

WATER AND SEWER BOARD

Tuesday, October 25, 2016
Operations & Maintenance Facility
1725 South Church Street
3:30 PM

AGENDA

1. Consent Agenda:
 - A. Consider purchase of a 6,000 lb capacity lift truck for Stones River WTP..... 2
 - B. Consider bids for construction piping materials..... 6
 - C. Consider a request to abandon a sewer easement for Marymont Springs Subdivision..... 13
 - D. Consider a request to abandon a sewer easement along Robert Rose Dr..... 17
 - E. Consider purchase of a call recording/reporting phone system module..... 20
 - F. Consider contingency allocations for Sinking Creek WWTP Phase 4D..... 22
2. Consider minutes from the September 27, 2016 meeting..... 25
3. Consider a proposal from Pall Corporation for membrane modules at Stones River WTP 34
4. Consider Engineering Task Order from LittleJohn Engineering Associates for Sanitary Sewer Rehabilitation project..... 60
5. 2017-2021 Capital Improvements Plan (CIP) Update and Impact on Working Capital Reserve Account 68
6. Dashboard
7. Financials
8. Other business
9. Adjourn



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MEMORANDUM

DATE: September 20, 2016
TO: Water and Sewer Board
FROM: Alan Cranford
SUBJECT: 6,000 lb Capacity Lift Truck - Stones River Water Treatment Plant

Background

Staff is in need of a 6,000 lb capacity lift truck to unload heavier items than the current 3,000 lb tow motor. In addition, the lift truck needs the capability to reach the second floor of the membrane building and operate in and around the facility. The two motor is not capable of this and several items in the last couple of years have exceeded the capacity of the tow motor.

Staff has reviewed the available standing contracts and found a 6,000 lb capacity lift truck equipment that meets all of Staff's specifications on the GSA contract GS-07F-0199T. The pricing of this contract expires January 31, 2017. The details are as follows:

The GSA contract # GS-07F-0199T is through Atlanta Fork Lifts, Inc.

Qty	Item ID/Description	Cost
1	6,000 LB Capacity Lift Truck	\$26,840.00

Recommendations

Staff recommends the Water and Sewer Board recommends that the City Council approve the purchase of a Toyota 6,000 lb capacity internal combustion lift truck in accordance with the GSA Contract # GS-07F-0199 from Atlanta Fork Lifts, Inc.

Fiscal Impact

The cost for the referenced equipment on the GSA contract is in the amount of \$26,840.00. This equipment is in the FY 2016/17 rate funded capital budget in the amount of \$35,000.00.

Attachments

Atlanta Fork Lifts, Inc. Government Sales Quote



Atlanta Fork Lifts, Inc.
 3111 E. Ponce De Leon Ave
 Scottsdale, GA 30079
 Phone: 770-704-9500
 Fax: 770-704-9501
 www.atlantaforklifts.com

To: Murfreesboro Water and Sewer Dept.
 5528 Sam Jared Drive
 Murfreesboro, TN 37130

Attn: Alison McGee E-Mail: amcgee@murfreesborotn.gov

Date: September 22, 2016

Our Ref: 09221627

Phone: 615-848-3222

Cell: 615-642-1390

GOVERNMENT SALES QUOTE

CONTRACT# GS-07F-0199T

We respectfully submit this quotation for the following NEW Toyota 6,000# Capacity Internal Combustion Lift Truck (1 each):

TOYOTA MODEL 8FGU30, 6,000# Capacity Internal Combustion Lift Truck, quality engineered with the following specification:

- Pneumatic Drive & Steer Tires
- LP Gas Powered - UL Type "LP" Rating – **Includes LP Fuel Tank**
- Heavy-Duty Side-Shifter with 3-Way Hydraulic Controls with Automatic Fork Leveling System.

This lift truck is equipped with a 3-Way Catalytic Muffler System as standard equipment, and conforms to current Federal EPA and California ARB regulations for off-road large spark ignited engines.

- **SYSTEM OF ACTIVE STABILITY™ (SAS)**
 Toyota's industry exclusive System of Active Stability (SAS) helps reduce lift truck instability by electronically monitoring and controlling various functions of the lift truck.
 - Active Control Rear Stabilizer
 - Active Mast Function Controller (AMC)
- **AUTOMATIC FORK LEVELING**
- **TOYOTA ENGINE**
- **ULTRA COMFORT 4-WAY ADJUSTABLE, FULL SUSPENSION SEAT WITH NON CINCHING SEAT BELT**



Photo may portray optional equipment not included in your quotation.

Mast 3-Stage (FSV) mast with full free lift. Mast specifications:
 Maximum Fork Height - 237.5"
 Overall Lowered Height - 112.8" (Overhead Guard Height - 85.50")
 Free Lift - 64.8" with standard Load Backrest

Lifting Capacity Base Model Capacity - 6,000 lbs. lbs. @ 24" load center
 Actual Capacity, based on quoted specifications, - 3,020 lbs. @24" load center to 237.5" MFH

Tilt 6 degrees forward and 6 degrees backwards

<i>Carriage</i>	ITA Hook-type, 42" Carriage with Heavy-Duty Side-Shifter with 3-Way Hydraulic Controls
<i>Forks</i>	42" Long x 5" Wide x 1.8" Thick Class III Forks
<i>Load Backrest</i>	48" High Load Backrest
<i>Attachments</i>	3 Way Valve with 3rd. Function Internal Hosing) for 42" Wide Carriage with Heavy Duty Cascade Side-Shifter and Automatic Fork Leveling System
<i>Speeds</i>	Travel Speed: 11.50 mph. Lift Speed: 102 fpm.
<i>Engine</i>	Toyota 2.2L 4Y-ECS Industrial LP Gas Engine <u>with LP Fuel Tank</u> 136 cubic inch displacement, 4 cylinder, overhead valve (OHV) Net Torque Rating (SAE ft-lb): 118 @ 2100 rpm Net Horsepower Rating (SAE HP): 51 @ 2570 rpm
<i>Transmission</i>	Automatic Transmission 1 speed forward, 1 speed reverse standard.
<i>Steering</i>	Load Sensing Hydrostatic Power Steering with Memory Tilt Steering Column
<i>Wheels and Tires</i>	Front Tires: 28x9-15 (Pneumatic) Rear Tires: 6.50-10 (Pneumatic) * Includes Safety Rear Side-Ring Wheels
<i>Additional Equipment Included:</i>	Two (2) Adjustable Headlights With Headlight Guards Back-up Alarm Rear Light Group (Brake Lights/Tail Lights/Turn Signals/Back-Up Lights/Marker Lights) 4Y-ECS Hi-Power LP Gas Engine LP Gas Fuel system With UL Approval Placard - Includes Swing-Out Mounting Bracket U.L. (Underwriter's Laboratories) Safety Approved Model Type "LP " LP Gas Fuel Tank - Included Digital Dash Display Includes: Hour Meter With SAS Diagnostic Display, Clogged Air Filter Warning Lamp, Engine Coolant Temperature Warning Gauge, Engine Oil Pressure Warning Lamp, Battery Charge Warning Lamp, and SAS & Operator Presence Warning Lamp. Air Cleaner: Includes 7" Cyclone Air Cleaner With High Position External High Air Intake & Fully Sealed Air Intake System Dual Operator Assist Grips Oversized Cup Holder & Amenity Tray Heavy-Duty Non Slip Rubber Floor Mat MANUALS: Includes Operator's Manuals
<i>Warranty</i>	12 Months or 2,000 hours whichever occurs first: Basic 36 Months or 6,000 hours whichever occurs first: Powertrain

GSA SIN# 629-01A ITEM# 17-033-03B –

Investment: Customer Cost per Unit Delivered – Your Dock..... \$26,840.00

NOTES: Unit will be delivered fully serviced and ready to be put into operation. Includes Operator Orientation on the new forklift at your facility at no cost to the government (if desired).

Atlanta Fork Lifts, Inc GSA Contract# GS-07F-0199 expires 01-31-2017, WAWF Certified, TIN# 58-1152676, DUNS# 06-2593603, Cage Code 0VTV7, SAM.GOV Registered, Business Size: Small Business per NAICS 333924. Phone 770-704-9500, Fax 770-704-9501.

E-Mail: rmincey@windstream.net

Terms and Conditions **Payment: Net 30 Days**
 F.O.B.: Destination
 Delivery: 90 Days A.R.O.

GSA CONTRACT NUMBER GS-07F-0199T EXPIRES 01-31-2017

******This forklift proudly made in the U.S.A. (Columbus, Indiana)******

*******WE ARE AN SBA CERTIFIED SMALL BUSINESS*******

**Sincerely,
Atlanta Fork Lifts, Inc.**

By: *Randy C. Mincey*

Phone: 770-704-9500

Fax: 770-704-9501

Title: Government Sales Manager

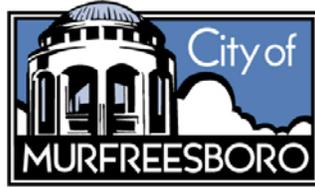
**Accepted:
Murfreesboro Water and Sewer Dept.**

By: _____

Name: _____

Title: _____

Date: _____



T E N N E S S E E
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MEMORANDUM

DATE: October 19, 2016
TO: Water and Sewer Board
FROM: Darren Gore
SUBJECT: Sealed Bids for Construction Piping Materials

Background

The Legal and Purchasing Departments instructed Water and Sewer Operations and Maintenance (O&M) to request sealed bids for piping materials necessary for in-house construction projects. The reason for this new purchasing requirement is due to Tennessee state law and City Code requiring contracts or City Council approval for money spent on a specific vendor that exceeds \$25,000 annually. With the volume of materials required for O&M construction operations throughout the year, that amount is typically exceeded on several pipe supply vendors. The table below show the bid results for piping materials necessary for upcoming projects.

Project Name: Shelby-Taylor-Green Hills			
Company	Water	Sewer	Total
HD Supply	\$13,759.23	\$7,517.22	\$21,276.45
Fortiline	\$13,577.05	\$8,250.60	\$21,827.65
Consolidated	\$14,078.00	\$7,816.40	\$21,894.40
Hayes Pipe	\$13,669.00	\$8,236.80	\$21,905.80

In the past, O&M would solicit materials in allotments not to exceed \$10,000 per quote, but could exceed \$25,000 in aggregate over a year's time. Stone and precast concrete manholes are purchased through standing annual contracts previously approved by the Board and Council. The current contract for stone is with Hoover, Inc. and the current contract for precast concrete manholes is with Sherman Dixie.

Recommendation

Staff recommends the Board recommend to City Council approval of purchasing all piping materials for the projects identified above from the low bidder, HD Supply.

Fiscal Impact

The overall costs associated with piping material bids for the referenced project is \$21,276.45. Funds are available per the O&M construction operations accounts tabulated below as approved by the Water and Sewer Board and City Council in the 2016-2017 (FY17) budget.

FY17 APPROVED MWSD O&M CONSTRUCTION ACCOUNTS

Description	TOTAL AMOUNT
CAPITAL ACCOUNTS	
Meters	\$100,000
Water Taps	\$200,000
Sewer Taps	\$100,000
Repurified water taps	\$5,000
Fire Hydrants	\$25,000
Water Lines	\$425,000
Sewer Lines	\$350,000
OPERATING ACCOUNTS	
Materials Pipe (Trans/Dist) Lines	\$23,000
Paving Material (Water)	\$32,000
Pipe & Materials Private Laterals	\$7,000
Materials Pipe Sewer Rehab	\$41,000
Paving Materials (Sewer)	\$56,000

Attachments

Itemized Water and Sewer Materials Bid
Project Exhibit



Bid Proposal for SHELBY-TAYLOR-GREEN HILLS PROJECT

MURFREESBORO WTR & SEWER DEPT

Bid Date: 10/12/2016 02:00 p.m.

HD Supply Bid #: 180465

HD Supply Waterworks

2353 South Church St
Murfreesboro, TN 37130

Phone: 615-893-0900

Fax: 615-893-1238

Seq#	Qty	Description	Units	Price	Ext Price
10		WATER LINE MATERIA LIST			
20	400	8 C900 DR18 PVC PIPE (G) MARKINGS PC235	FT	5.57	2,228.00
30	109	6 TJ CL52 DI PIPE C/L	FT	12.46	1,358.14
40	2	8X8 TYLER 5149 MJ TAP SLV DI C153 COMPACT F/DIP #377160	EA	807.20	1,614.40
50	2	8 T2361-19 MJ RW TAP VLV OL ON	EA	970.10	1,940.20
60	3	8X6 MJXSWIVEL TEE(I)CP DI C153	EA	93.61	280.83
70	3	6 A2361-23 MJ RW GV OL L/ACC	EA	467.00	1,401.00
80	3	A423 5-1/4VO HYD 3'6"B 6M 3W Y 3'6"BURY,6" MJ SHOE,3WAY,O/L 423-503918 YELLOW L/A	EA	1,516.00	4,548.00
90	2	8 MJ 90 BEND (I) CP DI C153	EA	65.12	130.24
100	12	8 MJ REGULAR ACC SET	EA	13.00	156.00
110	9	6 MJ REGULAR ACC SET	EA	11.38	102.42
		SUBTOTAL			13,759.23
120		SEWER LINE MATERIAL LIST			
130	910	8X14' SDR35 PVC SWR PIPE(G)	FT	2.62	2,384.20
140	1050	6X14' SDR35 PVC SWR PIPE(G)	FT	1.45	1,522.50
150	10	8X6 PVC SDR35 SWR WYE GXG	EA	32.71	327.10
160	10	6 PVC SDR35 SWR 45 GXSP	EA	9.48	94.80
170	42	6X6 PVC SDR35 SWR WYE GXG	EA	20.23	849.66
180	42	6 PVC SDR35 SWR GSKT CAP	EA	6.38	267.96
190	10	JBS 1150 RING & COVER MARKED SANITARY SEWER	EA	207.10	2,071.00
		SUBTOTAL			7,517.22
		Sub Total			21,276.45
		Tax			0.00
		Total			21,276.45

Branch Terms:

OUR CURRENT TERMS AND CONDITIONS APPLY. PLEASE CALL 615-893-0900 IF YOU REQUIRE A COPY.

*

IF ORDER IS NOT PLACED WITHIN 10 DAYS FROM BID DATE, PRICES ARE SUBJECT TO CHANGE. COPPER PRICING GOOD FOR 7 DAYS PVC PIPE GOOD FOR 14 DAYS.



CUSTOMER NO	QUOTING BRANCH	QUOTE NO	QUOTE DATE	PAGE
215810	FORTILINE NASHVILLE	5586085	10/07/16	1

CUSTOMER
MURFREESBORO WATER&SEWER DEPT. P.O. BOX 1477 MURFREESBORO, TN 37133

PROJECT INFORMATION
43-SHELLY-TAYLOR GREEN HILLS

LINE	QTY	UOM	DESCRIPTION	UNIT PRICE	TOTAL PRICE
30	400	FT	WATER LINE MATERIAL 8" C900 DR18 PIPE	5.7300	2,292.00
50	100	FT	6" TJ DIP CL52	12.9800	1,298.00
70	2	EA	8X8 MJ TAP SLV F/DI TYLER	856.5800	1,713.16
80	4	EA	8" MJ REGULAR ACCESSORY SET	13.1300	52.52
100	2	EA	8" MJ TV O/L 7950 L/ACC	892.2300	1,784.46
120	3	EA	8"X6" MJ HYD TEE C153	104.2900	312.87
130	6	EA	8" MJ REGULAR ACCESSORY SET	13.1300	78.78
150	3	EA	6" MJ GV O/L 7571-01 L/ACC	430.4000	1,291.20
160	6	EA	6" MJ REGULAR ACCESSORY SET	11.4200	68.52
200	3	EA	M&H ALTERNATE TO AMERICAN FLOW CONTROL HYDRANT 5-1/4" HYD 3'6" 6MJ O/L 129 L/ACC-YELLOW	1,495.9800	4,487.94
220	2	EA	8" MJ 90 C153	72.5400	145.08
230	4	EA	8" MJ REGULAR ACCESSORY SET	13.1300	52.52
			SEWER LINE MATERIAL		
280	910	FT	8" SDR35 PVC SEWER PIPE	2.6800	2,438.80
300	1050	FT	6" SDR35 PVC SEWER PIPE	1.5000	1,575.00
320	10	EA	8"X6" SDR35 PVC WYE GXG	28.0400	280.40
340	10	EA	6" SDR35 PVC 45 GXS	8.1100	81.10
360	42	EA	6" SDR35 PVC WYE GXG	17.8400	749.28
380	42	EA	6" SDR35 PVC CAP G	5.4600	229.32
400	10	EA	1150 R&C WT M/SEWER MURF	289.6700	2,896.70
			Subtotal:		21,827.65
			Tax:		.00
			Bid Total:		21,827.65

ALL STOCK DELIVERIES ARE SUBJECT TO SHIPPING CHARGES

All material is quoted for shipment within 30 days of bid or quote date. After 30 days, ALL quote prices are subject to review, based on current market conditions.

Ent By KYS 10/12/16 9:06:19

Shelly--Taylor--Green Hills Project

Bid Due in by 2:00 p:m Oct 12th 2016

Water Line Material List	QUANTITY	PRICE	TOTAL
8" PVC C900 DR18 CL150 PC235 WATER LINE Must Be; Diamond, National, Napco, Royal, Pipe Life Jet Stream "No Mixed Brands"	400 LF	5.69'	2276.00
6" DIP CLASS 52 WATER LINE Must be US Pipe, American Cast Iron, Clow or Griffin "No Mixed Brands"	100 LF	13.39'	1339.00
8" X 8" Tapping Sleeve BLK--F/DI W/Accessories	2 EA	960.00	1920.00
8" TAPPING VALVE MJ--O/L--W/Nut	2 EA.	1025.00	2050.00
8" X 6" Anchor Tee--CL153 FOR DI W/Accessories	3 EA.	115.00	345.00
6" Gate Valve MJ-MJ O/L R5 W / OP Nut W/Accessories	3 EA.	495.00	1485.00
5-1/4 Fire Hydrant / 3-Way / 42" Bury / 6" MJ Shoe / Yellow "MUST BE AMERICAN FLOW CONTROL B62B" MUELLER	3 EA.	1495.00	4485.00
8" 90 - 1/4 BEND MJ BLK--F/DI W/Accessories	2 EA.	89.00	178.00
		Total	14,078.00

Sewer Line Material List	QUANTITY	PRICE	TOTAL
8" x 14' PVC--SRD35 SEWER PIPE Must be; JM Eagle, Vulcan, Napco, Diamond, National, Sanderson, Royal or Pipe Life Jet Stream "No Mixed Brands"	910 LF	2.79'	2538.90
6" x 14' PVC--SRD35 SEWER PIPE Must be; JM Eagle, Vulcan, Napco, Diamond, National, Sanderson, Royal or Pipe Life Jet Stream "No Mixed Brands"	1,050 LF	1.55	1627.50
8" X 6" SDR35 WYE B X B X B Must be Harco, GPK, Plastic Trends or Multi-Fit	10 EA.	27.00	270.00
6" 45 DEGREE BEND B X S Must be Harco, GPK, Plastic Trends or Multi-Fit	10 EA.	8.00	80.00
6" X 6" SDR35 WYE B X B X B Must be Harco, GPK, Plastic Trends or Multi-Fit	42 EA.	18.00	756.00
6" PVC--SDR35 SEWER CAPS Must be Harco, GPK, Plastic Trends or Multi-Fit	42 EA.	7.00	294.00
JBS #1150 Traffic Manhole Casting 24" Ring & Cover "Sanitary Sewer To Be Cast On Lids"	10 EA	225.00	2250.00
		Total	7816.40

CONSOLIDATED PIPE & SUPPLY CO.

1500 COUNTY HOSPITAL RD

NASHVILLE TN 37218

242-4286

726-8827

CRAIG SLOAN

21,894.40

HAYES PIPE SUPPLY, INC.
 950 FIBER GLASS RD
 NASHVILLE, TN 37210
 615-255-4040

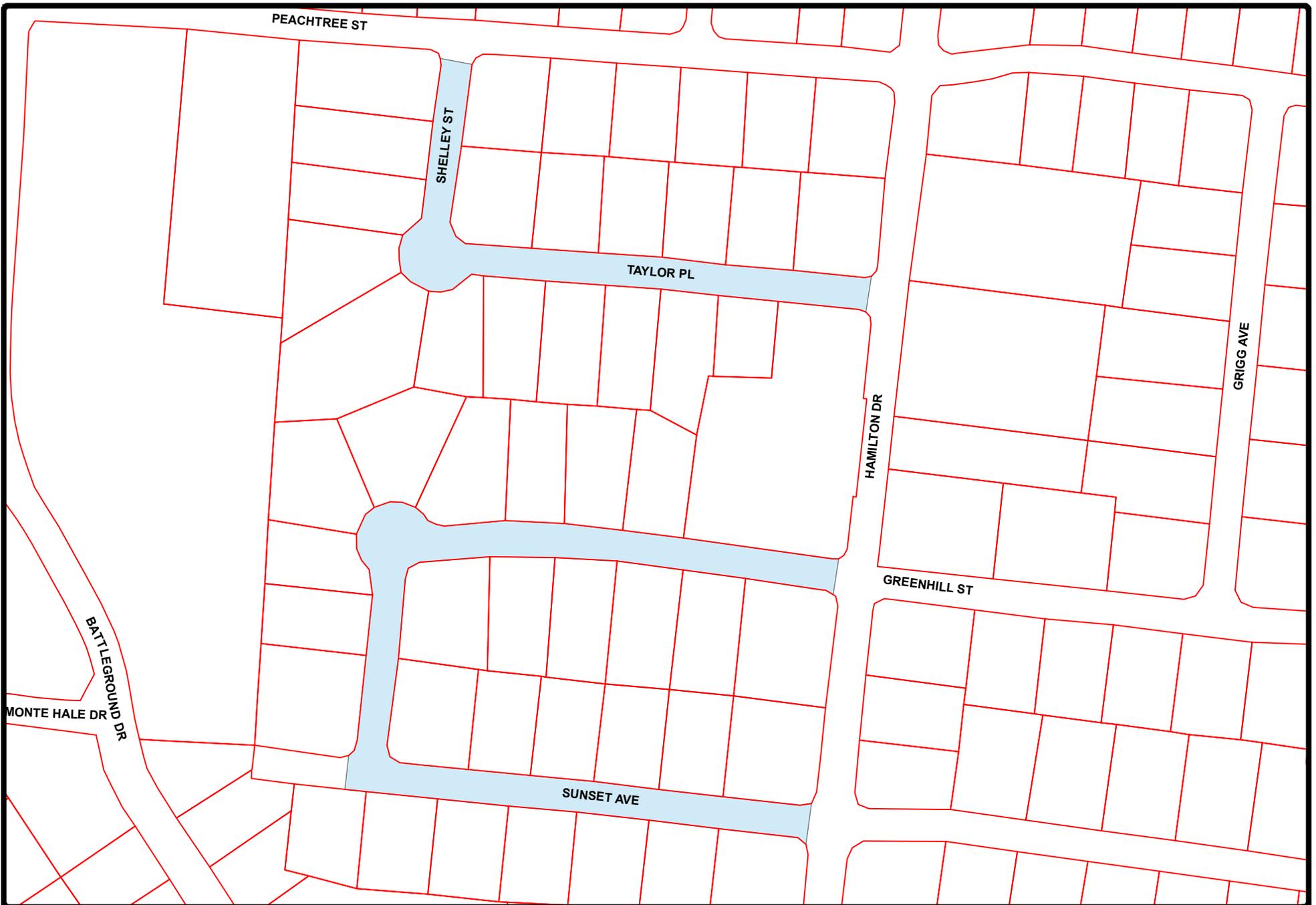
Shelly--Taylor--Green Hills Project

Bid Due in by 10:00 A:M Oct 12th 2016

Water Line Material List	QUANTITY	PRICE	TOTAL
8" PVC C900 DR18 CL150 PC235 WATER LINE Must Be; Diamond, National, Napco, Royal, Pipe Life Jet Stream "No Mixed Brands"	400 LF	5.85	2340. ⁰⁰
6" DIP CLASS 52 WATER LINE Must be US Pipe, American Cast Iron, Clow or Griffin "No Mixed Brands"	100 LF	13.69	1369. ⁰⁰
8" X 8" Tapping Sleeve BLK--F/DI W/Accessories	2 EA	885. ⁰⁰	1770. ⁰⁰
8" TAPPING VALVE MJ--O/L--W/Nut	2 EA.	995. ⁰⁰	1990. ⁰⁰
8" X 6" Anchor Tee--CL153 FOR DI W/Accessories	3 EA.	107. ⁰⁰	321. ⁰⁰
6" Gate Valve MJ-MJ O/L RS W / OP Nut W/Accessories	3 EA.	470. ⁰⁰	1410. ⁰⁰
5-1/4 Fire Hydrant / 3-Way / 42" Bury / 6" MJ Shoe / Yellow "MUST BE AMERICAN FLOW CONTROL B62B"	3 EA.	1431. ⁰⁰	4293. ⁰⁰
8" 90 - 1/4 BEND MJ BLK--F/DI W/Accessories	2 EA.	88. ⁰⁰	176. ⁰⁰
Total			13,669. ⁰⁰

Sewer Line Material List	QUANTITY	PRICE	TOTAL
8" x 14' PVC--SRD35 SEWER PIPE Must be; JM Eagle, Vulcan, Napco, Diamond, National, Sanderson, Royal or Pipe Life Jet Stream "No Mixed Brands"	910 LF	2.73	2484. ³⁰
6" x 14' PVC--SRD35 SEWER PIPE Must be; JM Eagle, Vulcan, Napco, Diamond, National, Sanderson, Royal or Pipe Life Jet Stream "No Mixed Brands"	1,050 LF	1.53	1606. ⁵⁰
8" X 6" SDR35 WYE B X B X B Must be Harco, GPK, Plastic Trends or Multi-Fit	10 EA.	28.50	285. ⁰⁰
6" 45 DEGREE BEND B X S Must be Harco, GPK, Plastic Trends or Multi-Fit	10 EA.	9.25	92. ⁵⁰
6" X 6" SDR35 WYE B X B X B Must be Harco, GPK, Plastic Trends or Multi-Fit	42 EA.	18.25	766. ⁵⁰
6" PVC--SDR35 SEWER CAPS Must be Harco, GPK, Plastic Trends or Multi-Fit	42 EA.	6.00	252. ⁰⁰
JBS #1150 Traffic Manhole Casting 24" Ring & Cover "Sanitary Sewer To Be Cast On Lids"	10 EA	275. ⁰⁰	2750. ⁰⁰
Total			8236. ⁸⁰

2,1905.80



MURFREESBORO WATER AND SEWER DEPARTMENT

Water & Sewer Improvements - Greenhill St, Sunset Ave, Taylor Pl, & Shelley St

SCALE : 1" = 200'





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MEMORANDUM

DATE: October 19, 2016
TO: Water and Sewer Board
FROM: Valerie H. Smith
SUBJECT: Sewer Easement Abandonment
Marymont Springs Subdivision

Background

This easement abandonment request is from Bill Huddleston, the project Engineer with Huddleston Steele Engineering, Inc. on behalf of the Developer, Bob Parks. They are requesting the abandonment of an existing fifteen (15) foot sewer easement. The existing easement was for a future sewer main extension to serve a remaining area of the subdivision and it would have been combined with an additional fifteen (15) foot easement. However, the sewer master plan has been re-designed and the remaining area will be served through future roadways. Therefore, this easement is no longer necessary.

Recommendation

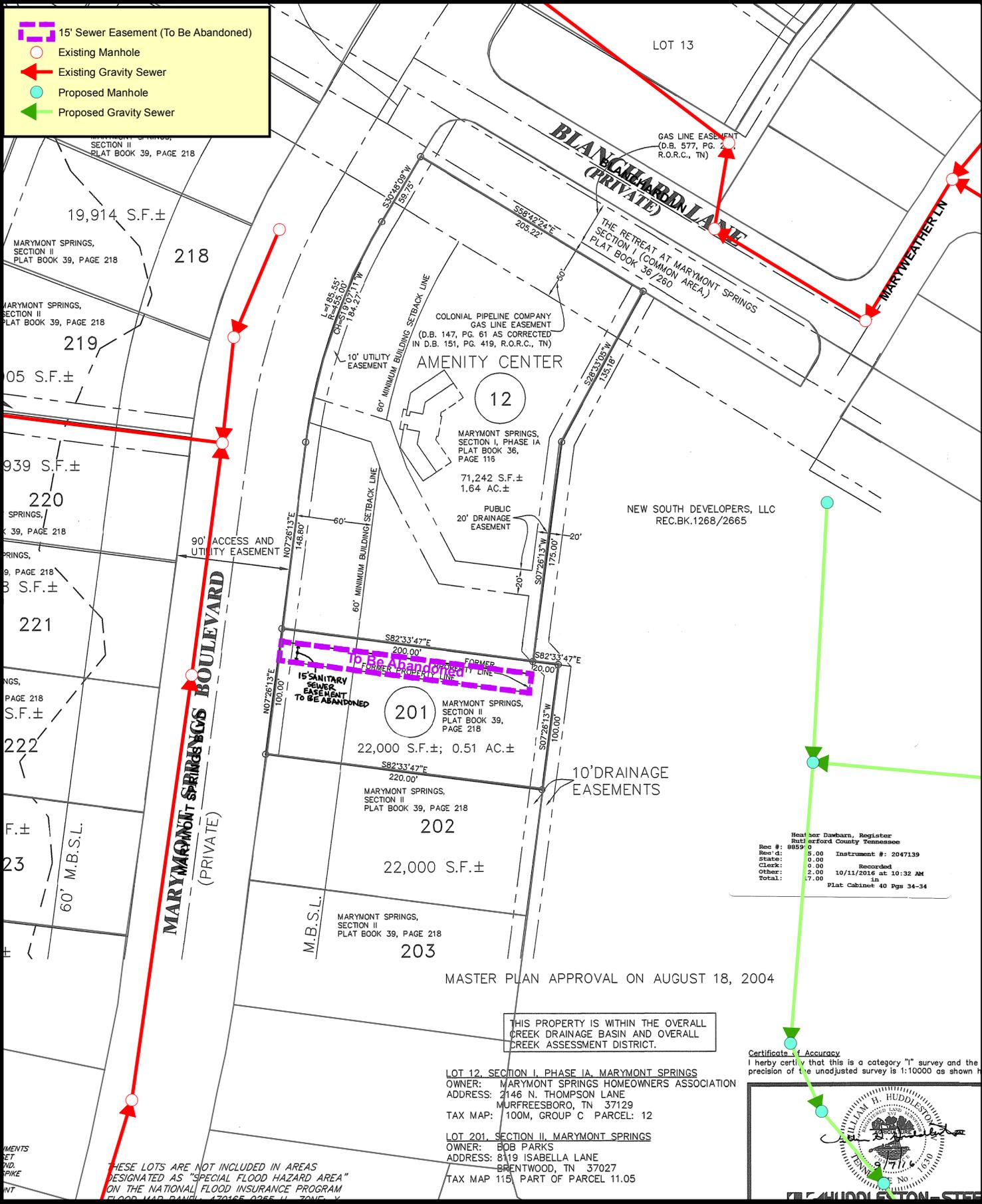
Staff recommends that the Board recommend to the Planning Commission and City Council approval of abandoning this existing sewer easement.

Fiscal Impact

Not applicable. The existing easement was dedicated to the Department by plat.

Attachments

Easement Abandonment Exhibit
Huddleston Steele Engineering Request for Abandonment



15' Sewer Easement (To Be Abandoned)
 Existing Manhole
 Existing Gravity Sewer
 Proposed Manhole
 Proposed Gravity Sewer

Heather Dawbarn, Register
 Rutledge County Tennessee
 Rec #: 8839 0
 Rec'd: 5.00 Instrument #: 2047139
 State: 0.00
 Clerk: 0.00 Recorded
 Other: 2.00 10/11/2016 at 10:32 AM
 Total: 7.00 in
 Plat Cabinet 40 Pgs 34-34

Certificate of Accuracy
 I hereby certify that this is a category "I" survey and the precision of the unadjusted survey is 1:10000 as shown in

October 18, 2016

Mr. Gary Whitaker
City of Murfreesboro
111 West Vine Street
Murfreesboro, Tennessee 27130

Re: Lot 201, Marymont Springs, Section II

Dear Mr. Whitaker:

At the request of our client, Mr. Bob Parks, we hereby make a request to abandon a 15' Sanitary Sewer Easement (Plat Book 36, Page 116) with a mandatory referral by Planning Commission. We are also submitting these documents to Valerie Smith at the Murfreesboro Water and Sewer Department for the Department Board's approval as well. The description and an exhibit are attached.

Sincerely,

HUDDLESTON-STEELE ENGINEERING, INC.



Joe Manly Thweatt, P.E.

Enclosures
Cc: Valerie Smith, MWSD

Property Description
Lot 201, Marymont Springs, Section II
Tax Map 100M, Group N, Parcel 27
Plat Book 39, Page 218
Plat Book 36, Page 116

Sanitary Sewer Easement to be Abandoned

Located in the 12th Civil District of Rutherford County, Tennessee. Bound on the south Lot 202, Marymont Springs, Section II (Plat Book 39, Page 218); on the west by Marymont Springs Boulevard; on the north by Lot 12, Marymont Springs, Section I, Phase IA (Plat Book 36, Page 116); and on the east by New South Developers, LLC (Record Book 1268, Page 2665).

Commencing at an iron pin in the east right-of-way of Marymont Springs Boulevard, said pin being the northernmost corner of Lot 12, Marymont Springs, Section I, Phase IA;

Thence with said east right-of-way, S30°48'09"W, 59.75 feet to an iron pin;

Thence with a curve to the left having a radius of 455.00 feet, an arc length of 185.55 feet, and a chord bearing and distance of S19°07'11"W, 184.27 feet to an iron pin;

Thence S07°26'13"W, 148.80 feet to an iron pin;

Thence S07°26'13"W, 10.00 feet to the Point of Beginning, being the northwest corner of this easement;

Thence leaving the east right-of-way of Marymont Springs Boulevard, S82°33'47"E, 220.00 feet to a point, being the northeast corner of this easement;

Thence with the west line of New South Developers, LLC, S07°26'13"W, 15.00 feet to a point, being the southeast corner of this easement;

Thence N82°33'47"W, 220.00 feet to a point in the east right-of-way of Marymont Springs Boulevard, being the southwest corner of this easement;

Thence with said east right-of-way, N07°26'13"E, 15.00 feet to the Point of Beginning, being 3300 square feet or 0.08 acre, more or less.

This easement is subject to all other easements and/or restrictions either recorded or by prescription that a complete title search may reveal.

Prepared by:
Huddleston-Steele Engineering, Inc.
2115 NW Broad Street
Murfreesboro, TN 37129



... creating a better quality of life

MEMORANDUM

DATE: October 19, 2016
TO: Water and Sewer Board
FROM: Valerie H. Smith
SUBJECT: Sewer Easement Abandonment
259 Robert Rose Drive

Background

This easement abandonment request is from Chris Barns, with Murfreesboro Electric Department (MED). They are requesting the abandonment of an existing twenty-five (25) foot sewer easement. The existing easement was for a future sewer main extension to serve the property. MED is constructing a substation on the property and does not need sewer service. The neighboring properties already have sewer available. Therefore, this easement is no longer necessary.

Recommendation

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

Fiscal Impact

Not applicable. The existing easement was dedicated to the Department by plat.

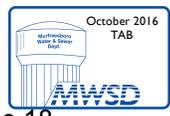
Attachments

MED Request for Abandonment



MURFREESBORO WATER AND SEWER DEPARTMENT

Easement Abandonment - Home Depot Sub Lot 3A





205 North Walnut Street
P. O. Box 9
Murfreesboro, Tennessee 37133-009
Office: 615-893-5514
Fax: 615-904-9118
www.murfreesboroelectric.com

9/30/2016

Valerie Smith
Murfreesboro Water and Sewer Department
300 NW Broad St
Murfreesboro, TN 37130

RE: Abandonment of Sanitary Sewer Easement

To whom it may concern:

The Murfreesboro Electric Department (MED) requests the 25ft. Sanitary Sewer Easement to be abandoned at 259 Robert Rose Drive. MED is constructing a substation on this site and does not require sewer service, thus justifying the elimination of the easement since all adjacent parcels have sewer access. Below is additional information for the site.

Owner Name: City of Murfreesboro
Parcel # 091I A 01501
Subdivision: Home Depot 1st Resub
Lot# 3A
Acres: 0.9

Please contact me if you need any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Chris Barns".

Chris Barns, P.E.
Distribution Engineer
Office: (615)-494-0428



... creating a better quality of life

MEMORANDUM

DATE: October 20, 2016
TO: Water and Sewer Board
FROM: Darren Gore, Doug Swann
SUBJECT: Phone System Module

BACKGROUND

Our current phone system does not have the ability to record calls or provide call detail reporting.

Staff feels these two features are important, as follows:

1. Recording calls provides two benefits;
 - a. Monitoring/recording of calls to ensure good customer service skills, and
 - b. Ability to record conversations with customers that need to be archived and attached to their account
2. Full system call detail reporting will enhance our ability to track data, further enabling us to report on call data and create/track KPI related to industry standards.

RECOMMENDATION

Staff recommends the Board approve the purchase of the call recording/reporting module for our NEC phone system. Quoted price is \$16,948 through a purchasing cooperative known as The Interlocal Purchasing System (TIPS) approved by the City of Murfreesboro.

FISCAL IMPACT

This module is in the rate-funded FY16 Capital Budget. Budgeted amount is \$16,000.



City of Murfreesboro Water & Sewer
 300 NW Broad Street
 Murfreesboro, TN 37130

August 16, 2016

Attn: Brian Pollock

TIS/TAPS contract # 5052215

The following quote is for the materials and labor for the installation of Call Recording and Call Accounting.

QTY	Description	Part #	LIST PRICE	TIPS/TAPS PRICE
1	Tapit NOVA SQL	TPNV	\$ 2,995.00	\$ 2,845.25
1	RePlaY for Twelve ATS	RPLATS12	\$ 10,495.00	\$ 9,970.25
1	RePlaY Enhanced	RPL_ENH	\$ 600.00	\$ 570.00
1	Shipping	SHP	\$ 87.00	\$ 87.00
1	SMDR License	LK-SYS-SMDR-LIC	\$ 100.00	\$ 90.00
	Labor	BLACK BOX	\$ 2,420.00	\$ 1,443.48
SUBTOTAL			\$ 16,697.00	\$ 15,005.98
SECOND YEAR SUPPORT				
1	RePlaY for 12 ATS Support	RPLATS12_S	\$ 1,942.00	\$ 1,942.00
TOTAL				\$ 16,947.98

SUPPORT INCLUDES:

- Refresh training
- Software Support
- Hardware warranty on TriSys-supplied hardware
- Software for upgrades
- New area codes and NXXs

NOTES:

- Quote is valid for 30 days from quote date.
- First year support is provided at no charge.
- Trisys strongly suggests use of a Smart UPS on all computers supplied.
- Quote includes a Black Box team member working with customer to create the database, with the customer providing the database information to Black Box. Trisys will work with the customer to import the database.
- This quote will provide for call recording on 12 trunks at the Main location and SMDR reporting on all four sites.

Jacque Glisson
 Phone: 615-315-8608
 Fax: 615-315-8609
jacque.glisson@blackbox.com



... creating a better quality of life

MEMORANDUM

DATE: October 21, 2016
TO: Water and Sewer Board
FROM: Valerie Smith
SUBJECT: Contingency Allowance Allocations for Sinking Creek WWTP Phase 4D

Background

The Department received bids for the Sinking Creek Plant Expansion – Phase 4D on January 8, 2015. At that meeting the Board approved to award the project to 3D Enterprises the contract in the amount of \$30,472,000. As part of the referenced project, Item #4 within Schedule C of the Construction Contract is a contingency allowance of \$500,000.

The attached change control log which identifies the recent allowance allocation issued through field work change directives. Note that these work change directives do not change the contract price, only adjust the remaining balance of the contingency allowance. The final contract price will be adjusted accordingly in a future change order or a final balancing change order at the end of the project.

The following table is provided to update the Board on the current field work change directives and the remaining contingency allowances.

Project	Contingency Allowance	Prior Contingency Allocations	Current Contingency Allocations	Remaining Contingency Allowance
Phase 4D Expansion	\$500,000	\$231,517.00**	\$ 6,540.00 *	\$261,943.00

*CCF # – 30 (Current)

**CCF #'s (1 Rev. 2, 2, 5-9, 11-13, 17-29 (previously approved)(cumulative)

Recommendation

Staff recommends the referenced contingency allocation for the Phase 4D Expansion be authorized. A final contract amount accounting for all contingency items will be brought to the Board and City Council for approval in a final balancing change order.

Fiscal Impact

There is no fiscal impact at this time to the Department’s State Revolving Fund (SRF) loan, as the contingency allowance has been approved within the contract and the contract amount remains unaffected.

Attachments

SSR Change Control Form
 Letter from 3D Enterprises



Engineers • Contractors/Construction Managers • Environmental Consultants

October 19, 2016

Smith, Seckman, Reid, Inc.
2995 Sidco Drive
Nashville, TN 37204

Attention: Mr. Brent Fowler, P.E.
Senior Environmental Engineer

RE: Sinking Creek Wastewater Treatment Plant
Phase 4D Expansion
Murfreesboro, TN
3D Project No. 176
3D Change Order Proposal No. 022, CCF-30

Dear Mr. Fowler:

3D has attached signed CCF-30 which documents a request for proposal to provide column support beneath the Tertiary Filter Control Room Door Mark 8-3 along with demolition of a section of upturned concrete beam at the door opening. Therefore, we are pleased to provide the following proposal for your consideration and approval. The scope of this quotation is as follows:

1. Furnish and install one square HSS 7"x7"x5/16" primed steel column support with 1" thick cap and base plate per CCF-30 description and attached sketches including all necessary labor, materials, equipment, supervision, etc.
2. Provide drill and epoxy anchorage at column base plate with leveling nuts and grout along with screw anchorage at top plate per SSR structural engineer e-mail clarifications. Provide finish paint coat as required.
3. Saw cut, demolish, and remove portion of upturned concrete beam at door opening. Exposed reinforcing steel shall be burnt back below concrete surface and patched for a uniform transition through the door threshold. Additionally, new installations within Tertiary Filter Control Room shall receive dust protection during concrete demo operations and clean-up upon completion of concrete demolition activities.

This quotation is limited to the items as defined herein. Any additional items required, but not included within this proposal shall be subject to additional consideration. We propose to perform the additional work as defined herein for the total lump sum addition of **\$6,540.00** to our contract amount with the following breakdown:

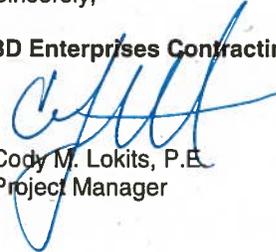
COP #022 – CCF-30 BREAKDOWN

3D Labor	\$1,450.00
3D Materials	\$3,200.00
3D Equipment	\$500.00
Subcontractor - Painting	<u>\$300.00</u>
Subtotal:	\$5,450.00
General Overhead	\$545.00
Profit	<u>\$545.00</u>
Total:	\$6,540.00

No change to our contract time of performance is required. We hope this proposal meets with your approval. However, if after reviewing this proposal you have any questions, please do not hesitate to contact me.

Sincerely,

3D Enterprises Contracting Corporation


Cody M. Lokits, P.E.
Project Manager

CL/blh

cc: Mike Klein, 3D, w/encl.

CHANGE CONTROL FORM (CCF)

Owner Contract No.	N/A
Project Name:	SINKING CREEK WWTP PHASE 4D EXPANSION
Engineer:	Smith Seckman Reid, Inc.
Contractor:	3D Enterprises Contracting Corporation

DESCRIPTION OF CHANGE

Provide one (1) column support beneath Filter Control Room Door Mark 8-3. Column shall be located 6'-8" past where door stops and centered under the upturned beam. Column shall be either an 8-inch round section or a square HSS 7x7x5/16 with end plates, 12"x16"x1" thick. Provide (4) bolted connection to the slab above and slab below. Column may be provided in welded sections; 3 maximum. A certified welder shall be used for all welds. Section of upturned beam at door opening shall be demolished after column installation. Any exposed re-steel at beam shall be coated per 09900.

(Attach Supporting Documentation)

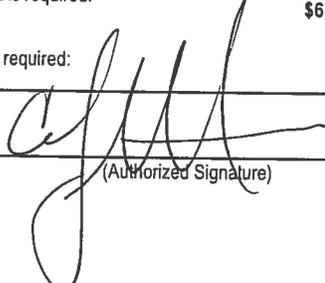
Requested By:	ENGINEER
This Document is a:	REQUEST FOR PROPOSAL (RFP)
Drawing(s) Reference:	A1.1-08; S1.1-08
Spec. Reference:	

REQUEST FOR PROPOSAL / CHANGE REQUEST / CLAIM

We propose to perform the Work or make the Claim described above for the following change in Contract

Cost and Contract Times:

<input type="checkbox"/> No Change in Contract Amount is required.	<input checked="" type="checkbox"/> A Change in Contract Amount is required:	\$6,540.00
	Add/Deduct (Circle One)	
<input checked="" type="checkbox"/> No Change in Contract Time is required.	<input type="checkbox"/> A Change in Contract Time is required:	_____ days

Engineer:  (Authorized Signature)	Contractor:  (Authorized Signature)
Owner: _____ (Authorized Signature)	<input type="checkbox"/> Recommends Acceptance <input type="checkbox"/> Recommends Rejection

WORK CHANGE DIRECTIVE

You are directed to proceed to make the changes to the Work described in this Work Change Directive. Any change in Contract Price or Contract Time will be determined in accordance with the General Conditions.

Recommended by Engineer:	Date:
Authorized by Owner:	Date:
Accepted by Contractor:	Date:

FIELD ORDER

This Field Order issued in accordance with the General Conditions for minor changes in the Work without changes in the Contract Price or Contract Time. If you consider that a change in Contract Price or Contract Times is required, notify the Resident Project Representative immediately and before proceeding with the Work.

Recommended by RPR:	Date:
Directed by Engineer:	Date:
Accepted by Contractor:	Date:

MINUTES
MURFREESBORO WATER AND SEWER BOARD
September 27, 2016

The Murfreesboro Water and Sewer Board met on Tuesday, September 27, 2016 in the conference room 4at the Operations and Maintenance Building, 1725 S. Church Street. Present at the meeting were Board members: Mr. John Sant Amour, Mr. Ron Crabtree, Mr. Brian Kidd, Ms. Kathy Nobles, Ms. Sandra Trail, and Dr. Al Carter. Also present were Darren Gore, Valerie Smith, David Ives, Doug Swann, Steve Tate, Donald Hughes, Jimmy Stacey, Sharon Seibert, Alan Cranford, Melissa Rowland, Steve Toler, Kyle Peters, Mike Corn, John Corn, and Kenny Diehl, along with other members of the public.

The Board recognized Steve Toler and Wesley Young for achieving a level of excellence by passing the Maintenance Technologist exam.

The Consent Agenda was presented for the following considerations:

A. Consider Final Change Order for South Church Street Sanitary Sewer –

At the December 2014 Board meeting it was recommended and approved for Wiser Consultants (Wiser) to design the sewer extension to an area of interest, approximately 32.6 acres in size on the west side of South Church St. (US-231) at the intersection of the newly constructed Joe B Jackson Pkwy. The design was completed, bids received and the project awarded to Charles Deweese Construction, Inc. at the February Board meeting in the amount of \$287,887.65.

The project is now completed and a final balancing change order has been submitted. The final change increases the original contract amount by \$9,386.47 due mainly to an increase in the amount of asphalt paving necessary to repair the roadway and paved drives. This is more than anticipated and originally estimated by Wiser Company. The increase brings the final contract amount to \$297,274.12.

Staff recommended the Board recommend to the City Council approval of the Final Balancing Change Order for a total of \$297,274.12.

Funding was approved to come from the Department's working capital reserves with repayment through the assessment district. This construction project has been programmed into the Department's 5-year capital improvement plan.

B. Consider contingency allocations for Sinking Creek WWTP Phase 4D –

The Department received bids for the Sinking Creek Plant Expansion Phase 4D on January 8, 2015. At that meeting the Board approved to award the project to 3D Enterprises the contract in the amount of \$30,472,000. As part of the referenced project, Item #4 within Schedule C of the Construction Contract is a contingency allowance of \$500,000.

The change control log identifies the recent allowance allocation issued through field work change directives. These work change directives do not change the contract price, only adjust the remaining balance of the contingency allowance. The final contract price will be adjusted accordingly in a future change order or a final balancing change order at the end of the project.

The following table is provided to update the Board on the current field work change directives and the remaining contingency allowances.

Project	Contingency Allowance	Prior Contingency Allocations	Current Contingency Allocations	Remaining Contingency Allowance
Phase 4D Expansion	\$500,000	\$213,387.00**	\$ 18,130 *	\$268,483.00

*CCF # – 27-29 (Current)

**CCF #'s (1 Rev. 2, 2, 5-9, 11-13, 17-26 (previously approved)(cumulative)

Staff recommended the referenced contingency allocation for the Phase 4D Expansion be authorized. A final contract amount accounting for all contingency items will be brought to the Board and City Council for approval in a final balancing change order.

There is no fiscal impact at this time to the Department's State Revolving Fund (SRF) loan, as the contingency allowance has been approved within the contract and the contract amount remains unaffected.

C. Consider an amendment to SSR Engineering Work Order 11-47-017.0, Wastewater Pump Station Arc Flash Study –

The recommendation of staff is to approve a second amendment to the referenced work order to include an arc flash study for an additional 12 sanitary sewer lift stations as well as inclusion of the electrical panels at the Stones River Water Treatment Plant. The engineering work order amendment covers the assessment, documentation, reporting and recommendations for remedial action for the additional 12 sewage pumping stations and electrical panels at the Stones River WTP.

The NFPA 70E Arc Flash standard outlines the specific practices and standards to be followed in protecting a workplace from arc flash and other electrical hazards. OSHA has referenced compliance to NFPA 70E using Section 5(a) (1) of the Occupational Safety and Health Act of 1970, commonly referred to as the "general duty clause," as their basis for implementation. NFPA 70E requires an assessment to be conducted of all electrical installations that are accessed by employees.

An assessment over 12 sanitary sewer lift stations was approved in September 2011 by the Board and City Council in an amount of \$19,865. The Board approved amendment #1 of this task order in August of 2013 in the amount of \$62,675 for an additional 12 sanitary sewer lift stations as well as inclusion of the electrical panels at the Sinking Creek Wastewater Treatment Plant.

Actions resulting from the assessments will be Hazard Risk Labeling, arc flash clothing and personal protective equipment for employees, arc flash training and assessment updates every five years.

Staff recommended the Board recommend to the City Council approval to execute Smith Seckman Reid, Engineering Work Order 11-47-017.0 Amendment 2.

Compensation for the services outlined in the Agreement is an additional lump sum of \$62,675 to the revised contracted amount of \$82,540. Funding is recommended to come from FY17 budget operating accounts for professional services.

D. Consider SSR Engineering Work Order 15-41-029.0, Auxiliary Raw Water Intake Generator Construction Administration –

In February of 2014, staff solicited quotes from Thompson Power to purchase standby generators for the raw water pump intake. At the time, staff believed the work may be done “in-house”. However, based on the size and complexity of the project, staff recommended and the Board approved Smith Seckman Reid (SSR) the design of this installation in December of 2015. Bids were received in August of 2016; the low bid being awarded to John Bouchard & Sons in the amount of \$480,000.

The project timeline is 300 days, which will require multiple progress meetings, review of construction progress and processing of pay applications, as well as shop drawing review and limited coordination with integration, controls and telemetry at the raw water intake. Therefore, staff has requested construction administration services from Smith Seckman Reid for the duration of the project.

SSR’s scope of services will include conducting a pre-construction conference, issuing a Notice-to-Proceed, reviewing all shop drawings, reviewing all monthly payment requests and change order requests from the contractor, answering questions regarding the Construction Drawings and Contract Documents, providing Record drawings, and making a final inspection for the project close-out. Record drawing information will be provided to the Owner based on mark-ups provided by the Contractor or the Resident Project Representative. Their scope also includes limited integration support to the Contractor and to the Owner.

Staff recommended the Board recommend to City Council approving SSR Engineering Work Order 15-41-029.0 for Engineering Consulting Services for the Murfreesboro Auxiliary Raw Water Intake Generator.

The costs for these services are hourly not to exceed \$20,760. Funding of the project was included in the Department’s 5-yr capital improvements plan for \$600,000. The low bid amount of \$480,000 allows for these construction administration services costs to be incorporated into the original budget.

E. Consider an engineering services proposal from Neel Schaffer for water and sewer design in conjunction with Bradyville Pike Improvements –

In 2013 the Department received Preliminary Field Review plans and noticed that the Tennessee Department of Transportation (TDOT) was going to be re-constructing a large portion of Bradyville Pike.

The limits of construction are from S.E. Broad Street to Rutherford Boulevard. The project is now in the final design stage and right of way acquisition should begin soon.

As with all roadway improvements staff considers these projects as ideal opportunities for making improvements to the water and sewer systems. Staff intends to replace all and upsize portions of the existing water mains within the project limits as they are cast iron and were installed between 1960 and 1974. With regard to the sewer mains, there is an existing 18" interceptor along this stretch as well as smaller collector sewer mains. Staff will be reviewing the integrity of the interceptor as well as the collector lines to determine whether they should be completely reconstructed within the project limits or rehabilitated. There may also be some conflicts with proposed storm drainage that may require relocation.

Currently Neel Schaffer, Inc. (N/S) is the design engineer for the roadway and is contracted with the City. The Department would like for N/S to design the improvements because of their familiarity with the project and with fulfilling TDOT requirements. It is anticipated that this work would be included in TDOT's project for bid and constructed through their contract. N/S provided a proposal for the design, permitting and bidding assistance in the amount of \$62,000. Construction Administration scope of services hasn't been determined and will be brought back before the Board for approval. Also, once the construction scope is determined and a construction cost estimate prepared, the estimate will be brought back to the Board for their information.

Staff recommended the Board recommend to Council approval of the engineering design, contingent upon the Legal Department's approval of the contract, to N/S in an amount not to exceed \$62,000.

This project was included in the Department's FY16-20 Capital Improvement Plan (CIP) and \$500,000 was programmed in for each year of 2016/2017 & 2017/2018. Based on the Board approved recommendations of the 2007 Financial Conditions Assessment prepared by Smith Seckman Reid, 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. Therefore, staff recommended that the design costs for this project come from working capital account.

F. Consider an engineering services proposal from Wiser Consultants for Sanitary Sewer Master Planning along Cherry Lane extension –

The City in conjunction with the Tennessee Department of Transportation (TDOT) are in the early stages of design for the extension of Cherry Lane. The alignment has been set and they are ready to schedule a public meeting late October early November 2016. The extension would be from Cherry Lane, at the western end previously widened, at Memorial Boulevard to N.W. Broad Street. Once the public meetings are complete, TDOT and the City will be ready to move forward with the land acquisition. The schedule

for bidding the project will depend on the amount of time for the acquisition, but could be as early as spring of 2018.

Currently Wiser Company (Wiser) is contracted with TDOT for the design of the roadway. Staff has requested a proposal from Wiser to study the area around the alignment to develop a Sanitary Sewer Master Plan (Plan). Staff chose Wiser because of their familiarity with the project and with our sewer system. Once the Plan is accepted, staff will better understand what sewer infrastructure will need to be built with the extension. Wiser submitted a proposal for the development of the Plan in the amount of \$17,000.

Staff recommended the Board recommend to Council approval of the development of a Sanitary Sewer Master Plan to Wiser in an amount not to exceed \$17,000.

The Cherry Lane Repurified Water Main Extension project was included in the Department's FY16-20 CIP summary and \$825,000 was programmed in for year 2016/2017 and \$1M for year 2017/2018. Staff recommended this study be funded from the Department's working capital reserves account.

A motion was made by Dr. Carter to accept the Consent Agenda as presented and it was seconded by Kathy Nobles. The Board voted unanimously to approve.

The August 23, 2016 Board Minutes were unanimously accepted as presented.

The Board considered Department participation for sewer main extension for Springfield Luxury Apartments.

At the April Board meeting, staff brought a sewer participation request for the Lancaster Christian Daycare, which is proposing to build along Manson Pike next to the Overall Creek Interceptor Sewer. This development was first in line to connect to the existing interceptor sewer along Overall Creek. The Board approved the sewer participation to install a larger and deeper sewer main in order to serve the area shown on the Sub-basin Area Master Plan (SAMP). The extension through Lancaster Daycare was a second alternative route consistent with the SAMP.

The Springfield Luxury Apartments are along this same route and will extend the larger and deeper line through their site to the west in order to be able to continue moving toward the SAMP.

A few points per the Department's participation policy, within our approved Policies, Procedures & General Design Requirements adopted in 2009 by the Board & Council are:

1. Prior to dedication and acceptance of the improvements by the City, the Developer requesting reimbursement must present to the City Council a detailed statement of the actual eligible costs and the City Council in its discretion may amend the agreement, and the reimbursement amount, to reflect the actual project costs.
2. Should a project be eligible for participation by the City due to upsizing of a water or sewer line, the Department reserves the right to publicly bid the project or the portion of the project eligible for participation.

3. Participation in the cost to upsize water and/or sewer lines shall be in accordance with established policies in effect. The Department or Developer can prepare a schedule of upsize participation, based on recent bid results or agreed upon unit pricing, which the Department and the Developer may accept in lieu of publicly bidding, subject to approval of the Water and Sewer Board and City Council.
4. The Department will only participate on that portion of sewer deeper than twelve (12) feet deep, if the sewer is upsized and if the material changes.
5. Sewer must extend to the limits of construction at strategic locations for future extension.

To determine the Department participation amount, Bill Huddleston, with Huddleston Steele Engineering, Inc., has prepared an estimate for the cost associated with the extra depth of sewer “over” 12 feet to include the material invoice cost associated with upsizing and the change in pipe material from 8 inch to 12 inch and ductile iron pipe (DIP) respectively.

The estimated amount of the extra depth and increase in size is \$45,813 and is also the Department’s participation amount to the Developer.

Staff recommended the Board recommend to City Council approval of participating financially in this sanitary sewer extension requiring extra depth and size to serve future MWSD customers, as established through the Sub-basin Area Master Plan for this area. This approval is consistent with the Department’s adopted Policies and Procedures. The proposed funding is from the Department’s working capital reserves.

Brian Kidd made a motion to approve. Sandra Trail seconded. The motion unanimously passed.

The Board considered a request for the use of reserve funds for Bar Screen, Pipe Gallery Leaks, and Actuator Access at the Stones River Water Treatment Plant.

River Bar Screen Issues: In December 2015, staff noticed problems with the raw water bar screen at the river pump station located at the water treatment plant. As a result, staff requested at the January Board meeting that \$3,273 from rate funded capital reserves be used to allow John Bouchard & Sons Co., currently under a contract with MWSD for Water/Wastewater System Mechanical/Electrical Services, to conduct an inspection of the raw water bar screen to determine the necessary repairs to get the bar screen properly working again. After JB&S and Evoqua personnel (Evoqua is the company that manufactures the equipment) conducted the inspection in April 2016, it was determined that the cost to repair the existing equipment installed in 1981 would be \$94,132. These repairs were to do the minimum to get the equipment operating and functioning. There would be no warranty on this work. Staff recommended that due to the cost of repairing a 35-year old bar screen, it would be better to replace it with a new bar screen.

Pipe Gallery Leaks: The treated water trough going from the pretreatment building to each of the five softening basins has a liner in it for basins #1-4. The reason the liner was installed during the expansion back in 2008 was that water was leaking into the pipe gallery and causing problems (electrical and mechanical). Prior to the expansion staff had ABG Calking, who was awarded the work, to repair leaks by injecting urethane into the areas. This worked for a couple of years and then other leaks would reappear.

It was decided that during the plant expansion staff would use an approved liner. This liner worked for about six years, then the leaks began to reappear. During the FY2015/16 staff had budgeted \$50,000 per year, for the next three years, to repair the leaks based upon discussion with several waterproofing companies. In October 2015 staff started trying to get these companies back out to assist in developing bid specs for repairs. By February 2016, all three companies had decided that they would not bid the repairs. As a result, staff did not know how these problems could be addressed. It is for this reason that staff would like SSR to recommend a method that would provide a more permanent repair to the leaks problems.

Actuator Access: In the upper level of the pipe gallery there are 7 actuators pre GAC contactor. Generally, it is not required that staff accesses these actuators on a regular basis for repairs. In late February 2016, however, three of the effluent actuators began to malfunction. At this time, staff determined that accessing these actuators by ladder was very difficult and that repair, removal and replacement of the actuators would be dangerous. Staff researched various methods to access the actuators that would make it safe for staff to repair, remove and replace the actuators. The best method staff could determine was that a platform be designed to allow access from one of the pipe gallery walkways. Staff asked SSR to look at the problem and it was determined this would be the best method. The three actuators that are malfunctioning are going to be replaced in October. This will be a very difficult replacement and staff requested approval to allow SSR to design, bid and have a contractor install the platform for future incidents with GAC actuators.

Staff recommended the Board recommend that City Council approve the use of reserves to fund the three projects identified that became major costs after the FY2016/17 Capital Budget was approved.

Staff and SSR are currently looking at ways to address each of the issues in order to provide a better estimate of the costs. These projects have been placed in the Department's 5-yr CIP; the best estimate at this time to complete all three projects is \$500,000. Adequate funds exist in reserves to pay for these improvements.

Kathy Nobles made a motion to approve. Sandra Trail seconded. The motion unanimously passed.

The Board considered water chiller replacement at Stones River Water Treatment Plant.

The chiller system is used to cool several areas throughout the facility. These areas include the high service building, high service VFD pumps, GAC room, operations laboratory, cross-connection offices, map room, file room, third floor training and break room, post treatment building, membrane building, and the membrane pump room. Staff has identified a need to purchase and install a new chiller system due to service repairs on the current unit totaling over \$25,600 in less than one year and additional repairs of over \$15,000 that need to be made again at this time. Staff had originally estimated in the capital budget a replacement in FY2021 but unforeseen failures have necessitated unit replacement at this time.

Staff recommended at the August Board meeting the release for invitations to bid for the replacement and installation for one chiller system. It was determined after this recommendation that the U.S. Communities Government Purchasing Alliance contained the chiller system needed for replacement at SRWTP. The scope of work includes removal of the existing Standard Efficiency McQuay Scroll compressor air cooled chiller and installation of a High Efficiency Trane Air Cooled Screw Compressor chiller; including factory start up and a 5 year compressor warranty, one year parts, labor and refrigerant whole unit warranty.

Staff has reviewed the available standing contracts and found this equipment on the U.S. Communities Government Purchasing Alliance contract pricing effective through September 30, 2018. The details are as follows:

Qty	Item ID/Description	Cost
1	155-ton Trane Chiller	\$119,357
1	5-year Extended Parts & Labor Warranty	\$4,265
	Total Price	\$123,622

Staff recommended the Board recommend that City Council approve the replacement of the existing chiller with the purchase of a Trane 155-ton chiller from Trane U.S. Inc. in accordance with the U.S. Communities Government Purchasing Alliance USC 15-JLP-023.

The cost for the referenced equipment is in the amount of \$123,622. Staff did not anticipate the need to replace the chiller prior to the FY2016/17 Capital Budget. Funding would come from rate funded capital reserves.

Ron Crabtree made a motion to approve. Dr. Carter seconded. The motion unanimously passed.

Staff presented a PowerPoint presentation and reviewed MWSD comments on the Draft 2016 State of Tennessee 303(d) List.

TDEC issues a biannual (every other year) list of impaired streams, known as the 303(d) list. Under section 303(d) of the Clean Water Act, states, territories and authorized tribes are required to submit lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet water quality standards. The law requires that the states establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDL) for these waters.

TDEC is taking public comment on the Draft 2016 State of Tennessee 303(d) list until September 30, 2016. Staff wanted to apprise the Board of their comments in conjunction with reviewing where the Department is on several action items and goals/objectives.

The Board considered an amendment to SSR Engineering Work Order 0-47-001.2 for E. coli and Fecal Coliform sampling on the West Fork Stones River and Sinking Creek.

As a result of the Tennessee Department of Environment and Conservation (TDEC) draft 2016 listing of the Section 1000 of the West Fork Stones River (WFSR) and Sinking Creek as being impaired for E. coli, staff has requested of AquAeTer to include sampling in this section of the river.

E. coli is commonly found in the lower intestine of warm-blooded organisms. TDEC's test does not confirm whether the E. coli originated from human sources or animal sources. Staff believes this issue is of significance due to the impairment pollutant source being listed as "Discharges from MS4 area" and "Collection System Failure".

Staff believes it is important to confirm whether human E. coli is present to validate that Collection System Failure is an appropriate pollutant source to list. MWSD does not have any sanitary sewer infrastructure in this section of the WFSR. We do have infrastructure in the section of Sinking Creek listed as impaired; however, we did not have any sewer overflows during the sampling events taken by TDEC, so the new pollutant source listing of Collection System Failure is suspect in staff's opinion.

As MWSD's comments state in our public comment letter to TDEC, the more reasonable source for E. coli during elevated stream conditions resulting from stormwater runoff are from animal sources (e.g., cattle, birds, dogs, etc.). The proposal from AquAeTer is intended to confirm the genetic source of the E. coli, and as such, at a minimum, demonstrate to TDEC that Collection System Failure (or human E. coli presence) is or is not an appropriate pollutant source.

Staff recommended the Board recommend to City Council approval of Amendment No. 4 to SSR Task Order 09-47-001.2 for E. coli sampling in the West Fork Stones River and Sinking Creek.

The fiscal impact is \$20,300. Staff recommended funding this project from the Department's working capital reserves.

Ron Crabtree made a motion to approve. Kathy Nobles seconded. The motion unanimously passed.

Staff presented and discussed the Water and Sewer Dashboard Performance for August 2016.

There being no further business, the meeting was adjourned.

John Sant Amour, Chairman



... creating a better quality of life

MEMORANDUM

DATE: October 19, 2016
TO: Water and Sewer Board
FROM: Alan Cranford
SUBJECT: Scinor Membrane Module Plant Evaluation Results

Background

The Stones River Water Treatment Plant commissioned its Pall Corporation membranes on December 18, 2008. Since commission, the Pall membranes are working as expected with minimal fiber breaks and very good recovery following the Manufacturer's cleaning program. According to industry standard, membrane modules are designed to last approximately 10 years. Staff expects the Pall Corporation membrane modules to last longer than the 10 years. The original configuration of the membranes consisted of ten racks with 50 modules each for a total of 500 modules.

In August 2015, Staff, in consultation with SSR, recommended using Scinor Water America, LLC membrane modules as a sole source procurement. The Board approved \$70,000 for this purchase. The reason for this selection was that Scinor Water America, LLC is the only membrane manufacturer for drinking water membranes that produce their membranes fibers using the same method as the Pall Corporation. The justification for this sole source procurement was simply to provide a trial of the Scinor Water America, LLC membrane modules in a controlled manner to determine if their product is suitable as a competitive bidder to the Pall Corporation.

The trial started in December 2015. Staff removed the Pall Corporation membrane modules from Rack #1 and reallocated those membrane modules to the other nine (9) racks. Seven of the racks have 56 modules and two racks have 54 modules. The Scinor Water America, LLC membrane modules, a total of 56, were placed on Rack #1. A Scinor Water America, LLC Representative was here to observe and direct the installation and startup of the membranes. Upon installation and startup of the Scinor membranes 14 of the 56 modules failed the integrity testing. Integrity testing (IT) is a test performed on each individual rack that ensures there are no leaks in the membrane fibers. This test is required by the Tennessee Department of Environment and Conservation every 24-hours. Failure of a rack requires staff to locate the module(s) and then pin the fiber that is leaking. Staff and the Scinor Water America, LLC Representative could not determine the number of leaks in the 14 modules because there were so many leaks. As a result, the 14 modules were rejected and required replacement. In January 2016, 15 new modules arrived. Of the 15 modules, three (3) modules also failed the initial IT and were rejected. This left Rack #1 at 54 of 56 modules operating. In February 2016, the two (2) remaining modules arrived and were installed. At this time all 56 modules were in full operation.

Water and Sewer 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

Staff operated the Scinor membranes alongside the Pall membranes consistently. In May 2016, one (1) Scinor module failed an IT and could not be repaired. This module exhibited the same issues as the previous modules were rejected. A new module was sent and replaced this bad module. In July 2016, two (2) modules failed an IT. One (1) module failed an IT twice. Of the two (2) modules that failed, one (1) was pinned two (2) times and a replacement was requested for the second module. The replacement arrived on October 14, 2016.

Staff has reviewed the data captured during the membrane comparison from January 1, 2016 through September 30, 2016. This comparison is provided in the presentation Pall vs Scinor. The evidence is conclusive, at least on the water quality that we experience at the Stones River Water Treatment Plant. The evidence demonstrates that the Pall membrane modules are more consistent in production of water and do not foul as easy as the Scinor membrane modules. In addition, Staff has dealt with quality control issues with the Scinor Water America, LLC membranes. A total of 18 modules have been unusable of the 56 modules that we purchased. When considering the 500 modules purchased from Pall Corporation in 2008, only one (1) module has been replaced. The module was still functioning at the time Pall Corporation replace it at no cost to the Department.

Staff recommends ending the trial and signing an agreement with the Pall Corporation for replacement of the Scinor modules. The agreement includes replacing the 56 Scinor membranes on Rack #1 with 56 Pall Microza UNA-620A membrane modules and adding two (2) Pall Microza UNA-620A membrane modules to Racks #9 and #10. This will provide 56 modules for each of the 10 racks. The agreement also includes pricing for future purchases, warranty, replacement of six (6) feeder headers that are leaking and 10 turbidimeter shutoff valves. Details of the agreement and scope of services are in the Pall Corporation proposal.

Recommendation

Staff recommends that the Water and Sewer Board recommend to the City Council to approve the proposal from the Pall Corporation in accordance the scope of services.

Fiscal Impact

The cost of the work identified in Pall Corporation's Scope of Services is \$168,500. Funding for this work will come from the Department's working capital reserves. The Department created a sinking fund in FY15 earmarking \$400,000 per year for five (5) years in anticipation of a \$2.0M dollar cost in replacing all of the Pall membranes by 2019. The cumulative amount of the sinking fund is currently \$1.2M. Based on the proposal submitted by Pall, the replacement costs of the remaining membranes will be \$630,000. Therefore, \$800,000 will cover this current request and future costs. The excess \$400,000 earmarked for the membrane replacement for FY17 will be rebudgeted to another sinking fund; the biosolids processing equipment and storage project.

Attachments

Pall Corporation Proposal

June 6, 2016

Attn: Alan Cranford
City of Murfreesboro
5528 Sam Jared Dr.
Murfreesboro, TN 37133-1477
acranford@murfreesborotn.gov

On behalf of the Aftermarket Services Group of Pall Corporation, we would like to thank you for your interest in Pall Corporation's advanced filtration technologies and services.

Pall Corporation has over 450 microfiltration systems installed in the Western Hemisphere and is proud to showcase any one of them. This combination of local experience and corporate capabilities, brings the following short and long term benefits to the City of Murfreesboro:

1. **Low Operator Requirements** - Achieved through simple, time tested automated operational sequences.
2. **Experience, High Reliability and Low Fiber Break History**-Pall's Asahi membrane has unmatched performance, with what is considered the lowest fiber break history in the industry, averaging < **1 Fiber Break / Million Fibers / Year**.
3. **Unmatched Levels of Experience and Consistent Manufacturing Processes for MF module Production. Extensive Quality Control Procedures Ensures a Working Product Out of the Box.**
4. **Regional Service Teams** – Local Field Service resources, with an average of over 20 plus years of experience, working in conjunction with the main service center available 24/7 as needed.
5. **Long Membrane Life** - Demonstrated through numerous systems operating greater than 10 years with minimal to no fiber breaks.
6. **Competitive pricing for all aspects of your water treatment system**

We appreciate the opportunity to submit this proposal, and look forward to your favorable review of our submission.

Sincerely,

Louis Mattera
Aftermarket Sales Manager, Pall Corporation
Process Systems
Lou_Mattera@pall.com
Office: 631-724-1320
Cell: 516- 924-6655

PROPRIETARY & CONFIDENTIAL
INFORMATION NOTICE

This proposal document, proprietary to Pall Corporation, is furnished in confidence solely for use in evaluating the proposal and for no other direct or indirect use, and no rights are granted to the recipient for any information disclosed in this proposal. "It contains proprietary information which may be the subject of an issued patent or pending application in the United States or elsewhere." By accepting this document from Pall Corporation the recipient agrees:

- ❑ To use this document and the information it contains exclusively for the above-stated purpose and to avoid use of the information for performance of the proposed work by recipient itself or any third party,
- ❑ To avoid publication or other disclosure of this document or the information it contains to any third party without the prior approval of Pall Corporation,
- ❑ To make only those copies needed for recipient's internal review, and
- ❑ To return this document and any copies thereof when they are no longer needed for the purpose for which furnished or upon the request of Pall Corporation.
- ❑ This stipulation may be subject to FOIA. In such a case a formal request for this information would have to be filed with the appropriate city officials and deemed appropriate for release. Pall would need to be notified in kind if any such request was filed.

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3.0 Pall's Standard Terms and Conditions of Sale

4.0 Terms of Extended Module Warranty

SECTION ONE

C

ompany Overview

1.1 Pall Corporation – Making the World Safer, Greener, Better

Scientists and engineers at heart, we thrive on helping customers protect people, the environment and our natural resources. We are often called “the original clean technology company” because our products provide clear environmental benefits. Pall fluid management solutions enable customers to purify and conserve water, consume less energy, make alternative energy possible and practical, advance medicine, and minimize emissions and waste. By doing so we’re helping to make our world safer, greener and better every day.

With sales in excess of \$2.5 billion, Pall Corporation is the global leader in filtration and separation. Founded in 1946 by David B. Pall, today the company has over 11,000 employees that work out of over 40 locations globally.

Our structure is based around market specific business units providing specialists who work with our customers in given industries to provide optimal cost-effective and environmentally friendly solutions.

All Pall manufacturing facilities adhere to uniform manufacturing procedures that result in unparalleled quality. Our manufacturing facilities, research and development and scientific laboratories globally have been granted International Standard Organization certification to the ISO 9001 Quality Management System. Therefore, no matter where in the world you order Pall filters, you can be assured they will perform exactly as specified.

1.2 Pall’s Leadership Recognition



ISO 14001 is the international standard for environmental management systems. Worldwide, all of Pall’s plants have achieved ISO 14001 certification. Certified companies must provide assurance about their ability to satisfy quality requirements and to enhance customer satisfaction in supplier-customer relationships.

<http://www.iso.org>

Newsweek

(October 2011) Pall was named one of the greenest companies in America by *Newsweek* magazine. Pall was ranked 5th in the Capital Goods sector and 69th among *Newsweek's* U.S. 500 List. <http://www.newsweek.com>



(2010) Pall Corporation won the prestigious Engineering Materials Achievement Award (EMAA) for 2011 for its porous iron aluminide technology. The award, which recognizes outstanding achievements in the field of materials science, is given annually to one company by ASM International, a society dedicated to the development and commercialization of materials that advance production techniques and facilitate innovation. Previous winners include DuPont for aramid fiber, IBM for magnetic recording media, and AT&T Bell Labs for transoceanic optical fiber systems. <http://www.asminternational.org/>



(2008) Dr. David B. Pall, founder of Pall Corporation, was inducted into the National Inventors Hall of Fame. Dr. Pall's body of work in the field of filtration science earned him a place among legendary innovators including Alexander Graham Bell, Walt Disney, Thomas Edison and Henry Ford.

<http://www.invent.org>



(1990) On behalf of Pall Corporation, Dr. Pall received the National Medal of Technology, the highest technology honor in the United States. Other past winners include Microsoft, Applied Materials, Proctor & Gamble and Johnson & Johnson.

<http://www.uspto.gov>

1.3 Pall Water Processing

Water is the universal fluid. As it becomes increasingly scarce, new ways to conserve, reclaim, and utilize untapped sources are urgently needed. Membrane technologies provide a means to achieve each of these goals.

Pall customers have stringent requirements for water – whether for drinking, power generation, or manufacturing a broad range of industrial and consumer products. Our water processing technology platform leverages core technologies, like the highly permeable hollow-fiber microfiltration membranes in Pall Aria™ water treatment systems, to meet their varied and vast needs.

Pall recognizes the complexities and implications of effective water management. We have considerable experience and broad capabilities to assist water users everywhere with removing contaminants, meeting regulations, and conserving this vital resource.

For over ten years, Pall Water Processing has provided quality systems and cartridge filtration to the municipal sector. Pall Water Processing specializes in providing efficient and cost-effective solutions to meet regulations in the treatment of surface water, groundwater, wastewater, and sea water desalination.

1.4 Manufacturing Facility

Location of the fabrication shop - **Cortland, New York**

Full address - **3643 State Route 281, Cortland, New York 13045**

Number of employees - **Systems Business Unit: 64 Shop, 9 Office, 425 Manufacturing Plant**

Size of the fabrication shop floor - **Systems: 45,000 ft.² Shop, 30,000 ft.² Warehouse**

Kind of technology produced - **Water Systems, Disposable and Cleanable Filter Elements**



1.5 Quality

At Pall, we provide quality products, expert services and customer support. Our history of excellence in designing and manufacturing filtration, separation, and purification products; providing leading edge technologies and services spans over 60 years.

Our goal is to provide the innovative solutions that will enable you to control and improve the quality of your finished goods. All of our employees are committed to helping - you - the customer- achieve a consistent, high quality end product.

Quality Assured. Quality Delivered: Our Guiding Principles

- **Quality Function Deployment (QFD)** - Our approach to product development and manufacturing assures that Quality is built into the product from the earliest stage. QFD requires a thorough understanding of a product, its process of manufacture, and customer expectations with respect to critical to quality attributes.
- **Process Excellence** - By defining, measuring, analyzing and controlling processes, we continually seek ways to improve their effectiveness. Some of the tools we employ in our Process Excellence approach include Six Sigma and Lean Manufacturing.
- **Total Fluid Management** - Pall Corporation is the largest and most diverse filtration, separation and purification company in the world. Our extensive product portfolio enables us to deliver a range of fluid management capabilities that is unmatched. Total Fluid Management is our synergistic, planned cross-functional approach to bringing you the right products, systems and services to solve your most challenging needs.

Pall's Quality Policy: Our Commitment to Customers

For each of our products and services, we will meet the requirements of our customers in all areas of the world. We will always ask what can be done better - for our customers, our distributors, our suppliers, our shareholders, our employees, and the general public. Our personal commitment is to continually advance our processes through measurable improvements.

Quality Systems Overview

Quality must be intrinsic to the manufacturing process. The majority of our operations are certified to the [ISO 9001](#) standard and our manufacturing sites are certified to Environmental Management Systems such as ISO 14001. In addition, some of our sites are certified to industry specific standards such as:

[ISO 13485](#) - Medical devices, quality management systems, requirements for regulatory purposes.

[SAE AS9100](#) - Quality management system requirements for aviation, space and defense organizations.

[ISO/TS 16949](#) - Quality management systems. Particular requirements for the application of ISO 9001 for automatic production and relevant service part organizations.

[ISO 9001](#) - Quality management systems.

NSF - National Sanitation Foundation (Contact [Customer Service](#) for information on NSF certified products).

ASME - American Society for Mechanical Engineers (Contact [Customer Service](#) for specific ASME certifications).

1.6 Pall Corporation - Profile

Pall Corporation has been partnering with customers since 1946 helping them solve their most critical and difficult fluid management challenges. One of the earliest calls for assistance came from the fledging commercial aviation industry after landing gear failures grounded a fleet of new jets. The hydraulic systems were much more contamination sensitive than earlier technology and required sophisticated filtration to protect them. Pall's quick response helped customers solve a crippling problem and get the planes flying and landing safely again. Contamination was at the root of the problem then just as it often is today.

Over the years there have been many more calls for assistance – to help increase product quality, yields and efficiency, meet regulations, remove barriers to innovation, or open a new facility. Pall has amassed the broadest filtration, separation and purification capabilities and experience in the world answering them. Our commitment is to continuously enhance our ability to provide customers with the most effective Total Fluid ManagementSM solutions to help ensure their success.

When our customers succeed, Pall succeeds. And so, we will continue to follow the guiding principles that have brought us to where we are today. This means we will strive to do more for customers than others in our field. And we will always do what's right for them and for those who put their trust in us.

1.7 Membrane Treatment Experience and Qualification

All of our systems have shown excellent performance, reliability, and cost-effectiveness.

Pall's membranes have been successfully tested and installed in a wide range of applications, including:

- Surface waters (reservoirs, lakes, and rivers)
- Secondary Wastewater Effluent and Pre-RO Applications
- Coagulated and clarified surface water
- Ground water with iron, manganese and arsenic
- Waste filter wash water from conventional granular filters

1.8 Contracted Field Service Support

Achieve the best return on your investment through superior system performance, uptime and reliability. Install, start-up and optimize the Pall microfiltration system properly. Train staff to operate, maintain and manage a system with the understanding and confidence, with Pall experts at your call for system support, updates and upgrades whenever needed.

Included below is a list of the services Pall Corporation can provide in support of our water systems. At any time during or after the warranty period Pall recommends leveraging Pall system expertise through a service contract. Customers can choose a contract to fit their needs. A contract which includes regularly scheduled on-site visits from a Pall Field Service Engineer, a contract using remote monitoring technology, another contract which provides technical phone support or a combination of all three.

Please see a summary of benefits and deliverables of several service packages which you might want for your Pall system:

Inspection, Check-up or Health Check: A variety of comprehensive inspection and maintenance services that combines required service, complete inspection and test of the system components, process, and controls; hardware and software are adjusted, repaired, and updated as required.

24/7 Technical Phone Support: The Pall Service Hotline provides service support to customers under contract, pending regional availability.

Operator Training – Certification/Advanced: Pall provides comprehensive hands-on Operation and Maintenance training.

CIP – Full Service: All membrane systems require periodic cleaning. Routine, effective CIP is required to prevent long-term flux deterioration, which can be difficult to restore. CIP protocols can be performed on-site for systems that experience reduced flux.

Spares Supply – Critical and High Frequency Kits: Pall can support your need for system parts and ongoing maintenance.

1.9 Pall Advanced Separation Systems Technical Services

A global resource of Pall engineers, programmers and technicians equipped with the latest technology and software is ready to provide value-added field engineering support. Customers can use Pall professional resources to identify and resolve technical issues before they impact production. Customers can achieve performance and financial goals without adding overhead or headcount. Focus on your core business while Pall focuses on your system and process.

Pall Technical Services

Attention: Customer Service
P.O. Box 5630
839 State Route 13
Cortland, New York, United States
13045-5630
Email: Pall_Technology_csc@pall.com
Attn: Customer Service
Phone: +1 (866) 475-0115

US and Canada Map of Service Coverage:



S E C T I O N T W O

Proposal

Stones River WTP
 5528 Sam Jared Drive
 Murfreesboro, TN 37133
 Attn: Alan Cranford
 EMail: acranford@murfreesborotn.gov
 Phone: 615-848-3222

Re: Parts & Service Support for Pall Filtration System at Murfreesboro, TN
 Equipment no: Large Water; WBS#01.00048

As a follow up to our meeting, we are pleased to offer the following proposal for your consideration.

Scope of Services

Item 1-Modules, Parts, Installation and future pricing:

Pall proposes to remove existing membranes provided by others from one MF module rack and repopulate with Pall Microza UNA-620A membranes, with a 10 year warranty (**3 years absolute and 7 years pro-rated**), at no charge. Pall will also provide all required fittings, wrenches, hoses, tubing and hardware required to complete the installation. Parts included are as follows:

WH015807-AMM-UNA-620A Module- Qty of 60
 WH016474- CAP,END,PLAIN,6IN MF MODULE,UPPER- Qty of 60
 WH016475- CAP,END,PLAIN,6IN MF MODULE,LOWER- Qty of 60
 JP010030889- Coupling adaptor 50mm PVC clear- Qty of 60
 WH014314- ASSY,HOSE,1 IN FLEX HOSE, XR CONN,OUTER- Qty of 60
 WH014298- O-RING,MODULE,AUME-UV62-10B- Qty of 120
 WH014306- NUT,MODULE,END CAP,AUME-UV62-03,PVC- Qty of 120
 WH014323- ELBOW,TUBE,0.375IN,14.75X2.75,304SST-Qty of 60
 WH014308- WRENCH,6.0IN MF MODULE NUT- Qty of 2
 WH061734- WRENCH,TORQUE,MODULE,30-150FT LB- Qty of 1
 WH014317- WRENCH,2.0IN SLIP COUPLING- Qty of 1

In addition Pall will provide a Field Service Engineer to supervise and assist plant personnel with the change out of these membranes. Pall recommends two people to provide labor for module replacement. While the actual change out of the membranes is expected to take one full day, the Field Service Engineer will be on site for three full days:

- One half day for set up and assistance with rack CIP
- One half day to review system operation and ensure the upgraded module racks are performing to specification.

Pall requires a CIP be completed prior to removal of modules as a safety precaution to prevent exposure of those working on the module replacement to contaminants that may reside on the membranes.

Pall will lock in a price per module of \$1,250 for five years* for the City of Murfreesboro. Any additional modules purchased will carry an extended 10 year warranty (3 years absolute and 7 years pro-rated). All existing original modules (racks 2-10) will have an absolute warranty through year 10.

** Subject to PPI adjustment*

Item 2- Header Replacement

Stainless steel (316LSS) feed headers will be provided by Pall for six module racks. Existing hardware (clamps, connectors, etc.) will be reused to install the headers.

- Six days on site for the installation and associated activities of six feed headers.

Item 3-Turbidimeter Shutoff Valves with Installation

Pall will also provide and install one diaphragm valve to be retrofitted on the filtrate turbidimeter line on each of 10 microfiltration system racks. This valve will be used to prevent erroneous turbidity spikes after EFM, CIP and IT events. Pall will provide a field service engineer to install the valves, make necessary controls hardware changes, and install and debug updated programming to allow the valve to function. Pall will then provide an updated P&ID and electrical controls drawings to reflect the changes made.

Item 4-On Site Service

Pall will continue to provide on-site service visits twice per year per the original agreement.

Pall Preferred Customer Discounted Total for Items 1-4:	\$168,500.00
--	---------------------

Validity: This proposal is valid for 30 days.

Supplemental Special Terms of Agreement:

- Included in the cost shall be a ten (10) year prorated warranty covering the membrane modules/elements. This warranty shall cover 100% of the membrane replacement cost if failure occurs in the first three years, 60% if the failure occurs in the fourth year, and so on. The membrane replacement cost shall be guaranteed not to exceed the value stated as the Membrane Replacement Cost in the Life Cycle Analysis. This value may be adjusted annually based upon the U.S. Consumer Price Index, as calculated by the U.S. Bureau of Labor and Statistics.
- Price shall be FOB Stones River Water Treatment Plant. The warranty term will begin on the date of Installation of the new membranes.
- Failure of a module or group of modules shall be defined as follows:
 - Breakage of more than 0.2% of the fibers per module or element
 - Failure of an element to pass the Membrane Integrity Test despite attempts at repair
 - Reduction in temperature corrected clean water permeability by more than 15% over the initial value.

Customer Authorization

I am an authorized representative of the customer, and I accept the Terms and Conditions of this Agreement on behalf of the customer. I authorize Pall Corporation to perform / supply the work/goods defined in this agreement, and accept the costs and charges defined in this agreement.

Company: _____

Print Name

Title/Position

Signature

Date

Purchase Order No. or Reference for Billing: _____

Pall Proposal No.: 33102016-38955DSP

Effective Date and Duration: This Agreement will be effective as of the date signed below, and will remain in effect:

- until onsite service work has been completed by Pall,
- for 12 consecutive months (or as indicated in the annual or multi-year contract)
- or until 30 days after receipt of notice of termination by either party.

Customer Billing Address: _____

Customer Comments: _____

S E C T I O N T H R E E

P all Standard Terms and Conditions

**Standard Terms and Conditions of Sale
Non-Systems – The Americas**

1. Applicability: Entire Agreement:

- 1.1. These terms and conditions of sale (these "**Terms**") are the only terms which govern the sale of the goods identified on Buyer's purchase order (the "**Goods**") by Seller to Buyer. By placing a purchase order, Buyer makes an offer to purchase the Goods pursuant to these Terms, including (a) a list of the Goods to be purchased; (b) the quantity of each of the Goods ordered; (c) the requested delivery date; (d) the unit Price for each of the Goods to be purchased; (e) the billing address; and (f) the delivery location (the "**Basic Purchase Order Terms**"), and on no other terms.
- 1.2. The accompanying quotation, proposal, confirmation of sale, invoice, order acknowledgment or similar document delivered by Seller to Buyer (the "**Sales Confirmation**"), the Basic Purchase Order Terms and these Terms (collectively, this "**Agreement**") comprise the entire agreement between the parties, and supersede all prior or contemporaneous understandings, agreements, negotiations, representations and warranties, and communications, both written and oral. These Terms prevail over any of Buyer's general terms and conditions of purchase regardless whether or when Buyer has submitted its purchase order or such terms. Fulfillment of Buyer's order does not constitute acceptance of any of Buyer's terms and conditions and does not serve to modify or amend these Terms.
- 1.3. Notwithstanding anything herein to the contrary, if a written contract signed by both parties is in existence covering the sale of the Goods covered hereby, the terms and conditions of said contract shall prevail to the extent they are inconsistent with these Terms.

2. Non-delivery:

- 2.1 The quantity of any installment of Goods as recorded by Seller on dispatch from Seller's Shipment Point (as defined in **Section 4**) is conclusive evidence of the quantity received by Buyer on delivery unless Buyer can provide conclusive evidence proving the contrary.
- 2.2 Seller shall not be liable for any non-delivery of Goods (even if caused by Seller's negligence) unless Buyer gives written notice to Seller of the non-delivery within 10 days of the date when the Goods would in the ordinary course of events have been received.
- 2.3 Any liability of Seller for non-delivery of the Goods shall be limited to replacing the Goods within a reasonable time or adjusting the invoice respecting such Goods to reflect the actual quantity delivered.

3. Delivery:

- 3.1 The Goods will be delivered within a reasonable time after the receipt of Buyer's purchase order, subject to availability of finished Goods. The delivery and/or shipping schedule is the best estimate possible based on conditions existing at the time of Seller's Sales Confirmation or Seller's quotation and receipt of all specifications, as applicable, and in the case of non-standard items, any such date is subject to Seller's receipt of complete information necessary for design and manufacture. Seller shall not be liable for any delays, loss or damage in transit or for any other direct, indirect, or consequential damages due to delays, including without limitation, loss of use.
 - 3.2 Seller may, in its sole discretion, without liability or penalty, deliver partial shipments of Goods to Buyer and ship the Goods as they become available, in advance of the quoted delivery date. If the Goods are delivered in installments, then insofar as each shipment is subject to the same Agreement, the Agreement will be treated as a single contract and not severable.
 - 3.3 Seller shall make the Goods available to Buyer at Seller's factory or designated shipment point (each, "**Seller's Shipment Point**") using Seller's standard methods for packaging and shipping such Goods. Buyer shall take delivery of the Goods within 5 days of Seller's written notice that the Goods have been delivered to the Seller's Shipment Point.
 - 3.4 If for any reason Buyer fails to accept delivery of any of the Goods on the date fixed pursuant to Seller's notice that the Goods have been delivered at the Seller's Shipment Point, or if Seller is unable to deliver the Goods at the Seller's Shipment Point on such date because Buyer has not provided appropriate instructions, documents, licenses or authorizations: (i) title and risk of loss to the Goods shall pass to Buyer; (ii) the Goods shall be deemed to have been delivered; and (iii) Seller, at its option, may store the Goods until Buyer picks them up, whereupon Buyer shall be liable for all related costs and expenses (including, without limitation, storage and insurance).
- 4. Shipping Terms:** Unless otherwise mutually agreed to in writing by the parties, delivery shall be FCA (Seller's Shipment Point) INCOTERMS 2010. At Buyer's request, Seller will, at Buyer's risk and expense, arrange for the delivery of the Goods to Buyer's site/facility and Buyer will pay, or reimburse Seller, for all freight charges, taxes, duties, entry fees, brokers' fees, special, miscellaneous and all other ancillary charges and special packaging charges incurred.
- 5. Title and Risk of Loss:** Title and risk of loss passes to Buyer upon the earlier of (i) delivery of the Goods at the Seller's Shipment Point or (ii) deemed delivery pursuant to clause 3.4 above. As collateral security for the payment of the purchase price of the Goods, Buyer hereby grants

to Seller a lien on and security interest in and to all of the right, title and interest of Buyer in, to and under the Goods, wherever located, and whether now existing or hereafter arising or acquired from time to time, and in all accessions thereto and replacements or modifications thereof, as well as all proceeds (including insurance proceeds) of the foregoing. The security interest granted under this provision constitutes a purchase money security interest under the New York Uniform Commercial Code.

6. Inspection and Rejection of Nonconforming Goods:

- 6.1** Buyer shall inspect the Goods within 10 days of receipt (the "**Inspection Period**"). Buyer will be deemed to have accepted the Goods unless it notifies Seller in writing of any nonconforming Goods during the Inspection Period and furnishes such written evidence or other documentation as required by Seller. Such notification shall identify each and every alleged nonconformity of the Goods and describe that portion of the shipment being rejected. Seller shall then respond with instructions as to the disposition of the Goods.
- 6.2** If Buyer timely notifies Seller of any nonconforming Goods, Seller shall, in its sole discretion, (i) replace such nonconforming Goods with conforming Goods, or (ii) credit or refund the Price for such nonconforming Goods, together with any reasonable shipping and handling expenses incurred by Buyer in connection therewith. Buyer shall ship, at its expense and risk of loss, the nonconforming Goods to Seller's Shipment Point. If Seller exercises its option to replace nonconforming Goods, Seller shall, after receiving Buyer's shipment of nonconforming Goods, ship to Buyer, at Buyer's expense and risk of loss, the replaced Goods to the Seller's Shipment Point.
- 6.3** Buyer acknowledges and agrees that the remedies set forth in **Section 6.2** are Buyer's exclusive remedies for the delivery of Nonconforming Goods. Except as provided under **Section 6.2**, all sales of Goods to Buyer are made on a one-way basis and Buyer has no right to return Goods purchased under this Agreement to Seller.
- 6.4** If Seller delivers to Buyer a quantity of Goods of up to 5% more or less than the quantity set forth in the Sales Confirmation, Buyer shall not be entitled to object to or reject the Goods or any portion of them by reason of the surplus or shortfall and shall pay for such Goods the price set forth in the Sales Confirmation adjusted pro rata.
- 7. Services:** Seller will provide such services as are expressly described in the Sales Confirmation (collectively, the "**Services**"), during normal business hours, unless otherwise specified in the Sales Confirmation. Services requested or required by Buyer outside of these hours or in addition to the quoted or agreed upon services will be charged at Seller's then current schedule of rates, including overtime charges, if applicable, and will be in addition to the charges outlined in the Sales Confirmation.
- 8. Purchase Price:** The price for the Goods and/or Services thereof shall be Seller's quoted price. Seller may also at any time assess a fuel or energy surcharge (in addition to the price of the Goods) (the "**Purchase Price**"). The Purchase Price is based on the project schedule defined in this Agreement, Sales Confirmation or applicable contract documents. Notwithstanding anything to the contrary set out herein, in the event of any delay to Seller's delivery schedule caused by Buyer or its representatives (other than for Force Majeure or delays caused by Seller), including without limitation, a suspension of work or the project, a postponement of the delivery date or failure to timely issue of a notice of commencement or similar document, then the Purchase Price shall increase by 1% for every month or partial month of such delay and this Agreement shall be construed as if the increased Purchase Price were originally inserted herein, and Buyer shall be billed by Seller on the basis of such increased Purchase Price.
- 9. Taxes:** The Purchase Price is exclusive of any applicable federal, state or local sales, use, excise or other similar taxes, including, without limitation, value added tax, goods and services tax or other similar tax imposed by any governmental authority on any amounts payable by Buyer. All such taxes will be for Buyer's account and will be paid by Buyer to Seller upon submission of Seller's invoices. Buyer agrees to make tax accruals and payments to the tax authorities as appropriate. If Buyer is exempt from any applicable sales tax or equivalent, but fails to notify Seller of such exemption or fails to furnish its Sales Tax Exemption Number to Seller in a timely manner and Seller is required to pay such tax, the amount of any such payment made by Seller will be reimbursed by Buyer to Seller upon submission of Seller's invoices.
- 10. Payment:**
- 10.1** Buyer shall pay all invoiced amounts due to Seller within 30 days from the date of Seller's invoice. Buyer shall make all payments hereunder by EFT, wire transfer, or check and in US dollars. Payment for foreign billing shall be in accordance with Seller's written instructions.
- 10.2** Buyer shall pay interest on all late payments at the lesser of the rate of 1.5% per month or the highest rate permissible under applicable law, calculated daily and compounded monthly. Buyer shall reimburse Seller for all costs incurred in collecting any late payments, including, without limitation, reasonable attorneys' fees. In addition to all other remedies available under these Terms or at law (which Seller does not waive by the exercise of any rights hereunder), Seller shall be entitled to suspend performance of any Purchase Order, or suspend the delivery of any Goods, if Buyer fails to pay any amounts when due hereunder and such failure continues for 5 days following written notice thereof. Additionally Seller may require payment in cash, security or other adequate assurance satisfactory to Seller when, in Seller's opinion, the financial condition of Buyer or other grounds for insecurity warrant such action.
- 10.3** All sales are subject to the approval of Seller's credit department.

10.4 Buyer may not withhold or setoff any amounts that may be claimed by Buyer against any amounts that are due and payable to Seller by reason of any set-off of any claim or dispute with Seller, whether relating to Seller's breach, bankruptcy or otherwise.

11. Limited Warranty:

11.1 **Limited Warranty for Goods.** Seller warrants to Buyer that for a period of twelve months from the date of delivery of the Goods, including deemed delivery pursuant to clause 3.4 above (the "**Warranty Period**"), that the Goods manufactured by Seller, when properly installed and maintained, and operated at ratings, specifications and design conditions specified by Seller, will materially conform to Seller's specifications for such Goods set forth in Seller's proposal, or, in the absence of such a proposal, such specifications for such Goods appearing in Seller's product catalogues and literature or in the Sales Confirmation, at the time of the order and will be free from material defects in material and workmanship (this "**Limited Warranty**"). Buyer shall notify Seller promptly in writing of any claims within the Warranty Period and provide Seller with an opportunity to inspect and test the Goods or service claimed to fail to meet this Limited Warranty. Buyer shall provide Seller with a copy of the original invoice for the product or service, and prepay all freight charges to return any Goods to Seller's factory, or other facility designated by Seller. All claims must be accompanied by full particulars, including system operating conditions, if applicable. If the defects are of such type and nature as to be covered by this Limited Warranty, Seller shall, at its option and in its sole discretion, either: (a) accept return of the defective Goods and furnish replacement Goods; (b) furnish replacement parts for the defective Goods; (c) repair the defective Goods; or (d) accept return of the defective Goods and return payments made, or issue credits for, such defective Goods. If Seller determines that any warranty claim is not, in fact, covered by this Limited Warranty, Buyer shall pay Seller its then customary charges for any additionally required service or products. **(Reference supplemental Module Warranty Submittal and supplemental special terms of sale.)**

11.2 **Limited Warranty for Services.** Seller further warrants that all Services performed hereunder, if any, will be performed in a workmanlike manner in accordance with applicable law and industry standards by qualified personnel (this "**Limited Warranty for Services**"); this Limited Warranty for Services shall survive for 30 days following Seller's completion of the Services (the "**Service Warranty Period**"). In the event of a warranty claim under this Limited Warranty for Services, Buyer shall inform Seller promptly in writing of the details of the claim within the Service Warranty Period. Seller's liability under any service warranty is limited (in Seller's sole discretion) to repeating the service that during the Service Warranty Period does not meet this Limited Warranty for Services or issuing credit for the nonconforming portions of the service. If Seller determines that any warranty claim is not, in fact, covered by the foregoing Limited Warranty for Services, Buyer shall pay Seller its then customary charges for all services performed by Seller.

11.3 **No Warranty as to Third Party Products.** Products manufactured by a third party ("**Third Party Product**") may constitute, contain, be contained in, incorporated into, attached to or packaged together with, the Goods. Third Party Products are not covered by the warranty in Section 11.1. For the avoidance of doubt, **SELLER MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO ANY THIRD PARTY PRODUCT, INCLUDING ANY (a) WARRANTY OF MERCHANTABILITY; (b) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; (c) WARRANTY OF TITLE; OR (d) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.** With respect to any Third Party Product, the warranty, if any, is provided solely through the manufacturer of such Third Party Product, the terms of which vary from manufacturer to manufacturer and Seller assumes no responsibility on their behalf. For Third Party Products, specific warranty terms may be obtained from the manufacturer's warranty statement. **Membrane modules and associated hardware withstanding.**

11.4 **Other Limits.** EXCEPT FOR THE WARRANTIES SET FORTH IN SECTIONS 11.1 and 11.2, SELLER MAKES NO WARRANTY WHATSOEVER WITH RESPECT TO THE GOODS AND SERVICES, INCLUDING WITHOUT LIMITATION ANY (a) WARRANTY OF MERCHANTABILITY; (b) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; (c) WARRANTY OF TITLE; OR (d) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE. Seller does not warrant against, and in no event shall Seller be liable for, damages or defects arising out of improper or abnormal use, misuse, abuse, improper installation (other than by Seller), application, operation, maintenance or repair, alteration, accident, or for negligence in use, storage, transportation or handling or other negligence of Buyer. In no event shall Seller be liable for any Goods repaired or altered by someone other than Seller other than pursuant to written authorization by Seller.

11.5 **Exclusive Obligation.** THIS WARRANTY IS EXCLUSIVE. THE LIMITED WARRANTY AND THE LIMITED WARRANTY FOR SERVICES ARE THE SOLE AND EXCLUSIVE OBLIGATIONS OF SELLER WITH RESPECT TO THE DEFECTIVE GOODS AND SERVICES. SELLER SHALL NOT HAVE ANY OTHER OBLIGATION WITH RESPECT TO THE GOODS, SERVICES, OR ANY PART THEREOF, WHETHER BASED ON CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE. THE REMEDIES SET FORTH IN SECTIONS 11.1 AND 11.2 SHALL BE THE BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S ENTIRE LIABILITY FOR ANY BREACH OF THE LIMITED WARRANTY SET FORTH IN SECTION 11.1 AND 11.2.

11.6 **Buyer Breach.** In no event shall Buyer be entitled to claim under the above Limited Warranties if Buyer is in breach of its obligations, including but not limited to payment, hereunder.

12. Limitation of Liability:

- 12.1 IN NO EVENT SHALL SELLER BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES, LOST PROFITS OR REVENUES OR DIMINUTION IN VALUE, INCLUDING WITHOUT LIMITATION, REMANUFACTURING COSTS AND REWORK COSTS, DE-INSTALLATION OR RE-INSTALLATION COST, WHETHER OR NOT THE POSSIBILITY OF SUCH DAMAGES HAS BEEN DISCLOSED IN ADVANCE BY BUYER OR COULD HAVE BEEN REASONABLY FORESEEN BY BUYER, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY (TORT, CONTRACT, OR OTHERWISE) UPON WHICH THE CLAIM IS BASED, AND WHATEVER THE FORUM, WHETHER ARISING OUT OF OR IN CONNECTION WITH THE MANUFACTURE, PACKAGING, DELIVERY, STORAGE, USE, MISUSE OR NON-USE OF ANY OF ITS GOODS OR SERVICES OR ANY OTHER CAUSE WHATSOEVER.**
- 12.2 IN NO EVENT SHALL SELLER'S AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO THIS AGREEMENT, WHETHER ARISING OUT OF OR RELATED TO BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, EXCEED THE TOTAL OF THE AMOUNTS PAID TO SELLER FOR THE GOODS SOLD HEREUNDER**
- 12.3** The limitation of liability set forth in **Section 12.2** above shall not apply to (i) liability resulting from Seller's gross negligence or willful misconduct and (ii) death or bodily injury resulting from Seller's acts or omissions.
- 13. Cancellation:** Buyer may not cancel this Agreement after Sales Confirmation unless all the details are approved in writing by the parties, including Buyer's agreement to pay a stated amount of termination charges.
- 14. Termination:** In addition to any remedies that may be provided under these Terms, Seller may terminate this Agreement with immediate effect upon written notice to Buyer, if Buyer: (i) fails to pay any amount when due under this Agreement and such failure continues for 10 days after Buyer's receipt of written notice of nonpayment; (ii) has not otherwise performed or complied with any of these Terms, in whole or in part; or (iii) becomes insolvent, files a petition for bankruptcy or commences or has commenced against it proceedings relating to bankruptcy, receivership, reorganization or assignment for the benefit of creditors.
- 15. Changes:** Seller shall not be obligated to implement any changes or variations in the scope of work described in Seller's Documentation unless Buyer and Seller agree in writing to the details of the change and any resulting price, schedule or other contractual modifications. This includes any changes or variations necessitated by a change in applicable law occurring after the effective date of this Agreement including these Terms.
- 16. Intellectual Property Infringement:** Buyer has no authorization to make any representation, statement or warranty on behalf of Seller relating to any Goods sold hereunder. Buyer shall indemnify and defend, at its own expense, Seller against claims or liability for U.S. or applicable foreign patent, copyright, trademark or other intellectual property infringement and for product liability arising from the preparation or manufacture of the Goods according to Buyer's specifications or instructions, or from Buyer's unauthorized or improper use of the Goods or part thereof, or from any changes or alterations to the Goods or part thereof made by persons other than Seller, or from the use of the Goods in combination with products not furnished by Seller or from the manufacture or sale or use of Buyer products which incorporate or integrate the Goods.
- 17. Ownership of Materials:** All ideas, concepts, whether patentable or not, devices, inventions, copyrights, improvements or discoveries, designs (including drawings, plans and specifications), estimates, prices, notes, electronic data and other documents or information that are: a) created, prepared, reduced to practice or disclosed by Seller; and/or b) based upon, derived from, or utilize the Confidential Information of Seller, and all related intellectual property rights, shall at all times remain Seller's property. No right, title or interest in any patents, trademarks, trade names or trade secrets, or in any pattern, drawing or design for any of the Goods or in any other Seller intellectual property right, shall pass or transfer to the Buyer and Seller shall at all times retain ownership rights therein. Notwithstanding the foregoing, Seller grants Buyer a non-exclusive, non-transferable license to use any such material to the extent necessary and solely for Buyer's use of the Goods purchased by Buyer from Seller hereunder. Buyer shall not disclose any such material to third parties without Seller's prior written consent. As a condition to Seller's delivery to Buyer of the Goods, Buyer shall not, directly or indirectly, and shall cause its employees, agents and representatives not to: (i) alter or modify the Goods, (ii) disassemble, decompile or otherwise reverse engineer or analyze the Goods, (iii) remove any product identification or proprietary rights notices, (iv) modify or create derivative works, (v) otherwise take any action contrary to Seller's rights in the technology and intellectual property relating to the Goods, (vi) assist or ask others to do any of the foregoing.
- 18. Export:** As a condition to Seller's delivery to Buyer of the Goods, Buyer agrees, with respect to the exportation or resale of the Goods by Buyer, to comply with all requirements of the International Traffic in Arms Regulations ("ITAR") and the Export Administration Regulations ("EAR"), regulations issued thereunder and any subsequent amendments thereto, and all other national, including, but not limited to, European, government laws and regulations on export controls, including laws and regulations pertaining to export licenses, restrictions on export to embargoed countries and restrictions on sales to certain persons and/or entities. Buyer further agrees that the shipment and/or delivery of the Goods by Seller is contingent upon Seller obtaining all required export authorizations, licenses, and permits (collectively, "Authorizations") and Buyer agrees that Seller shall not be liable to Buyer for any failure or delay in the shipment or delivery of the Goods if such Authorizations are delayed, conditioned, denied or not issued by the regulatory or governmental agencies having jurisdiction over such Authorizations.
- 19. Confidentiality:** If Seller discloses or grants Buyer access to any research, development, technical, economic, or other business information or "know-how" of a confidential nature, whether reduced to writing or not, Buyer will not use or disclose any such information to any other person or company at any time, without Seller's prior written consent. In the event that Buyer and Seller have entered into a separate

confidentiality agreement (the "**Confidentiality Agreement**"), the terms and conditions of the Confidentiality Agreement shall take precedence over the terms of this paragraph.

20. **No Waiver:** No waiver by Seller of any of the provisions of this Agreement is effective unless explicitly set forth in writing and signed by Seller. Seller's failure to exercise, or to delay in exercising, any right, remedy, power or privilege arising from this Agreement, or to insist on Buyer's strict performance of these Terms shall not operate as or be construed as a waiver by Seller.
 21. **Force Majeure:** Whenever performance by Seller of any of its obligations hereunder, is substantially prevented by reason of any act of God, strike, lock out, or other industrial or transportation disturbance, fire, lack of materials, law, regulation or ordinance, war or war conditions, or by reason of any other matter beyond its reasonable control, then such performance shall be excused, and deemed suspended during the continuation of such event and for a reasonable time thereafter, delayed, or adjusted accordingly.
 22. **No Third-Party Beneficiaries:** This Agreement is for the sole benefit of the parties hereto and their respective successors and permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other person or entity any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of these Terms.
 23. **Relationship of the Parties:** The relationship between the parties is that of independent contractors. Nothing contained in this Agreement shall be construed as creating any agency, partnership, joint venture or other form of joint enterprise, employment or fiduciary relationship between the parties, and neither party shall have authority to contract for or bind the other party in any manner whatsoever.
 24. **Validity:** If any provision of this Agreement, the Sales Confirmation or these Terms is held by any competent authority to be invalid or unenforceable in whole or in any part, such provision shall be ineffective, but only to the extent of such invalidity or unenforceability, without invalidating the remainder of such provision nor the other provisions, which shall not be affected.
 25. **Governing Law:** This Agreement, and all the rights and duties of the parties arising from or relating in any way to the subject matter of this Agreement or the transaction(s) contemplated by it, shall be governed by the laws of the State of New York, without giving effect to any choice or conflict of law provision or rule (whether of the State of New York or any other jurisdiction) that would cause the application of the laws of any jurisdiction other than those of the **State of Tennessee**.
- The parties expressly exclude the application of the United Nations Conventions on Contracts for the International Sale of Goods, and further exclude the applications of the International Sale of Goods Contracts Convention Act, S.C. 1990-1991, C.13, and the International Sale of Goods Act, R.S.O. 1990, C.I. 10, as amended.
26. **Submission to Jurisdiction:** Buyer and Seller hereby unconditionally and irrevocably submit to (and waive any objection on the grounds of inconvenient forum or otherwise) the jurisdiction of the Supreme Court of the State of New York, County of Nassau or the United States District Court for the Southern District of New York, which courts shall have exclusive jurisdiction to adjudicate and determine any suit, action or proceeding regarding or relating to this Agreement and the purchase and supply of the Goods. A judgment, order or decision of those courts in respect of any such claim or dispute shall be conclusive and may be recognized and enforced by any courts of any state, country or other jurisdiction.
 27. **No Jury Trial: BUYER AND SELLER HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR RELATING TO THIS AGREEMENT.**
 28. **Survival:** All payment, confidentiality and indemnity obligations, warranties, limitations of liability, product return, and ownership of materials provisions together with those sections the survival of which is necessary for the interpretation or enforcement of these Terms, shall continue in full force and effect for the duration stated in such provisions or the applicable statute of limitations.
 29. **Amendment and Modification:** This Agreement may only be amended or modified in a writing which specifically states that it amends this Agreement and is signed by an authorized representative of each party.

S E C T I O N F O U R

T

erms of Module Warranty

WARRANTY SUBMITTAL

Microfiltration System and Module Warranty

SUBMITTED TO:

CITY OF MURFREESBORO

SUBMITTED BY:

PALL CORPORATION
25 Harbor Park Drive
Port Washington, NY 11050

BEGINNING DATE OF WARRANTY: T B D

PALL will offer the following warranties with the purchase of the proposed microfiltration parts and services.

The Pall Standard Terms and Conditions are attached.

Terms of Material, Workmanship, Repair & Replacement Warranty

- i. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WITH RESPECT TO ANY OF THE PRODUCTS, NOR IS THERE ANY OTHER WARRANTY EXPRESS OR IMPLIED, EXCEPT AS PROVIDED FOR HEREIN.
- ii. **Hardware Warranty:** For 12 months commencing from the date of start-up or eighteen months from time of delivery from Seller (the "Warranty Period"), Seller warrants that products manufactured by Seller when properly installed and maintained, and operated at ratings, specifications and design conditions, will be free from defects in material and workmanship.
- iii. **Module Warranty: (10 YEAR -3 YEAR ABSOLUTE AND 7 YEARS PRO-RATED)**

For a period of one hundred and twenty months commencing from the date of the startup, or one hundred and twenty six months from the time of delivery from Seller (the "Warranty Period"), whichever is sooner, Seller warrants that the membrane modules, when properly installed and maintained, and operated at ratings, specifications and design conditions, will be free from defects in material and workmanship. In addition, Seller warrants satisfactory performance of each membrane module based on the microfilter system's ability to support design flow rates and the membrane modules passing the Seller's standard integrity test.

Owner and Seller will work together to optimize the specific operating protocol to be used including number of racks on line, flow rates per rack, cleaning technique and cleaning set points with the goal of achieving excellent long-term performance. Any change in operating conditions, water chemistry or the nature of the contaminants will require a review to determine the potential for impact on this warranty.

If the membrane modules fail to perform as outlined for up to thirty six *months* commencing from the startup, or forty two *months* from the time of delivery from

Seller, whichever is sooner, Seller will be given the opportunity to remedy the situation, for example, by modifying operating and/or cleaning protocol. If Seller is not able to remedy the situation, Seller will repair or replace those modules that do not perform if they are removed from service due to poor performance.

If the membrane modules fail to perform as outlined after *thirty six months up to one hundred twenty months* commencing from startup, or after *forty two months to one hundred twenty six months* from the time of delivery from Seller, whichever is sooner, Seller will be given the opportunity to remedy the situation, for example, by modifying operating and/or cleaning protocol. If Seller is not able to remedy the situation or repair the modules, Seller will replace those modules at the following replacement price:

- **Replacement Module Price = Module Price x (# of months from startup/120 months)**
- Or**
- **Replacement Module Price = Module Price x ((# of months from delivery – 6)/ 120 months))**

PALL is committed to continuous development of its filters and filter processes. Should membrane technology improve, for example via changes in the permeability or operating flux rates of the membranes, Pall reserves the right to provide a suitable number of alternative membrane replacements during the term of our warranty and beyond. This does not change the warranty since PALL guarantees the design flow capacity and the operational performance as defined within this proposal.

- iv. Seller's liability under any warranty is limited solely (in Seller's discretion) to replacing (FOB original ship point), repairing or issuing credit for products which become defective during the Warranty Period. Purchaser shall notify Seller promptly in writing of any claims and provide Seller with an opportunity to inspect and test the product claimed to be defective.
- v. In no event shall Seller be liable for any product altered outside of the Seller's factory by someone other than Seller or for a product subjected to misuse, abuse, improper installation, application, operation, maintenance or repair, alteration, accident, or negligence in use, storage, transportation or handling.
- vi. Seller shall not be liable for any damage or defect to equipment caused by improper use or mishandling of consumable items used in the operation of the treatment plant or by normal wear & tear or impact.
- vii. Seller shall not be liable for any damage or defect to equipment caused by operation of the equipment not in accordance with seller provided Operation and Maintenance manual even if seller is not aware of the existence of these conditions. Neither shall seller be liable for repairs, alterations or replacements to or uses of the equipment, which go beyond the equipment specification.

- viii. Seller shall not be liable for any damage or defect to equipment caused by operation of the equipment at pressures during forward flow, air scour and reverse flow modes higher than those recommended in the Operation and Maintenance manual
- ix. **Limitation of Liabilities: Notwithstanding anything elsewhere herein contained, PALL shall not be liable for any loss or damage in excess of the purchase price of the equipment.**
- x. The performance bond issued in conjunction with this contract will only cover a one-year warranty period and will not cover the long term warranties outlined above.
- xi. Warranty does not cover fiber damage due to foreign debris or operation outside of design specification and or Pall recommended operating procedures.
- xii. Warranty is void if customer is in default of payment to Pall Corporation.
- xiii. For long term membrane warranties customer is required to contract Pall Corporation to perform one system audit and CIP annually to maintain warranty validity. In addition, CIPs must be conducted by the customer at the interval and formulation indicated in the Operations and Maintenance Manual (O&M Manual) and the system must be operated per the conditions indicated in the O&M manual or as may be modified as per section iii of this warrantee.



... creating a better quality of life

MEMORANDUM

DATE: October 19, 2016
TO: Water and Sewer Board
FROM: Valerie H. Smith
SUBJECT: Sanitary Sewer Rehabilitation-Project Design
LittleJohn Engineering Associates
Engineering Task Order #20161017

BACKGROUND

The Department current has a Master Services Agreement (MSA) with LittleJohn Engineering Associates (LEA) approved February 2012. We have used the MSA for various projects the most recent being the 2015 Sanitary Sewer Rehabilitation Project. This project is wrapping up and staff is ready to move forward with our next rehab project. Our new Engineering Technician, Matt Powers who transferred from Operations & Maintenance, has spent this year reviewing our CCTV database, pulling out the sewer mains with the worst defects and making rehabilitation recommendations for our next project. We have delivered this information to LEA and asked for a proposal for the design, construction administration and resident inspection for this work.

They have prepared preliminary estimates for the rehabilitation project in the amount of \$3M and provided a proposal in a lump sum amount of \$75,000 for design, in an amount not to exceed \$65,000 for construction administration and in an amount not to exceed \$124,000 for resident inspection. Staff intends to again have a staff inspector present during all aspects of the construction to train under the LEA representative in hopes to be able to minimize the need for inspection assistant for future projects.

This next project includes approximately nineteen (19) sewer main point repairs, 4,385 linear feet of open cut sewer main replacements, 15,500 linear feet of cured in place pipe (CIPP), twenty-one (21) new manholes, 650 vertical feet of manhole lining and 132 sewer lateral linings. Staff would like to accept the proposal in the amount of \$264,000 and issue Task Order #20161017 to LEA to design the next project and have it ready to bid by the end of the year.

RECOMMENDATION

Staff recommends that the Board recommend to the City Council approval of the Engineering Task Order with LEA, through our Master Services Agreement, to design, bid, and provide construction administration and inspection not to exceed \$264,000. Bids for construction will be brought back to the Board for approval.

FISCAL IMPACT

Funding for the Engineering Design will come from the 2016-2017 Budget.

Funding for the construction will be from a combination of Rate Funded Budget and Working Capital Reserves from 2014/2015 to the present 2016/2017.

Total Budget Rehab Allocation 2014/2015 to 2015/2016 (1.25M/year)	\$2,500,000
<u>Total Reserve Rehab Allocation 2014/2015 (1M) to 2015/2016 (1.5M)</u>	<u>\$2,500,000</u>
Total:	\$5,000,000

Total Rehab Expenditures 2014/2015 to 2015/2016: \$3,213,563*

Total Funds Remaining from 2014/2015 & 2015/2016: **\$1,786,437**

The below table shows the estimated allocation going forward in 2016/2017:

Rehab Rate Funded Budget 2016/2017				
Total Budget	WO#	Project	Project Expenditure	Remaining 2016/2017 Budget
\$1,250,000 + \$1,786,437	?????	2016/2017 Sewer Rehab Project	\$2,736,437	\$300,000
	???	2016/2017 Rehab Engineering & Inspection	\$300,000	\$0
Working Capital Reserves 2016/2017				
Total Budget	WO#	Project	Project Expenditure	Remaining 2016/2017 Reserves
\$1,500,000**	???	2016/2017 Sewer Rehab Project (Remaining)	\$263,563	\$1,236,437

*The expenditures include all of the construction and engineering costs for work order #'s 112.233,369,334, 466 and 142 as well as the current 2015 Rehabilitation project (WO #'s 466, 467 & 468). The final change order for this 2015 project will be brought to the Board for approval in the next couple of months.

** Recent revision to the Capital Improvements Plan for Reserves.

ATTACHMENTS

LEA Proposal/ Task Order #20161017

TASK ORDER NO. 20161017

To the AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES
For 2015 REHABILITATION PROJECT

This Task Order made and entered into by and between **MURFREESBORO WATER AND SEWER DEPARTMENT**, hereinafter called the “OWNER” and **LITTLEJOHN ENGINEERING ASSOCIATES, INC.**, hereinafter called the “ENGINEER,” shall be incorporated into and become a part of the Agreement Between Owner and Engineer for Professional Services entered into by the parties hereto on the 28th of August, 2012, (the “AGREEMENT”).

PURPOSE

This Task Order authorizes and directs the ENGINEER to proceed in providing to the OWNER professional engineering services for assisting OWNER in the development of rehabilitation project within priority areas of the sanitary sewer collection system.

ENGINEER'S SCOPE OF SERVICES

The Scope of Services, dated October 17, 2016, is enumerated in Exhibit A. It is entitled “2017 Rehabilitation Project” and consists of 2 pages.

COMPENSATION

As consideration for providing the services enumerated within Exhibit A of this Task Order, the OWNER shall compensate the ENGINEER in accordance with the AGREEMENT. The specific method and/or amount of compensation for this Task Order is enumerated in the attached Exhibit C.

TASK ORDER NO. 20161017

Exhibit A

Date: October 17, 2016

Owner: Murfreesboro Water & Sewer Department

Project Title 2017 Rehabilitation Project

Project Location Murfreesboro, TN

SCOPE OF SERVICES

Task 1 – Design and Bidding Services

ENGINEER will prepare contract documents, technical specifications and plans necessary to convey to prospective contractors the extent and scope of work to be performed in conducting manhole and pipeline rehabilitation of the priority areas within the sanitary sewer collection system. It is anticipated that the Construction Value of this project will be approximately \$3.0 million. Specific sub-tasks to be performed by ENGINEER include:

- Review data files (CCTV and Manhole inspection data)
- Prepare preliminary recommendation plan and submit to OWNER for review
- Conduct preliminary recommendation meeting with OWNER to discuss (1 meeting)
- Develop and finalize a design for trenchless and conventional repairs of sanitary sewer mainlines, manholes, and service line connections
- Conduct final design review meeting with OWNER (1 meeting)
- Prepare Engineer's estimate
- Prepare GIS maps with master repair spreadsheet and CCTV videos for bid package
- Provide invitation to bid for qualified contractors
- Provide complete bid documents (plans & specifications)
- Conduct a Pre-bid meeting for the prospective contractors
- Receive and respond to Requests for Information (RFI's) during the bid process
- Issue Addenda if necessary
- Conduct a bid opening and prepare certified bid tabulations
- Evaluate bids and prepare recommendation of award
- Prepare Contract Documents for Execution – A total of eight (8) hard bound copies will be produced (2-OWNER, 2-Contractor, 2-ENGINEER, 2-Field Sets)
- Coordinate execution of contract documents between OWNER and contractor

Task 2 – Construction Administration

ENGINEER will provide Construction Administration (CA) services prior to commencement of work and throughout the construction period as more specifically described below.

- Conduct pre-construction conference with OWNER and contractor
- Review and approve submittals
- Set-up, attend and compile information for monthly progress meetings
- Distribute meeting minutes

- Provide project coordination with OWNER and contractor throughout construction period
- Scheduling of work throughout construction period
- Respond to inquiries from subcontractor on project specifics during the project
- Review and approval of pay requests
- Manage and facilitate change orders
- Conduct project close-out meeting
- Provide OWNER with updated rehabilitation GIS layer including rehabilitation performed

Task 3 – Resident Project Representation Services

ENGINEER will provide *assistance* for Resident Project Representation (RPR) services and *assist* OWNER to observe performance of work for approximately 75% of the project period as more specifically described below. Should more than 75% assistance be required, additional budget will be requested.

- Provide onsite representative to verify construction is in accordance with specifications
- Keep daily records of construction activities completed
- Keep online map updated and coordinate with OWNER staff to facilitate use of maps on OWNER's iPADS.
- Interface with the contractor's superintendent as required
- Assist in coordination with project schedule
- Review and reconcile pay applications with contractor
- Facilitate change orders for additional work or change of scope

Schedule

Upon execution of the agreement, ENGINEER will begin the review and design of the prioritized areas of the collection system. Upon completion of the design, ENGINEER will begin assembling the contract documentation and coordinate the advertisement and construction schedule with OWNER. At that time, a final project schedule will be determined.

TASK ORDER NO. 20161017

Exhibit B

OWNER'S RESPONSIBILITIES

The OWNER shall provide the ENGINEER with CCTV inspection videos and databases of any prospective mainlines or manholes that may be considered for repair. OWNER shall provide ENGINEER with any pertinent documentation from OWNER's legal department relating to bidding of sanitary sewer collection system rehabilitation projects and provide assistance, direction, and comments regarding the OWNER's purchasing procedures. OWNER shall make available any necessary staff to provide pertinent information in the development of project design.

TASK ORDER NO. 20161017

Exhibit C

COMPENSATION

The ENGINEER will be compensated for the Scope of Services as follows:

The fee for **Task 1 – Design and Bidding Services**, will be billed a lump sum amount of \$75,000.

The fee for **Task 2 – Construction Administration**, will be billed on an hourly basis at standard rates with a not-to-exceed maximum of \$65,000.00. All expenses incurred as part of completing this task will be billed at a rate of cost plus ten percent (10%). Expenses may include but are not limited to mileage, postage, printing, lodging, sustenance, etc.

The fee for **Task 3 – Resident Project Representation**, will be billed on an hourly basis at standard rates with a not-to-exceed maximum of \$124,000.00. All expenses incurred as part of completing this task will be billed at a rate of cost plus ten percent (10%). Expenses may include but are not limited to mileage, postage, printing, lodging, sustenance, etc.

The ENGINEER will bill monthly, based on the percentage of work completed each month. Unpaid invoices after 30 days will accrue service charges at 1 1/2% per month and include any costs of collections and reasonable attorney's fees.

IN WITNESS WHEREOF, the parties hereto have executed Task Order No. – 20161017
as a part of the “Agreement between Owner and Engineer for Professional Services-Task Order Edition”
on this, the 17th day of October 2016.

LITTLEJOHN – AN S&ME COMPANY

By: W. Scott McDonald

Printed: W. Scott McDonald

Title: Area Manager

WITNESS: Travis E. Wilson

By: _____

Printed: Travis E. Wilson

Title: Principal Project Manager

CITY OF MURFREESBORO

MURFREESBORO WATER & SEWER DEPARTMENT

By: _____

Printed: Mayor Shane McFarland

Title: Mayor

APPROVED AS TO FORM:

By: _____

Printed: Craig Tindall

Title: City Attorney



... creating a better quality of life

MEMORANDUM

DATE: October 18, 2016
TO: Water and Sewer Board
FROM: Darren Gore
SUBJECT: Working Capital Reserve Account in Conjunction with FY2017 – 2021 Capital Improvements Plan (CIP)

BACKGROUND

The Murfreesboro Water and Sewer Department (MWSD) staff has drafted an updated 5-Year Capital Improvements Plan (CIP) from Fiscal Year (FY) 2017 through 2021. The primary focus of this preliminary draft is the capital improvements projected to be funded by **working capital reserves** (shaded in green). After receiving the FY15-16 draft estimate of the Department's working capital reserve amount of \$55,005,063 provided by Jobe Hastings, PLLC (JH), staff has been able to "reset" the amount of cash available in the Department's working capital reserve account and therefore provide a more updated accurate reflection of the Department's reserve balance.

The attached FY17-21 Capital Improvements Plan highlights three (3) major project classifications:

1. Projects funded through Debt Service (highlighted in red)
2. Projects/Purchases funded through Rates (highlighted in blue)
3. Projects/Purchases funded through Working Capital Reserves (highlighted in green)

The largest components of the FY17-21 CIP are those projects funded through working capital reserves (highlighted in green). 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 \$24.87M of unassigned cash in reserves is determined available as of Oct 2016 (2nd quarter of FY17). When applying this to the FY17-21 CIP, and assuming projected additional FY17 reserve fund revenue and expenditures a working capital account balance of available funds is estimated as \$29.21M at FY17 year-end. Subsequent year-end available reserve balances have been estimated over the five (5) year CIP horizon.

When plotting that balance against the Department's twelve (12) months operating expenses (i.e., the minimum allowable working capital reserve fund balance), the Board can see that current planned expenditures never go below the secured level. Please note that operation expenses are assumed to

Water and Sewer 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

increase at 2% annually over the 5-yr CIP. The twelve (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.

The major expenditures within the 5-yr CIP are the funding for the Northeast Regional Pumping forcemain and pump station and the Biosolids processing equipment and storage addition. The bulk of these projects are expected to occur starting in FY18 and continuing through FY21. The amounts earmarked in the working capital reserve fund are based on costs associated with the Southeast Regional pumping station and preliminary estimates on biosolids processing equipment and storage. The total earmarked funds for these projects are currently itemized at \$26.25M; however, this estimate is likely to change as more detailed study and design occurs.

The Northeast regional pump station would take all of the sewer flow from the east side of Memorial Dr. between Northfield Blvd. and Compton Rd., allow the abandonment of three large pump stations, including the DeJarnette Lane pump station, and ease the surcharging flows that typically occur on the 21" Sinking Creek interceptor.

The biosolids processing equipment and storage addition would take our current biosolids process to a more sustainable platform with the closing of the Middlepoint landfill. Staff is hoping that there is an affordable way to take the biosolids generated at the Sinking Creek plant to a 100% beneficially reusable product by manufacturing Class A biosolids. Class A biosolids is a designation for dewatered and heated sewage sludge that meets U.S. EPA guidelines for land application with no restrictions. Thus, class A biosolids can be legally used as fertilizer on farms, vegetable gardens, and can be sold to home gardeners as compost or fertilizer.

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.

More detailed information on many of these projects will be presented to provide the Board a comfort level before making the decision to expend funds on them.

RECOMMENDATION

MWSD staff is providing this to the Board as information only. Subsequent discussion and appropriate recommendations will be provided as projects are requested for design and construction.

FISCAL IMPACT

The 5-yr CIP provides a pro forma for anticipated capital costs and the effect against the Department's secured minimum reserve amount of 12 months of operating expenses. There is no immediate fiscal impact, the 5-yr CIP provided is an update based on the FY16 audit and is for information only.

ATTACHMENTS

- DRAFT FY2017-2021 MWSD Capital Improvements Plan (CIP)
- EUM Financial Viability Working Capital Reserve Account Worksheet (FY17)

MWSD FY2017-2021 CIP

NO.	PROJECT	2016-2017 2016 Issue	2017-2018 2017 Issue	2018-2019 2018 Issue	2019-2020 2019 Issue	2020-2021 2020 Issue	TOTAL
	Construction- Northeast Regional force main						\$0
	Construction- Northeast Regional pumping station						\$0
	Engineering, Resident Project Representation (4D)	\$200,000	\$200,000				\$400,000
	Process expansion to 24 mgd, Phase 4D	\$10,165,000	\$3,535,000				\$13,700,000
	TOTAL Capital Improvements funded from Debt Service	\$10,365,000	\$3,735,000	\$0	\$0	\$0	\$14,100,000

NO.	PROJECT	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	2020-2021 2021 FY	TOTAL
	Sewer rehab- Account 335	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$6,250,000
	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
	Water Plant Membrane Replacement Sinking Fund						\$0
	Biolsolids Processing Equip & Storage Sinking Fund	\$700,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,700,000
	Walter Hill Dam Repair/Remediation Sinking Fund		\$125,000	\$125,000	\$125,000	\$125,000	\$500,000
	Lift Station Replacement Sinking Fund	\$285,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,285,000
	NE Regional PS & FM Sinking Fund	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
	GAC Replacement	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$550,000
	Vehicle and Equipment Replacement	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$7,500,000
	TOTAL Capital Improvements funded from Rates	\$5,480,000	\$5,370,000	\$5,370,000	\$5,370,000	\$5,370,000	\$26,960,000

NO.	PROJECT	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	2020-2021 2021 FY	TOTAL
	W&S CAPITAL IMPROVEMENT PROJECTS						
	Misc FY16 Working Reserve Commitments	\$1,400,000					\$1,400,000
	Customer Service Area Security Renovations	\$750,000					\$750,000
	NE Regional Engineering Design	\$250,000	\$1,000,000	\$500,000	\$250,000	\$250,000	\$2,250,000
	NE Regional P.S.			\$2,500,000	\$5,000,000	\$2,500,000	\$10,000,000
	NE Regional Force Main			\$2,500,000	\$5,000,000	\$2,500,000	\$10,000,000
	Walter Hill Dam Repair/Remediation					\$500,000	\$500,000
	Lift Station Rehab/Replacement (#13)	\$500,000	\$1,000,000				\$1,500,000
	Lift Station Rehab/Replacement (#9) Ransom Dr.		\$650,000				\$650,000
	Water Resource Integration Plan (WRIP)	\$400,000					\$400,000
	WTP Membrane Replacement				\$650,000		\$650,000
	Biolsolids Processing Equipment & Storage Addition		\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$6,000,000
	Direct Potable Reuse Pilot		\$200,000				\$200,000
	Stones River Water Qual Sampling / NPDES Permitting	\$200,000	\$250,000	\$250,000	\$150,000	\$150,000	\$1,000,000
	WTP Bar Screen, Pipe Gallery Leaks, Actuator Access	\$200,000	\$300,000				\$500,000
	Subtotal CAPITAL PROJECTS	\$3,700,000	\$4,900,000	\$7,250,000	\$12,550,000	\$7,400,000	\$35,800,000
	TRANSPORTATION (Water/Sewer Imp.)						
	Bradyville Pike		\$500,000	\$500,000	\$500,000		\$1,500,000
	MT Blvd Widening- Greenland to Main	\$250,000					\$250,000
	Lytle St. Relocation (Ph1 & Ph2)	\$750,000	\$750,000				\$1,500,000
	SR 99 Widening- Old Fort to Cason Lane		\$500,000	\$500,000	\$500,000		\$1,500,000
	St. Clair St.		\$500,000				\$500,000
	John Rive Blvd & Rucker Lane		\$200,000				\$200,000
	Cherry Lane Repurified Main Extension (14,600 LF)		\$825,000	\$1,000,000			\$1,825,000
	Maney Avenue Reconstruction - Phase 2		\$250,000	\$250,000			\$500,000
	Wilkinson Pike Reconstruction (MCP to TL)		\$650,000				\$650,000
	Subtotal TRANSPORTATION PROJECTS	\$1,000,000	\$4,175,000	\$2,250,000	\$1,000,000	\$0	\$8,425,000
	REHABILITATION						
	Sewer Rehabilitation - Maintenance Contract	\$1,500,000	\$1,500,000	\$1,000,000	\$1,000,000	\$1,000,000	\$6,000,000
	INFORMATION TECHNOLOGY PROJECTS						
	Advanced Metering Infrastructure (AMI)	\$950,000					\$950,000
	IT/Computer Systems Hardware Upgrades	\$50,000	\$50,000	\$50,000	\$100,000	\$100,000	\$350,000
	Electronic Content Management (Scanning/Imaging)		\$150,000	\$150,000	\$150,000		\$450,000
	IT Design Services & Consulting	\$100,000	\$100,000	\$100,000			\$300,000
	Comp Maintenance Management System (CMMS)			\$400,000	\$400,000		\$800,000
	Subtotal INFORMATION TECHNOLOGY PROJECTS	\$1,100,000	\$300,000	\$700,000	\$650,000	\$100,000	\$2,850,000
	TOTAL Projects from Working Capital Reserves	\$7,300,000	\$10,875,000	\$11,200,000	\$15,200,000	\$8,500,000	\$53,075,000

PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)	\$6,000,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000
PROJECTED ENHANCED REVENUE FOR RESERVES	\$500,000	\$750,000	\$2,000,000	\$2,000,000	\$2,000,000
SINKING FUND DEPOSITS TO RESERVES FROM RATES	\$1,485,000	\$1,375,000	\$1,375,000	\$1,375,000	\$1,375,000
SECURED MIN. BALANCE FOR WORKING CAPITAL RESERVES	\$21,792,755	\$22,228,610	\$22,673,182	\$23,126,646	\$23,589,179
PROJECTED WORKING CAPITAL RESERVE BALANCE	\$51,000,453	\$46,750,453	\$43,425,453	\$36,100,453	\$35,475,453

FUNDS ABOVE SECURED MINIMUM BALANCE **\$29,207,698** **\$24,521,843** **\$20,752,271** **\$12,973,807** **\$11,803,740**

EFFECTIVE UTILITY MANAGEMENT
Financial Viability
MWSD WORKING CAPITAL ACCOUNT SUMMARY

ESTIMATED Working Capital at 9/30/16

Board Designated (System Dev, Assessments, etc) as of 6/30/16	\$ 26,890,920	
Undesignated Excess Funds as of 6/30/16	28,114,143	
Estimated Reserve Revenue thru 9/30/16	2,400,000	
Estimated Reserve Expenditures thru 9/30/16	(4,689,610)	
		52,715,453

COMMITTED Reserves at 9/27/16

New Chiller at SRWTP	123,622	
Department Participation - Sewer, Springfield Apt	45,813	
Bradyville Pike Utility Design - Neil-Schaffer	62,000	
Cherry Lane Sewer Master Plan - Wisner	17,000	
Amendment #4, E. Coli Sampling	20,300	
Aux Generator Intake, SSR Const Admin	20,760	
Auxiliary Raw Water P.S. Generator	480,800	
Kroger (Mercury Blvd) Participation	11,500	
H-S Eng Services - St. Clair St. Imp	9,000	
Geotech Services for P.S. #13	13,500	
SEC Eng Services - John Rice Blvd Widening	6,500	
Pump Station #13 Replacement	1,515,000	
Amendment to Stones River Sampling	98,920	
Biosolids Master Plan	57,453	
John Bouchard - Fournier Press Install 15-06	291,709	
MR Systems - Fournier Press Install	27,593	
GAC Effluent Filter Actuator Replacement	4,500	
Wilkinson Pike Utilities Design	24,850	
Eng Design for Raw Water Aux Pumps Generator	3,697	
Sewer Rehab Projects (Littlejohn)	463,817	
Lytle St Ph2 Utility Design Services	6,149	
Engineering Services - Fournier Biosolids Press Repl	40,095	
Middle TN Blvd Utility Construction	106,819	
Lytle St. Utility Construction	87,734	
Westin Task Order #11 - AMI Implementation Support	78,440	
Pump Stations #3, #19, & #20 Replacement	90,166	
Water Resource Integration Plan (WRIP)	362,157	
Johnson Bailey Architect Fee (O&M, C/S)	22,172	
AMI Implementation	925,657	
E. & W. Fork Stones River Water Quality Sampling	105,441	
Pump Station #13 Replacement Design	19,220	
Additional Services Ph4D - SSR Amendment	37,373	5,179,757

APPROVAL Requests at 10/25/16

Pall Membrane Replacement (Rack #1)	168,500	
Sewer Rehab Design (Littlejohn)	264,000	432,500

BALANCE of Working Capital at 10/25/16 after COMMITMENTS **\$ 47,103,196**

DESIGNATED Projects Pending

Bar Screen, Trough, Platform Repair @ WTP	500,000	500,000
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ESTIMATED UNCOMMITTED Working Capital Reserves as of October 25, 2016 **\$ 46,603,196**

SECURED FY16-17 Operating and Maintenance Expenses **\$ 21,729,755**

UNASSIGNED Working Capital Funds (Est. Uncommitted - Secured) **\$ 24,873,441**



WATER AND SEWER ***DASHBOARD PERFORMANCE***

September 2016



MWSD FY2017-2021 CIP

NO.	PROJECT	2016-2017 2016 Issue	2017-2018 2017 Issue	2018-2019 2018 Issue	2019-2020 2019 Issue	2020-2021 2020 Issue	TOTAL
	Construction- Northeast Regional force main						\$0
	Construction- Northeast Regional pumping station						\$0
	Engineering, Resident Project Representation (4D)	\$200,000	\$200,000				\$400,000
	Process expansion to 24 mgd, Phase 4D	\$10,165,000	\$3,535,000				\$13,700,000
	TOTAL Capital Improvements funded from Debt Service	\$10,365,000	\$3,735,000	\$0	\$0	\$0	\$14,100,000

NO.	PROJECT	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	2020-2021 2021 FY	TOTAL
	Sewer rehab- Account 335	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$1,250,000	\$6,250,000
	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
	Water Plant Membrane Replacement Sinking Fund						\$0
	Biolsolids Processing Equip & Storage Sinking Fund	\$700,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,700,000
	Walter Hill Dam Repair/Remediation Sinking Fund		\$125,000	\$125,000	\$125,000	\$125,000	\$500,000
	Lift Station Replacement Sinking Fund	\$285,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,285,000
	NE Regional PS & FM Sinking Fund	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
	GAC Replacement	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$550,000
	Vehicle and Equipment Replacement	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$7,500,000
	TOTAL Capital Improvements funded from Rates	\$5,480,000	\$5,370,000	\$5,370,000	\$5,370,000	\$5,370,000	\$26,960,000

NO.	PROJECT	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	2020-2021 2021 FY	TOTAL
	W&S CAPITAL IMPROVEMENT PROJECTS						
	Misc FY16 Working Reserve Commitments	\$1,400,000					\$1,400,000
	Customer Service Area Security Renovations	\$750,000					\$750,000
	NE Regional Engineering Design	\$250,000	\$1,000,000	\$500,000	\$250,000	\$250,000	\$2,250,000
	NE Regional P.S.			\$2,500,000	\$5,000,000	\$2,500,000	\$10,000,000
	NE Regional Force Main			\$2,500,000	\$5,000,000	\$2,500,000	\$10,000,000
	Walter Hill Dam Repair/Remediation					\$500,000	\$500,000
	Lift Station Rehab/Replacement (#13)	\$500,000	\$1,000,000				\$1,500,000
	Lift Station Rehab/Replacement (#9) Ransom Dr.		\$650,000				\$650,000
	Water Resource Integration Plan (WRIP)	\$400,000					\$400,000
	WTP Membrane Replacement				\$650,000		\$650,000
	Biolsolids Processing Equipment & Storage Addition		\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$6,000,000
	Direct Potable Reuse Pilot		\$200,000				\$200,000
	Stones River Water Qual Sampling / NPDES Permitting	\$200,000	\$250,000	\$250,000	\$150,000	\$150,000	\$1,000,000
	WTP Bar Screen, Pipe Gallery Leaks, Actuator Access	\$200,000	\$300,000				\$500,000
	Subtotal CAPITAL PROJECTS	\$3,700,000	\$4,900,000	\$7,250,000	\$12,550,000	\$7,400,000	\$35,800,000
	TRANSPORTATION (Water/Sewer Imp.)						
	Bradyville Pike		\$500,000	\$500,000	\$500,000		\$1,500,000
	MT Blvd Widening- Greenland to Main	\$250,000					\$250,000
	Lytle St. Relocation (Ph1 & Ph2)	\$750,000	\$750,000				\$1,500,000
	SR 99 Widening- Old Fort to Cason Lane		\$500,000	\$500,000	\$500,000		\$1,500,000
	St. Clair St.		\$500,000				\$500,000
	John Rive Blvd & Rucker Lane		\$200,000				\$200,000
	Cherry Lane Repurified Main Extension (14,600 LF)		\$825,000	\$1,000,000			\$1,825,000
	Maney Avenue Reconstruction - Phase 2		\$250,000	\$250,000			\$500,000
	Wilkinson Pike Reconstruction (MCP to TL)		\$650,000				\$650,000
	Subtotal TRANSPORTATION PROJECTS	\$1,000,000	\$4,175,000	\$2,250,000	\$1,000,000	\$0	\$8,425,000
	REHABILITATION						
	Sewer Rehabilitation - Maintenance Contract	\$1,500,000	\$1,500,000	\$1,000,000	\$1,000,000	\$1,000,000	\$6,000,000
	INFORMATION TECHNOLOGY PROJECTS						
	Advanced Metering Infrastructure (AMI)	\$950,000					\$950,000
	IT/Computer Systems Hardware Upgrades	\$50,000	\$50,000	\$50,000	\$100,000	\$100,000	\$350,000
	Electronic Content Management (Scanning/Imaging)		\$150,000	\$150,000	\$150,000		\$450,000
	IT Design Services & Consulting	\$100,000	\$100,000	\$100,000			\$300,000
	Comp Maintenance Management System (CMMS)			\$400,000	\$400,000		\$800,000
	Subtotal INFORMATION TECHNOLOGY PROJECTS	\$1,100,000	\$300,000	\$700,000	\$650,000	\$100,000	\$2,850,000
	TOTAL Projects from Working Capital Reserves	\$7,300,000	\$10,875,000	\$11,200,000	\$15,200,000	\$8,500,000	\$53,075,000

PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)	\$6,000,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000
PROJECTED ENHANCED REVENUE FOR RESERVES	\$500,000	\$750,000	\$2,000,000	\$2,000,000	\$2,000,000
SINKING FUND DEPOSITS TO RESERVES FROM RATES	\$1,485,000	\$1,375,000	\$1,375,000	\$1,375,000	\$1,375,000
SECURED MIN. BALANCE FOR WORKING CAPITAL RESERVES	\$21,792,755	\$22,228,610	\$22,673,182	\$23,126,646	\$23,589,179
PROJECTED WORKING CAPITAL RESERVE BALANCE	\$51,000,453	\$46,750,453	\$43,425,453	\$36,100,453	\$35,475,453
FUNDS ABOVE SECURED MINIMUM BALANCE	\$29,207,698	\$24,521,843	\$20,752,271	\$12,973,807	\$11,886,274

**Preliminary Draft 5-YR CAPITAL IMPROVEMENTS PLAN (CIP)
STORMWATER UTILITY FUND, FY17-21**

NO.	PROJECT	Originator	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	2020-2021 2021 FY	TOTAL
			<i>Budget</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	
	Neighborhood Projects (NP)							
NP-1	Memorial Blvd / Haynes Dr. Drainage Improvements	City Eng	\$75,000	\$150,000	\$125,000			\$350,000
NP-2	Mitchell-Nielson Drainage Project	City Eng	\$50,000	\$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	\$200,000	\$400,000				\$600,000
NP-5	Liberty Dr. / Thatcher Trace Spring Box	City Eng		\$25,000	\$50,000	\$50,000		\$125,000
NP-6	Pennington Drive Drainage Repair/Upgrade (Added)	City Eng						\$0
NP-7	Gateway Pond Repair (Added)	Eng/MWSD						\$0
NP-8	Hardwood Drive Drainage Upgrade (Added)	City Eng	\$100,000	\$250,000				\$350,000
NP-9	Pacific Place/Riverrock Blvd Drainage Imp.	City Eng	\$0	\$150,000	\$200,000			\$350,000
	Subtotal		\$525,000	\$1,125,000	\$375,000	\$50,000	\$0	\$2,075,000
	Water Quality Improvement (Compliance) Projects (WQ)							
WQ-1	Town Creek Bioretention BMP's @ Cannonsburgh	MWSD	\$0	\$75,000				\$75,000
WQ-2	Molloy Lane Water Quality Pond	MWSD		\$100,000	\$100,000			\$200,000
WQ-3	Rosebank Springs Constructed Wetlands	City Eng	\$400,000	\$300,000				\$700,000
WQ-4	Lee's Branch Stream Restoration	City Eng		\$50,000	\$50,000	\$50,000	\$50,000	\$200,000
WQ-5	West Fork Stones River at Cason Trail; bank repair	MWSD						\$0
WQ-6	Bear Branch Water Quality Mitigation	City Eng	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000
WQ-7	Sinking Creek Headwater protection BMP	City Eng	\$100,000	\$100,000	\$150,000	\$150,000		\$500,000
WQ-8	Todd's Lake Regional Wetlands Improvements	City Eng						\$0
WQ-9	Hooper's Bottom Regional Water Quality Project	City Eng	\$100,000	\$150,000	\$150,000	\$150,000	\$150,000	\$700,000
WQ-10	Lytle Creek/Ridgley Road Bacteriological Reduction (Added)	MWSD			\$50,000			\$50,000
WQ-11	Memorial Blvd/VA Pond Trash Rack (Added)	MWSD			\$50,000			\$50,000
WQ-12	Spence Creek Restoration	Eng/MWSD	\$100,000	\$25,000	\$25,000	\$25,000	\$25,000	\$200,000
	Subtotal		\$750,000	\$850,000	\$625,000	\$425,000	\$275,000	\$2,925,000
	Public Drainage/Streets Participation Projects (PD)							
PD-1	Maney Avenue Phase 2	City Eng						\$0
PD-2	Town Creek Conveyance (Murfree Springs to Cannonsburgh)	City Eng	\$800,000					\$800,000
PD-3	Maple St. Alley Permeable Paver Project	City Eng						\$0
	Subtotal		\$800,000	\$0	\$0	\$0	\$0	\$800,000
	Parks & Rec and School Participation Projects (PP)							
PP-1	Hobgood School Porous Pavers	City Eng						\$0
PP-2	McFadden LID Project	MWSD						\$0
PP-3	Parks and Rec Office/Ag Center Pervious Parking Lot	MWSD						\$0
PP-4	West Elementary School Porous Pavers/Outdoor Classroom	City Eng						\$0
PP-5	Hobgood School Pervious Pavers Phase 2	City Eng						\$0
PP-6	Black Fox School Pervious Pavers	City Eng						\$0
PP-7	Police HQ Sinking Creek Water Quality Project	City Eng						\$0
	Subtotal		\$0	\$0	\$0	\$0	\$0	\$0
	Watershed Planning Projects / Development Participation (DP)							
DP-1	Warrior Dr. Regional Stormwater BMP	MWSD						\$0
DP-2	Mercury Plaza Shopping Center Pervious Parking Conversion	City Eng						\$0
	Subtotal		\$0	\$0	\$0	\$0	\$0	\$0
	Totals		\$ 2,075,000	\$ 1,975,000	\$ 1,000,000	\$ 475,000	\$ 275,000	\$ 5,800,000

\$ 5,800,000

EFFECTIVE UTILITY MANAGEMENT
Financial Viability
MWSD WORKING CAPITAL ACCOUNT SUMMARY

ESTIMATED Working Capital at 9/30/16

Board Designated (System Dev, Assessments, etc) as of 6/30/16	\$	26,890,920
Undesignated Excess Funds as of 6/30/16		28,114,143
Estimated Reserve Revenue thru 9/30/16		2,400,000
Estimated Reserve Expenditures thru 9/30/16		(4,689,610)
		52,715,453

COMMITTED Reserves at 9/27/16

New Chiller at SRWTP	123,622	
Department Participation - Sewer, Springfield Apt	45,813	
Bradyville Pike Utility Design - Neil-Schaffer	62,000	
Cherry Lane Sewer Master Plan - Wisner	17,000	
Amendment #4, E. Coli Sampling	20,300	
Aux Generator Intake, SSR Const Admin	20,760	
Auxiliary Raw Water P.S. Generator	480,800	
Kroger (Mercury Blvd) Participation	11,500	
H-S Eng Services - St. Clair St. Imp	9,000	
Geotech Services for P.S. #13	13,500	
SEC Eng Services - John Rice Blvd Widening	6,500	
Pump Station #13 Replacement	1,515,000	
Amendment to Stones River Sampling	98,920	
Biosolids Master Plan	57,453	
John Bouchard - Fournier Press Install 15-06	291,709	
MR Systems - Fournier Press Install	27,593	
GAC Effluent Filter Actuator Replacement	4,500	
Wilkinson Pike Utilities Design	24,850	
Eng Design for Raw Water Aux Pumps Generator	3,697	
Sewer Rehab Projects (Littlejohn)	463,817	
Lytle St Ph2 Utility Design Services	6,149	
Engineering Services - Fournier Biosolids Press Repl	40,095	
Middle TN Blvd Utility Construction	106,819	
Lytle St. Utility Construction	87,734	
Westin Task Order #11 - AMI Implementation Support	78,440	
Pump Stations #3, #19, & #20 Replacement	90,166	
Water Resource Integration Plan (WRIP)	362,157	
Johnson Bailey Architect Fee (O&M, C/S)	22,172	
AMI Implementation	925,657	
E. & W. Fork Stones River Water Quality Sampling	105,441	
Pump Station #13 Replacement Design	19,220	
Additional Services Ph4D - SSR Amendment	37,373	5,179,757
		5,179,757

APPROVAL Requests at 10/25/16

Pall Membrane Replacement (Rack #1)	168,500	
Sewer Rehab Design (Littlejohn)	264,000	432,500
		432,500

BALANCE of Working Capital at 10/25/16 after COMMITMENTS **\$ 47,103,196**

DESIGNATED Projects Pending

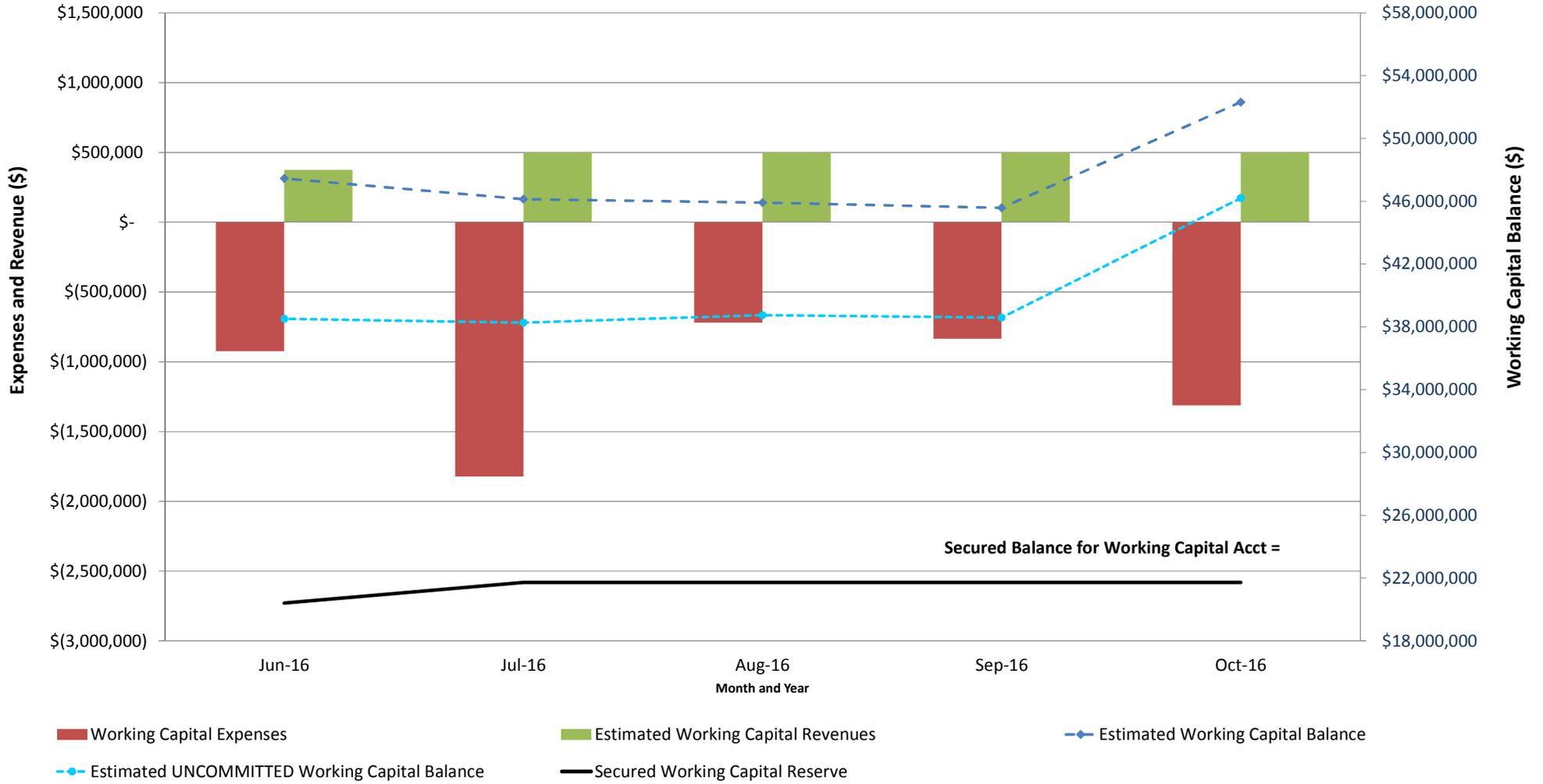
Bar Screen, Trough, Platform Repair @ WTP	500,000	500,000
		500,000

ESTIMATED UNCOMMITTED Working Capital Reserves as of October 25, 2016 **\$ 46,603,196**

SECURED FY16-17 Operating and Maintenance Expenses **\$ 21,729,755**

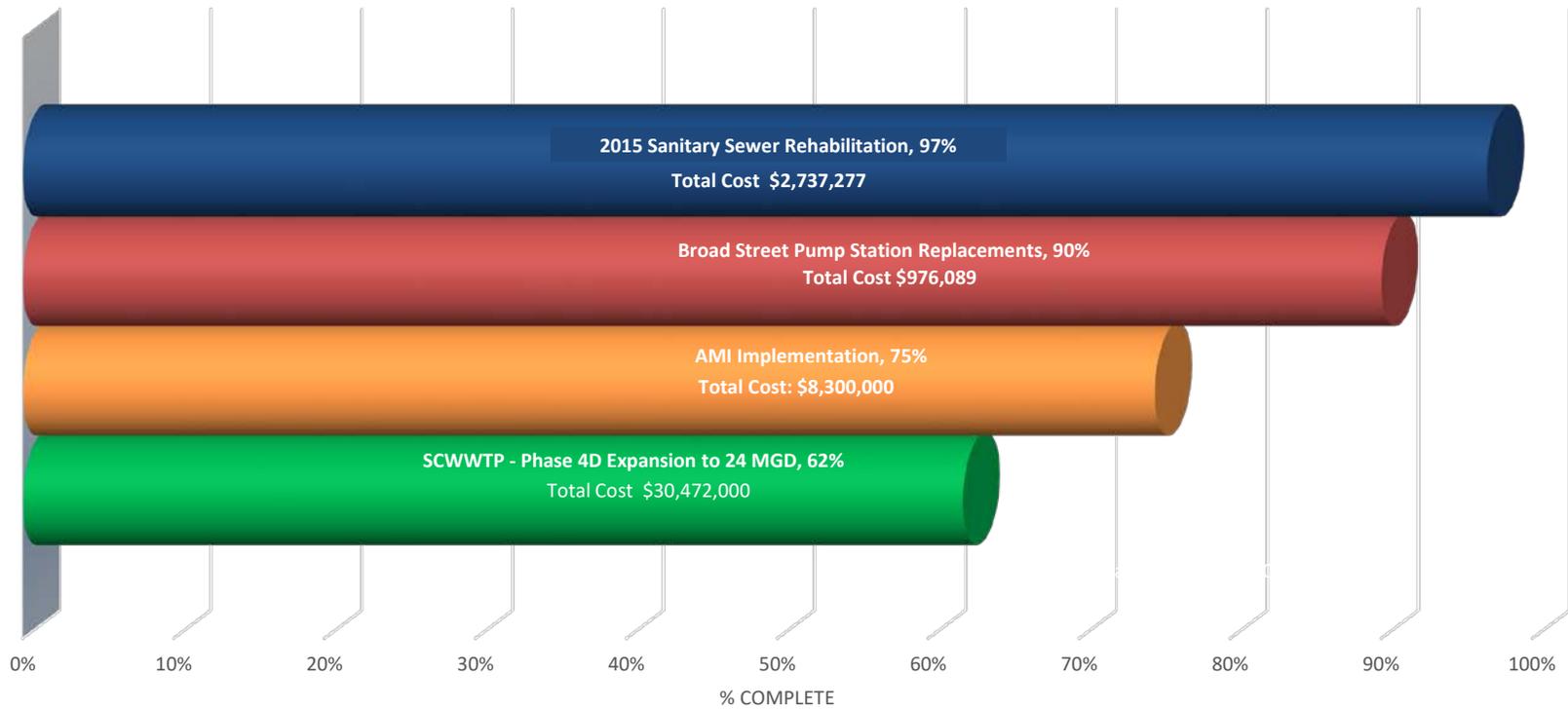
UNASSIGNED Working Capital Funds (Est. Uncommitted - Secured) **\$ 24,873,441**

MWSD Working Capital Reserves Dashboard

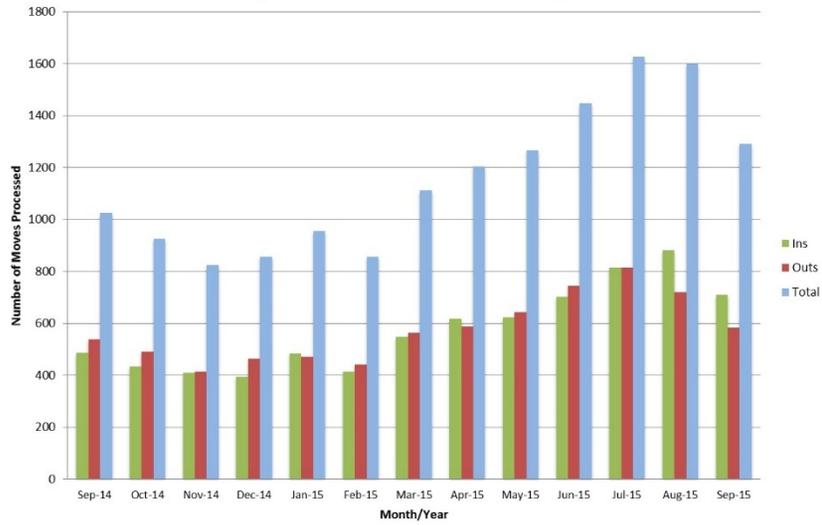


DASHBOARD PERFORMANCE - SEPTEMBER 2016

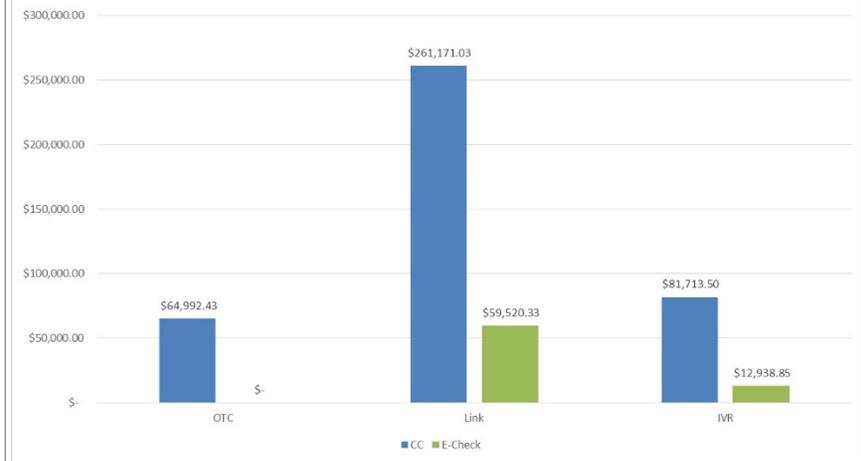
CAPITAL PROJECTS



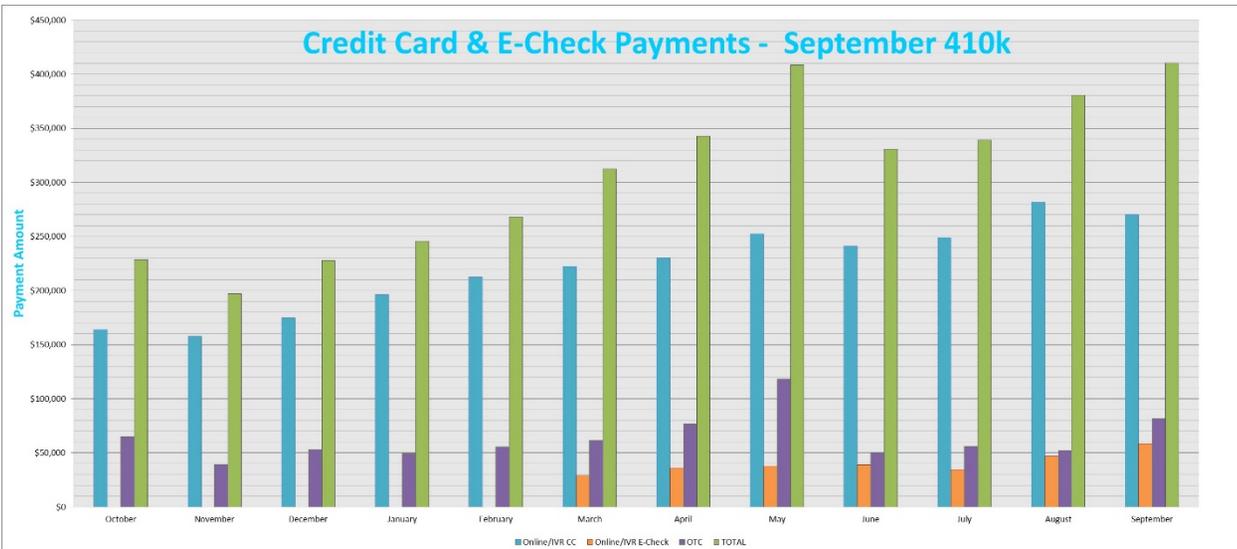
September Moves Processed = 1,292

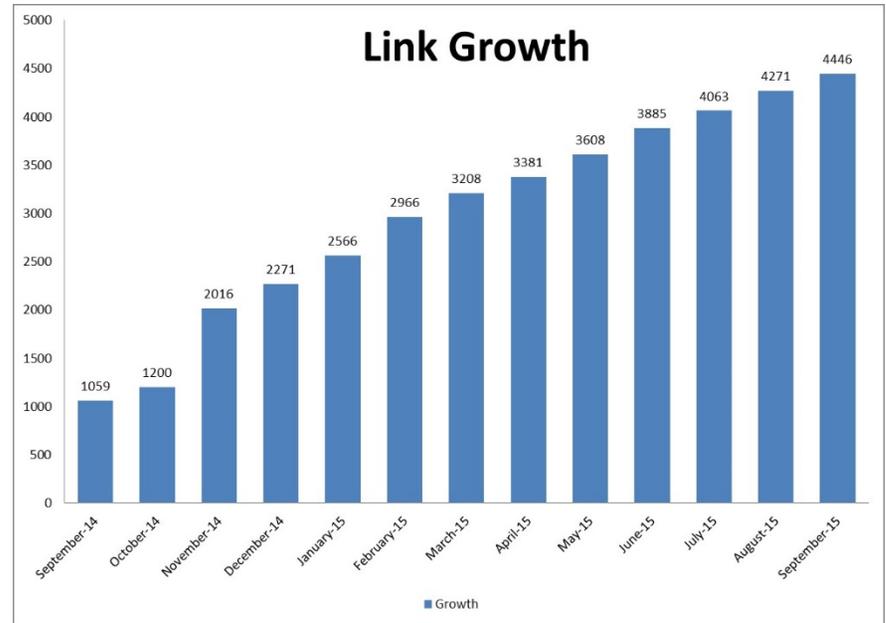
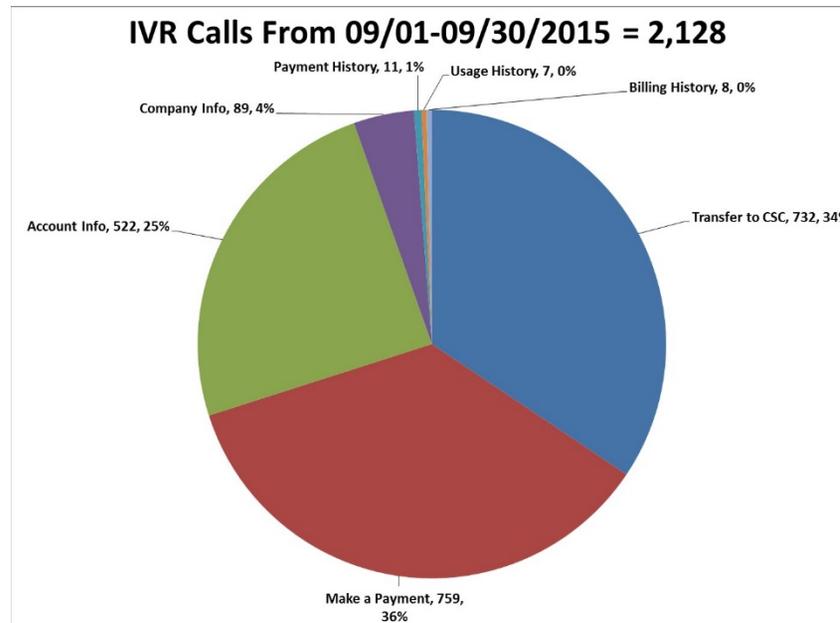
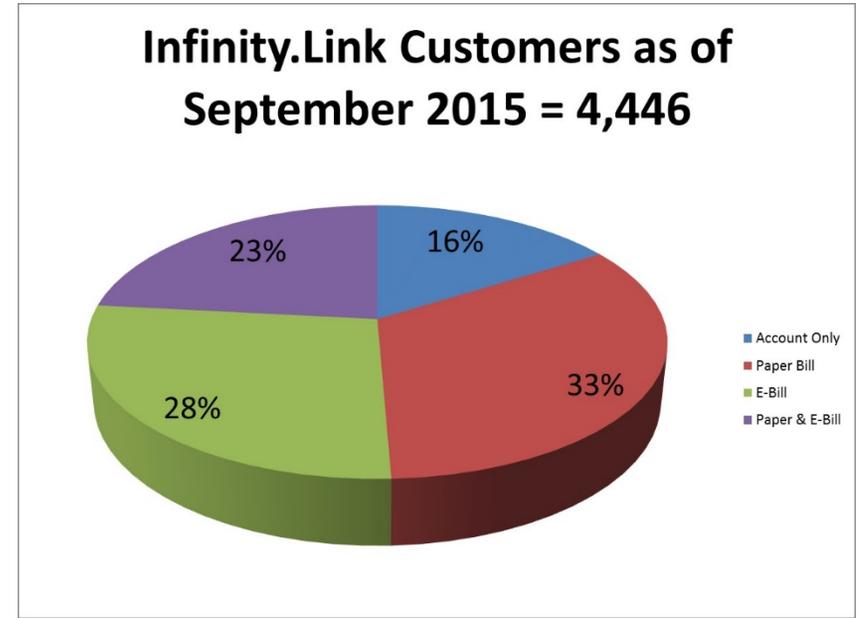
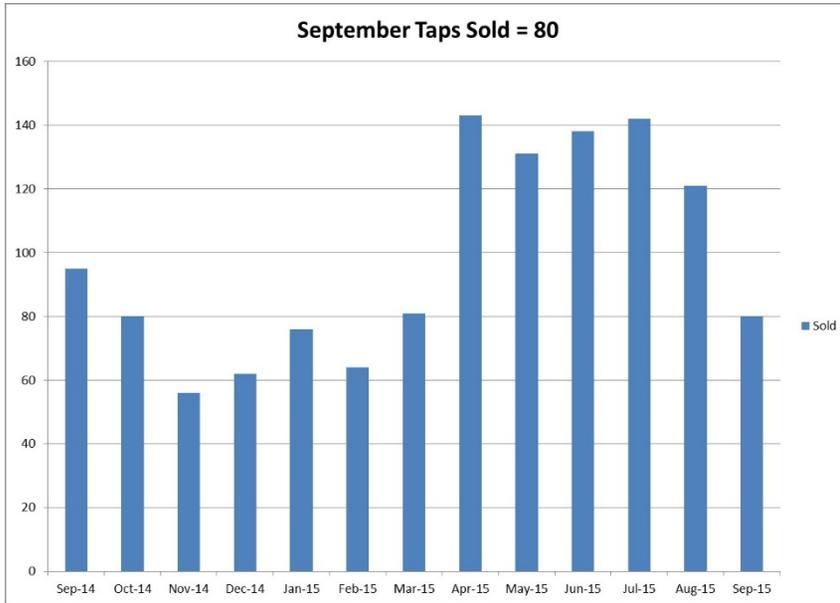


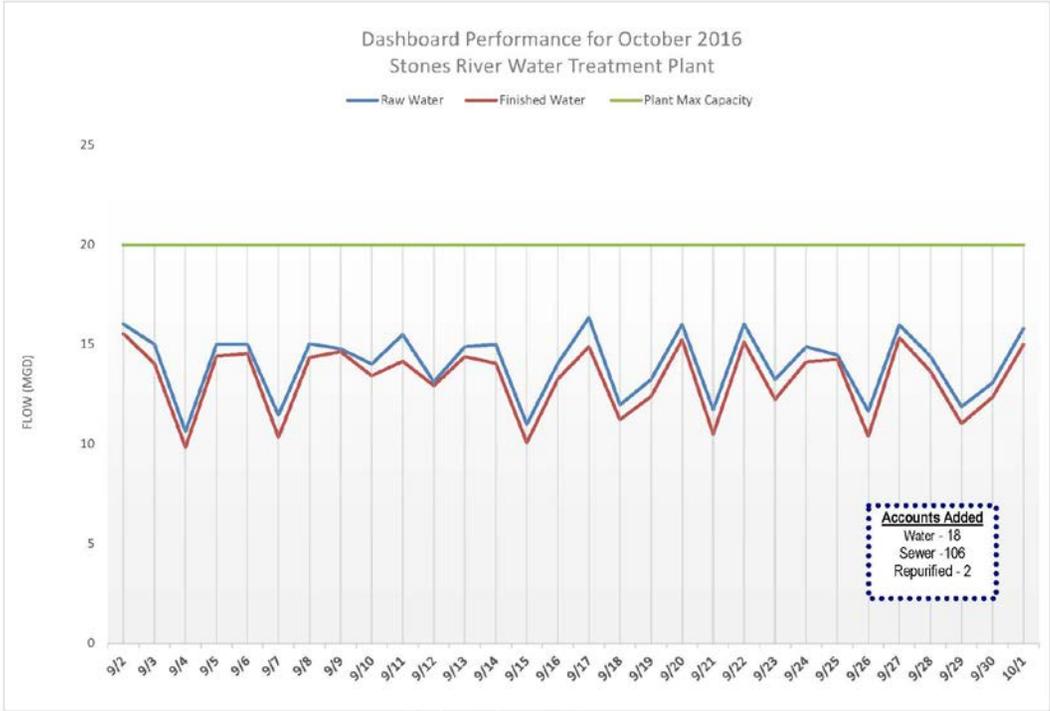
Electronic Payment Method September 2016



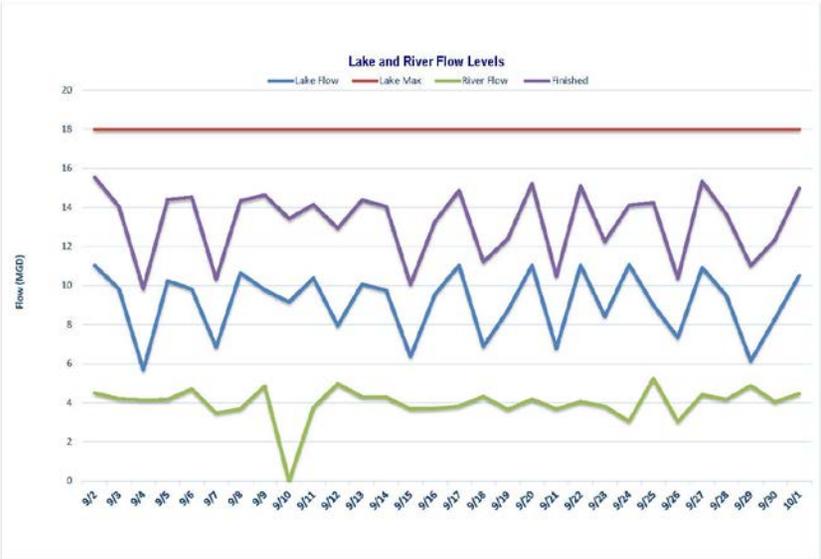
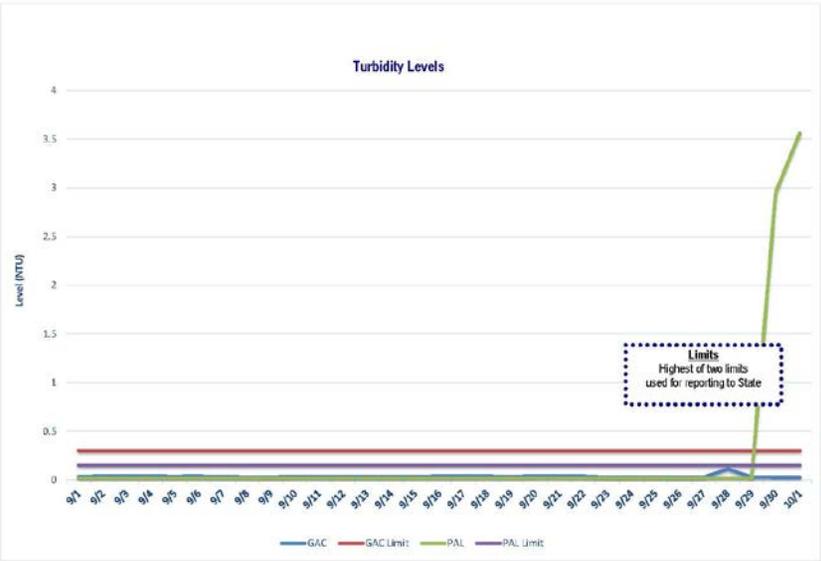
Credit Card & E-Check Payments - September 410k







Totalized Finished Water Volume: 397.6 MG
Totalized Billed Water Volume: 293.8 MG
% Unaccounted for Water: 26.1%



State Report Coversheet

Month/Year Reported

September 2016

Name of Water Utility Murfreesboro Water & Sewer Department
 Name of WTP Stones River Water Treatment Plant
 County Rutherford
 PWSID 0000491
 Laboratory ID 00450

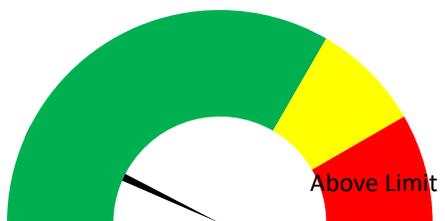
Bacteria	Total Number of Bacteria Samples for Month	103
Disinfection	Number of Samples	103
	Number of days plant operated	30
	Lowest Residual in Distribution System	1.10
	Lowest Residual Entering Distribution System	3.03
	Average Plant Effluent	3.4
Turbidity	Total Hours Planted Operated	719
	Number of Samples	180
	Maximum Turbidity	0.36
Flow	Average Raw Water Flow	14036
	Maximum Raw Water Flow	16344
Pumpage Data	Total Water Pumped (Lake)	273,857.000
	Average Water Pumped (Lake)	9,128.567
	Maximum Day (Lake)	11,074.000
	Minimum Day (Lake)	5,687.000
	Total Water Pumped (River)	147,211.222
	Average Water Pumped (River)	4,907.041
	Minimum Day (River)	3,805.727
Water Statistics	Water Treated (Raw)	421,068.222
	Water Pumped (Finished)	397,580.130
	Water Transfer - to Murfreesboro (Smyrna, CUD)	0.000
	Water Metered (Sales, OM/Hydrant)	280,423.916
	Water Metered (Vacant Accounts, Fire Protection)	264.986
	Accounted For Water - (Flushing O&M/Eng, Fire, Street)	387.854
	Accounted For Water - (Flushing WTP)	1,125.999
	Process Water (Distribution,Tank,Water Plant)	11,634.268
	Water Transfer - to CUD	0.000
	Water Transfer - to Smyrna	0.000
	Total Accounted For Water	293,837.023
	Non Revenue Water	103,743.106
	Water Loss - Percentage	26.1%
Water Cost Per 1,000 gallons		

Subtotals		
0	0	
280,375.641	48.275	
0.000	264.986	
225.905	137.049	24.9
1125999		
568.8	0	11065.47

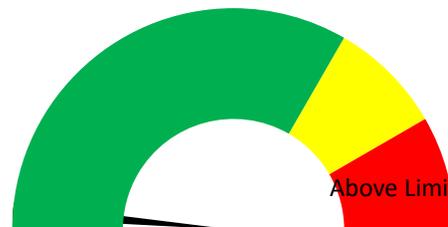
Reports Needed:

- MOR - Page 1 & 2 **DECEMBER Check YEAR!**
- Distribution
- Monthly Disinfectants Monitoring Report - Page 1 & 2
- Filter Performance Report
- Filter Turbidity Exceedance Report (Only if the filter turbidity exceeds standards)
- Monthly Microbiological Monitoring Report/Disinfectant Monitoring
- TOC & Enhanced Coagulation Report (Quarterly ADDED Data in March, June, September, December)
- Pumpage Data Report
- Bacteria Detail Report (**Check for POSITIVE Bacteria**)
- Flow to/from Smyrna to Smyrna, Dashboard Data to Pamela, Raw Flow to Debbie, PALL Turb to SS Indirect IT Folder, Dist Sheet to Randy
- Copy of Chemicals sheet to Debbie Crocker, Data to WaterLossMonthlyTotals (\\172.19.195.31\ShareA\Admin\Water Loss and Unaccounted for Water)
- Close out and lock Operator Log, convert to PDF, Add to SS Operator Log Folder
- High Service Dist. Monitor Logs to SS Folder
- PALL Data Logs to S3 and HS1 archives to S3
- BE-BH Correction on RAW Sheet/ **AUTOMATIC FLUSHING to KIM**

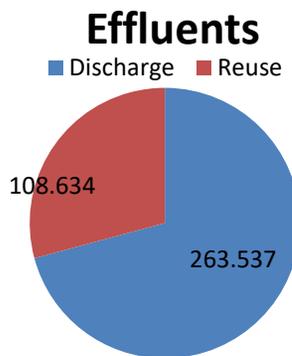
Dashboard Report August 2016
Sinking Creek Wastewater Treatment Plant



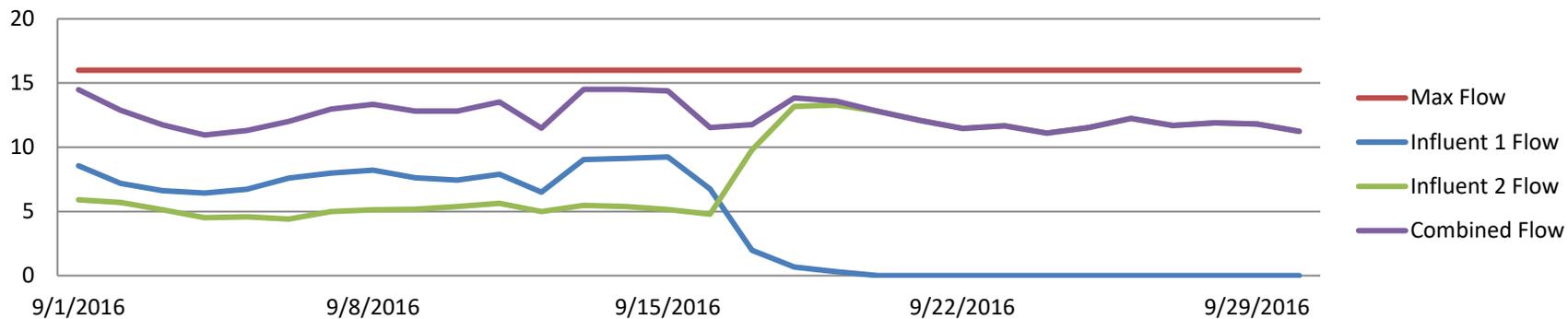
99.13%
Removal
BOD



99.64%
Removal
NH3

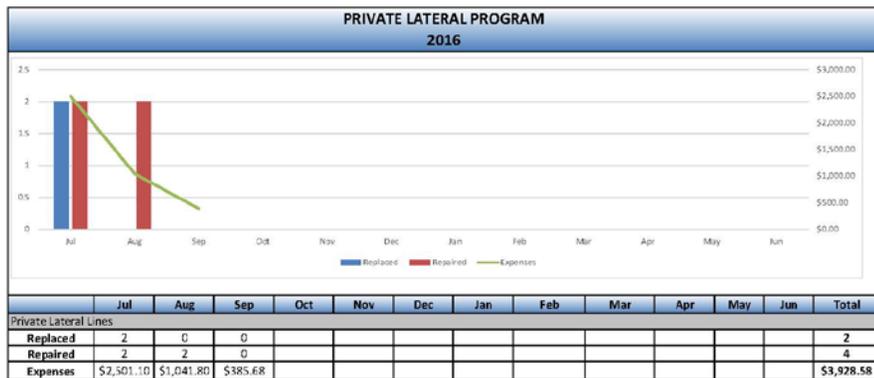
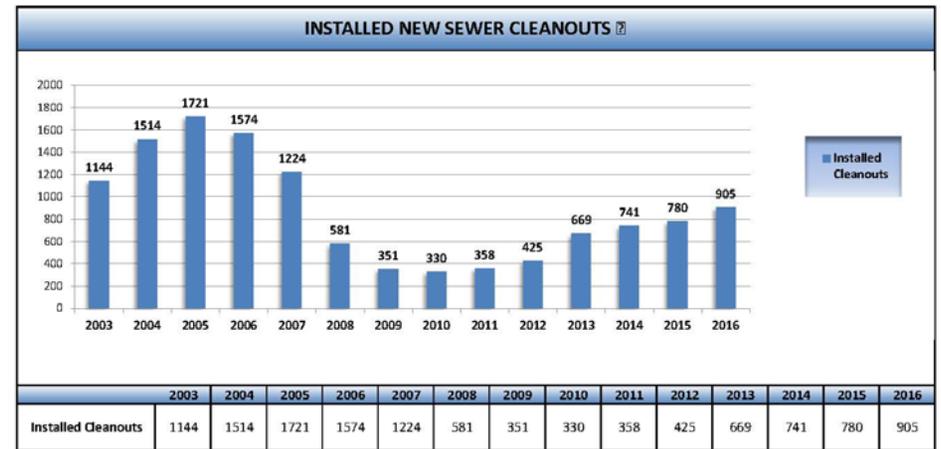
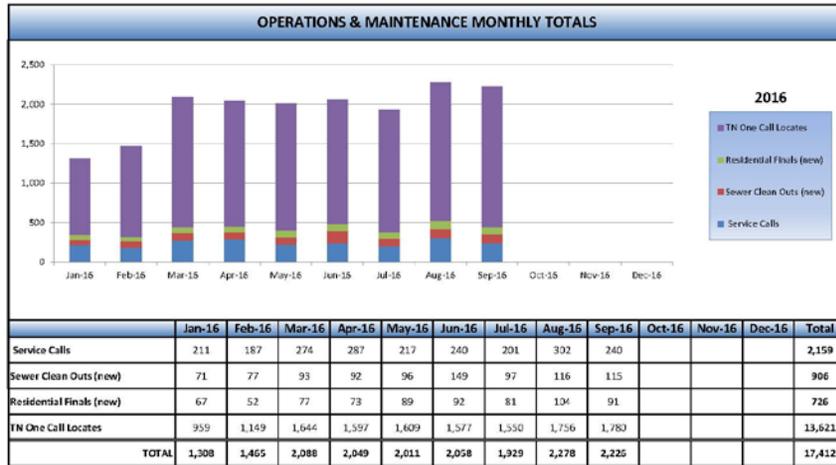


Average Influent Flow



Operations and Maintenance Dashboard

September 2016



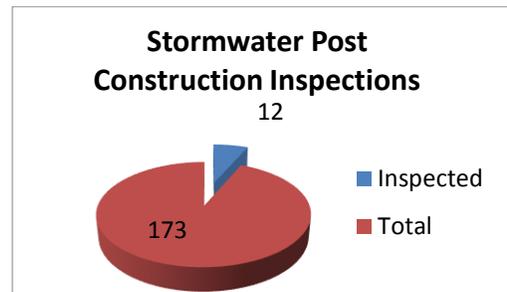
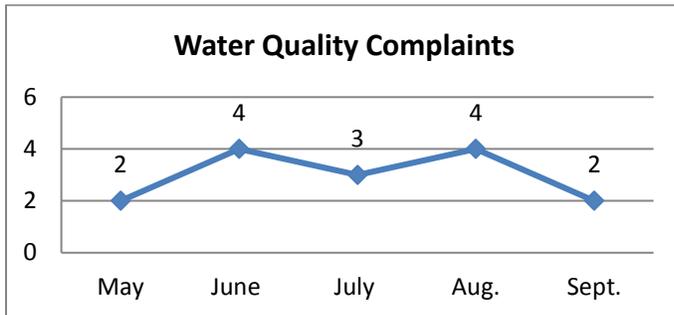
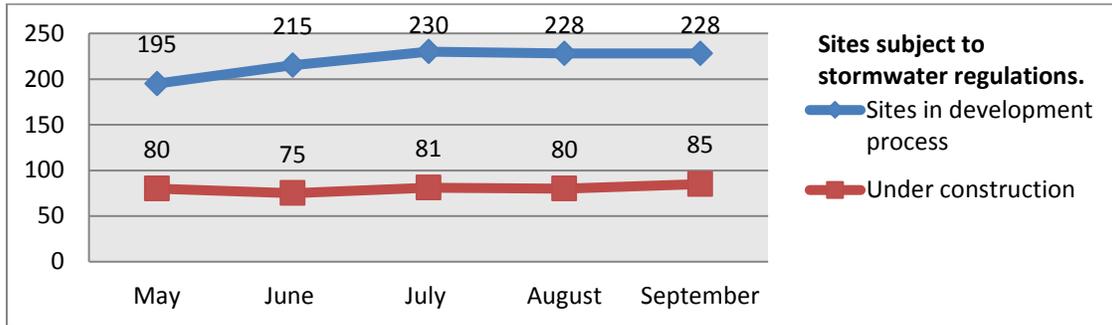
ASPHALT MONTHLY QUOTES 2016

Date	Product	Hawkins	Hoover	Lojac	Other	Low Bid	QTY	Notes
May	Fine BM	\$50.93	N/A	\$52.25		Hawkins		
	Topping	\$54.18	N/A	\$53.00		Lojac		
	BM Binder	N/A	\$50.79	N/A		Hoover		
June	BM Binder	\$50.50	\$51.00	\$55.78		Hawkins		
	Binder	\$50.80	\$51.43	\$54.18		Hawkins		
July	Topping	\$58.60	\$59.03	\$62.19		Hawkins		
	Binder	\$51.00	\$51.28	\$54.00		Hawkins		
August	Binder	\$51.00	\$51.28	\$52.24		Hawkins		
September	Binder	\$51.00	\$51.28	\$52.24		Hawkins		

PURCHASES

Date	Product	Hawkins	Hoover	Lojac	Other	Vendor	QTY	Amt Paid	Approval	Notes
4/14/2016	Cold Mix			\$73.00		Lojac	40.22	\$2,789.26	Taylor	Single source
4/27/2016	Fine BM	\$52.04				Hawkins	43.89	\$2,284.04	Taylor	Single source
5/3/2016	Fine BM	\$50.93				Hawkins	89.85	\$4,576.06	Taylor	
5/4/2016	BM			\$52.25		Lojac	86.12	\$4,499.77	Taylor	Hawkins closed
5/11/2016	Binder			\$46.25		Lojac	99.55	\$4,145.05	Taylor	
5/13/2016	BM Binder		\$50.79			Hoover	19.98	\$1,014.78	Taylor	Single source
6/6/2016	BM Binder	\$50.50				Hawkins	63.80	\$3,221.90	Taylor	
6/9/2016	BM	\$50.50				Hawkins	305.44	\$15,424.72	Taylor	
6/21/2016	Fine BM	\$50.50				Hawkins	15.88	\$801.94	Taylor	
6/22/2016	Fine BM	\$50.50				Hawkins	12.07	\$609.54	Taylor	
7/8/2016	Topping	\$58.60				Hawkins	81.88	\$4,798.17	Taylor	
8/23/2016	Topping	\$58.60				Hawkins	10.01	\$549.75	Taylor	
9/21/2016	Binder	\$61.00				Lojac	10.35	\$556.21	Hughes	
9/27/2016	Binder	\$51.00				Hawkins	91.55	\$4,669.05	Hughes	
9/28/2016	Binder	\$51.00				Hawkins	4.19	\$213.69	Hughes	

Stormwater September 2016



Monitoring and Sampling

Stream Miles Assessed (VSA June 2016)

August - 0 miles
September - 0 miles
Year to Date - 2.2 miles

Samples Taken

August - 9 (bacteria)
September - 4 (bacteria)
Year to Date - 36

Outfall Screenings

August - 2
September - 0
Year to Date - 6

Stormwater Infrastructure

Gravity Mains (ft)

September - 6,004
Year to Date - 48,298

Junction Boxes

September - 44
Year to Date - 450

Weirs/Headwalls/Basins

September - 2/25/5
Year to Date - 21/152/26

Pavers/ P. Concrete

Total to Date: 31.3 acres

Outfalls

August - 0
September - 0
Year to Date - 6

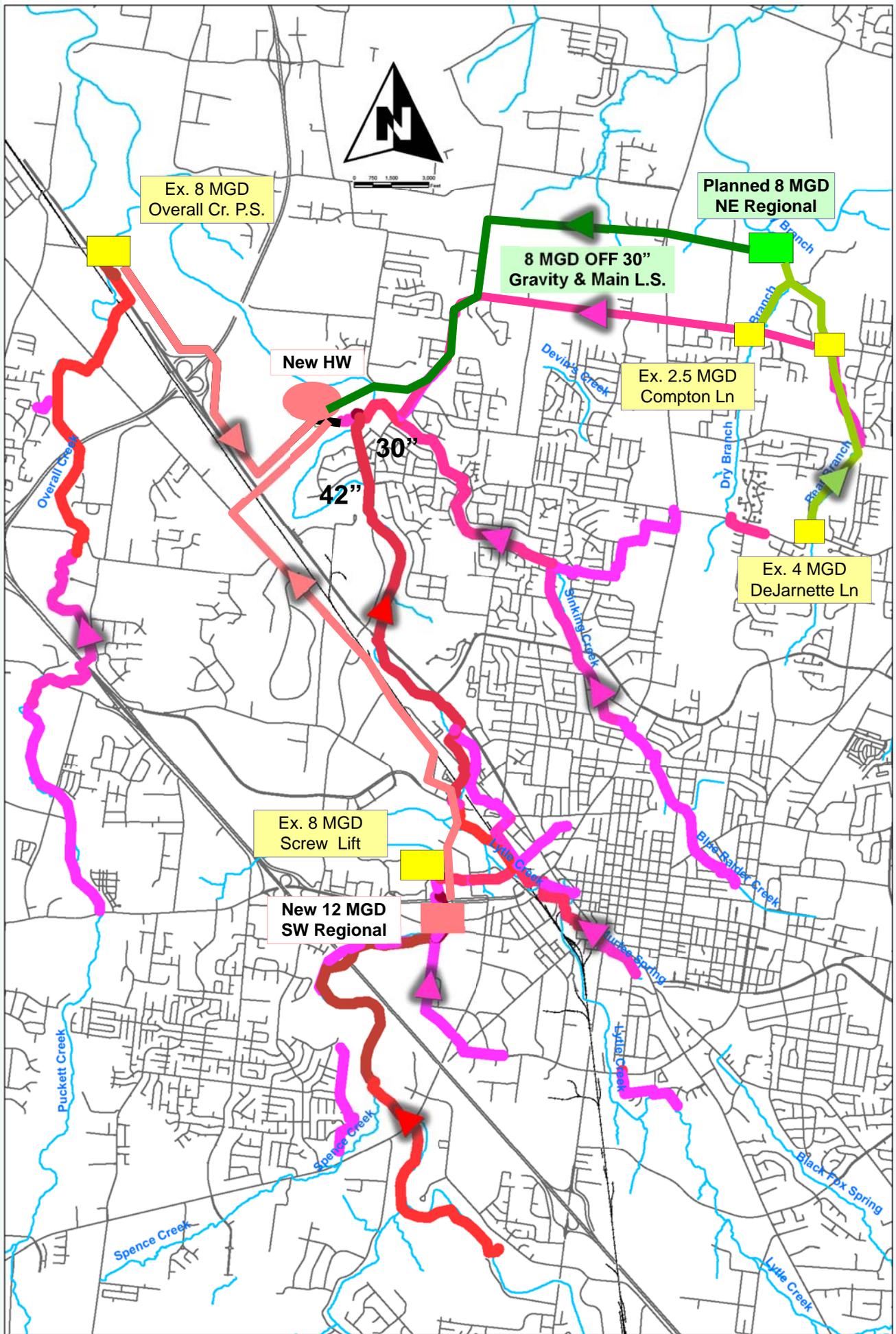
Stormwater Activities

Outreach Events

August - 0
September - 3
Year to Date - 8

Ongoing Projects

- Invasive aquatic plant treatment and management plan at Murfree Spring Wetlands
- Illicit Discharge Detection Elimination (IDDE) - Dry Weather Screening in October



**MURFREESBORO WATER & SEWER DEPT.
OPERATING REVENUES AND EXPENDITURES
TWO MONTHS ENDED AUGUST 31, 2016**

ACCOUNT DESCRIPTION	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Operating Revenues			
Water Revenue	\$ 2,939,076	\$ 15,932,000	18%
Repurified Revenue	\$ 6,547	\$ 28,000	23%
Sewer Revenues	\$ 4,465,735	\$ 27,259,500	16%
Other Income	\$ 62,737	\$ 175,000	36%
Total Operating Revenue	\$ 7,474,095	\$ 43,394,500	17%
Water Operating Expenses	\$ 1,515,295	\$ 10,028,690	15%
Sewer Operating Expenses	\$ 1,548,461	\$ 11,701,070	13%
Total Operating Expenses	\$ 3,063,756	\$ 21,729,760	14%
Net Earnings from Operations	\$ 4,410,339	\$ 21,664,740	20%
Water Operating Expenses			
31701118 Water Source Operations	\$ 36,552	\$ 246,000	15%
31701137 Water Treatment Personnel	\$ 267,528	\$ 1,835,626	15%
31701138 Water Treatment Operations	\$ 390,596	\$ 2,041,100	19%
31701147 Water Treatment Maint Personnel	\$ -	\$ -	
31701148 Water Treatment Maint Ops	\$ -	\$ -	
31701157 Water Storage Personnel	\$ -	\$ -	
31701158 Water Storage Operations	\$ 3,755	\$ 70,500	5%
31701177 Water Distribution Personnel	\$ 110,643	\$ 998,924	11%
31701178 Water Distribution Operations	\$ 34,713	\$ 529,473	7%
31701187 Water T&D Maint Personnel	\$ -	\$ 1	0%
31701188 Water T&D Maint Operations	\$ -	\$ 500	0%
31701197 Cross Connection Personnel	\$ 34,471	\$ 216,920	16%
31701198 Cross Connection Operations	\$ 3,406	\$ 38,050	9%
31701237 Water Admin Personnel	\$ 53,292	\$ 359,045	15%
31701238 Water Admin Operations	\$ 102,492	\$ 365,200	28%
31701707 Water Meter Field Svc Personnel	\$ 91,935	\$ 603,496	15%
31701708 Water Meter Field Svc Ops	\$ 9,605	\$ 92,450	10%
O&M Admin Allocation (40%)	\$ 60,277	\$ 371,283	16%
Customer Service Alloction (50%)	\$ 106,008	\$ 668,875	16%
Engineering Allocation (40%)	\$ 39,911	\$ 368,023	11%
Field Inspection Allocation (25%)	\$ 13,074	\$ 92,721	14%
Admin Allocation (40%)	\$ 157,036	\$ 1,130,503	14%
Total Water Operating Expenses	\$ 1,515,295	\$ 10,028,690	15%

MURFREESBORO WATER & SEWER DEPT.
 OPERATING REVENUES AND EXPENDITURES
 TWO MONTHS ENDED AUGUST 31, 2016

ACCOUNT DESCRIPTION	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Sewer Operating Expenses			
31702317 Sewer Collections Personnel	\$ 171,280	\$ 1,208,909	14%
31702318 Sewer Collections Operations	\$ 3,727	\$ 242,931	2%
31702327 Swr Collex Maint Personnel	\$ -	\$ 1	0%
31702328 Swr Collex Maint Operations	\$ 2,875	\$ 7,500	38%
31702337 Sewer Rehabilitation Personnel	\$ -	\$ 1	0%
31702338 Sewer Rehab Operations	\$ 16,947	\$ 294,750	6%
31702357 Sewer Pump Stations Personnel	\$ 39,298	\$ 231,496	17%
31702358 Sewer Pump Station Operations	\$ 59,182	\$ 524,904	11%
31702367 Swr Pump Station Maint Personnel	\$ -	\$ 1	0%
31702368 Swr Pump Station Maint Operatons	\$ -	\$ 12,500	0%
31702377 Swr Industrial Surveilance Personnel	\$ 37,616	\$ 245,010	15%
31702378 Sewer Ind Surv Operations	\$ 3,810	\$ 44,075	9%
31702397 Swr Private Laterals Personnel	\$ -	\$ 1	0%
31702398 Swr Private Laterals Operations	\$ 258	\$ 31,800	1%
31702407 Pvt Lat Maint Personnel	\$ -	\$ -	
31702417 House Services Personnel	\$ -	\$ -	
31702418 House Service Operations	\$ 1,122	\$ 12,000	9%
31702427 House Services Maint Personnel	\$ -	\$ -	
31702428 House Svc Maint Operations	\$ -	\$ -	
31702457 Sewer Treatment Personnel	\$ 162,228	\$ 1,186,276	14%
31702458 Sewer Treatment Operations	\$ 294,596	\$ 1,888,520	16%
31702467 Sewer Treatment Maint Personnel	\$ -	\$ 1	0%
31702468 Sewer Treatment Maint Operations	\$ 1,307	\$ 102,500	1%
31702477 Sewer Disposal Personnel	\$ 31,450	\$ 206,516	15%
31702478 Sewer Disposal Operations	\$ 33,976	\$ 319,133	11%
31702517 Sewer Admin Personnel	\$ 54,669	\$ 444,057	12%
31702518 Sewer Administration Operations	\$ 56,313	\$ 573,700	10%
31703618 Repurified Operations	\$ 14,010	\$ 208,929	7%
31703637 Repur Distr Personnel	\$ 10,852	\$ 82,808	13%
31703638 Repurified Distribution Operations	\$ 604	\$ 5,000	12%
31703658 Repurified Disposal Operations	\$ 21,273	\$ 76,000	28%
O&M Admin Allocation (60%)	\$ 90,415	\$ 556,925	16%
Customer Service Alloction (50%)	\$ 106,008	\$ 668,875	16%
Engineering Allocation (60%)	\$ 59,867	\$ 552,035	11%
Field Inspection Allocation (75%)	\$ 39,223	\$ 278,162	14%
Admin Allocation (60%)	\$ 235,554	\$ 1,695,755	14%
Total Sewer Operating Expenses	\$ 1,548,461	\$ 11,701,070	13%

**TAP SALES AND DEBT SERVICE
TWO MONTHS ENDED AUGUST 31, 2016**

	2 months ended 8/31/16
SUMMARY OF TAP FEES	
Water Taps/Reserves	\$ 28,648
Sewer Taps/Reserves	\$ 1,081,543
Special Assessment Districts	\$ 259,740
	\$ 1,369,931

DEBT SERVICE	YTD ACTUAL	ANNUAL BUDGET	%
Principal	\$ 289,918	\$ 9,801,492	3.0%
Interest	\$ 145,419	\$ 2,007,750	7.2%
	\$ 435,337	\$ 11,809,242	3.7%

Debt Coverage Ratio	YTD	Annual
Operating Net Earnings	\$ 4,410,339	\$ 21,664,740
Debt Service	\$ 435,337	\$ 11,809,242
	10.13	1.83