacement - 6-foot to 12-foot Depth (up to 80 linear feet) - Paved with Traffic Control | 1     | EA   | \$42,000.00 | \$42,000.00 |
| 5l         | 10-Inch Internal CIPP Point Repair - 3-ft Section Liner                                                                                      | 2     | EA   | \$5,500.00  | \$11,000.00 |
| 5m         | Exploratory Dig for Segment 002A0030 - 002A003B                                                                                              | 1     | LS   | \$2,450.00  | \$2,450.00  |
| 6o         | 8-inch Mainline Sewer Point Repair 6-foot to 12-foot depth - Open Cut Repair beyond First 20-Linear Feet - Unpaved                           | 1     | EA   | \$4,300.00  | \$4,300.00  |
| 6t         | 8-inch Mainline Sewer Point Repair 6-foot to 12-foot depth - Open Cut Repair beyond First 20-Linear Feet - Paved                             | 15    | LF   | \$325.70    | \$4,885.50  |
| 8b         | Install New 4-foot Diameter Precast Concrete Manhole, 6-foot to 12-foot Depth                                                                | 3     | EA   | \$9,300.00  | \$27,900.00 |
| 11a        | Lining 48-inch Diameter Manhole                                                                                                              | 13    | VF   | \$340.00    | \$4,420.00  |
| 11b        | Lining 60-inch Diameter Manhole                                                                                                              | 17.3  | VF   | \$385.00    | \$6,660.50  |
| 11l        | Lining Oil and Water Separators (4' Dia)                                                                                                     | 30    | VF   | \$350.00    | \$10,500.00 |
| 13e        | Revised Asphalt Paving in TDOT Roads includes traffic control                                                                                | 1,000 | S.F. | \$35.00     | \$35,000.00 |
| 15i        | CCTV Inspection of 6-inch to 12-inch Sanitary Sewer Mainline                                                                                 | 129   | LF   | \$2.00      | \$258.00    |
| 15j        | CCTV Inspection of 15-inch to 18-inch Sanitary Sewer Mainline                                                                                | 122   | LF   | \$4.00      | \$488.00    |

| <b>DEDUCT</b>                                       |  |  |  |  |                       |
|-----------------------------------------------------|--|--|--|--|-----------------------|
| CHANGE IN CONTRACT VALUE                            |  |  |  |  | <b>\$150,812.00</b>   |
| ORIGINAL CONTRACT VALUE                             |  |  |  |  | \$3,842,301.00        |
| <b>REVISED CONTRACT VALUE AFTER CHANGE ORDER #1</b> |  |  |  |  | <b>\$3,993,113.00</b> |

Contractor Acknowledgement:  
 No Change in Contract Amount is required.       A Change in Contract Amount is required: **\$150,812.00**  
 No Change in Contract Time is required.       A Change in Contract Time is required: **73**

  
 Architect / Engineer / Inspector / RPR

  
 Contractor

**Proceed with Execution**

Yes     No \_\_\_\_\_

\_\_\_\_\_  
 Owner's Representative

**MINUTES**  
**MURFREESBORO WATER RESOURCES BOARD**  
December 10, 2019

---

The Murfreesboro Water Resources Board met on Tuesday, December 10, 2019 in the conference room at the Operations and Maintenance Building, 1725 S. Church Street. Present at the meeting were Board members: Mr. John Sant Amour, Dr. Al Carter, Mr. Ron Crabtree, Mr. Brian Kidd, Mr. Kirt Wade, and Ms. Madelyn Scales-Harris. Also present were Darren Gore, Valerie Smith, Doug Swann, Michele Pinkston, Roman Hankins, Anita Heck, Steve Tate, Donald Hughes, Jimmy Stacey, Matt Powers, Alan Cranford, John Strickland, Mike Bernard, Brent Fowler, Ronnie Martin, Randy McCullough, Adam Todd, Andy McCrary, and Travis Wilson along with other members of the public.

The Board considered Water Resources Fund Financial Audit for FY19.

There are no findings in this year’s audit.

The table below summarizes the Department’s financial position for the water and sewer fund:

|                                                         | June 30, 2019         | June 30, 2018         |
|---------------------------------------------------------|-----------------------|-----------------------|
| Current Assets                                          | \$ 110,983,291        | \$ 101,122,393        |
| Capital Assets                                          | 422,661,821           | 417,131,278           |
| Non-Current Other Assets                                | 63,269                | 86,799                |
| Deferred Outflows                                       | <u>2,514,322</u>      | <u>2,616,525</u>      |
| Total Assets and Deferred Outflows                      | <u>\$ 536,222,703</u> | <u>\$ 520,956,995</u> |
| Current Liabilities                                     | \$ 15,428,129         | \$ 16,573,301         |
| Non-current Liabilities                                 | 112,100,223           | 122,557,631           |
| Deferred Inflows                                        | <u>1,843,409</u>      | <u>870,391</u>        |
| Total Liabilities and Deferred Inflows                  | <u>\$ 129,371,761</u> | <u>\$ 140,001,323</u> |
| Net investment in capital assets                        | \$ 324,313,502        | \$ 307,032,011        |
| Restricted                                              | 63,269                | 86,799                |
| Unrestricted                                            | <u>82,474,171</u>     | <u>73,836,862</u>     |
| Total Net Position                                      | <u>\$ 406,850,942</u> | <u>\$ 380,955,672</u> |
| Total Liabilities, Deferred Inflows<br>and Net Position | <u>\$ 536,222,703</u> | <u>\$ 520,956,995</u> |

Staff requested approval of the June 30, 2019 audit of the Murfreesboro Water Resources Department.

Kirt Wade made a motion to approve. Madelyn Scales-Harris seconded. The motion unanimously passed.

The Board considered Stormwater Fund Financial Audit for FY19.

There are no findings in this year's audit.

Summary information regarding Stormwater Fund's financial position is as follows:

|                                                             | June 30, 2019        | June 30, 2018        |
|-------------------------------------------------------------|----------------------|----------------------|
| Cash                                                        | \$ 5,964,987         | \$ 5,856,604         |
| Utility Plant                                               | 6,449,249            | 6,296,594            |
| Deferred Outflows                                           | 121,636              | 91,689               |
| Prepaid Expenses and Other Assets                           | 9,281                | 45,263               |
| <b>Total Assets and Deferred Outflows of Resources</b>      | <b>\$ 12,545,153</b> | <b>\$ 12,290,150</b> |
| Trade Accounts Payable                                      | \$ 35,565            | \$ 39,178            |
| Other Liabilities                                           | 48,042               | 75,848               |
| Deferred Inflows                                            | 132,980              | 52,352               |
| Due to Other Funds                                          | 1,054,368            | 1,252,823            |
| Long-Term Liabilities                                       | 1,220,183            | 1,157,414            |
| <b>Total Liabilities and Deferred Inflows of Resources</b>  | <b>\$ 2,491,138</b>  | <b>\$ 2,577,615</b>  |
| <b>Net Position</b>                                         |                      |                      |
| Net Investment in Capital Assets                            | 6,449,249            | 6,296,594            |
| Unrestricted                                                | 3,604,766            | 3,415,941            |
| <b>Total Net Position</b>                                   | <b>10,054,015</b>    | <b>9,712,535</b>     |
| <b>Total Liabilities, Deferred Inflows and Net Position</b> | <b>\$ 12,545,153</b> | <b>\$ 12,290,150</b> |

Staff requested approval of the June 30, 2019 audit of the Murfreesboro Stormwater Fund.

Dr. Carter made a motion to approve. Madelyn Scales-Harris seconded. The motion unanimously passed.

The Consent Agenda was presented for the following considerations:

*A. Consider Five Vehicle Purchases for AMI, O&M, WRRF & Engineering –*

In MWRD's approved Distribution Capital Budget FY20, there were five vehicles for various divisions; Advanced Metering Infrastructure (AMI), Operations and Maintenance, Water Resource Recovery Facility (WRRF) biosolids, and Engineering inspection. Due to the high mileage and high cost of maintenance, Jack Hyatt, manager of Fleet Services, approved the replacement of these vehicles. The desired vehicles are included on the State of Tennessee Vehicle Contract with Wilson County Motor Co.

The table below identifies the vehicle being replaced under each division:

| VEHICLE DETAILS |                                      |               |                     |                  |
|-----------------|--------------------------------------|---------------|---------------------|------------------|
| Division        | Description                          | Unit Replaced | Cost                | Budgeted         |
| O&M             | 2020 GMC Sierra 1500 (4WD)           | #4            | \$28,369            | \$35,000         |
| O&M             | 2020 GMC Sierra 1500 (4WD)           | #12           | \$28,369            | \$35,000         |
| WRRF            | 2020 Chevy Silverado 1500 Crew (4WD) | #64           | \$30,899.10         | \$35,000         |
| AMI             | 2020 GMC Sierra 1500 (4WD)           | #49           | \$28,554.30         | \$35,000         |
| ENG             | 2020 GMC Sierra 1500 (V6 & 4WD)      | #132          | \$26,788.80         | \$31,000         |
|                 | <b>TOTAL</b>                         |               | <b>\$142,980.20</b> | <b>\$175,000</b> |

Staff recommended the Board recommend City Council approve the purchase of these vehicles.

*B. Consider O&M Compact Excavator Purchase –*

MWRD’s FY20 Collection Capital Budget contains an approved line item to purchase a compact excavator for Operations & Maintenance. This piece of equipment will be utilized in the rehabilitation of sewer lines and can outperform our existing excavator in performance, digging depth and reach. The existing excavator will be kept in our fleet and will be used for smaller jobs.

Staff located the desired excavator on the Sourcewell Contract with Meade Equipment.

|  | Description                           | Cost        | Budgeted |
|--|---------------------------------------|-------------|----------|
|  | 2020 John Deere 60G Compact Excavator | \$67,560.90 | \$90,000 |

Staff recommended the Board recommend City Council approve the purchase of this equipment.

*C. Consider O&M Backhoe Loader Purchase –*

O&M requested approval to replace Unit 79, a 2008 Case Backhoe. This backhoe is used daily to load gravel, cold mix, and dirt. With 12 years of service, it has high hours and the performance of the machine is degrading. Jack Hyatt, manager of Fleet Services, recommended this unit be replaced to prevent costly repairs and downtime.

Staff researched various backhoe loaders of similar type and decided the John Deere Backhoe Loader 310SL was the best fit for the Department. It is included on the Statewide Contract through Meade Equipment, LLC located in LaVergne, TN.

Staff recommended the Board recommend City Council to approve the purchase of the backhoe loader in the amount of \$72,274.97.

Funding for the purchase of the backhoe loader was approved within the 2019/2020 Rate Funded Capital Budget for \$100,000. O&M received a quote of \$86,374.97 with a trade-in value of the current backhoe of \$14,100 resulting in a total cost of \$ 72,274.97.

*D. Consider Customer Service Video Camera Purchase –*

The current cameras are not high resolution and only has approximately 7 days of video storage on our servers. This creates issues with viewing current and historical transactions. Plus, parts of Customer Service are not fully visible with the current camera locations.

Staff obtained a quote from Twin Technologies for upgraded cameras and video storage. Twin Technologies has an existing contract with the City that affords the Water Resources Department to purchase these cameras via a contract amendment.

The cameras are high resolution, and storage capacity for video is being increased to approximately 45 days. Cameras will be placed in more optimal locations in the customer service and cashiering areas. These cameras can be moved as necessary, including if the Water Resources Department relocates in the future.

Staff recommended the Board recommend City Council approve the quote for cameras and video storage.

The total bid cost for the cameras and video storage is \$15,429.80. Funding will come from rate-funded capital.

*E. Consider JBS Task Order 19-13, Electrical Testing & Cleaning @ WTP –*

Staff submitted Task Order No. 19-13 for the Water/Wastewater Mechanical/Electrical Services Contract to conduct infrared testing on electrical gear, breaker testing and cleaning, testing of spare breakers and the cleaning of switchgear.

|                                                    |                  |
|----------------------------------------------------|------------------|
| • Spare Breaker Testing                            | \$ 1,985.00      |
| • IR Testing                                       | \$ 2,612.20      |
| • Eaton Inside Gear Breaker Testing and Cleaning:  | \$ 3,745.20      |
| • GE Gear Breaker Testing and Cleaning:            | \$ 3,745.20      |
| • Eaton Outside Gear Breaker Testing and Cleaning: | \$ 4,115.90      |
| <br>TOTAL FOR ALL ABOVE                            | <br>\$ 16,203.50 |

Infrared testing/inspection of electrical panels finds hot spots caused by defects in connections and components. Infrared thermography is used to find areas of excess heat (caused by increased resistance) so that problems can be corrected before a component fails, causing damage to the component, creating safety hazards and productivity loss.

Switchgear maintenance is very important to maintain key components of the facility. Not only can the malfunction of the equipment be extremely expensive, it is also very hazardous to personnel. The National Fire Protection Association standard suggests testing/inspection every three to six years. The InterNational Electrical Testing Association recommends every two years.

The last time the switchgear and electrical components were tested was in early 2015. At that time there were several major issues found and corrected. The schedule that staff would like to have is approximately every five years.

The cost for the project is estimated at \$16,203.50. Funding will come from the FY20 Operating Budget.

Staff recommended the Board recommend to the City Council approving JBS Task Order 19-13 in accordance with the JBS estimate.

*F. Consider Sewer Easement Abandonment at Northgate Commercial Lot 4 –*

Huddleston-Steele is requesting the abandonment of an existing 30-foot sanitary sewer easement located on Lot 4. This easement was recorded by plat and was intended for a proposed gravity sewer main to serve the property. During construction it was determined that there was a conflict between the sanitary sewer and the proposed storm drainage. The sanitary sewer was redesigned along a different route, so this

easement is no longer correct or necessary. The Developer will dedicate a new sewer easement along the new route. The easement document for the dedication is already being prepared by the Legal Department.

Staff recommended that the Board recommend to the Planning Commission and City Council approval of abandoning this existing sewer easement.

*G. Consider JBS Task Order 19-14, WRRF Main PS & UV Generators Renovations –*

Maintenance staff, with advice from the manufacturer, determined that the WRRF's Main pump station and UV disinfection system generators need to be renovated. The project also requires the replacement of 7 Automatic Transfer Switches. John Bouchard & Sons will be tasked with performing this work.

Staff recommended the Board recommend to City Council approving Task Order 19-14 in the total amount of \$350,204; \$301,436 for Thompson Power and \$48,768 for John Bouchard & Sons Co.

The generators at the Main pump station and UV disinfection system were installed at the Water Resource Recovery Facility in 1998 and 1999 respectively. They are required to ensure that the treatment process continues uninterrupted when normal electrical power is lost.

New Original Equipment Manufacturer (OEM) parts are only available from a single source, Caterpillar. Their authorized dealer for this area is Thompson Machinery Co./Thompson Power.

The renovation of the generators was budgeted in the Department's rate funded capital account in the total amount of \$500,000; \$275,000 for the Main pump station and \$225,000 for the UV disinfection system.

*H. Consider Server Backup Support Purchase –*

Barracuda Backup System support will end January 13, 2020. MWRD currently uses a Barracuda Appliance with cloud storage to create backup copies of department servers and files. The Barracuda System was purchased in January 2015. The support is due annually and includes software updates, replacement of any failed components and the cloud storage. The system is functioning as intended and is a valuable asset to the Department for the assurance that it provides.

The pricing is available from a Tennessee NVP Software Contract through CDW-G. Cost for 1-year renewal is \$19,549.68. Funding for the support would come from prepaid maintenance accounts.

Staff recommended the Board recommend to City Council approving the purchase of 1-year of Barracuda support.

*I. Consider Engineering Services Proposal from SEC for Salem Hwy, Phase 3 –*

The Tennessee Department of Transportation (TDOT) is in the design and land acquisition phase for Salem Highway Widening Phase 3. This project extends from Cason Lane to just west of Veterans Blvd. Along this route, the widening of the highway will take the septic fields for three of the properties. There is a convenience store on the corner of Salem Hwy and Armstrong Valley Road and a home and church just to the west of Veterans. Because of this, TDOT has asked the Department to design sewer main

extensions to serve these three properties, so TDOT doesn't have to purchase the properties and relocate them.

TDOT has agreed to pay for the costs associated with the engineering and the sewer main extensions to these properties; however, per TDOT's regulations, they are unable to purchase the permanent sewer and temporary construction easements necessary for the extensions. Contractual agreements with TDOT will be forthcoming.

Typically, the Department would request proposals from the design engineer for the roadway project, to give a proposal for the design of the sewer main extensions. However, in this case TDOT is designing this section of roadway improvements inhouse. SEC has worked with the Rucker Donnell Foundation which owns three of the seven properties in which the Department/TDOT needs easement and felt they would be a good match for the design of the sewer and easement descriptions. The Department has a Master Services Agreement (MSA) with SEC, Inc. dated July 29, 2009, therefore staff has requested a Task Order from SEC, Inc. for this design work.

Staff recommended that the Board recommend to the City Council approval of the work described in Task Order No. 9 through the MSA.

Funding for this design is requested to come from Working Capital Reserves in an amount not to exceed \$17,100.

*J. Consider Bids for Southwest Interceptor Bypass Pumping –*

MWRD has completed two emergency repairs on the Hobas pipe along the Southwest interceptor. To gain a better understanding of the condition of the pipe, the Department contracted a CCTV company to provide an accurate survey so staff can determine if any repair or replacement is needed. The survey was completed this past October; however, a 1,500-foot section of the 36" pipe located upstream and through the 72" tunnel located under Highway 99 was unreachable due to a possible problem with the pipe deflection in the tunnel. O&M's CCTV crew conducted a search from the downstream side but were unsuccessful due to high flow. It will be necessary to set up a bypass line to divert flows from the blockage area to gain a thorough assessment.

Bids were solicited from three bypass pumping companies to provide bypass pumping services for approximately a two-week period. Quotes were obtained from Xylem, Nashville Pump and Power, and United Rentals, and Xylem provided the lowest bid. The total estimate to complete this project is \$24,869.06 with funding recommended to come from the Department's working capital reserves.

| <b>Company</b>         | <b>Totals</b>      |
|------------------------|--------------------|
| <b>Xylem</b>           | <b>\$24,869.06</b> |
| Nashville Pump & Power | \$33,522.00        |
| United Rentals         | \$35,441.21        |

Staff recommended the Board approve the rental, setup, and tear down of a bypass pumping system consisting of 2-12" pumps and approximately 1600' of HDPE piping for approximately a two-week period.

A motion was made by Brian Kidd to accept the Consent Agenda as presented and it was seconded by Ron Crabtree. The Board voted unanimously to approve.

The October 22, 2019 Board Minutes were unanimously accepted as presented.

The Board considered ADS temporary flow monitoring and monitor upgrades.

Currently, the Department is contracted with ADS, LLC to operate and maintain the Department's 19 permanent flow monitors and 7 rain gauges, to analyze data recorded from these monitors and to report on this data annually. We are in year one of this contract.

Each year staff, after review of the annual report, requests ADS to perform temporary flow monitoring of one basin in the system which is typically one of the top 5 worst basins. This year staff would like to study/monitor basin 3, with the addition of basins 11A & 13. ADS would install 6 monitors in MF03, 9 monitors in MF11A, and 3 monitors in an unmonitored area staff named MF13 North. The total for the temporary flow monitoring for a 60-day period is \$117,703.80.

Basin MF03 was ranked 5<sup>th</sup> of the worst basins and hasn't had temporary flow monitoring performed since 2005, MF11A was ranked 3<sup>rd</sup> of the worst basins and even though temporary monitoring was performed in 2012, staff has received numerous requests for high density developments and would like to get a better handle on the remaining capacity in this area. Staff has performed wet weather CCTV and inspections in the unmonitored area and although we don't feel a need to install a permanent meter at this time, these three temporary monitors will help narrow down the area that is allowing the infiltration and inflow into the system.

In addition to the temporary monitoring, staff requested approval for the upgrade of four existing monitors. Flow monitors MF01-04 are FlowShark Triton monitors and are being phased out. ADS ended the sale of these monitors in 2017. ADS has given staff a price to upgrade to the Triton+ model in the amount of \$7,749 total for all four.

Staff recommended that the Board recommend to the City Council approval of the temporary flow monitoring and the upgrade to the existing monitors in the amount of \$125,452.80. A portion of this amount will be from the FY20 budget and the remainder of \$69,000 from working capital reserves.

Kirt Wade made a motion to approve. Brian Kidd seconded. The motion unanimously passed.

The Board considered SSR Task Order 1941018.0, Overall Creek Pump Station & Force Main Expansion.

In December 2018, staff identified the need to upgrade the Overall Creek pumping station and highlighted that need in the Department's 2019-2023 capital improvements plan as an \$8.85 million-dollar potential expenditure from the Department's working capital reserves.

The Board approved at the March 2019 meeting a task order for Smith Seckman and Reid (SSR) to study the sewer inflows into the station and any hydraulic upgrades that the pumps and associated force mains may need based on the analysis.

At last month’s Board meeting SSR had prepared a memo that refined the itemized costs associated with this upgrade estimated at \$12,671,000. The revised estimate with the proposed engineering task order is \$12,395,070.

The Water Resources Department Capital Improvements Plan (CIP) has been updated to reflect these new values, and recommended the Board recommend to City Council to approve SSR’s engineering task order 1941018.0 in the amount of \$864,070.

Brian Kidd made a motion to approve. Kirt Wade seconded. The motion unanimously passed.

The Board considered bids for a sewer bypass pump for O&M.

MWRD requested sealed bids to purchase a sewer bypass pump to be utilized by the Sewer Rehabilitation Division. The results are listed in the table below.

| <b>Company</b>             | <b>Unit Price</b>  |
|----------------------------|--------------------|
| CDPW, Inc                  | \$34,306.00        |
| <b>United Rentals (#1)</b> | <b>\$37,301.85</b> |
| Thompson Pump              | \$37,420.00        |
| Nashville Pump & Power     | \$42,238.00        |
| Xylem                      | \$49,324.00        |
| Southern Sales             | \$55,320.00        |
| United Rentals (#2)        | \$63,102.43        |

Staff recommended the Board recommend the City Council to approve the purchase of the 6” Sewer Bypass Pump from United Rentals (#1) in the amount of \$37,301.85. This company provided the lowest bid and met the requirement of having a service facility within 100 miles with fully stocked parts.

Brian Kidd made a motion to approve. Dr. Carter seconded. The motion unanimously passed.

The Board considered Mill Street, Tiger Hill, and Halls Hill Storage Tank bid rejection.

Invitations to Bid the Mill Street, Tiger Hill and Halls Hill Storage Tank Repair and Repainting project were advertised and released for bid on October 8, 2019. There were six plan holders, however, only four bids were submitted. The bid tabulation is below.

| <b>Bidder</b>                               | <b>Bid Amount</b> |
|---------------------------------------------|-------------------|
| 1. Maguire Iron, Inc.                       | \$2,345,965       |
| 2. Preferred Sandblasting and Painting, LLC | \$2,888,840       |
| 3. Tank Pro, Inc.                           | \$3,040,970       |
| 4. Classic Protective Coatings, Inc.        | \$3,474,450       |

After evaluations of the submitted bids, the low bidder is Maguire Iron, Inc. Unfortunately, Maguire Iron’s bid cannot be accepted due to their Tennessee Contractor’s License monetary limit being \$1,500,000 and less than the contract amount. The second low bidder, Preferred Sandblasting and Painting

also had a major error with their unit price bid item. Given this information, it is in the best interest of the City to reject all bids and re-bid the project on January 7, 2020.

Staff recommended the Board recommend to the City Council rejecting all bids for the Mill Street, Tiger Hill and Halls Hill Storage Tank Repair and Repainting project.

Ron Crabtree made a motion to approve. Kirt Wade seconded. The motion unanimously passed.

The Board considered Thompson Lane Pump Station #10 and Fogle property land swap.

SEC has submitted a request for the Department/City to swap a portion of the pump station property, south of the station, for wider access into the Fogle property, in exchange for the same amount of property, to the rear (west), of the pump station. The owner of the property behind the pump station wishes to develop the property into 6 single family lots, however, the access into the property is not wide enough to meet the City's roadway width requirements. This swap will allow the width necessary for the subdivision entrance.

Currently, the Department's Maintenance Technicians enter the pump station from an access drive along Thompson Lane in front of the station, however, per the plans for the future widening of Thompson Lane, this access may not continue to be a viable option. The Tennessee Department of Transportation (TDOT) has plans for a turning lane into the Thompson Square Subdivision which will reduce the existing station access drive from ~31.5 feet to 15 feet long. This is not long enough for a truck to safely pull off the roadway and open the gate to the station. The property the City will receive on the rear (west) side of the station will allow for a new safer access for the Department. This additional property will also allow working room around the station at such time in the future the station needs replacing.

Both parties are in favor of the swap. Staff will request the developer to install the PS driveway apron along the new roadway, fencing similar to the existing type fence around the new property line and install landscaping as a barrier to the station with the development of the subdivision roadway.

Staff has worked with the Legal Department regarding this swap and will continue to do so. The City may also ask for additional property along the rear of the subdivision that backs up to what is known as Hooper's Bottom.

Staff recommended that the Board recommend to the Planning Commission and City Council approval of the even land swap around the pump station in the amount of 1906 sf.

Dr. Carter made a motion to approve. Brian Kidd seconded. The motion unanimously passed.

Staff provided the Board a PowerPoint presentation reviewing the Working Capital Reserve Account in conjunction with FY2020-2024 Capital Improvements Plan (CIP).

The Murfreesboro Water Resources Department (MWRD) staff has drafted an updated 5-Year Capital Improvements Plan (CIP) from Fiscal Year (FY) 2020 through 2024. The primary focus of this preliminary draft is the capital improvements projected to be funded by working capital reserves. After receiving the FY18-19 draft estimate of the Department's working capital reserve amount of \$82,474,171

provided by Jobe Hastings, PLLC (JH), staff has been able to “reset” the amount of available funds in the Department’s working capital reserve account and therefore provide a more updated accurate reflection of the Department’s reserve balance.

The FY20-24 Capital Improvements Plan highlights three (3) major project classifications:

1. Projects funded through Debt Service
2. Projects/Purchases funded through Rates
3. Projects/Purchases funded through Working Capital Reserves

The largest components of the FY20-24 CIP are those projects funded through working capital reserves. They are sub-classified as the following:

1. Water and Sewer Capital Improvement Projects
2. Transportation (Water/Sewer Improvements)
3. Sewer Rehabilitation
4. Information Technology Projects

Based on the available cash (designated and undesignated) minus the outstanding committed projects and sanctioned/pending projects, approximately \$48.4M of unassigned cash in reserves is determined available as of November 2019 (2<sup>nd</sup> quarter of FY20). When applying this to the FY20-24 CIP, and assuming projected additional FY20 reserve fund revenue and expenditures a working capital account balance of available funds is estimated as \$58.9M at FY20 year-end. Subsequent year-end available reserve balances have been estimated over the 5-year CIP horizon.

When plotting that balance against the Department’s 12 months operating expenses (i.e., the minimum allowable working capital reserve fund balance), current planned expenditures never go below the secured level but get close in FY23. Operational expenses are assumed to increase at 2% annually over the 5-yr CIP. The 12 months’ worth of O&M expense is considered a secured minimum balance for the working capital reserve account as approved at the December 17, 2013 Water and Sewer Board meeting through the adoption of the Water and Sewer Enterprise Fund Financial Management Policies. The City Council also approved these policies at their January 9, 2014 meeting.

No debt funding has been programmed into the proposed 5-yr CIP. All projects as currently budgeted could potentially be funded with working capital reserve cash. Funding all major capital projects with cash is not required; several would qualify for State Revolving Fund (SRF) loans. The increase in capital improvement projects jumped from \$88.49M to \$98.87M, or \$10,385,000. Increasing the budget for the Overall Creek Pumping Station from \$8,850,000 to \$12,300,000 along with the addition of the biosolids polymer system replacement for \$1,450,000, the addition of High Service pump station and membrane feed pump improvements for \$2,500,000, the addition of Joe B Jackson Sewer for \$800,000, and the increase of \$1,175,000 on the Cherry Lane Repurified watermain extension were the primary reasons for the increase.

As is customary in presenting the 5-year Capital Improvements Plan, all debt funded and reserve funded projects are qualified insofar as they must come back before the Board for consideration and recommendation to City Council before expending any funds on them. The CIP is meant to chart out a road-map for the Board to see the Department's priority projects and provides a pro forma for anticipated capital costs.

Staff updated the Board on the biosolids polymer system replacement.

Currently, MWRD has two existing dry polymer feed systems originally built in 2001 and 2008, respectively. Due to the age of the existing polymer systems, staff is concerned with the capacity and overall reliability of the systems. Additionally, the current feed system is not configured optimally to most effectively dewater the biosolids. This is because the polymer system was built in two phases coinciding with the installation of the pre-existing rotary presses.

The polymer system upgrades will address these issues by designing an upgraded system, sized for future solids production loadings with 100-percent redundancy. Equipment planned includes the following:

- 2 sets of mixing/aging tanks, each sized for all 8 rotary presses
- 2 disperser/mixers (feeders), each sized for all 8 rotary presses
- 2 bag unloaders, each sized for all 8 rotary presses
- 10 polymer feed pumps (8 duty and 2 spare)

The new dry polymer system equipment will be procured and installed by John Bouchard & Sons (JBS) along with the installation of ancillary equipment necessary for a complete upgrade via the City Master Services Agreement with JBS. The SCADA integration and integration of local controls and field instrumentation will be performed by MR Systems and contracted directly with MWRD via the City Master Services Agreement.

No formal recommendation was submitted, but staff wanted to update the Board on the costs prior to bringing a task order from SSR for designing the necessary upgrades. The upgraded costs of \$1,436,000 have been incorporated into the Department's 5-yr CIP. The increase in costs does not cause the Department to violate any of our working capital reserve financial policies based on our 5-yr pro forma.

Staff updated the Board on SRWTP High Service Pump Station & Membrane Feed Pump Improvements re-budget.

The High Service Pump Station and Membrane Feed Pump Station have been budgeted for replacement in the Department's FY19-FY22 rate funded capital expenditure budget. The items included:

|                                         |                    |
|-----------------------------------------|--------------------|
| • High Service Pump Check Valves        | \$165,000          |
| • VFD High Service Pump Station         | \$600,000          |
| • PLC Upgrade High Service Pump Station | \$150,000          |
| • <u>Add #4 High Service Pump</u>       | <u>\$680,000</u>   |
| <b>TOTAL BUDGETED COSTS</b>             | <b>\$1,595,000</b> |

Recent issues with a high service pump variable frequency drives (VFDs) instigated staff to review the plan in place and reprioritize the proposed multi-year improvements into a more immediate project to properly address redundancy and capacity.

As is customary, when projects are reprioritized or new costs are identified as necessary for a project, staff wants to inform the Board of the re-budgeted costs and factor these costs into the working capital reserve bucket versus the rate funded capital bucket. Additional costs include:

|                                               |                  |
|-----------------------------------------------|------------------|
| • Re-budget High Service PS Improvements      | \$(69,000)       |
| • Membrane Feed Pump Improvements             | \$490,000        |
| • Contingency                                 | \$404,000        |
| • <u>Engineering &amp; Construction Admin</u> | <u>\$141,000</u> |
| TOTAL ADDED COSTS                             | \$966,000        |

TOTAL RE-BUDGETED PROJECT COSTS is \$2,561,000.

In late October one of the VFDs, controlling the high service pump, malfunctioned and is no longer operable. Staff contacted SSR to discuss the possibility of a different direction with the improvements. From discussion it was determined that all the work, originally scheduled at different times, needed to be completed in one project.

Considering the 12-15-week delivery plus installation for replacing the VFD that failed in October, it could be catastrophic for operations. To provide more capacity and additional redundancy, a fourth high service pump is being proposed to be added to the facility now instead of FY22. With the replacement and addition of the high service pump VFDs, it was proposed to go ahead and replace the GAC backwash pump VFD which is also located in the high service pump station. This replacement would complete the electrical rehabilitation portion of the high service pump station.

Because of operation and maintenance difficulties associated with the existing check valves on the high service pumps and backwash pump, the check valves will be replaced. The capacity of the existing surge relief valve will also be evaluated. The valve will be replaced if the analysis deems it is undersized following the installation of the fourth high service pump.

The existing programmable logic controllers (PLCs) are due for replacement. To complete the instrumentation and control rehabilitation of the high service pump station, the PLC for the high service pump station will be replaced by MR Systems. Pump pressure monitoring will also be added to the high service pumps for future integration with a future pump monitoring system.

All four membrane feed pump VFDs will be replaced. These VFDs were installed in 2008 and are critical infrastructure to the treatment plant and are approaching the end of their useful life. Pressure monitoring instrumentation will also be added to the membrane feed pump station to be used with a future pump monitoring system.

The total estimate for the entire project is estimated at \$2,561,000 funding requested as coming from working capital reserves with an accompanying refunding component coming from rate funded capital in the amount of \$1,000,000 in FY21.

Staff presented and discussed the Water Resources Dashboard Performance for October / November 2019.

Staff presented the Financial Reports for the year ending October 31, 2019.

Staff reminded the Board that the Department Christmas lunch will be held on Thursday, December 12<sup>th</sup> at the Operations and Maintenance building.

There being no further business, the meeting was adjourned.

---

John Sant Amour, Chairman



... creating a better quality of life

# MEMORANDUM

**DATE:** January 23, 2020  
**TO:** Water Resources Board  
**FROM:** Alan Cranford  
**SUBJECT:** Mill Street, Tiger Hill and Halls Hill Storage Tank Repair/Recoating Rebid  
 Stones River Water Treatment Plant

---

## Summary

Recommend award of water storage tank repair/recoating bids for Mill St., Tiger Hill and Halls Hill Pike tanks.

## Background

Initial Invitations to Bid (ITB) for the Mill Street, Tiger Hill and Halls Hill Storage Tank Repair and Repainting project were accepted on November 5, 2019 and rejected by the Board on December 10, 2019. The ITB was re-advertised and released for bid for the second time on December 3, 2019 and bids were publicly opened on Tuesday, January 7, 2020 at 2:00 P.M. at the Stones River Water Treatment Plant. There were eleven plan holders, however, only seven bids were submitted. The bid tabulation is below.

| <b>Bidder</b>                               | <b>Bid Amount</b> |
|---------------------------------------------|-------------------|
| 1. Currens Construction Services, LLC       | \$2,557,130       |
| 2. Preferred Sandblasting and Painting, LLC | \$2,611,500       |
| 3. Utility Service Co., Inc.                | \$2,959,500       |
| 4. Tank Pro, Inc.                           | \$3,040,970       |
| 5. Worldwide Industries Corp                | \$3,087,620       |
| 6. TMI Coatings, Inc.                       | \$3,270,000       |
| 7. Classic Protective Coatings, Inc.        | \$3,472,870       |

After evaluation of the submitted bids, the low responsive and responsible bidder is Currens Construction Services, LLC in the amount of \$2,557,130.

The low bidder, Currens Construction Services, LLC is located in Harrodsburg, KY. Though SSR and MWRD have not worked with Terry Currens recently, SSR is familiar with this company as they have completed multiple projects with SSR's coating inspection subcontractor, Mid-South Tank Consultants, and come highly recommended. The opinion of probable construction cost for this work was approximately \$2,596,300.00. Currens' bid is slightly under our original cost estimate. Given this information, we recommend Currens Construction Services, LLC be awarded the contract for the Tiger Hill, Mill Street and Halls Hill Water Tanks project.

The previous bid, which was rejected due to errors, was in the amount of 2,650,840 after the errors were corrected. The rebidding of the project saved the Department \$93,710.

### **Fiscal Impact**

The cost for recoating the Mill Street, Tiger Hill and Halls Hill tanks is \$2,557,130. Funding is budgeted in the amount of \$2,800,000 in the FY20 and FY21 Working Capital Reserves 5-yr CIP.

### **Recommendation**

Staff recommends the Water Resources Board recommend to the City Council approving the storage tank repair and repainting bid from Currens Construction Services, LLC in accordance with their bid.

### **Attachments**

Attachment – SRWTP – MWRD Water Tanks Evaluation of Bids Rebid

Attachment – SRWTP – Bid Summary Tab MWRD Water Tanks Rebid

Attachment – SRWTP – Bid Tab MWRD Water Tanks Rebid



January 13, 2020

Mr. Alan Cranford  
City of Murfreesboro, Tennessee  
5528 Sam Jared Road  
Murfreesboro, TN 37129

**Transmitted Via Email**

Re: **MURFREESBORO WATER RESOURCES DEPARTMENT  
Tiger Hill, Mill Street and Halls Hill Water Tanks  
Evaluation of Bids & Recommendation (Re-Bid)  
SSR No. 1841021.0**

Dear Mr. Cranford:

On Tuesday, January 7, 2020 at 2:00 P.M., bids were opened for the MWRD Tiger Hill, Mill Street and Halls Hill Water Tanks project. Seven (7) bids were submitted. Maguire Iron, Scott I. Enterprises, Suburban Contractors and Viking Painting did not submit a bid. A list of bidders and bid amounts are shown below.

| <b><u>Bidder</u></b>                        | <b><u>Bid Amount</u></b> |
|---------------------------------------------|--------------------------|
| 1. Currens Construction, LLC                | \$2,557,130.00           |
| 2. Preferred Sandblasting and Painting, LLC | \$2,618,720.00           |
| 3. Suez – Utility Service Company, Inc.     | \$2,959,500.00           |
| 4. Tank Pro, Inc.                           | \$3,040,970.00           |
| 5. Worldwide Industries Corp.               | \$3,087,620.00           |
| 6. TMI Coatings, Inc.                       | \$3,270,000.00           |
| 7. Classic Protective Coatings, Inc.        | \$3,472,870.00           |

After evaluations of the submitted bids, the low bidder is Currens Construction, LLC. Per Section 00200, Part 20 – Evaluation of Bids and Award of Contract, each bid was checked for errors and a bid tabulation was created. One error was found with Preferred Sandblasting’s bid. The total base bid sum listed in writing was \$2,611,500.00, but the actual sum of line items equaled \$2,618,720.00. This error did not affect the outcome of the bid. The bid tab has been sent to all plan holders and a copy is attached for your use.

The low bidder, Currens Construction, is located in Harrodsburg, KY. Though we have not worked with Terry Currens recently we are familiar with this company as they have completed multiple projects with our coating inspection subcontractor, Mid-South Tank Consultants, and come highly recommended. The opinion of probable construction cost for this work was approximately \$2,596,300.00. Curren’s bid is slightly under our original cost estimate. Given this information, we recommend Currens Construction, LLC be awarded the contract for the Tiger Hill, Mill Street and Halls Hill Water Tanks project. If you have any questions regarding this recommendation please feel free to contact me at [pfonda@ssr-inc.com](mailto:pfonda@ssr-inc.com) or (615) 460-0543.

Sincerely,  
**SMITH SECKMAN REID, INC.**

Paolo M. Fonda, P.E.

Cc: Joe Russell, Steve Toler – MWRD  
LGW, GKG, File (1)

**BID TABULATION SUMMARY**  
**TIGER HILL, MILL STREET AND HALLS HILL WATER TANKS**  
**OWNER: MURFREESBORO WATER RESOURCES DEPARTMENT**  
**ENGINEER: SMITH SECKMAN REID, INC.**  
**BID DATE: JANUARY 7, 2020**  
**2:00 PM CST TIME**

| BIDDER<br>NO. | CONTRACTOR                                | TOTAL BID AMOUNT |
|---------------|-------------------------------------------|------------------|
| 1             | Currans Construction Services, LLC.       | \$2,557,130.00   |
| 2             | Preferred Sandblasting and Painting, LLC. | \$2,618,720.00   |
| 3             | Suez - Utility Service Company, Inc.      | \$2,959,500.00   |
| 4             | Tank Pro, Inc.                            | \$3,040,970.00   |
| 5             | Worldwide Industries Corp.                | \$3,087,620.00   |
| 6             | TMI Coatings, Inc.                        | \$3,270,000.00   |
| 7             | Classic Protective Coatings, Inc.         | \$3,472,870.00   |

**SUMMARY OF ERRORS FOUND**

1.) Preferred Sandblasting and Painting, LLC had an error in total base bid amount. The total base bid sum listed in writing was \$2,611,500.00 but sum of line items equals \$2,618,720.00.

**BID TABULATION SHEET FOR  
MURFREESBORO WATER RESOURCES DEPARTMENT  
TIGER HILL, MILL STREET AND HALLS HILL WATER TANKS**



SSR NO. 1841021.0  
Page 1 of 1  
BID DATE: JANUARY 7, 2020  
2:00 PM CST TIME

|                                                                                             |                                                                                                          |                                                                                                       |                                                                                |                                                                                          |                                                                                 |                                                                                                 |                                                                                        |                                                                             |                                                                                      |                                                                                 |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Currens Construction Services, LLC.<br>PO Box 492<br>Harrodsburg, KY 40330<br>TN LN#: 70787 | Preferred Sandblasting and Painting, LLC.<br>107 Anthony Lane<br>Shelbyville, TN 37160<br>TN LN #: 54893 | Suez - Utility Service Company, Inc.<br>535 Courtney Hodges Blvd.<br>Perry, GA 31069<br>TN LN#: 14995 | Tank Pro, Inc.<br>5500 Watermelon Road<br>Northport, AL 35473<br>TN LN#: 42850 | Worldwide Industries Corp.<br>470 Mitchell Hall Road<br>Butler, PA 16002<br>TN LN# 65593 | TMI Coatings, Inc.<br>3291 Terminal Drive<br>St. Paul, MN 55121<br>TN LN# 54978 | Classic Protective Coatings, Inc.<br>N7676 State Hwy 25<br>Menomonie, WI 54751<br>TN LN#: 50625 | Maguire Iron, Inc.<br>1610 N. Minnesota Ave<br>Sioux Falls, SD 57104<br>TN LN #: 52898 | Scott I. Enterprises<br>86 Seabuscut Ct.<br>Newman, GA 30263<br>TN LN#: N/A | Suburban Contractors, LLC<br>526 Norris Road<br>Anderson, SC 29626<br>TN LN #: 52898 | Viking Painting, LLC.<br>8790 F St. Suite 629<br>Omaha, NE 68127<br>TN LN#: N/A |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|

| Item Number             | Quantity & Units | Description | Unit Price                                                                                                                                                                                                    | Extension           | Unit Price      | Extension           | Unit Price      | Extension           | Unit Price      | Extension           | Unit Price      | Extension           | Unit Price      | Extension           | Unit Price      | Extension           | Unit Price      | Extension     | Unit Price    | Extension     | Unit Price | Extension |
|-------------------------|------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------|---------------|---------------|------------|-----------|
| 1                       | 1                | LS          | Furnish all materials, labor and equipment to clean, repair and repaint the 3MG Tiger Hill Ground Storage Water Tank and valve pit except for the work identified below and in Schedule C.                    | \$ 604,960.00       | \$ 604,960.00   | \$ 575,000.00       | \$ 575,000.00   | \$ 704,500.00       | \$ 704,500.00   | \$ 536,325.00       | \$ 536,325.00   | \$ 671,110.00       | \$ 671,110.00   | \$ 829,200.00       | \$ 829,200.00   | \$ 1,055,000.00     | \$ 1,055,000.00 |               |               |               |            |           |
| 2                       | 1                | LS          | Furnish all materials, labor and equipment to fabricate and install galvanized platform and handrail at ladder termination of the Tiger Hill Ground Storage Water Tank                                        | \$ 24,000.00        | \$ 24,000.00    | \$ 38,000.00        | \$ 38,000.00    | \$ 18,000.00        | \$ 18,000.00    | \$ 27,500.00        | \$ 27,500.00    | \$ 24,610.00        | \$ 24,610.00    | \$ 25,300.00        | \$ 25,300.00    | \$ 28,000.00        | \$ 28,000.00    |               |               |               |            |           |
| 3                       | 1                | LS          | Furnish all materials, labor and equipment to clean, repair and repaint the 2MG Mill Street Elevated Water Tank (including containment) and valve pit except for the work identified below and in Schedule C. | \$ 1,312,900.00     | \$ 1,312,900.00 | \$ 1,387,500.00     | \$ 1,387,500.00 | \$ 1,623,100.00     | \$ 1,623,100.00 | \$ 1,879,400.00     | \$ 1,879,400.00 | \$ 1,696,410.00     | \$ 1,696,410.00 | \$ 1,765,800.00     | \$ 1,765,800.00 | \$ 1,795,400.00     | \$ 1,795,400.00 |               |               |               |            |           |
| 4                       | 1                | LS          | True Blue Logo for Mill Street Elevated Water Tank                                                                                                                                                            | \$ 27,000.00        | \$ 27,000.00    | \$ 32,000.00        | \$ 32,000.00    | \$ 19,200.00        | \$ 19,200.00    | \$ 16,175.00        | \$ 16,175.00    | \$ 41,610.00        | \$ 41,610.00    | \$ 45,200.00        | \$ 45,200.00    | \$ 7,800.00         | \$ 7,800.00     |               |               |               |            |           |
| 5                       | 1                | LS          | Furnish all materials, labor and equipment to clean and repaint the Halls Hill Water Tank valve pit.                                                                                                          | \$ 8,800.00         | \$ 8,800.00     | \$ 5,000.00         | \$ 5,000.00     | \$ 7,880.00         | \$ 7,880.00     | \$ 9,100.00         | \$ 9,100.00     | \$ 14,910.00        | \$ 14,910.00    | \$ 18,030.00        | \$ 18,030.00    | \$ 7,200.00         | \$ 7,200.00     |               |               |               |            |           |
| 6                       | 1                | LS          | Construction Contingency Allowance                                                                                                                                                                            | \$ 175,000.00       | \$ 175,000.00   | \$ 175,000.00       | \$ 175,000.00   | \$ 175,000.00       | \$ 175,000.00   | \$ 175,000.00       | \$ 175,000.00   | \$ 175,000.00       | \$ 175,000.00   | \$ 175,000.00       | \$ 175,000.00   | \$ 175,000.00       | \$ 175,000.00   |               |               |               |            |           |
| 7                       | 1                | LS          | Guaranteed Price Proposal from Crom for Halls Hill Water Tank                                                                                                                                                 | \$ 356,500.00       | \$ 356,500.00   | \$ 356,500.00       | \$ 356,500.00   | \$ 356,500.00       | \$ 356,500.00   | \$ 356,500.00       | \$ 356,500.00   | \$ 356,500.00       | \$ 356,500.00   | \$ 356,500.00       | \$ 356,500.00   | \$ 356,500.00       | \$ 356,500.00   |               |               |               |            |           |
| 8                       | 1                | LS          | Guaranteed Price Proposal from Trittech Fall Protection Systems for Tiger Hill Water Tank and Mill Street Elevated Water Tank                                                                                 | \$ 37,470.00        | \$ 37,470.00    | \$ 37,470.00        | \$ 37,470.00    | \$ 37,470.00        | \$ 37,470.00    | \$ 37,470.00        | \$ 37,470.00    | \$ 37,470.00        | \$ 37,470.00    | \$ 37,470.00        | \$ 37,470.00    | \$ 37,470.00        | \$ 37,470.00    |               |               |               |            |           |
| 9                       | 3,500            | SF          | Fill Sharp Edge Pits                                                                                                                                                                                          | \$ 3.00             | \$ 10,500.00    | \$ 3.50             | \$ 12,250.00    | \$ 5.10             | \$ 17,850.00    | \$ 1.00             | \$ 3,500.00     | \$ 20.00            | \$ 70,000.00    | \$ 5.00             | \$ 17,500.00    | \$ 3.00             | \$ 10,500.00    |               |               |               |            |           |
| <b>TOTAL BID AMOUNT</b> |                  |             | <b>\$</b>                                                                                                                                                                                                     | <b>2,557,130.00</b> | <b>\$</b>       | <b>2,618,720.00</b> | <b>\$</b>       | <b>2,959,500.00</b> | <b>\$</b>       | <b>3,040,970.00</b> | <b>\$</b>       | <b>3,087,620.00</b> | <b>\$</b>       | <b>3,270,000.00</b> | <b>\$</b>       | <b>3,472,870.00</b> | <b>NO BID</b>   | <b>NO BID</b> | <b>NO BID</b> | <b>NO BID</b> |            |           |

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT RECORD WITH ALL ERRORS AND EXTENSIONS OF UNIT PRICE CORRECTED.

BY: Paolo M. Fonda

DATE: January 8, 2020





... creating a better quality of life

# MEMORANDUM

**DATE:** January 23, 2020  
**TO:** Water Resources Board  
**FROM:** Alan Cranford  
**SUBJECT:** Smith Seckman Reid (SSR) Engineering Task Order 1941021.0  
 High Service Pump Station and Membrane Feed Pump Improvements  
 Stones River Water Treatment Plant

---

## Summary

Request approval of SSR Engineering task order 1941021.0 for Stones River Water Treatment Plant (SRWTP) high service pump station and membrane feed pumps improvements

## Background

Staff brought this project to the December Board meeting for adjustment to the current budgeting schedule and provided additional information regarding the need for renovations to the High Service Pump Station and Membrane Feed Pump Station.

The High Service Pump Station and Membrane Feed Pump Station have been budgeted for replacement in the Department's FY20-FY22 rate funded capital expenditure budget. The re-budgeting request from last month compresses the previous 3-yr plan for improvements into completing the project during a portion of FY20 and FY21. The improvements detailed at the December 2019 Board meeting included:

- High Service Pump Check Valves \$165,000
  - VFD High Service Pump Station \$600,000
  - PLC Upgrade High Service Pump Station \$150,000
  - Add #4 High Service Pump \$680,000
  - Re-budget High Service PS Improvements \$-(69,000)
  - Membrane Feed Pump Improvements \$490,000
  - Contingency \$404,000
  - Engineering & Construction Admin \$141,000
- TOTAL RE-BUDGETED PROJECT COSTS** \$2,561,000.

In late October one of the VFDs, controlling the high service pump, malfunctioned and is no longer operable and requires replacement. A fourth high service pump is being proposed to be added to the facility now instead of FY22. With the replacement and addition of the high service pump

VFDs, it was proposed to go ahead and replace the GAC backwash pump VFD which is also located in the high service pump station.

All four membrane feed pump VFDs will also be replaced. These VFDs were installed in 2008 and are critical infrastructure to the treatment plant and are approaching their useful life.

All of the mechanical and electrical work will be conducted by John Bouchard and Sons in accordance with the Water/Wastewater Mechanical and Electrical contact.

The existing programmable logic controllers (PLCs) are due for replacement. To complete the instrumentation and control rehabilitation of the high service pump station, the PLC for the high service pump station will be replaced by MR Systems as part of this project.

The equipment portion of the project will likely bid in the last quarter of the MWRD Financial Year of 2019-2020 (June 2020). Construction is anticipated to begin in the first quarter of the MWRD Financial Year of 2020-2021 and all work should be completed within that fiscal year.

### **Fiscal Impact**

The immediate fiscal impact associated with approving SSR's task order for designing these improvements is \$140,130. The total estimate for the entire project is \$2,561,000 with requested funding coming from working capital reserves with an accompanying refunding component coming from rate funded capital in the amount of \$1,000,000 for FY21.

### **Recommendations**

Recommend to the City Council approval of SSR Task Order funding for this project and the proposed engineering services from SSR with funding coming from reserves.

### **Attachments**

1. SSR Memo dated 12/3/19 detailing High Service Pump Station and Membrane Feed Pump Improvements
2. SSR Engineering Task Order No. 1941021.0



## MEMORANDUM

**DATE:** December 3, 2019  
**TO:** Alan Cranford  
**FROM:** Luke Williams  
**RE:** High Service Pump Station and Membrane Feed Pump Improvements

---

As requested by Murfreesboro Water Resources Department (MWRD), Smith Seckman Reid, Inc. (SSR) is pleased to provide this proposal for design and construction services for the High Service Pump Station and Membrane Feed Pumps Improvements for the Stones River Water Treatment Plant.

### Background

Currently, MWRD has three existing high service pumps that were installed in 2008. One of the existing three VFDs recently failed and is currently being replaced. To provide more capacity and additional redundancy, a fourth high service pump is being proposed to be added to the facility. The fourth high service pump is currently being proposed to match the other three high service pumps in both flow capacity and pressure. The hydraulics for the high service pump station will be analyzed prior to determine the final sizing of the pump.

With the replacement and addition of the high service pump VFDs, it was proposed to go ahead and replace the GAC backwash pump VFD which is also located in the high service pump station. This replacement would complete the electrical rehabilitation portion of the high service pump station. Any chilled water piping and equipment associated with the existing VFDs will not be needed once the VFDs have been replaced and the equipment will be demolished as necessary. To complete the instrumentation and control rehabilitation of the high service pump station, the PLC for the high service pump station will be replaced by MR Systems as part of this project. Pump pressure monitoring will also be added to the high service pumps for future integration with a future pump monitoring system to be installed at a later date. Because of operation and maintenance difficulties associated with the existing check valves on the high service pumps and backwash pump, the check valves will also be replaced as part of this project. The capacity of the existing surge relief valve will also be evaluated as part of this project. The valve will be replaced if the analysis deems it is undersized following the installation of the fourth high service pump.

A preliminary HVAC analysis was completed on the existing high service pump station HVAC equipment. As of now, no HVAC modifications will be needed with the addition of the fourth high service pump. However, there have been discussions around upsizing the existing VFD and the new VFD higher than the motor rating of the pumps to provide additional flexibility in operations. If this upsize does end up happening, an additional HVAC analysis will need to be performed and possible HVAC modifications may need to be made to the existing pump station.

All four membrane feed pump VFDs will also be replaced. These VFDs were installed in 2008 and are critical infrastructure to the treatment plant and are approaching their useful life. Pressure monitoring instrumentation will also be added to the membrane feed pump station to be used with a future pump monitoring system.

The project will likely bid in the last quarter of the MWRD Financial Year of 2019-2020 (June 2020). Construction is anticipated to begin in the first quarter of the MWRD Financial Year of 2020-2021 and all work should be completed within that financial year.

### Recommendation

SSR recommends proceeding with the Staff request of replacing the existing VFDs and adding the fourth high service pump. Doing so will ensure adequate redundancy and capacity.

### Project Costs

The following table summarizes the opinion of probable costs for the proposed modifications to the high service pump and membrane feed pump stations. The opinions of costs were developed from engineering judgement based on similar facilities and preliminary budgetary proposal from equipment manufactures and installation contractor. The final costs will depend on actual labor and material costs, competitive market conditions, final project costs, implementation schedule, and other variable factors. All costs are presented in 2019 dollars.

### Summary of Opinion of Project Costs

| Description                                             | Opinion of Probable Cost |
|---------------------------------------------------------|--------------------------|
| High Service Pump Station Improvements                  | \$1,526,000              |
| Membrane Feed Pump Station Improvements                 | \$490,000                |
| Contingency                                             | \$404,000                |
| <b>Total Probable Construction Cost</b>                 | <b>\$2,420,000</b>       |
| Engineering and Construction Administration             | \$141,000                |
| <b>Total Probable Project Cost</b>                      | <b>\$2,561,000</b>       |
| <u>Notes:</u>                                           |                          |
| 1. Costs include Contractor's Overhead and Profit       |                          |
| 2. Costs are rounded up to the nearest thousand dollar. |                          |

We appreciate the opportunity to provide our services to the Murfreesboro Water Resources Department. If you need any additional information, please contact us.

## Task Order

---

In accordance with the Standard Form of Agreement Between Owner and Engineer for Professional Services, dated August 6, 2002 ("Agreement"), Owner and Engineer agree as follows:

### 1. Background Data

- a. Effective Date of Task Order: January 6, 2020
- b. Owner: Murfreesboro Water Resources Department
- c. Engineer: Smith Seckman Reid
- d. Specific Project (title): Stones River WTP High Service Pump Station and Membrane Feed Pumps Improvements
- e. Specific Project (description): The project includes the design and construction administration for the installation of a fourth high service pump, valves, piping, and variable frequency drive at the existing high service pump station. The project also consists of replacing two (2) existing high service pump 700 HP variable frequency drives and one (1) backwash pump 200 HP variable speed drive, replacement of three (3) existing check valves, a new PLC for the high service pump station, and integration by MR Systems. The project also includes the design and construction administration for the replacement of four (4) existing 200 HP variable speed drives for the membrane feed pumps. Pump pressure monitoring will also be installed for all three (3) separate pumping systems as part of this project.

### 2. Services of Engineer

- A. The specific services to be provided or furnished by Engineer under this Task Order are:

the services (and related terms and conditions) set forth in the following sections of Basic Services of Engineer in the Agreement modified herein for this specific Task Order, as attached to the Agreement referred to above, such sections being hereby incorporated by reference:

- Preliminary Design Phase (Agreement, Paragraph 1.3) and the following:
  - Evaluation of existing high service pump station hydraulics.
  - Including a brief, bullet point style basis of design document including key design criteria, evaluation results for hydraulics analysis, conceptual layout drawings, and preliminary piping and instrumentation drawings.
- Final Design Phase (Agreement, Paragraph 1.4)
- Negotiating Services (Agreement, Paragraph 1.5).

- Construction Phase Services (Agreement, Paragraph 1.6) and the following:
  - Including establish baselines and benchmarks for locating the Work which in Engineer's judgment are necessary to enable Contractor to proceed.
  - Visit the Site promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor to review the Work and determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.
  - Conduct a final visit to the specific Project to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice to Owner and Contractor that the Work is acceptable to the best of Engineer's knowledge, information, and belief, and based on the extent of the services provided by Engineer under the Agreement and this Task Order.
  - Including part time Resident Project Representative (RPR) services (as referenced in 1.6.2.1).
- Operational Phase Services (Agreement, Paragraph 1.7)

B. All of the services included above comprise Basic Services for purposes of Engineer's compensation under this Task Order.

### 3. Exclusions

- A. Study and Report Phase Services (Agreement, Paragraph 1.2).
- B. Services associated with government funding programs, i.e., State Revolving Fund loan program.

### 4. Additional Services

A. Additional Services that may be authorized or necessary under this Task Order are:

set forth as Additional Services in Part 2—Additional Services of Engineer, of the Agreement modified for this specific Task Order, and attached to and incorporated as part of this Task Order.

### 5. Owner's Responsibilities

Owner shall have those responsibilities set forth in Section 3 of the Agreement, subject to the following:

- A. Delete Paragraph 3.5.

### 6. Task Order Schedule

In addition to any schedule provisions provided in Exhibit A or elsewhere, the parties shall meet the following schedule:

| <b><u>Party</u></b> | <b><u>Action</u></b>                                                                                                                                                                                                                                                           | <b><u>Schedule</u></b>                                                                                                                                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Engineer            | Furnish electronic review copies of the basis of design memorandum to Owner.                                                                                                                                                                                                   | Within 30 days of the Effective Date of the Task Order or project kick-off meeting, whichever is later.                                                                                                                                             |
| Owner               | Submit comments regarding basis of design memorandum to Engineer.                                                                                                                                                                                                              | Within 7 days of the basis of design memorandum from Engineer.                                                                                                                                                                                      |
| Engineer            | Furnish electronic copies of the revised basis of design memorandum to Owner.                                                                                                                                                                                                  | Within 5 days of the receipt of Owner's comments regarding the basis of design memorandum.                                                                                                                                                          |
| Engineer            | Furnish electronic review copies of the 90% Drawings and Specifications, assembled drafts of other Construction Contract Documents, requests for proposals, and any other Final Design Phase deliverables, to Owner.                                                           | Within 90 days following project kick-off meeting.                                                                                                                                                                                                  |
| Owner               | Submit comments and instructions regarding the 90% Drawings and Specifications, assembled drafts of other Construction Contract Documents, the requests for proposals or other construction procurement documents, and any other Final Design Phase deliverables, to Engineer. | Within 7 days of the receipt of the 90% Drawings and Specifications, assembled drafts of other Construction Contract Documents, the requests for proposals, and any other Final Design Phase deliverables from Engineer.                            |
| Engineer            | Furnish electronic review copies of the 100% Drawings and Specifications, assembled drafts of other Construction Contract Documents, requests for proposals, and any other Final Design Phase deliverables, to Owner.                                                          | Within 14 days of Owner's comments regarding 90% Drawings and Specifications and other 90% documents.                                                                                                                                               |
| Owner               | Submit comments and instructions regarding the 100% Drawings and Specifications, assembled drafts of other Construction Contract Documents, requests for proposals, and any other Final Design Phase deliverables, to Engineer.                                                | Within 10 days of the receipt of the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, requests for proposals, and any other Final Design Phase deliverables from Engineer.                             |
| Engineer            | Furnish electronic copies of the 100% Drawings and Specifications, assembled Construction Contract Documents, requests for proposals, and any other Final Design Phase deliverables, to Owner and TDEC.                                                                        | Within 10 days of the receipt of Owner's comments and instructions regarding the 100% Drawings and Specifications, assembled drafts of other Construction Contract Documents, requests for proposals and any other Final Design Phase deliverables. |

## 7. Payments to Engineer

A. Owner shall pay Engineer for services rendered under this Task Order as follows:

| Description of Service                     | Amount           | Basis of Compensation |
|--------------------------------------------|------------------|-----------------------|
| 1. Basic Services (Section 1 of Agreement) |                  |                       |
| a. Preliminary and Final Design Phase      | \$83,595         | Hourly Not to Exceed  |
| b. Negotiating Phase                       | \$3,915          | Hourly Not to Exceed  |
| c. Construction Phase*                     | \$46,135         | Hourly Not to Exceed  |
| d. Post Construction Phase                 | \$6,485          | Hourly Not to Exceed  |
| <b>TOTAL COMPENSATION (lines 1.a-c)</b>    | <b>\$140,130</b> |                       |
| <b>REIMBURSABLE EXPENSES **</b>            |                  |                       |
| a. Out-of-Town Mileage                     | \$0.00           | \$0.58 /mile          |
| b. Air Transportation                      | \$0.00           | At Cost               |
| c. Meals and Lodging                       | \$0.00           | At Cost               |
| d. External Plotting                       | \$400            | At Cost               |
| e. Permitting Fees                         | \$50             | At Cost               |

\*Based on a 42-week continuous construction period.

\*\*Reimbursable expenses are estimated amounts.

Engineer expects the entire contract duration for these services to be less than 15 months. If the contract duration extends beyond this time, commensurate additional compensation may be required.

**8. Consultants retained as of the Effective Date of the Task Order:**

A. N/A

**9. Attachments:**

B. Detailed project understanding.

**10. Terms and Conditions**

Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is January 6, 2020.

CITY OF MURFREESBORO:

WITNESS:

By: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_



Page Left Intentionally Blank

**HIGH SERVICE PUMP STATION AND MEMBRANE FEED PUMPS IMPROVEMENTS  
DETAILED PROJECT UNDERSTANDING  
ATTACHMENT TO TASK ORDER 1941021.0**

**Project Understanding**

The task order covers the engineering basic services necessary to complete each of the following:

- Prepare a brief basis of design document for the expanded high service pump station following review of hydraulic model of station and distribution system.
- Design a new fourth vertical turbine high service pump including piping and valves, motor, 700 HP variable frequency drive, and pressure monitoring.
- Design of replacement of existing four (4) check valves on high service and backwash pump system.
- Design replacement of two (2) existing high service 700 HP VFDs, one (1) existing GAC backwash 200 HP VFD, and four (4) existing membrane feed 200 HP VFDs.
- Design of membrane feed pump pressure monitoring for future pump monitoring system.
- Evaluation of existing surge relief valve at high service pump station and design of new surge relief system, as necessary.
- Design of demolition plan for existing chilled water loop system for existing variable frequency drives at high service pump station.
- Design of all structural, electrical, plumbing and controls systems necessary to provide operational facilities at high service pumping station and membrane feed pump station.
- Submittal of drawings and specifications to Tennessee Department of Environment and Conservation (TDEC) Water Resources office.

The task order excludes engineering basic services for each of the following:

- Modifications to the existing HVAC equipment inside the high service pump station.
- Controls integration services (to be handled by MR Systems through MWRD MSA).
- Bidding Phase Services (to be constructed through John Bouchard and Sons Task Order Contract)

**Project Meetings**

In addition to meetings referenced in the Agreement, Engineer will perform each of the following:

- Conduct an Owner kickoff meeting to discuss the overall scope, schedule, costs, and other pertinent items critical to project success.
- Conduct Owner review workshops at basis of design memo and 90-percent deliverable milestones.
- Conduct monthly construction progress meetings with Owner and Contractor.

Murfreesboro Water Resources Department  
 SRWTP High Service Pump Station and Membrane Feed Pumps Improvements  
 Preliminary Estimate of Manpower



|                                         |                                                 |                 | Summary          |                   |                 |                 |                 |                   |                 |              |            |                    |
|-----------------------------------------|-------------------------------------------------|-----------------|------------------|-------------------|-----------------|-----------------|-----------------|-------------------|-----------------|--------------|------------|--------------------|
|                                         |                                                 |                 | TOTAL            | Project Principal | Project Manager | Engineer III    | Engineer II     | Engineer Intern I | Sr. Designer    | Designer     | Technician | Admin/<br>Clerical |
|                                         |                                                 |                 | 205              | 160               | 145             | 135             | 90              | 140               | 95              | 100          | 75         |                    |
| <b>Task 1- Preliminary Design Phase</b> |                                                 |                 |                  |                   |                 |                 |                 |                   |                 |              |            |                    |
| SubTask 1.1                             | Kickoff Meeting                                 | 8               | 2                |                   |                 |                 | 4               | 4                 |                 |              |            |                    |
| SubTask 1.2                             | Project Work Plan                               | 6               | 1                |                   |                 |                 | 4               | 2                 |                 |              |            |                    |
| SubTask 1.3                             | Project Management and Communications           | 10              | 1                |                   |                 |                 | 8               | 2                 |                 |              |            |                    |
| SubTask 1.4                             | Preliminary Hydraulic Calculations              | 55              | 1                |                   |                 |                 | 15              | 40                |                 |              |            |                    |
| SubTask 1.5                             | Preliminary MEP Evaluation                      | 23              |                  |                   | 3               | 5               | 10              | 5                 |                 |              |            |                    |
| SubTask 1.6                             | Preliminary I&C Evaluation - SCADA              | 20              |                  |                   | 5               | 15              |                 |                   |                 |              |            |                    |
| SubTask 1.7                             | Preliminary Equipment Selection                 | 12              |                  |                   |                 | 4               | 8               |                   |                 |              |            |                    |
| SubTask 1.8                             | Opinion of Probable Construction Cost           | 6               |                  |                   |                 | 2               | 4               |                   |                 |              |            |                    |
| SubTask 1.9                             | Preliminary Engineering Report                  | 22              | 1                |                   |                 | 6               | 16              |                   |                 |              |            |                    |
| SubTask 1.10                            | TDEC Submission of PER                          | 5               |                  |                   |                 | 2               | 2               |                   |                 |              |            | 1                  |
| <b>Task 1 Subtotal Hours</b>            |                                                 | <b>173</b>      | <b>6</b>         |                   | <b>8</b>        | <b>65</b>       | <b>88</b>       | <b>5</b>          |                 |              |            | <b>1</b>           |
| <b>Task 1 Subtotal Cost</b>             |                                                 | <b>\$19,860</b> | <b>\$1,230</b>   |                   | <b>\$1,160</b>  | <b>\$8,775</b>  | <b>\$7,920</b>  | <b>\$700</b>      |                 |              |            | <b>\$75</b>        |
| <b>Task 2- Final Design Phase</b>       |                                                 |                 |                  |                   |                 |                 |                 |                   |                 |              |            |                    |
| SubTask 2.1                             | Project Management and Communications           | 9               |                  |                   |                 | 6               | 2               |                   |                 |              |            | 1                  |
| SubTask 2.2                             | Process Mechanical Design Development           | 161             |                  |                   |                 | 19              | 44              | 90                | 8               |              |            |                    |
| SubTask 2.3                             | Structural Design Development                   | 6               |                  |                   |                 | 4               | 2               |                   |                 |              |            |                    |
| SubTask 2.4                             | MEP Design Development                          | 100             |                  |                   | 5               | 10              | 40              | 45                |                 |              |            |                    |
| SubTask 2.5                             | I/C Design Development                          | 84              |                  | 10                | 20              | 54              |                 |                   |                 |              |            |                    |
| SubTask 2.6                             | Preliminary Specifications                      | 99              |                  |                   |                 | 35              | 60              |                   |                 |              |            | 4                  |
| SubTask 2.7                             | Opinion of Probable Construction Cost           | 9               |                  |                   |                 | 4               | 5               |                   |                 |              |            |                    |
| SubTask 2.8                             | 100% Design Submittal                           | 44              | 2                |                   |                 | 12              | 12              | 20                |                 |              |            |                    |
| SubTask 2.9                             | 100% Design Workshop                            | 9               |                  |                   |                 | 4               | 4               |                   |                 |              |            | 1                  |
| <b>Task 2 Subtotal Hours</b>            |                                                 | <b>523</b>      | <b>2</b>         | <b>10</b>         | <b>25</b>       | <b>148</b>      | <b>169</b>      | <b>155</b>        | <b>8</b>        |              |            | <b>6</b>           |
| <b>Task 2 Subtotal Cost</b>             |                                                 | <b>\$63,735</b> | <b>\$410</b>     | <b>\$1,600</b>    | <b>\$3,625</b>  | <b>\$19,980</b> | <b>\$15,210</b> | <b>\$21,700</b>   | <b>\$760</b>    |              |            | <b>\$450</b>       |
| <b>Task 3- Negotiating Phase</b>        |                                                 |                 |                  |                   |                 |                 |                 |                   |                 |              |            |                    |
| SubTask 3.1                             | Preparation of Request for Proposals            | 8               |                  |                   |                 | 4               | 3               |                   |                 |              |            | 1                  |
| SubTask 3.2                             | Distribution of Documents                       | 6               |                  |                   |                 | 2               | 3               |                   |                 |              |            | 1                  |
| SubTask 3.3                             | Scoping Coordination and Meeting                | 6               |                  |                   |                 | 3               | 3               |                   |                 |              |            |                    |
| SubTask 3.4                             | Requests for Information                        | 6               |                  |                   |                 | 3               | 3               |                   |                 |              |            |                    |
| SubTask 3.5                             | Addenda Preparation                             | 6               |                  |                   |                 | 2               | 4               |                   |                 |              |            |                    |
| SubTask 3.6                             | Proposal Evaluation and Recommendation to Award | 4               |                  |                   |                 | 2               | 1               |                   |                 |              |            | 1                  |
| <b>Task 3 Subtotal Hours</b>            |                                                 | <b>36</b>       |                  |                   |                 | <b>16</b>       | <b>17</b>       |                   |                 |              |            | <b>3</b>           |
| <b>Task 3 Subtotal Cost</b>             |                                                 | <b>\$3,915</b>  |                  |                   |                 | <b>\$2,160</b>  | <b>\$1,530</b>  |                   |                 |              |            | <b>\$225</b>       |
| <b>Task 4- Construction Phase</b>       |                                                 |                 |                  |                   |                 |                 |                 |                   |                 |              |            |                    |
| SubTask 4.1                             | Pre-Construction Conference                     | 12              |                  |                   |                 | 5               | 7               |                   |                 |              |            |                    |
| SubTask 4.2                             | Submittal Review                                | 116             |                  | 6                 | 10              | 40              | 60              |                   |                 |              |            |                    |
| SubTask 4.3                             | Address Requests for Information                | 64              |                  | 4                 | 5               | 28              | 27              |                   |                 |              |            |                    |
| SubTask 4.4                             | Monthly Meeting Attendance                      | 24              |                  |                   |                 | 12              | 12              |                   |                 |              |            |                    |
| SubTask 4.5                             | Construction Project Management Duties          | 69              | 4                |                   |                 | 63              | 6               |                   |                 |              |            |                    |
| SubTask 4.6                             | Resident Project Engineer                       | 110             |                  |                   |                 |                 | 110             |                   |                 |              |            |                    |
| SubTask 4.7                             | Final Inspections and Contract Closeout         | 10              | 2                |                   |                 | 6               | 4               |                   |                 |              |            |                    |
| <b>Task 4 Subtotal Hours</b>            |                                                 | <b>411</b>      | <b>6</b>         | <b>10</b>         | <b>15</b>       | <b>154</b>      | <b>226</b>      |                   |                 |              |            |                    |
| <b>Task 4 Subtotal Cost</b>             |                                                 | <b>\$46,135</b> | <b>\$1,230</b>   | <b>\$1,600</b>    | <b>\$2,175</b>  | <b>\$20,790</b> | <b>\$20,340</b> |                   |                 |              |            |                    |
| <b>Task 5- Post Construction Phase</b>  |                                                 |                 |                  |                   |                 |                 |                 |                   |                 |              |            |                    |
| SubTask 5.1                             | Record Drawings                                 | 25              |                  |                   |                 | 4               | 8               | 12                |                 |              |            | 1                  |
| SubTask 5.2                             | Operation and Maintenance Manuals               | 10              |                  |                   |                 | 4               | 6               |                   |                 |              |            |                    |
| SubTask 5.3                             | Operations Assistance and Training              | 10              |                  |                   |                 | 4               | 6               |                   |                 |              |            |                    |
| SubTask 5.4                             | One Year Warranty Inspection                    | 8               | 2                |                   |                 | 4               | 4               |                   |                 |              |            |                    |
| <b>Task 5 Subtotal Hours</b>            |                                                 | <b>55</b>       | <b>2</b>         |                   |                 | <b>16</b>       | <b>24</b>       | <b>12</b>         |                 |              |            | <b>1</b>           |
| <b>Task 5 Subtotal Cost</b>             |                                                 | <b>\$6,485</b>  | <b>\$410</b>     |                   |                 | <b>\$2,160</b>  | <b>\$2,160</b>  | <b>\$1,680</b>    |                 |              |            | <b>\$75</b>        |
| <b>LABOR HOURS</b>                      |                                                 |                 | <b>1,198</b>     | <b>16</b>         | <b>20</b>       | <b>48</b>       | <b>399</b>      | <b>524</b>        | <b>172</b>      | <b>8</b>     |            | <b>11</b>          |
| <b>LABOR COST</b>                       |                                                 |                 | <b>\$140,130</b> | <b>\$3,280</b>    | <b>\$3,200</b>  | <b>\$6,960</b>  | <b>\$53,865</b> | <b>\$47,160</b>   | <b>\$24,080</b> | <b>\$760</b> |            | <b>\$825</b>       |



*... creating a better quality of life*

# MEMORANDUM

**DATE:** January 22, 2020  
**TO:** Water Resources Board  
**FROM:** Valerie Smith  
**SUBJECT:** TDOT – Thompson Lane Widening  
NW Broad Street to Memorial Boulevard  
ELI - Engineering Work Authorization

---

## **Summary**

Recommend approval of Engineering Work Authorization #4 (WA#4) under the City’s Master Services Agreement (MSA) with Energy, Land and Infrastructure (ELI) for utility design improvements and relocations in conjunction with the TN Department of Transportation (TDOT) plans to widen Thompson Lane.

## **Background**

In 2015 the Department received Preliminary Field Review plans and notice that the TDOT was going to reconstruct and widen Thompson Lane. The limits of construction are between NW Broad Street and Memorial Boulevard. On December 30, 2019, all Utilities received notification to proceed with the engineering necessary to prepare plans, a schedule of working days and cost estimates for the adjustment or relocation of our water, sewer, and repurified water mains that may be in conflict with the reconstruction.

As with all roadway improvement projects staff considers these projects as ideal opportunities for making improvements to the water, sewer and/or repurified water systems and to replace old cast iron, clay and concrete lines. The existing sewer mains are anywhere from 8” to 48” and the water main is 6” up to 20”.

Currently Wiser Company (Wiser) is the design engineer for the roadway. Typically, the Department would request the design engineer for the roadway project, give a proposal for the water, sewer and/or repurified water main improvements or relocations. In this situation however, Wiser has not provided the Department with a professional engineering staff member demonstrating acceptable experience in the area of utility design in conjunction with such a significant roadway reconstruction project. Therefore, the Department has requested and received WA#4 from ELI to design the above-mentioned improvements and/or relocations utilizing the City’s MSA unit prices. The staff at ELI are familiar with the project as well as our system. It is anticipated that this work would be included in TDOT’s project for bid and constructed through their contract. The anticipated bid date is June of 2022, however, this depends on funding and right of way acquisition.

**Water Resources Department**

300 NW Broad Street \* P.O. Box 1477 \* Murfreesboro, TN 37133-1477 \* Office: 615 890 0862 \* Fax: 615 896 4259  
TTY 615 848 3214 \* [www.murfreesborotn.gov](http://www.murfreesborotn.gov)

Attached is the WA from ELI for the initial design, as TDOT refers to it as an “A Date Package Submittal”, in an amount not to exceed \$175,000. Additional engineering passed this “A Date Package” will be brought back to the Board for approval. Once the construction scope is determined and a construction cost estimate prepared, the estimate will be brought back to the Board for information.

**Recommendation**

Staff would request the Water Resources Board recommend to Council approval of the WA with ELI in an amount not to exceed \$175,000.

**Fiscal Impact**

This project is not included in the Department’s Capital Improvement Plan (CIP). Based on the Board approved recommendations of the 2007 Financial Conditions Assessment prepared by SSR, all water and sewer improvements associated with new roadway or roadway improvements in the City would be funded from the Department’s working capital reserves account. It is therefore recommended that the design costs for this project come from working capital account. The future fiscal impact associated with the construction costs associated with utility improvements at this intersection will be brought back before the Board for approval.

**Attachments**

ELI Work Authorization #4  
GIS Exhibit



ENGINEERS • SURVEYORS • INFRASTRUCTURE • ENVIRONMENTAL

January 22, 2020

Valerie Smith, PE  
MWRD Assistant Director - Engineering  
220 NW Broad Street  
Murfreesboro TN, 37133

Re: Thompson Lane Utility Relocations

Dear Ms. Smith,

Energy Land & Infrastructure, LLC (ELI-LLC) is pleased to offer the following proposal for professional services as needed by the Murfreesboro Water Resources Department (MWRD) for the design of the utility relocations along Thompson Lane from Broad Street (US-41) to Memorial Blvd (US-231) in Murfreesboro, TN. ELI-LLC proposes to provide professional engineering services as outlined in the attached Standard Form of Agreement Between Owner and Engineer.

ELI-LLC proposed to conduct these professional services at an hourly rate not to exceed **\$175,000.00**.

We appreciate the opportunity to provide professional services to the Murfreesboro Water Resource Department for this project. If you agree to its terms, please sign and return a copy of the Agreement.

Warmest regards,

**ENERGY LAND & INFRASTRUCTURE, LLC**

A handwritten signature in black ink that reads 'Jay W. Bradley'.

Jay W. Bradley, PE

Attachments

**MURFREESBORO WATER RESOURCES DEPARTMENT**

**WORK AUTHORIZATION #4  
THOMPSON LANE UTILITY RELOCATIONS**

Under terms and conditions of the Master Services Agreement (Agreement) between ELI-LLC and City of Murfreesboro Water Resources Department (MWRD) (OWNER), executed on February 15, 2018.

ELI-LLC will provide the following services for the City of Murfreesboro Water Resources Department under this Work Authorization:

Design of water, sewer and repurified water relocations and improvements necessary to avoid conflicts with the proposed reconstruction and widening of Thompson Lane area between Broad Street (Hwy-41) and Memorial Blvd (US-231) in Murfreesboro, TN

State Project #           75078-2206-54  
Federal Project #        STP-M-268(4)  
PIN:                        115906.00  
County:                  Rutherford  
TDOT Description:       Widen SR-268 (Thompson lane) from 2 to 5 lanes including sidewalks and bike lanes. Interconnect traffic signals into existing fiber optic to provide for coordinated arterial signal system.

1. TDOT "A" Date Submittal - Preliminary Design Phase; Due 4/28/20
  - a. Five (5) half size, color-coded relocation plans
  - b. Completed TDOT Form 2013-16XLS
  - c. Signed Declaration of Scheduled Calendar Days and Chapter 86 Eligibility
  - d. Utility Declaration for Reimbursement
2. Utility coordination with utilities located within the project area for "A: Date submittal"

Services not included but may be preformed as Additional Services include:

1. Tree survey or landscape design
2. Traffic study
3. Flood study (FEMA)
4. Property appraisals or acquisition
5. Development of NEPA documentation
6. Local, State or Federal permitting
7. Right-of-way exhibits, description and/or property acquisition
8. Contract Bidding Assistance
9. Construction Administration
10. Construction Engineering and Inspection
11. Construction staking for contractor

Compensation:

For services delineated in the scope of this Work Authorization, ELI-LLC will be compensated on an hourly basis according to the attached Schedule of Services and Expenses and Contract Terms and Conditions,

not to exceed **\$175,000.00**.

Schedule

Upon authorization to proceed, ELI-LLC will perform the tasks delineated in the Scope of Services outlined above. Delivery schedule is as follows:

- TDOT "A" Date Submittal - Preliminary Design Phase; Due 4/28/20

ELI-LLC is pleased to present this Work Authorization for Execution by the City of Murfreesboro:

CLIENT EXECUTION

By: \_\_\_\_\_ Date: \_\_\_\_\_

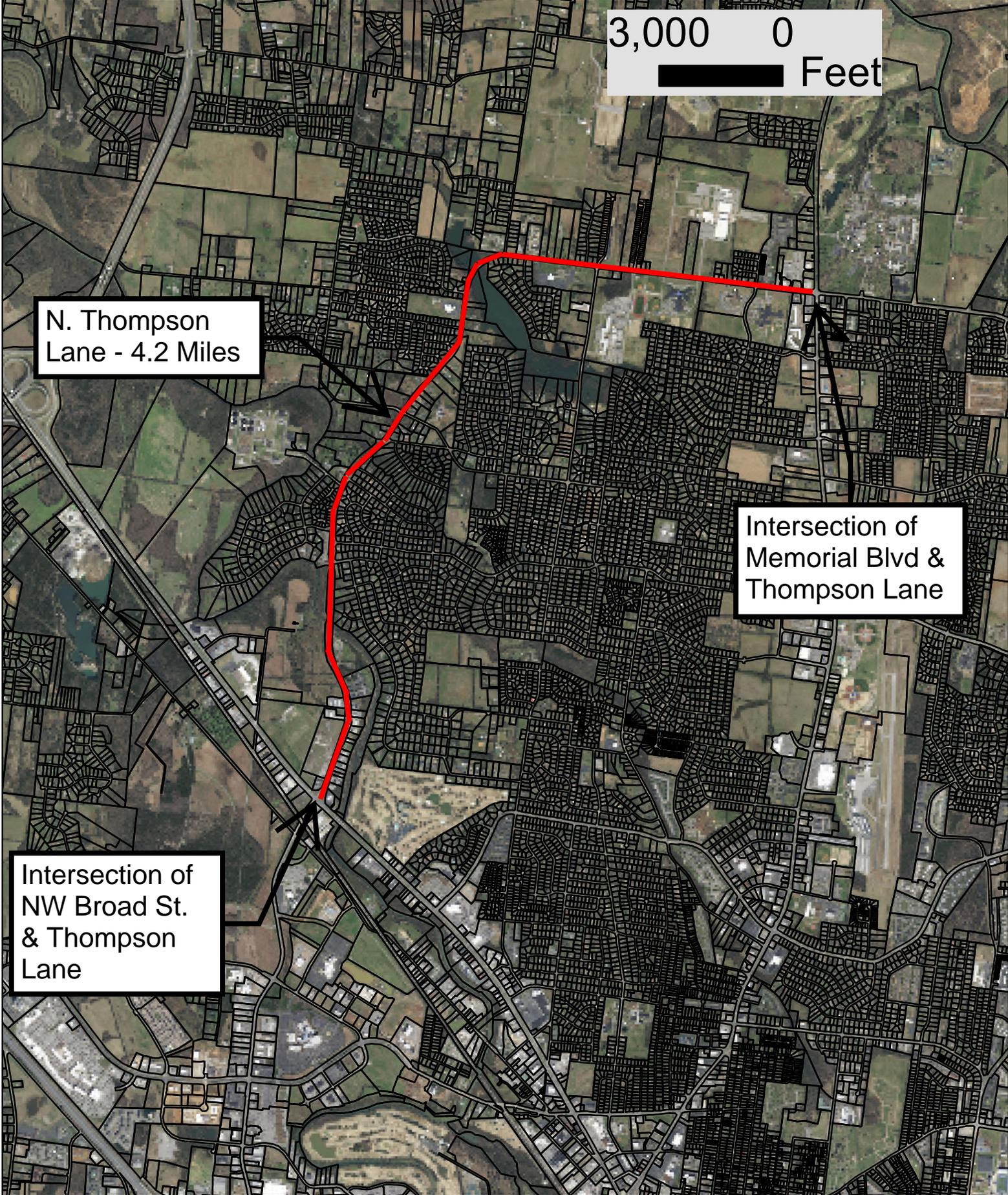
Printed/Typed Name: \_\_\_\_\_ Title \_\_\_\_\_

3,000 0  
Feet

N. Thompson Lane - 4.2 Miles

Intersection of Memorial Blvd & Thompson Lane

Intersection of NW Broad St. & Thompson Lane



1 Inch = 3000 Feet

Murfreesboro Water Resources Department

TDOT-Thompson Lane Widening





*... creating a better quality of life*

# MEMORANDUM

**DATE:** January 22, 2020  
**TO:** Water Resources Board  
**FROM:** John Strickland  
**SUBJECT:** John Bouchard & Sons Task Order 19-05  
Installation of Three Oxidation Ditch Aerators at Water Resource Recovery Facility

---

## **SUMMARY**

Recommend approval of Task Order 19-05 with John Bouchard & Sons (JB&S) through the Department's standing Water-Wastewater Mechanical-Electrical services contract for the installation and replacement of three pre-existing aerators in the oxidation ditches at the Water Resource Recovery Facility (WRRF).

## **STAFF RECOMMENDATION**

Recommend to City Council approving the installation of the WRRF's oxidation ditch aerators 1B, 1C, and 2B by John Bouchard & Sons Co. at a cost of \$70,047 (\$23,349 each).

## **BACKGROUND INFORMATION**

In April 2019, the Board approved purchase of three oxidation ditch aerators and associated parts in the amount of \$383,022. At that time, staff estimated that the installation of these aerators through the contract with JB&S to be \$72,000. These aerators have been delivered to the WRRF and are ready to be installed.

The pre-existing oxidation ditch aerators to be replaced were originally installed at the Water Resource Recovery Facility in 2000 and are at the end of their useful life. They are key units of the water treatment process. The system relies on a total of nine 200 HP Aerators mechanically introducing oxygen into the biological mixed liquid.

## **FISCAL IMPACT**

The Installation of the WRRF's Oxidation Ditch Aerators are requested to be funded from the Department's working capital reserves in the amount of \$70,047.

## **ATTACHMENTS**

Task Order 19-05



...

**TASK ORDER NO. 19-05**

**January 10, 2020**

**BETWEEN**

**JOHN BOUCHARD & SONS COMPANY AND CITY OF MURFREESBORO  
acting by and through the Murfreesboro Water and Sewer Department**

**UNDER**

**Water/Wastewater System Mechanical/Electrical Services Contract**

**DATED**

**June 6, 2019 thru June 6, 2020**

**FOR**

**Aerator Gearbox Installation at Sinking Creek WWTP**

**Aerators 1B, 1C, and 2B**

***Task Order No. 19-05***

***Aerator Gearbox Replacement 1B, 1C, and 2B  
Murfreesboro Sinking Creek Waste Water Treatment Plant***

**BACKGROUND**

JBS has been asked to remove and replace three (3) aerator gearboxes 1B, 1C, and 2B and upper columns at the Sinking Creek WWTP. JBS has confirmed with Ovivo that the aerator gearboxes will come with mounting plates and adapter shaft, along with the motors including aegis rings. Budget pricing includes crane, equipment rental, and labor.

Note that included budget estimate is for one (1) aerator, as requested by MWRD.

**SCOPE OF WORK**

Labor and materials by JBS to replace the aerator gearboxes as described above.

**FISCAL IMPACT**

|                                                                                  |
|----------------------------------------------------------------------------------|
| <b>Murfreesboro Service Contract Rate Sheet - 2019</b>                           |
| <b>Task Order 19-05: Aerator Gearbox Remove &amp; Reinstall (Priced as Each)</b> |

| Description                  | Qty (hrs) | Rate     | Extended   |
|------------------------------|-----------|----------|------------|
| Project Mgr (RT)             |           | \$75.00  | \$0.00     |
| Project Mgr (OT)             |           | \$110.00 | \$0.00     |
| Superintendent (RT)          |           | \$67.00  | \$0.00     |
| Superintendent (OT)          |           | \$100.50 | \$0.00     |
| Apprentice/Helper (RT)       |           | \$37.00  | \$0.00     |
| Apprentice/Helper (OT)       |           | \$55.50  | \$0.00     |
| Expediter/Delivery (RT)      |           | \$29.00  | \$0.00     |
| Expediter/Delivery (OT)      |           | \$43.50  | \$0.00     |
| Machine Shop Millwright (RT) | 80        | \$60.00  | \$4,800.00 |
| Machine Shop Millwright (OT) | 30        | \$90.00  | \$2,700.00 |
| HVAC/Plb Service Tech (RT)   |           | \$66.00  | \$0.00     |
| HVAC/Plb Service Tech (OT)   |           | \$99.00  | \$0.00     |

| Equipment               | Qty (hrs) | Rate/Hr | Extended |
|-------------------------|-----------|---------|----------|
| Welder                  |           | \$15.00 | \$0.00   |
| Power Threader          |           | \$10.00 | \$0.00   |
| Mini/Midi Hammer        |           | \$10.00 | \$0.00   |
| Variable Reach Forklift |           | \$27.00 | \$0.00   |
| Pickup Truck            | 60        | \$15.00 | \$900.00 |
| Scissor Lift            |           | \$19.00 | \$0.00   |
| Skid Steer              |           | \$25.00 | \$0.00   |
| Boom Man Lift           |           | \$29.00 | \$0.00   |

| Materials & Subcontractors                  |             |            |
|---------------------------------------------|-------------|------------|
| Crane - Counterweights In/Out for Removal   | Clark Crane | \$1,600.00 |
| Crane - 8 hrs @ \$540/hr for Removal        | Clark Crane | \$4,320.00 |
| Crane - Counterweights In/Out for Reinstall | Clark Crane | \$1,600.00 |
| Crane - 8 hrs @ \$540/hr for Reinstall      | Clark Crane | \$4,320.00 |
| Hydraulic Wrench Rental                     |             | \$1,250.00 |
| Misc                                        |             | \$500.00   |
| Markup on Material & Subcontractors         | 10.00%      | \$1,359.00 |

|                                   |                    |
|-----------------------------------|--------------------|
| <b>TOTAL ESTIMATE PER AERATOR</b> | <b>\$23,349.00</b> |
|-----------------------------------|--------------------|

Contractor:

John Bouchard and Sons Company

By: David Proctor IV

Name: David Proctor

Title: Project Manager

Date: 1/10/20

City:

City of Murfreesboro

By: \_\_\_\_\_

Name: Shane McFarland

Title: Mayor

Date: \_\_\_\_\_

Approved as to Form: \_\_\_\_\_  
Adam F. Tucker, City Attorney

**CONTRACTOR NOTICE CONTACT INFORMATION**

**CITY NOTICE CONTACT INFORMATION**

John Bouchard and Sons Company

Mailing address 1024 Harrison St.  
Nashville, TN 37203

Phone number 615-256-0112

Fax number 615-256-2427

Company Contact David Proctor

E-mail David.Proctor@jbouchard.com

Murfreesboro Water and Sewer Dept.

Mailing address 300 NW Broad St.  
Murfreesboro, TN 37130

Phone number 615-890-0862

Fax number 615-896-4259

Company Contact Darren Gore

E-mail dgore@murfreesborotn.gov



*... creating a better quality of life*

# MEMORANDUM

DATE: January 22, 2020  
TO: Water Resources Board  
FROM: Darren Gore  
SUBJECT: Review Special Sanitary Sewer Assessment Districts (SSSAD) Recoupment as of CY19

---

## Background

Starting in 1994, MWRD established certain areas that the Department “front end” funded with cash reserves to facilitate growth by installing adequate sanitary sewer infrastructure. That forward-thinking, proactive planning has continued throughout the past twenty (20) years. Setting the proper utility foundation has been a viable model to trigger and support structured growth in “green field” areas within and around the City of Murfreesboro.

In addition, the Department’s initial tenets were as follows:

- 1) The special sanitary sewer assessment districts were established so that the ratepayer would not bear the financial burden of fostering new development.
- 2) The intent of establishing special sanitary sewer assessment districts was to recoup the Department’s investment; not to make a profit.
- 3) The initial sewer assessment districts term limits were based on a trajectory or trend of development that the City was experiencing in the late 1990’s and early 2000’s. The recession that occurred in the latter 2000’s was not accounted for in the timeline anticipated to fully recoup the Department’s investment.

As a result of some of the skewed recoupment periods and that some of the SSSAD’s had been fully recouped, the Board recommended in December 2014 and the Council approved in February 2015; 1) Modifying assessment district ordinances that had a specific time limit (e.g. 15 or 25 years) to an indefinite limit based on complete repayment of MWRD’s expenses and 2) Modifying assessment district ordinances that the special assessment cease when all of the district’s construction expenses have been recouped.

In September of 2018 the Board asked staff to look at the earnings foregone by making the cash outlay for the sewer improvements associated with the special sanitary sewer assessment districts. As of December 2019, there has been approximately \$5.0M in foregone interest earned (assuming 1% annually) in the twenty years since the inception of the Overall Creek SSSAD established in 1999 and the last assessment district established in 2016 on South Church St.

MWRD has invested \$35.8M in SSSAD’s since 1999 and have recouped \$25.1M (70.1% of total). When accounting for the interest earnings foregone the recoupment drops to 61.5%. Attached is a more comprehensive summary of the special sanitary sewer assessments as of December 2019.

[Water Resources Department](#)

[300 NW Broad Street \\* P.O. Box 1477 \\* Murfreesboro, TN 37133-1477 \\* Office: 615 890 0862 \\* Fax: 615 896 4259](#)  
[TTY 615 848 3214 \\* \[www.murfreesborotn.gov\]\(http://www.murfreesborotn.gov\)](#)

**Recommendation**

This memo is provided to the Board as an update to the Department's SSSAD's recoupment as of December 2019.

**Fiscal Impact**

N/A

**Exhibits**

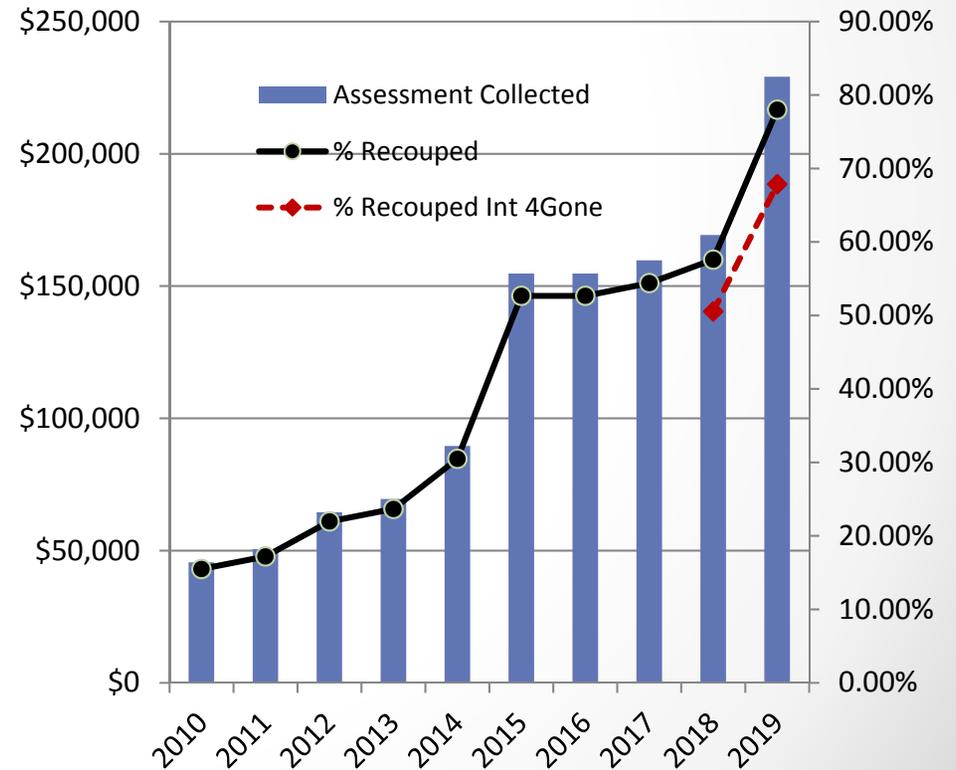
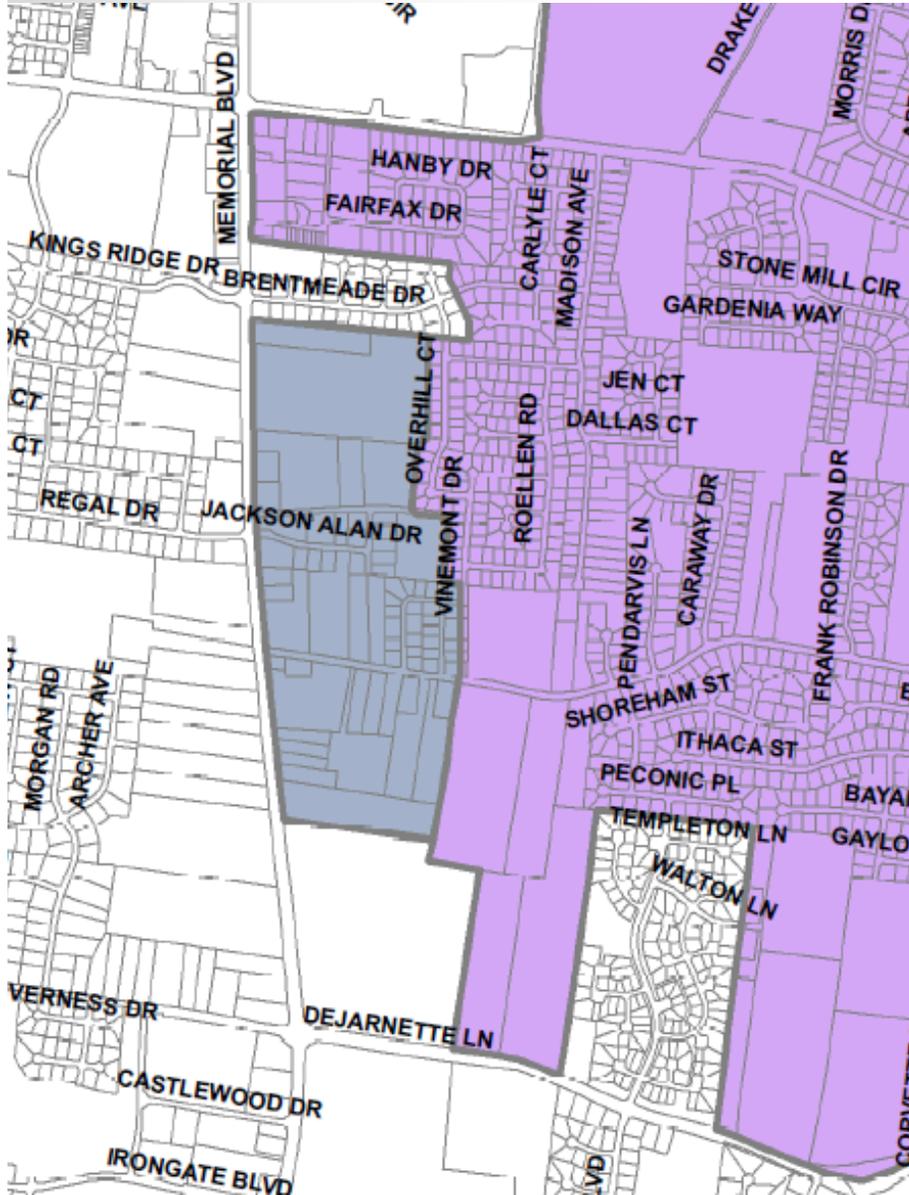
MWRD Sanitary Sewer Assessment District Update Slides

# NORTHEAST SANITARY SEWER DISTRICTS

MURFREESBORO WATER RESOURCES

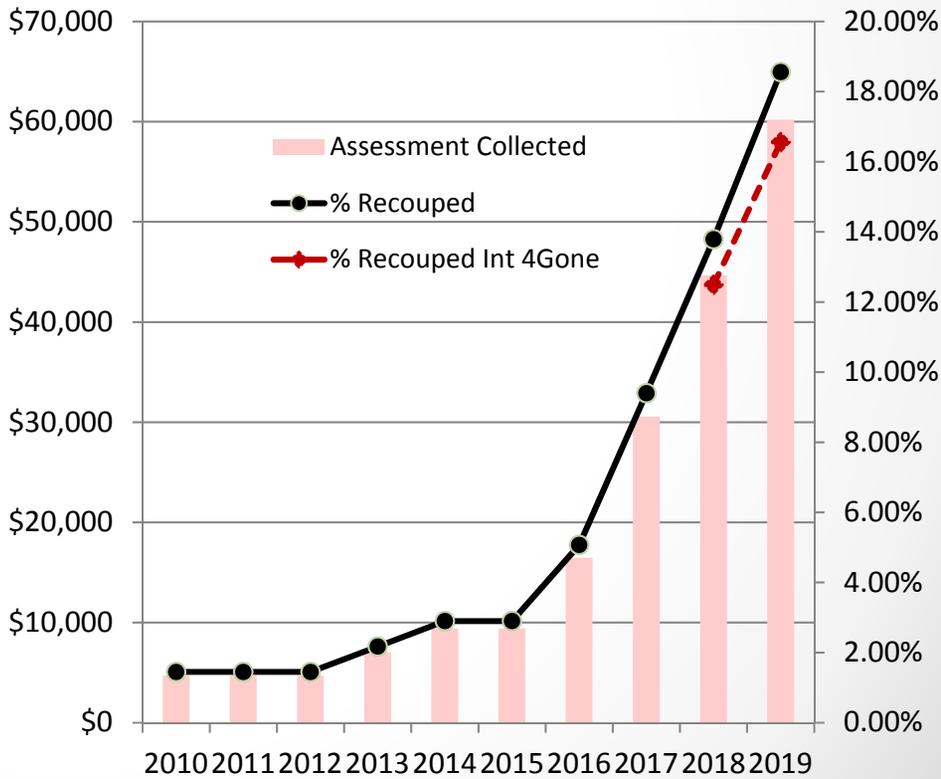
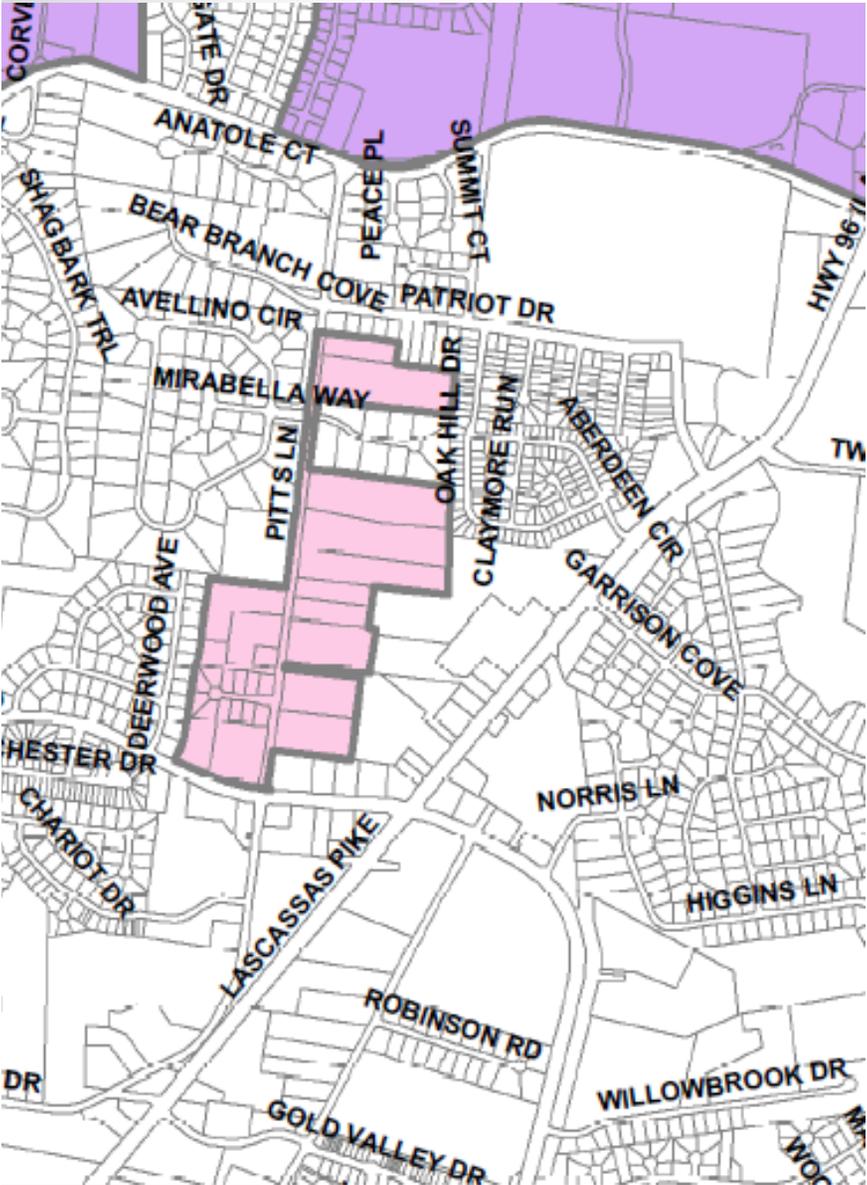
# OSBORNE LANE SSSAD

Total Construction  
Costs 2001 = \$293,665



# PITTS LANE SSAD

Total Construction  
Costs 2008 = \$324,400

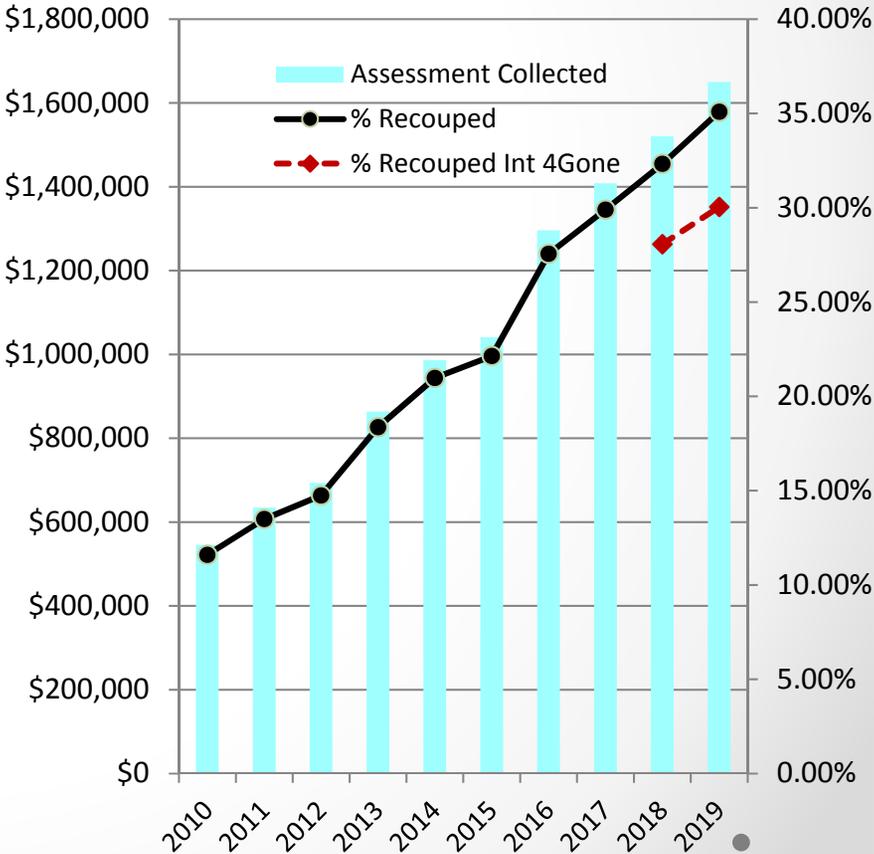
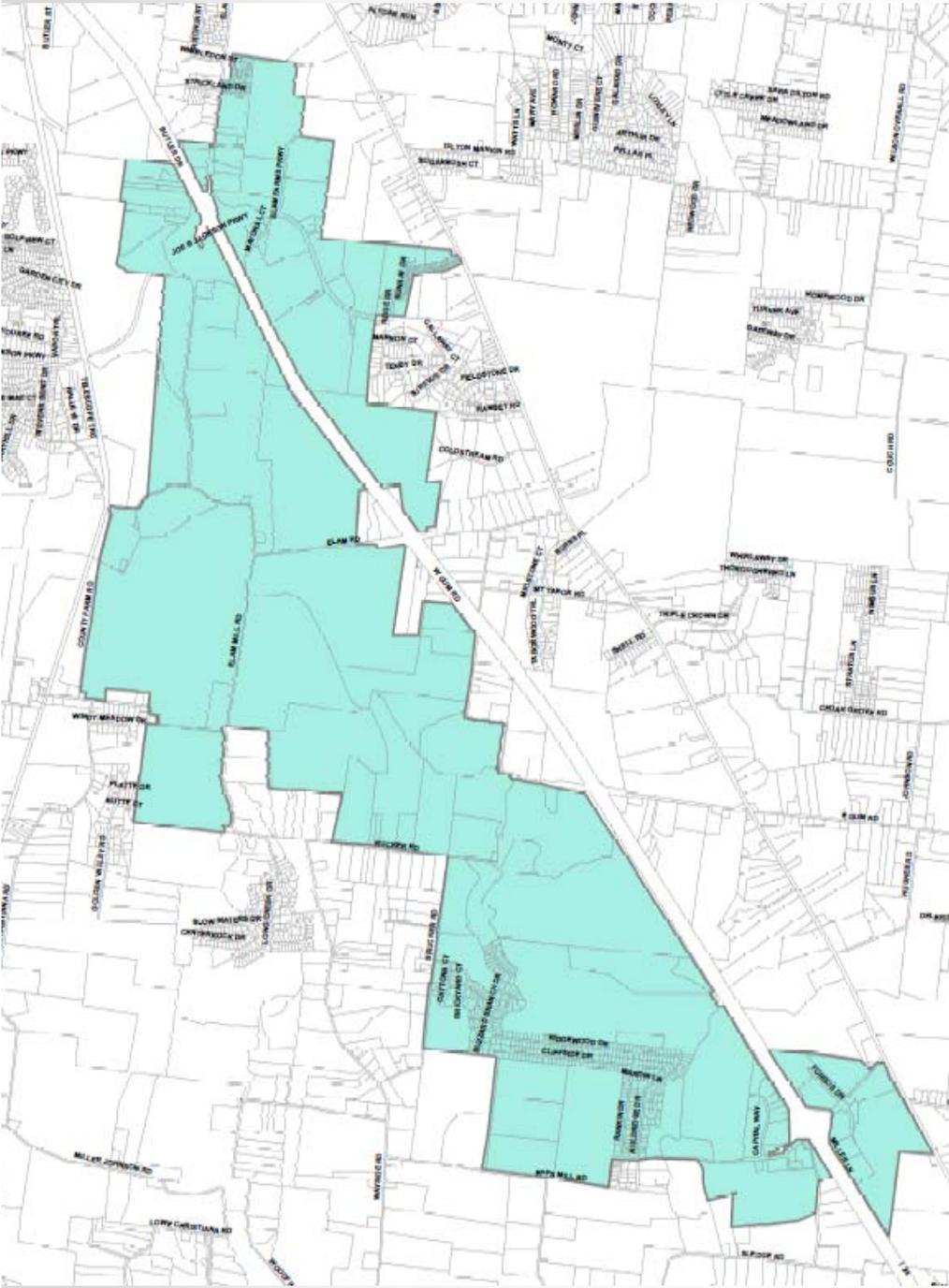


# SOUTHEAST SANITARY SEWER DISTRICTS

MURFREESBORO WATER RESOURCES

# BUCHANAN ELAM RD SSAD

Total Construction  
Costs 2001 = \$4,701,959

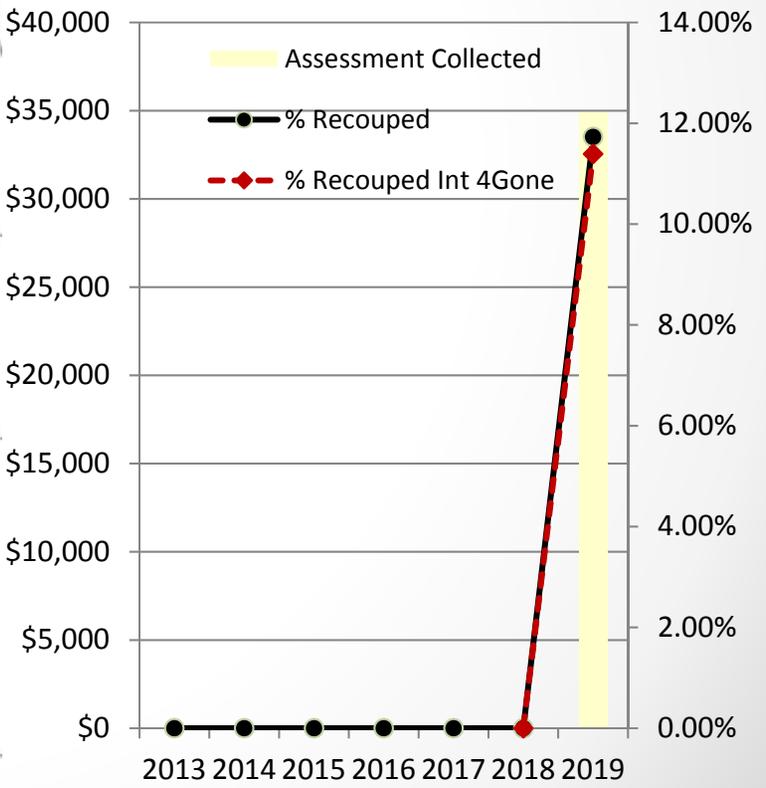
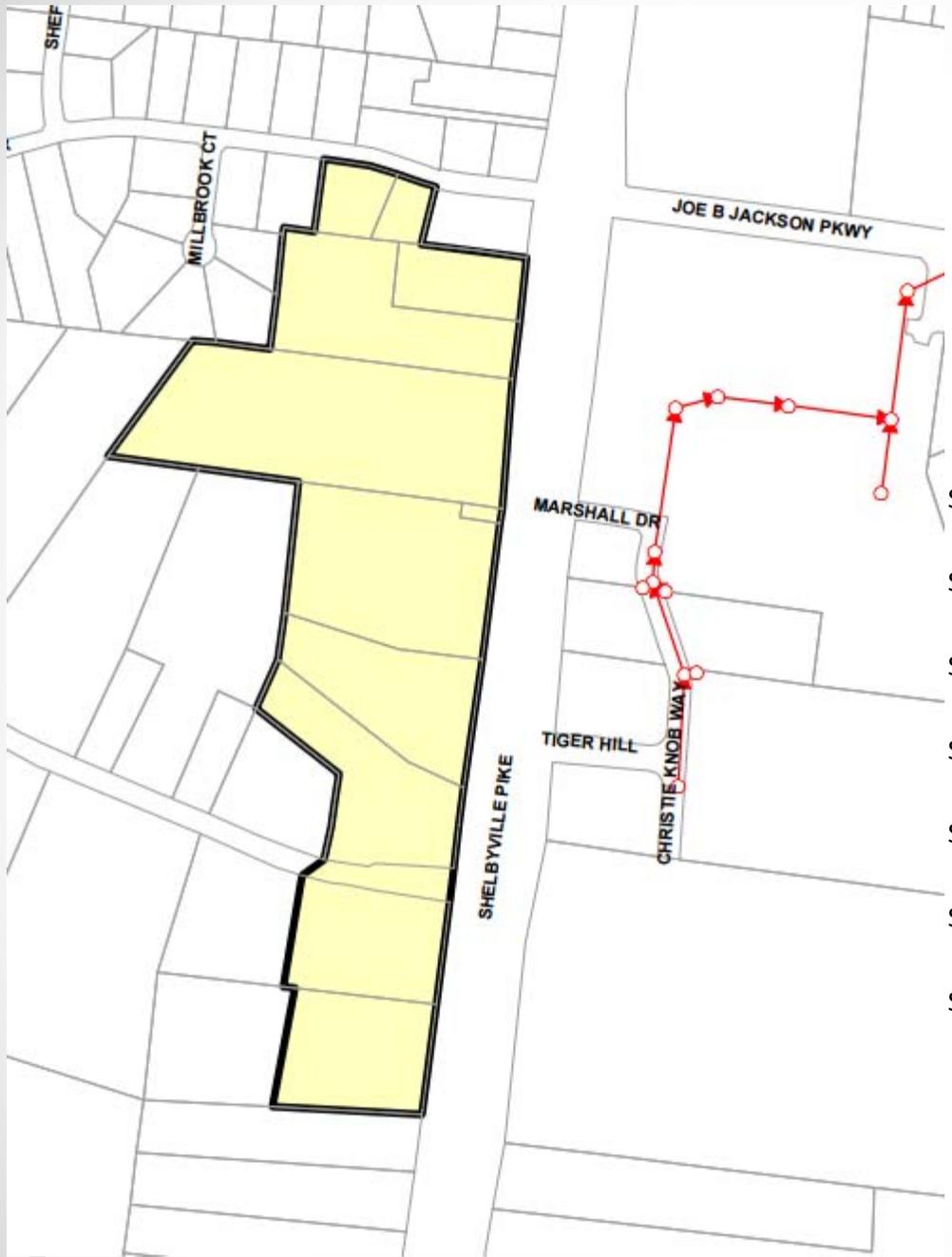


# SOUTH SANITARY SEWER DISTRICTS

MURFREESBORO WATER RESOURCES

# SOUTH CHURCH ST SSAD

Total Construction Costs 2016 = \$297,274

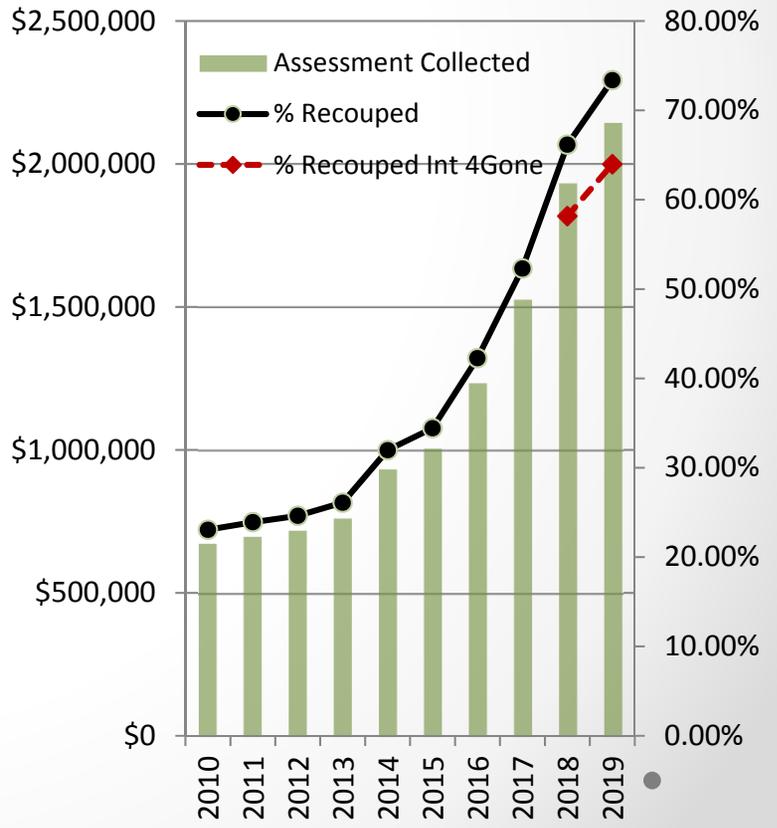
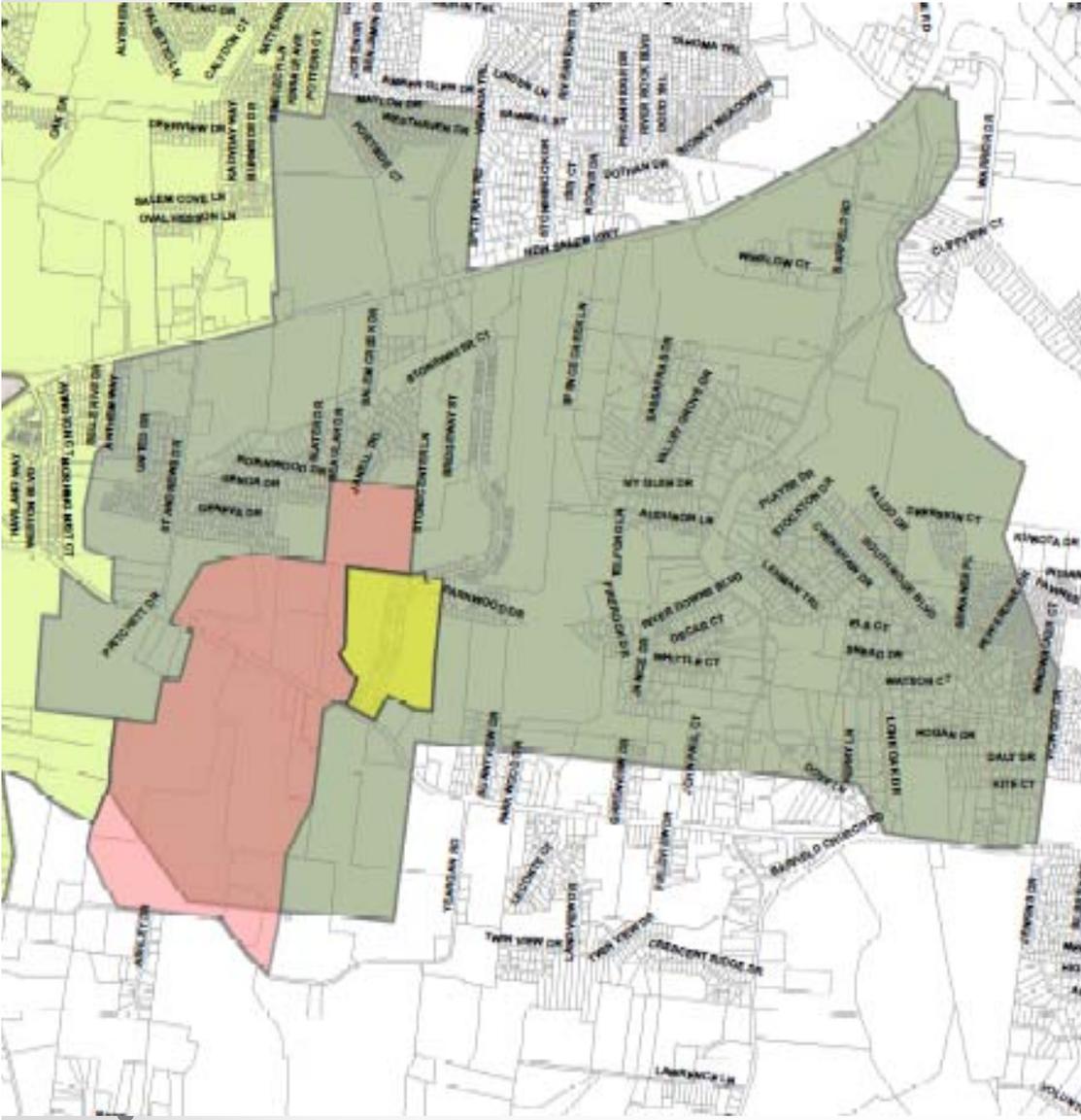


# SOUTHWEST SANITARY SEWER DISTRICTS

MURFREESBORO WATER RESOURCES

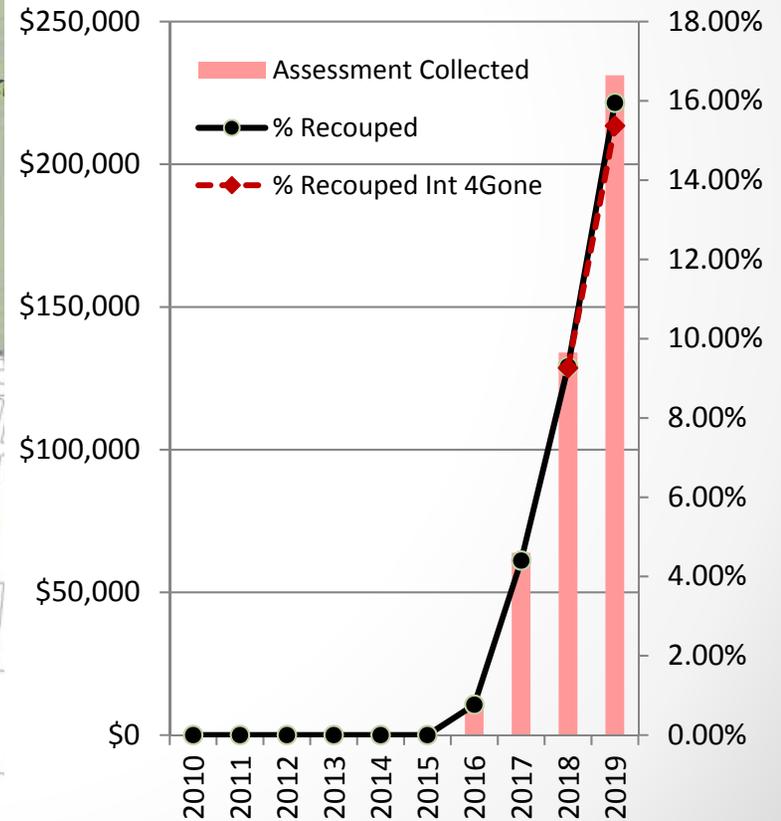
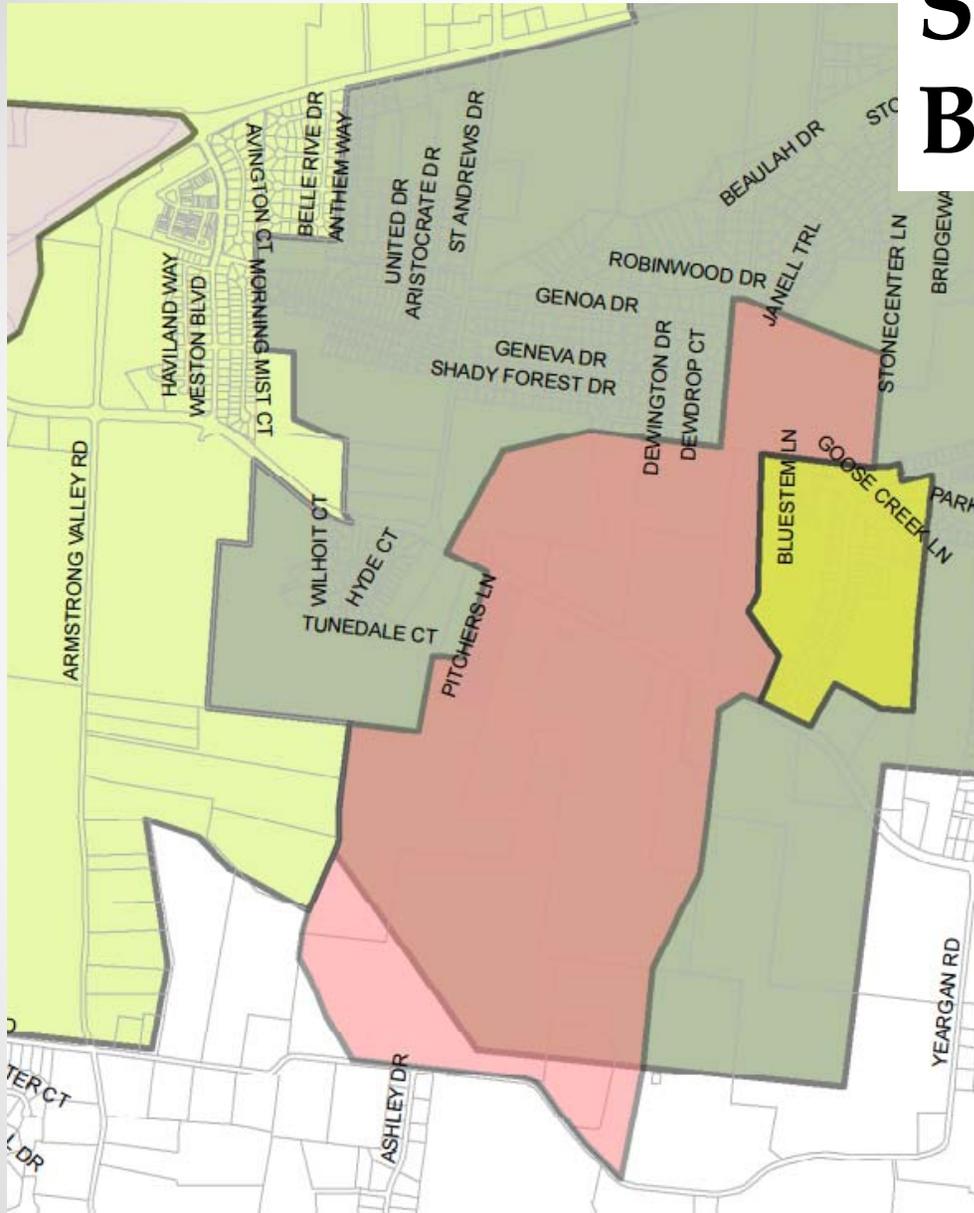
# SALEM BARFIELD SSSAD

Total Construction  
Costs 2001 = \$2,920,664

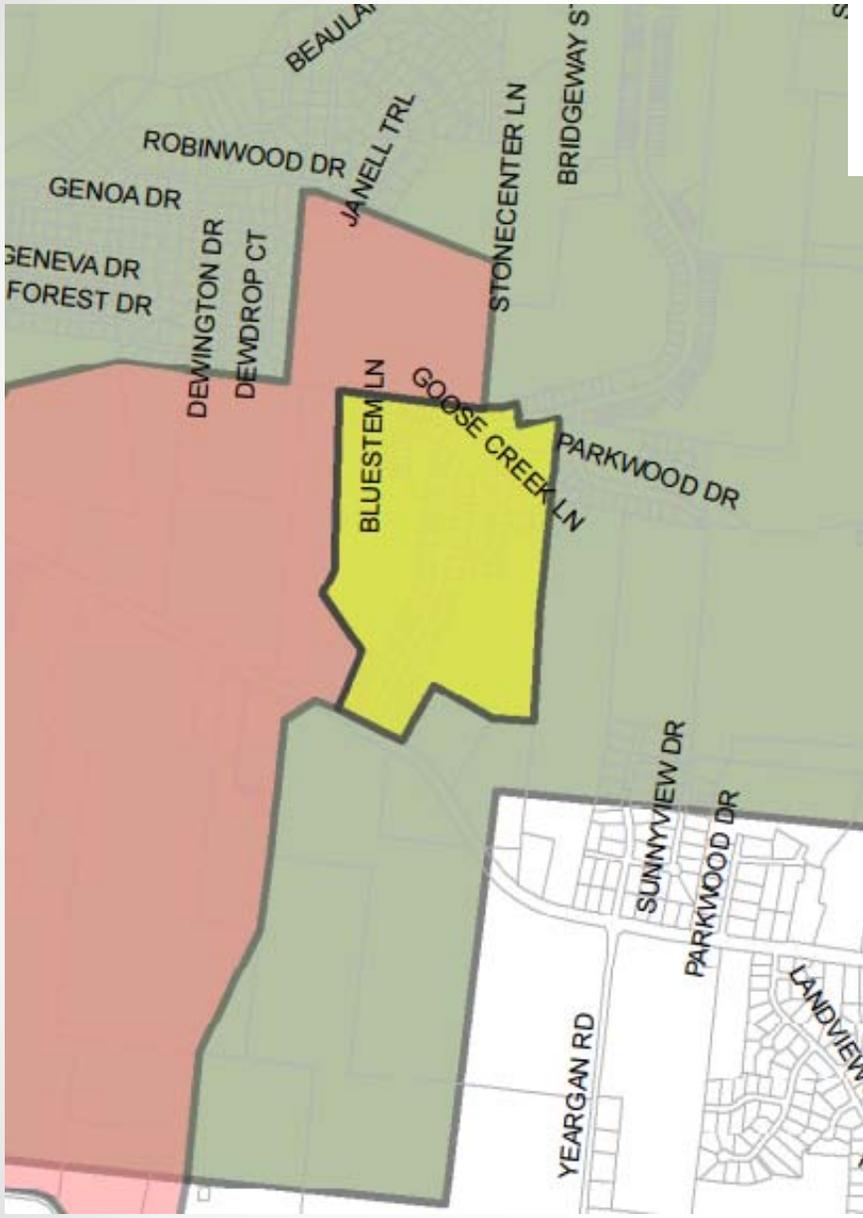


# SALEM BARFIELD BASIN D SSSAD

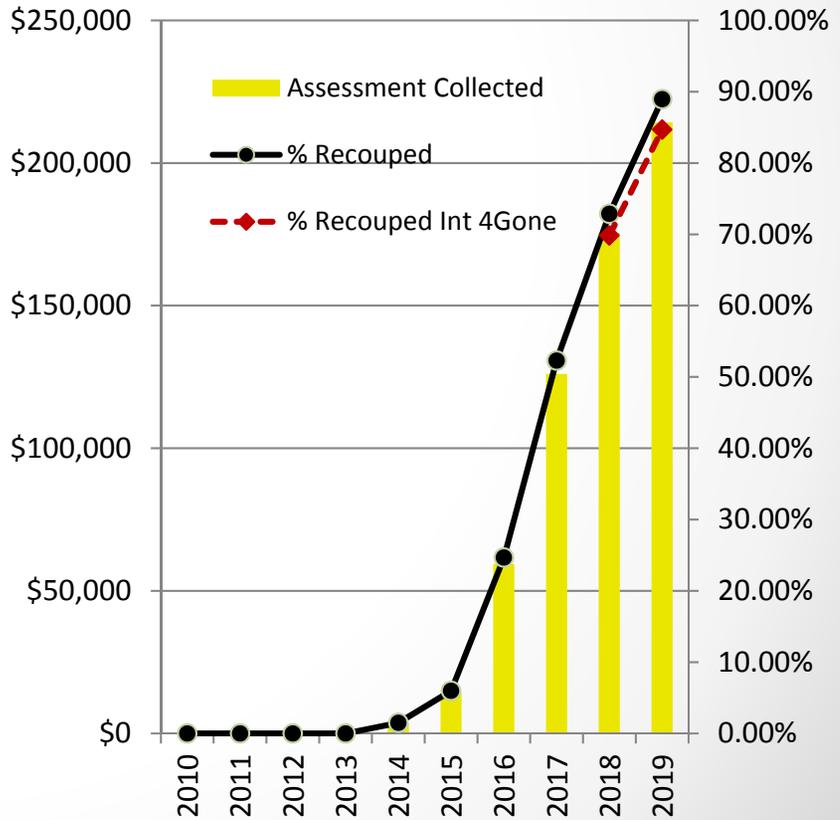
Total Construction  
Costs 2007 = \$1,448,846

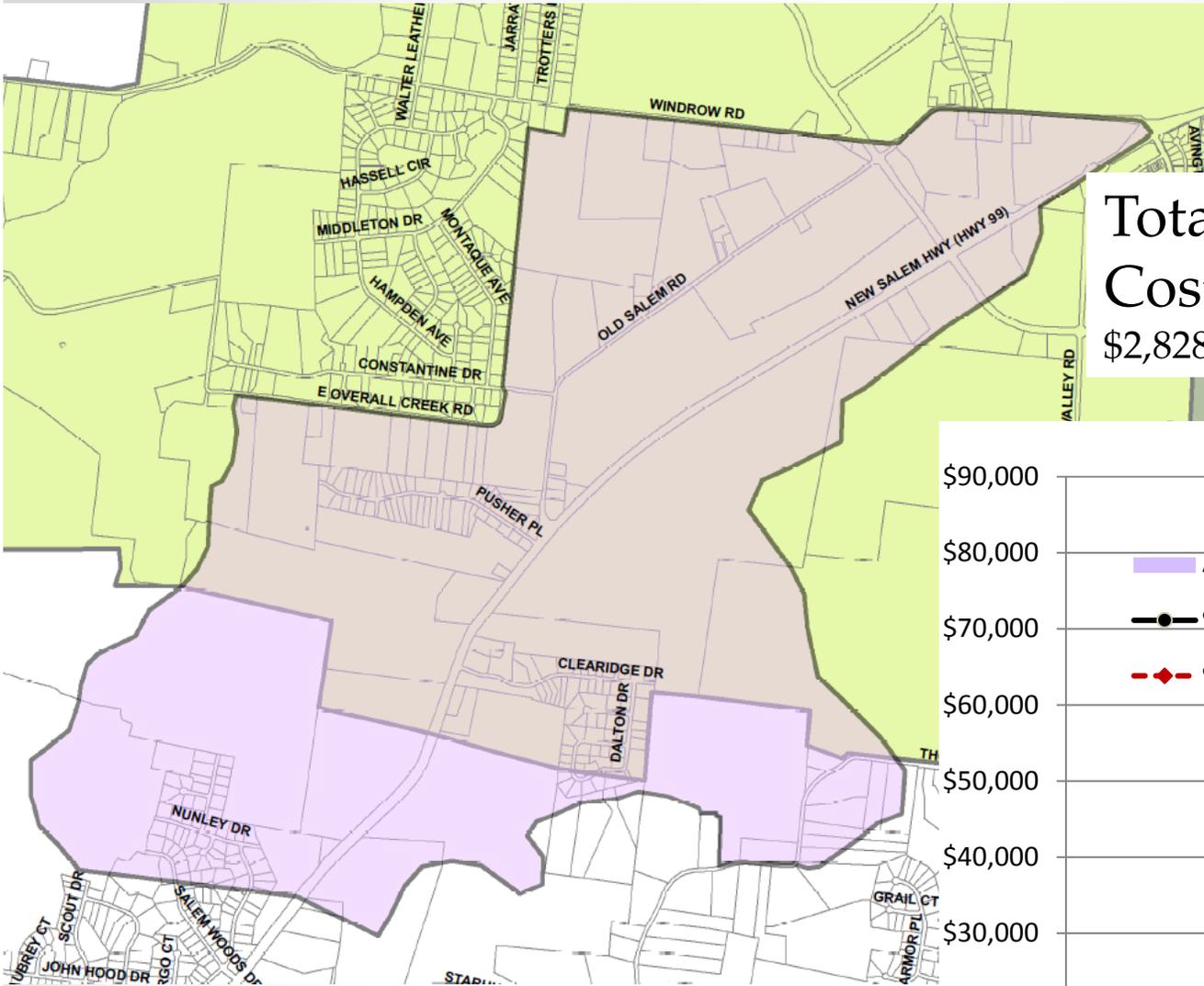


# THREE RIVERS SECTION 3 SSSAD

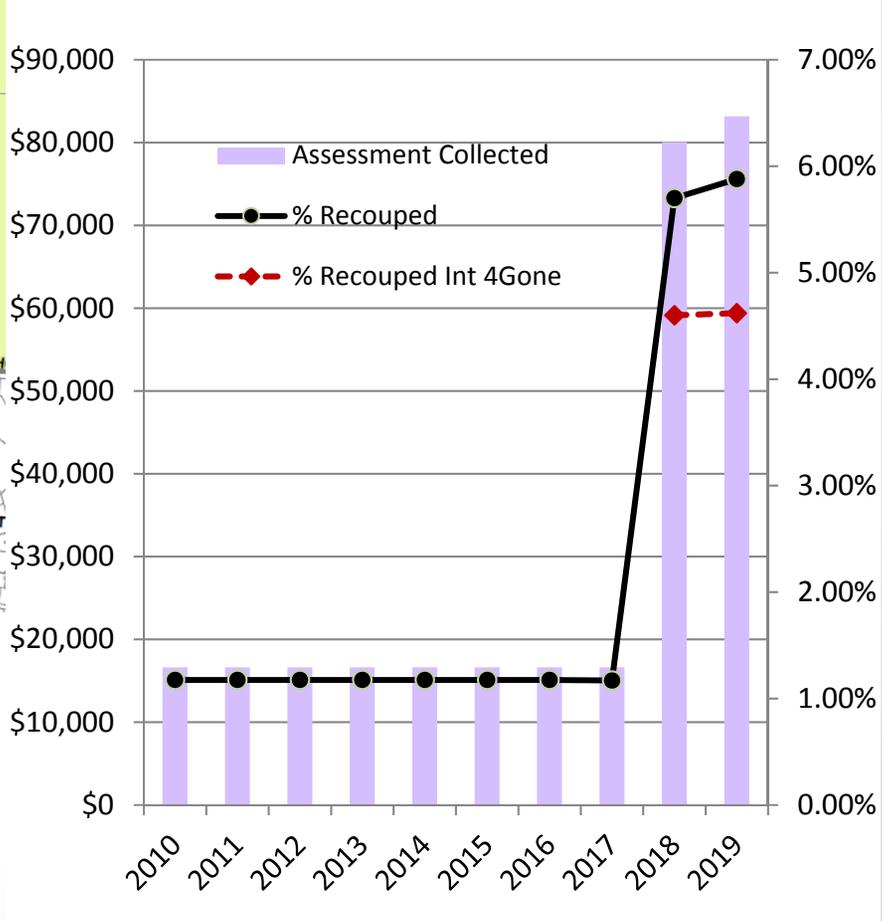


Total Construction  
Costs 2014 = \$240,807





**Total Construction Costs 2006 = \$1,414,290**  
 \$2,828,580 Total (50% by County)



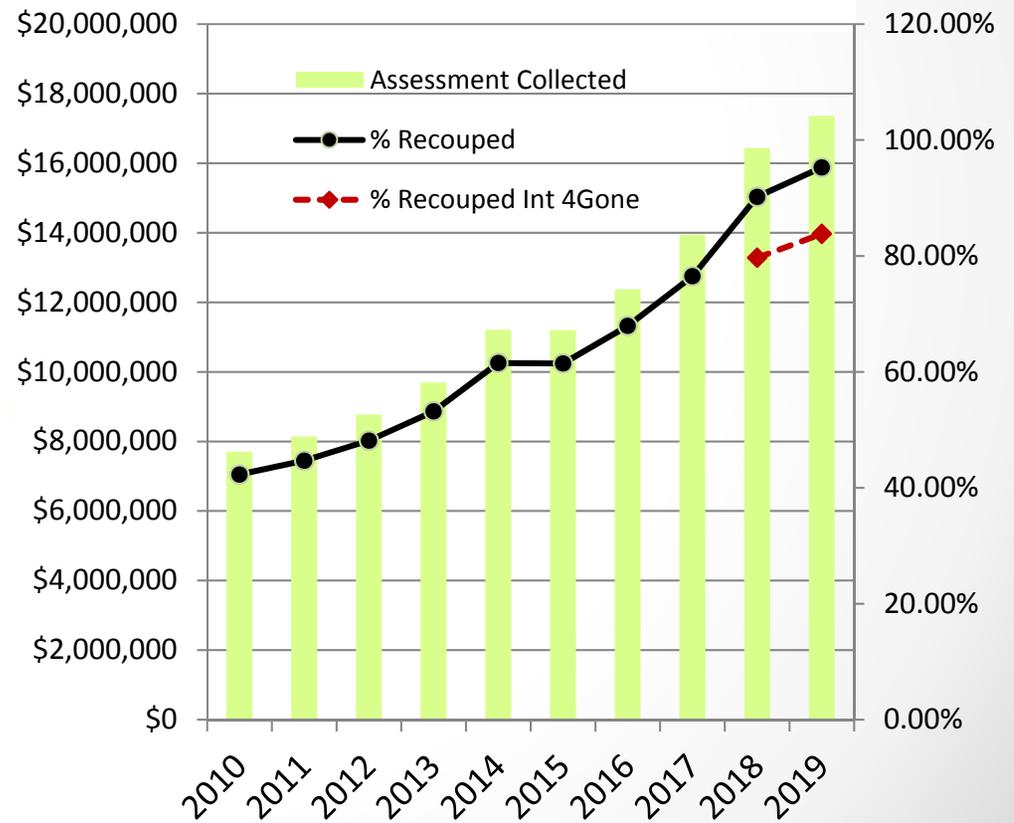
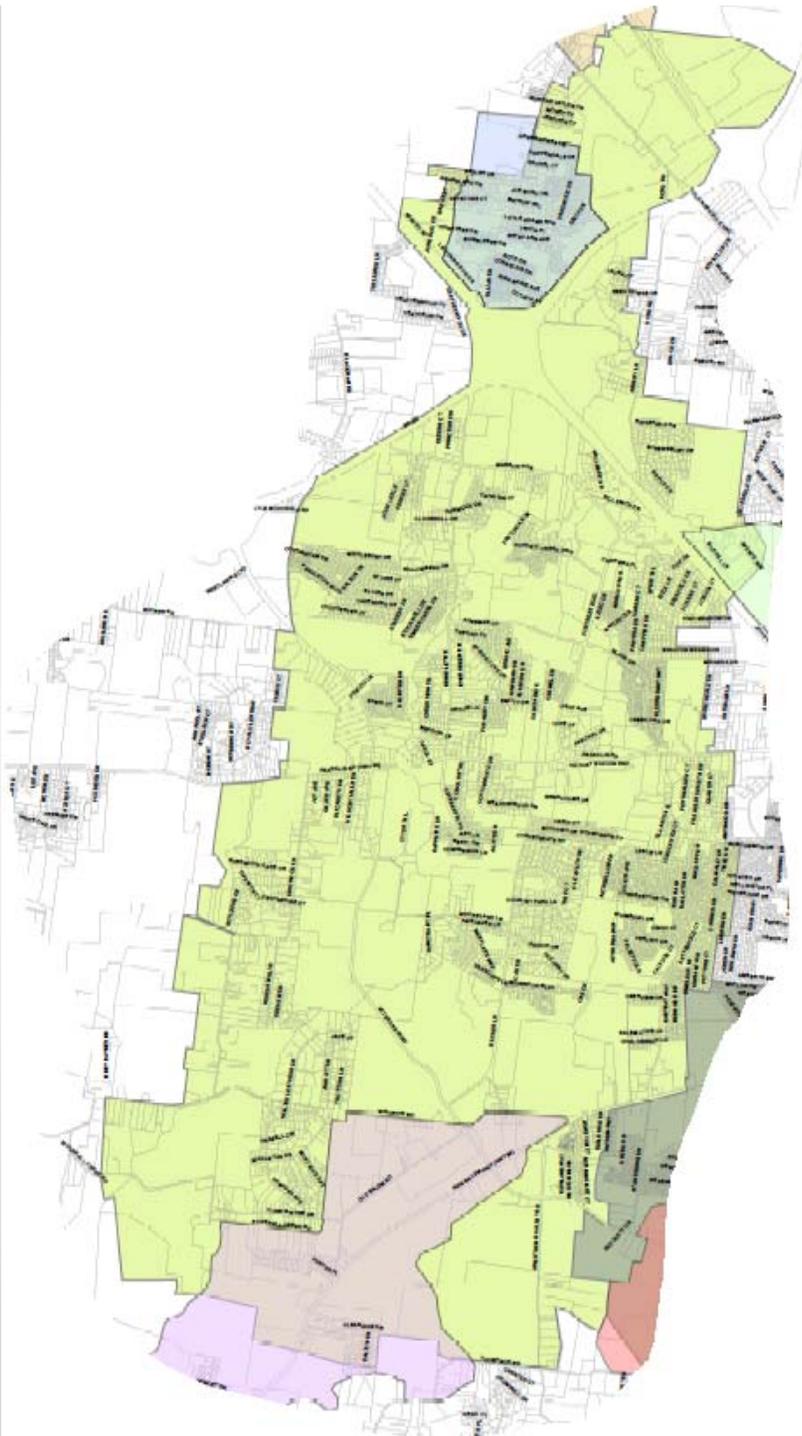
# ROCKVALE SSSAD

# WEST SANITARY SEWER DISTRICTS

MURFREESBORO WATER RESOURCES

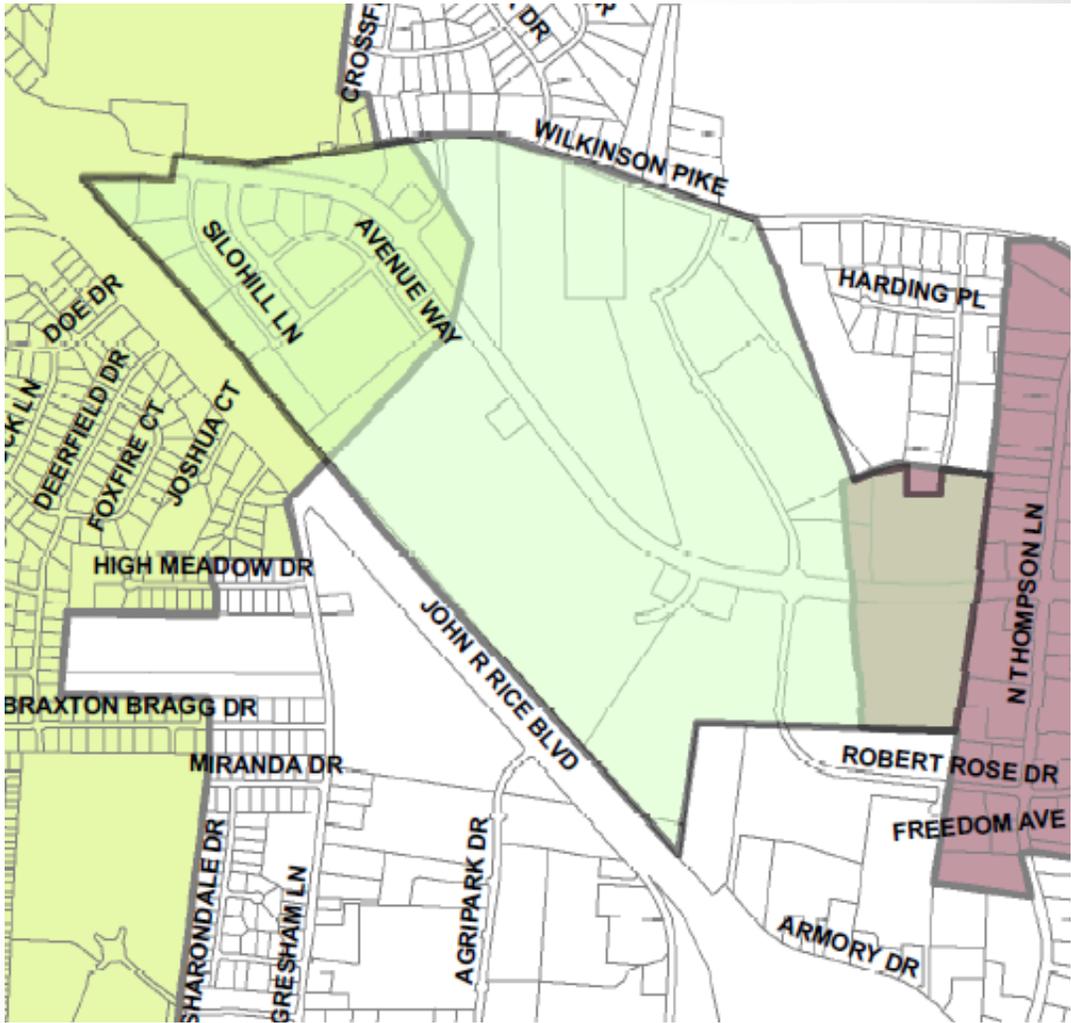
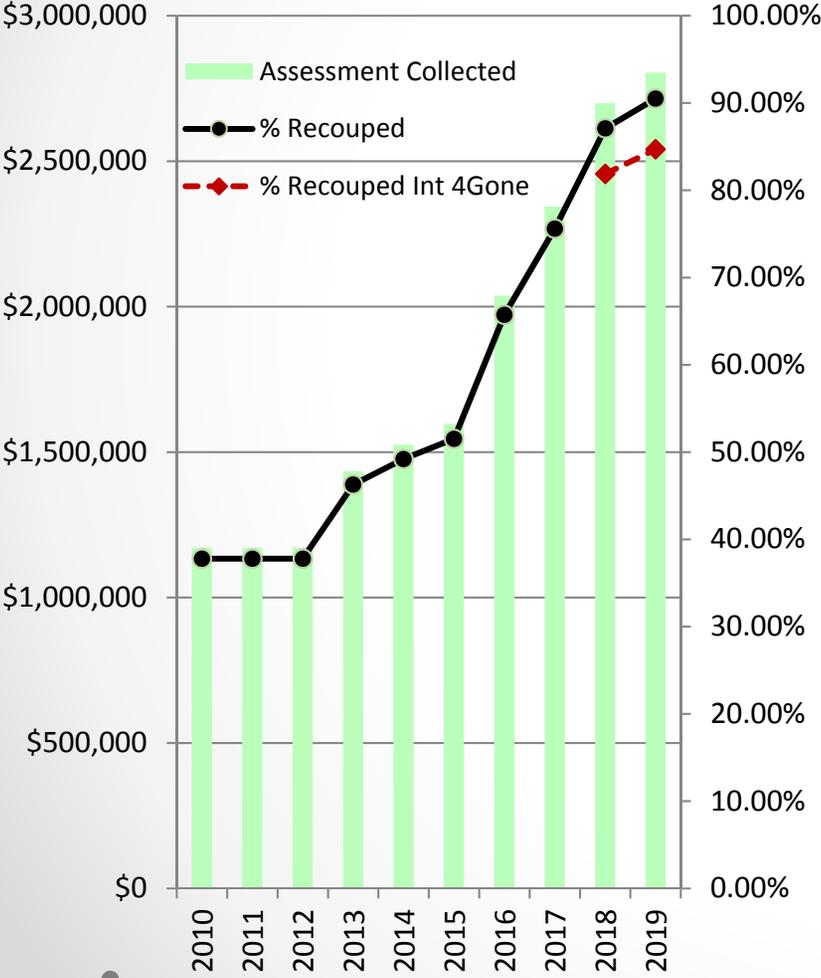
# OVERALL CREEK SSSAD

Total Construction  
Costs 1999 = 18,218,700



# MED CENTER PKWY SSSAD

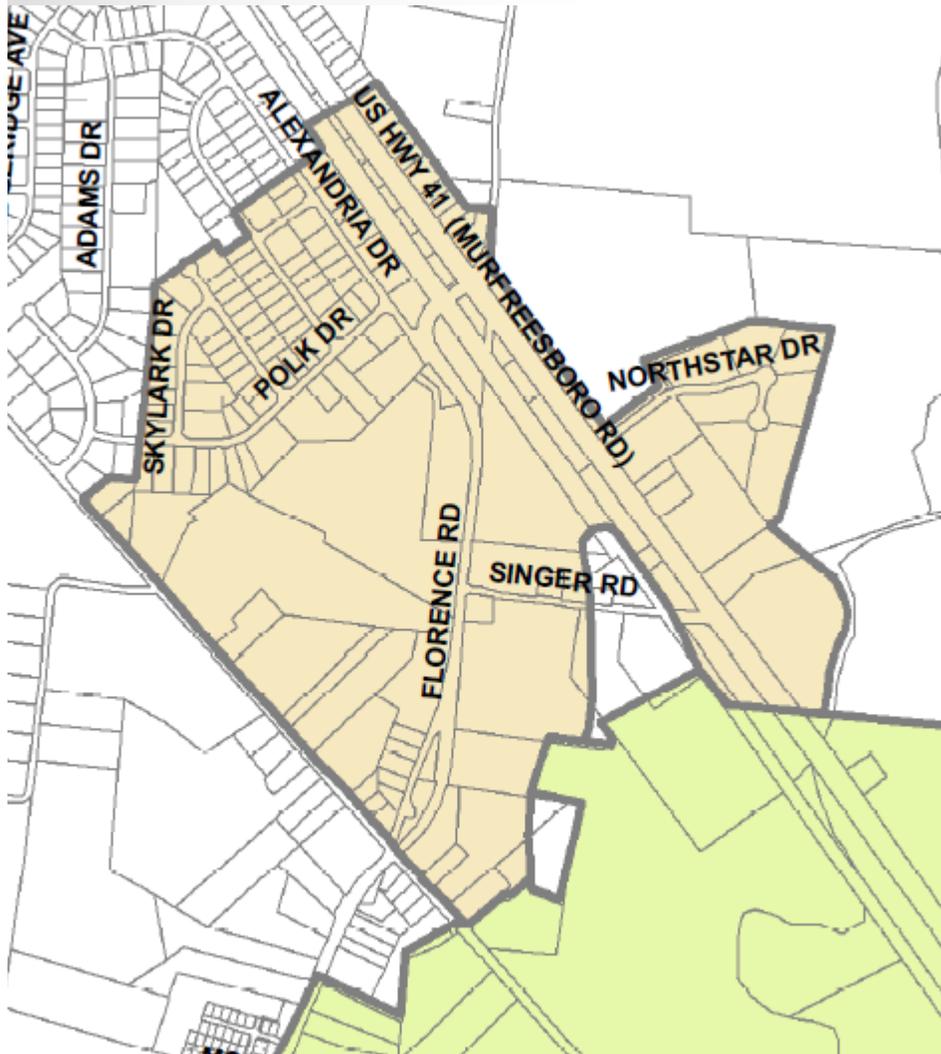
Total Construction  
Costs 2006 = \$3,099,400



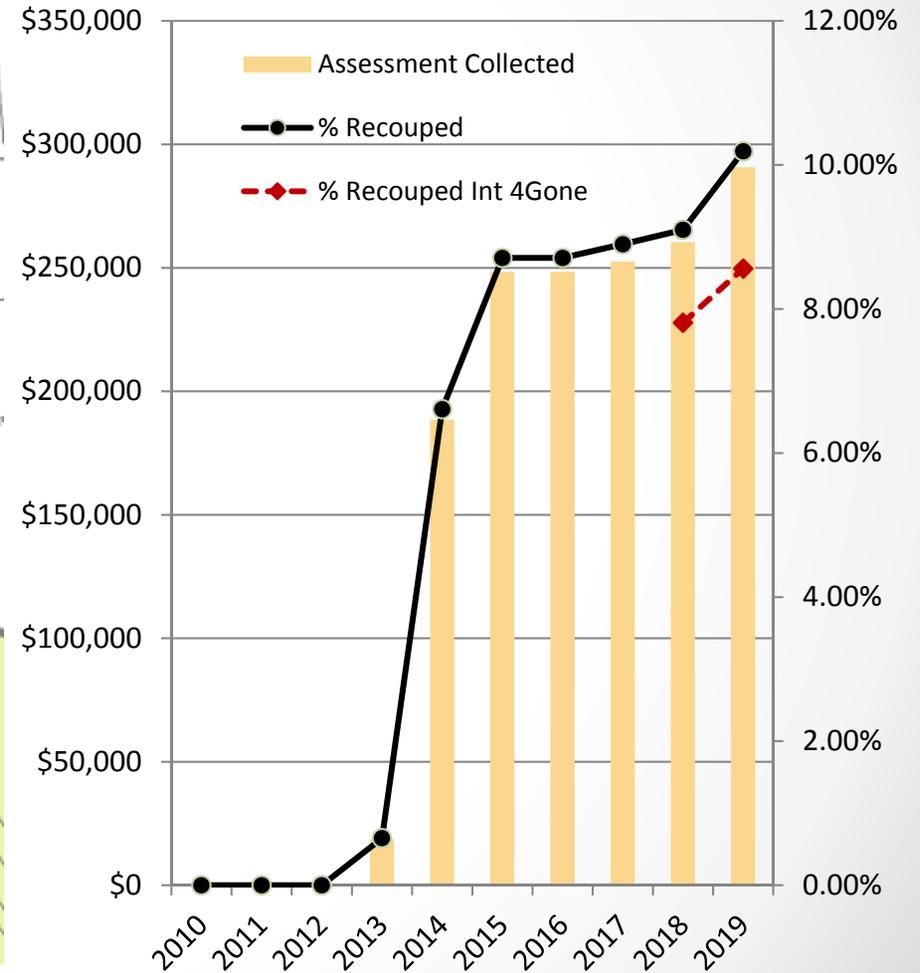
# NORTHWEST SANITARY SEWER DISTRICTS

MURFREESBORO WATER RESOURCES

# US41/FLORENCE SSSAD



Total Construction  
Costs 2001 = \$2,851,514



# Overall Recoupment as of December 2019

| Assessment Districts   | Inception Date | Actual Construction Costs | Assessment As of December 2019 | Revenue as % of Construction | Interest (Earnings Foregone @ 1%) | Revenue as % of Construction + Earnings Foregone | Difference in % |
|------------------------|----------------|---------------------------|--------------------------------|------------------------------|-----------------------------------|--------------------------------------------------|-----------------|
| Overall Creek          | 1999           | \$18,218,700              | \$17,358,843                   | 95.3%                        | \$2,493,798                       | 83.8%                                            | 11.5%           |
| Salem Barfield         | 2001           | \$2,920,664               | \$2,143,096                    | 73.4%                        | \$429,168                         | 64.0%                                            | 9.4%            |
| US 41 Florence         | 2001           | \$2,851,514               | \$290,638                      | 10.2%                        | \$543,883                         | 8.6%                                             | 1.6%            |
| Buchanan Elam          | 2001           | \$4,701,959               | \$1,650,097                    | 35.1%                        | \$791,593                         | 30.0%                                            | 5.1%            |
| Osborne Lane           | 2001           | \$293,665                 | \$229,077                      | 78.0%                        | \$43,915                          | 67.9%                                            | 10.1%           |
| Medical Center Parkway | 2006           | \$3,099,400               | \$2,804,899                    | 90.5%                        | \$212,318                         | 84.7%                                            | 5.8%            |
| Rockvale Sewer         | 2006           | \$1,414,290               | \$83,158                       | 5.9%                         | \$387,411                         | 4.6%                                             | 1.3%            |
| Pitts Lane             | 2008           | \$324,400                 | \$60,200                       | 18.6%                        | \$39,221                          | 16.6%                                            | 2.0%            |
| Three Rivers Phase 3   | 2014           | \$240,807                 | \$214,200                      | 89.0%                        | \$12,100                          | 84.7%                                            | 4.3%            |
| Basin D                | 2007           | \$1,448,846               | \$231,158                      | 16.0%                        | \$55,182                          | 15.4%                                            | 0.6%            |
| South Church St        | 2016           | \$297,274                 | \$34,874                       | 11.7%                        | \$9,008                           | 11.4%                                            | 0.3%            |
| <b>Total</b>           |                | <b>\$35,811,519</b>       | <b>\$25,100,240</b>            | <b>70.1%</b>                 | <b>\$5,017,596</b>                | <b>61.5%</b>                                     | <b>8.6%</b>     |



# WATER RESOURCES

## ***DASHBOARD PERFORMANCE***

December 2019



**MWRD FY2020-2024 CIP**

| NO. | PROJECT                                                    | 2019-2020<br>2019 | 2020-2021<br>2020 Issue | 2021-2022<br>2021 Issue | 2022-2023<br>2022 Issue | 2023-2024<br>2023 Issue | TOTAL |
|-----|------------------------------------------------------------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------|
|     | Construction- Northeast Regional PS & Force Main           |                   |                         |                         |                         |                         | \$0   |
|     | Overall Creek PS & Force Main Upgrade                      |                   |                         |                         |                         |                         | \$0   |
|     | Construction- Biosolids Processing Equipment               |                   |                         |                         |                         |                         | \$0   |
|     | <b>TOTAL Capital Improvements funded from Debt Service</b> | \$0               | \$0                     | \$0                     | \$0                     | \$0                     | \$0   |

| NO. | PROJECT                                                 | 2019-2020<br>2020 FY | 2020-2021<br>2021 FY | 2021-2022<br>2022 FY | 2022-2023<br>2023 FY | 2023-2024<br>2024 FY | TOTAL        |
|-----|---------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------|
|     | Sewer rehab- Account 335                                | \$1,000,000          | \$1,000,000          | \$1,000,000          | \$1,000,000          | \$1,000,000          | \$5,000,000  |
|     | Meters, Water/Sewer Taps, Hydrants - 280, 290, 300, 310 | \$435,000            | \$435,000            | \$435,000            | \$435,000            | \$435,000            | \$2,175,000  |
|     | Water lines- Account 320                                | \$350,000            | \$350,000            | \$350,000            | \$350,000            | \$350,000            | \$1,750,000  |
|     | Sewer Lines - Account 330                               | \$350,000            | \$350,000            | \$350,000            | \$350,000            | \$350,000            | \$1,750,000  |
|     | Biolsolids Processing Equip & Storage Sinking Fund      | \$500,000            | \$500,000            | \$500,000            | \$500,000            | \$500,000            | \$2,500,000  |
|     | Walter Hill Dam Repair/Remediation Sinking Fund         | \$125,000            | \$125,000            | \$125,000            | \$125,000            | \$125,000            | \$625,000    |
|     | Lift Station Replacement Sinking Fund                   | \$250,000            | \$250,000            | \$250,000            | \$250,000            | \$250,000            | \$1,250,000  |
|     | NE Regional PS & FM Sinking Fund                        | \$500,000            | \$500,000            | \$500,000            | \$500,000            | \$500,000            | \$2,500,000  |
|     | GAC Replacement                                         | \$125,000            | \$125,000            | \$125,000            | \$125,000            | \$125,000            | \$625,000    |
|     | High Service Pumps & Membrane Pump Improv.              |                      | \$1,000,000          |                      |                      |                      | \$1,000,000  |
|     | Vehicle and Equipment Replacement                       | \$1,500,000          | \$1,500,000          | \$1,500,000          | \$1,500,000          | \$1,500,000          | \$7,500,000  |
|     | <b>TOTAL Capital Improvements funded from Rates</b>     | \$5,135,000          | \$6,135,000          | \$5,135,000          | \$5,135,000          | \$5,135,000          | \$26,675,000 |

| NO. | PROJECT                                                      | 2019-2020<br>2020 FY | 2020-2021<br>2021 FY | 2021-2022<br>2022 FY | 2022-2023<br>2023 FY | 2023-2024<br>2024 FY | TOTAL        |
|-----|--------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------|
|     | <b>W&amp;S CAPITAL IMPROVEMENT PROJECTS</b>                  |                      |                      |                      |                      |                      |              |
|     | Misc FY20 Working Reserve Commitments                        | \$1,850,000          |                      |                      |                      |                      | \$1,850,000  |
|     | Biosolids Processing Equipment & Storage Addition            | \$1,000,000          | \$9,500,000          | \$5,500,000          |                      |                      | \$16,000,000 |
|     | Replace Biosolids Polymer System                             | \$100,000            | \$1,350,000          |                      |                      |                      | \$1,450,000  |
|     | Overall Creek Pump Station & Force Main Upgrade              | \$500,000            | \$7,500,000          | \$4,300,000          |                      |                      | \$12,300,000 |
|     | NE Regional Engineering Design                               | \$500,000            | \$1,500,000          | \$250,000            | \$250,000            |                      | \$2,500,000  |
|     | NE Regional P.S. & Force Main                                |                      | \$3,000,000          | \$10,000,000         | \$7,500,000          |                      | \$20,500,000 |
|     | Cherry Lane / Sazerac Sanitary Sewer                         |                      | \$1,000,000          | \$1,500,000          |                      |                      | \$2,500,000  |
|     | SR840 Interchange Area Sanitary Sewer                        | \$200,000            | \$1,100,000          | \$1,100,000          |                      |                      | \$2,400,000  |
|     | Joe B. Jackson Sanitary Sewer                                | \$50,000             | \$750,000            |                      |                      |                      | \$800,000    |
|     | MWRRF Wet Weather Treatment Train Impr                       | \$50,000             | \$150,000            | \$500,000            | \$2,500,000          | \$2,500,000          | \$5,700,000  |
|     | Mill Street Painting, Halls Hill and Tiger Hill Tank Repairs | \$1,000,000          | \$1,800,000          |                      |                      |                      | \$2,800,000  |
|     | Replace Pall Membranes                                       |                      |                      |                      |                      | \$650,000            | \$650,000    |
|     | High Service PS & Membrane Feed Pump Improv.                 |                      | \$2,500,000          |                      |                      |                      | \$2,500,000  |
|     | Direct Potable Reuse Demonstration                           |                      |                      | \$350,000            | \$350,000            |                      | \$700,000    |
|     | Stones River Water Qual Sampling / NPDES Permitting          | \$150,000            | \$150,000            | \$150,000            | \$150,000            | \$150,000            | \$750,000    |
|     | <b>Subtotal CAPITAL PROJECTS</b>                             | \$5,400,000          | \$30,300,000         | \$23,650,000         | \$10,750,000         | \$3,300,000          | \$73,400,000 |
|     | <b>TRANSPORTATION (Water/Sewer Imp.)</b>                     |                      |                      |                      |                      |                      |              |
|     | Bradyville Pike                                              |                      |                      | \$1,500,000          | \$1,500,000          | \$500,000            | \$3,500,000  |
|     | Jones Blvd Widening                                          |                      | \$500,000            | \$500,000            |                      |                      | \$1,000,000  |
|     | Cherry Lane Repurified Main Extension (14,600 LF)            |                      | \$2,000,000          | \$1,000,000          |                      |                      | \$3,000,000  |
|     | Cherry Lane Sanitary Sewer Construction                      | \$150,000            | \$1,000,000          | \$1,500,000          |                      |                      | \$2,650,000  |
|     | SR 99 Widening- Old Fort to Cason Lane                       |                      | \$500,000            | \$1,000,000          |                      |                      | \$1,500,000  |
|     | St. Clair St.                                                |                      | \$500,000            |                      |                      |                      | \$500,000    |
|     | John Rice Blvd & Rucker Lane                                 |                      | \$200,000            |                      |                      |                      | \$200,000    |
|     | Maney Avenue Reconstruction - Phase 2                        |                      | \$250,000            | \$250,000            |                      |                      | \$500,000    |
|     | Wilkinson Pike Reconstruction ( MCP to TL)                   |                      | \$650,000            | \$650,000            |                      |                      | \$1,300,000  |
|     | <b>Subtotal TRANSPORTATION PROJECTS</b>                      | \$150,000            | \$5,600,000          | \$6,400,000          | \$1,500,000          | \$500,000            | \$14,150,000 |
|     | <b>REHABILITATION</b>                                        |                      |                      |                      |                      |                      |              |
|     | Sewer Rehabilitation - Maintenance Contract                  | \$2,770,000          | \$1,500,000          | \$1,500,000          | \$1,500,000          | \$1,500,000          | \$8,770,000  |
|     | <b>INFORMATION TECHNOLOGY PROJECTS</b>                       |                      |                      |                      |                      |                      |              |
|     | IT/Computer Systems Hardware Upgrades                        | \$350,000            | \$100,000            | \$100,000            | \$100,000            | \$100,000            | \$750,000    |
|     | Electronic Content Management (Scanning/Imaging)             |                      | \$250,000            | \$250,000            |                      |                      | \$500,000    |
|     | IT Design Services & Consulting                              | \$100,000            | \$100,000            | \$100,000            |                      |                      | \$300,000    |
|     | Comp Maintenance Management System (CMMS)                    |                      | \$400,000            | \$600,000            |                      |                      | \$1,000,000  |
|     | <b>Subtotal INFORMATION TECHNOLOGY PROJECTS</b>              | \$450,000            | \$850,000            | \$1,050,000          | \$100,000            | \$100,000            | \$2,550,000  |
|     | <b>TOTAL Projects from Working Capital Reserves</b>          | \$8,770,000          | \$38,250,000         | \$32,600,000         | \$13,850,000         | \$5,400,000          | \$98,870,000 |

|                                                   |                     |                     |                    |                    |                    |
|---------------------------------------------------|---------------------|---------------------|--------------------|--------------------|--------------------|
| PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)     | \$8,000,000         | \$7,500,000         | \$7,500,000        | \$7,500,000        | \$7,500,000        |
| SINKING FUND DEPOSITS TO RESERVES FROM RATES      | \$2,375,000         | \$3,375,000         | \$2,375,000        | \$2,375,000        | \$2,375,000        |
| SECURED MIN. BALANCE FOR WORKING CAPITAL RESERVES | \$24,331,276        | \$24,817,902        | \$25,314,260       | \$25,820,545       | \$26,336,956       |
| PROJECTED WORKING CAPITAL RESERVE BALANCE         | \$83,220,668        | \$55,845,668        | \$33,120,668       | \$29,145,668       | \$33,620,668       |
| <b>FUNDS ABOVE SECURED MINIMUM BALANCE</b>        | <b>\$58,889,392</b> | <b>\$31,027,766</b> | <b>\$7,806,408</b> | <b>\$3,325,123</b> | <b>\$7,283,712</b> |

**Preliminary *Draft* 5-YR CAPITAL IMPROVEMENTS PLAN (CIP)**  
**STORMWATER UTILITY FUND, FY20.-24**

| NO.   | PROJECT                                                          | Originator | 2019-2020<br>2020 FY | 2020-2021<br>2021 FY | 2021-2022<br>2022 FY | 2022-2023<br>2023 FY | 2023-2024<br>2024 FY | TOTAL        |
|-------|------------------------------------------------------------------|------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------|
|       |                                                                  |            | <i>Projected</i>     | <i>Budget</i>        | <i>Pro Forma</i>     | <i>Pro Forma</i>     | <i>Pro Forma</i>     |              |
|       | <b>Neighborhood Projects (NP)</b>                                |            |                      |                      |                      |                      |                      |              |
| NP-1  | Memorial Blvd / Haynes Dr. Drainage Improvements                 | City Eng   | \$125,000            | \$50,000             |                      |                      |                      | \$175,000    |
| NP-2  | Mitchell-Nielson Drainage Project                                | City Eng   | \$50,000             |                      |                      |                      |                      | \$100,000    |
| NP-3  | Huntwood/Leaf Ave Neighborhood Drainage Imp.                     | City Eng   | \$100,000            | \$100,000            |                      |                      |                      | \$200,000    |
| NP-4  | Southern Meadows / Kimbro Woods Drainage Imp.                    | City Eng   | \$500,000            | \$500,000            |                      |                      |                      | \$1,025,000  |
| NP-5  | Liberty Dr. / Thatcher Trace Spring Box                          | City Eng   | \$50,000             | \$75,000             |                      |                      |                      | \$125,000    |
| NP-6  | Pennington Drive Drainage Repair/Upgrade (Added)                 | City Eng   |                      |                      |                      |                      |                      | \$0          |
| NP-7  | Gateway Pond Repair                                              | Eng/MRSD   |                      |                      |                      |                      |                      | \$0          |
| NP-8  | Hardwood Drive Drainage Upgrade (Added)                          | City Eng   | \$250,000            |                      |                      |                      |                      | \$250,000    |
| NP-9  | Pacific Place/Riverrock Blvd Drainage Imp.                       | City Eng   | \$0                  | \$0                  |                      |                      |                      | \$0          |
|       | <b>Subtotal</b>                                                  |            | \$1,075,000          | \$725,000            |                      |                      |                      | \$1,875,000  |
|       | <b>Water Quality Improvement (Compliance) Projects (WQ)</b>      |            |                      |                      |                      |                      |                      | \$0          |
| WQ-1  | Town Creek Bioretention BMP's @ Cannonsburgh                     | MWRD       |                      |                      |                      |                      |                      | \$0          |
| WQ-2  | Molloy Lane Water Quality Pond                                   | MWRD       | \$25,000             | \$125,000            | \$75,000             |                      |                      | \$225,000    |
| WQ-3  | Rosebank Springs Constructed Wetlands                            | City Eng   | \$35,000             | \$165,000            | \$115,000            |                      |                      | \$350,000    |
| WQ-4  | Lee's Branch Stream Restoration                                  | City Eng   | \$25,000             |                      |                      |                      |                      | \$25,000     |
| WQ-5  | West Fork Stones River at Cason Trail; bank repair               | MWRD       | \$140,000            |                      |                      |                      |                      | \$180,000    |
| WQ-6  | Bear Branch Water Quality Mitigation                             | City Eng   |                      |                      |                      |                      |                      | \$0          |
| WQ-7  | Sinking Creek Headwater protection BMP                           | MWRD/Eng   | \$30,000             | \$50,000             | \$150,000            | \$150,000            | \$150,000            | \$530,000    |
| WQ-8  | Todd's Lake Regional Wetlands Improvements                       | City Eng   |                      |                      |                      |                      |                      | \$0          |
| WQ-9  | Hooper's Bottom Regional Water Quality Project                   | City Eng   | \$25,000             | \$150,000            |                      | \$175,000            | \$175,000            | \$550,000    |
| WQ-10 | Lytle Creek/Ridgley Road Bacteriological Reduction (Added)       | MWRD       | \$15,000             | \$75,000             | \$25,000             |                      |                      | \$125,000    |
| WQ-11 | Memorial Blvd/VA Pond Trash Rack (Added)                         | MWRD       |                      |                      |                      |                      |                      | \$0          |
| WQ-12 | Spence Creek Restoration                                         | MWRD/Eng   | \$25,000             | \$25,000             | \$25,000             |                      |                      | \$100,000    |
| WQ-13 | E. Lokey Ave Trash Rack at Sinking Creek                         | MWRD       | \$30,000             | \$75,000             |                      |                      |                      | \$105,000    |
| WQ-14 | Sinking Creek/ Northfield Blvd Commercial Retrofit Study/Project | MWRD       | \$25,000             | \$50,000             | \$100,000            |                      |                      | \$185,000    |
| WQ-15 | Overall Street retrofit/ bioretention - streetscape              | MWRD       | \$35,000             | \$100,000            |                      |                      |                      | \$135,000    |
| WQ-16 | Downtown planter box retrofits study/project                     | MWRD       | \$50,000             | \$50,000             |                      |                      |                      | \$110,000    |
|       | <b>Subtotal</b>                                                  |            | \$460,000            | \$865,000            | \$490,000            | \$325,000            | \$325,000            | \$2,620,000  |
|       | <b>Public Drainage/Streets Participation Projects (PD)</b>       |            |                      |                      |                      |                      |                      | \$0          |
| PD-1  | Maney Avenue Phase 2                                             | City Eng   |                      |                      |                      |                      |                      | \$50,000     |
| PD-2  | Town Creek Conveyance (Murfree Springs to Cannonsburgh)          | City Eng   | \$500,000            | \$250,000            | \$100,000            |                      |                      | \$900,000    |
| PD-3  | Maple St. Alley Permeable Paver Project                          | City Eng   |                      |                      |                      |                      |                      | \$0          |
|       | <b>Subtotal</b>                                                  |            | \$500,000            | \$250,000            | \$100,000            |                      |                      | \$950,000    |
|       | <b>Totals</b>                                                    |            | \$2,035,000          | \$ 1,840,000         | \$ 590,000           | \$ 325,000           | \$ 325,000           | \$ 5,445,000 |

**EFFECTIVE UTILITY MANAGEMENT**  
*Financial Viability*  
**MWRD WORKING CAPITAL ACCOUNT SUMMARY**

**ESTIMATED Working Capital at 12/31/19**

|                                                               |               |                   |
|---------------------------------------------------------------|---------------|-------------------|
| Board Designated (System Dev, Assessments, etc) as of 6/30/19 | \$ 34,445,773 |                   |
| Undesignated Excess Funds as of 6/30/19                       | 48,028,398    |                   |
| Estimated Reserve Revenue thru 12/31/19                       | 4,269,024     |                   |
| Estimated Reserve Expenditures thru 12/31/19                  | (1,484,096)   |                   |
|                                                               |               | <b>85,259,099</b> |

**COMMITTED Reserves at 12/10/19**

|                                                        |           |                  |
|--------------------------------------------------------|-----------|------------------|
| ADS Temporary Flow Monitoring                          | 69,000    |                  |
| SEC Engineering Task Order - Salem Hwy Ph 3            | 17,100    |                  |
| SW Interceptor Bypass Pumping                          | 24,896    |                  |
| SSR Task Order Overall Creek PS Upgrade                | 864,070   |                  |
| Commercial Painting SRWTP C.O. #1                      | 19,913    |                  |
| CIA - Cherry Lane Ph2 Utility Design                   | 86,520    |                  |
| Hobas Pipe Sewer Inpsection - Vortex                   | 185,401   |                  |
| SRWTP Trough Construction Joint Repair                 | 54,519    |                  |
| JBS TO 19-10 - Replace Cast Iron Drains SRWTP          | 15,264    |                  |
| ELI - Joe B. Jackson West P.S. and Sewer Design        | 39,000    |                  |
| JBS Task Order 19-06 - #5 Raw Water Pump Repair        | 28,000    |                  |
| Westwind Reserve Sewer Participation                   | 105,631   |                  |
| S&ME CCTV HOBAS Inspection                             | 11,858    |                  |
| Sanitary Sewer 2019/20 Rehabilitation Contract         | 3,569,948 |                  |
| CIS Software Upgrade V4                                | 343,000   |                  |
| Purchase of Two (2) Aerators at WRRF                   | 217,046   |                  |
| SSR Task Order - Mill, Tiger, Halls Hill Tank Painting | 133,679   |                  |
| SSR Task Order 201 Facilities Plan                     | 196,202   |                  |
| Biosolids Thermal Dryer Install (JBS & MR)             | 107,137   |                  |
| Overall Creek P.S. Upgrades (VFD's)                    | 351,042   |                  |
| S&ME - 2019 Sewer Rehab Design                         | 282,555   |                  |
| WRRF Aerator 2A Gearbox Replacement                    | 130,930   |                  |
| Biosolids Small-scale Thermal Dryer                    | 216,250   |                  |
| H-S Blackman Park Sewer Design                         | 180,000   |                  |
| SEC Jones Blvd Utility Design Proposal                 | 14,225    |                  |
| Northeast Regional PS & Conv - SSR                     | 1,894,538 |                  |
| Waste Load Allocation Study                            | 78,200    |                  |
| Bradyville Pike Utility Design - Neil-Schaffer         | 22,710    |                  |
| Wilkinson Pike Utilities Design                        | 10,190    |                  |
|                                                        |           | <b>9,268,824</b> |

**APPROVAL Requests at 1/28/20**

|                                                |           |                  |
|------------------------------------------------|-----------|------------------|
| Tank Painting (Mill, Tiger, Halls Hill)        | 2,557,130 |                  |
| ELI - Thompson Lane Utility Relocation TDOT    | 175,000   |                  |
| SSR Task Order - High Service & Membrane Pumps | 140,130   |                  |
| JBS Task Order 19-05 - 3 Aerator Install WRRF  | 70,047    |                  |
| Sewer Rehab Change Order #1                    | 150,812   |                  |
|                                                |           | <b>3,093,119</b> |

**BALANCE of Working Capital at 1/28/20 after COMMITMENTS** **\$ 72,897,156**

**DESIGNATED Projects Pending**

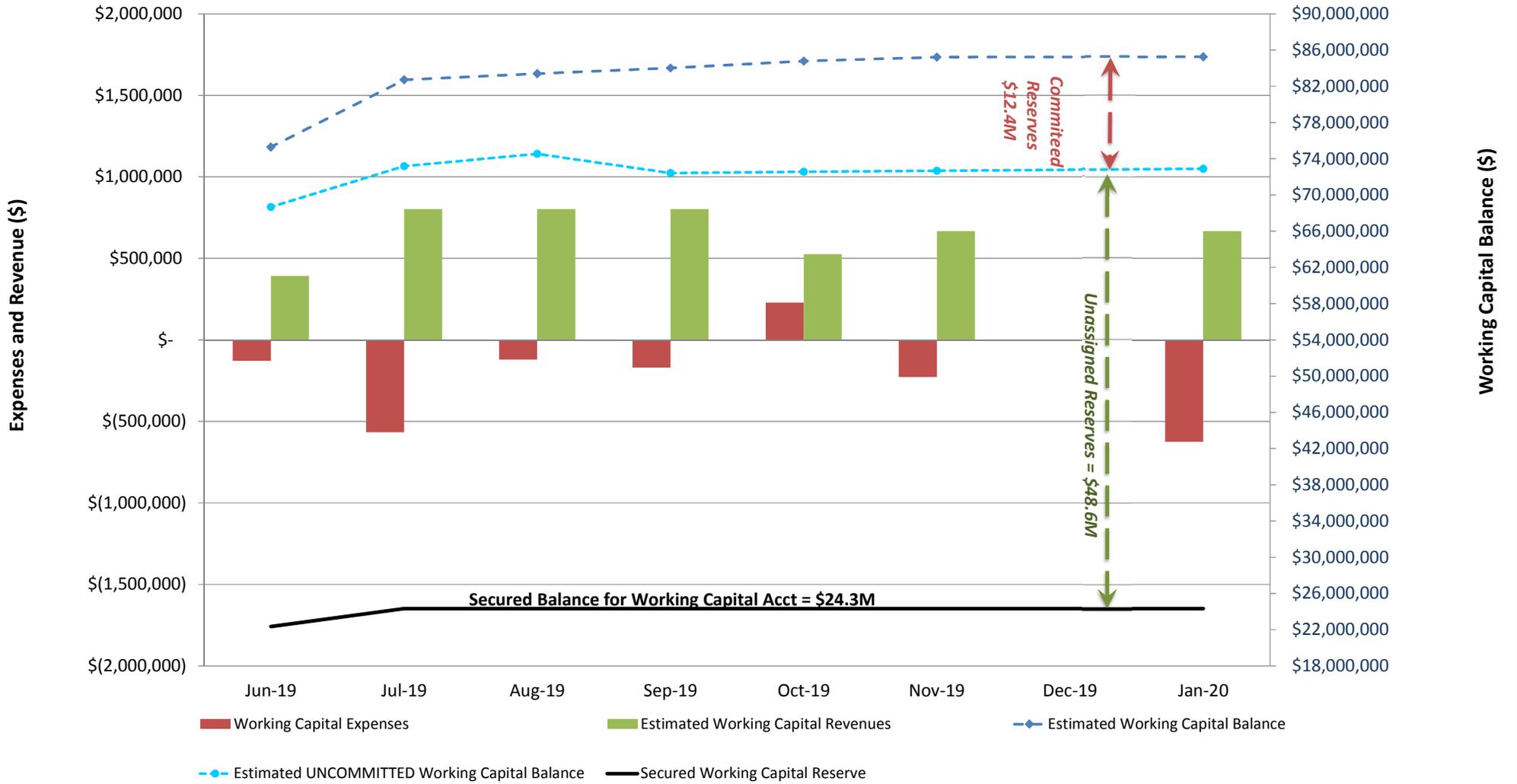
|     |  |   |
|-----|--|---|
| N/A |  | - |
|     |  |   |

**ESTIMATED UNCOMMITTED Working Capital Reserves as of January 28, 2020** **\$ 72,897,156**

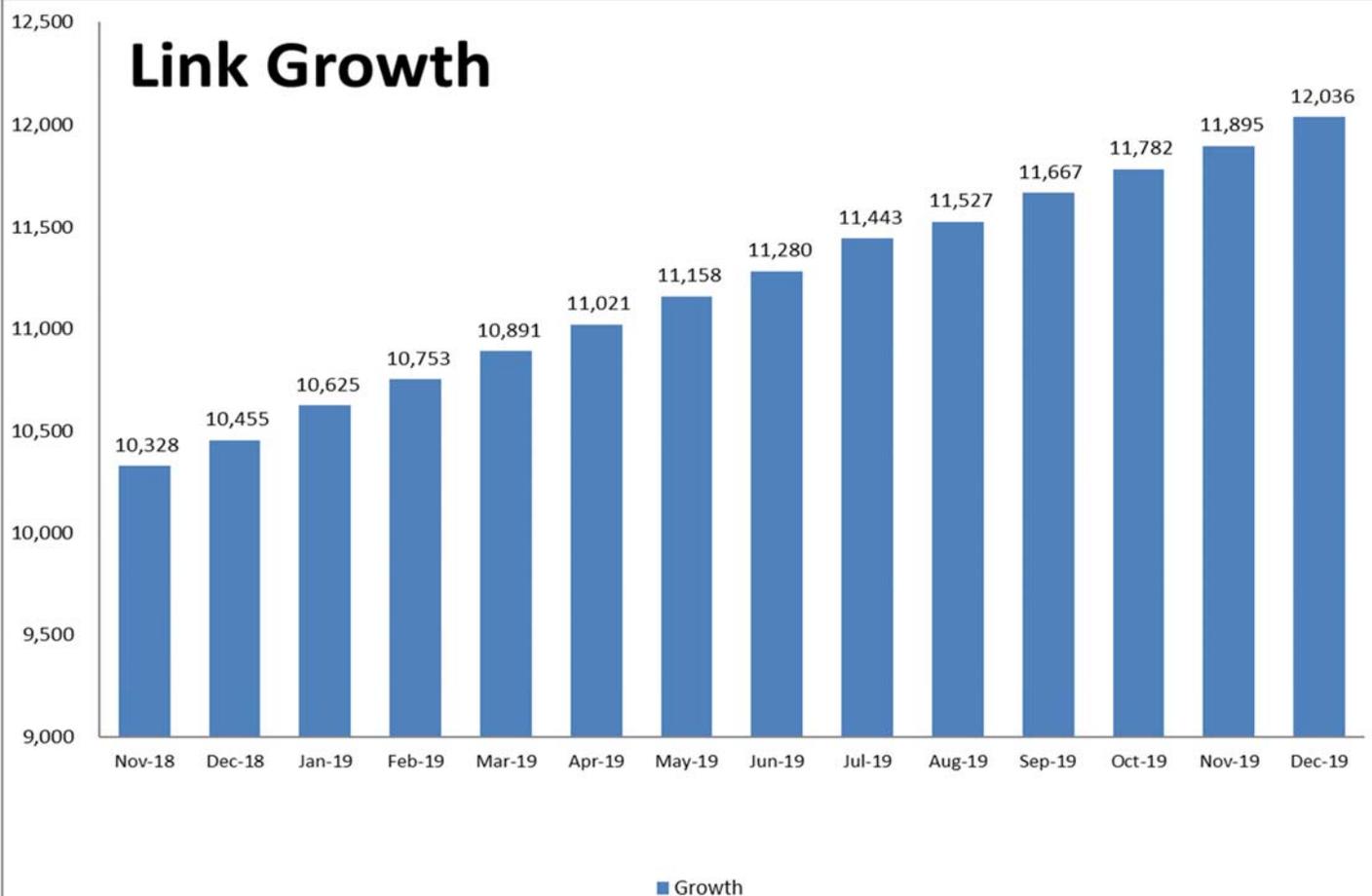
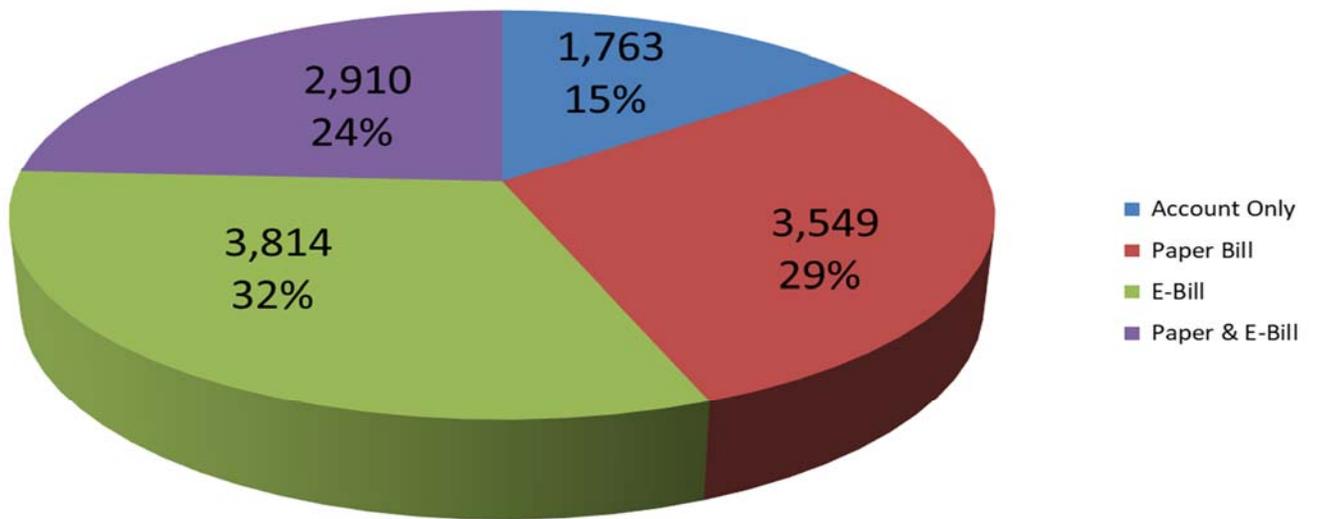
**SECURED FY19-20 Operating and Maintenance Expenses** **\$ 24,331,276**

**UNASSIGNED Working Capital Funds (Est. Uncommitted - Secured)** **\$ 48,565,880**

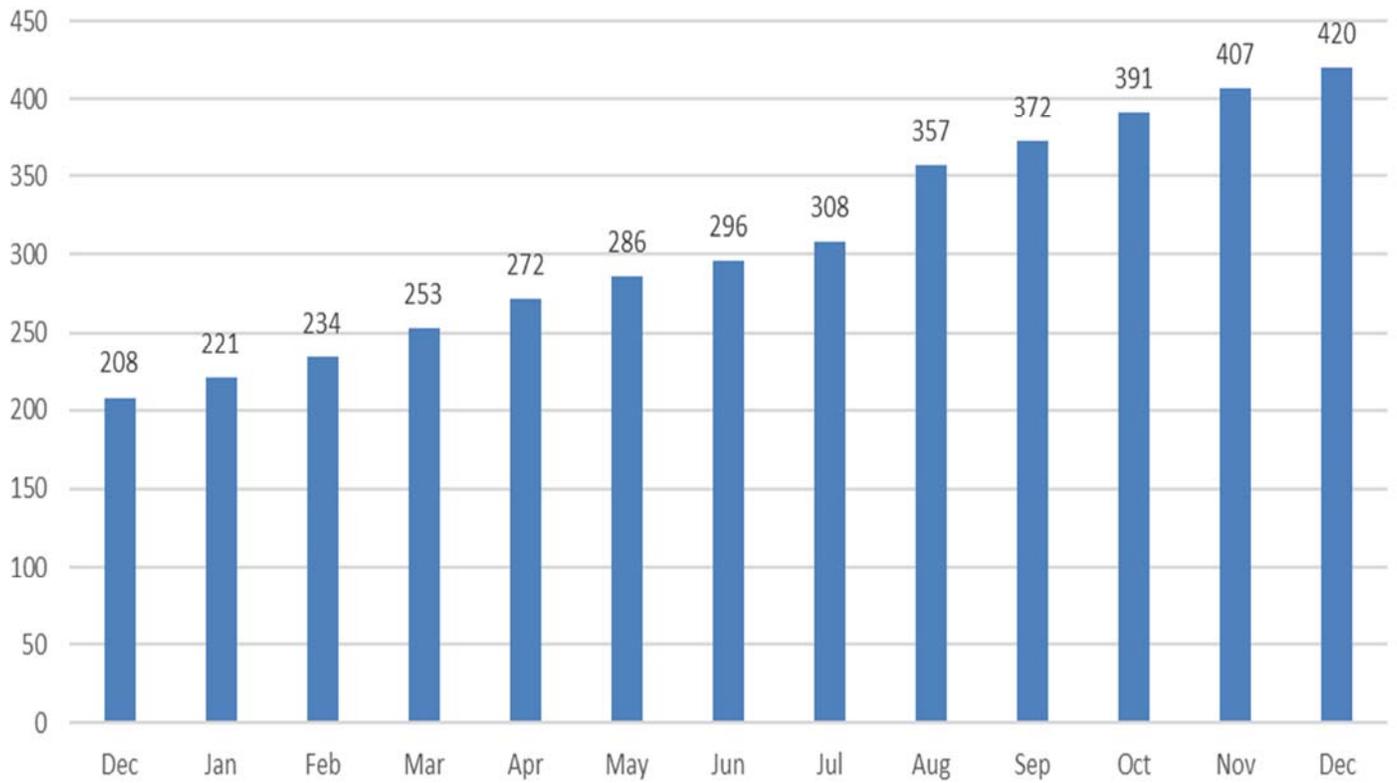
## MWRD Working Capital Reserves Dashboard



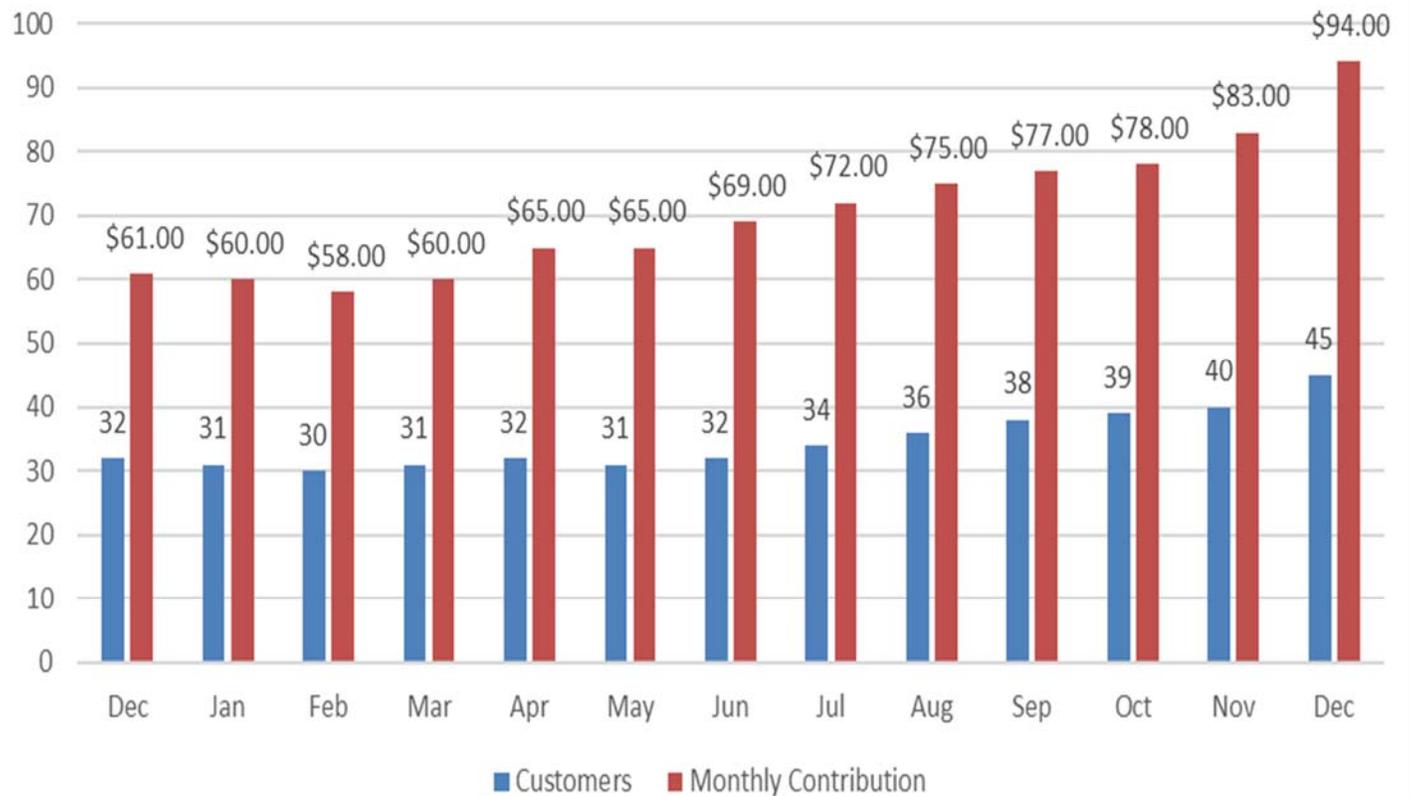
# Infinity.Link Customers as of December 2019 = 12,036



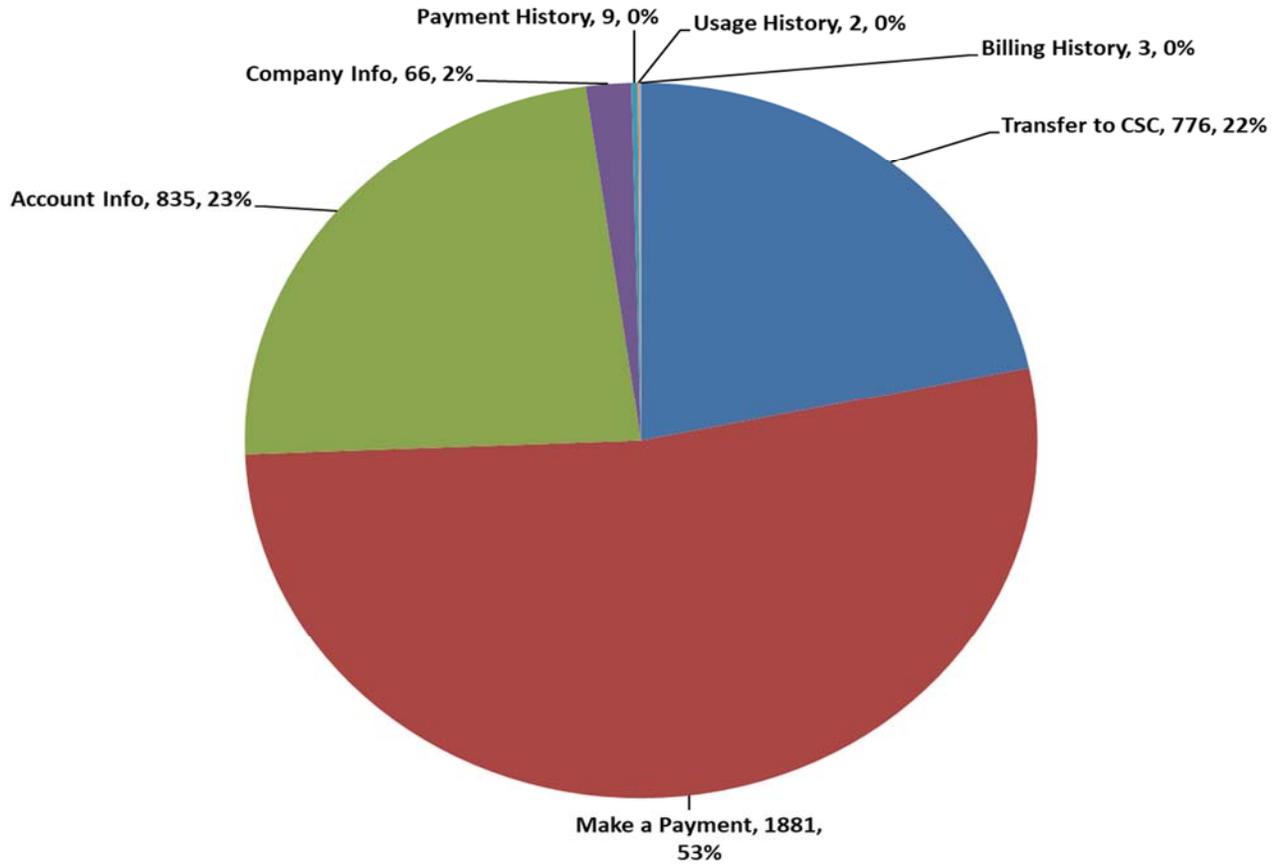
### AMI Customer Portal Users



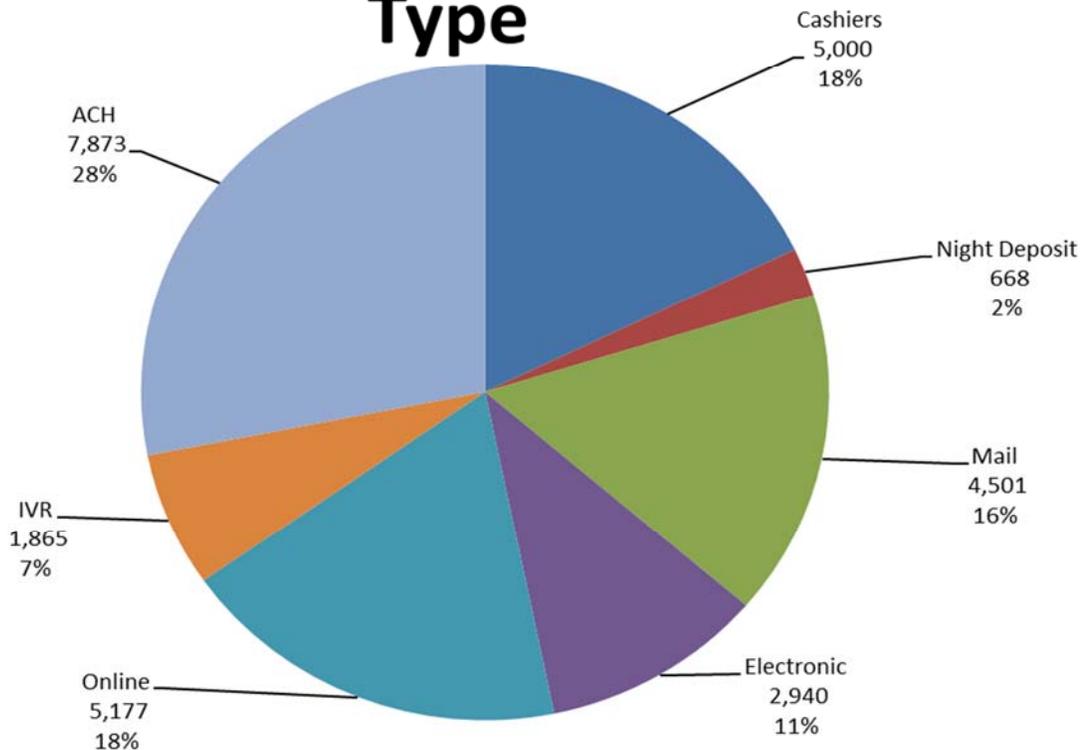
### H<sub>2</sub>O Users & Monthly Contributions



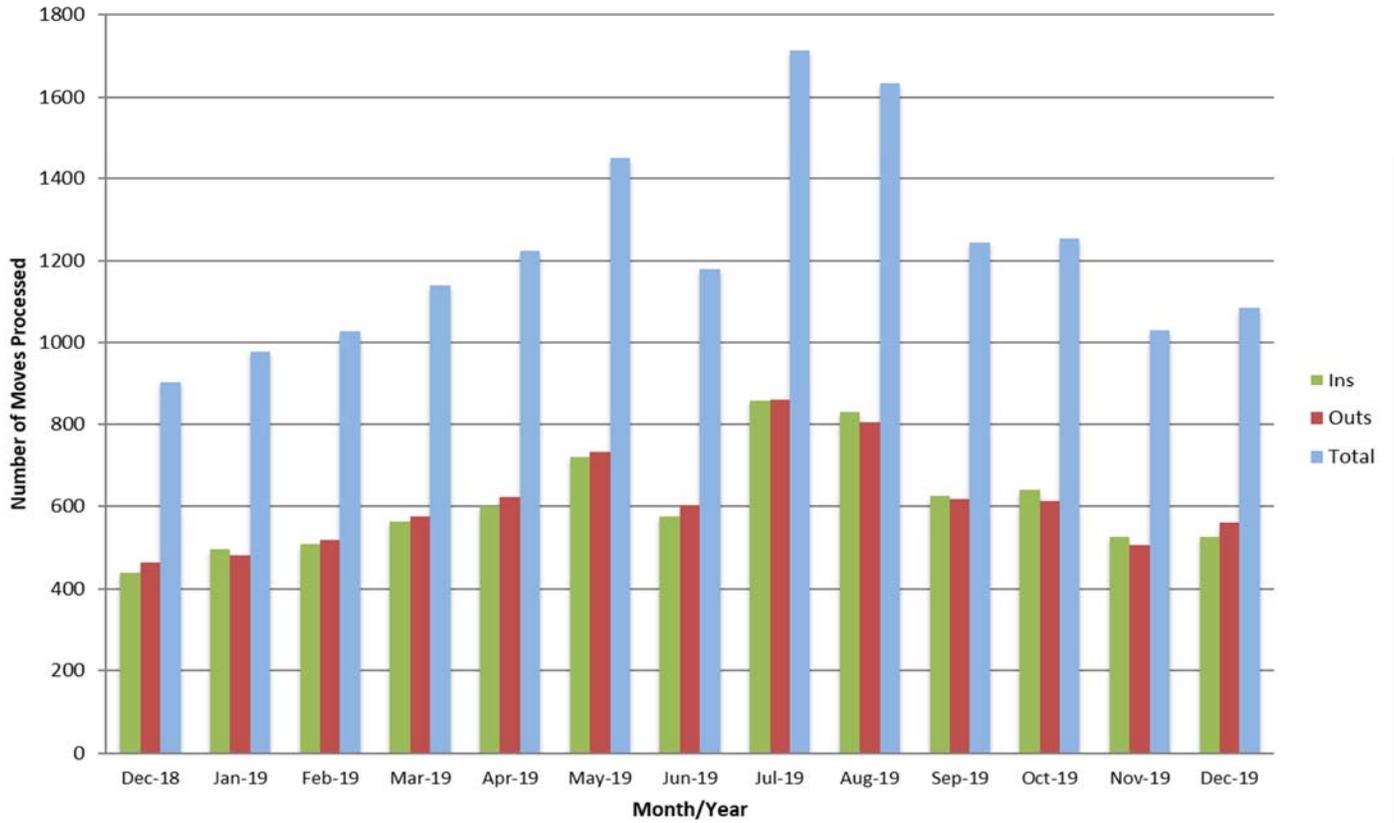
## IVR Calls From 12/01-12/31/2019 = 3,572



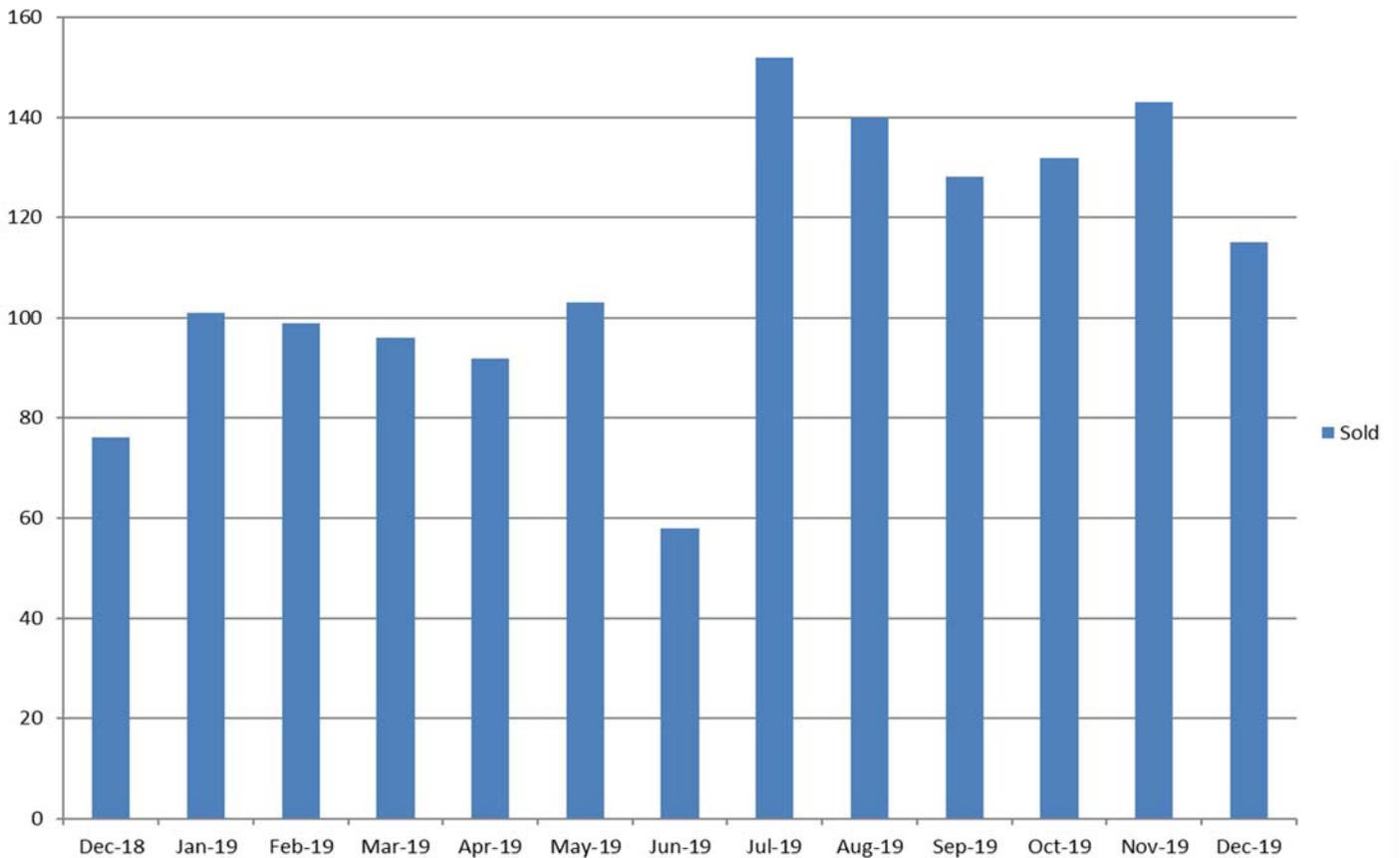
## December 2019 Payments by Type



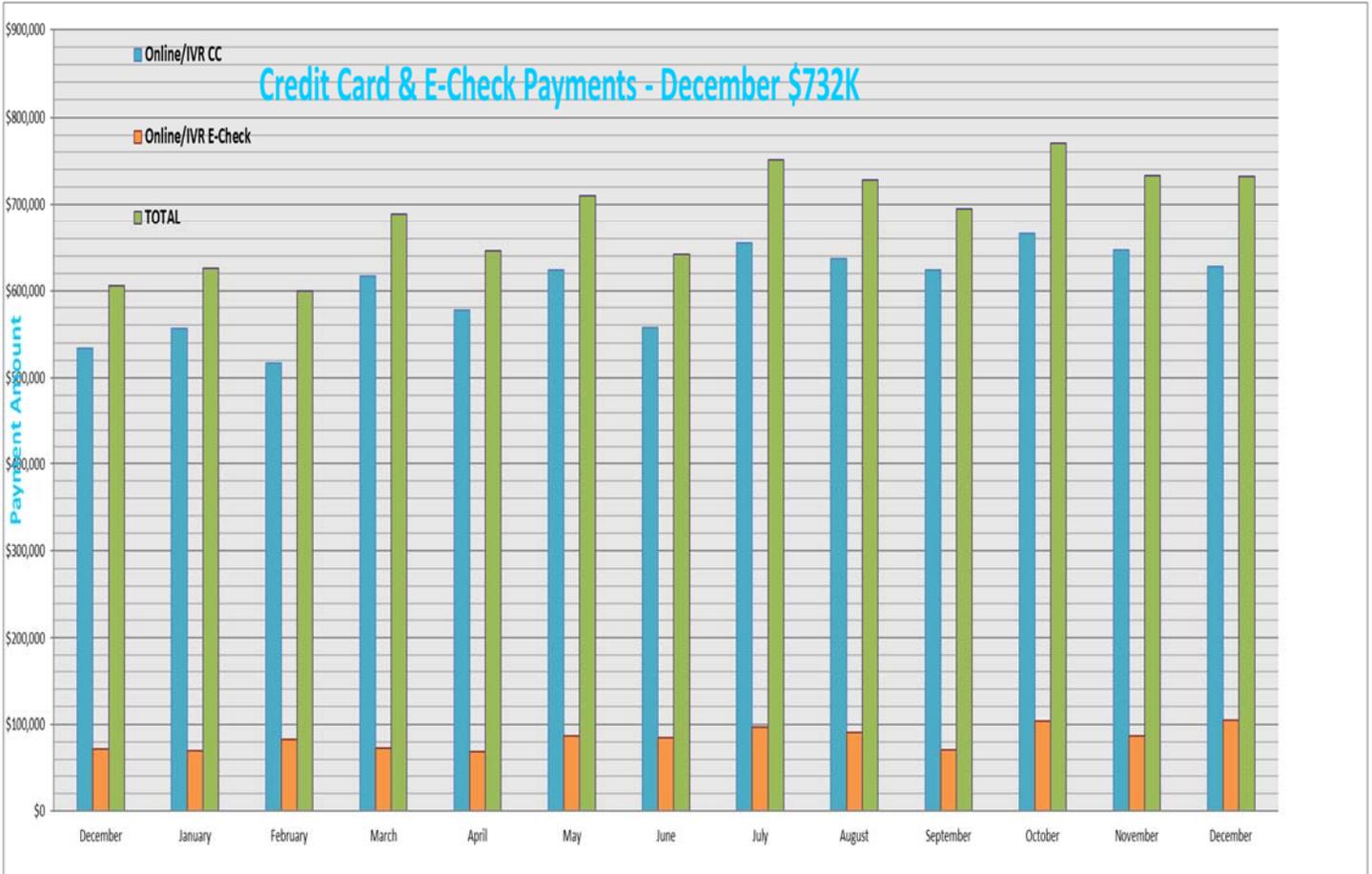
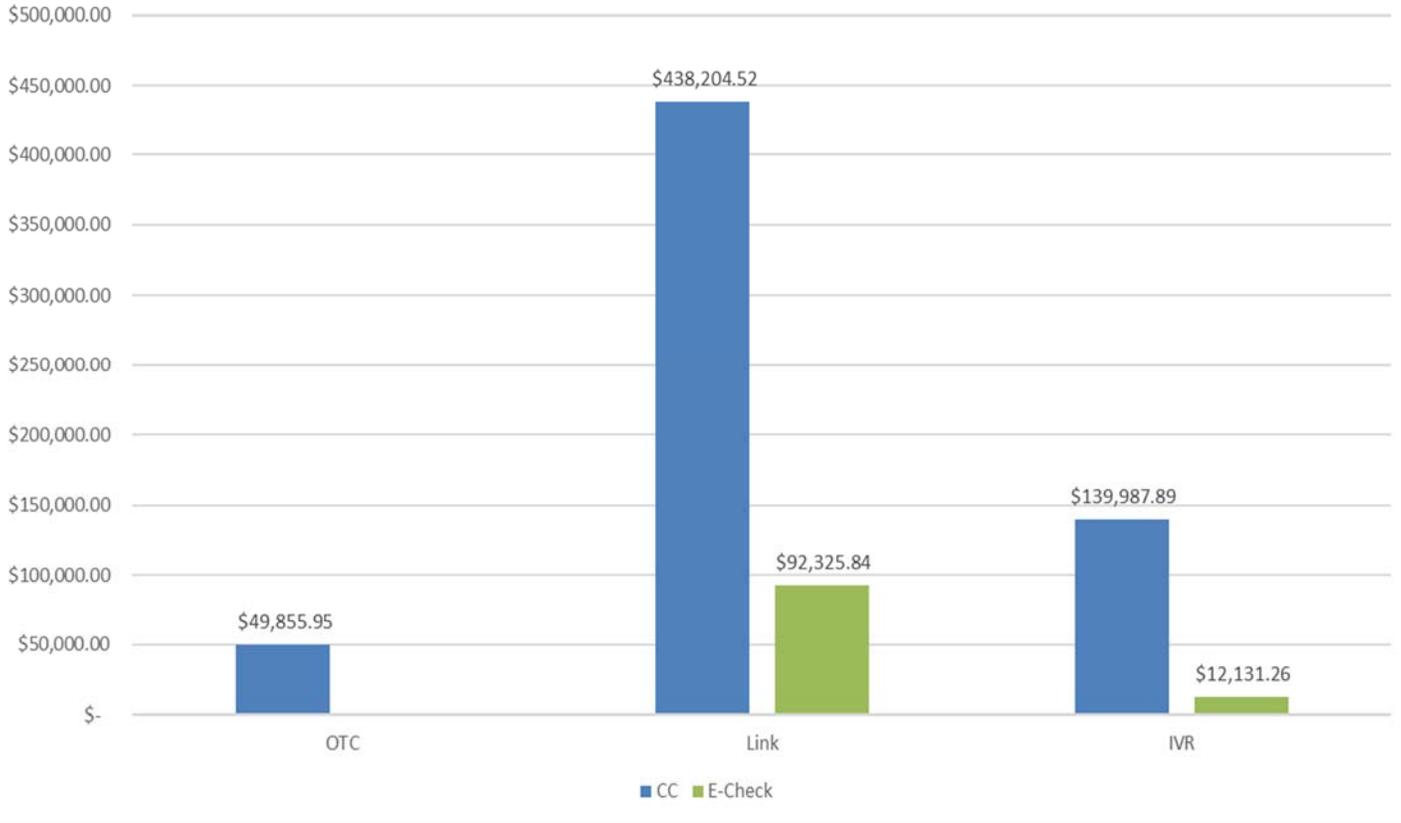
### December Moves Processed = 1,086



### December Taps Sold = 115



# Electronic Payment Method December 2019

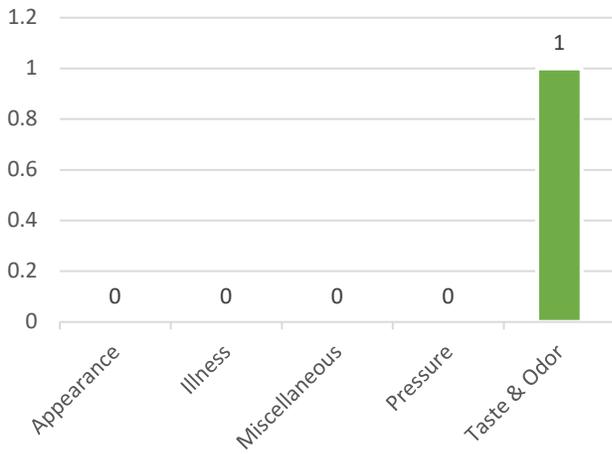


# STONES RIVER WATER TREATMENT PLANT

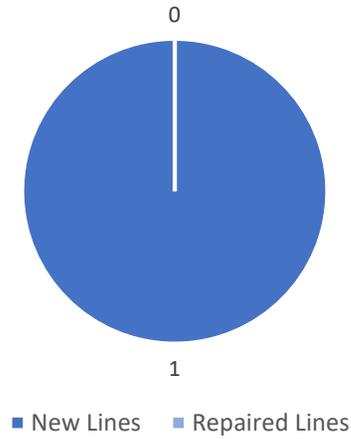
Dashboard Report

October 2019

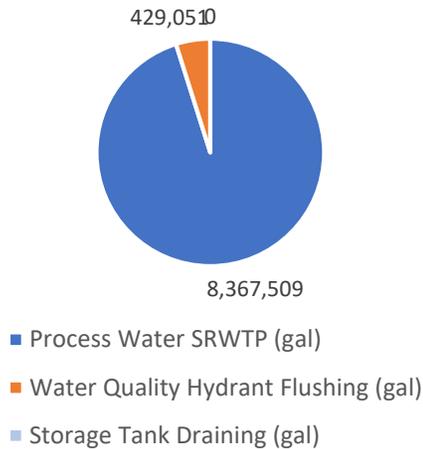
### Drinking Water Laboratory Section Water Quality Complaints



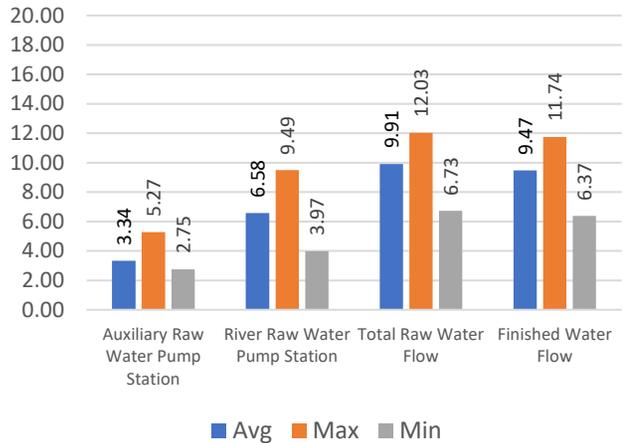
### Drinking Water Laboratory Section New & Repaired Lines Tested



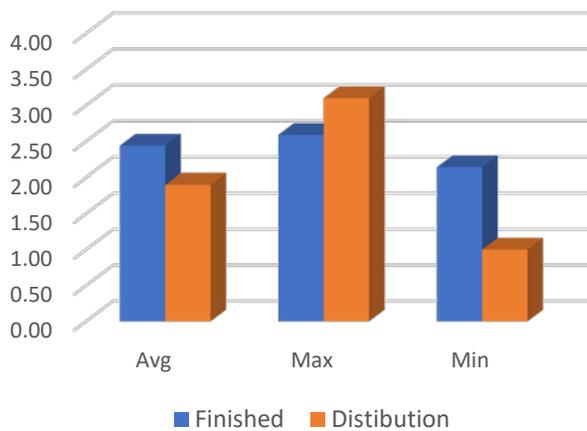
### Water Quality Water Used Not Sold



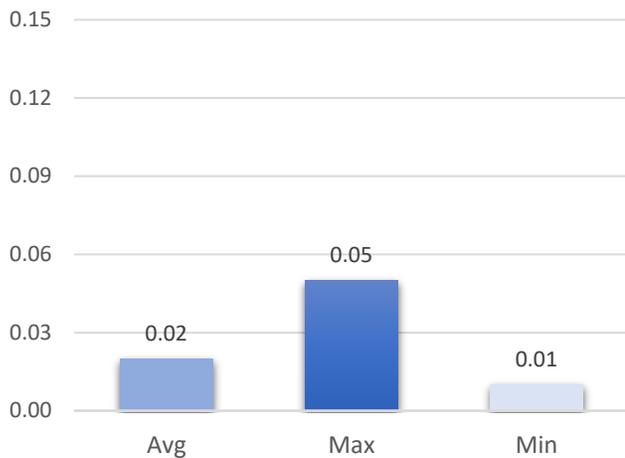
### Plant Operations Section Flow (MGD)



### Plant Operations Section Chlorine (mg/L)



### Plant Operations Section Finished Turbidity (NTU)

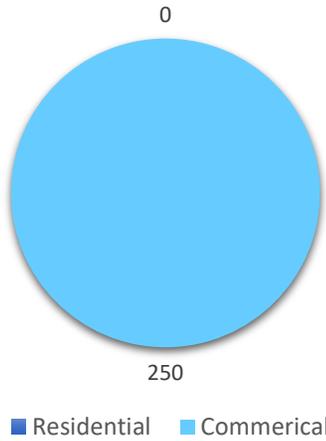


# STONES RIVER WATER TREATMENT PLANT

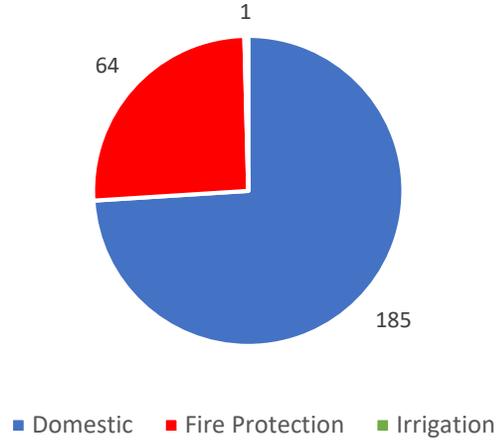
Dashboard Report

October 2019

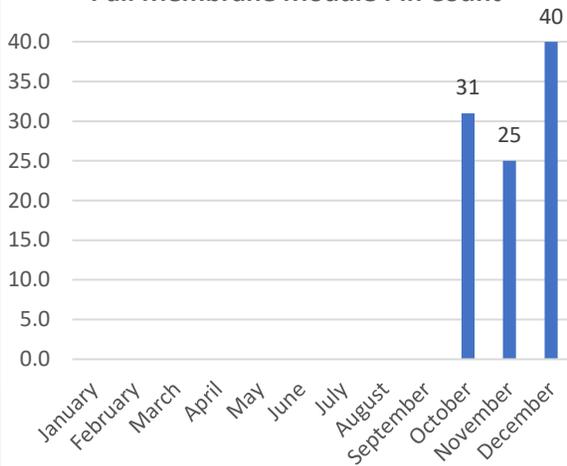
### Cross-Connection Control Section Number of Devices Tested By Category



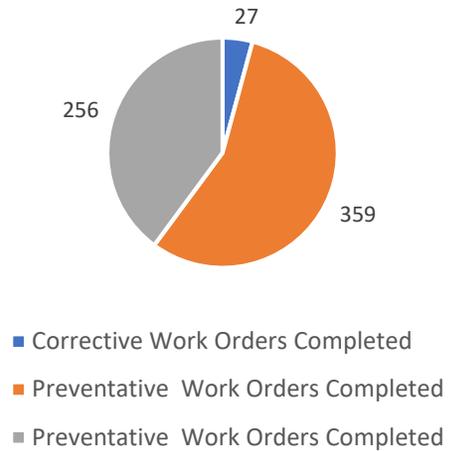
### Cross-Connection Control Section Number of Devices Tested



### Drinking Water Operations Section Pall Membrane Module Pin Count



### Drinking Water Maintenance Section Work Order Status

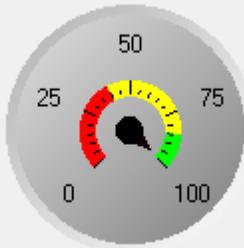


# MURFREESBORO WATER RESOURCE RECOVERY FACILITY

## DASHBOARD REPORT

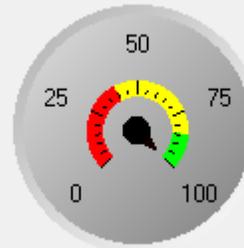
December, 2019

**BOD PERCENT  
REMOVAL**



98.9

**AMMONIA PERCENT  
REMOVAL**

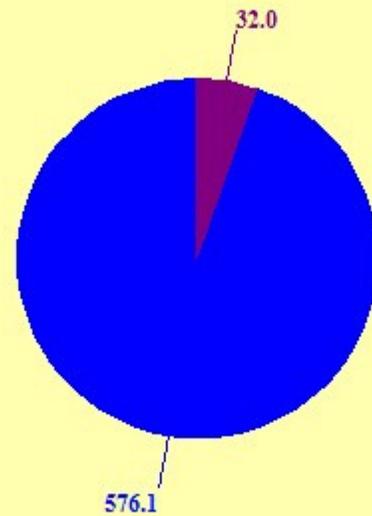


99.5

**636.553  
MILLION GALLONS  
TREATED**

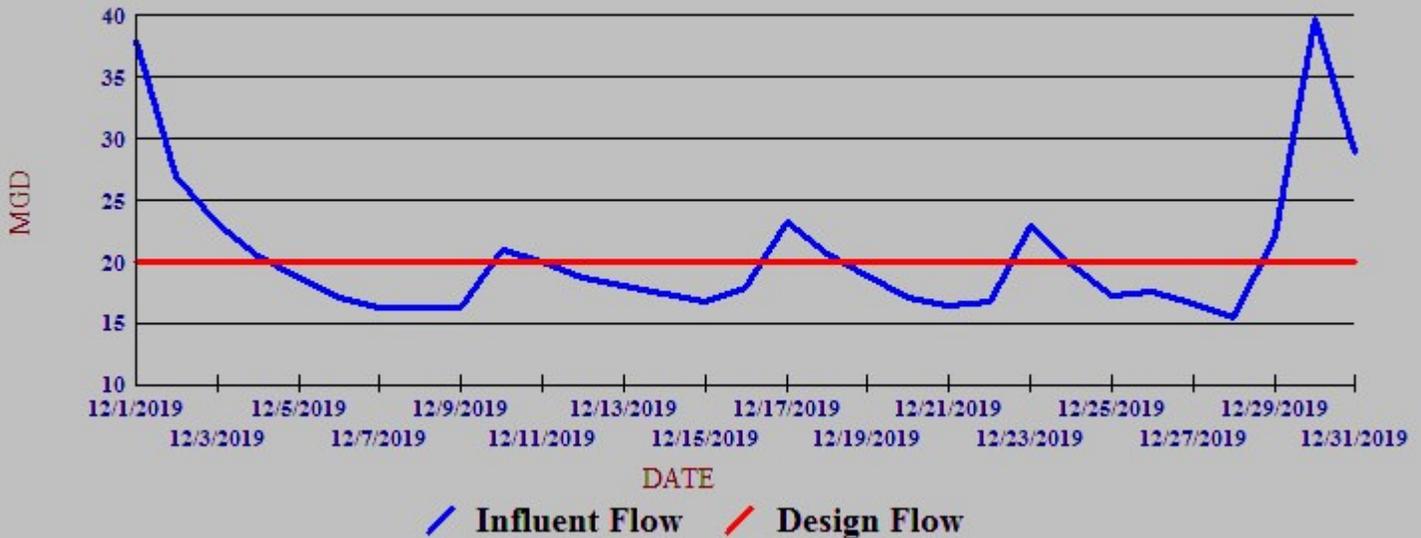
**2,071.43  
TONS  
BIOSOLIDS  
REMOVED**

**EFFLUENTS**

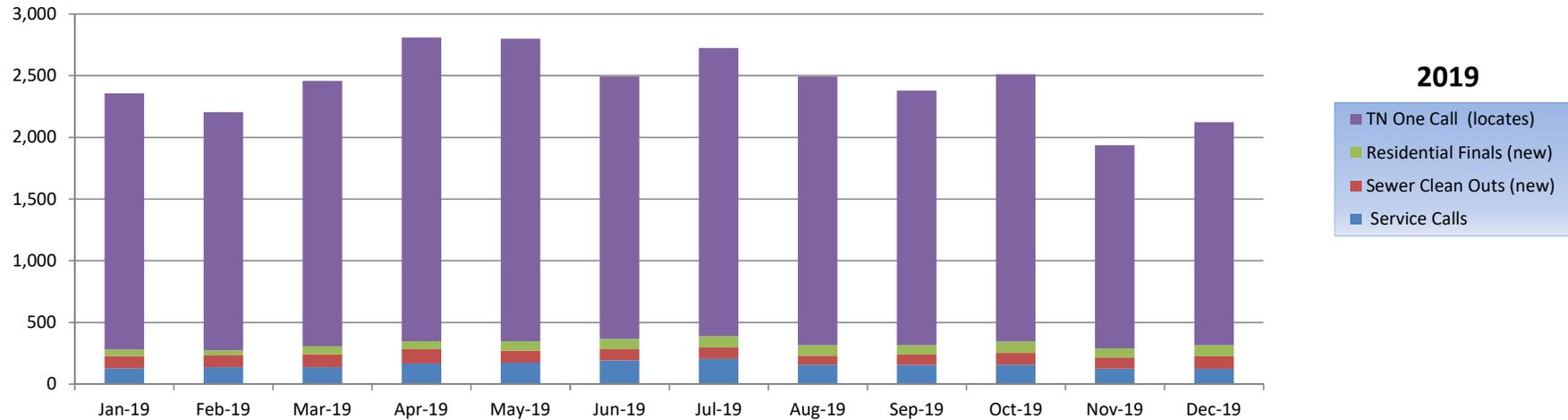


**MGD**  
■ DISCHARGE ■ REUSE

**AVERAGE INFLUENT FLOW**

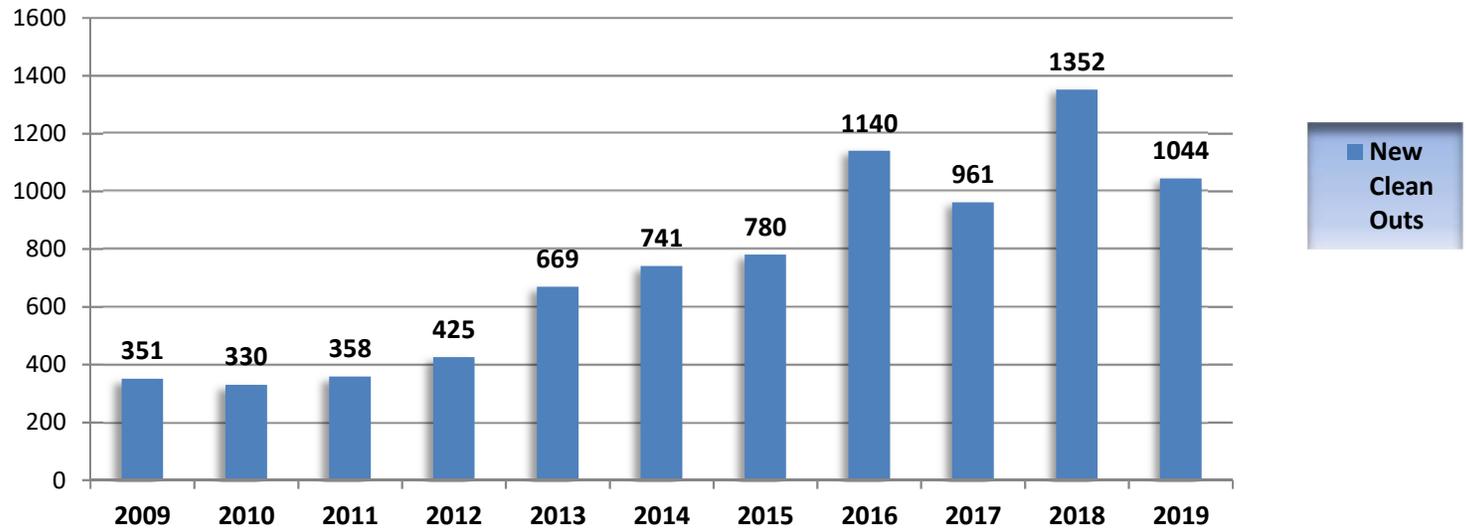


## OPERATIONS & MAINTENANCE MONTHLY TOTALS



|                                 | Jan-19       | Feb-19       | Mar-19       | Apr-19       | May-19       | Jun-19       | Jul-19       | Aug-19       | Sep-19       | Oct-19       | Nov-19       | Dec-19       | Total         |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| <b>Service Calls</b>            | 129          | 138          | 139          | 168          | 176          | 193          | 205          | 159          | 156          | 159          | 128          | 124          | <b>1,874</b>  |
| <b>Sewer Clean Outs (new)</b>   | 100          | 95           | 104          | 115          | 97           | 91           | 93           | 72           | 85           | 94           | 89           | 102          | <b>1,137</b>  |
| <b>Residential Finals (new)</b> | 52           | 41           | 65           | 65           | 76           | 84           | 93           | 86           | 75           | 94           | 75           | 91           | <b>897</b>    |
| <b>TN One Call (locates)</b>    | 2,076        | 1,931        | 2,150        | 2,463        | 2,452        | 2,125        | 2,334        | 2,177        | 2,064        | 2,165        | 1,645        | 1,807        | <b>25,389</b> |
| <b>TOTAL</b>                    | <b>2,357</b> | <b>2,205</b> | <b>2,458</b> | <b>2,811</b> | <b>2,801</b> | <b>2,493</b> | <b>2,725</b> | <b>2,494</b> | <b>2,380</b> | <b>2,512</b> | <b>1,937</b> | <b>2,124</b> | <b>29,297</b> |

## NEW SEWER CLEAN OUTS



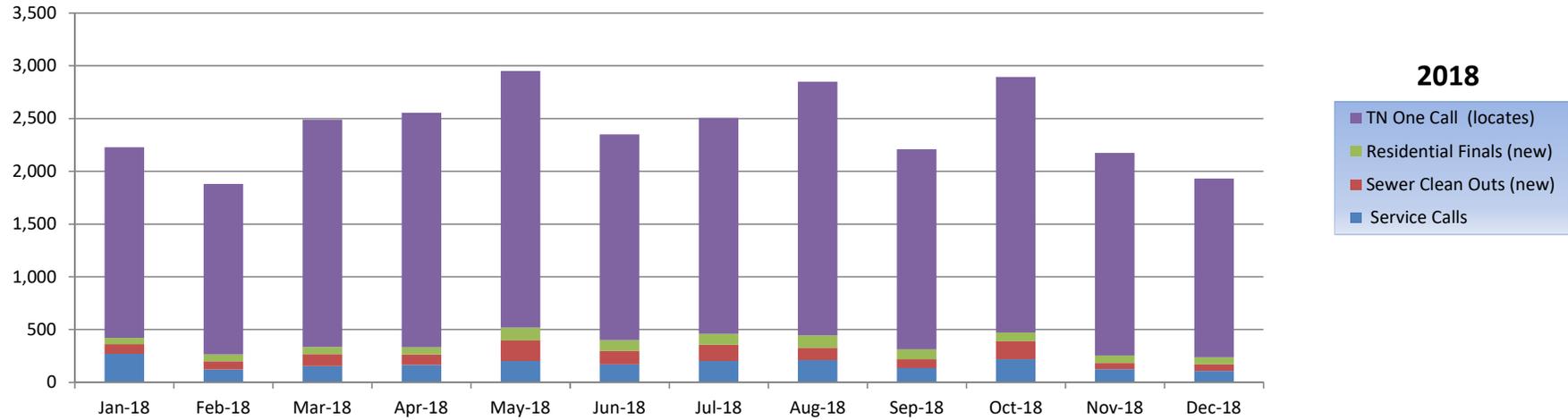
|                       | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|
| <b>New Clean Outs</b> | 351  | 330  | 358  | 425  | 669  | 741  | 780  | 1140 | 961  | 1352 | 1044 |

*\* For the calendar year Jan-Dec*





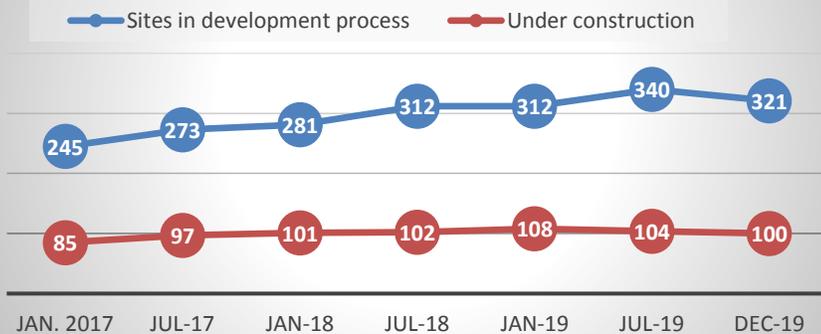
## OPERATIONS & MAINTENANCE MONTHLY TOTALS



|                                 | Jan-18       | Feb-18       | Mar-18       | Apr-18       | May-18       | Jun-18       | Jul-18       | Aug-18       | Sep-18       | Oct-18       | Nov-18       | Dec-18       | Total         |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| <b>Service Calls</b>            | 273          | 124          | 155          | 167          | 205          | 171          | 206          | 213          | 137          | 221          | 127          | 109          | <b>2,108</b>  |
| <b>Sewer Clean Outs (new)</b>   | 91           | 78           | 115          | 99           | 195          | 128          | 153          | 117          | 84           | 169          | 59           | 64           | <b>1,352</b>  |
| <b>Residential Finals (new)</b> | 60           | 65           | 66           | 69           | 119          | 102          | 103          | 117          | 93           | 84           | 71           | 68           | <b>1,017</b>  |
| <b>TN One Call (locates)</b>    | 1,805        | 1,614        | 2,155        | 2,222        | 2,434        | 1,949        | 2,046        | 2,404        | 1,896        | 2,421        | 1,918        | 1,692        | <b>24,556</b> |
| <b>TOTAL</b>                    | <b>2,229</b> | <b>1,881</b> | <b>2,491</b> | <b>2,557</b> | <b>2,953</b> | <b>2,350</b> | <b>2,508</b> | <b>2,851</b> | <b>2,210</b> | <b>2,895</b> | <b>2,175</b> | <b>1,933</b> | <b>29,033</b> |

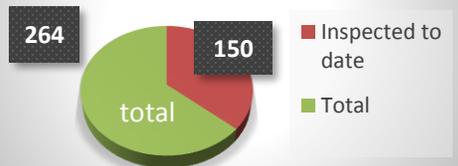
# Stormwater Dashboard – December 2019

## Construction Phase Inspections of Stormwater Control Measures (SCMs)



## Inspection Program

### Stormwater Post Construction Inspections



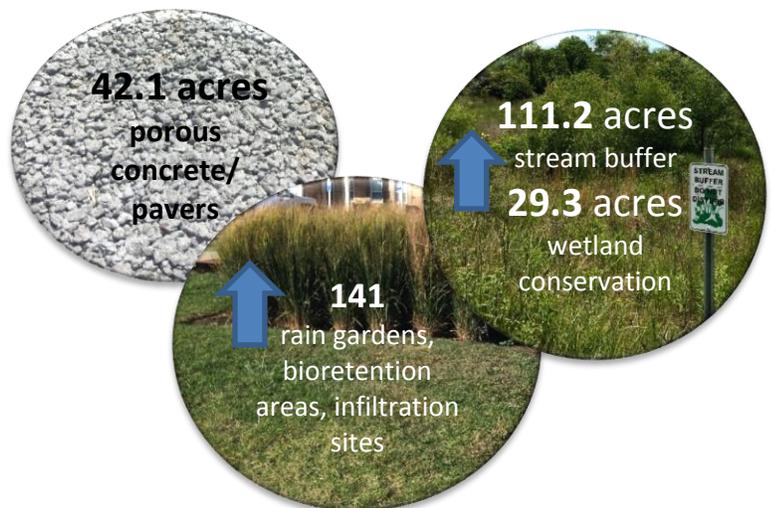
## Education and Outreach



0 outreach events

- February – watershed education to elementary students at RRE
- March – 12<sup>th</sup> Annual Tree Day

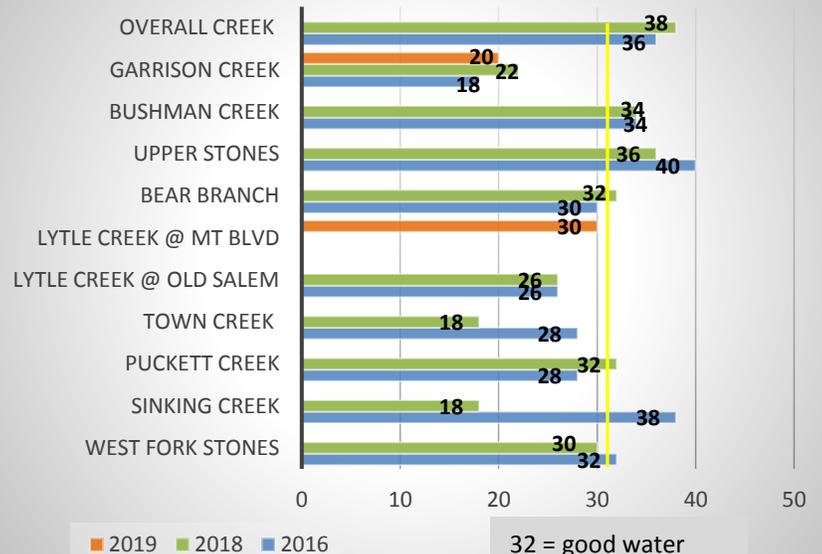
## LID/ Green Infrastructure

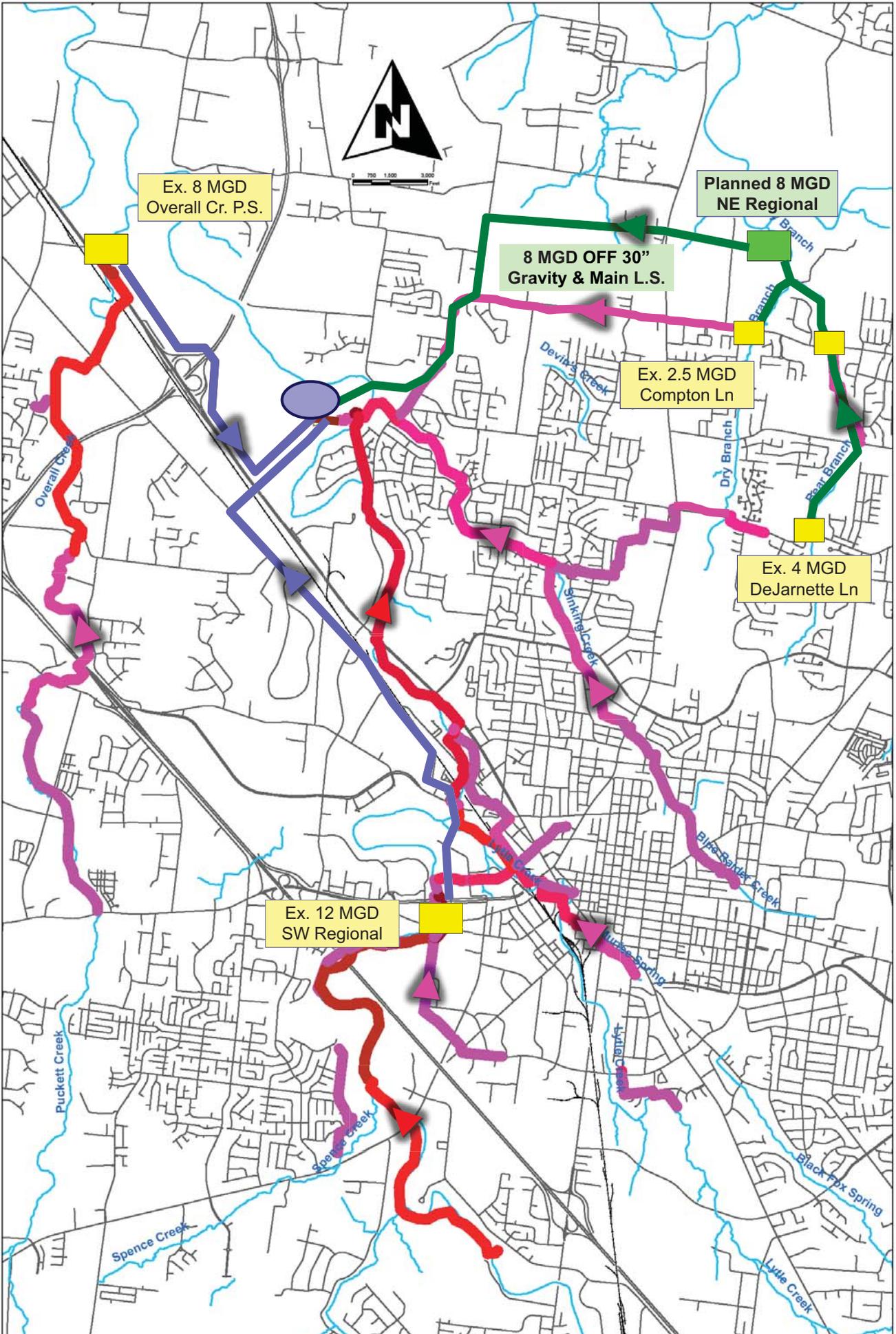


## Stormwater Infrastructure

|                     | Dec      | YTD        | Total       |
|---------------------|----------|------------|-------------|
| Junction Boxes      | 76       | 803        | 1,719       |
| Headwalls           | 27       | 269        | 6,881       |
| Ponds               | 5        | 44         | 514         |
| Gravity Mains       | 8,386 ft | 103,949 ft | 701.8 miles |
| Weirs               | 4        | 34         | 304         |
| WQ Units            | 1        | 7          | 112         |
| Underground Storage | 0        | 0          | 30          |

## Water Quality Scorecard





**MURFREESBORO WATER RESOURCES DEPARTMENT  
OPERATING REVENUES AND EXPENDITURES  
SIX MONTHS ENDED DECEMBER 31, 2019**

|                                 | YTD ACTUAL           | ANNUAL BUDGET        | % TO<br>BUDGET |
|---------------------------------|----------------------|----------------------|----------------|
| <b>Operating Revenues</b>       |                      |                      |                |
| Water Revenue                   | \$ 8,432,274         | \$ 16,654,000        | 51%            |
| Repurified Revenue              | \$ 19,482            | \$ 26,000            | 75%            |
| Wastewater Revenue              | \$ 14,572,374        | \$ 29,804,000        | 49%            |
| Other Income                    | \$ 487,715           | \$ 596,000           | 82%            |
| <b>Total Operating Revenues</b> | <b>\$ 23,511,844</b> | <b>\$ 47,080,000</b> | <b>50%</b>     |
| <br>                            |                      |                      |                |
| Water Operating Expenses        | \$ 4,935,425         | \$ 11,526,114        | 43%            |
| Wastewater Operating Expenses   | \$ 5,343,480         | \$ 12,829,162        | 42%            |
| <b>Total Operating Expenses</b> | <b>\$ 10,278,905</b> | <b>\$ 24,355,276</b> | <b>42%</b>     |
| <br>                            |                      |                      |                |
| Net Earnings from Operations    | \$ 13,232,940        | \$ 22,724,724        | 58%            |

|                             | YTD ACTUAL          | ANNUAL BUDGET        | % TO<br>BUDGET |
|-----------------------------|---------------------|----------------------|----------------|
| <b>WATER REVENUES</b>       |                     |                      |                |
| Metered Water               | \$ 7,701,824        | \$ 15,200,000        | 51%            |
| Water Adjustments           | \$ (6,148)          | \$ (26,000)          | 24%            |
| Private Fire Protection     | \$ 56,652           | \$ 112,000           | 51%            |
| Service Initiation Fees     | \$ 123,670          | \$ 230,000           | 54%            |
| Late Fees                   | \$ 360,464          | \$ 700,000           | 51%            |
| Non-Payment Fees            | \$ 81,360           | \$ 180,000           | 45%            |
| Returned Payment Fees       | \$ 3,840            | \$ 8,000             | 48%            |
| Cross Connection            | \$ 100,730          | \$ 225,000           | 45%            |
| Enernoc                     | \$ 9,881            | \$ 25,000            | 40%            |
| Miscellaneous               | \$ -                | \$ -                 |                |
| <b>TOTAL WATER REVENUES</b> | <b>\$ 8,432,274</b> | <b>\$ 16,654,000</b> | <b>51%</b>     |

|                                  |                  |                  |            |
|----------------------------------|------------------|------------------|------------|
| <b>REPURIFIED REVENUES</b>       |                  |                  |            |
| Repurified Revenue               | \$ 19,482        | \$ 26,000        | 75%        |
| <b>TOTAL REPURIFIED REVENUES</b> | <b>\$ 19,482</b> | <b>\$ 26,000</b> | <b>75%</b> |

|                             |                      |                      |            |
|-----------------------------|----------------------|----------------------|------------|
| <b>WASTEWATER REVENUES</b>  |                      |                      |            |
| Enernoc                     | \$ 3,493             | \$ 5,000             | 70%        |
| Sewer Charges               | \$ 14,416,590        | \$ 29,500,000        | 49%        |
| Sewer Adjustments           | \$ (38,220)          | \$ (140,000)         | 27%        |
| Surveillance                | \$ 18,654            | \$ 38,000            | 49%        |
| Sampler                     | \$ 8,700             | \$ 18,000            | 48%        |
| BOD                         | \$ 90,249            | \$ 275,000           | 33%        |
| Amonia                      | \$ 23,737            | \$ 60,000            | 40%        |
| Septage Charges             | \$ 44,780            | \$ 45,000            | 100%       |
| STEP Revenue                | \$ 4,391             | \$ 3,000             | 146%       |
| <b>TOTAL SEWER REVENUES</b> | <b>\$ 14,572,374</b> | <b>\$ 29,804,000</b> | <b>49%</b> |

|                           |                   |                   |            |
|---------------------------|-------------------|-------------------|------------|
| <b>OTHER INCOME</b>       |                   |                   |            |
| Interest Earnings         | \$ 333,174        | \$ 400,000        | 83%        |
| Inspections               | \$ 113,472        | \$ 166,000        | 68%        |
| Miscellaneous             | \$ 41,070         | \$ 30,000         | 137%       |
| <b>TOTAL OTHER INCOME</b> | <b>\$ 487,715</b> | <b>\$ 596,000</b> | <b>82%</b> |

**MURFREESBORO WATER RESOURCES DEPARTMENT  
 OPERATING REVENUES AND EXPENDITURES  
 SIX MONTHS ENDED DECEMBER 31, 2019**

|                                       | YTD ACTUAL          | ANNUAL BUDGET        | % TO BUDGET |
|---------------------------------------|---------------------|----------------------|-------------|
| <b>Water Operating Expenses</b>       |                     |                      |             |
| Water Source                          | \$ 67,336           | \$ 208,000           | 32%         |
| Water Treatment                       | \$ 1,932,554        | \$ 4,259,169         | 45%         |
| Water Storage                         | \$ 10,197           | \$ 67,300            | 15%         |
| Water Distribution                    | \$ 781,771          | \$ 1,776,098         | 44%         |
| Cross Connection                      | \$ 156,878          | \$ 351,959           | 45%         |
| Water Plant Administration            | \$ 376,030          | \$ 977,419           | 38%         |
| AMI Field Services                    | \$ 398,376          | \$ 919,329           | 43%         |
| O&M Admin Allocation (40%)            | \$ 112,314          | \$ 229,594           | 49%         |
| Customer Service Allocation (50%)     | \$ 301,937          | \$ 690,837           | 44%         |
| Engineering Allocation (40%)          | \$ 162,984          | \$ 463,758           | 35%         |
| Field Inspection Allocation (25%)     | \$ 59,182           | \$ 112,868           | 52%         |
| Admin Allocation (40%)                | \$ 575,865          | \$ 1,469,782         | 39%         |
| <b>Total Water Operating Expenses</b> | <b>\$ 4,935,425</b> | <b>\$ 11,526,114</b> | <b>43%</b>  |
| <br>                                  |                     |                      |             |
| <b>Wastewater Operating Expenses</b>  |                     |                      |             |
| Wastewater Collections                | \$ 980,109          | \$ 2,213,855         | 44%         |
| Wastewater Rehab                      | \$ 68,488           | \$ 158,500           | 43%         |
| Wastewater Pump Stations              | \$ 394,552          | \$ 779,924           | 51%         |
| Wastewater Industrial Surveillance    | \$ 145,766          | \$ 320,878           | 45%         |
| Wastewater House Services             | \$ 7,050            | \$ -                 |             |
| Wastewater Treatment                  | \$ 1,228,694        | \$ 2,953,269         | 42%         |
| Wastewater Disposal                   | \$ 280,114          | \$ 727,407           | 39%         |
| WRRF Administration                   | \$ 365,194          | \$ 916,888           | 40%         |
| STEP System                           | \$ 1,103            | \$ 24,000            | 5%          |
| Repurified Treatment                  | \$ 225              | \$ 121,000           | 0%          |
| Repurified Distribution               | \$ 2,464            | \$ 29,500            | 8%          |
| Repurified Disposal                   | \$ 113,491          | \$ 309,797           | 37%         |
| O&M Admin Allocation (60%)            | \$ 168,471          | \$ 344,391           | 49%         |
| Customer Service Allocation (50%)     | \$ 301,937          | \$ 690,837           | 44%         |
| Engineering Allocation (60%)          | \$ 244,476          | \$ 695,638           | 35%         |
| Field Inspection Allocation (75%)     | \$ 177,546          | \$ 338,605           | 52%         |
| Admin Allocation (60%)                | \$ 863,798          | \$ 2,204,674         | 39%         |
| <b>Total Sewer Operating Expenses</b> | <b>\$ 5,343,480</b> | <b>\$ 12,829,162</b> | <b>42%</b>  |

**MURFREESBORO WATER RESOURCES DEPARTMENT  
OPERATING REVENUES AND EXPENDITURES  
SIX MONTHS ENDED DECEMBER 31, 2019**

| <b>SUMMARY OF NET TAP FEES</b> | <b>YTD ACTUAL</b>   | <b>ANNUAL<br/>BUDGET</b> | <b>% TO<br/>BUDGET</b> |
|--------------------------------|---------------------|--------------------------|------------------------|
| Water Taps/Reserves            | \$ 217,475          | \$ 500,000               | 43%                    |
| Sewer Taps/Reserves            | \$ 2,659,776        | \$ 5,500,000             | 48%                    |
| Special Assessment Districts   | \$ 988,381          | \$ 2,000,000             | 49%                    |
|                                | <u>\$ 3,865,632</u> | <u>\$ 8,000,000</u>      | <u>48%</u>             |

| <b>DEBT SERVICE</b> | <b>YTD ACTUAL</b>   | <b>ANNUAL<br/>BUDGET</b> | <b>% TO<br/>BUDGET</b> |
|---------------------|---------------------|--------------------------|------------------------|
| Principal           | \$ 1,320,294        | \$ 11,547,588            | 11%                    |
| Interest            | \$ 914,842          | \$ 1,940,732             | 47%                    |
|                     | <u>\$ 2,235,136</u> | <u>\$ 13,488,320</u>     | <u>17%</u>             |

| <b>Debt Coverage Ratio</b> | <b>YTD ACTUAL</b> | <b>ANNUAL<br/>BUDGET</b> | <b>% TO<br/>BUDGET</b> |
|----------------------------|-------------------|--------------------------|------------------------|
| Operating Net Earnings     | \$ 13,232,940     | \$ 22,724,724            | 58%                    |
| Debt Service               | \$ 2,235,136      | \$ 13,488,320            | 17%                    |
|                            | 5.92              | 1.68                     |                        |