WATER AND SEWER BOARD

Tuesday, August 23, 2016
Operations & Maintenance Facility
1725 South Church Street
3:30 PM

A G E N D A

---

1. Consent Agenda:
   A. Consider a revision to the CUD Water Service Boundary 2
   B. Consider precast manhole structures contract renewal 4
   C. Consider vehicle purchases for SRWTP 7
   D. Consider vehicle purchase for O&M 8
   E. Consider Department participation for sewer main extension for Kroger on Mercury Blvd 16
   F. Consider a proposal for geotechnical engineering services from TTL, Inc. for DeJarnette Lane Pump Station #13 Replacement 21
   G. Consider a proposal for engineering design services from SEC, Inc. for John Rice Boulevard Widening 38
   H. Consider a proposal for engineering design services from Huddleston-Steele Engineering for St. Clair Street Improvements 42

2. Consider minutes from the August 2, 2016 meeting 45

3. Consider crushed stone contract renewal 62

4. Consider a request to release Invitations to Bid the Chiller System Replacement at SRWTP 65

5. Consider bids for auxiliary raw water intake standby generator 66

6. Consider Change Order 1 for Middle Tennessee Boulevard 68

7. Consider a proposal from Blue Margin, Inc. for Discovery and Master Planning to Implement Microsoft Power BI 70

8. 2015 AWWA Benchmarking Survey Results 92

9. Director's Executive Summary 111

10. Dashboard

11. Other business

12. Adjourn

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MEMORANDUM

DATE: August 15, 2016

TO: Water and Sewer Board

FROM: Valerie H. Smith

RE: CUD Boundary Revision
Addition to Amendment #5
Polaris Hospital (Trustpoint)

Background

For this additional revision to Amendment #5, there are five properties to consider. The properties surround the now, Trustpoint Hospital located at 1009 N Thompson Lane, which is a current Murfreesboro Water & Sewer Department (MWSD) customer. Trustpoint is in the process of designing an expansion and would like for the entire campus to be served by MWSD. The five properties highlighted in blue, on the attached exhibit, are within Consolidated Utility District's (CUD) water service area. Consolidated Utility District's Board has approved this revision to the boundary at the July Board meeting.

An amendment document will be prepared, and these changes will be considered a part of Amendment #5 to the boundary.

Recommendation

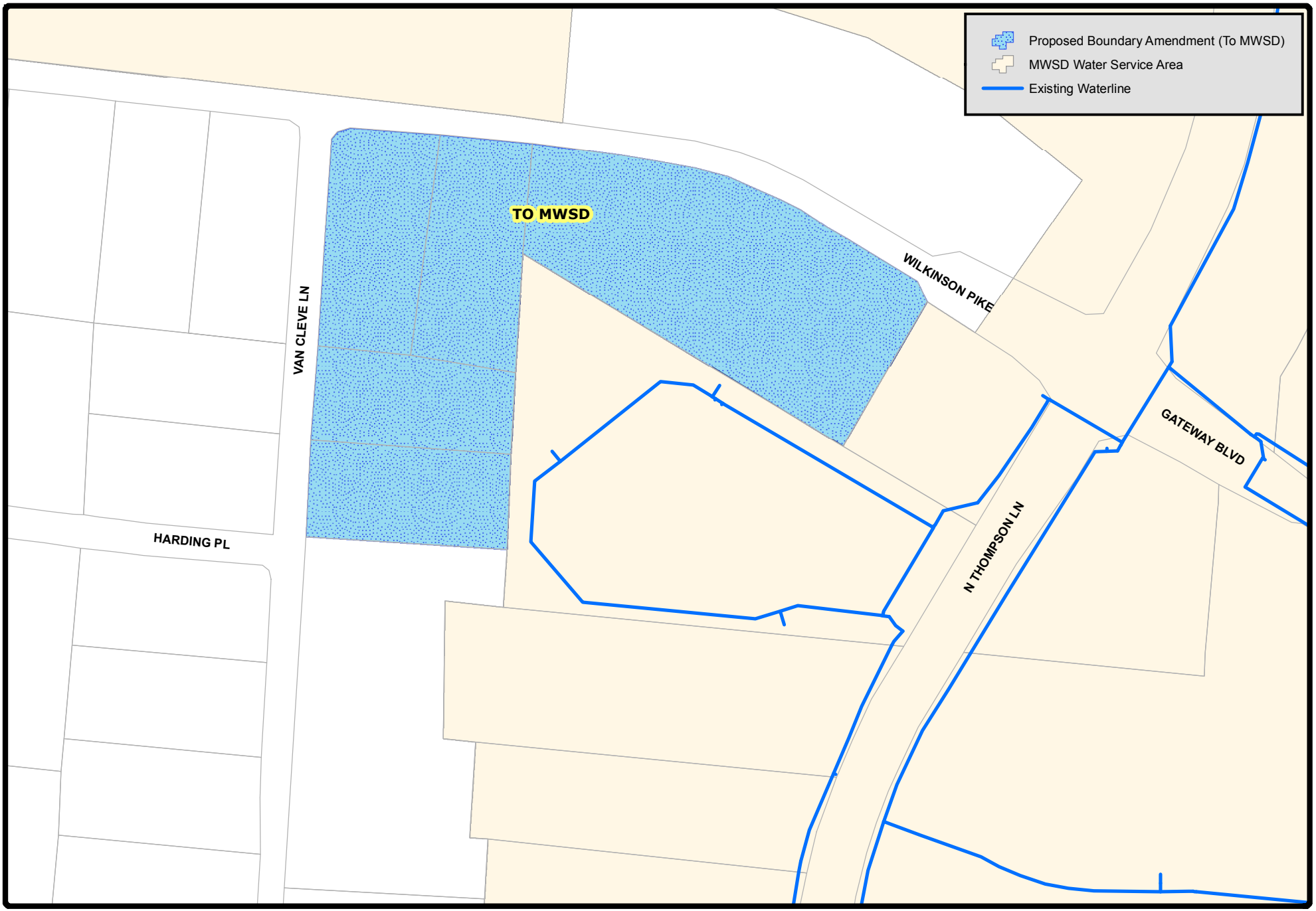
Staff recommends the Board recommend to City Council approval of the revisions to the CUD/MWSD boundary and the Mayor executing an amendment to the Water Service Boundary.

Fiscal Impact

Water connection fees for the Trustpoint Hospital expansion will be based upon the type and size of expansion.

Attachments

GIS Exhibit of the Proposed Boundary Revision



MURFREESBORO WATER AND SEWER DEPARTMENT

Exhibit - Proposed MWSD Boundary Amendment #5 - TrustPoint Hospital

SCALE : 1" = 200'

August 2016
TAB

Amendment 5 Exhibit-TrustPoint.mxd

City of MURFREESBORO TENNESSEE

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MEMORANDUM

DATE: August 4, 2016

TO: Water and Sewer Board

FROM: Terry Taylor

SUBJECT: Contract Renewal – Sherman Dixie Concrete Industries

Background

On July 11, 2013, bids were opened at Operations and Maintenance to provide precast manhole structures to the Murfreesboro Water and Sewer Department. Two vendors submitted bids and Sherman Dixie was the lowest bidder and awarded the contract.

Recommendations

Staff recommends extending the contract for precast manhole structures to Sherman Dixie Concrete Industries for an additional two years. Sherman Dixie is reliable and can quickly construct made to order manholes. This will be the fifth and final extension to the original contract.

Fiscal Impact

The Operations and Maintenance division uses approximately 20 precast manhole structures on sewer projects each year. We estimate costs for FY '17 to be approximately $15,000.

Fiscal Year	Total Expenditures
2013-2014	$12,709
2014-2015	$17,750
2015-2016	$3,577.88

Attachments

Renewal Letter
Second Amendment

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

City of MURFREESBORO
TENNESSEE
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July 28, 2016

Maxwell C. Fuller
Vice President - Sales
Sherman Dixie Concrete Industries
200 42nd Ave North
Nashville TN 37209

Dear Mr. Fuller:

This letter is to inform you that the Murfreesboro Water & Sewer Department is renewing the contract with Sherman Dixie Concrete Industries for the second 2–year renewal period. The current contract for pre-cast manholes will expire on August 30, 2016. The renewal term of the contract indicates that:

> ***Term**. This contract shall not be effective until approved by the City Council and signed by all required parties. The contract shall be valid for one (1) year and is renewable for two (2) additional two-year periods (for a total of 5 years) at the option of the City. Should the City desire to renew the contract, a written preliminary notice will be furnished to the Contractor sixty (60) days prior to the expiration date of the contract. (Such preliminary notice will not be deemed to commit the City to renew.)*

If you concur, please sign and return the enclosed Second Amendment which will confirm you wish to continue the pre-cast manhole service contract for the period of August 30, 2016 through August 29, 2018. I enclosed a copy for your files.

Attached is a copy of the original Contract dated August 30, 2013 and the renewal option is detailed on page 19 of the Invitation to Bid.

If you have any questions, please let me know.

Yours truly,

Terry Taylor

Terry Taylor
Operations Manager
Operations and Maintenance

SECOND AMENDMENT TO THE CONTRACT BETWEEN
SHERMAN DIXIE CONCRETE INDUSTRIES
AND
THE CITY OF MURFREESBORO, TENNESSEE

The Contract dated August 30, 2013 ("Contract"), by and between Sherman Dixie Concrete Industries and the City of Murfreesboro, acting through its Murfreesboro Water and Sewer Department ("City") is hereby amended as follows:

1. Sherman Dixie Concrete Industries was acquired by Forterra Concrete Industries, Inc., effective April 4, 2016. Pursuant to Clause 18 of the Contract, the City hereby consents to the assignment of any rights and obligations of Sherman Dixie Concrete Industries under the Contract to Forterra Concrete Industries, Inc.

2. Pursuant to Clause 2 of the Contract, the term of this Contract is amended by extending the term of the Contract for one additional two-year period ending on August 29, 2018.

3. All terms, conditions, and pricing remain the same.

4. This Second Amendment shall take effect as August 30, 2016.

CITY OF MURFREESBORO

_____

By: Shane McFarland, Mayor

_____

Date

FORTERRA CONCRETE INDUSTRIES, INC.

Maxwell C. Fuller

By: Maxwell C. Fuller, VP Sales

8/15/16

Date

Approved as to form:

_____

Craig Tindall, City Attorney

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MEMORANDUM

DATE: August 15, 2016

TO: Water and Sewer Board

FROM: Alison McGee

SUBJECT: FY 2016-17 Vehicle Purchases
Stones River Water Treatment Plant

Background

There are two vehicles approved in the MWSD's FY 2016-2017 capital budget under *Account 370 – New Equipment - Vehicles* for the Stones River Water Treatment Plant. One vehicle is the replace Unit 14 for the Instrumentation and Control Technician; one is to replace Unit 29 for Maintenance. There is one vehicle approved in the MWSD's FY 2016-2017 capital budget under *Account 370 – New Equipment - Vehicles* for the Sinking Creek Treatment Plant. This vehicle is for the Instrumentation and Control Technician and will replace Unit 38.

Staff has reviewed the available standing contracts and selected the most appropriate vehicles for its intended use. The details are as follows:

The three vehicles are from the State of Tennessee Statewide Contract 209, Contract Number 00000000000000000000050708 with Ford of Murfreesboro, Inc.

Qty	Item ID/Description	Cost	Budgeted
1	1 Ton Pickup, Full Size, Super Cab, 4WD	$29,561.16	
1	Service Body	$24,283.54	
	Total	**$53,844.70**	$65,000.00

Qty	Item ID/Description	Unit Cost	Total	Budgeted
2	High Roof Cargo Van, 148" Wheelbase, Diesel Engine	$33,999.36	$67,998.72	
2	Electrical Contractor Package	$4,351.30	$8,702.60	
		Grand Total	**$76,701.32**	$100,000

Recommendations

Staff recommends the Water and Sewer Board to recommend the City Council to approve purchase of the three vehicles in accordance with the existing contracts as identified with funding coming from the FY 2016-2017 budgeted capital account.

Fiscal Impact

The cost for the referenced vehicles on the State of Tennessee Statewide Contract is in the amount of $130,546.02. The total amount budgeted for these two vehicles are in the rate funded capital equipment for FY 2016-2017 is $165,000.00.

City of MURFREESBORO TENNESSEE

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MEMORANDUM

DATE: July 27, 2016

TO: Water and Sewer Board

FROM: Donald Hughes

SUBJECT: FY 2016-2017 Vehicle Replacement

Background

On March 3, 2016, O&M opened bids to replace a single axle dump truck. The bid was awarded to Country Ford in the amount of $87,981. O&M's Budget for Fiscal Year 2017, includes the purchase of additional dump truck to replace Unit 74. Country Ford has agreed to provide a new 2017 F-750 for the same contract price provided in March.

Paul Boyer, the Director of Purchasing, has reviewed the bid and documentation and supports our recommendation to purchase from Country Ford.

Recommendations

Staff recommends the Water and Sewer Board recommend to City Council to approve the purchase of the referenced vehicle from Country Ford with funding coming from the FY 2016-2017 budgeted capital account.

Fiscal Impact

The Collection & Sewer Rehab's Capital Budget FY 2017 includes a line item for $95,000 listed under *Account 370-New Equipment-Vehicles.* The cost for the referenced vehicle is $87,981 which is $7,019 under budget.

Attachments

Letter to Extend Price to FY2017
Country Ford Contract

P.O. Box 304
95 Goodman Road East
Southaven, MS 38671

Country Ford

Phone (662) 349-4300
Office Fax (662) 996-1059
Sales Fax (662) 996-1040

To Whom It May Concern: July 15, 2016

This letter is to confirm that Country Ford Inc. will provide an additional new 2017 Ford F750 with a Dump Truck Body per the attached contract and purchase order. We currently have one unit on order that should arrive at your location completed in August and will order as many more of these as you want.

The contracted price for each unit is $87,981. Please advise and I will order your additional units.

Steve Bell
Commercial Accounts Manager
Country Ford
9014899582

Purchase Order

City of MURFREESBORO TENNESSEE

Fiscal Year 2016 Page 1 of 1

THIS NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES AND SHIPPING PAPERS.

Purchase Order # 71601936-00

Delivery must follow any special instructions and dates & times.

BILL TO

Murfreesboro Water & Sewer
PO Box 1477
Murfreesboro TN 37133-1477
Phone: 615-890-0862 Fax: 615-896-4259

VENDOR

Country Ford, Inc.

SHIP TO

MWSD - Operation & Maintenance
1725 S. Church Street
Murfreesboro TN 37130
615 893 1223
615 893 2153

Vendor Phone Number	Vendor Fax Number	Requisition Number	Delivery Reference
		7332	Donald Hughes

Date Ordered	Vendor Number	Date Required	Freight Method/Terms	Department/Location
04/21/2016	376	04/12/2016		Water

Item#	Description/Part No.	Qty	UOM	Unit Price	Extended Price
1	Class 8 Trucks (33,001 lb. GVWR and Over)- 2016 F750 Diesel Base Reg Cab The Above Purchase Order Number Must Appear On All Correspondence - Packing Sheets And Bills Of Lading ******** GL SUMMARY ******** ***3102 - 181790*** ***87,981.00***	1.00	EACH	$87,981.000	$87,981.00

By City of Murfreesboro, TN
Authorized by Robert J. Lyons, City Manager

VENDOR COPY

Total Ext. Price	$87,981.00
PO Total	**$87,981.00**

CONTRACT BETWEEN
CITY OF MURFREESBORO
AND
COUNTRY FORD, INC.
FOR PURCHASE OF 7 SERIES TRUCK (2 TON) WITH DUMP BED

This contract is entered into on this April 8, 2016, by and between **THE CITY OF MURFREESBORO**, a municipal corporation of the State of Tennessee ("City") and **COUNTRY FORD, INC**, Ford Dealership of the State of Mississippi ("Contractor"). This contract consists of the following documents:

- ***Invitation to Bid (ITB) issued 2-11-16***
- ***Bid specifications issued 2-11-16***
- ***Contractor's Bid Response dated 2-26-16***
- ***This Contract***

In the event of conflicting provisions, all documents shall be construed according to the following priorities:

- ***Any properly executed amendment or change order to this contract (most recent with first priority)***
- ***This Contract***
- ***Invitation to Bid & Bid Specifications***
- ***Contractor's Bid Response***

1. **Duties and Responsibilities of Contractor.** Contractor agrees to provide and City agrees to purchase 7 Series truck (2 ton) with Dump Bed and Contractor agrees to provide the services as set forth in the attached Bid Form and Specifications.

2. **Term.** This contract shall not be effective until approved by the City Council and signed by all required parties.

3. **Payment and Delivery.**

   3.1. Payment will be made by the City after goods and/or services have been received, accepted, and properly invoiced. Invoices must bear the purchase order number.

   3.2. Deliveries of all items shall be made within thirty (90) calendar days of order at the **Water & Sewer Department located at 1725 South Church Street, Murfreesboro, TN 37130. Contact Person Terry Taylor, Operations Manager (tel. 615-893-1223; fax 615-843-2153) must be notified of delivery date and time within two (2) calendar days prior to delivery.** Deliveries shall be made during the normal working hours of the City, Monday through Friday.

   3.3. Deliveries of all items shall be made as stated in the ITB and bid specifications. Should the Contractor fail to deliver items on or before its stated date, the City reserves the right to cancel the order or contract. The Contractor shall be responsible for making any and all claims against carriers for missing or damaged items.

   3.4. Delivered items will not be considered "accepted" until an authorized agent for the City has, by inspection or test of such items, determined that they fully comply with specifications. The City may return, for full credit and at no expense to the City, any item(s) received which fail to meet the specifications as stated in the Invitation to Bid.

3.5. All deliveries made pursuant to the contract must be made pursuant to the written purchase order of the City. The City assumes no liability for goods and/or services provided without a written purchase order from the City. Delivery and freight charges are to be prepaid and included in the bid price.

4. **Price.** The price for goods and other items and/or services shall be invoiced at the prices and charges fixed by the Contractor as per the attached bid which reflects a total price of **$87,981**.

5. **Warranty.** Unless otherwise specified every item bid shall meet the warranty requirements set forth in the specifications.

6. **Taxes.** The City of Murfreesboro is exempt from State sales tax and will issue a tax exemption certificate to the Contractor as requested. City shall not be responsible for any taxes that are imposed on Contractor. Furthermore, Contractor understands that it cannot claim exemption from taxes by virtue of any exemption that is provided to City.

7. **Termination—Breach.** In the event that any of the provisions of the Contract are violated by the Contractor, the City may serve written notice upon the Contractor of its intention to terminate the Contract, and unless within seventy-two (72) hours after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement for correction be made, the City may immediately terminate the Contract at anytime after said seventy-two (72) hours. Such termination shall not relieve Contractor of any liability to City for damages sustained by virtue of any breach by Contractor.

8. **Termination—Funding.** Should funding for this contract be discontinued, City shall have the right to terminate the contract immediately upon written notice to Contractor.

9. **Termination—Notice.** City may terminate this contract at any time upon thirty (30) calendar days written notice to Contractor. In that event, the Contractor shall be entitled to receive just and equitable compensation for any satisfactory authorized work completed as of the termination date.

10. **Compliance with Laws.** Contractor agrees to comply with any applicable federal, state and local laws and regulations.

11. **Notices.**

    11.1. Notices to City including but not limited to notice of assignment of any rights to money due to Contractor under this contract must be mailed or hand delivered to the attention of City Manager, Post Office Box 1139, 111 West Vine Street, Murfreesboro, Tennessee 37133-1139.

    11.2. Notices to Contractor shall be mailed or hand delivered to Contractor, Country Ford, Inc. P.O. Box 304 Southaven MS 38671

12. **Maintenance of Records.** Contractor shall maintain documentation for all charges against City. The books, records, and documents of Contractor, insofar as they relate to work performed or money received under the contract, shall be maintained for a period of three (3) full years from the date of final payment and will be subject to audit, at any reasonable time and upon reasonable notice by City or its duly appointed representatives. The records shall be maintained in accordance with generally accepted accounting principles.

13. **Modification of Contract.** This contract may be modified only by written amendment executed by all parties and their signatories hereto. Depending upon the nature and amount of the amendment, the approval of the City Council may be required. Minor modifications to the contract may be executed by signature of the City Manager in lieu of the City's signatory hereto.

14. **Partnership/Joint Venture.** Nothing herein shall in any way be construed or intended to create a partnership or joint venture between the parties or to create the relationship of principal and agent between or among any of the parties. None of the parties hereto shall hold itself out in a manner contrary to the terms of this paragraph. No party shall become liable for any representation, act or omission of any other party contrary to the terms of this paragraph.

15. **Waiver.** No waiver of any provision of this contract shall affect the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any other default.

16. **Employment.** Contractor shall not subscribe to any personnel policy which permits or allows for the promotion, demotion, employment, dismissal or laying off of any individual due to race, creed, color, national origin, age, sex, or which is in violation of applicable laws concerning the employment of individuals with disabilities.

17. **Non-Discrimination.** It is the policy of the City not to discriminate on the basis of age, race, sex, color, national origin, or disability in its hiring and employment practices, or in admission to, access to, or operation of its programs, services, and activities. With regard to all aspects of this contract, Contractor certifies and warrants it will comply with this policy.

18. **Indemnification and Hold Harmless.** Contractor shall indemnify and hold harmless City, its officers, agents and employees from:

    18.1. Any claims, damages, costs and attorney fees for injuries or damages arising, in part or in whole, from the negligent or intentional acts or omissions of Contractor, its officers, employees and/or agents, including its sub or independent Contractors, in connection with the performance of the contract, and,

    18.2. Any claims, damages, penalties, costs and attorney fees arising from any failure of Contractor, its officers, employees and/or agents, including it sub or independent Contractors, to observe applicable laws, including, but not limited to, labor laws and minimum wage laws.

    18.3. Contractor shall pay City any expenses incurred as a result of Contractor's failure to fulfill any obligation in a professional and timely manner under this Contract.

19. **Attorney Fees.** Contractor agrees that, in the event either party deems it necessary to take legal action to enforce any provision of the contract, and in the event City prevails, Contractor shall pay all expenses of such action including City's attorney fees and costs at all stages of the litigation.

20. **Assignment—Consent Required.** The provisions of this contract shall inure to the benefit of and shall be binding upon the respective successors and assignees of the parties hereto. Except for the rights of money due to Contractor under this contract, neither this contract nor any of the rights and obligations of Contractor hereunder shall be assigned or transferred in whole or in part without the prior written consent of City. Any such assignment or transfer shall

not release Contractor from its obligations hereunder. NOTICE OF ASSIGNMENT OF ANY RIGHTS TO MONEY DUE TO CONTRACTOR UNDER THIS CONTRACT MUST BE SENT TO THE ATTENTION OF CITY MANAGER, POST OFFICE BOX 1139, 111 WEST VINE STREET, MURFREESBORO, TENNESSEE 37133-1139.

21. **Entire Contract.** This contract, invitation to bid, bid specifications, and Contractor's bid response set forth the entire agreement between the parties with respect to the subject matter hereof and shall govern the respective duties and obligations of the parties.

22. **Force Majeure.** No party shall have any liability to the other hereunder by reason of any delay or failure to perform any obligation or covenant if the delay or failure to perform is occasioned by *force majeure*, meaning any act of war, order of legal authority, act of nature, or other unavoidable causes not attributed to fault or negligence of Contractor and/or City.

23. **Governing Law.** The validity, construction and effect of this contract and any and all extensions and/or modifications thereof shall be governed by the laws of the State of Tennessee. Tennessee law shall govern regardless of any language in any attachment or other document that the Contractor may provide.

24. **Venue.** Any action between the parties arising from this agreement shall be maintained in the courts of Rutherford County, Tennessee.

25. **Severability.** Should any provision of this contract be declared to be invalid by any court of competent jurisdiction, such provision shall be severed and shall not affect the validity of the remaining provisions of this contract.

26. **Notices.** Any notice to Contractor from the City relative to any part of the Contract shall be considered delivered and the service thereof completed when said notice is posted by registered mail, to the said Contractor at its last given address or delivered in person to said Contractor or its authorized representative on the work.

    26.1. Notices to City shall be sent to:

    Department: Murfreesboro Water & Sewer Department
    Attention: Terry Taylor
    Address: 1725 S Church St
    Murfreesboro, TN 37130-1477

    26.2. Notices to Contractor shall be sent to:

    Contractor: Country Ford
    Attention: Steve Bell
    Address: P.O. Box 304
    Southaven MS 38671

27. **Effective Date.** This contract shall not be binding upon the parties until it has been signed first by the Contractor and then approved by the City Council and signed by the Mayor. When it has been so signed, this contract shall be effective as of the date first written above.

CITY OF MURFREESBORO

By:_____
Shane McFarland, Mayor

Approved as to form:

_____
Craig Tindall, City Attorney

_____

COUNTRY FORD, INC.
P.O. Box 304
SOUTHHAVEN MS 38671

By:_____
Steve Bell, Commercial Accounts Manager

STATE OF Mississippi)
: ss
COUNTY OF DeSoto)

Before me, the undersigned notary public, personally appeared Steve Bell, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged such person to be the Signor, or other officer authorized to execute the foregoing instrument for the purposes therein contained.

WITNESS MY HAND and seal this 12th day of April, 2016.

_____
Notary Public

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 49248 BARBARA DUNLAP Commission Expires May 21, 2017 DESOTO COUNTY

My Commission Expires: May 21, 2017

5

City of MURFREESBORO TENNESSEE

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MEMORANDUM

DATE: August 17, 2016

TO: Water and Sewer Board

FROM: Valerie H. Smith

RE: Department Participation
Sewer Main Extension
Kroger – Mercury Blvd.

Background

The Kroger is proposing to relocate from Middle Tennessee Boulevard and re-build along Mercury Boulevard at Mercury Plaza. They are going to tear the center portion of the existing Mercury Plaza down and rebuild in the center. As part of the construction of the new building, they will have to relocate the existing utilities. This includes the 10" water and sewer mains along the rear of the property. With regard to the sewer main relocation, Perry Engineering, LLC (Perry), the project engineer proposed to set a manhole over the existing sewer main on the western side of the property. This is typically acceptable to staff, however, after reviewing the CCTV for this section of sewer, it was determine that the proposed manhole was going to be installed within the center of an existing sag in the main.

If this manhole were installed in this location, the Department would not ever be able to correct the problem with the incorrect grade in the sewer main, therefore staff requested the remainder of that section of sewer be re-layed with this project to avoid future problems. Since this is not a typical request, and it is not the fault of the developer that the sag is in the line, staff agreed to bring a participation request before the Board for approval to pay for the cost of re-laying the last 100 linear feet of sewer main.

Perry has submitted a request letter and cost estimate for the construction cost of re-laying the 100 linear feet of sewer in the amount of $11,500. This cost covers replacing 100 linear feet of 10" defective, clay sewer main with new coated ductile iron sewer main. This request doesn't fit our standard participation request requirements as listed below, but staff does feel that the request is fair.

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.

Recommendation

Staff recommends the Board recommend to City Council approval of paying for the replacement of the 100 linear feet of sewer main in the amount of $11,500.

Fiscal Impact

The proposed funding is from the Department's working capital reserves in the amount of $11,500.

Attachments

Perry Engineering, LLC Request & Estimate
Kroger Utility Plan

PERRY
ENGINEERING, LLC

August 11, 2016

Ms. Valerie Smith
Assistant Director
Murfreesboro Water & Sewer Department
220 NE Broad Street
Murfreesboro, Tennessee 37130

RE: Kroger Store # U-621
Mercury Plaza – Mercury Boulevard and Middle Tennessee Boulevard
Murfreesboro, Rutherford County, Tennessee
Tax Map #102D, Group M, Parcel 35

Dear Valerie:

As we discussed, Murfreesboro Water and Sewer Department has required Kroger to repair 100 L.F. of existing 10" sanitary sewer main (due to a swag in the existing line) by complete replacement and reconnection of existing services in the first 100 L.F. of sewer main between Manhole 0170010 and Manhole 0170020 with 10" Class 52 Ductile Iron sewer main.

By this letter, Kroger Limited Partnership I requests contribution by Murfreesboro Water and Sewer Department to cover 100% of the cost to make this repair on behalf of the Department. We understand that this request requires approval by the Murfreesboro Water and Sewer Board, and request this be placed on the next Board agenda. As such, I have included our opinion of the cost with line item breakdown for the total amount of $11,500.00.

If you have any questions or need additional information, please give me a call.

Sincerely,

Randy Harper, PE, CPESC

Attachment

cc: File

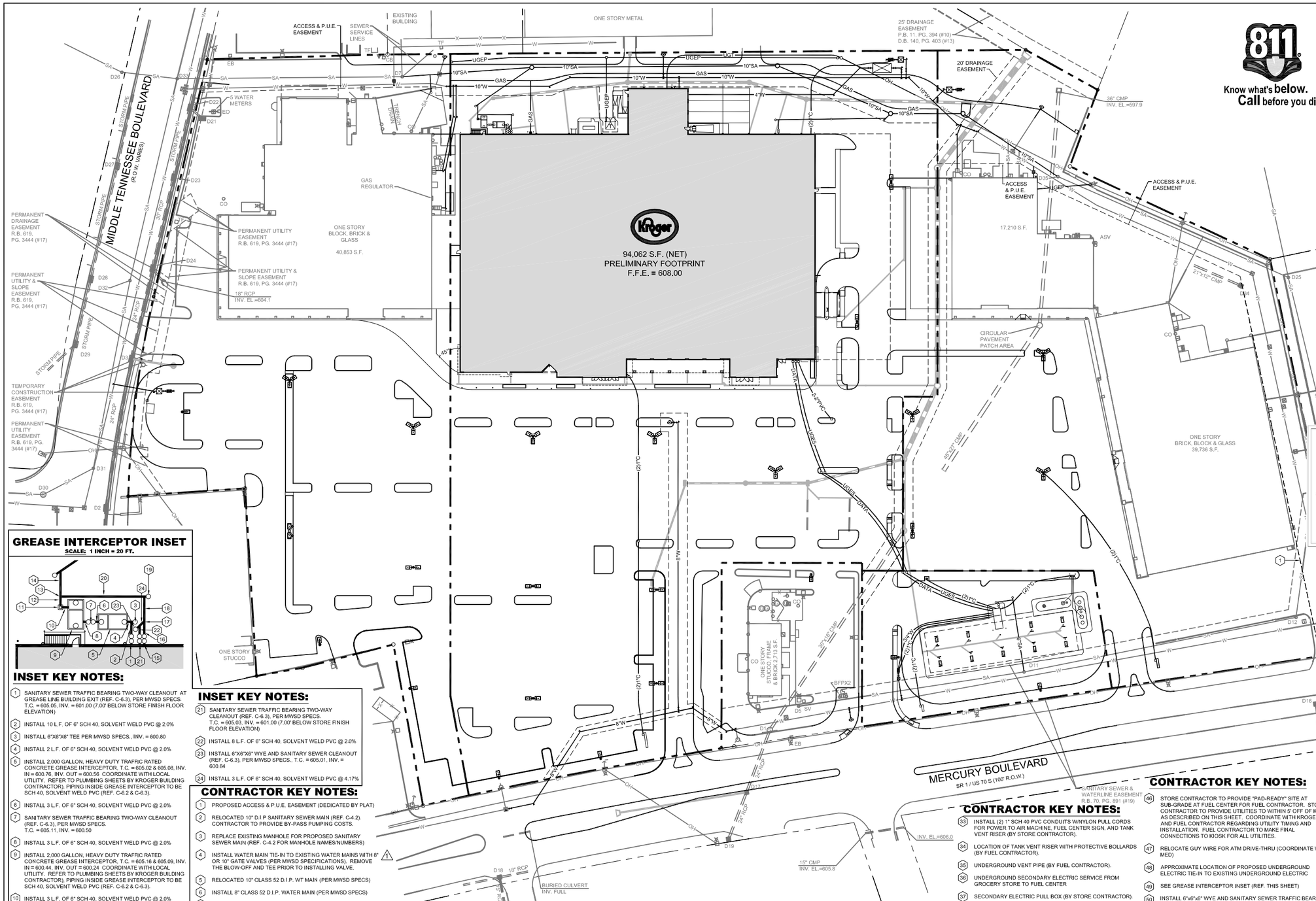
100 North Main Street, Suite F – Goodlettsville, TN 37072
Phone: 615-855-2220 – Fax: 615-855-2221 – Email: perryengineering@comcast.net

SANITARY SEWER OPINION OF COST TABULATION
KROGER U621 - MURFREESBORO, TN

LOCATION: **Mercury Blvd. & Middle TN. Blvd., Murfreesboro, TN** **DATE: 08/11/2016**

WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	UNIT	TOTAL
SANITARY SEWER					
Main Sewer Line Demolition	100	**LF**	$15.00	**$/LF**	$1,500.00
Manhole Demolition	0	**Each**	$200.00	**$/Each**	$0.00
Sewer Bypass Pumping	1	**LS**	$2,500.00	**$/LS**	$2,500.00
Main Sewer Line 10" CL 52 DIP Pipe Installed @ ~10' Depth	100	**LF**	$75.00	**$/LF**	$7,500.00
Manholes (10' Average Depth)	0	**Each**	$5,000.00	**$/Each**	$0.00
Manhole Casting	0	**Each**	$1,000.00	**$/Each**	$0.00
Core Existing Manhole	0	**Each**	$500.00	**$/Each**	$0.00
SANITARY SEWER SUBTOTAL					$11,500.00

Estimate Prepared By: Randy Harper, PE
Company Name: Perry Engineering, LLC
Plans Dated: 07/22/2016 (MWSD Approved)
Project Notes/Comments: MWSD contribution for 100 LF additional Sanitary Sewer Extension between manholes 0170010 & 0170020.
***Costs do not include sewer services pipes or associated items.**
***Assuming No Rock Encountered at this depth, nearest borings refusal at approximately 14 feet.**



Know what's **below.** **Call** before you dig.

GRAPHIC SCALE - 1 inch = 50 ft.

NOTE:

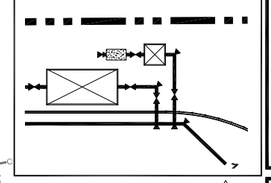
REF. SHEET C-0.2 FOR ADDITIONAL INFORMATION.

BID NOTE:

UNLESS DENOTED WITH AN ASTERISK*, ALL UTILITIES SHALL BE PART OF THE BASE BID SCOPE OF WORK.

WATER SERVICES INSET

SCALE: 1 INCH = 20 FT.



APPROVED FOR CONSTRUCTION

THE DOCUMENT BEARING THIS STAMP HAS BEEN REVIEWED BY THE:

MURFREESBORO WATER AND SEWER DEPARTMENT

UNDER THE AUTHORITY DELEGATED BY THE:
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
DIVISION OF WATER SUPPLY
AND IS HEREBY APPROVED FOR CONSTRUCTION.

THIS APPROVAL SHALL NOT BE CONSTRUED AS CREATING A PRESUMPTION OF CORRECT OPERATION OR AS WARRANTING BY THE MURFREESBORO WATER AND SEWER DEPARTMENT THAT THE APPROVED FACILITIES WILL REACH THE DESIGNED GOALS.

APPROVAL DATE
APPROVAL EXPIRES IN 12 MONTHS

BY _____

GREASE INTERCEPTOR INSET

SCALE: 1 INCH = 20 FT.

INSET KEY NOTES:

1. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT AT GREASE LINE BUILDING EXIT (REF. C-6.3). PER MWSD SPECS. T.C. = 605.05, INV. = 601.00 (7.00' BELOW STORE FINISH FLOOR ELEVATION)
2. INSTALL 10 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
3. INSTALL 6"X6"X6" TEE PER MWSD SPECS., INV. = 600.80
4. INSTALL 2 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
5. INSTALL 2,000 GALLON, HEAVY DUTY TRAFFIC RATED CONCRETE GREASE INTERCEPTOR. T.C. = 605.02 & 605.08, INV. IN = 600.76, INV. OUT = 600.56 COORDINATE WITH LOCAL UTILITY. REFER TO PLUMBING SHEETS BY KROGER BUILDING CONTRACTOR). PIPING INSIDE GREASE INTERCEPTOR TO BE SCH 40, SOLVENT WELD PVC (REF. C-6.2 & C-6.3).
6. INSTALL 3 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
7. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT (REF. C-6.3). PER MWSD SPECS. T.C. = 605.11, INV. = 600.50
8. INSTALL 3 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
9. INSTALL 2,000 GALLON, HEAVY DUTY TRAFFIC RATED CONCRETE GREASE INTERCEPTOR. T.C. = 605.16 & 605.09, INV. IN = 600.44, INV. OUT = 600.24 COORDINATE WITH LOCAL UTILITY. REFER TO PLUMBING SHEETS BY KROGER BUILDING CONTRACTOR). PIPING INSIDE GREASE INTERCEPTOR TO BE SCH 40, SOLVENT WELD PVC (REF. C-6.2 & C-6.3).
10. INSTALL 3 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
11. INSTALL GREASE SAMPLING BOX, T.C. = 605.14, INV. IN = 600.18 (SCH 40, SOLVENT WELD PVC), INV. OUT = 599.18 (SDR 35 PVC) PER MWSD SPECS (REF. C-6.3)
12. INSTALL 5 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
13. INSTALL 6"X6"X6" TEE PER MWSD SPECS., INV. = 599.08
14. INSTALL 11 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
15. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT (REF. C-6.3). PER MWSD SPECS. T.C. = 605.02, INV. = 601.00 (7.00' BELOW STORE FINISH FLOOR ELEVATION)
16. INSTALL 10 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.2%
17. INSTALL 6"X6"X6" TEE-WYE PER MWSD SPECS., INV. = 600.78
18. INSTALL 11 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
19. INSTALL 6"X6"X6" TEE AND SANITARY SEWER CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 604.73, INV. = 600.54
20. INSTALL 36 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 4.06%
21. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT (REF. C-6.3). PER MWSD SPECS. T.C. = 605.03, INV. = 601.00 (7.00' BELOW STORE FINISH FLOOR ELEVATION)
22. INSTALL 8 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 2.0%
23. INSTALL 6"X6"X6" WYE AND SANITARY SEWER CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 605.01, INV. = 600.84
24. INSTALL 3 L.F. OF 6" SCH 40, SOLVENT WELD PVC @ 4.17%

CONTRACTOR KEY NOTES:

1. PROPOSED ACCESS & P.U.E. EASEMENT (DEDICATED BY PLAT)
2. RELOCATED 10" D.I.P SANITARY SEWER MAIN (REF. C-4.2). CONTRACTOR TO PROVIDE BY-PASS PUMPING COSTS.
3. REPLACE EXISTING MANHOLE FOR PROPOSED SANITARY SEWER MAIN (REF. C-4.2 FOR MANHOLE NAMES/NUMBERS)
4. INSTALL WATER MAIN TIE-IN TO EXISTING WATER MAINS WITH 8" OR 10" GATE VALVES (PER MWSD SPECIFICATIONS). REMOVE THE BLOW-OFF AND TEE PRIOR TO INSTALLING VALVE.
5. RELOCATED 10" CLASS 52 D.I.P. WT MAIN (PER MWSD SPECS)
6. INSTALL 8" CLASS 52 D.I.P. WATER MAIN (PER MWSD SPECS)
7. INSTALL 6" CLASS 52 D.I.P. WATER MAIN (PER MWSD SPECS)
8. INSTALL 10" CLASS 52 D.I.P. WATER MAIN BEND WITH THRUST BLOCK (PER MWSD SPECS - REF. C-6.8)
9. INSTALL 6" CLASS 52 D.I.P. WATER MAIN, 10"X10"X6" TEE, 6" GATE VALVE & BOX, AND FIRE HYDRANT ASSEMBLY (PER MWSD SPECS - REF C-6.8)
10. INSTALL APPROVED KNOX STORZGUARD FIRE DEPARTMENT CONNECTION (F.D.C. - PER M.R.F.D. REQUIREMENTS) W/30° ELBOW & LOCKING CAP SIZED 4" STORZ x 4" NPT ON EXTERIOR WALL WITH DOUBLE CHECK VALVE ASSEMBLY MOUNTED ON RISER ON INSIDE WALL PER MWSD SPECS. AN EXTEIOR ELECTRIC HORN/STROBE (NOT A WATER MOTOR GONG) IS REQUIRED ABOVE THE FDC. ACCESS TO THE RISER ROOM MUST BE PROVIDED TO MRFD WITH AN APPROVED KNOX 3200 SERIES SURFACE OR RECESSED MOUNTED LOCKING BOX.
11. INSTALL 4" CLASS 52 D.I.P. DOMESTIC WATER SERVICE ROUTED TO GRASS AND THEN TO GROCERY STORE, INCLUDING 10"X10X4" TEE, BENDS, AND 4" VALVES (BY CONTRACTOR). 3" METER AND THRUST BLOCKS IN 10'x20' NON-TRAFFIC RATED METER BOX (BY MWSD) (SEE WATER SERVICE INSET)
12. RELOCATE EXISTING FIRE HYDRANT BEHIND PROPOSED CURB
12. INSTALL 6" CLASS 52 D.I.P. FIRE SERVICE ROUTED TO GROCERY STORE, INCLUDING 10"X10X6" TEE, 6" GATE VALVE AT TEE AND THRUST BLOCKS (PER MWSD)
13. INSTALL 2" WATER DOMESTIC TAP, 2" TYPE "K" COPPER, WATER METER & BOX BY MWSD. VALVE & R.P.B.P. IN ABOVE-GROUND HEATED ENCLOSURE W/BENDS & THRUST BLOCKS BY CONT. (SEE WATER SERVICE INSET)
14. INSTALL 4"x3" REDUCER & 3" D.I.P. BEND W/THRUST BLOCKS
15. INSTALL 5/8" WATER IRRIGATION TAP, COPPER, WATER METER & BOX BY MWSD. VALVE AND R.P.B.P. IN ABOVE-GROUND HEATED ENCLOSURE W/BENDS & THRUST BLOCKS BY CONTRACTOR.
16. INSTALL 6" CLASS 52 D.I.P. WATER MAIN, 8" 90° BEND, 8"x6" REDUCER, 6" GATE VALVE & BOX, AND FIRE HYDRANT ASSEMBLY
17. INSTALL 8" CLASS 52 D.I.P. WATER MAIN BEND WITH THRUST BLOCK (PER MWSD SPECS - REF. C-6.8)
18. RELOCATE & REPLACE EXS. FIRE HYDRANT BEHIND PROP. CURB
19. INSTALL RELOCATED UTILITY POLES (PER MED REQUIREMENTS)
20. INSTALL OVERHEAD PRIMARY POWER LINES (PER MED REQUIREMENTS)
21. PRIMARY ELECTRIC DROP FROM POWER POLE PER MED (2 - 4" RIGID GALVANIZED STEEL CONDUITS DOWN POLE TO 4" RGS LONG SWEEP 90'S, THEN TRANSITION TO SCHEDULE 40 PVC FOR UNDERGROUND)
22. PRIMARY ELECTRIC VAULT (VAULT WILL BE FURNISHED BY MED, BUT PAID FOR BY PROJECT, INSTALLATION BY ELECTRICAL CONTRACTOR)
23. (2) SCH 40 PVC CONDUITS BY CONTRACTOR. 48" MIN. DEPTH (SIZE AND NUMBER TO BE DETERMINED BY MED). MAINTAIN 1' VERTICAL AND 1' HORIZONTAL SEPARATION FROM CABLE TV & TELEPHONE CONDUITS. AND 3' SEPARATION FROM GAS (IN A SEPARATE TRENCH). MAINTAIN MINIMUM 1' SEPARATION FROM DRAIN TILE CROSSING, WITH GRAVEL BACKFILL BETWEEN. AID-TO-CONSTRUCTION WILL BE CHARGED AT $30/TRENCH FOOT FOR THREE-PHASE PRIMARY BY MED.
24. PRIMARY ELECTRIC PULL BOX (PROVIDED BY MED FOR $900.00 - TO BE INSTALLED BY CONTRACTOR)
25. INSTALL 277/480V/4000 AMPS TRANSFORMER INSTALLED ON 8'x10' CONCRETE PAD PER MED REQUIREMENTS
26. APPROXIMATE LOCATION OF PROPOSED GAS MAIN TIE-IN TO EXISTING GAS MAIN
27. CONNECT NEW 2" NATURAL GAS SERVICE TO PROPOSED RELOCATED 2" POLYETHYLENE GAS MAIN (BY ATMOS)
28. INSTALL RELOCATED 2" POLYETHYLENE GAS MAIN
29. INSTALL 2" NATURAL GAS SERVICE PER ATMOS REQUIREMENTS (MAINTAIN IN SEPARATE TRENCH AT MIN. OF 3' FROM ELEC.)
30. INSTALL NEW NATURAL GAS METER (BY ATMOS)
31. CONNECT NEW AT&T TELEPHONE SERVICE AT POLE (BY AT&T)
32. INSTALL 2-4" SCH 40 PVC CONDUITS W/PULL STRINGS FOR TELEPHONE SERVICE PER AT&T REQUIREMENTS
33. INSTALL (2) 1" SCH 40 PVC CONDUITS W/NYLON PULL CORDS FOR POWER TO AIR MACHINE. FUEL CENTER SIGN, AND TANK VENT RISER (BY STORE CONTRACTOR).
34. LOCATION OF TANK VENT RISER WITH PROTECTIVE BOLLARDS (BY FUEL CONTRACTOR).
35. UNDERGROUND VENT PIPE (BY FUEL CONTRACTOR).
36. UNDERGROUND SECONDARY ELECTRIC SERVICE FROM GROCERY STORE TO FUEL CENTER
37. SECONDARY ELECTRIC PULL BOX (BY STORE CONTRACTOR).
38. INSTALL (2) 4" SCH 40 PVC CONDUITS W/2 NYLON PULL CORDS PER CONDUIT FOR PHONE & DATA SERVICE FROM KIOSK TO STORE AT 36" MINIMUM COVER (BY STORE CONTRACTOR).
39. PHONE/DATA OR MISCELLANEOUS PULL BOX
40. INSTALL (2) 1" SCH 40 PVC CONDUITS W/NYLON PULL CORDS FOR POWER TO GROCERY STORE SIGN. ABOVE GROUND HEATED ENCLOSURES AND CLICK-LIST CANOPY (2 - 2" SCH 40 PVC CONDUITS TO PULL BOX FOR ANY FUTURE CLICKLIST USES OR NEEDS)
41. INSTALL 8"x8"x8" TEE & 8" GATE VALVE W/THRUST BLOCKS
42. INSTALL ELECTRIC METER BASE LOCATION (CONFIRM LOCATION W/ARCHITECTURAL PLANS & M.E.D. REQUIREMENTS)
43. FUTURE BUILDING EXPANSION LIMITS
44. CONCRETE GENERATOR PAD SHOULD BE 15'X6', CONCRETE OPENINGS IN THE PAD WILL NEED TO BE COORDINATED WITH BUILDING, ELECTRICAL AND PLUMBING CONTRACTORS
45. LOCATION OF REMOTE GENERATOR HOOK-UP SWITCHGEAR
45A. CONFIRM LOCATION OF S.S. SERVICES W/DYE-TEST (REF. C-1.2)
46. STORE CONTRACTOR TO PROVIDE "PAD-READY" SITE AT SUB-GRADE AT FUEL CENTER FOR FUEL CONTRACTOR. STORE CONTRACTOR TO PROVIDE UTILITIES TO WITHIN 5' OFF OF KIOSK AS DESCRIBED ON THIS SHEET. COORDINATE WITH KROGER AND FUEL CONTRACTOR REGARDING UTILITY TIMING AND INSTALLATION. FUEL CONTRACTOR TO MAKE FINAL CONNECTIONS TO KIOSK FOR ALL UTILITIES.
47. RELOCATE GUY WIRE FOR ATM DRIVE-THRU (COORDINATE WITH MED)
48. APPROXIMATE LOCATION OF PROPOSED UNDERGROUND ELECTRIC TIE-IN TO EXISTING UNDERGROUND ELECTRIC
49. SEE GREASE INTERCEPTOR INSET (REF. THIS SHEET)
50. INSTALL 6"x6"x6" WYE AND SANITARY SEWER TRAFFIC BEARING CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 605.05, INV. = 598.86
51. INSTALL 70 L.F. OF 6" SDR 35 PVC @ 2.00%
52. TIE 6" SDR 35 PVC TO SANITARY SEWER MH (REF. C-4.2), INV. = 597.74
53. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT (REF. C-6.3). PER MWSD SPECS. T.C. = 605.52, INV. = 601.00 (7.00' BELOW STORE FINISH FLOOR ELEVATION)
54. INSTALL 15 L.F. OF 6" SDR 35 PVC @ 3.33%
55. TIE 6" SDR 35 PVC TO SANITARY SEWER MH (REF. C-4.2), INV. = 597.35
56. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT (REF. C-6.3). PER MWSD SPECS. T.C. = 608.49, INV. = 604.50 (APPX. 4.0' BELOW KIOSK FINISH FLOOR ELEVATION)
57. INSTALL 7 L.F. OF 6" SDR 35 PVC @ 5.00%
58. INSTALL 6"X6"X6" WYE AND SANITARY SEWER TRAFFIC BEARING CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 608.41, INV. = 604.15 (BY FUEL CONTRACTOR).
59. INSTALL 16 L.F. OF 6" SDR 35 PVC @ 5.00%
60. SANITARY SEWER TRAFFIC BEARING TWO-WAY CLEANOUT (REF. C-6.3). PER MWSD SPECS. T.C. = 608.76, INV. = 603.35 (BY STORE CONTRACTOR).
61. INSTALL 78 L.F. OF 6" SDR 35 PVC @ 5.00%
62. TIE 6" SDR 35 PVC TO SANITARY SEWER MH (REF. C-4.2), INV. = 599.45 (EXS. INV. = 598.80)
63. TAP EXISTING WATER MAIN WITH TAPPING SLEEVE & THRUST BLOCK AND REPAIR UTILITY TRENCH TO MATCH EXISTING CONDITIONS
64. APPROXIMATE LOCATION OF HOSE-BIB ON EXTERIOR OF KIOSK FOR LANDSCAPE IRRIGATION ON FUEL LOT
65. REINSTALL WATER SERVICES AFFECTED BY PROJECT TO MATCH EXISTING - PER MWSD SPECS - REF. C-6.8). INSTALL NEW METER IN GRASS WHEN REQUIRED.
66. INSTALL LIGHT POLE (REF. C-6.3 & P-1)
67. ROUTE "SHOP" LIGHTPOLE CIRCUITS (NON-KROGER) TO THIS POINT - LOTS 1 & 3 IN SEPARATE LOCATIONS (REF. SHEETS E0.1 AND E0.2)
68. INSTALL 6"x6"x6" TEE AND SANITARY SEWER TRAFFIC BEARING CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 602.78, INV. = 600.50
69. INSTALL 6" CLASS 52 D.I.P. FIRE SERVICE ON EXISTING 8" WATER MAIN, 10"X10"X6" TEE, 6" GATE VALVE AND THRUST BLOCK AT EXISTING TEE (PER MWSD - REF. DOLLAR-EWERS ARCH. PLANS - FOR REFERENCE ONLY - NOT INCLUDED IN THIS CONTRACT)
70. RE-ROUTE EXISTING ROOF DRAIN AND REMOVE EXISTING ABANDONED ELECTRICAL EQUIPMENT (REF. DOLLAR-EWERS ARCH. PLANS - FOR REFERENCE ONLY - NOT INCLUDED IN THIS CONTRACT)
71. REF. DOLLAR-EWERS ARCH. PLANS (FOR REFERENCE ONLY - NOT INCLUDED IN THIS CONTRACT).
72. APPROXIMATE LOCATION OF SPRINKLER RISER ROOM INSIDE ENCLOSED DOCK AREA (REF. FIXTURE PLAN)
73. INSTALL 10"x10"x8" TEE & 8" METER W/THRUST BLOCK FOR EX. SERVICE (VERIFY LOCATION OF SERVICE).
74. INSTALL 56 L.F. OF 6" SDR 35 PVC @ 3.33%
75. INSTALL SANITARY SEWER TRAFFIC BEARING CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 604.27, INV. = 598.64
76. INSTALL 58 L.F. OF 6" SDR 35 PVC @ 3.33%
77. INSTALL 6"x6"x6" WYE AND SANITARY SEWER TRAFFIC BEARING CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 604.56, INV. = 596.71
78. INSTALL 7 L.F. OF 6" SDR 35 PVC @ 3.33%
79. INSTALL 6"x6"x6" WYE AND SANITARY SEWER TRAFFIC BEARING CLEANOUT (REF. C-6.3). PER MWSD SPECS., T.C. = 604.07, INV. = TBD (VERIFY IN FIELD)
80. INSTALL 17 L.F. OF 6" SDR 35 PVC @ TBD SLOPE (VERIFY SLOPE IN FIELD)
81. 42" MIN. COVER REQ'D FOR WATER AT CROSSING W/ STORM DRAIN. LOWER WATER MAIN IF NECESSARY.

X*. ITEMS NOTED WITH AN * ARE A PART OF BID ALT.

PERRY ENGINEERING, LLC
100 NORTH MAIN STREET, SUITE 1
GOODLETTSVILLE, TENNESSEE 37072
(615) 855-2230 (V)
(615) 855-2231 (F)

THE KROGER COMPANY
MIDSOUTH OFFICE
2620 ELM HILL PIKE
NASHVILLE, TN 37214
PH 615-871-2403

SITE IMPROVEMENTS FOR:

KROGER - STORE # U-621
MERCURY BLVD. AND MIDDLE TN BLVD.
MURFREESBORO, TENNESSEE 37130

REV.	DATE	COMMENT
1	07/05/16	ADDENDUM 1
1	07/22/16	SITE REV. 1

PROJ. NO: 125-105

UTILITY PLAN

C-4.1

DATE: JUNE 6, 2016
SUBM: BID SET

. . . creating a better quality of life

MEMORANDUM

DATE: August 18, 2016

TO: Water and Sewer Board

FROM: Valerie H. Smith

SUBJECT: Geotechnical Engineering Services
& Materials Testing
DeJarnette Lane PS #13 Replacement

Background

Attached is a proposal from TTL, Inc. to perform geotechnical engineering services and materials testing during the proposed construction of the DeJarnette Lane PS #13 Replacement project. Included in this proposal is a construction testing estimate as well.

TTL has worked for the Department on several geotechnical and materials testing projects in the past and has always performed to the satisfaction of the Department. They are currently working for the Department on the Wastewater Treatment Plant Expansion-Phase 4D. TTL estimated the $13,500 based on time and materials and per the unit pricing in the construction testing schedule. Staff feels this proposal amount is in line for this project.

Recommendation

Staff recommends that the Board recommend to City Council awarding the geotechnical engineering services and materials testing associated with the construction of the DeJarnette Lane PS #13 Replacement to TTL in the amount of $13,500.

Fiscal Impact

This construction project has been programmed to come from into the Department's 5-year capital improvement plan with funding from working capital reserves.

Attachments

TTL Construction Testing Proposal

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

5010 Linbar Drive,
Suite 153
Nashville, TN 37211
615.331.7770
www.TTLUSA.com

August 17, 2016

Ms. Valerie Smith, P.E.
City of Murfreesboro
Water & Sewer Department
220 NW Broad Street
Murfreesboro, Tennessee 37130

RE: Proposal for Construction Materials Engineering and Testing
Dejarnette Lane Pump Station Addition
Murfreesboro, Tennessee
TTL Proposal No. P02816066

Dear Ms. Smith:

We appreciate having the opportunity to provide materials engineering and testing services during construction of the Dejarnette Lane Pump Station addition in Murfreesboro, Tennessee. This proposal contains our understanding of the project, the requested scope of services, and fee and scheduling information.

PROJECT INFORMATION

Plans are being made to construct a new pump station north of Dejarnette Lane, near its intersection with Tennessee State Route 96. The project will include demolishing and removing an existing wet well, pump station, and communication tower. The new wet well will then be constructed east of the former wet well. The project will also include relocating a 65-foot tall communication tower.

PROPOSED SCOPE OF SERVICES

Based on the drawings provided and our understanding of the project requirements, we propose to provide the following services:

- Monitor and test structural cut and fill activities for both the building pad and associated parking areas and measure compaction efforts with a nuclear gauge and/or proofrolls of each lift.
- Observe that continuous and spread footing subgrades meet the bearing capacity.
- Make test specimens and perform field tests on plastic concrete in accordance with the specifications, including slump, air content, unit weight, and temperature.
- Cure the concrete samples in our laboratory and test the specimens for compressive strength.

- Observe reinforcing steel, anchor bolts, and embedments prior to concrete placement to evaluate conformance with the specifications in regard to size, grade, spacing, profiles, lap lengths, and concrete coverage.

- Observe, monitor, and provide density testing for roadway and parking lot base stone materials.

We will issue field and testing reports for each site visit. Our project manager will review the field reports and test results before these documents are issued as final documents and will also be available for consultation at your request. We will issue a final special inspection report at job completion stamped by a licensed, professional engineer. The actual scope of services may vary from the proposed scope of services based on the project schedule, budget constraints, and other issues that we do not control. Please keep in mind that our testing is a sampling of the construction materials and does not guarantee the quality of the entire work product. Our representatives will notify you and the contractor of any portions of the work we observe which do not meet the project specifications. We do not have the authority to stop the contractor's work. Additionally, we are not responsible for the safety of persons other than TTL personnel. Job-site safety is the sole responsibility of the general contractor.

SCHEDULING

A TTL technician will be on-site on a part-time basis, except for activities that require full-time monitoring. Our on-site inspectors will communicate with the General Contractor's Project Manager to verify construction schedules and ensure proper inspection staff are scheduled to adequately cover all aspects of the contractor's work. We require at least 24 hours' notice to assist with scheduling our services.

COMPENSATION

Based on our understanding of the site-specific needs, we estimate the total fee for our services as outlined above and on the appended sheets to approach $13,500. We will provide our services on a time and materials basis. Our fees depend on the quality of the work and rate of progress achieved by the contractor, weather conditions, and other factors beyond our control. We will monitor and keep you apprised of the budget status. If it appears that we will exceed the budget estimate, we will notify you and discuss whether you wish to expand the budget or reduce the remaining scope of services to maintain the budget.

AUTHORIZATION

To formally authorize us, we request that you sign where indicated below and return a copy of this proposal to us. Our services will be performed in accordance with the attached Terms and Conditions, which were previously approved by the City Attorney for the City of Murfreesboro.

CLOSING

We appreciate this opportunity to be of service to you on this project. If you have any questions or require additional information, please contact our office at (615) 331-7770.

Sincerely,
TTL, Inc.

Martin L. Medley, II, P.E.
CMT Group Leader

Mark A. Herrmann, P.E.
Principal Engineer

Attachments: Copy of Executed Client Project Services Agreement
Schedule of Fees
Construction Testing Estimates

Authorized By:

Client (Signature and Date)

Approved to as form
City Attorney

Project: Dejarnette Lane Pump Station Addition
Location: Murfreesboro, Tennessee
TTL Proposal No.: P02816070

geotechnical • analytical • materials • environmental
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SERVICE	PROJECTED SCHEDULE			UNIT COST	SUBTOTAL	SECTION SUBTOTAL
EARTHWORK	No. Days	hrs/day	Total	Rate	Subtotal	
Subgrade Review / Proofrolling	2	4	8	$45.00	$360.00	
Monitoring Cut/Fill Activities & Density Testing	2	8	16	$45.00	$720.00	
Technician Overtime			0	$67.50	$0.00	
Project Manager / Engineer Review	4	0.5	2	$120.00	$240.00	
PM Support Services	4	0.25	1	$50.00	$50.00	
						$1,370
RIGID / FLEXIBLE PAVEMENTS	No. Days	hrs/day	Total	Rate	Subtotal	
Subgrade Review / Proofrolling	2	4	8	$45.00	$360.00	
Monitoring Cut/Fill Activities & Density Testing	5	8	40	$45.00	$1,800.00	
Monitoring Basestone Placement	1	4	4	$45.00	$180.00	
Monitoring & Testing Pavement Placement	2	4	8	$45.00	$360.00	
Concrete Pavement Placement			0	$45.00	$0.00	
Technician Overtime			0	$67.50	$0.00	
Project Manager / Engineer Review	10	0.5	5	$120.00	$600.00	
PM Support Services	10	0.25	2.5	$50.00	$125.00	
						$3,425
FOUNDATIONS	No. Days	hrs/day	Total	Rate	Subtotal	
Shallow Foundations (Spread / Continuous Footings)	4	4	16	$45.00	$720.00	
Deep Foundations (Drilled Piers / Micropiles / etc.)			0	$45.00	$0.00	
Technician Overtime			0	$67.50	$0.00	
Cylinder Pick-Up	4	2	8	$45.00	$360.00	
Project Manager / Engineer Review	4	0.5	2	$120.00	$240.00	
PM Support Services	4	0.25	1	$50.00	$50.00	
						$1,370
CONCRETE	No. Days	hrs/day	Total	Rate	Subtotal	
Columns / Retaining Walls / Shear Walls	6	4	24	$45.00	$1,080.00	
Slab-On-Grade / Slab-On-Deck / Beams	2	4	8	$45.00	$360.00	
Post-Tension / Tilt-Up / Precast / etc.			0	$45.00	$0.00	
Misc. Placements (Sidewalks / Stairwells / Curbs)	4	4	16	$45.00	$720.00	
Technician Overtime			0	$67.50	$0.00	
Cylinder Pick-Up	12	2	24	$45.00	$1,080.00	
Project Manager / Engineer Review	12	0.5	6	$120.00	$720.00	
PM Support Services	12	0.25	3	$50.00	$150.00	
						$4,110
STRUCTURAL STEEL	No. Days	hrs/day	Total	Rate	Subtotal	
Anchor Bolts / Bolted Connections			0	$90.00	$0.00	
Welded Connections			0	$90.00	$0.00	
Metal Decking			0	$90.00	$0.00	
Certified Welding Inspector Overtime			0	$135.00	$0.00	
Certified Structural Steel Inspector Overtime			0	$135.00	$0.00	
Project Manager / Engineer Review			0	$120.00	$0.00	
PM Support Services			0	$50.00	$0.00	
						$0
MASONRY / MORTAR	No. Days	hrs/day	Total	Rate	Subtotal	
Masonry Monitoring / Masonry Sampling			0	$45.00	$0.00	
Technician Overtime			0	$67.50	$0.00	
Cylinder Pick-Up			0	$45.00	$0.00	
Project Manager / Engineer Review			0	$120.00	$0.00	
PM Support Services			0	$50.00	$0.00	
						$0

WOOD FRAMING	No. Days	hrs/day	Total	Rate	Subtotal	
Nailing / Bolting / Anchoring Observation			0	$45.00	$0.00	
Technician Overtime			0	$45.00	$0.00	
Project Manager / Engineer Review			0	$120.00	$0.00	
PM Support Services			0	$50.00	$0.00	
						$0
HIGH STRENGTH GROUT	No. Days	hrs/day	Total	Rate	Subtotal	
Grout Monitoring / Grout Sampling			0	$45.00	$0.00	
Technician Overtime			0	$67.50	$0.00	
Cylinder Pick-Up			0	$45.00	$0.00	
Project Manager / Engineer Review			0	$120.00	$0.00	
PM Support Services			0	$50.00	$0.00	
						$0
FIREPROOFING	Number	Units	Total	Rate	Subtotal	
Thickness Measurements			0	$45.00	$0.00	
Density Testing			0	$30.00	$0.00	
Adhesion / Cohesion Testing			0	$50.00	$0.00	
Technician Overtime			0	$67.50	$0.00	
Project Manager / Engineer Review			0	$120.00	$0.00	
PM Support Services			0	$50.00	$0.00	
						$0
MATERIALS / LAB TESTING / ADDITIONAL SERVICES	Number	Units	Total	Rate	Subtotal	
Floor Flatness / Floor Levelness Testing			0	$0.05	$0.00	
Floor Flatness / Floor Levelness Testing Technician Time			0	$45.00	$0.00	
Proctor Density Testing			0	$125.00	$0.00	
Proctor Density Testing w/ Atterberg Limits	1	1	1	$205.00	$205.00	
Vapor Emmission Testing (Kit Only)			0	$45.00	$0.00	
Concrete Cylinders (Foundation)	4	5	20	$13.00	$260.00	
Concrete Cylinders (Structure)	12	5	60	$13.00	$780.00	
Masonry / Mortar Specimens			0	$13.00	$0.00	
High Strength Grout Cube Specimens			0	$13.00	$0.00	
On-Site Trailer Mobilization & Monthly Fees			0	$0.00	$0.00	
Special Inspection Letter & Engineer Review			0	$120.00	$0.00	
						$1,245
DIRECT COSTS	Trips	Miles	Total	Rate	Subtotal	
Trip Charge	46	56	2576	$0.70	$1,803.20	
						$1,803
PROJECT ESTIMATE / BUDGET					**$13,323**	

Note: *This is a good faith estimate based on our understanding of the project. The actual schedule may vary and billing will be based on the unit rates shown on the attached fee schedule for actual hours worked.*

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Nashville, TN 37211
615.331.7770
www.TTLUSA.com

Schedule of Fees

Professional Services:

01. Materials Technician (Staff Technician Level II) ..... $45.00 / hr
02. Senior Materials Technician (Staff Technician Level III) ..... $49.00 / hr
03. Landfill Technician (Staff Technician Level IV) ..... $55.00 / hr
04. Environmental Technician ..... $65.00 / hr
05. Principal Engineer (Principal Professional Level VII) ..... $190.00 / hr
06. Senior Project Professional / Project Manager (Sr. Project Manager Level IV) ..... $135.00 / hr
07. Professional Engineer (Project Professional Level IV) ..... $120.00 / hr
08. Project Manager (Project Manager Level IV) ..... $120.00 / hr
09. Engineer Intern (Staff Professional Level II) ..... $90.00 / hr
10. CWI / Structural Steel Technician (NDT Steel / Welding Inspector) ..... $90.00 / hr
11. CADD Technician (CADD Technician / Draftsman) ..... $70.00 / hr
12. Administrative Support ..... $50.00 / hr

Technician rates to be multiplied by 1.5 for time in excess of 8 hours per day, and all hours on Saturdays, Sundays, and Holidays.

Direct Expenses:

13. Travel from Portal to Portal ..... $0.70 / mile
14. Other Direct Expenses ..... Cost + 15%

Additional services can be provided and prices quoted upon request

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Laboratory Schedule of Fees

Soils:

01. Field Moisture Content and Density Tests by Nuclear Methods ..... No Charge
02. Natural Moisture Content (ASTM D2216) ..... $6.00 / test
03. Atterberg Limits (ASTM D4318) ..... $85.00 / test
04. Shrinkage Limit & Shrinkage Ratio (ASTM D427) ..... $165.00 / test
05. Material in Soils Finer than the No. 200 Sieve by Washing (ASTM D1140) ..... $65.00 / test
06. Grain Size, Sieve Analysis, with hydrometer (ASTM D422) ..... $185.00 / test
07. Grain Size, Sieve Analysis, without hydrometer (ASTM D422) ..... $85.00 / test
08. Rymac Soil Strength Test (SPT Sample) ..... $25.00 / test
09. Resistivity of Soils (ASTM G57) ..... $100.00 / test
10. pH of Soils (ASTM D4972) ..... $35.00 / test
11. Specific Gravity of Soils (ASTM D854) ..... $55.00 / test
12. Organic Content (ASTM D2974) ..... $45.00 / test
13. Moisture-Density Curve (Requires Atterberg Limits Not Included in Test Fee)
    a. Standard Proctor (ASTM D698) ..... $125.00 / test
    b. Modified Proctor (ASTM D1557) ..... $130.00 / test
    c. One Point ..... $55.00 / test
14. Laboratory CBR (ASTM D1883)
    a. In-situ ..... $215.00 / test
    b. Remolded (Not Including Proctor) ..... $300.00 / test
15. Unconfined Compression Test:
    a. Soil Specimen (2-½-inch or 3-inch) (ASTM D2166) ..... $130.00 / test
    b. Rock Core Specimen (BX or NX), Cupped (Non-ASTM) ..... $75.00 / test
16. Unit Dry and Wet Weight (ASTM D2216) ..... $50.00 / test
17. One-Dimensional Consolidation Test (1/4 to 16 ton loading) (ASTM D2435)
    (Add $40.00 for each unload-reload cycle)
    a. Undisturbed Sample ..... $395.00 / test
    b. Remolded Sample (Proctor Not Included) ..... $375.00 / test
18. One-Dimensional Swell/Settlement Potential of Cohesive Soils (ASTM D4546) ..... $375.00 / test
19. Triaxial Compression Test:
    a. Unconsolidated Undrained (ASTM D2850) ..... $300.00 / 3 pts
    b. Consolidated Undrained with Pore Pressure Measurements (ASTM D4767) . $635.00 / 3 pts
20. Consolidated-Drained, Undisturbed Sample ..... $650.00 / test
21. Direct Shear Testing of Soils under Consolidated-Drained Conditions
    2 ½" Specimen (ASTM D3080) ..... $305.00 / test
22. Hydraulic Conductivity (Permeability), Flexible Wall/Backpressure (ASTM D5084) ..... $350.00 / test

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23. Moisture-Density of Soil-Cement Mixture (ASTM D558) ..... $150.00 / test
24. Moisture-Density of Soil-Cement Mixture (Modified) ..... $170.00 / test
25. Remolded Soil Specimen for Any Soil Test Above ..... $50.00 / each

Concrete:

01. Curing and Breaking Cylinders ..... $13.00 / each
02. Curing and Breaking Cylinders (Made by Others) ..... $21.00 / each
03. Thin-Wall Concrete Coring, 2-Person Crew and Equipment ..... $120.00 / hour
04. Sawing, Curing, Capping and Breaking Thin-Wall Concrete Cores (ASTM C42) ..... $45.00 / each
05. Floor Flatness / Floor Levelness Testing (ASTM E1155) ..... $0.05 / sq. ft.
06. Petrographic Examination (ASTM C856) ..... $600.00 / each
07. Test Cylinder Sample Preparation Saw Cutting ..... $25.00 / each
08. Hardened Concrete Shrinkage Testing, (ASTM C157) (Set of 3) ..... $180.00 / each
09. Compressive Strength of Grout Prism (Made by Others) ..... $17.00 / each
10. Flexural Strength of Concrete Beams (ASTM C78) ..... $37.50 / each
11. Flexural Strength of Concrete Beams (ASTM C78) (Made by Others) ..... $37.50 / each
12. Mechanical Tension Splice Testing Rebar ..... $300.00 / each

Aggregates:

01. Base Stone Moisture Content and Density Tests by Nuclear Methods ..... No Charge
02. Specific Gravity and Absorption, coarse aggregate (ASTM C127) ..... $70.00 / test
03. Specific Gravity and Absorption, fine aggregate (ASTM C128) ..... $90.00 / test
04. Sieve Analysis of Fine and Coarse Aggregates (ASTM C136) ..... $70.00 / test
05. Soundness of Aggregates, Sodium or Magnesium Sulfate
    a. Five Cycles (ASTM C88) ..... $350.00 / test
    b. Bulk Sample Preparation ..... $50.00 / each
06. LA Abrasion (ASTM C535) ..... $350.00 / each
07. Clay Lumps & Friable Particles (ASTM C142) ..... $75.00 / test
08. Organic Impurities in Sands & Concrete (ASTM C40) ..... $50.00 / test
09. Chemical Analysis ..... $350.00 / test
10. Bulk Sample Preparation ..... $25.00 / each

Asphalt:

01. Marshall Mix Design (KM 64-411-90) ..... $550.00 / each
02. Gradation & Asphalt Content (Extraction) (KM 64-405-92 & KM 64-433-89) ..... $225.00 / each
03. Unit Weight & Thickness (AASHTO T166) ..... $25.00 / each
04. Maximum Theoretical Density ..... $50.00 / each

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Masonry & Mortar:

01. Absorption and As-Received Moisture, Masonry Block Units ..... $45.00 / each
02. Absorption Test, Brick, 5-hour with Coefficient ..... $40.00 / each
03. Compression Test, Brick ..... $25.00 / each
04. Compression Test, Grout Cylinder ..... $15.00 / each
05. Compression Test, Grout Cylinder (Made by Others) ..... $17.00 / each
06. Compression Test, Masonry Block Units ..... $45.00 / each
07. Compressive Strength Test of Mortar Cubes (ASTM C109) ..... $13.00 / each
08. Equivalent Thickness Masonry Block Unit ..... $10.00 / each
09. Modulus of Rupture, Brick ..... $30.00 / each

Fireproofing:

01. Bond Strength $50.00/each
02. Density $30.00/each

Specialty Testing:

Based on our experience and network of contacts we can provide or develop most specialty tests on an individual basis as requested.

TTL

geotechnical • analytical • materials • environmental

CLIENT PROJECT SERVICES AGREEMENT

TTL, Inc. (referred to herein as TTL) is pleased to provide the services described below. The purpose of this document and any attachments is to obtain your authorization for the work requested and to confirm the terms and conditions under which these services will be provided to you (referred to herein as Client).

Compensation for services rendered will be based on the attached Schedule of Fees (or as otherwise indicated below) which is a part of this Work Authorization. If TTL is asked to modify the scope of the Work Authorized at Client's request or determines during the execution of the Work Authorized that a modification of the scope is required, TTL will promptly seek and confirm in writing a mutually agreeable revision of the scope of the Work Authorized and associated fees.

PROJECT IDENTIFICATION:

Project Name Stones River Greenway

Project Location Murfreesboro, Tennessee

TTL Proposal No. P01812145 TTL Office Nashville

Client Project / Job No. _____ TTL Project Manager Mark Herrmann

CLIENT CONTACT FOR REPORTING PURPOSES:

Firm _____ Attention _____

Address _____ Telephone No. _____

City and State _____ Zip Code _____ Fax No. _____

Email Address _____ Cell No. _____

CLIENT CONTACT FOR BILLING PURPOSES:

Firm _____ Attention _____

Address _____ Telephone No. _____

City and State _____ Zip Code _____ Fax No. _____

Email Address _____ Cell No. _____

DESCRIPTION OF SERVICES AUTHORIZED: (Consulting, Observations, Testing, Drilling and/or Reports)

_____

_____

_____

COMPENSATION:

☐ **Lump Sum $** _____

☒ **PER ATTACHED PROPOSAL FOR SERVICES**

☐ **TIME AND MATERIALS PER ATTACHED SCHEDULE OF FEES**

PROJECTED TIME OF COMPLETION: per agreement

☐ **Check here if the Client Project Services Agreement will serve as a Master Agreement and specify the contract termination date:** _____

(Master agreements involve potentially more than one project over a defined contract period; unless otherwise specified, the termination date will be established as 1 year from the date of contract and automatically renews annually subject to changes in compensation unless the agreement is terminated by either party by giving 30-day advance written notice)

TERMS AND CONDITIONS BETWEEN TTL AND CLIENT

SECTION 1. SITE RESPONSIBILITIES

1.1 Client will provide right of entry for **TTL** and all necessary equipment in order for **TTL** to complete the Work Authorized.

1.2 While **TTL** will take reasonable precautions to avoid damage to Client's property, Client acknowledges that in the normal course of performing the Work Authorized, some damage to lawns, landscaping, pavement or other property may occur. Client agrees that the correction of such damage is not **TTL's** responsibility and will be undertaken by Client at Client's sole expense.

1.3 If part of the Work Authorized, **TTL** will observe the work of the contractor or subcontractor. **TTL** does not guarantee the performance of the contractor or subcontractor by **TTL's** performance of such construction observation. **TTL's** undertaking hereunder shall not relieve the contractor or subcontractor of the contractor's/subcontractor's obligation to perform the work in conformity with the contract documents, including plans and specifications. **TTL's** observation of any contractor's or subcontractor's procedures is not intended to include a review of the adequacy of such contractor's or subcontractor's safety measures on or near the site. It is agreed **TTL** is not responsible for safety or security at the site, and **TTL** does not have the right or duty to stop the work of others.

SECTION 2. PROJECT INFORMATION

2.1 Client will furnish to **TTL** all plans, specifications, project requirements, drawings, guidelines and any other project information (referred to herein as Project Information) necessary to perform the Work Authorized. Client shall be responsible for furnishing to **TTL** any changes in said Project Information of which Client becomes aware or which are made by Client as the work progresses.

SECTION 3. STANDARD OF CARE

3.1 Services performed by **TTL** under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of **TTL's** profession practicing under similar conditions at the same time and in the same geographic location. No other warranty, expressed or implied (including, by way of illustration and not by way of limitation, warranties of fitness for a particular purpose or warranties of merchantability) is made or intended and the same are specifically disclaimed. Client shall not be entitled to assert a claim against **TTL** based on any theory of negligence or violation of the standard of care unless and until Client has obtained the written opinion from a licensed, independent and reputable engineering and/or environmental professional, as appropriate for the services in question, that **TTL** has violated the standard of care applicable to **TTL's** performance of those services under this Agreement.

3.2 Field test and boring locations described in **TTL's** report to Client or shown on **TTL's** sketches are based on specific information furnished to **TTL** by Client and/or others or estimates made in the field by **TTL's** technicians. All such dimensions, depths or elevations are approximations unless otherwise stated in **TTL's** report.

3.3 Client recognizes that conditions may vary from those encountered at the location where borings, tests, samplings, surveys, or explorations are made by **TTL** and that site and subsurface conditions may change over time. Client understands that the data, interpretations, and recommendations of **TTL** are based solely on the information available to **TTL** at the time of testing. **TTL** will be responsible for the data, interpretations, and recommendations developed by **TTL**, but shall not be responsible for the interpretation by others of the information developed.

3.4 **TTL** will adhere to Project Information which is provided by Client. However, Client agrees that **TTL** will not be responsible for any adverse outcome which results from **TTL's** adherence to that Project Information. Client will defend, hold harmless and indemnify **TTL** to the extent permitted under Tennessee law from and against all losses, costs, expenses and damages, including but not limited to attorneys' fees and court costs, which may be incurred by or on account of **TTL's** performance or non-performance in reliance upon the Project Information. WDH 11/30/12

3.5 It is expressly agreed that **TTL** may rely upon information provided by Client (or by third parties on behalf of or at the request of Client) without any duty to independently verify the correctness or accuracy thereof. Client agrees to indemnify, defend and hold harmless **TTL** to the extent permitted under Tennessee law from and against liabilities arising from the inaccuracy or incorrect information (if any) in such Client-provided information, and Client further waives any claims as to **TTL** relating to losses created by such inaccurate or incorrect Client data. WDH 11/30/12

SECTION 4. RISK ALLOCATION, LIMITATIONS AND WAIVERS OF CERTAIN CLAIMS

4.1 There are relative risks and benefits for **TTL** and Client arising from their agreement regarding the Work Authorized. **TTL** and Client have discussed these risks and benefits and have negotiated to allocate the risks as described in Section 4.2.

$1,000,000

4.2 TTL agrees to perform the Work Authorized for the compensation agreed and Client agrees, to the fullest extent allowed by law, to limit the total maximum aggregate liability of **TTL** and that of its officers, directors, employees, agents, assigns and subcontractors for any and all costs, losses, claims, expenses and damages of any nature whatsoever, which might be claimed and proven by, through or on behalf of Client relative to the Work Authorized, due to or on account of any claims and/or causes of action against **TTL** and/or any of its officers, directors, employees, agents or subcontractors, to ~~**$50,000 or TTL's fee, whichever is greater**~~. Such claims and/or causes of action include, but are not limited to, negligence, professional errors and omissions, strict liability, breach of contract and breach of warranty. This allocation of risks shall apply regardless of the causes of action or legal theory, plead or asserted. ~~TTL will consider providing higher limits of liability at the Client's written request, subject to the mutual written agreement of the parties, prior to accepting TTL's proposal, up to a total maximum aggregate of no more than $1,000,000, provided Client pays a mutually agreed to additional consideration.~~ The additional consideration for the higher liability limit is because of the greater risk assumed by **TTL** and is not a charge for additional professional liability insurance. Client's signature on the Client Project Services Agreement indicates Client's acknowledgment of and agreement with the allocation of risks as set out in this Section 4.2. Client expressly waives any claims for liquidated damages against **TTL**.

WDH 11/30/12

4.3 Limitations on liability and indemnities in this Agreement are business understandings between the parties and shall apply to all the different theories of recovery, including breach of contract or warranty, tort including negligence, strict or statutory liability, or any other cause of action, except for willful misconduct or gross negligence. "Parties" means Client and **TTL** and their officers, employees, agents, AND affiliates and subcontractors. The parties also agree that Client will not seek damages in excess of the limitations indirectly through suits against (or in concert with) ~~other parties who may join TTL as a third party defendant~~ Others in this contract.

Approved by the Client.

WDH 11/30/12

4.4 In certain sections of this Agreement, Client agrees to waive certain claims against **TTL**. Relative to such provisions, these Risk Allocation provisions shall not operate or be construed to operate as allowing anything other than a complete waiver of such claims.

> **NOTE:** Sections 5, 7 and the language regarding test specimens and samples in paragraph 6.1 shall apply if sampling, testing or other intrusive services are part of **TTL's** scope of services. The ownership of documents provisions in Section 6 apply to all **TTL** services.

SECTION 5. SUBTERRANEAN STRUCTURES AND UTILITIES

5.1 In the prosecution of the Work Authorized, **TTL** will take reasonable precautions to avoid damage or injury to identified subterranean structures or utilities.

5.2 Client will inform **TTL** of the locations of all subterranean structures and utilities on Client's property before the Work Authorized begins. Client agrees to hold **TTL** harmless to the extent permitted under Tennessee law. for any damages to subterranean structures and utilities which are not brought to **TTL's** attention or not correctly shown in the Project Information furnished.

WDH 11/30/12

5.3 TTL will contact the local "one-call" utility authority, but assumes no responsibility with respect to utilities beyond that action. Under no circumstances is **TTL** responsible for notifying the one-call authority for work performed by parties other than **TTL** and its subcontractors.

SECTION 6. OWNERSHIP OF DOCUMENTS AND SAMPLES

6.1 All reports, boring logs, field data, test specimens, drilling samples, field notes, laboratory test data, calculations, estimates, and other documents prepared by **TTL**, as Instruments of Service, shall remain the property of **TTL**. ~~These documents, specimens and samples will be considered confidential, and they will not be available to any other entity unless express consent is obtained in writing from Client.~~

WDH 11/30/12

6.2 TTL will render a Report (written or verbal, as particular circumstances dictate) to Client regarding the work performed.

6.3 Client agrees that any written Report and other work furnished to Client or Clients's agents, for which full payment has not been made to TTL, will be returned to TTL upon demand and will not be used by Client for any purpose whatsoever ~~or disseminated to any third parties by Client~~. WDH 11/30/12

6.4 TTL will retain pertinent documents relating to the services performed for a period of five (5) years following submission of TTL's Report, during which period the documents will be made available to Client within a reasonable time after TTL receives a written request from Client specifically identifying the documents sought.

6.5 All TTL communications, reports, analyses, proposals (and any related documents, plans or specifications), electronic or hard copy, all collectively referred to in this provision as the "documents", are provided by TTL for the sole and exclusive use and reliance of the Client, without any intended or contemplated third party beneficiaries. All copies (electronic or hard copies) of any reports provided to third parties by Client or TTL are intended solely and only for informational purposes absent a Secondary Client Agreement, as discussed immediately following. Under no circumstances may any third party rely upon any TTL "documents" (as defined above) without first executing a TTL-approved Secondary Client Agreement. No disclosure (in hard copy or electronically, in full text or in summary) to third parties for reliance without an approved and executed TTL Secondary Client Agreement on file with TTL is approved or intended by TTL and any such third party coming into possession of any "documents" (as defined above) in breach of these provisions may not rely on TTL reports, documents, plans or specifications. If any "documents" are not <u>paid for in full pursuant to TTL's invoice</u> within the time required under this Agreement, Client agrees that TTL may cease any or all work for Client (TTL providing no plans, reports, work site services, presentations or reports to regulators [if any are required] and attending no meetings or conferences) until and unless paid in full by Client. Client expressly agrees hereby that full and prompt payment to TTL is a fundamental inducement for TTL to agree to provide services to Client and that failure to make payment by Client is a material breach of this Agreement. In the event that TTL suspends work for failure to pay, Client waives any and all claims against TTL or TTL personnel under applicable laws or professional canons for any and all losses, harms, liabilities or costs experienced or suffered by Client following TTL's suspension of services. If the full amount of the TTL invoice is not paid within 7 calendar days, Client agrees that TTL may elect to treat this Agreement as irrevocably breached by Client and permanently suspend all services and refuse to provide any documents or reports. In such event, TTL may demand (and Client must immediately return at Client's sole cost and expense) that all hard copies of all TTL reports, plans, specifications, test results, letters or communications be returned to TTL and Client must further, within 3 business days of TTL's demand, certify without exception in a sworn affidavit executed by an Officer of Client that any and all electronic copies of such information have been destroyed by Client at Client's sole cost and expense, wherever located (networks, work stations, personal computers, laptops, phones, PDAs, remote internet storage, servers, archives wherever or however maintained, backup files and all related electronic or hard copy storage mediums or methods). No demand for mediation by Client or TTL shall impact TTL's rights under this provision and no mediation or subsequent litigation shall impair the waiver by Client of claims against TTL in this provision.

SECTION 7. DISPOSAL OF SAMPLES

7.1 Test specimens will be disposed of promptly upon completion of tests. Drilling samples will be disposed of thirty (30) days after submission of TTL's Report. Upon written request received before the disposal dates identified in this Section 7.1, TTL will retain test specimens and/or drilling samples for a mutually acceptable storage charge.

SECTION 8. DISCOVERY OF UNANTICIPATED TOXIC OR HAZARDOUS MATERIALS

8.1 Client warrants that a reasonable effort to inform TTL of known or suspected toxic or hazardous materials on or near the project site has been made. TTL acknowledges client has informed them the site is adjacent to a former landfill

8.2 Hazardous or toxic materials may exist at a site where there is no reason to believe they could or should be present. TTL and Client agree that the discovery of unanticipated toxic or hazardous materials will (unless agreed otherwise in writing by TTL and Client following the discovery of such materials) constitute a changed condition mandating a renegotiation of the Work Authorized or termination of services. TTL and Client also agree that the discovery of unanticipated toxic or hazardous materials may make it necessary for TTL to take immediate measures to protect health and safety. In such event, Client appoints TTL as Client's Limited Agent in connection with such immediate measures. Client agrees to compensate TTL for any costs it may incur, such as, but not limited to, equipment decontamination costs or other costs incident to the discovery of unanticipated toxic substances or hazardous waste, and (recognizing that in such situations initial information can be inadequate or incorrect, and that WDH 11/30/12

TTL will act upon such information in good faith) to fully indemnify TTL to the extent permitted under Tennessee law for all costs, expenses and liabilities, including reasonable attorney's fees, experienced by TTL in connection therewith except to the extent of TTL's negligence, subject always to the limitation of liability set out elsewhere in this agreement. WDH 11/30/12

8.3 During the performance of the Work Authorized, TTL agrees to notify Client when unanticipated toxic or hazardous materials or suspected toxic or hazardous materials are encountered. Client agrees to make any disclosures required by law to the appropriate governing agencies. Client also agrees to hold TTL harmless to the extent permitted under Tennessee Law for any and all consequences of disclosures made by TTL which are required by governing law or professional ethical canons. In the event the project site is not owned by Client, Client recognizes that it is the Client's responsibility to inform the property owner of the discovery of unanticipated toxic or hazardous materials or suspected toxic or hazardous materials. WDH 11/30/12

8.4 Notwithstanding any other provision of this Agreement, Client waives any claim against TTL, and to the maximum extent permitted by law, agrees to defend, indemnify, and hold TTL harmless to the extent permitted under Tennessee Law from any claim, liability, and/or defense costs for injury or loss arising from TTL's discovery of unanticipated toxic or hazardous materials or suspected toxic or hazardous materials, including, but not limited to, any costs created by delay of the Work Authorized, delay of Client's project and/or cost associated with possible reduction of the property's value. WDH 11/30/12

8.5 Client will be responsible for ultimate proper disposal of any samples secured by TTL which are found to be contaminated.

8.6 In connection with toxic or hazardous substances or constituents and to the maximum extent permitted by applicable law, as a fundamental consideration to induce TTL to perform its services, Client agrees to defend, hold harmless and indemnify TTL to the extent permitted under Tennessee law from and against any and all claims, liabilities, or judgments, except to the extent finally determined as being caused by TTL's negligence or willful misconduct, resulting from: WDH 11/30/12

A. Client's (or any person or entity sharing legal liability with Client) violation of any federal, state, or local statue, regulation or ordinance relating to the management or disposal of toxic or hazardous substances or constituents;

B. Client's (or any person or entity sharing legal liability with the Client) undertaking of or arrangement for the handling, removal, treatment, storage, transportation or disposal of toxic or hazardous substances or constituents found or identified at the site;

C. Toxic or hazardous substances or constituents introduced at the site by Client (or any person or entity sharing legal liability with Client) before, during or after the completion of TTL's services;

D. Allegations that TTL is a handler, generator, operator, treater, storer, transporter, or disposer unless expressly retained by Client for such services under the Resource Conservation and Recovery Act of 1976 as amended or any other similar federal, state or local regulation or law due to TTL's services; and

E. Any suit or claim for damages against TTL by, through or on behalf of Client, alleging strict liability, personal injury (including death) or property damage from exposure to or release of toxic or hazardous substances or constituents at or from the project site before, during or after completion of TTL's services under this Agreement.

SECTION 9. BIOLOGICAL POLLUTANTS

9.1 Except to the degree specified in an accompanying proposal letter, TTL's work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. The term "Biological Pollutants" includes, but is not limited to molds, fungi, spores, bacteria, viruses, and/or any of their byproducts. TTL's Instruments of Service will not include any interpretations, recommendations, findings, or conclusions pertaining to Biological Pollutants. Client agrees that TTL has no liability for any claims alleging a failure to investigate, detect, prevent, assess, or make recommendations for preventing, controlling, or abating Biological Pollutants.

SECTION 10. INSURANCE

10.1 TTL represents and warrants that it and its agents, staff, and consultants are protected by worker's compensation insurance to the extent required by law. TTL maintains insurance coverage for general liability, automobiles, and professional errors and omissions in a minimum amount of $1,000,000 per coverage as ~~TTL deems to be adequate and subject to commercial availability~~. Certificates for all such policies of insurance will be provided to Client, if Client so requests in writing. WDH 11/30/12

SECTION 11. INVOICES

11.1 The Work Authorized will be accomplished in a timely, workmanlike, and professional manner by **TTL**, at the unit fees quoted, or as otherwise agreed herein. If, during the execution of the Work Authorized, **TTL** is required to stop operations as a result of changes in the Work Authorized, such as requests by the Client or requirements of third parties, additional charges may be applicable.

11.2 As deemed appropriate by **TTL**, Client may be required to complete a credit application and/or obtain personal or corporate guaranties prior to the commencement of or during the performance of the Work Authorized.

11.3 TTL will submit invoices to Client on a monthly basis and a final bill upon completion of the Work Authorized. Invoices will show charges for different personnel and expense classifications if the work is performed on a time and materials basis. A more detailed separation of charges and back-up data can be provided upon Client's specific prior written request.

11.4 Payment is due upon presentation of Invoice and is past due thirty (30) days after the Invoice date. If payment is not received by **TTL** within 30 days from the date of **TTL's** Invoice, Client agrees to pay the lesser of 1 ½ % per month or the maximum rate allowed by law, on the past due amount until the amount is paid in full, plus the hourly rate for the time of **TTL's** employees, reasonable attorney fees, and all other costs incurred by **TTL** in collecting the amounts due **TTL** under this Agreement.

SECTION 12. TERMINATION

12.1 The agreement between **TTL** and Client may be terminated by either party upon seven (7) days written notice to the other in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, **TTL** shall be paid for services performed to the termination notice date plus reasonable termination expenses. If Client fails to pay **TTL**, then this termination provision shall be governed by the language in paragraph 6.5 concerning termination, return of documents, destruction of electronic copies and waivers of claims by Client for suspension of services by **TTL** for non-payment.

13. DISPUTE RESOLUTION

13.1 In the unlikely event a dispute or claim or breach arises out of this Agreement, the parties will attempt to settle the dispute between each other. Failing that, the parties agree to settle any such dispute, claim, or breach through Mediation, where a non-biased mediator is chosen by the American Arbitration Association (AAA); however, this mediation provision shall not apply to disputes regarding payment of **TTL's** fees where this may be a violation of state or applicable law. Notwithstanding anything above to the contrary, the parties agree that the mediation proceedings shall be held in ~~Tuscaloosa, Alabama~~. Rutherford County, Tennessee

UWJR 11/30/12

13.2 Either **TTL** or Client may demand mediation at any point. Upon demand for mediation by either **TTL** or Client, the parties shall attempt to select a mediator within 3 business days.

13.2.1 If the parties are unsuccessful, the mediator shall be selected pursuant to the mediation rules and from the AAA mediation panel by AAA.

13.2.2 The costs of the mediation shall be borne equally by the parties.

13.2.3 The mediation shall be held within 30 business days of the demand for mediation.

13.2.4 If the parties are unable to resolve the matter through mediation, absent any contrary agreement in writing between the parties, either party may institute litigation, and it is agreed that no offers, communications, presentations or evidence made or presented in the course of the mediation shall be admissible in the litigation.

13.2.5 This dispute resolution section (or any subparagraph hereof) shall not interfere with or impede (or be construed to interfere with or impede) any rights of **TTL** and any waiver of claims by Client under paragraph 6.5.

13.2.6 Any litigation of a dispute relative to the amount owed **TTL** under an invoice after mediation has failed shall be limited only to the amount owed under the invoice, and it is further agreed that any such litigation shall be for the sole purpose of deciding whether or not Client owed **TTL** none, some or all of the invoice amount, plus applicable interest, fees, costs, etc.

13.2.7 In the event that a mediation settlement or any litigation between the parties results in the Client owing less than the amount demanded by **TTL** under its invoice per Paragraph 6.5, then Client agrees that Client's sole remedy in all events in any such litigation over the invoice amount shall be limited to a refund of any monies paid to **TTL**

pursuant to the invoice for which **TTL** has demanded payment and which a reviewing court finds were not owed, plus interest on such amount at the Prime Rate as of the date of payment by Client to **TTL** as set out in the Wall Street Journal.

13.2.8 It is agreed that any and all claims of whatsoever nature relating to or arising out of Client liabilities, losses, expenses, costs, fees and the like (of every kind and nature whatsoever) which result directly or indirectly from **TTL's** suspension of services (and demand for return of "documents") following client's failure to pay an invoice in full after **TTL's** demand for payment, plus any and all associated or derivative or related claims or rights to payment or other relief of whatsoever nature are irrevocably waived by Client in Paragraph 6.5 and may not be asserted in any mediation or litigation.

SECTION 14. OPINIONS OF COST

14.1 If requested, **TTL** will use its professional efforts and experience on similar projects in an attempt to provide order-of-magnitude opinions or estimates of costs for remediation or construction as appropriate based on reasonably available data, **TTL's** designs or **TTL's** recommendations. However, such opinions are intended primarily to provide information on the order of magnitude or scale of such costs and **are not** intended for use in firm budgeting or negotiation unless specifically agreed otherwise, in writing with **TTL**. Client understands that the actual costs of such work depend heavily on regional economics, local construction practices, material availability, site conditions, weather conditions, contractor skills, legal requirements, applicable building codes, and many other factors beyond **TTL's** control.

SECTION 15. ASSIGNS

15.1 Neither the Client nor **TTL** may delegate, assign, sublet or transfer their duties under or interest in this Agreement without the prior written consent of the other party.

SECTION 16. SEVERABILITY

16.1 Any term or provision of this Agreement found to be invalid under any applicable statute or rule of law shall be deemed omitted and the remainder of this Agreement shall remain in full force and effect.

SECTION 17. GOVERNING LAW

17.1 Client and **TTL** agree that this Agreement and any legal actions concerning its validity, interpretation and performance shall be governed by the laws of the State of ~~Alabama~~. Tennessee

WDH 11/30/12

SECTION 18. ENTIRE AGREEMENT

18.1 This Agreement and its attachments constitute the entire agreement between **TTL** and Client. All understandings and agreements heretofore reached by and between **TTL** and Client are merged into this agreement, which alone fully and completely expresses their understandings. No representation or warranty made by any party which is not contained herein or expressly referred to herein has been relied on by any party entering into this Agreement. Nothing under this Agreement shall be construed to give any rights or benefits in this Agreement to anyone other than the Client and **TTL**, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of the Client (Owner) and **TTL** and not for the benefit of any other party.

AUTHORIZED BY (Client Signature) _____
(Signature warrants his/her authority to bind the entity represented herein)

PRINT NAME AND TITLE _____ **Date** _____

TTL APPROVAL BY _____

PRINT NAME AND TITLE _____ **Date** _____

. . . creating a better quality of life

MEMORANDUM

DATE: August 15, 2016

TO: Water and Sewer Board

FROM: Valerie H. Smith

RE: John Rice Boulevard Widening
Hwy 96 to Just North of Doe Drive
Proposal for Engineering Services

Background

The City is moving forward with the design to reconstruct and widen the above portion of John Rice Boulevard. Typically the Department's policy is to replace and upgrade the existing water and sewer mains with new roadway reconstruction projects to avoid having old lines within a new road. However, the water and sewer mains along this stretch are adequate and is fairly young so a full replacement is not necessary. What is necessary is to extend a few water stubs to properties so John Rice will not have to be open-cut for future development.

The City is under contract with SEC Engineering, Inc. (SEC) to design the roadway improvements and as matter of standard practice, staff has requested a proposal from SEC to design the water improvements.

SEC has provided their proposal on an hourly rate bases with a not to exceed amount of $6,500.

Recommendation

Staff would like to recommend the Board to recommend approval from the City Council the proposal for engineering design services in the amount not to exceed $6,500.

Fiscal Impact

This project was not a planned project listed in the 5-year capital improvement plan. Once an estimate is prepared, the construction costs will be factored in. This project is proposed to be funded from working capital reserves.

Attachments

Proposal SEC, Inc.
Exhibit of Project Area

SEC, Inc.
SITE ENGINEERING CONSULTANTS
Engineering • Surveying • Land Planning
850 Middle Tennessee Blvd, Murfreesboro, TN 37129
www.sec-civil.com • 615-890-7901 • fax 615-895-2567

July 7, 2016

Mrs. Valerie Smith, P.E.
Murfreesboro Water and Sewer Department
220 NW Broad Street
Murfreesboro, TN 37130

RE: John Rice Boulevard
Proposal for Engineering Services
SEC Project No. 02012

Dear Valerie:

We appreciate this opportunity to submit our proposal for the design of water line extensions associated with the road widening project. As you are aware, the project is presently in the early stages of design.

Based on our meeting held July 1st, the scope of work will consist of two (2) waterline extensions across John Rice Boulevard for approximately 200 feet of new waterline. This proposal covers the design services, bidding and construction administration phases.

We propose to provide all services on an hourly rate basis with a total fee not to exceed $6,500. Services we anticipate are plan submittal to TDEC, shop drawing reviews, construction meetings, and processing contractor's pay requests. Additional services beyond the scope stated above would be provided as requested and charged at our firm's then current hourly rates. Presently, our hourly rates are as follows:

CIVIL ENGINEERING AND LAND SURVEYING
HOURLY RATE SCHEDULE

Principal Engineer	$145/hour
Senior Engineer	$125/hour
Senior Surveyor	$120/hour
Survey Manager	$110 /hour
Design Engineer	$100/hour
Landscape Architect	$100/hour
Staff R.L.S	$100/hour
Site Designer	$ 80/hour
Survey Technician	$ 65/hour
Staff Technician	$ 50/hour
Technical/Clerical Support	$ 50/hour
2-Man Survey Crew	$105/hour
3-Man Survey Crew	$145/hour
GPS Survey Crew	$135/hour
1-Man GPS/Robotic Crew	$100/hour

If our proposal as outlined in this correspondence is acceptable to you, your acceptance may be acknowledged by your signature on the line provided below. If you should desire to accept this proposal, we would normally bill at monthly intervals based on the percentage of completion as we progress. Our accounts are due and payable within thirty (30) days of the date of invoice and are assessed a late payment charge of 1.5% per month of the overdue amount. Should you need any clarification concerning this proposal, please feel free to contact me.

Respectfully,

Douglas Jenkins, P.E.
Design Engineer
SEC, Inc.

ACCEPTED BY:_____DATE:_____

MURFREESBORO WATER AND SEWER DEPARTMENT

John R Rice Blvd Widening

SCALE : 1" = 1,000'

August 2016
TAB

JohnRice.mxd

. . . creating a better quality of life

MEMORANDUM

DATE: August 17, 2016

TO: Water and Sewer Board

FROM: Valerie H. Smith

RE: St. Clair Street Improvements
N. Walnut to Memorial Blvd.
Proposal for Engineering Services

Background

The City is moving forward with the design to reconstruct and widen the above portion of St. Clair Street. Typically the Department's policy is to replace and upgrade the existing water and sewer mains with new roadway reconstruction projects to avoid having old lines within a new road. The water mains along this stretch are 10" and 12" cast iron lines installed in 1969. Staff will replace these old lines with new 12" ductile iron. The sewer main along this stretch is an 18" Interceptor. The sewer system in this area has been re-configured so Huddleston Steele along with staff will be evaluating whether to replace this 18" with a smaller main.

The City is under contract with Huddleston Steele Engineering, Inc. (H/S) to design the roadway improvements and as matter of standard practice, staff has requested a proposal from H/S to design the water and sewer improvements.

H/S has provided their proposal on an hourly rate bases with a not to exceed amount of $9,000.

Recommendation

Staff would like to recommend the Board to recommend approval from the City Council the proposal for engineering design services in the amount not to exceed $9,000.

Fiscal Impact

This project was not a planned project listed in the 5-year capital improvement plan. Once an estimate is prepared, the construction costs will be factored in. This project is proposed to be funded from working capital reserves.

Attachments

Proposal H/S, Inc.
Exhibit of Project Area

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

HUDDLESTON-STEELE
ENGINEERING, INC.
2115 N.W. Broad Street • Murfreesboro, TN 37129 • Engineering 615-893-4084 • Surveying 615-890-0372 • Fax 615-893-0080

August 16, 2016

Ms. Valerie Smith, P.E.
Assistant Director
Murfreesboro Water & Sewer Department
220 N. W. Broad Street
Murfreesboro, TN 37130
Email: vsmith@murfreesborotn.gov

Re: Proposal for Civil Engineering Services
St. Clair Street
Sanitary Sewer and Water Line Improvements
Murfreesboro, Tennessee

Dear Ms. Smith:

Thank you for the opportunity to submit this proposal for Civil Engineering Services on the above-referenced project.

We will provide land surveying and preliminary and final design plans for Sanitary Sewer and Water Line Improvements in conjunction with our Roadway Improvement Plans for St. Clair Street for the City of Murfreesboro. We also will perform bidding and negotiating phase and construction phase services for these Sanitary Sewer and Water Line Improvements. We will perform this work for our standard hourly rates as follows:

Principal	$150.00/Hr.
Engineer, Surveyor of Senior Planner	$110.00/Hr.
Landscape Architect	$125.00Hr.
Survey Crew (GPS)	$160.00/Hr.
Survey Crew (Construction Layout)	$145.00/Hr.
Survey Crew (Other)	$110.00/Hr.
Technician	$80.00/Hr.
Technical/Clerical Support	$55.00/Hr.

We will perform this work for our standard hourly rates above, the total of which shall not exceed $9,000.00.

Please contact us if you have any questions or comments. We look forward to working with you on this project.

Sincerely,

HUDDLESTON-STEELE ENGINEERING, INC.

William H. Huddleston IV, P.E., R.L.S.

Accepted_____ Date_____

Title: _____

MURFREESBORO WATER AND SEWER DEPARTMENT

Saint Clair Street Improvements

SCALE : 1" = 100'

August 2016
TAB

MWSD

StClairSt.mxd

MINUTES
MURFREESBORO WATER AND SEWER BOARD
August 2, 2016

The Murfreesboro Water and Sewer Board met on Tuesday, August 2, 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. Ron Washington, Mr. Brian Kidd, Ms. Sandra Trail, and Dr. Al Carter. Also present were Darren Gore, Valerie Smith, Michele Pinkston, David Ives, Craig Tindall, Doug Swann, Steve Tate, Terry Taylor, Jimmy Stacey, Donald Hughes, Brian Pollock, Sharon Seibert, Randy McCullough, Alison McGee, Daniel Tribble, Sam Huddleston, Lynda Sullivan, Mike Bernard, Travis Wilson, Mac Nolen, and Hannah Kate Marrs, along with other members of the public.

Mr. Sant Amour administered the Oath of Office to Mr. Brian Kidd as the newest member of the Water and Sewer Board.

The Consent Agenda was presented for the following considerations:

A. Consider purchase of flow monitors and rain gauge –

Currently, the Department is contracted with ADS, LLC to operate and maintain the Department's 19 permanent flow monitors and 7 rain gauges within the sewer system. As of now, out of the 19 monitors, there are four remaining that are an older model of flow monitor called the Flowshark. These have been budgeted to be replaced because ADS has received notifications from AT&T to phase out the monitors and rain gauges that required the "2G" network. The Flowshark Models use this "2G" network.

With the replacement of the old flow monitors, staff also budgeted to install stand-alone Rain Alert III rain gauges along with a replacement of one tipping bucket. Six of the 7 rain gauges utilized the old Flowshark monitors that are being phased out. ADS has developed these new Rain Alert III gauges as replacements.

Staff has taken a phased approach for replacement of all of this equipment and these purchases will conclude our replacements. ADS is also continuing to offer the trade-in value of $1,500 each.

In addition to budgeting the replacement of the monitors, staff budgeted to install one additional monitor for the Joe B Jackson "Area". This Area is currently added into the MF12 flow basin. This new basin will be called MF12A. With all of the construction and growth in this Area a monitor will help determine if a section of line is damaged during construction for the short term, but also help staff determine if I/I starts occurring in the system for the long term.

Funding for the replacement of four monitors, purchase of one new monitor, the replacement of 6 rain gauges and one tipping bucket was approved within the 2016/2017 Rate Funded Capital Budget at a total of $44,740.

Staff recommended the Board recommend approval from the City Council to purchase the 5 monitors, 6 rain gauges and one tipping budget in the amount of $38,887.41, which is $5,852.59 under budget.

B. Consider purchase of Rockwell Automation TechConnect Software Support –

The Department's current Rockwell Automation software support will expire on July 31, 2016. The Department uses the Rockwell Automation applications to run, program, connect, and view the collection and water treatment control systems. It is critical that these control systems continue to function as needed to enable the processes to run. This TechConnect Support includes technical support for any issues with the systems and software updates.

The pricing is available single sourced from our appointed distributor, Stuart C. Irby Co.

Staff recommended the Board recommend to City Council approving the purchase of the TechConnect Support for 1 year in the amount of $9,936.

Funding for the support would come from prepaid maintenance accounts for water and wastewater in the Department's approved FY17 operating accounts. A multi-year option is available, which locks in the current price for 3 years for a cost of $29,808. The 3-year term will not be a viable option because the current legacy hardware support will be removed when the wastewater plant controls are replaced in the 4D expansion project.

C. Consider purchase of streaming current charge analyzer at SRWTP –

The Stones River Water Treatment Plant uses a Streaming Current Charge Analyzer to optimize coagulant and polymer dosing. This piece of equipment is instrumental to maintaining a stable dosage for treatment. A Streaming Current Charge Analyzer has failed and needs to be replaced as soon as possible.

Staff received a quote from Chemtrac, Inc. the sole source vendor for Chemtrac, Inc. manufactured equipment.

Staff recommended the Board recommend the City Council approve the purchase of the Streaming Current Charge Analyzer in accordance with the quote provided by Chemtrac, Inc.

The cost of the Streaming Current Charge Analyzer is $10,593. Total cost of the instrument will come from rate funded capital reserves.

D. Consider sole source purchase of Pit Raider and Nutri Pro odor control products –

The Department has been using the odor control product called "Pit Raider" and "Nutri Pro" developed and furnished by State Chemical since 2013. These chemicals are being fed through the Kensington Pump Station to Saratoga Subdivision to control ongoing odor issues. Since the Department started using these products, the odor in this area has been all but eliminated. This worked to eliminate resident complaints. To keep costs down, the Department works closely with a State Chemical representative who performs weekly visits to develop optimal feed rates during summer dry and winter wet months.

Staff recommended the Board recommend City Council approve the sole source purchase of Pit Raider and Nutri Pro odor control from State Industrial Products.

State Chemical pricing for the Pit Raider and Nutri Pro will remain the same through the FY 2016/2017. The cost of the product used during last year's budget was $45,732.87. The Department has budgeted $50,000.

E. Consider parking lot sealant contract renewal –

On May 21, 2015, bids were opened at Operations and Maintenance to prepare surfaces, seal asphalt, and repaint traffic markings for the parking lots located at the Administration Building, Operations & Maintenance, and Water Plant. Staff received three bids and accepted the lowest from Pavement Restorations. Staff was satisfied with the quality of work provided and the project was completed in a timely fashion.

Staff recommended extending the contract term for an additional 2 year period with the entire contract not to exceed 5 years.

Staff anticipates an $8,500 expense to furnish sealcoating services to various pump station locations. The funding for this project was included in the collection and sewer rehab capital budget 2016-2017.

F. Consider herbicide treatment contract extension –

Parrot feather (Myriophyllum aquaticum) is an invasive, non-native plant that thrives in spring-fed, slow moving waters. Native to South America, it is a detriment to native flora and fauna here. Since 2006 or 2007, it has been present in Murfree Spring wetlands. Between the fall of 2011 and spring of 2014, the City employed an aquatic weed specialist to apply herbicides to reduce and control the parrot feather in the Murfree Spring wetlands. Without treatment in 2014, the parrot feather returned to cover a large part of the wetland.

After considering two or three methods for management of the parrot feather, staff concluded it best to continue herbicide treatments. The City contracted with Aqua Services in 2015 for one year of treatment with provision for a second year.

In addition to this treatment, a Murfree Spring wetlands task force is developing a management plan for maintaining the wetlands as a park and a sensitive ecosystem. The task force formed earlier this year is comprised of staff from Urban Environmental, Parks and Recreation, Engineering, and Water and Sewer.

Staff recommended that the Board recommend to City Council extension of the contract with Aqua Services, for a second year of herbicide application to combat the parrot feather at the Murfree Spring wetlands.

Cost will be $22,200, and funds will be drawn from the stormwater fund. The FY 2016-17 budget includes $30,000 for invasive plant treatments.

G. Consider Work Change Directive for Middle Tennessee Boulevard project –

This project was originally bid June 2, 2015 and then re-bid October 8, 2015. Jarrett Builders, Inc. was awarded the project by City Council at the November 19, 2015 meeting. The total water and sewer bid was in the amount of $1,640,567.50.

A notice to proceed was issued on January 11, 2016 and construction is well underway. During the re-construction of the sewer main extending from Bell Street north along MTB it was determined that an existing 8" sewer service extended from the existing sewer main over to the MTSU Alumni Gym. This sewer service was not shown as existing in our GIS maps. This service being unknown along with the fact that the sewer main replacement was designed by Wiser Company shallower than the existing sewer was going to require the entire length of sewer service from MTB to the Gym to be re-laid. The distance from MTB is over 200 feet in length and crosses multiple utilities both public and private. A better route was determined, which was to re-route the existing service over to Faulkinberry Drive. Either replacement scenario will require the installation of two manholes, but extending the sewer from Faulkinberry is only 182 feet and doesn't cross as many utilities.

Staff recommended the Board recommend to City Council approval of the Work Change Directive to replace the 8"sewer service with an 8" sewer main to the Alumni Gym. This work will be added to a future Change Order for the project and will increase the contract in the amount of $32,320.

H. Consider Change Order 2 for 2015 Sanitary Sewer Rehabilitation –

Bids were received for the 2015 Sewer Rehabilitation project on October 13, 2015 and the Board approved to award the project to SBW Constructors, LLC (SBW) in the amount of $2,737,276.90. At the April 2016 Board meeting, Change Order #1 was approved.

One of the items within Change Order #1 was for SBW to sand-blast, clean and coat the inside of the VA Pump Station dry-pit (PS#28) with an epoxy coating. This work is going to be in conjunction with the work on the pump station wet well, which is also being completed per the original contract amount with SBW. SBW has agreed to perform this work at the time that John Bouchard, through our Mechanical & Electrical Services Contract, will be changing and upsizing the pumps within the station.

The pumps for the John Bouchard work are not scheduled for delivery until August which is after the July 12th completion date for the contract with SBW. Therefore, this change order is to request additional time so all of the work can take place at the same time.

The requested time is for 80 days. This will give time for the pumps to be delivered as well as time for coordination and installation between John Bouchard and SBW.

Staff recommended the Board recommend approval from the City Council for Change Order #2 to add 80 additional days to the contract.

Funding is coming from the 2014/2015 & 2015/2016 Rate Funded Rehabilitation Budgets & 2014/2015 Working Capital Reserves. The following table shows the remaining allocation.

Rehab Rate Funded Budget 2014/2015				
Total Budget	**WO#**	**Project**	**Project Expenditure**	**Remaining 2014/2015 Budget**
$1,250,000	112.233	Basin MF02,07, 09B & MH's	$158,677.45	$1,091,322.55
	112.369	Rehab Specifications	9,833.75	$1,081,488.80
	112.334	LEA Review of Basins 6-3 & 6-4	$6,922.50	**$1,074,566.30**
Rehab Rate Funded Budget 2015/2016				
Total Budget	**WO#**	**Project**	**Project Expenditure**	**Remaining 2015/2016 Budget**
$1,250,000 + $1,074,566.30	112.369	Rehab Specifications	$5,166.25	$2,319,400.05
	112.466	Rehab Project Design	**$233,250**	**$2,086,150.05**
Working Capital Reserves 2014/2015				
Total Budget	**WO#**	**Project**	**Project Expenditure**	**Remaining 2015/2016 Budget**
$1,000,000 + **$2,086,150.05**	112.142	LMK Demo	$4,650.00	**$3,081,500.05**
	112.467	Rehab Project Construction	**$2,795,063.50**	**$286,436.55**

I. Consider Change Order 4 for NW Broad Street Pump Station Replacements –

Within the original contract, there was a $10,000 Miscellaneous Allowance set up to be used for unforeseen circumstances and small miscellaneous changes to the project. Within the previous three change orders it has been approved to use $4,705 of this allowance for various changes.

Civil Infrastructure Associates (CIA) requests the additional use of this allowance in the amount of $2,200, for the upsize of the access gate. A total of $3,095 will remain.

Also being requested, through Change Order #4 is 45 additional days to complete the project. J. Cumby Construction (Cumby) and their sub-contractor has experienced numerous problems with the bore under NW Broad Street. Cumby cannot complete the remaining gravity sewer construction and landscaping in front of the Kubota until the bore is complete. This additional time will give them time to install the landscaping at a more appropriate time of the year as well.

Staff recommended the Board recommend to City Council approval of Change Order #4 to add 45 days to the construction contract time. The work completed through the Miscellaneous Allowance does not change the original contract amount.

J. Consider a proposal for professional services from Neil-Schaffer for Spence Creek Watershed Study –

Neil-Schaffer (NS) submitted a proposal to provide a budget amendment for the current Spence Creek Watershed Study and a Phase 2 Proposal to submit a request for a Conditional Letter of Map Amendment (CLOMR) to FEMA.

In March 2014, the City of Murfreesboro authorized NS to conduct the Spence Creek Watershed Study in an area located along New Salem Highway (State Route 99) west of Interstate 24. The purpose was to study an existing flooding condition on Spence Creek at St. Andrews Drive, update the flood study of Spence Creek, and perform a water quality evaluation of Spence Creek. The study is approximately 80% complete.

During the course of the study, NS coordinated and evaluated several proposed modifications to St. Andrews Drive crossing at Spence Creek between the City and the roadway designer. Because of the complexity of the crossing as an existing floodplain, existing utilities, existing homes, and limited ROW and easements, these complex evaluation and models could not be anticipated in the initial scoping. However, as a significant goal of the Watershed Study, staff determined that this level of evaluation and modeling was appropriate to address the existing flooding condition at this location.

During the performance period of the study, staff engaged the Tennessee Department of Transportation (TDOT) regarding the improvements to New Salem Highway (State Route 99). It was determined that the modifications proposed along Spence Creek would be best addressed in the flood study of this Watershed Study. Therefore, NS incorporated additional study information on the proposed New Salem Highway improvements.

Staff then discussed study strategy and approval approach with FEMA Region 4 and their FEMA Map Update contractor. FEMA Region 4 indicated the most appropriate method to incorporate the flood study work, proposed modifications to St. Andrews Drive, and proposed modifications to New Salem Highway along Spence Creek was to submit a request for a Conditional Letter of Map Revisions (CLOMR) for review and approval by FEMA.

NS provided a proposal for a budget amendment to Phase 1 for $30,000. Additionally, NS proposes to complete the CLOMR submittal for $75,500 for a total of $105,500.

Staff recommended approval of the NS proposal for $105,500 from the Stormwater Capital Reserves.

K. Consider a proposal for engineering services from Huddleston-Steele Engineering for North Murfreesboro Drainage Study –

Huddleston Steele Engineering (HSE) submitted a proposal to provide pre-bid, bid, and construction phase services for Basins 1, 2, 23, and 24 (Haynes Drive and Memorial Boulevard) in the North Murfreesboro Drainage Study.

In June 2010, the City of Murfreesboro authorized HSE to conduct the North Murfreesboro Drainage Study in an area located along and east and west of Memorial Boulevard between Haynes Drive and Thompson Lane. The study resulted in the identification, characterization, and evaluation of 25 sub-area drainage basins. Basins 1, 2, 23, and 24 were identified as needing additional study and surveying to address water quality and existing drainage system inadequacies. In October 2012, HSE was authorized to

conduct a Preliminary Engineering and Surveying Task. Later, HSE conducted 6 detailed easement surveys of properties in Basins 1, 2, 23, and 24. Based on discussions with City staff, City Administration, and the design team, the project is ready to progress to the next stage. To that end, HSE has provided a proposal for pre-bid, bid, and construction phase services in three phases for a total of $32,500.

Staff recommended approval of the HSE proposal for $32,500 from the Stormwater Capital Reserve.

L. Consider a proposal for additional geotechnical engineering services and materials testing from TTL, Inc. for SCWWTP Phase 4D Expansion –

At the February 2015 meeting, the Board approved a proposal from TTL, Inc. to perform geotechnical engineering services and materials testing during the proposed construction of the Sinking Creek Wastewater Treatment Plant Phase 4D Expansion. Their proposal was estimated using the number of trips to the site, the number of inspections as well as the number of concrete tests that would be required during construction, which is based on the information provided from 3D Enterprises and Smith Seckman Reid (SSR).

TTL has worked for the Department in the past on the Headworks and Southwest Pump Station projects and their estimations were fairly correct. However, it came to staff's attention last month that the total invoiced amount was approaching the total previously approved by the Board, which was $76,000. After a call to TTL and SSR, staff realized that the work TTL was to perform was not near complete. Therefore, TTL provided an explanation and requested to approve an additional $70,000 to complete the project.

The original proposal as well as this additional proposal is on a time and materials basis and per the unit pricing in the construction testing schedule originally submitted.

Staff recommended that the Board recommend to City Council approval of the additional $70,000 for the geotechnical engineering services and materials testing associated with the construction of the Sinking Creek Wastewater Treatment Plant Phase 4D Expansion.

Funding the engineering services is recommended to come from the secured SRF loans designated for the Phase 4D Expansion project.

M. Consider MED power contracts for SRWTP –

Department staff was contacted by Murfreesboro Electric Department (MED) regarding power contracts. It has been the practice of MED, in the past, to not obtain a power contract for any account that belongs to the City of Murfreesboro. However, TVA requires power contracts on all customers whose demand exceeds 1000 kW regardless if the customer is considered governmental, commercial, industrial, non-profit, etc. During a recent audit by TVA, two of our accounts were flagged for not having a power contract since the demand for these accounts exceeded 1000 kW. Both of these accounts are for the Stones River Water Treatment Plant at 5528 Sam Jared Dr. Account 18034-063 establishes a 1500 kW demand,

based upon the 1500 KVA transformer and the second account, 180434-064, establishes a 2500 kW demand, based upon the 2500 KVA transformer.

The power contracts that were originally submitted were the same format that MED used for every other customer; however, these contracts have been reviewed, revised and approved as to form by the City's Legal Department. These contracts will not change any of the services provided to us, they just establish a formal agreement for providing power.

None of the accounts have exceeded the maximum demand that has been established for them.

Staff recommended that the Board recommend to City Council approval of the power contracts.

N. Notification of emergency purchase of replacement aerator impellor at SCWWTP –

On July 14th at the Sinking Creek Treatment Plant, the submerged portion of the shaft of 1B Aerator at the Carrousels™ tore into two pieces. The 4,000 pound impellor fell to the bottom of the 17' deep oxidation ditch. This immediately impacted the plant's ability to nitrify and meet NPDES permit limit for ammonia (2.0 mg/L daily average, 1.5 mg/L weekly average, and 1.0 mg/L monthly average). No exceedances have occurred yet. The daily average peaked on July 17th at 1.41 mg/L. It is currently less than 1.0 mg/L and is holding steady. However, the potential for an exceedance is significant.

Operations is actively managing all processes to equipment limits. Additionally, large air compressors have been rented and are being used to supply oxygen to the biological process on a temporary basis.

Staff, John Bouchard & Sons (the Department's mechanical and electrical contractor), and the equipment manufacturer, Ovivo, have determined that the impellor is damaged beyond repair, necessitating the purchase of a replacement. The plant's maintenance staff is working in coordination with John Bouchard & Sons to replace the impellor. A dive team was mobilized to assist in the removal of the impellor from the bottom of the oxidation ditch and all of the work necessary to prepare for the installation of the replacement impellor is currently being completed.

Staff notified the Board and City Council of the emergency purchase of one Replacement Aerator Impellor from Ovivo USA, LLC in the amount of $43,394 from working capital reserves. This is an original equipment manufacturer (OEM) purchase from OVIVO and cannot be competitively bid.

There are available funds in the Department's working capital reserves for the emergency purchase.

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

The June 28, 2016 Board Minutes were unanimously accepted as presented.

The Board considered a proposal for engineering services from SSR, Inc. for Task Order 14-41-018.1, Preparation of Biosolids Master Plan.

Staff had interactions in February of this year with Republic Services, the owner and operator of Middlepoint landfill in the Walter Hill area, regarding odors they were claiming came from the biosolids

generated at the Sinking Creek Plant. The general public was complaining significantly to their State of Tennessee congressman, who in turn forced a response and subsequent action plan by Republic Services.

Staff asserted at that time and still maintains the assertion that the biosolids were not the cause of the odor at the landfill. MWSD dumps approximately 75 tons per day at Middlepoint, which constitutes 2.5% of the total tonnage of garbage, or 3,000 tons, dumped on a daily basis at the landfill. However, the end result was that MWSD was limited to what times we were allowed to dump biosolids at the landfill.

As somewhat of a fall-out from this interaction, a Mr. Jason Repsher with the Tennessee Department of Environment and Conservation (TDEC) Solid Waste Division met with Mr. John Strickland and conducted a site visit of the Sinking Creek Plant's biosolids facility to see if the odor was as egregious as claimed at the landfill. Mr. Repsher agreed that MWSD's biosolids were most likely not the issue. Mr. Strickland prepared correspondence to TDEC suggesting how MWSD could help and recommended that Republic only limit our windows of time for dumping to "screenings". Ultimately, TDEC agreed to this condition and our permit was modified accordingly.

Staff brought up this history to not only demonstrate how professional our staff handled this challenge, but also to bring up Mr. Repsher's professional opinion that Middlepoint landfill would not be able to accept MWSD's biosolids outside of a 5 year horizon. This came as somewhat of a shock to staff, having always thought we had a 7 to 8 year window. Mr. Repsher stated that while municipal solid waste would have that amount of time, the biosolids would not be able to be dumped due to the steep slopes that would start to form on the face of the landfill.

This epiphany caused staff to start discussing biosolids handling and management sooner than expected. Staff sat down with Smith Seckman and Reid, who has expertise in biosolids management master planning and treatment, and requested a task order that would complement the Water Resource Integration Plan (WRIP) and City Comprehensive Plan (Murfreesboro 2035) currently underway. The WRIP had only allotted around $1,800 to a biosolids evaluation. That is not enough to guide MWSD through the next 20 years. Staff modified a graphic that has been brought before the Board several times that demonstrates the Department's overall goal to balance sustainability with affordability. The WRIP is identified as the longer term planning or parent document to the Department's annual Trends and Strategic Planning Issues document (which is supported by the Department's Information Technology Master Plan and the Effective Utility Management model). The Trends and Strategic Planning document guides our financial planning and financial commitments as well as ultimately controls our annual budget. Staff believes that the Biosolids Master Plan is a companion document to the WRIP. Although biosolids management and handling will be somewhat less significant than how we integrate our water resources, it nonetheless will have a considerable social, economic and environmental impact.

An additional need for this document is to provide support for the City of Murfreesboro's Solid Waste Master Plan. The City's Solid Waste Master Plan is around $250,000 and will be created by Gershman, Brickman and Bratton (GBB). The City dumps approximately 110 tons of garbage on a daily basis as compared to the Department's 75 tons of biosolids per day.

To give the Board an assessment of cost associated with handling and disposing of biosolids, the Department's fiscal year 2015 cost of service study indicates that the total cost of sludge hauling and disposal was $1,078,065. If you add a tipping fee of $35 per ton that a landfill would charge, you are adding $958,125 annual costs to the operation.

Similar to the WRIP, the Biosolids Master Plan is intended to provide pragmatic solutions to anticipated growth by leveraging existing infrastructure, but also to provide vision regarding paradigm shifts occurring within the water utility industry.

There is cause for optimism; as water is able to be beneficially reused, so can biosolids. Biosolids are a local and renewable resource. Their reuse is the ultimate in recycling. We have the potential (based on the business case) of taking something that was considered a waste, treating it, and converting it to a valuable product and using it to benefit the environment. There is attractiveness to the environmental and social benefit of reusing something that was once considered a waste.

Biosolids are a great soil conditioner. They contain slow-releasing nutrients that are more eco-friendly than chemical fertilizers because they add organic matter to enrich depleted soils and fibrous matter to improve the soil's ability to hold water. Biosolids are highly valued by many - especially farmers - because they contain all of the essential plant nutrients as well as vital organic matter that help plants grow.

Staff recommended the Board recommend that City Council approve SSR Task Order 14-41-018.1 to create a Biosolids Master Plan in support of the City of Murfreesboro's Comprehensive Plan and Solid Waste Master Plan.

The creation of the Biosolids Master Plan is an hourly not to exceed fee of $84,740. The funding for this task order is recommended to come from working capital reserves. This amount has not been programmed into the 5-yr CIP; however, ample funds exist to conduct this study in FY17.

Sandra Trail made a motion to approve. Ron Crabtree seconded. The motion unanimously passed.

The Board considered land acquisition proposed for improvements to Town Creek.

City staff has been approached about their interest in purchasing properties at the corner of South Church Street and Southeast Broad Street. The three parcels are impacted by Town Creek Conveyance Phase 1 project area and staff believes that acquisition of the parcels would simplify the reconstruction of Town Creek and reduce overall construction costs. Staff requested approval for authorization to negotiate and contract for the purchase of three parcels.

Following the construction of Broad Street through the downtown area, The Bottoms Urban Renewal Plan resulted in placing Murfree Springs/Town Creek in culverts in circa-1952. Circa-1970, development plans on the east side of South Church Street resulted in additional culverts being installed across the lot used for KFC. In 2007, a portion of the culvert on KFC failed and the City responded by implementing an emergency replacement project. Video and engineering inspections revealed significant concerns about the condition of the conveyance between Murfree Springs and South Church. City staff then added the system to the Stormwater Capital Improvement Plan for evaluation and reconstruction.

In 2015, Griggs and Maloney was authorized to develop a conceptual design of Town Creek Phase 1. As the conceptual design was advance, several private developers approached the City about redevelopment plans for the three parcels. As site layouts were compared to easements and infrastructures, most of the redevelopment plans failed to meet land development standards. Recently, City staff was approached by a private developer that proposed to work with the City to purchase and redevelop the properties and implement the Town Creek Phase 1 conceptual design. The developer proposed to have the City acquire the property, complete the reconstruction of Town Creek, and sell the remainder developable lot back to the Developer at a pre-determined price. The approach was reviewed with City Administration and they were favorable to begin negotiations.

Staff recommended approval of the land acquisition proposed for improvements to Town Creek with funding of up to $800,000 from the Stormwater Capital Reserve.

There is a potential to recover approximately $400,000 in 2 to 3 years with the future sell of the remainder parcel the proceeds of which would be refunded to the Stormwater Capital Reserves.

Ron Crabtree made a motion to approve. Sandra Trail seconded. The motion unanimously passed.

The Board considered bids for DeJarnette Lane Pump Station #13 Replacement.

In May of 2013 the Board approved the engineering for the replacement of Pump Station #13 along DeJarnette Lane to Huddleston Steele Engineering (H/S). Pump station #13 is located north of DeJarnette Lane across from Oakland High School. This pump station went into service in 1972 and has been in operation for 43 years. The most recent estimate for the project was in the amount of $1M.

The design has been completed and bids were received on July 14th. Only two bids were received out of four plan holders. Even though only two bids were received, they were within $15,000 of each other. H/S recommends awarding the project to W&O Construction in the amount of $1,515,000. They were the lowest responsible and responsive bidder for the project.

Staff recommended the Board recommend to City Council awarding the contract to W&O Construction.

Funding is recommended to come from the Department's working capital reserves. This construction project has been programmed into the Department's 5-year capital improvement plan in the amount of $1M, but there is enough within the reserves account to fund the additional $515,000. The 5-yr CIP has been updated to reflect the adjusted amount.

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

The Board considered SSR, Inc. Amendment #3 to Task Order 09-47-001.3 for 2016 East and West Fork Stones River Bioassessment Sampling.

AquAeTer has completed its water quality and stream assessments for the West and East Fork Stones River commissioned for 2014 and 2015. The bioassessment monitoring results were very encouraging and demonstrate that the West Fork Stones River is healthy and meeting its designated uses. The Department's 2016 draft National Pollution Discharge Elimination System (NPDES) permit incorporated some of these results in the rationale and staff believes the Tennessee Department of Environment and Conservation (TDEC) is open to further dialog about how bioassessment sampling can be incorporated in the Department's 2021 NPDES permit. Staff believes the summary of work and associated task order is necessary to continue this work through the summer and fall of 2016, as a next installment of developing the protocol that we believe will help create a new permitting framework for the City of Murfreesboro with TDEC.

In June 2013 and March of 2014, the Board approved Smith Seckman Reid, Inc. (SSR) and AquAeTer to commence sampling of the East Fork and West Fork Stones River in support of renewing our existing NPDES permit application, and introduce the option to TDEC for an additional outfall on the East Fork Stones River.

These sampling results are intended to support the strategy of approaching TDEC to offer alternate permitting potentials to the City of Murfreesboro as we attempt to get ahead of the growth projected in the City's Murfreesboro 2035 Comprehensive Plan. One of the main overarching goals that the Department has over the next 20 years is to influence the regulatory framework focusing on reclaimed water.

Effluent discharged from "wastewater" plants is no longer a "waste" product, but in fact becoming an ever increasing, sought after commodity. The results of AquAeTer's sampling reinforce the argument that the effluent released from the Sinking Creek Plant actually improves the health of the West Fork Stones River.

SSR and AquAeTer have been assembling a data set that staff believes demonstrates that effluent discharged into West Fork enhances the water quality of the river. The data demonstrates that the biology in the stream is healthy and that the stream is in fact meeting its designated uses.

Staff supplied the Board a summary of future objectives and action items associated with the on-going dialog with TDEC.

1) Demonstrate the Sinking Creek plant's effluent meets the Environmental Protection Agency's (EPA) anti-degradation criteria:
    a. ***Ongoing*** – Through continued biological sampling of the West and East Fork Stones River.
    b. ***Ongoing*** – Through enhanced monitoring techniques such as a 90-day time series Biochemical Oxygen Demand (BOD) test.
    c. ***New*** – Developing a Waste Load Allocation Study that proves there is no anti-degradation ("backsliding") associated with increased effluent BOD/ammonia load to the W. Fork Stones River.
2) ***Completed & Ongoing*** – Initiate attempts to "de-list" the West Fork Stones River from the 303d impaired water bodies list.
3) ***Ongoing*** – Partner with TDEC in the paradigm shift that they are attempting to develop. Develop tactics that TDEC approves as proper implementation protocols and conforms to the new paradigm.
4) ***New*** – Develop a new NPDES permit rationale and framework "prototype" for TDEC review between now and MWSD's 2021 permit renewal.

Staff believes they've made great progress with TDEC in the bioassessment pathway, but they need to meet with them and get their buy-in prior to initiating the waste load allocation modeling pathway.

Staff recommended the Board approve amendment #3 to SSR Task Order 09-47-001.3 to allow for continued biological sampling of the West and East Fork Stones River as well as conducting 90-day time series Biochemical Oxygen Demand (BOD) sampling.

The extension to sampling and monitoring the West and East Fork Stones River is a **net additional fee of $98,920** from previous approved fee ceilings. The table below accounts for the increase in fee to a revised total of $332,181. Staff recommended funding coming from the Department's working capital reserves. MWSD's 5-yr CIP budgeted $375,000 for Stones River Water Quality studies between FY15

through FY17. Staff programmed $50,000 into the 5-yr CIP for FY17. Previous years have had a shortfall of approximately $100,000 on what was budgeted for FY15 and FY16.

Firm	Scope	Original Fee	Amended #1	Amended #2	Amended #3
SSR, Inc.	Complete 2016 NPDES Permit Application	$0	$0	$12,000	$0
SSR, Inc.	Project Management	$25,000	$25,000	$25,000	$0
AquAeTer, Inc.	Sampling of Water Quality Data	$149,000	$162,051	$162,051	$87,500
Laboratory	Testing	$33,000	$34,210	$34,210	$11,420
	TOTAL	**$207,000**	**$221,261**	**$233,261**	**$332,181**

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

The Board considered Septic Tank Effluent Pump (STEP) Design Guidelines for MWSD service area affecting TM 126 Parcel 18.00 on Dilton-Mankin Road.

MWSD has considered operating and maintaining satellite facilities treating sanitary sewer for several years. Staff has worked with Site Engineering Consultants (SEC) along with City Planning and Engineering staff to develop some proposed STEP design criteria for developments beyond MWSD's sanitary sewer central collection system. The primary purpose of these design criteria are to incentivize developments to request annexation into the City limits of Murfreesboro and build to City standards.

A proposed site off of Dilton-Mankin Road just outside the City limits of Murfreesboro brought the need for the City of Murfreesboro to consider becoming operators of STEP systems. The property is annexable under current State law. The site has been preliminarily designed to Rutherford County development standards and Consolidated Utility District (CUD) STEP drip disposal criteria for effluent disposal.

Bill Dunnill, the General Manager for CUD, called MWSD staff several weeks ago to inquire if this site was close enough to MWSD's gravity sanitary sewer system that it should be connected to the City's collection system. Mr. Dunnill even suggested that a future CUD abandoned waterline adjacent to Manchester Pike (US41) would be available to MWSD for conversion to a sanitary sewer force main should MWSD consider a pumping station serve the property.

Staff investigated three scenarios, each having an unknown business case, so we would like to put the decision into the developer's control. The options are as follows:

1) Allow the 8" abandoned water main to act as a casing sleeve for a four (4) or six (6) inch sanitary sewer force main that would convey pumped sewage to the terminus point. The main challenge with this scenario is converting the permanent water easement dedicated to CUD to allow a dedicated easement to the City of Murfreesboro for conveyance of a sewer force main.

2) The development be served by a decentralized STEP treatment system that is owned, operated and maintained by the Murfreesboro Water and Sewer Department. The main challenge with this option is associated with MWSD not having general design guidelines associated with allowable lots, drip dispersal acreage, reserve drip field area, and hydraulic soil loading.

3) Facilitate through cost-sharing an extension of gravity sanitary sewer along the alignment of the Department's 201 Wastewater Facilities Plan and coordinate with the installation of the approved pumping station on the Jones property to serve both developments. The main challenge with this option is acquiring easements on the property to the north of the subject property and the timing associated with the multi-family development on the Jones property and coordinating the installation of a pumping station serving both properties.

Based on a meeting conducted on July 21, 2016 with the Department, the developer and Planning and Engineering staff at City Hall, the developer has stated their intent to pursue option 2, or install a decentralized STEP treatment system.

As this project has moved rather quickly, it was always staff's desire to allow the developer to select the option that provides the best development solution for them. The primary role of MWSD is to incentivize the voluntary request by the property owner to be annexed into the City of Murfreesboro and subsequently have the development built to City standards. The following DRAFT design guidelines accomplishes that objective, and therefore staff recommended the Board adopt the STEP design guidelines developed in conjunction with Site Engineering Consultants, Inc. (SEC). In concert with the STEP system design criteria, staff has developed some pre-requisites that would need to be fulfilled prior to committing to serving a property with a decentralized STEP system.

There are no initial capital costs associated with allowing the referenced property to be developed using a STEP system. Staff anticipates creating a customer class for customers served through a STEP system and seeing that operation and maintenance costs are adequately covered.

DRAFT Design Guidelines for Servicing City Properties through a STEP System

The preliminary conditions for consideration of MWSD to serve a proposed development with a Septic Tank Effluent Pump (STEP) system are:

1) The property must be initially deemed "annexable", as defined by either (i) being contiguous to current Murfreesboro City Limits, or (ii) all owners of all properties between the proposed site and current Murfreesboro City Limits must also consent; and, the developer of the property must request annexation into the City limits of Murfreesboro.
2) Sanitary sewer must be deemed economically unfeasible to extend to the development per MURFREESBORO CITY CODE Chapter 29 SUBDIVISIONS, MAPS AND PLATS, Section 29-10, which states – Where a subdivision or the lots located therein for any reason cannot be economically connected with the City's or other sewerage system, or where for any reason the Council of the City declines to extend its sewerage or service to a subdivision or any of the lots therein, the lots in said subdivision not connected or to be connected to the City's or such other

sewerage system must contain adequate area for installation of approved septic tank and disposal fields based on a percolation test and must be approved in writing by the county health officer.

3) Adequate soils must be available to support the development at a hydraulic loading rate of 0.20 gallons per day per square foot (gpd/sf) and maintain a reserve drip irrigation area of 50% of the approved application area. Per the example provided in SEC's engineering report, this would require 5.17 acres of drip irrigation application area for a 100 lot development.
4) The Planning Dept. and Planning Commission would need to approve the development in accordance with all applicable zoning requirements and engineering design standards.

The City's ordinance would need to be amended to accommodate two (2) specific items:

1) Collection of fees for treating sewerage through a STEP system. The proposed MWSD STEP rate structure would be recommended to align with CUD's STEP rate structure which is a flat rate of $28.00 per month plus $2.00 per thousand gallons of all consumption; and,
2) Exclusion of single family units and single family unit equivalents from system development charges (a.k.a., connection fees) and special sanitary sewer assessment fees. Since these developments would not be "buying in" to the capacity of the central collection and treatment system, the aforementioned charges and fees should not be applied.

Sandra Trail made a motion to approve the DRAFT Guidelines for Servicing City Properties through a STEP System. Ron Crabtree seconded. The motion unanimously passed.

Under Other Business, the Board considered purchase of GE GlobalCare Software Support.

The Department's GE GlobalCare software support will expire on August 8, 2016. This software support renewal is for the GE iFix application that the Water and Wastewater Plants use to view and control the operations of the plant and remote sites. It is critical that this part of the control system continue to function as needed to enable the operators to monitor and control the processes. The GE GlobalCare Support renewal includes technical support for any issues with the iFix application and software updates.

The pricing is available single sourced from our appointed distributor, Advantage Industrial Automation.

Staff recommended the Board recommend to City Council approving the purchase of the GE GlobalCare Support for 1 year in the amount of $28,124.59. Funding for the support would come from prepaid maintenance accounts for water and wastewater.

Sandra Trail made a motion to approve. Dr. Carter seconded. The motion unanimously passed.

The Board considered a proposal for services from King and Spalding relating to water supply in J. Percy Priest Reservoir.

In May of this year, staff informed the Board of an engagement we entered into with King and Spalding (K&S) to provide a high level strategic review of the legal issues involving Murfreesboro and the United States Army Corps of Engineers (Corps) as pertaining to water supply out of J. Percy Priest Reservoir. The funding of this initial engagement was within the approval authority of the City Manager

(i.e., less than $25,000). Staff recommended to continue to utilize King and Spalding in on-going negotiations with the Corps and other activities relating to the pending reallocation report.

King and Spalding will be replacing the role that has heretofore been filled by Bass Berry and Sims (BB&S). Through conversations with Ms. Jessie Zeigler it became apparent that BB&S had reached a limit in their effectiveness to reach acceptable outcomes for the Murfreesboro Water and Sewer Department with the Corps. Consolidated Utility District (CUD) has agreed that King and Spalding would be better suited to represent them moving forward and as such is cost-sharing in the future expense related to K&S's services.

The sporadic nature of the Corps delivering new information and the newly formed organization labeled the National Water Supply Alliance, and its anticipated effectiveness in dealing with the Corps on the national stage, disallows putting a fixed fee to King and Spalding's services. However, staff is confident that K&S fees will be more effective and more than likely be less than the fees incurred by BB&S to date.

Sandra Trail made a motion to approve. Dr. Carter seconded. The motion unanimously passed.

Staff notified the Board that the Utility of the Future (UOTF) Joint Recognition Program has recognized The Murfreesboro Water and Sewer Department as a Utility of the Future Today.

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

The Board and staff thanked Ron Washington for his years of service on the Board and City Council.

There being no further business, the meeting was adjourned.

_____

John Sant Amour, Chairman

City of MURFREESBORO TENNESSEE

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MEMORANDUM

DATE: August 2, 2016

TO: Water and Sewer Board

FROM: Terry Taylor

SUBJECT: Crushed Stone – Hoover Contract Renewal

Background

On July 11, 2013, bids were opened at Operations and Maintenance to provide crushed stone to the Murfreesboro Water and Sewer Department. Hoover Inc. was our only bidder.

Recommendations

Hoover, Inc. has been the department's stone provider for many years, and they have been very reliable and dependable. Staff recommends extending the contract for 2 years. This will be fifth year and final extension to the original contract.

Fiscal Impact

The Operations and Maintenance division uses approximately 17,000 tons of crushed stone on various projects throughout the year. The estimated cost for FY'17 is $165,000.

Fiscal Year	Total Expenditures
2013-2014	$191,109
2014-2015	$178,707
2015-2016	$117,175

Attachments

Letter of Renewal
Second Amendment

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

200 YEARS 1811-2011

City of MURFREESBORO TENNESSEE

. . . . creating a better quality of life.

August 1, 2016

Mr. Wayne Nobles
Vice President, Sales
Hoover, Inc.
P.O. Box 994
2106 Twin Oak Drive
Murfreesboro, TN 37133

Dear Wayne:

This letter is to inform you that the Murfreesboro Water & Sewer Department is by this letter renewing the contract in place with Hoover, Inc., for the second 2 year renewal period. The current contract for crushed stone will expire on September 22, 2016. The renewal term of the contract bid indicates the following:

Contract Renewal Option

> This contract is renewable for **two (2) additional two-year periods** at the option of the City. Should the City desire to renew the contract, a written preliminary notice will be furnished to the contractor sixty (60) days prior to the expiration date of the contract. (Such preliminary notice will not be deemed to commit the City to renew.)

If you concur, please sign and return the enclosed Second Amendment which will confirm you agree to continue with the crushed stone contract for the period of September 22, 2016 – September 21, 2018.

Attached is a copy of the original Contract and the renewal option is detailed in paragraph 2.

If you have any questions, please let me know.

Yours truly,

Terry Taylor
Operations Manager
Operations & Maintenance

SECOND AMENDMENT TO THE CONTRACT BETWEEN

HOOVER, INC.

AND THE CITY OF MURFREESBORO, TENNESSEE

The contract dated September 22, 2013 ("Contract"), by and between Hoover, LLC and the City of Murfreesboro, acting through its Murfreesboro Water and Sewer Department ("City") is hereby amended as follows:

1. Section 2 – Term is hereby amended by extending the term of the Contract for one additional two-year period ending on September 21, 2018.

2. All terms, conditions, and pricing remain the same.

3. This Second Amendment shall take effect as September 22, 2016.

CITY OF MURFREESBORO	**HOOVER, LLC.**
_____	Wayne Nobles
By: Shane McFarland, Mayor	By: Wayne Nobles, VP Sales
_____	8-3-16
Date	Date

Approved as to form:

_____

Craig Tindall, City Attorney

City of MURFREESBORO TENNESSEE

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MEMORANDUM

DATE: August 15, 2016

TO: Water and Sewer Board

FROM: Alison McGee

SUBJECT: Chiller System Replacement
Stones River Water Treatment Plant

Background

Staff is recommending the release for invitations to bid replacement and installation for (1) chiller system.

The Stones River Water Treatment Plant uses a chiller system in order 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. This system was installed during the expansion and put into service in 2008.

Since January 2016, the chiller unit has had eight (8) service repairs resulting in costs of over $25,600.00. The most recent repairs occurred in the months of July and August at a cost of over $7,000.00. As the result of these costly repairs over the course of eight months, staff recommends replacement the chiller unit.

Staff did not anticipate the need to replace the chiller prior to early June 2016. Therefore; the chiller replacement was not included in the FY 2016/17 Capital Budget.

Recommendations

Staff recommends the Water and Sewer Board to approve release of an invitation to bid for replacement and installation of the one (1) chiller system. Results of the bid will come before the Board at the September meeting.

Fiscal Impact

The cost for replacement and installation of the one (1) chiller system is estimated to be $100,000. Funding would come from working capital reserves.

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

City of MURFREESBORO TENNESSEE

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MEMORANDUM

DATE: August 19, 2016

TO: Water and Sewer Board

FROM: Darren Gore

RE: Auxiliary Raw Water Intake Standby Generator Bids
Recommend Award of Contract

Background

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 and Reid (SSR) the design this installation in December of 2015. At that time, the budget from the working capital reserves was established as $600,000 to pay for the generator along with the construction/installation costs.

Per the attached recommendation of SSR, bids were received at 2:00 pm on August 18th, 2016. Four (4) bidders submitted bids; the low bidder being John Bouchard and Sons, Inc. (JB&S). SSR recommends approving the referenced bid to JB&S; MWSD staff concurs. Staff has a standing contract with JB&S for several maintenance projects involving the water and wastewater plant along with several collection system pump station improvements and repairs. JB&S has performed exemplary on all of the work we've awarded them in the past two (2) years.

Recommendation

Staff recommends the Board recommend to City Council awarding the Auxiliary Raw Water Intake Standby Generator contract to John Bouchard & Sons, Inc.

Fiscal Impact

Funding of the low bid amount of $480,000 is recommended to come from the Department's working capital reserves. This construction project has been programmed into the Department's 5-year capital improvement plan in the amount of $600,000.

Attachments

SSR Recommendation letter

Water and Sewer Department
300 NW Broad Street * P.O. Box 1477 * Murfreesboro, TN 37133-1477 * Office: 615 890 0862 * Fax: 615 896 4259
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August 18, 2016

Mr. Darren Gore
Director
Murfreesboro Water and Sewer Department
P. O. Box 1477
Murfreesboro, TN 37133-1477

RE: Auxiliary Raw Water Intake Standby Generator Project
Recommendation of Award
SSR No. 15-41-029.0

The bids for the Auxiliary Raw Water Intake Standby Generator Project, were received by the City of Murfreesboro Water and Sewer Department (MWSD) at 2:00 p.m. CDT on August 18, 2016, and were read publicly. There were a total of four bids submitted and opened. The total base bid prices submitted by the bidders are listed below. Over the next several days, we will review the submitted bids and then prepare a certified bid tabulation. The purpose of this letter is to make a tentative recommendation on award of the contract based upon the submitted information.

1.	John Bouchard & Sons Co.	$480,800.00
2.	Powertek	No Bid
3.	S & W Contracting Co.	$528,255.00
4.	Stansell Electric Co.	$620,360.00
5.	Trinity Contracting	$552,690.00

John Bouchard & Sons is the apparent low bidder for the project with a submitted Total Base Bid Price of $480,800.00. The opinion of probable construction cost for this project was $600,000.00.

SSR and MWSD have successfully worked with John Bouchard and Sons on a number of projects both for MWSD and other municipal projects. They are currently working under a maintenance contract with MWSD, and to our knowledge are performing adequately.

The low bid is considered to be very competitive, in line with several of the other bidders, and in line with present construction pricing levels. Therefore, it is recommended that the contract be awarded to John Bouchard & Sons.

If you have questions or require additional information, please contact me at 615.460.0582.

Sincerely,

SMITH SECKMAN REID, INC.

Mike Bernard, PE
Principal

Enclosures

cc: Darren Gore, Alan Cranford – MWSD
JHB, MLB, SHR - SSR

T:\Team41\2015\15410290\Correspondence\Ltrs\MDF160818_LTR_RecommendtoAward.docx

City of MURFREESBORO TENNESSEE

. . . creating a better quality of life

MEMORANDUM

DATE: August 18, 2016

TO: Water and Sewer Board

FROM: Valerie H. Smith

RE: Middle Tennessee Blvd. (MTB)
Change Order #1
Addition of 10" Inserta Valve

Background

This project was originally bid June 2, 2015 and then re-bid October 8, 2015. Jarrett Builders, Inc. was awarded the project by City Council at the November 19, 2015 meeting. The total water and sewer bid was in the amount of $1,640,567.50.

At last month's meeting, a Work Change Directive was approved in the amount of $32,320 for Jarrett Builders to replace the 8" sewer service with an 8" sewer main to the MTSU Alumni Gym.

With regard to the water construction Jarrett Builders has completed the installation of the water main along Middle Tennessee Boulevard (MTB), however they still lack testing and chlorinating sections of this stretch. They have begun to tie the new water line along MTB over to the water lines along each side street and any large water lines and meters to the MTSU Buildings. In the original bid, staff received pricing for 6" and 8" Inserta Valves to assist in making these connections. This type of Valve assists Jarrett Builders and our Resident Inspector by allowing a valve to be inserted into the water line, without shutting the water line down and having numerous MTSU Buildings and customers without water. This month, in the coordination meeting, it was determined that the MTSU Murphy Center cannot be without water during the day and it will be very difficult to shut the water off at night, tie the new line over to the old line, flush the lines as necessary and have the water turned back on by morning. Both Jarrett Builders and our Resident Inspector have requested to purchase a 10" Inserta Valve in order to keep from having to shut the water off to the Murphy Center.

Staff feels this a reasonable request. Jarrett has submitted a price in the amount of $22,311.34 for this Valve.

Recommendation

Staff recommends the Board recommend to City Council approval of Change Order #1 to include the previously approved Work Change Directive and the additional $22,311.34 for the 10" Inserta Valve for a total of $54,631.34

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Fiscal Impact

This project was funded from working capital reserves. Funds are available for this work change directive and change order. This brings the Departments contract amount for the water and sewer mains to $1,651,198.84.

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MEMORANDUM

DATE: August 19, 2016

TO: Water and Sewer Board

FROM: Darren Gore

SUBJECT: Blue Margin Proposal for Discovery and Master Planning to Implement Microsoft Power BI

Summary Statement

Staff requests approval to enter into a Discovery and Master Planning engagement with Blue Margin, Inc., involving assessment of the Murfreesboro Water and Sewer Department's (MWSD) current data environment and our varied user-classes and use-cases. This engagement is expected to result in a Master Plan that includes a detailed Project Plan focusing on our Customer Information Service (CIS) and Financial Information System (FIS) reporting, utilizing Microsoft Power BI software. Note: BI stands for Business Intelligence

Background

Blue Margin uses Microsoft's Power BI to help companies create "The Dashboard Effect", which puts performance metrics at top-of-mind, driving focus and productivity. Power BI connects to any data source (ERP, Google Analytics, Salesforce, SAGE, SQL, GP, Excel, Dynamics, etc.) and delivers real-time dashboards via computer, phone, or tablet. Blue Margin also helps clients get control of their data with data warehousing on Azure. The result is a single source of data that is secure, scalable, and easy to use.

The specific goals associated with Power BI align with MWSD's Effective Utility Management (EUM) attributes Enterprise Resiliency, Operational Optimization and Stakeholder Understanding and Support. Power BI is expected to improve operational visibility as well as increase operational efficiency and service to constituents. MWSD has numerous systems (e.g., AMI, CIS, Utility Billing, Financial, Kronos, SQL, COBOL, etc.) and needs a way to efficiently access key performance indicators (KPIs) in near real-time.

Recommendation

Staff requests Board approval to enter into an agreement with Blue Margin, Inc. for the described services. The City's Information Technology (IT) Department has purchased several Power BI developer licenses and believes they can accomplish the goals and objectives internally that MWSD has defined. Staff would like to afford our IT Department some time to attempt to develop these solutions "in-house", with Blue Margin, Inc. being a secondary option.

Fiscal Impact

MWSD budgeted for an external consultant to perform phase 1 - discovery and phase 2 – implementation in the amount of $50,000. The cost submitted by Blue Margin for Phase 1 is in the amount of $14,725.

Attachments

Blue Margin, Inc. Proposal: Data Management and Analytics: Discovery and Master Planning

MURFREESBORO
TENNESSEE

Proposal:

Data Management and Analytics: Discovery and Master Planning

BLUE MARGIN

Presented by Blue Margin, Inc.
August 15, 2016

August 15, 2016

Doug Swann
City of Murfreesboro

Doug,

It has been a pleasure learning about Murfreesboro's opportunity to leverage data analytics and Microsoft's Power BI to improve operations and strategy. In our experience, visual analytics are among the most effective means of improving insight and getting everyone on the same page, and Power BI is at the forefront of delivering a cost-effective, high-impact analytics platform.

Enclosed is a proposal for the critical first step in this process: Discovery and Master Planning. In this phase, we will use our BlueCore™ methodology to draw a line between your business goals to the insights needed to advance those goals. We'll assess your current data environment and your varied user-classes and use-cases. This initial phase will result in a Master Plan that includes a detailed phase-1 Project Plan (focused on financial reporting) that will ensure a successful rollout of Power BI, while minimizing the risk of costly iterations and adoption failure.

Blue Margin specializes in data management and business intelligence, and is the largest Microsoft Gold Partner focused exclusively on SQL and Power BI. Our goal is to help accelerate your success by delivering the visibility needed to focus your organization, and to make good, timely decisions.

Best regards,

Jon Thompson

Proposal

Blue Margin Background

Blue Margin Overview:

Blue Margin uses Microsoft's Power BI to help companies create "The Dashboard Effect", which puts performance metrics at top-of-mind, driving focus and productivity. Power BI connects to any data source (ERP, Google Analytics, Salesforce, SAGE, SQL, GP, Excel, Dynamics, etc.) and delivers real-time dashboards via computer, phone, or tablet. The service costs a fraction of the competition ($10/seat/mo.), but gets top billing from both Gartner and Forrester. We also help clients get control of their data with data warehousing on Azure. The result is a single source of truth that is secure, scalable, and easy to use. Blue Margin is the largest partner in the US focused on Power BI and related SQL data warehousing. Visit us at: www.bluemargin.com

Blue Margin Case Studies:

https://powerbi.microsoft.com/en-us/partner-showcase/Bluemargin-OilandGas
https://powerbi.microsoft.com/en-us/partner-showcase/Bluemargin-PropMngmnt
https://powerbi.microsoft.com/en-us/partner-showcase/Bluemargin-Construction
https://powerbi.microsoft.com/en-us/partner-showcase/bluemargin-it-portfolio/

Microsoft Partner
Microsoft
Gold Data Analytics
Gold Data Platform

Recent Blue Margin Clients:

SAFEbuilt, boq, The Recording Academy, fitbit, BillingTree, Beacon Hill Staffing Group, Saphran, Spirae, NALCO An Ecolab Company, ALMO Distribution on a Personal Level, Brahma Group, Inc., SMG, Hunter Quinn Homes, In-Situ Inc., Pannell Kerr Forster, PKF, Colorado State University, Teleflex, Poudre Valley REA

Proposal

Blue Margin Background

We turn chaos

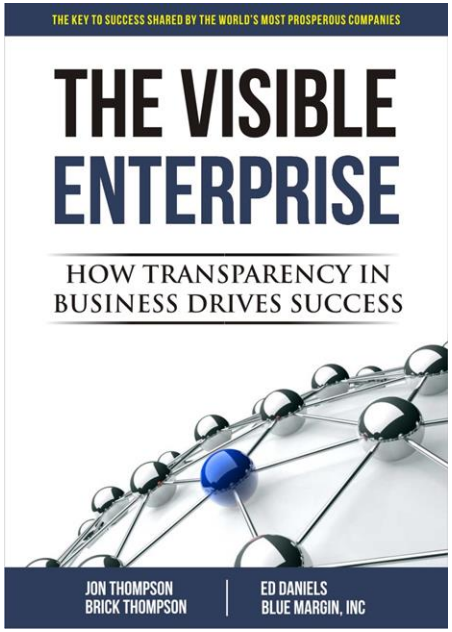
Into clarity

Blue Margin helps you control your data and deploy dashboards to drive growth

Proposal

High-Level Goals: The Visible Enterprise, a Business Model for Growth

1. Migrate from reactionary business management to a data-driven model
2. Support decision-making
3. Ensure everyone is focused on the most important issues
4. Advance a sense of team
5. Increase self-driven accountability
6. Increase Murfreesboro's employee satisfaction and productivity
7. Improve communication and collaboration across groups
8. Avoid the "hero" risk
9. Minimize time spent assembling and organizing data and reports



Proposal

Specific Goals for Murfreesboro

Improve Operational Visibility. Increase Operational Efficiency and Service to Constituents:

- Murfreesboro has numerous systems (e.g., AMI, CIS, Utility Billing, Financial, Chronos, SQL, COBOL, etc.) and needs a way to efficiently access key performance indicators (KPIs) in near real-time.
- Financial reporting is a priority. Murfreesboro would like to leverage visual analytics to automatically produce financial reports that are easily understood and that call out critical insights.
- Murfreesboro is looking to reduce the overhead currently spent on creating reports by automating data refresh, reports, and dashboards.
- Murfreesboro makes a priority of change management and master planning, and would like a careful analysis of business goals and requirements, and a master plan for leveraging their data assets to achieve its goals.

Proposal

Discovery and Master Planning

Benefits of Discovery and Master Planning

1. **Minimized deployment cost**
    1. Carefully defined business requirements and use-cases.
    2. Detailed project plan for the rollout of dashboards and analytics.
    3. Streamlined design to meet Murfreesboro's business goals with the least amount of hours required; minimized iterations and non-critical features.

2. **Maximized adoption**
    1. Practical, operational issues identified up front, before development.
    2. Avoiding the "watering down" effect of too many features and too much data.
    3. Avoiding end-user resistance resulting from launch missteps.
    4. Changing existing systems and processes as little as possible while still achieving the goals.

Proposal

Project Components

Discovery:

1. **Interview key stakeholders of Murfreesboro's data initiative:**
    1. Define and prioritize business goals.
    2. Define user security groups for the consumption of data and dashboards.
    3. Define business requirements and use cases, by user-group.
    4. Identify measures and KPI's, by user-group, needed to drive business goals.
    5. Catalogue current business-analysis and reporting processes; identify essential reports to be replicated/improved in Power BI.
    6. Identify new reports and dashboards needed to advance key initiatives.
    7. Identify training requirements.
2. **Assess Murfreesboro's current systems:**
    1. Current data input and analysis methodologies.
    2. Transactional databases – content, architecture, and access (APIs)
    3. Data warehouses and operational data stores – content and architecture.

Proposal

Project Components

Master Plan Elements:

1. Summary of measurable business goals, business requirements, and use-cases.
2. Definition of user categories and security roles.
3. Summary of data assets.
4. Recommended data security strategy.
5. ETL and data modeling strategy.
6. Essential measures and calculated columns.
7. Data warehouse strategy (if needed).
8. Description of reports and dashboards to drive the goals, including improvements to existing reports, and recommended new reports.
9. Recommended strategy for disseminating reports and dashboards to end-users.
10. Training curriculum and schedule.
11. Detailed, phased deployment project plan.

Proposal

Quote

Power BI Discovery and Design – Financial Reporting

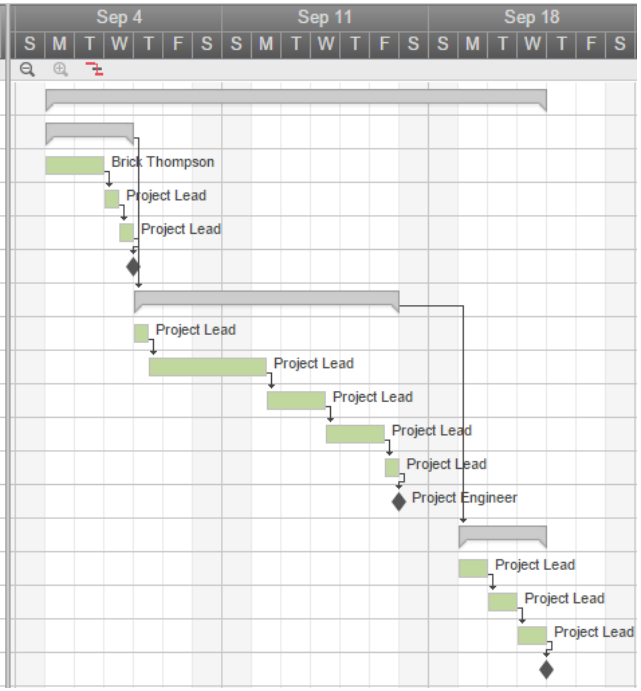
Project Elements	Hours
Interviews (gather and analyze business requirements, key metrics, use-cases, etc.)	16
Catalogue and Assess Data Assets	5
Review Existing Reports	3
Develop Master Planning Document & Project Plan	25
Review and Iterate and refine Master Plan with Murfreesboro project sponsors	9
Total Hours:	***58***

Estimated Effort	Up to 58 Hours
Hourly Rate	**$225/hour – Sr. Consultant (~53 hours)** **$160/hour – Std. Consultant (~5 hours)**
Estimated Travel and Expenses	$2,000
Total Cost	$14,725
Projected Start Date	Monday, September 5, 2016
Projected Completion Date	Wednesday, September 21, 2016

Proposal

Project Plan

S...	Task Name	Assigned To	Time Tag	Dur...	Work	Start Date	End Date
	Murfreesboro - BI Discovery and Design			**13d**	**58**	**09/05/16**	**09/21/16**
	Discovery			**3d**	**24**	**09/05/16**	**09/07/16**
	Interview key stakeholders	Brick Thompson	#Discovery	2d	16	09/05/16	09/06/16
	Review existing data sources	Project Lead	#Discovery	0.5d	5	09/07/16	09/07/16
	Collect and review existing reports	Project Lead	#Discovery	0.5d	3	09/07/16	09/07/16
	Milestone: Discovery complete			*0*	*0*	*09/07/16*	*09/07/16*
	Design			**7d**	**25**	**09/08/16**	**09/16/16**
	Write up goals and scope	Project Lead	#Design	0.5d	4	09/08/16	09/08/16
	Document data warehouse connections	Project Lead	#Design	2d	6	09/08/16	09/12/16
	Document conceptual reporting data model	Project Lead	#Design	2d	6	09/12/16	09/14/16
	High-level overview of dashboards to be produced	Project Lead	#Design	2d	6	09/14/16	09/16/16
	Create project plan with hours estimate	Project Lead	#Design	0.5d	3	09/16/16	09/16/16
	Milestone: Design complete	*Project Engineer*		*0*	*0*	*09/16/16*	*09/16/16*
	Review and Iterate			**3d**	**9**	**09/19/16**	**09/21/16**
	Present initial design	Project Lead	#Review	1d	3	09/19/16	09/19/16
	Incorporate requested changes	Project Lead	#Review	1d	3	09/20/16	09/20/16
	Iterate until in sync	Project Lead	#Review	1d	3	09/21/16	09/21/16
	Milestone: Review complete			*0*	*0*	*09/21/16*	*09/21/16*



Proposal

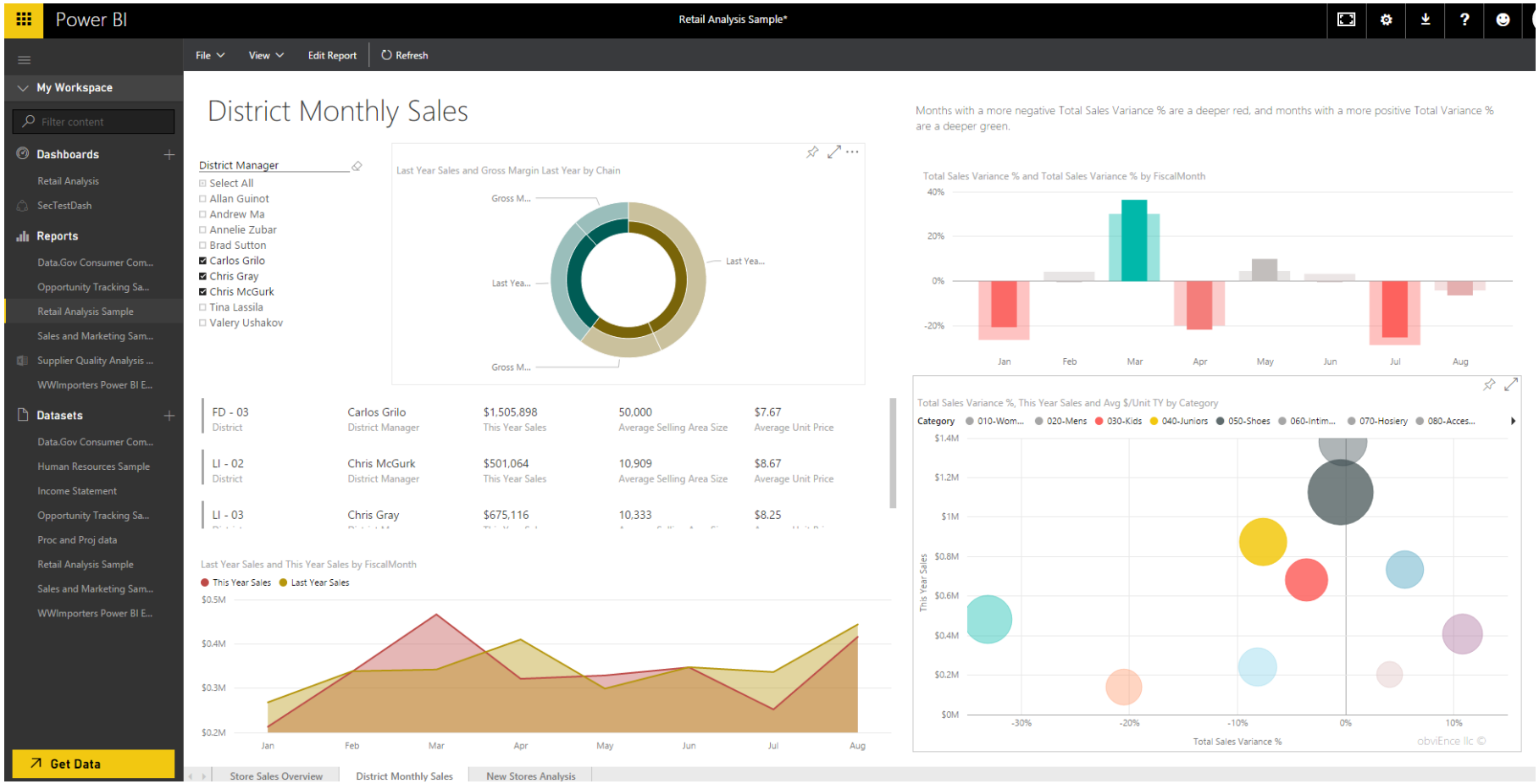
High-Level, Phase-1 Deployment (not included in the scope of this proposal)

1. **ETL and Data Model Build-Out:**
    1. Establish data connections.
    2. Shape data (M language).
    3. Set up data-refresh
    4. Build data model
    5. Develop measures and calculated columns (DAX language).
2. **Dashboard Development and Publishing:**
    1. Define and configure permissions for user-groups.
    2. Develop dashboards and reports, by user-group to maximize insight and accountability.
3. **Training, Iteration, and Support:**
    1. Train in-house administrator(s) and analyst(s), as needed.
    2. Train end-users to extract full value from BI dashboards.
    3. Iterate based on real-world use of dashboards and related workflows; adjust to address end-user response.
    4. Develop additional dashboard elements as needed.
    5. Support as needed.

Proposal

Sample of Powerbi.com Visuals

Note that these are generic examples, intended to show the look and feel of the powerbi.com interface. Murfreesboro data is not represented.



Murfreesboro's Project Team

Brick Thompson - *Senior Consultant*

Brick is an experienced Executive, IT Program Manager, and Strategic Consultant. He has founded 3 successful companies and was CIO of Vercuity, a 500-employee SaaS company. A natural executor, Brick is highly organized and is sought as an advisor on high-value projects, including a recent 12-month consulting engagement as a program manager in the trading IT department of the world's largest hedge fund.

brick.thompson@bluemargin.com
(720) 206-5884

Jon Thompson – *Senior Partner*

Jon has 20 years of experience in business and account management. His emphasis has been in the high-tech sector. Jon's specializes in Cloud-based technologies and other IT productivity tools. Jon's mission at Blue Margin is to help clients outpace their competition and promote their highest-return business goals through the use of emerging technologies.

jon.thompson@bluemargin.com
(970) 214-1652

Kyle Williams - *Engineer*

Kyle has worked closely with many Fortune 500 businesses in various industries to collect, analyze, and report business critical insights. In his previous role, Kyle managed 15 mid-to-senior level developers, while continuing to play a role as a developer for the various clients he served. Kyle is an expert in database architecture and the Microsoft BI stack.

kyle.williams@bluemargin.com
(800) 865-6350

Blue Margin References

"Blue Margin's understanding of database architecture and their business-centric approach to analytics has been invaluable. They have an uncanny ability to center on the metrics that are most important to us and to present them in an intuitive way. The professional manner they have handled our project is why I would recommend Blue Margin."

Nalco (an Ecolab Company)

"We were a challenging client; limited data availability, changing priorities and a long wish list. The Blue Margin engineers were consummate professionals and met every challenge with a positive attitude and targeted advice on next steps. Their expertise in business intelligence and more specifically PowerBI were evident throughout the project and they are to be commended on a job well done."

Colorado State University

"I appreciate working with the Blue Margin staff. From conception of our project to completion they were great to work with. The development process they designed worked great which included meetings to discuss KPI's, data gathering, and dashboard development. I would recommend them to anyone who may be interested in dashboard development and BI."

SMG Worldwide Entertainment and Convention Venue Management

"We engaged Blue Margin with a project that would take a series of data collection and presentation methods that we currently use and consolidate them in a dashboard environment. Our initial stage is nearing completion and it was done in the budgeted amount of time. Blue Margin really helped us get a great data model that we can build on for future reporting. Another big plus was the previous experience they had with other customers allowed us to see some reports we hadn't planned to do but made a lot of sense so we added them to our scope."

Boa Technology, Inc.

"Our contracts call for next-day inspections, so it's imperative we handle everything on time. But more importantly, we're dealing with building codes, life safety, and the quality of construction—we have to handle it all correctly. With the insights from PowerBI, we meet these requirements in real-time and reassign resources more effectively. We can see the growth coming, so we can plan for it accordingly. With Blue Margin and PowerBI, SAFEbuilt also aggregates companywide data faster than before; dashboards that formerly took 25 days to produce are now ready in 5, making the information far more actionable and accessible. As a result, SAFEbuilt provides better service to its clients—and they've taken note. The most recent client survey gauged satisfaction at 99 percent."

SAFEbuilt, Inc.

Power BI, A Market Disrupter

Scalability:

PowerBI can handle hundreds of millions of rows of data, in memory, with great efficiency. In addition, PowerBI integrates with SQL, and virtually every other commercial database for unlimited scalability and row-level security.

Low Cost:

Rather than a large up-front infrastructure investment and an ongoing subscription, PowerBI is delivered as a service for mere $10/seat/month for the highest level subscription. This is a fraction of the competition. In addition, Power BI's interactive reports can be embedded in any website for more broad viewing at little or no additional cost.

Adoption:

Because PowerBI is built on the familiar Excel framework, analysts can quickly adopt the toolset to develop dashboards and reports in-house, without having to learn yet another system. What used to require a team of data scientists can now be managed by Excel professionals.

Integration:

PowerBI is part of the Microsoft ecosystem, with "full-circle" integration with Excel, Azure Machine Learning, Office apps, Office 365, and more. This means you can leverage your current technology without introducing yet another platform into your ecosystem.

Functionality:

According to Gartner and Forrester, PowerBI is the best BI platform on the market. It contains the full spectrum of tools needed. **PowerQuery** is one of the leading ETL tools on the market. **DAX** is a robust functions-based language for creating calculated fields and measures. **PowerPivot** is a full-function relational database. In addition, 26 native visualization templates are included, plus Microsoft has developed an open-source Github community for developing new graphs and charts, resulting in 48 additional visualizations to-date, more than any other competitive platform. Also, PowerBI.com comes with mobile apps for all major platforms that offer full cross-filtering and drill-down capability.

Microsoft, a Leader in Business Intelligence

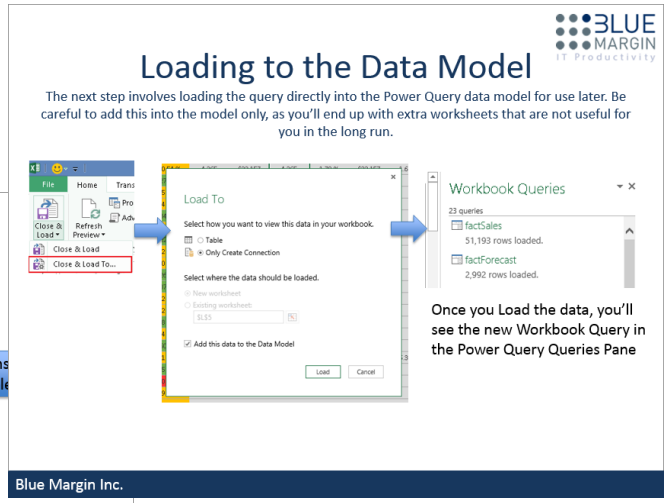
Forrester Q3 2015:

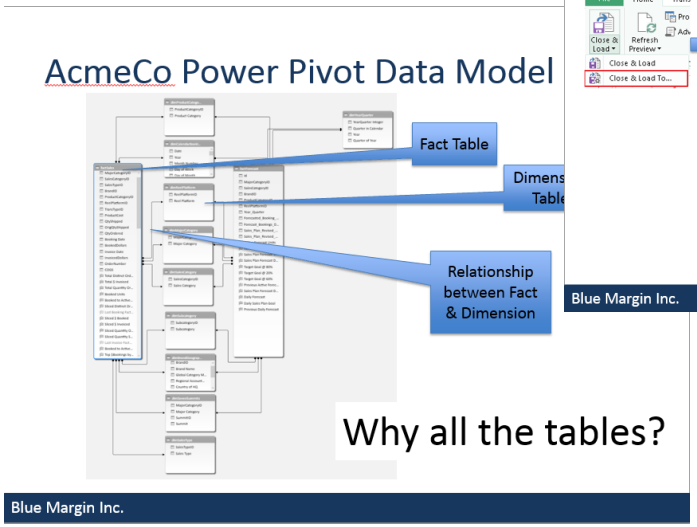
Gartner Q1 2016:

Training and Support

Without successful adoption, your technology, no matter how good, is of little value. Experience has shown that there is a limited window to affect adoption and gain the loyalty of end-users and administrators/analysts to a new system. To address this, Blue Margin puts a high-priority on delivering live training, easy-to-use reference materials, and "on-time" support after deployment.

- Hands-on training, supported by graphical training documents.
- Refresher, Skype-supported online training.
- On-time support via email and phone.





Monthly Invoice / Project-Status Reports

Blue Margin sends a report with each bill summarizing progress to-date, hours against budget by category, and a detail of all work completed, both billable and non-billable.
This keeps the client and their Blue Margin team in sync throughout the project. It also minimizes scope sprawl and produces a final product that is in-line with expectations.

Project
Project
Technology - BI Design

show all billable unbillable* entries, for everyone team & admins freelancers

Who's doing what?

Hours Breakdown

26:18h

	billable	unbil.
Brick T.	15h	none
Kyle W.	11:18h	none

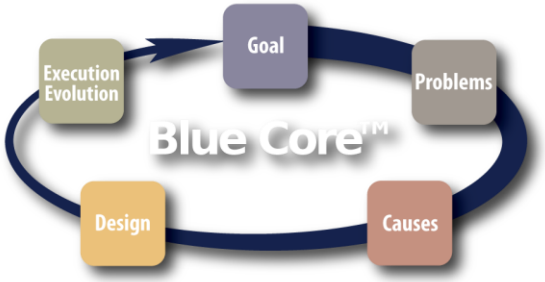
Billable

Total: 26:18 hours

Brick T.	Per the plan, I met with Don, Andrea, and Lonnie to review the implementation plan. We got in sync accross all areas and agreed on the start date and timeline. After the call, I added resources and dates to the Project plan tasks. I also had Kyle revise the ERD and related notes in the writeup. I copied the new plan into the writeup and sent it to Don and Andrea. I also sent it to Jon and asked him to prepare an SOW for Don. #Design	Feb 19
Kyle W.	In preparation for today's meeting, I worked alongside Brick on documentation within the Design Document. I worked specifically on the data model, report design and entity relationship diagram. We reviewed the document throughout the day and made some final revisions after the review meeting at 2:00. Everything went well and we're looking forward to the development starting next week! #Design	Feb 19
Brick T.	In preparation for this afternoon's meeting with Don and Andrea, I finished writing and editing the BI implementation plan. #Design	Feb 19
Brick T.	Per the plan, I continued building the BI Project plan for #Design	Feb 18
Kyle W.	Today I continued the design documentation for the Boa Technology project. This continues to progress well. I've been able to run quite a bit of discovery in their data model and existing reports. I've been able to incorporate a lot of this into the document in the data model / reporting sections. #Design	Feb 18
Brick T.	Per the plan, I continued building the design document for the BI project. #Design	Feb 18
Kyle W.	Per the project plan, today I worked on writing the initial design document alongside Brick. The document is in it's initial stage, but it's helping to provide us a good look into the Boa data and reports. I'll continue to work on this document more tomorrow. #Design	Feb 17
Kyle W.	At Brick's direction, this morning and this afternoon I made a preliminary pass on the Boa data. I was able to get the data loaded into our Azure SQL server through SSIS and setup a number of dimensions for use in the data model. Things are looking good and I'll continue the development work tomorrow. #Discovery	Feb 16

Blue Margin's BlueCore™ Discovery and Design Model

The BlueCore™ Model is effective because it rationalizes complex problems. We put your highest-value goals at the center of the design process, then quantify the relative impact of the issues hindering those goals. This enables us to focus in on the issues that will have the greatest impact, and avoids getting mired in features and functionality. The result is high-impact, streamlined solutions.



Goals
- Your highest-return goals drive the BlueCore™ analysis & design process
- Prioritization is key, highest-value ("above-the-bar") goals only

Problems
- List all problems, no filtering
- Intentionally call out "insurmountable" problems

Causes
- Drill down from proximate to root causes
- Be willing to 'touch the nerve' – No sacred cows

Design
- Consider multiple designs, assess possible sub-optimal outcomes
- Test designs conceptually before deploying

Execution/Evolution
- Agile POC: Define the solution, Seed adoption with team of project "champions"
- Deploy & Support. Hands-on training, on-time support
- Auto-output of KPI's, Periodic Review, CPI

Discovery Process

Our solution design model is business-centric rather than technology-centric. We begin our process by interviewing key resources to carefully define business goals and the key metrics that determine whether those goals are achieved. We then assess your current systems to capitalize on what's working, and to identify inefficiencies, redundancies, and other obstacles hindering the goals. We drill down through underlying causes until we can identify root causes. By carefully analyzing the impact of each root cause on the goals, Blue Margin can define the simplest solution with the greatest impact.

In contrast, conventional IT systems revolve around features and functionality. This leads to poor requirements planning, complex feature mapping, and ultimately, failed adoption. **In fact, it is estimated that over 60% of IT initiatives fail** (ref: AIG Consulting and The Standish Group).

Blue Margin turns conventional solution-design on its head, placing your highest-return business goals at the center of the design process, and delivering solutions that not only get adopted, but that measurably advance your business.

City of MURFREESBORO TENNESSEE

. . . creating a better quality of life

MEMORANDUM

DATE: August 15, 2016

TO: Water and Sewer Board

FROM: Darren Gore / Steve Tate

SUBJECT: 2015 AWWA Benchmarking Survey Results

This memo presents and comments on the results of the above named survey received on July 21, 2016. The survey attracted more participants this year at 163 utilities of which 98 are combined water/wastewater utilities. This is nearly double the number of combined utility respondents in the last survey. Other demographics include:

- 33 states represented
- 6 systems in TN including Memphis, Metro Nashville, Johnson City, Brentwood, Atoka, and MWSD, a good sampling considering the variety of size.

The tabular results are attached. I have color-code highlighted our results as to whether our result was above average (green), average (brown), or below average (red). The following commentary is offered.

Metrics Where We Are Above Average

1. Training Hours per Employee. At 18 hr/employee, this result is consistent with last year and exceeds the median result of 12.1 from 71 responding utilities.
2. Emergency Response Readiness Training. At 2.6 hr/employee, we far exceeded the median of 1.1 placing us in the top quartile of 62 respondents.
3. Retirement Eligibility. Our result of 13% against a median of 19.9% (81 respondents) is encouraging; however, our breakdown between water (17.2%) and wastewater (2.7%) is interesting.
4. All of our financial parameters continue to be top quartile. These include **Debt Ratio** (26% vs 35% median), **Return on Assets** (3.8% vs 1.9% median), **Days of Cash on Hand** (601 vs 272 median), **Debt Service Coverage Ratio** (3.22 vs 1.49 median), and **Operating Ratio** (24% vs 61% median). All of these parameters had 79 or more respondents.
5. Disruptions of Water Service. Top quartile results for number and duration of planned disruptions, and we had no unplanned disruptions that were longer than 4 hrs. Our average time to repair was also top quartile at 1.4 hr. These numbers resulted in a System Disruption Frequency Index (planned and unplanned) of 1.79 which is also top quartile.

6. Cost of Residential Water Service (Average Monthly Bill). Our average monthly residential water bill of $25.56 is top quartile, approximately $5 lower than the median bill with 91 respondents.
7. Cost of Residential Stormwater Service. At $3.00 per month, this cost is top quartile.
8. Customer Service Cost per Account. We continued to show a low customer service cost of $19.52 which is top quartile, also more than $5/mon lower than the median with 70 respondents.
9. Service Affordability. As one of our primary objectives and perhaps our customer's most pertinent measure of Customer Satisfaction, we scored in the top quartile at 0.46% for water, 0.59% for wastewater, and 0.05% for stormwater. This metric is calculated based on the median annual income.
10. Regulatory Compliance (Water and Wastewater). As our best measure of Product Quality we scored 100% and top quartile with 85 respondents.
11. Available Water Supply. At 85 years, we easily fell into the top quartile with 58 systems reporting. However, this estimate might conflict with a USCOE estimate should that matter.
12. O&M Costs for Water Service. Our operational costs for potable water service is low at $193/ account/yr, easily in the top quartile, and substantially lower than the median reported of $417/account for 83 systems.
13. Leaks and Breaks (per 100 mi). At only 8 per 100 mi., we are in the top quartile, however while this may appear to be a good measure of strong system integrity, our water loss probably suggests otherwise. I believe we are subject to a large degree of undetected leakage. If we knew about the leaks, we would be dedicating more resources to O&M of the water system and thus drive up the metric in #12 above.
14. Non-Capacity Sewer Overflow Rate. At 0.61/100 mi of pipe/yr, we fall into the top quartile on this important metric, and it speaks well for the routine maintenance activities of line cleaning and lift station preventive maintenance and repair.
15. Collection System Failures. Probably the best overall measure of our collection system integrity, we scored in the top quartile at only 0.3 failures/100 mi in FY 2015. The median result from 57 respondents was 3.8 failures/100 mi.
16. O&M Cost for Wastewater Services. Our cost of service for wastewater of $138/account/yr is top quartile, more than $200/account lower than the reported median with 73 systems reporting. This metric coupled with #12 above demonstrate excellent O&M efficiency when you consider the effectiveness of these dollars (#5, #15, and #16). From another perspective, it may also illustrate that our labor compensation rates are also below average in this peer group.
17. Call Center Indicators. 2015 represents the first time that these results were input into the benchmarking study for MWSD. All of the indicators, average talk time, average wait time, average calls per customer service clerk, and abandoned call ratio demonstrate MWSD to be at or near the top quartile.

Metrics Where We Are Average

1. Employee Health and Safety Severity Rate. We scored a 25 which is the median score from 49 reporting systems. The report does not state the units for this rate so it is unclear what metrics are used to calculate it.

2. System Inspection: Wastewater Pipe Network. We reported this metric at 13.1%, some better than the median of 79 systems of 11.1%. The top quartile score was 18.8%.
3. Average Time to Address Planned Water Service Disruption. At 3.0 hrs., we were slightly better than the median of 53 reporting systems at 3.4 hrs.
4. Unplanned Water Disruption Frequency Index. With 63 systems reporting, our score of 1.65 was slightly worse than the median of 1.26. This might suggest a need to be more flexible in non-routine deployment, however, still represents a better than average (2.44) score. It is not clear how this metric is calculated.
5. Cost of Residential Water Service (7,500 gallons per month). When normalized to 7500 gal/mon usage, our rate of $39.17 is average. However, at our average consumption per customer of 4100 gal/mon, our monthly bill is top quartile. This discrepancy may indicate that our minimum monthly bill may be average and our commodity rate higher than average.
6. Cost of Residential Wastewater Service (Average Monthly Bill). As with #5 above, the same result applies with this metric, again an indication that our minimum monthly charge for sewer is probably about average and our commodity rate is above average.
7. Domestic per capita consumption. At 63.4 gal/cap/day, we are right on the median of 88 systems reporting. Not that we can do anything about it, it is good to know we are average in this regard.
8. Stakeholder Outreach Index. As a subjective self-rating of several aspects of the utility, I'm not sure a comparison to the peer group is of any meaning or value. Even so, our index of 75% is exactly the average of 89 systems reporting.
9. Current Water Demand. Although it is not clear how this metric is calculated, our result was 51% which is the mean of 78 reporting systems.
10. Average Operating Pressure. Our reported average pressure in our water distribution system is 68 psi. For the 36 systems reporting the mean and median were 74.4 and 71, respectively. This is meaningful in that water pressure is probably not a significant factor in our real water loss.
11. Annual Cost of Apparent Losses. Our estimated annual cost of ~ $747,000 is right on the median of 34 reporting systems. Although this is a small sampling of systems (34), it may indicate that our metering inaccuracy may not be as poor as we thought.
12. Energy Consumption Efficiency for Wastewater. At 10,130 kBTU/yr/MG, we were close to the survey median of 9,842 with 69 systems reporting.

Metrics Where We Are Below Average

1. Organizational Best Practices Index. As a subjective self-rating of several planning and management functions of the utility, I'm not sure a comparison to the peer group is of any meaning or value. Even so, our index of 70.8 % is below the median of 91 systems reporting.
2. Customer Accounts per Employee. At 433, we are below the median of 94 systems reporting. Top quartile systems had an aggregate result of 645 accounts per employee.
3. Employee Turnover Rate. At 10.6%, we are higher than the mean (9%) and the median (8.1%) of 82 reporting systems. Top quartile systems had an aggregate result of 4.6%.
4. Triple Bottom Line Index. As a subjective self-rating, I'm not sure a comparison to the peer group is of any meaning or value. Even so, our index of 60% is below the median of 65% while the top quartile is 85%. Perhaps we are more honest than most.

5. Unplanned Disruptions of Water Service. We reported unplanned disruptions of water service (<4 hr duration) to be 1.65/1000 accts. which was the mean for 61 reporting systems. However, the median was only 0.79/1000 accts. The large variance between the mean and the median indicates the information submitted was not a normal distribution.
6. Billing Accuracy. This metric also had a wide variance between the mean and the median at 258.1 errors/10,000 bills and 12.9 errors/10,000 bills, respectively. With 56 systems reporting, this indicates a number of systems must have reported some very high numbers. Even so, we reported 30, placing us in the bottom quartile.
7. Energy Consumption Efficiency for Water. We reported 10,280 kBTU/yr/MG which placed us in the bottom quartile of 79 systems reporting. The mean value is 6,603. Possible explanations are the bleach generation, softening, and membrane filtration processes employed at the water plant, all significant energy users that are not employed in the average water treatment plant.
8. Planned Maintenance for Water Production and Distribution. Our metrics in these areas are significantly below average, in part due to the newness of our water plant as we expend only 0.2 hr/MG in corrective maintenance. Of the 61 reporting systems, this metric averaged 1.6 hr/MG. Corrective maintenance of the distribution system is also low at 250 hr/100 mi versus a survey mean and median of 2001 and 1257, respectively. Given that we do not have a leak detection system and most of our distribution crews are focused on new taps and new construction, these metrics are not necessarily surprising. It may point out however that our water loss is the price we are paying.
9. Water Loss. We reside in the bottom quartile in all of the water loss metrics, most notably Real Losses per service connection (86.9 gal/con/day vs the median of 42.6), Real losses per length of main (5268 gal/mi/day vs the mean of 1074), and Infrastructure Leakage Index (5250 vs the median of 2450). Obviously, these findings are not a revelation as we recognize this challenge and have a plan.
10. Capacity Sewer Overflow Rate. We reported 1.8/100 mi for FY15 which was prior to starting the SW PS. I suspect the capacity relief gained on the Stones River interceptor will bring this metric down closer to the survey median of 0.7.
11. Maintenance – Wastewater Treatment and Collection. While the wastewater metrics for corrective maintenance were top quartile, our metrics for planned maintenance were below average.

Summary

In summary, the benchmarking survey results provide some positive reinforcement of many of our systems and practices. As such, our results in comparison to our peers define a utility that:

- manages revenue, debt, and cost of service very effectively (Financial Viability)
- has well trained employees (Employee and Leadership Development)
- is not at significant risk of institutional loss of knowledge and know-how through retirement (Enterprise Resiliency)
- provides reliable water and wastewater services with a minimum of disruptions or failure (Customer Satisfaction and Infrastructure Strategy and Performance)
- strictly complies with all applicable water and wastewater regulations regarding product quality

and impact to the environment (Product Quality, Customer Satisfaction, and Community Sustainability)

- charges very affordable rates to its customers (Customer Satisfaction)
- has an adequate long term water supply (Water Resource Sustainability and Community Sustainability)

The survey results also illustrate some challenges for us as we move forward. I would submit that water loss is No. 1. In addition, the metrics for planned (preventive) maintenance in all areas (water treatment/distribution and wastewater treatment/collection) show us to be less proactive than our peers. While it is possible we understated our hours expended in this area, we reported expending fewer resources in these areas as a result of prioritizing unplanned repairs and growth (e.g., new taps, and new construction, etc.)

Finally, our cost of service is comparatively low across the board, from water service to wastewater service to customer service, and it is reflected in our ability to charge very reasonable and affordable rates and still reserve funds every year. The largest factor in our cost of service is labor. Although the survey does not address labor rates, if it did, I think it would be low compared to our peers. The benchmarking survey illustrates that we have a higher than average workforce based on the number of accounts, but we are still very affordable. We do have a higher ratio compared to our peers of Operations personnel to Administrative personnel, which I believe is a positive.

Attachments

MWSD 2015 American Water Work Works (AWWA) Benchmarking Survey Spreadsheet Results
MWSD 2015 AWWA Benchmarking Survey PowerPoint

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AWWA Utility Benchmarking
2015 Data Set and Report for

Murfreesboro Water and Sewer Department

ORGANIZATIONAL DEVELOPMENT

KEY	Above Avg	Average	Below Avg

		All COMBINED Utilities				
Organizational Best Practices	Your Utility	Mean	Top Quartile	Median	Bottom Quartile	Count
Organizational Best Practice Index (%)	70.8%	75.2%	83.1%	76.9%	67.7%	91
Strategic Planning	4	4	5	4	4	91
Strategic Plan Implementation	4	4	4	3	3	91
Long-term Financial Planning	5	5	5	4	4	91
Risk Management Planning	2	4	4	3	3	91
Performance Measurement System Integration	3	4	4	3	3	91
Optimized Asset Management Program	3	3	4	3	3	91
Customer Involvement Program	3	3	4	3	3	91
Governing Body Relations	5	4	5	4	4	91
Drought response/Water shortage contingency planning	4	4	5	3	3	91
Sourcewater protection planning	4	4	5	3	3	91
Succession Planning	3	3	4	3	3	91
Continuous Improvement Program Participation	3	3	4	3	3	91
Leadership Effectiveness	4	4	4	3	3	92

STAFFING LEVELS - Water (as % of TOTAL)

FTEs - TOTAL	87.0	296.1	209.0	90.5	40.4	94
FTEs - OPERATIONS AND MAINTENANCE	78.2%	52.4%	62.8%	53.4%	40.4%	74
FTEs - Water Supply	0.0%	5.8%	8.4%	0.2%	0.0%	73
FTEs - Water Treatment	37.9%	14.9%	21.9%	15.9%	0.0%	73
FTEs - Water Transmission and Distribution	40.2%	31.4%	40.8%	28.6%	21.5%	73
FTEs - MANAGEMENT, ENGINEERING, CUSTOMER SERVICE, OTHER	21.8%	47.3%	59.9%	45.7%	33.5%	74
FTEs - Engineering	10.3%	7.5%	10.3%	6.9%	3.3%	73
FTEs - Utility Planning	0.0%	1.9%	2.6%	0.2%	0.0%	73
FTEs - Lab Service / Compliance	0.0%	3.3%	4.8%	2.9%	0.0%	73
FTEs - Customer Service / Call Center	5.7%	12.3%	17.8%	12.0%	5.7%	73
FTEs - Customer Billing	0.0%	3.2%	4.1%	2.2%	0.0%	73
FTEs - Public relations	0.0%	0.8%	0.8%	0.3%	0.0%	73
FTEs - Finance	2.3%	3.6%	5.2%	2.5%	1.0%	73
FTEs - Human Resources	0.0%	1.4%	1.8%	0.9%	0.0%	73
FTEs - IT	0.0%	2.7%	3.8%	2.1%	0.0%	73
FTEs - Facilities	0.0%	2.6%	2.9%	0.0%	0.0%	73
FTEs - Fleet	0.0%	0.9%	1.3%	0.0%	0.0%	73
FTEs - Legal/Administration	2.3%	2.5%	3.4%	1.2%	0.0%	73
FTEs - Safety	1.1%	0.5%	0.7%	0.3%	0.0%	73
FTEs - Risks/Claims	0.0%	0.2%	0.0%	0.0%	0.0%	73
FTEs - Security	0.0%	0.3%	0.0%	0.0%	0.0%	73
FTEs - Other	0.0%	3.6%	2.4%	0.0%	0.0%	73

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		All Combined Utilities				
STAFFING LEVELS - Wastewater (as % of TOTAL)		Mean	Top Quartile	Median	Bottom Quartile	Count
FTEs - TOTAL	74.0	205.6	175.8	34.3	34.3	94
FTEs - OPERATIONS AND MAINTENANCE	75.7%	60.3%	72.2%	59.3%	51.8%	75
FTEs - Wastewater Collection	37.8%	30.9%	40.0%	31.3%	19.6%	72
FTEs - Wastewater Treatment	37.8%	26.9%	34.7%	27.2%	17.8%	72
FTEs - Stormwater Collection	0.0%	3.4%	2.3%	0.0%	0.0%	72
FTEs - Stormwater Treatment	0.0%	0.7%	0.0%	0.0%	0.0%	72
FTEs - MANAGEMENT, ENGINEERING, CUSTOMER SERVICE, OTHER	24.3%	37.3%	47.9%	39.2%	24.5%	74
FTEs - Pretreatment Programs	2.7%	2.2%	3.2%	1.2%	0.0%	70
FTEs - Engineering	10.8%	5.8%	8.7%	4.7%	1.9%	70
FTEs - Utility Planning	0.0%	1.3%	2.1%	0.1%	0.0%	70
FTEs - Lab service/compliance	0.0%	4.0%	6.4%	3.1%	0.0%	70
FTEs - Customer Service/Call Center	6.8%	6.7%	10.7%	6.1%	0.0%	70
FTEs - Customer Billing	0.0%	2.1%	2.3%	0.5%	0.0%	70
FTEs - Public Relations	0.0%	0.4%	0.6%	0.0%	0.0%	70
FTEs - Finance	1.4%	2.5%	3.8%	1.3%	0.0%	70
FTEs - Human Resources	0.0%	1.0%	1.4%	0.5%	0.0%	70
FTEs - IT	0.0%	2.3%	3.6%	1.5%	0.0%	70
FTEs - Facilities	0.0%	2.7%	3.5%	0.0%	0.0%	70
FTEs - Fleet	0.0%	0.6%	0.9%	0.0%	0.0%	70
FTEs - Legal/Administration	2.7%	2.0%	2.7%	0.5%	0.0%	71
FTEs - Safety	0.0%	0.4%	0.5%	0.0%	0.0%	70
FTEs - Risk/Claims	0.0%	0.3%	0.0%	0.0%	0.0%	70
FTEs - Security	0.0%	0.0%	0.0%	0.0%	0.0%	70
FTEs - Other	0.0%	4.6%	4.0%	0.0%	0.0%	70
Training (hours/employee)						
Training Hours per Employee - COMBINED	18.0	15.8	23.2	12.1	5.2	71
Training Hours per Employee - WATER	NA	13.8	18.0	10.2	5.3	64
Training Hours per Employee - WASTEWATER	NA	16.2	23.7	12.4	6.7	63
Emergency Response Readiness Training (hours/employee)						
Emergency Response Readiness - Combined	2.6	2.3	2.7	1.1	0.3	62
Emergency Response Readiness - Water	NA	2.0	2.5	1.1	0.4	50
Emergency Response Readiness - Wastewater	NA	2.9	3.0	1.2	0.4	49
Customer Accounts (accounts/employee)						
Customer Accounts per Employee - Combined	433	507	645	465	363	94
Customer Accounts per Employee - Water	314	518	643	484	375	92
Customer Accounts per Employee - Wastewater	573	614	725	527	359	90
Employee Turnover (%)						
Employee Turnover Rates - Combined	10.6%	9.0%	4.6%	8.1%	12.0%	82
Employee Turnover Rates - Water	17.2%	9.3%	5.2%	7.8%	12.6%	64
Employee Turnover Rates - Wastewater	2.7%	8.4%	3.4%	6.9%	10.7%	61
Retirement Eligibility (%)						
Retirement Eligibility - Combined	13.0%	22.6%	11.5%	19.9%	31.1%	81
Retirement Eligibility - Water	20.7%	20.4%	9.8%	19.3%	28.7%	66
Retirement Eligibility - Wastewater	4.1%	20.5%	8.3%	19.0%	30.1%	61
Employee Health & Safety Severity Rate						
Health & Safety Severity Rate - COMBINED	25.0	83.0	10.1	26.3	87.7	49
Health & Safety Severity Rate - WATER	46.5	92.1	19.1	42.0	57.1	27
Health & Safety Severity Rate - WASTEWATER	NA	72.8	11.2	39.5	99.7	27

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BUSINESS OPERATIONS

		All Combined Utilities				
Debt Ratio (%)		Mean	Top Quartile	Median	Bottom Quartile	Count
Debt Ratio - Combined	26%	40%	21%	35%	54%	86
Debt Ratio - Water	NA	37%	15%	30%	55%	55
Debt Ratio - Wastewater	NA	40%	21%	33%	57%	51
Debt Ratio - Stormwater	NA	8%	0%	1%	10%	22
Return on Assets (%)						
Return on Assets - Combined	3.8%	6.1%	3.6%	1.9%	0.6%	82
Return on Assets - Water	NA	6.4%	4.7%	1.8%	0.7%	53
Return on Assets - Wastewater	NA	5.5%	4.5%	1.8%	0.7%	51
Return on Assets - STORMWATER	NA	3.2%	4.0%	1.7%	0.0%	19
Days of Cash on Hand (days)						
Days Cash on Hand - COMBINED	601	366	533	272	111	79
Days Cash on Hand - WATER	NA	390	575	208	67	49
Days Cash on Hand - WASTEWATER	NA	445	591	257	91	49
Days Cash on Hand - STORMWATER	NA	425	466	280	75	19
Debt Service Coverage Ratio (net operating income / total debt service)						
Debt service coverage ratio - Combined	3.22	4.52	3.41	1.49	0.74	86
Debt service coverage ratio - Water	NA	6.97	3.44	1.74	0.28	56
Debt service coverage ratio - Wastewater	NA	7.49	3.27	1.47	0.57	54
Debt service coverage ratio - STORMWATER	NA	6.88	3.22	0.00	0.00	17
Operating Ratio (O&M costs / Total operating revenue)						
Operating ratio - Combined	24%	63%	77%	61%	44%	82
Operating ratio - Water	NA	66%	85%	64%	45%	68
Operating ratio - Wastewater	NA	65%	76%	62%	42%	66
Operating ratio - STORMWATER	NA	57%	85%	61%	34%	19
System Inspection (%)						
System Inspection(%): Water Pipe Network	0.0%	20.8%	26.7%	1.3%	0.0%	79
System Inspection(%): Wastewater Pipe Network	13.1%	20.1%	18.8%	11.0%	4.3%	81
System Renewal / Replacement Rate (%) - Water						
Water Supply	NA	3.4%	3.1%	1.6%	0.2%	29
Water Treatment Facilities	NA	6.0%	4.4%	1.4%	0.6%	38
Water Pump Stations	NA	5.3%	5.0%	2.4%	0.6%	29
Water Transmission & Distribution Pipe Networks	NA	2.6%	3.1%	1.4%	0.5%	46
System Renewal / Replacement Rate (%) - Wastewater						
Wastewater Collection	NA	5.3%	3.3%	1.5%	0.7%	45
Wastewater Pump Stations	NA	6.9%	5.0%	1.5%	0.6%	36
Wastewater Treatment Facilitites	NA	3.3%	4.0%	2.0%	0.5%	39
System Renewal / Replacement Rate (%) - Stormwater						
Stormwater Collection	NA	17.4%	2.9%	1.0%	0.0%	13
Stormwater Treatment	NA	0.7%	0.7%	0.0%	0.0%	4
Triple Bottom Line Index (%)						
Triple Bottom Line Index	60%	61%	85%	65%	45%	87
Bond Rating		Prime	High Grade	Upper Medium Grade	Lower Medium Grade	Count
Bond Rating	NA	19	54	10	1	84

Days of Working Capital

*** Complete data results unavailable; Metric will be included in the next Fiscal Year survey*

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CUSTOMER SERVICE

		All Combined Utilities				
Customer Service Complaints (per 1,000 accounts)		Mean	Top Quartile	Median	Bottom Quartile	Count
Customer Service Complaints - Combined	NA	23.9	0.5	1.6	8.0	49
Customer Service Complaints - Water	NA	4.3	0.5	1.3	4.9	16
Customer Service Complaints - Wastewater	NA	2.7	0.0	0.5	2.5	16
Technical Service Complaints (per 1,000 accounts)						
Technical Service Complaints - Combined	NA	42.1	2.1	7.9	36.9	50
Technical Service Complaints - Water	NA	57.7	3.1	5.9	49.3	38
Technical Service Complaints - Wastewater	NA	18.7	1.8	7.7	18.0	31
Call Center Indicators: Average TALK time (minutes)						
Average total call time (minutes) - Combined	2.0	3.5	2.5	3.2	4.6	61
Average total call time (minutes) - Water	NA	3.1	2.3	3.0	3.7	15
Average total call time (minutes) - Wastewater	NA	2.8	2.2	3.0	3.2	13
Call Center Indicators: Average WAIT time (minutes)						
Average wait time (minutes) - Combined	0.3	1.9	0.6	1.2	2.4	60
Average wait time (minutes) - Water	NA	1.5	0.5	1.0	1.6	15
Average wait time (minutes) - Wastewater	NA	1.4	0.3	1.0	1.1	12
Call Center Indicators: Abandoned Call Ratio (number of calls abandoned/number of call received)						
Abandoned call ratio - Combined	3.3%	8.4%	3.1%	6.0%	13.1%	58
Abandoned call ratio - Water	NA	7.3%	2.4%	6.4%	8.8%	13
Abandoned call ratio - Wastewater	NA	5.5%	2.0%	6.0%	8.8%	9
Call Center Indicators: Average Calls per Call Center Representative (# of calls)						
Average Calls per Call Center Rep - COMBINED	6,000	6,136	8,305	4,918	2,788	53
Average Calls per Call Center Rep - WATER	NA	5,040	5,586	3,345	1,750	14
Average Calls per Call Center Rep - WASTEWATER	NA	18,405	37,706	738	416	7
Disruptions of Water (W) Service						
PLANNED Disruptions of WATER Service (outages/1,000 accts)						
Duration: Less than 4 hours	0.15	2.44	0.14	0.53	3.10	60
Duration: Between 4 - 12 hours	0.00	0.77	0.00	0.18	0.77	58
Duration: More than 12 hours	0.00	0.12	0.00	0.00	0.01	55
Avg time to address (W) planned disruption (hrs)	3.0	8.0	1.5	3.4	10.0	53
UNPLANNED Disruptions of WATER Service (outages/1,000 accts)						
(W) Duration: Less than 4 hours	1.65	1.65	0.24	0.79	2.12	61
(W) Duration: Between 4 - 12 hours	0.00	0.80	0.02	0.16	0.87	59
(W) Duration: More than 12 hours	0.00	0.11	0.00	0.00	0.04	56
Avg time address (W) unplanned disruptions (hr)	1.4	10.4	1.1	3.3	11.2	54
Disruptions of Wastewater or Sewer (WW) Service						
PLANNED Disruptions of WASTEWATER Service (outages/1,000 accts)						
(WW) Duration: Less than 4 hours	NA	0.27	0.00	0.00	0.00	47
(WW) Duration: Between 4 - 12 hours	NA	0.07	0.00	0.00	0.00	48
(WW) Duration: More than 12 hours	NA	0.01	0.00	0.00	0.00	46
Avg time address (WW) planned disruption (hrs)	NA	3.4	0.0	0.0	0.0	45
UNPLANNED Disruptions of WASTEWATER Service (outages/1,000 accounts)						
(WW) Duration: Less than 4 hours	NA	2.38	0.00	0.23	2.01	50
(WW) Duration: Between 4 - 12 hours	NA	0.16	0.00	0.00	0.15	47
(WW) Duration: More than 12 hours	NA	0.05	0.00	0.00	0.00	46
Avg time address (WW) unplanned disruption (hrs)	NA	4.1	0.0	2.4	5.8	46

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AWWA Utility Benchmarking
2015 Data Set and Report for

Murfreesboro Water and Sewer Department

		All Combined Utilities				
Disruption Frequency Index		Mean	Top Quartile	Median	Bottom Quartile	Count
Water - Planned Disruption Frequency Index	0.15	3.08	0.25	0.94	3.34	62
Water - Unplanned Disruption Frequency Index	1.65	2.44	0.52	1.26	3.97	63
Water - System Disruption Frequency Index (all W Disruptions)	1.79	5.47	1.18	3.08	5.79	63
Wastewater - Planned Disruption Frequency Index	NA	0.33	0.00	0.00	0.00	50
Wastewater - Unplanned Disruption Frequency Index	NA	1.65	0.00	0.20	2.04	50
Wastewater - System Disruption Frequency Index - (all WW Disruptions)	NA	1.94	0.02	0.28	2.11	51
Cost of Residential Service ($) - Water						
Residential Cost of Water Service - 7,500 gallons per month ($)	$39.17	$39.62	$27.86	$35.94	$46.38	95
Residential Cost of Water Service - Average Monthly Bill ($)	$25.56	$34.38	$24.57	$30.45	$36.62	91
Residential Cost of Water Service - Average monthly usage (gallons)	4,100	6,644	4,500	5,800	7,069	90
Cost of Residential Service ($) - Wastewater						
Residential Cost of Sewer Service - 7,500 gallons per month	$52.23	$47.30	$34.75	$46.17	$56.59	91
Residential Cost of Sewer Service - Average monthly residential bill	$33.04	$36.64	$27.30	$34.18	$45.25	91
Residential Cost of Sewer Service - Average Montly flow (gallons)	4,100	5,744	4,488	5,160	6,146	89
Cost of Residential Service ($) - Stormwater						
Residential Cost of Stormwater Service - Average monthly residential bill ($ per month)	$3.00	$6.89	$3.00	$4.26	$7.00	25
Customer Service Cost per Account ($/account)						
Customer Service Cost per Account - Combined	$19.52	$34.67	$19.36	$24.95	$38.19	70
Customer Service Cost per Account - Water	NA	$45.30	$21.74	$32.03	$50.83	41
Customer Service Cost per Account - Wastewater	NA	$29.50	$14.60	$21.91	$32.05	40
Billing Accuracy (errors / 10,000 bills generated)						
Billing Accuracy - Combined	30.0	258.1	1.7	12.9	31.3	56
Billing Accuracy - Water	38.5	68.7	1.3	9.0	39.7	28
Billing Accuracy - Wastewater	24.5	20.6	0.9	6.9	24.9	27
Consumption (gallons per capita per day)						
Total per capita consumption (gallons per capita per day)	174.8	129.0	93.2	115.5	147.4	94
Domestic per capita consumption (gallons per capita per day)	63.4	71.9	47.2	63.8	83.4	88
Service Affordability (%)						
Water Service Affordability (%)	0.46%	0.70%	0.52%	0.66%	0.79%	83
Wastewater Service Affordability (%)	0.59%	0.79%	0.53%	0.74%	0.97%	83
Stormwater Service Affordability (%)	0.05%	0.14%	0.07%	0.09%	0.16%	23
Stakeholder Outreach Ratio						
Stakeholder Outreach Index (%)	75%	75%	100%	83%	58%	89

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2015 Data Set and Report for

Murfreesboro Water and Sewer Department

WATER OPERATIONS

		All Combined Utilities				
Water Operations - Various		Mean	Top Quartile	Median	Bottom Quartile	Count
Regulatory Compliance (%)	100.0%	99.1%	100.0%	100.0%	100.0%	85
Water Produced (MGD per Employee)	0.13	0.25	0.29	0.21	0.16	91
Current Water Demand (%)	51%	51%	36%	50%	64%	78
Available Water Supply (years)	85	54	51	33	19	58
Energy Consumption Efficiency for Water (kBtu/yr/MG)	10,280	6,603	3,469	6,181	8,313	79
O&M Costs for Water Service						
Operational cost of potable water services ($/Account)	$193	$553	$294	$417	$654	83
Operational cost of potable water services ($/MGD)	$1,266	$3,163	$1,726	$2,243	$3,677	75
Operational cost of potable water services ($/100 miles of pipe)	$1,199,280	$7,462,754	$1,727,701	$2,600,151	$4,055,590	85
Treatment O&M Cost of Potable Water Service ($/MG)	NA	$820	$452	$661	$911	50
Distribution O&M Cost of Potable Water Service ($/100 miles of pipe)	NA	$911,895	$385,169	$595,136	$773,144	62
O&M % - Water Supply	NA	27.6%	6.2%	19.6%	38.8%	45
O&M % - Water Treatment	NA	31.6%	18.0%	29.6%	40.5%	51
O&M % - Water Transmission and Distribution	NA	32.1%	15.1%	25.7%	40.0%	61
O&M % - Water Support Services provided by others	NA	29.4%	16.1%	26.4%	41.2%	41
Maintenance - Water						
Planned maintenance Ratio (as % of total maintenance)	58%	64%	79%	69%	48%	61
Corrective maintenance to Water Production (hrs / MG)	0.2	1.6	0.4	0.9	1.7	52
Planned maintenance to Water Production (hrs/MG)	0.3	3.5	3.6	1.7	1.2	54
Corrective maintenance to Water Distribution (hrs/100 mile)	182	2,001	356	1,257	2,622	62
Planned maintenance to Water Distribution (hrs/100 miles)	250	3,002	3,628	1,914	1,162	61
Leaks and Breaks (per 100 miles of pipe)						
Water Distribution System Integrity (leaks per 100 miles of pipe)	3	31	3	9	24	61
Water Distribution System Integrity (breaks per 100 miles of pipe)	5	14	4	7	18	61
COMBINED Leaks and Breaks (per 100 miles of pipe)	8	49	8	20	42	74
AWWA Water Audit Software						
Participated in AWWA Free Water Audit Software?	Yes		Yes			33
Validated Results	Yes		Yes			23
Level of Validated Results	3.00	2.0	2.5	2.0	1.0	23
Average Operating Pressure (psi)	68.0	74.4	61.9	71.0	82.5	36
Water Audit Data Validity Score	81.0	75.2	83.3	78.0	72.5	36
Annual cost of Apparent Losses	747,075	$ 9,954,978	$ 78,533	$ 731,351	$ 1,462,397	34
Annual cost of Real Losses	993,963	$ 5,195,514	$ 142,438	$ 578,242	$ 2,060,817	36
Non-revenue water as percent by cost of operating system	10.1	14.7	1.3	7.4	19.7	36
Apparent Losses per service connection per day (gallons/connection/day)	21.100	14.486	2.865	5.240	14.760	35
Real Losses per service connection per day (gallons/connection/day)	86.900	75.843	18.078	42.645	104.415	36
Real Losses per length of main per day (gallons/mile/day)	5268.0	1074.1	0.0	0.0	523.6	11
Infrastructure Leakage Index (ILI)	5.250	4.644	1.095	2.450	5.700	35

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STORMWATER OPERATIONS

Operations and Maintenance - Stormwater		All Combined Utilities				
		Mean	Top Quartile	Median	Bottom Quartile	Count
O&M % - Stormwater Collection	NA	69.8%	47.8%	75.5%	91.4%	13
O&M % - Stormwater Treatment	NA	16.4%	5.0%	12.3%	28.3%	7
O&M % - Stormwater Support Services (provided by others)	NA	38%	19%	37%	46%	10

WASTEWATER OPERATIONS

Wastewater Operations - Various		All Combined Utilities				
		Mean	Top Quartile	Median	Bottom Quartile	Count
Wastewater Compliance Rate (%)	NA	95.2%	100.0%	99.9%	99.5%	52
Wastewater Processed per Employee (mgd per employee)	0.22	0.24	0.28	0.19	0.12	79
Non-Capacity Sewer Overflow Rate (per 100 miles of pipe)	0.64	14.97	0.61	1.28	3.57	65
Capacity Sewer Overflow Rate (per 100 miles of pipe)	1.8	1.5	0.2	0.7	2.2	44
Collection System Failures (per 100 miles pipe)	0.3	14.1	1.1	3.8	11.2	57
Energy Consumption Efficiency for Wastewater (kBtu/yr/MG)	10,130	10,696	5,238	9,842	13,702	69

O&M Costs for Wastewater Service

Operational cost of wastewater services ($/Account)	$138	$402	$248	$355	$509	73
Operational cost of wastewater services ($/MG)	$1,003	$3,781	$1,727	$2,597	$3,977	69
Operational cost of wastewater services ($/100 miles of pipe)	$937,540	$2,920,784	$1,792,082	$2,405,855	$3,344,854	75
Collection O&M Cost of Wastewater Service ($ / 100 miles of pipe)	NA	$667,276	$368,562	$513,699	$795,483	57
Treatment O&M Cost of Wastewater Service ($ / MG)	NA	$1,376	$673	$1,114	$1,509	53
O&M % - Wastewater Collection	NA	29.8%	16.0%	24.0%	35.1%	57
O&M % - Wastewater Treatment	NA	50.9%	37.1%	49.7%	66.1%	56
O&M % - Wastewater Support Services (provided by others)	NA	29.2%	16.8%	25.3%	34.5%	41

Maintenance - Wastewater

Planned maintenance Ratio (as % of total maintenance)	80%	64%	79%	69%	48%	61
Corrective Maintenance to Wastewater Treatment (hrs per MG)	0.1	1.6	0.4	0.9	1.7	52
Planned Maintenance to Wastewater Treatment (hrs / MG)	0.4	3.5	3.6	1.7	1.2	54
Corrective Maintenance to collection (hrs per 100 miles)	83.2	2,001	356	1,257	2,622	62
Planned Maintenance to collection (hrs per 100 miles)	333	3,002	3,628	1,914	1,162	61

Maintenance - TOTAL

TOTAL Planned Maintenance Ratio (planned maintenance as % of total maintenance) -	71%	57%	76%	59%	42%	64

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AWWA UTILITY BENCHMARKING PROGRAM

BENCHMARKING PERFORMANCE INDICATORS FOR WATER AND WASTEWATER UTILITIES
2015 DATA SET

Murfreesboro Water & Sewer Dept.
August 23, 2016

PARTICIPANTS

163 Utilities (124 in 2014)

98 with Combined Water and Wastewater Services (80 in 2014)

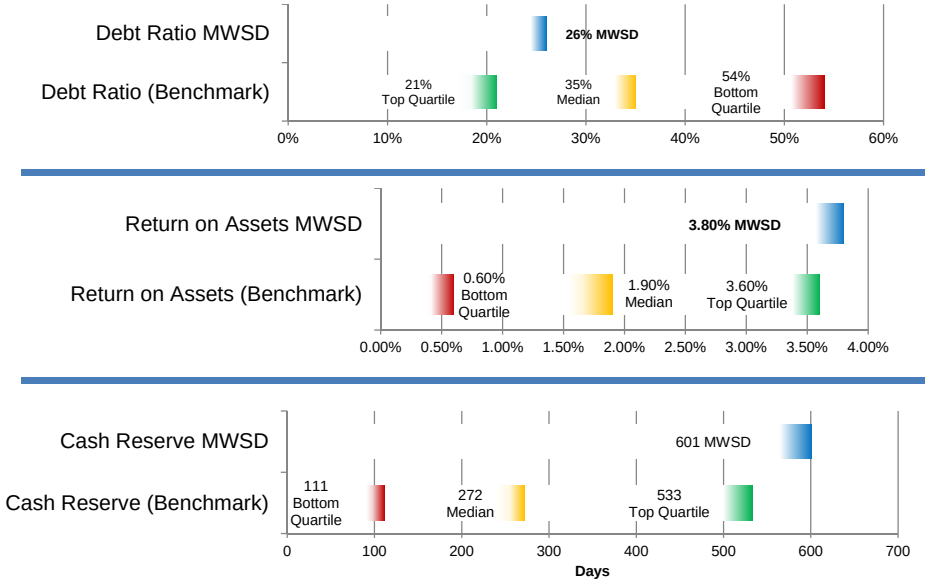
33 States Represented

6 from Tennessee

- Memphis
- Metro Nashville
- Johnson City
- Brentwood
- Atoka
- Murfreesboro

FINANCIAL VIABILITY

MWSD Scored in or near the TOP Quartile in every financial parameter



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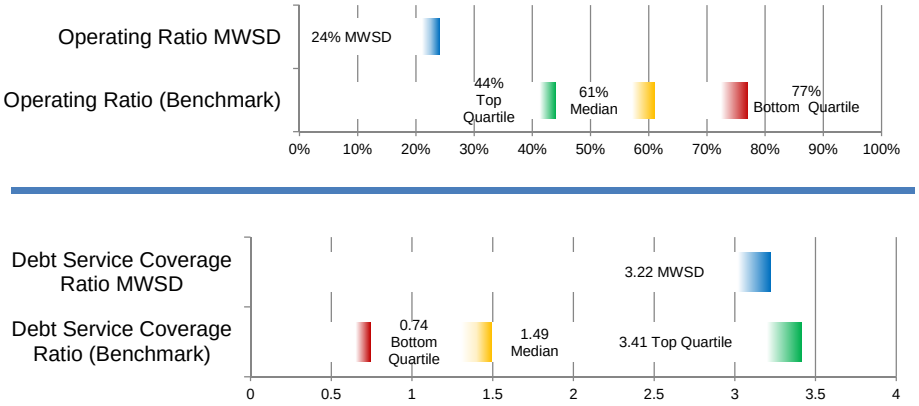
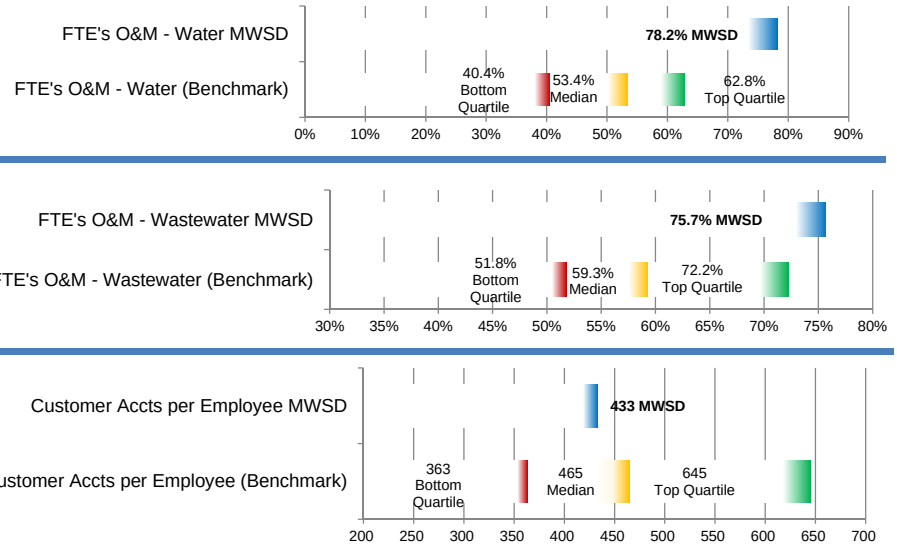


STAFFING LEVELS

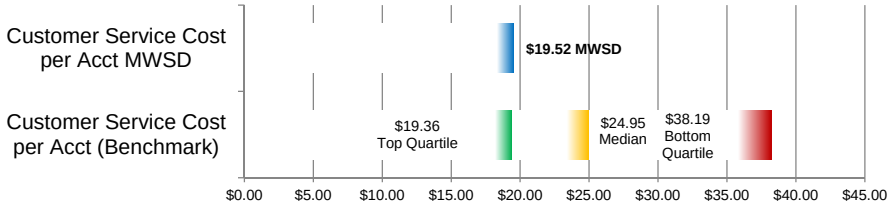
MWSD has a Higher O&M staff percentage and Lower Admin percentage than the survey respondents



CUSTOMER SATISFACTION

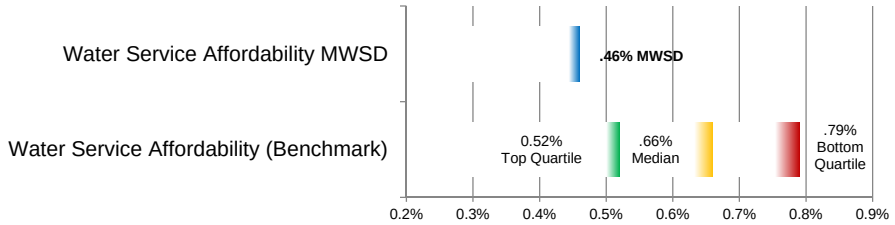
AFFORDABILITY

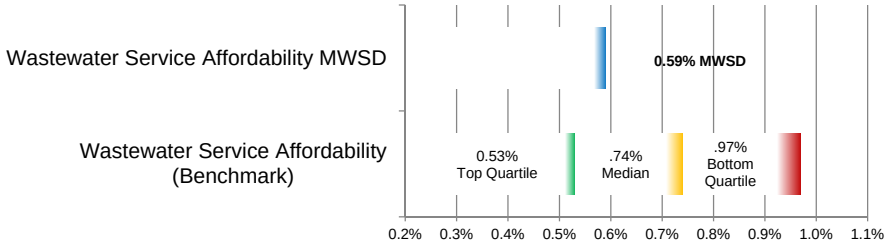
Parameter	MWSD	Top Quartile	Median	Bottom Quartile
Avg Monthly Water Bill	**$25.56**	$24.57	$30.45	$36.62
Avg Monthly Sewer Bill	**$33.04**	$27.30	$34.18	$45.25



CUSTOMER SATISFACTION

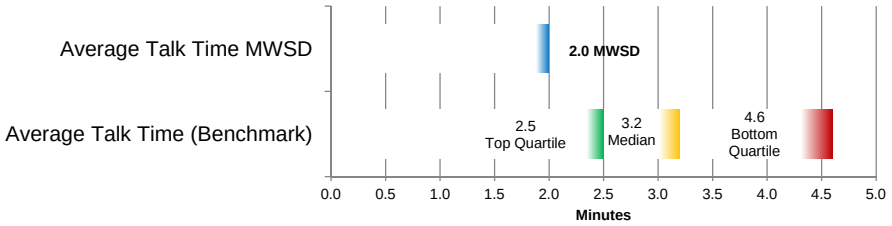
SERVICE AFFORDABILITY

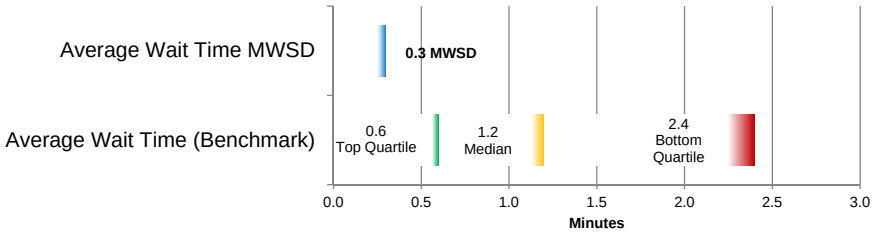




CUSTOMER SATISFACTION

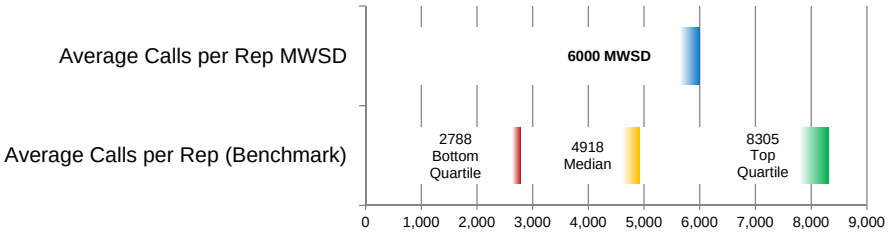
CALL CENTER INDICATORS

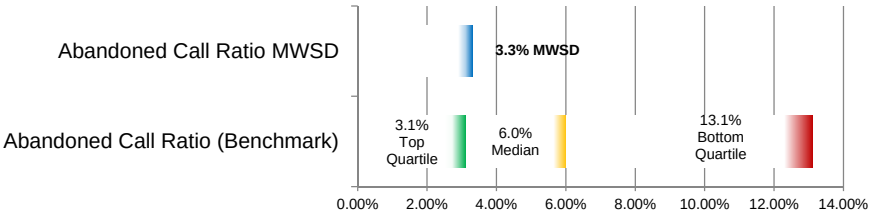




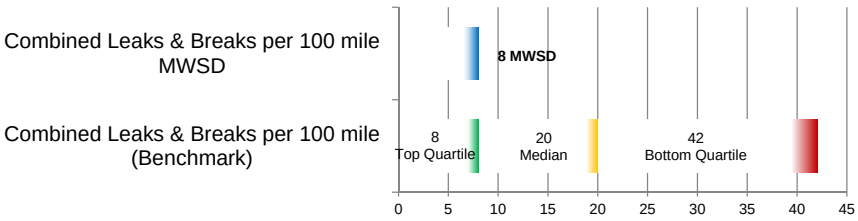
CUSTOMER SATISFACTION

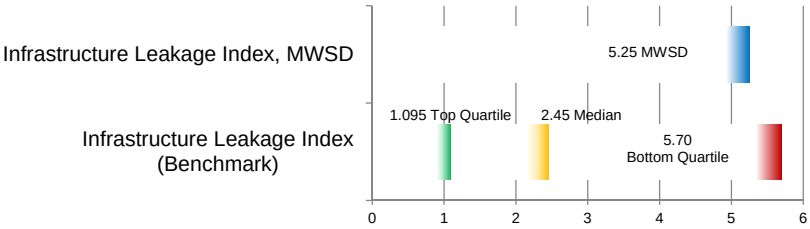
CALL CENTER INDICATORS





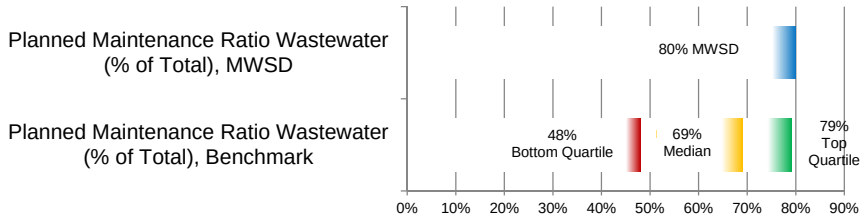
INFRASTRUCTURE STABILITY

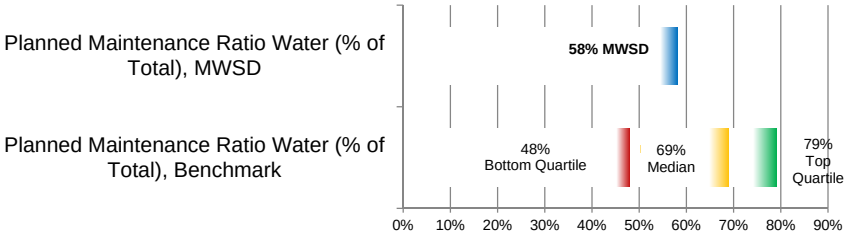




INFRASTRUCTURE STABILITY

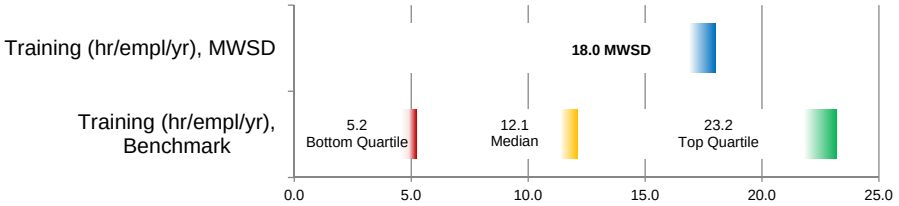
RESPONSIVENESS - SEWER

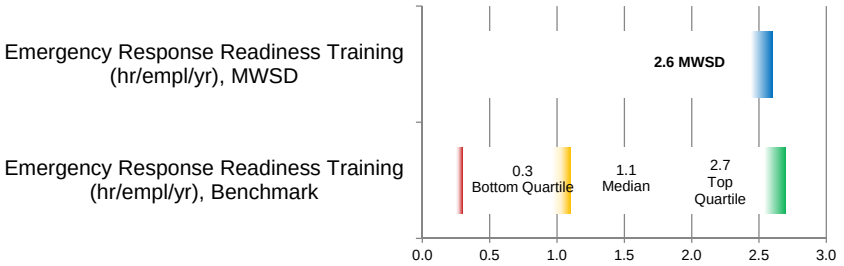




EMPLOYEE AND LEADERSHIP DEVELOPMENT

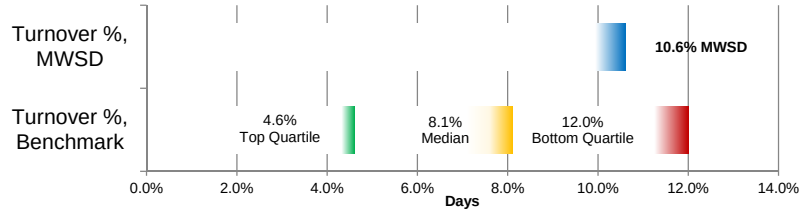
TRAINING

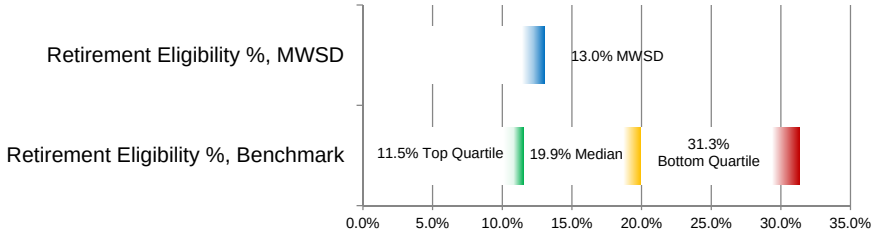




EMPLOYEE AND LEADERSHIP DEVELOPMENT

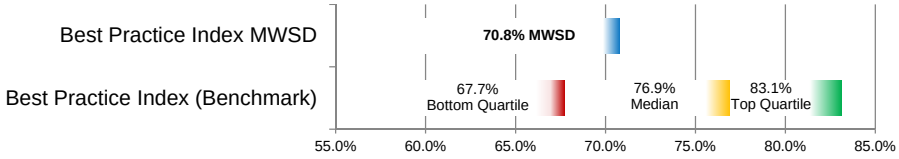
TURNOVER & RETIREMENT

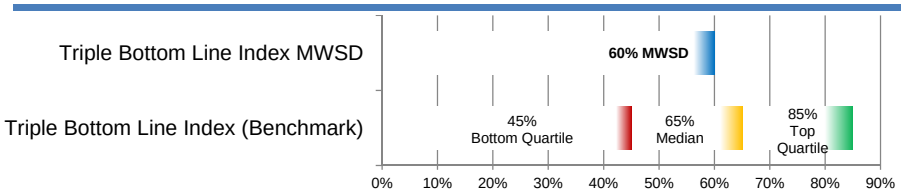


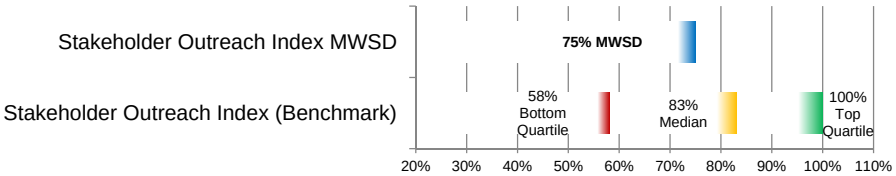


COMMUNITY SUSTAINABILITY

BEST PRACTICES / TBL / OUTREACH







City of MURFREESBORO TENNESSEE

. . . creating a better quality of life

MEMORANDUM

DATE: August 18, 2016

TO: Water and Sewer Board

FROM: Darren Gore

SUBJECT: Director's Executive Summary
Reflecting Back on FY15-16 and Anticipating Things to Come in FY16-17

Background

Since August of 2013, I've been publishing an Executive Summary that reviews the Departments accomplishments achieved in the previous fiscal year and attempts to forecast anticipated achievements in the upcoming fiscal year. Attached is the updated "version" for FY15-16 and FY16-17.

This summary effectively "tracks" progress from year to year and ensures that the Department is intentional in moving forward with defined goals and objectives.

Recommendation

For Information Only

Fiscal Impact

N/A

Exhibits

MWSD Executive Summary: Reflecting Back on FY15-16 and Anticipating Things to Come in FY16-17

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

Executive Summary

Murfreesboro Water and Sewer Department

Reflecting Back on **FY15-16** and Anticipating Things to Come in **FY16-17**

An executive summary of past performance, quick wins and upcoming challenges and goals; centered around Effective Utility Management and Lean manufacturing principals

By: Darren Gore, Director

August 5, 2016

Murfreesboro Water and Sewer ***FY16 Review***

Reflecting Back on the Past Year

Advanced Metering Infrastructure (AMI) Installation and Implementation

The Advanced Metering Infrastructure (AMI) encompasses approximately 28,000 meter replacements ranging from 5/8" to 2" in size. This project will allow the Department to read water meters wirelessly and no longer have to read them manually. This project's core benefits are:

1) Enhance customer service through proactive engagement; namely early leak notifications
2) Transform the manual meter reading business operation; eliminate routine tasks and reassign existing personnel to elevated functions
3) Confront real water loss and come into full observance of industry metrics for conservation
4) The AMI project's core goal is to have customers "pay their fair share"; otherwise, inaccuracy in meters have to be subsidized by all rate payers

As of June 30, 2016, the project implementation was approximately 50% complete. Interface with the Department's Customer Information System has been successful from launch of the pilot program in October 2015 and the On-line Analytics that allow for Customer Engagement are being "piloted" with a small user group at this time.

Water Resource Integration Planning

- **Look holistically at the management of water** (drinking water, wastewater, repurified water, and stormwater) within the potential service areas of the Murfreesboro Water & Sewer Department.
- **Coordinate efforts with the Murfreesboro 2035 plan**, so that the overall goal of facilitating the growth of the City of Murfreesboro will be accomplished in an orderly fashion with consideration of affordable and sustainable water management.
- **Coordinate water management strategies with the Consolidated Utility District** to identify challenges and strategies to providing water services within the Urban Growth Boundary.
- **Develop a framework** for the Murfreesboro Water & Sewer Department to utilize as a strategic plan for utilizing **Effective Utility Management** to guide its evolution into a "**Water Resource Utility of the Future**"

Success in Partnering with TDEC and Approval of 2016 National Pollutant Discharge Elimination System (NPDES) Permit

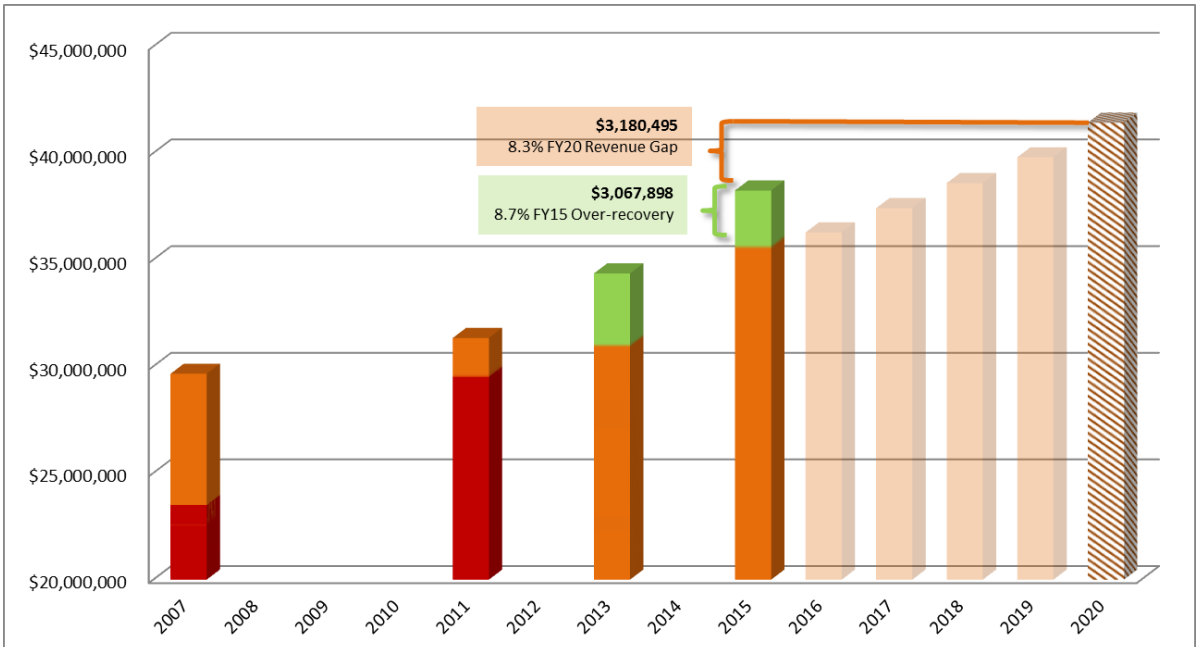
The Department was successful in changing the dialog with TDEC personnel from "reviewing the model results", to "reviewing the observed site-specific data results", and as such has received a draft NPDES permit through 2021 that maintained the Sinking Creek Treatment Plant's discharge limits at previous levels. We believe this sets the City up for continued compliance for the next five (5) years.

Reclassification of Meter Reading Workforce

The meter reading workforce was reorganized to report to the Operations Manager in FY14. This was intended to be the first step in the ultimate goal of developing the meter readers into Leak Detection and Advanced Metering Infrastructure (AMI) field technicians. With the help of the Human Resource (HR) Department , Water and Sewer meter reading staff was reclassified as part of the FY17 budget to a more sophisticated level of work that elevated an already committed workforce to handle new challenges and coordinate with Operations & Maintenance crews to fix leaks in the water distribution system.

FY15 Water and Sewer Cost of Service Study (COSS)

MWSD's completed the COSS for FY15 for the water, sewer and repurified water enterprise funds. The new study allowed the Department to modify our five (5) year rate design so that no anticipated rate increases will are expected for the residential customer class through FY20.



	2007 COSS	2007 Recov	2011 COSS	2011 Recov	2013 COSS	2013 Recov	2015 COSS	2015 Recov	2016 Pro Forma	2017 Pro Forma	2018 Pro Forma	2019 Pro Forma	2020 Pro Forma
Total	$29,650,005	$23,498,628	$31,328,535	$29,507,833	$31,244,197	$34,353,148	$35,175,522	$38,243,420	$36,277,171	$37,414,141	$38,587,586	$39,798,701	$41,423,915

Successful Leveraging of the Water/Wastewater Mechanical Electrical Services Contract with John Bouchard & Sons

The Department contracted with John Bouchard in early 2015 to facilitate a "work order" based system using established unit prices (similar to the City's annual concrete and paving contracts), in order to aid the plants with larger projects. The total project count is up to fourteen (14) at a total cost of $965k, ranging from $3,000 to help in replacing valves and wiring to upwards to $400,000 to replace raw water pumps and mechanical/electrical services to install the new biosolids rotary presses.

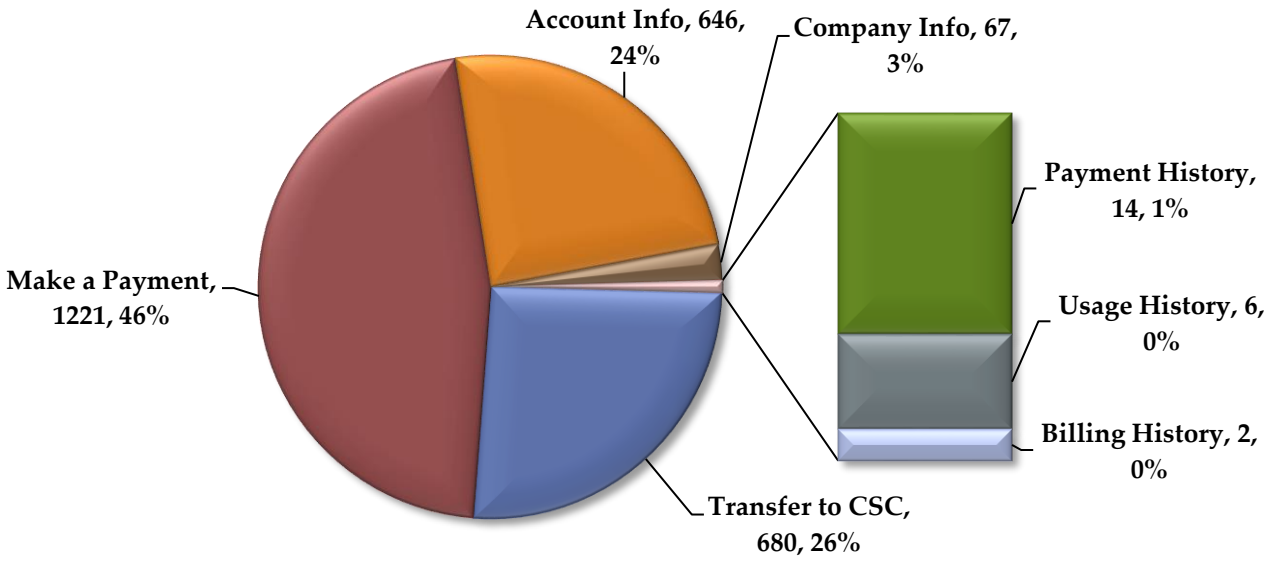
Pilot Testing New Membranes at the Stones River Water Plant

As MWSD approaches the useful life of the Pall membrane modules, it would be beneficial to have competition for their replacement. Scinor Water America, LLC manufactures a similar membrane that has received their NSF 419 certification. TDEC has approved the installation of these membranes at the water plant as of August 2015 in order to allow staff to determine if this product performs equally to the Pall membrane modules. If they do perform, this should result in savings when the membranes are replaced in whole due to the competitive bidding process.

Deploying Interactive Voice Response (IVR) IT Solution

The IVR system went live in March 2015 to afford the Department the ability to record phone conversations, allow customers to pay via telephone, as well as gain valuable call center metrics (e.g., first call resolution). This enterprise solution is linked with the Department's New CIS.Infinity software. From June 2015 to June 2016, we have witnessed a 38% call increase (2,636 from 1,910).

IVR Calls From 06/01-06/30/2016 = 2,636

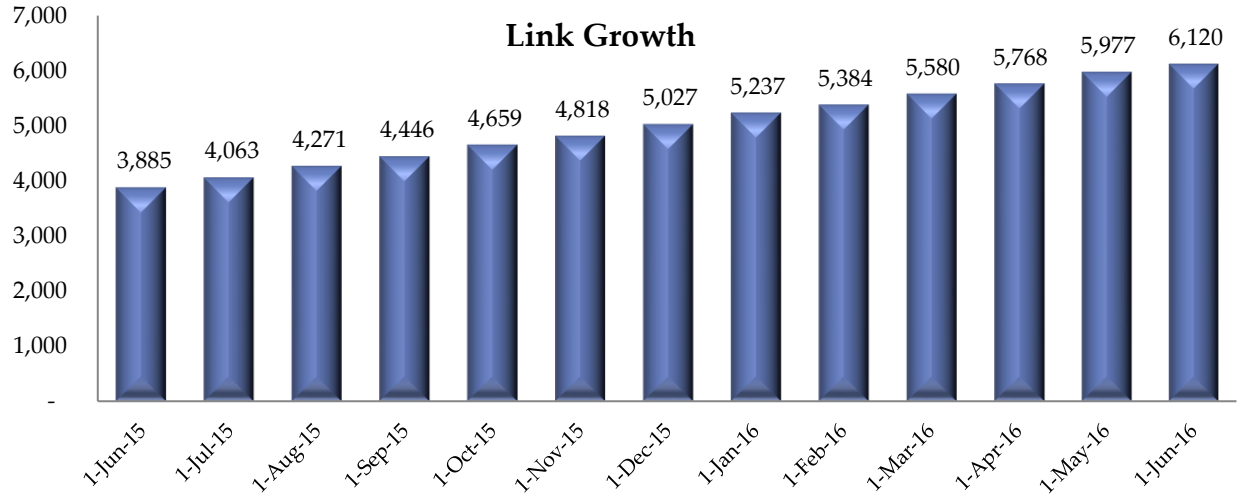


Working the Water and Sewer Capital Improvements Plan

The upgrade of the SCWWTP from 16 MGD to 20 MGD was bid in January 2015. Securing funding for the plant upgrade ($36.5M) was accomplished through the State Revolving Fund (SRF) loan program at a 20-yr fixed rate of 1.4%. The low bidder was awarded to 3D Enterprises in the amount of $30,472,000. Notice to Proceed was issued in April 2015. The Southwest Regional Pump Station and Force Main and the Sinking Creek Wastewater Treatment (SCWWTP) Headworks facility effectively completed by year end of FY15 as well. The total costs of these projects are $23.4M and are funding with State Revolving Fund (SRF) money at 20-yr fixed 1.1% loans. There is $2.4M in principal forgiveness associated with these SRF loans.

Infinity.Link Web Portal for Enhanced Customer Engagement

With our ongoing information technology (IT) enterprise implementations we are now able to reach many more customers and allow on-line querying and interactions within their accounts. The Department's new Infinity.Link is our on-line web portal, and it is growing each month (57% increase from June 2015 through June 2016 (6,120 accounts vs 3,885).



Approval to Develop a Water Resource Integration Plan (WRIP)

In FY15, The City of Murfreesboro is poised to begin a historic planning campaign through the commissioning of the Comprehensive Plan initiative with Kendig Keast Collaborative. As has been acknowledged in past discussions with City and Chamber of Commerce leaders, a key to the continued growth and socioeconomic welfare of the City of Murfreesboro will be the availability of water and sewer services within the Urban Growth Boundary. The City of Murfreesboro faces numerous challenges in the supply of these services within the Urban Growth Boundary, including, but not limited to:

- Limited assimilative capacity of the local receiving streams for wastewater effluent and stormwater runoff
- Contractual restrictions with the Corps of Engineers on raw water withdrawals from the J. Percy Priest Reservoir and its tributaries
- Service of portions of the Urban Growth Boundary by other entities (e.g., Consolidated Utility District)

The Water and Sewer Board and City Council approved the development of a Water Resource Integration Plan in April 2015.

Completion of the Stones River Water Treatment Plant Hydrogen Peroxide Feed System

Staff conducted a pilot scale study to prove that feeding hydrogen peroxide is a proper chemical treatment to reduce disinfection by-products (DBP's) to a level that meets the Stage 2 DBP rule. Construction of a full scale hydrogen peroxide feed system was completed in FY16 and is expected to bring us into full compliance with the State 2 DBP rule for drinking water standards.

Successful Implementation of a New Financial Information System (FIS) IT Solution

As of July 1, 2015, the Water and Sewer Department has successfully transitioned from an antiquated COBOL financial system to a state-of-the-art, off-the-shelf open database compliant software (MUNIS) to handle electronic requisition, purchase orders and accounts payable.

Participation in AWWA 2015 Utility Benchmarking Survey

With the new EUM Coordinator focusing on trends and benchmarking, the Department has participated in the American Water Works Association (AWWA) benchmarking study for the past four (4) years. Participating in these studies provides a level of confidence in how MWSD is

performing in comparison to our peers. As one of our primary objectives and perhaps our customer's most pertinent measure of Customer Satisfaction, we scored in the top quartile at 0.46% for water, 0.59% for wastewater, and 0.05% for stormwater. This metric is calculated based on the median annual income.

Murfreesboro Water and Sewer ***FY17 Look Ahead***

Anticipating the Upcoming Year

Venturing into Decentralized Septic Tank Effluent Pump (STEP) Wastewater Treatment System Operations

The Department received approval for STEP system design guidelines that incentivized a property off of Dilton-Mankin Rd. and Manchester Hwy. to voluntarily annex into the City Limits. The sanitary sewer collection system was not close enough to support extension to this site, but the site was contiguous to the City Limits. As a result City Administration, the Planning Department, City Engineering, City Legal and Murfreesboro Water and Sewer Department worked out an acceptable solution that afforded the developer a slightly higher lot yield and in turn triggered a request for annexation. MWSD is now in the STEP system business and looks forward to these types of opportunities in the future. Decentralized systems are one of several tools that MWSD must utilize to meet the growth and mitigate the limitations we have on the small receiving stream in the West Fork Stones River.

Development of a Biosolids Master Plan

The Sinking Creek plant's Biosolids handing facility originally went online in August of 2000. Approval of replacement of three (3) presses and the associated mechanical / electrical work was approved in June 2016. The work is expected to be completed by the third quarter of FY17 at a total capital outlay of $1.53M. With the closing of Middle Point Landfill expected to occur within the next 5-7 years, staff has received approval

Utility of the Future Today

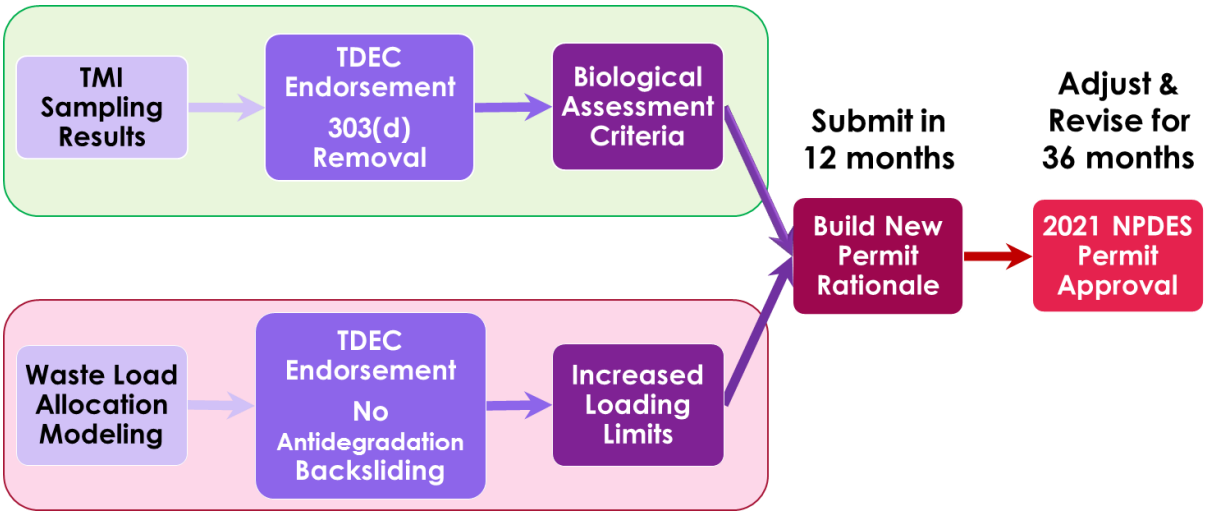
MWSD is a UOTF because it is –

- **a learning organization** where staff is encouraged and budget is allocated to develop the skills to stay on the cutting edge of technology.
- **an organization that understands and embraces taking calculated risk**. It is understood that challenging projects will not always succeed, thus, if honest, good faith efforts are given all around; no time is wasted seeking to assign blame
- **a team**, understanding that there is no need to claim ownership of ideas. Teams evaluate all ideas, select the best one, and commit to it.
- **facilitators of partnerships** with far reaching impact.
- **proactive**. Reactive maintenance has been replaced by systematic data analysis which guides preventive maintenance.

for development of a Biosolids Master Plan (BMP) to cover a 20-yr horizon. The BMP will evaluate alternatives in terms of guiding principles (i.e., weighted criteria) and incorporate the tenets of Effective Utility Management, attempting to quantify sustainability and affordability as well as socio-economic benefits and environmental stewardship. The BMP will include planning level cost estimates for the capital and operation and maintenance costs.

Leveraging the City's Effluent Quality for Development of a NPDES Permit Rationale & Develop a New Waste Load Allocation Study

Since June of 2013, staff, SSR and AquAeTer have been assembling a data set that we believe demonstrates that effluent discharged into W. Fork enhances the water quality of the river. The data provided and reviewed in March of 2015 demonstrates that the biology in the stream is healthy and that the stream is in fact meeting its designated uses. The team believes that it is in the City's best interest to continue to sample these receiving streams in an effort to reinforce that the benefit to the West Fork Stones River is a long term display. Staff expects to request approval to develop a Waste Load Allocation Study that proves there is no anti-degradation ("backsliding") associated with increased effluent BOD/ammonia load to the W. Fork Stones River, with the ultimate goal of developing a new NPDES permit rationale and framework "prototype" for TDEC review between now and MWSD's 2021 permit renewal.



Recognition as a "Utility of the Future" Today

MWSD received recognition as a Utility of the Future Today:

- By continuing to develop The Water Resource Integration Plan that was commissioned in May 2015
- Through advancing MWSD's 2015 Annual Review of Trends and Strategic Planning Issues
- In continuing to seek to measure those key performance indicators that provide insight and guidance into becoming a more efficient and Lean organization.

- In developing Agricultural Partnerships for Land Application of Effluent Spray Irrigation (e.g., Williamson Farm, MTSU Farm)
- In developing Industrial Partnerships for Financial, Environmental and Social Gains (e.g., General Mills & Indian Hills Collaboration)
- In facilitating Development Partnerships that may benefit from unconventional sewage treatment techniques (e.g., Dill/Rushing/Lyons Property).
- Collaborating water management strategies with the Consolidated Utility District to identify challenges and strategies to providing water services within the Urban Growth Boundary.

Provide Aid in Developing a Triple-Bottom Line (TBL) Partnership between Indian Hills Golf Course and General Mills/Yoplait

The Department has helped facilitate a new irrigation system on Indian Hills that will provide three (3) significant benefits. First, Indian Hills will develop a revenue stream to pay for the approximate $2.5M infrastructure improvement by General Mills paying a rate lower than sending their effluent to MWSD's sewer. Secondly, General Mills will incur savings by paying the reduced rate to Indian Hills for every gallon that is offset from MWSD's sewer system. Thirdly, MWSD will reduce the phosphorous loading by 35-50% currently felt by receiving General Mills effluent at the Sinking Creek Treatment Plant. Environmental, financial and social betterments – a triple-bottom line win.

Participate and Promote the National Water Supply Alliance (NWSA)

The Department has recently signed a Memorandum of Understanding (MOU) with other water providers across the nation advocating the water supply use in Corps' projects. The NWSA affords MWSD strength in numbers as well as a cohesive and unified voice to affect Corps policy and National legislation. The NWSA's mission has been defined as – "To advocate for the preservation and enhancement of the nation's water supply, protection of traditional State authorities, and to ensure that water supply interests share equitably in the benefits provided by U.S. Army Corps of Engineers' water projects."

Continue to Regain Capacity through Sanitary Sewer Rehabilitation and Replacement Efforts

Littlejohn Engineering was awarded a design contract to repair or replace portions of MWSD's sanitary sewer system that are deemed in need of repair. This total rehabilitation construction costs associated with this design contract were estimated at $1.2M in 2015; however, the project has expanded to the amount of $2.74M in system repairs and rehab. The project is expected to be

completed in the second quarter of FY17. New design contracts are expected to be awarded in FY17 to carry on this important work in regaining collection system capacity.

Enhancing Security in the Customer Service Area

Staff is continuing to work on upgrades in security in the customer service area. This is the one item that was not achieved in FY16; however architectural services were secured in January 2015 with the firm of Johnson & Bailey. In FY17, the Department expects to develop detailed plans for renovation of this area to guard against potential theft or other security threats.

Continued Partnering with Key Stakeholders

In FY17, MWSD staff will continue to partner and collaborate with key stakeholders such as the U.S. Army Corps of Engineers, Tennessee Department of Environment and Conservation, the Rutherford County Chamber of Commerce, General Mills / Pillsbury, Rutherford County, Middle TN State University, Consolidated Utility District, and the development community. Service Excellence is a committed culture within the Department.

Developing "Tool Kits" and Accepting Electronic Plans Submittals

Staff will continue to develop "tool kits" for easy navigation through our plans approval process. MWSD wants to continue to get information into the hands of small business entrepreneurs to educate them on water and sewer requirements so that there are "no surprises" as they navigate through the approval process. The Department is now accepting electronic plans for review as part of our approval process. More timely and efficient plans processing is expected, resulting in cost savings to the design engineer and their clients.

WATER AND SEWER
DASHBOARD PERFORMANCE
July 2016

PRELIMINARY MWSD FY2016-2020 CIP

NO.	PROJECT	2015-2016 2015 Issue	2016-2017 2016 Issue	2017-2018 2017 Issue	2018-2019 2018 Issue	2019-2020 2019 Issue	TOTAL
	Wastewater Treatment Plant Expansion						
	Engineering (4C, 4D, SW FM & PS)	$200,000	$200,000	$50,000			$450,000
	Construction- Northeast Regional force main						$0
	Construction- Northeast Regional pumping station						$0
	Process expansion to 24 mgd, Phase 4D	$14,500,000	$13,000,000	$2,000,000			$29,500,000
	TOTAL Capital Improvements funded from **Debt Service**	$14,700,000	$13,200,000	$2,050,000	$0	$0	**$29,950,000**

NO.	PROJECT	2015-2016 2016 FY	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 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	$400,000	$400,000	$400,000	$400,000	$0	$1,600,000
	Biolsolids Storage Sinking Fund	$300,000	$300,000	$300,000	$300,000	$0	$1,200,000
	Lift Station Replacement Sinking Fund	$125,000	$286,000	$125,000	$125,000	$125,000	$786,000
	NE Regional PS & FM Sinking Fund	$0	$500,000	$500,000	$500,000	$500,000	$2,000,000
	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**	$4,820,000	$5,481,000	$5,320,000	$5,320,000	$4,620,000	**$25,561,000**

NO.	PROJECT	2015-2016 2016 FY	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	TOTAL
	W&S CAPITAL IMPROVEMENT PROJECTS						
	Misc FY15 Working Reserve Commitments	$2,100,000					$2,100,000
	Customer Service Area Security Renovations	$450,000					$450,000
	Contingency Items (Generators, Gear Box, HVAC)	$775,000					$775,000
	NE Regional Engineering Design	$500,000	$500,000	$500,000	$200,000	$200,000	$1,900,000
	NE Regional P.S.				$2,500,000	$5,000,000	$7,500,000
	NE Regional Force Main				$2,500,000	$5,000,000	$7,500,000
	SCWWTP Phase 4D Engineering & Inspection	$300,000	$250,000				$550,000
	Lift Station Rehab/Replacement (#2, #13, #19 & #20)	$1,500,000	$1,000,000	$500,000	$500,000		$3,500,000
	S. Church St. Sewer @ Joe B. Jackson Pkwy	$250,000					$250,000
	Water Resource Integration Plan (WRIP)	$400,000					$400,000
	WTP Membrane Replacement				$2,000,000		$2,000,000
	Biolsolids Storage Addition			$1,500,000			$1,500,000
	Stones River Water Qual Sampling / NPDES Permitting		$200,000	$150,000	$100,000	$100,000	$550,000
	Subtotal CAPITAL PROJECTS	$6,275,000	$1,950,000	$2,650,000	$7,800,000	$10,300,000	$28,975,000
	TRANSPORTATION (Water/Sewer Imp.)						
	Bradyville Pike		$500,000	$500,000			$1,000,000
	MT Blvd Widening- Greenland to Main	$750,000	$750,000	$140,000			$1,640,000
	Lytle St. Relocation (Ph1 & Ph2)	$390,000	$1,170,000				$1,560,000
	SR 99 Widening- Old Fort to Cason Lane		$500,000	$500,000			$1,000,000
	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	$1,140,000	$4,645,000	$2,390,000	$0	$0	$8,175,000
	REHABILITATION						
	Sewer Rehabiliation - Maintenance Contract	$1,500,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$5,500,000
	INFORMATION TECHNOLOGY PROJECTS						
	CIS, IVR, MWM	$50,000					$50,000
	Advanced Metering Infrastructure (AMI)	$4,150,000	$2,850,000				$7,000,000
	IT/Computer Systems Hardware Upgrades	$200,000	$50,000	$50,000	$50,000	$50,000	$400,000
	Financial Information Systems (FIS), HRIS						$0
	Electronic Content Management (Scanning/Imaging)		$150,000	$150,000	$150,000		$450,000
	IT Design Services & Consulting	$100,000	$100,000	$100,000	$100,000		$400,000
	Computerized Maintenance Management System (CMMS)			$200,000	$200,000		$400,000
	Subtotal INFORMATION TECHNOLOGY PROJECTS	$4,500,000	$3,150,000	$500,000	$500,000	$50,000	$8,700,000
	TOTAL Projects from **Working Capital Reserves**	**$13,415,000**	**$10,745,000**	**$6,540,000**	**$9,300,000**	**$11,350,000**	**$51,350,000**

PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)	$8,500,000	**$6,000,000**	**$4,500,000**	**$4,500,000**	**$4,500,000**
PROJECTED ENHANCED REVENUE FOR RESERVES	$200,000	$500,000	$750,000	$2,000,000	$2,000,000
SINKING FUND DEPOSITS TO RESERVES FROM RATES	$825,000	$1,486,000	$1,325,000	$1,325,000	$625,000
SECURED MIN. BALANCE FOR WORKING CAPITAL RESERVES	$20,404,791	$20,812,887	$21,229,145	$21,653,727	$22,086,802
PROJECTED WORKING CAPITAL RESERVE BALANCE	$41,024,556	$38,265,556	$38,300,556	$36,825,556	$32,600,556
FUNDS ABOVE SECURED MINIMUM BALANCE	**$20,619,765**	**$17,452,669**	**$17,071,411**	**$15,171,829**	**$10,513,754**

Prepared by: DGore

8/19/2016

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
			Budget	*Pro Forma*	*Pro Forma*	*Pro Forma*	*Pro Forma*	
	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**

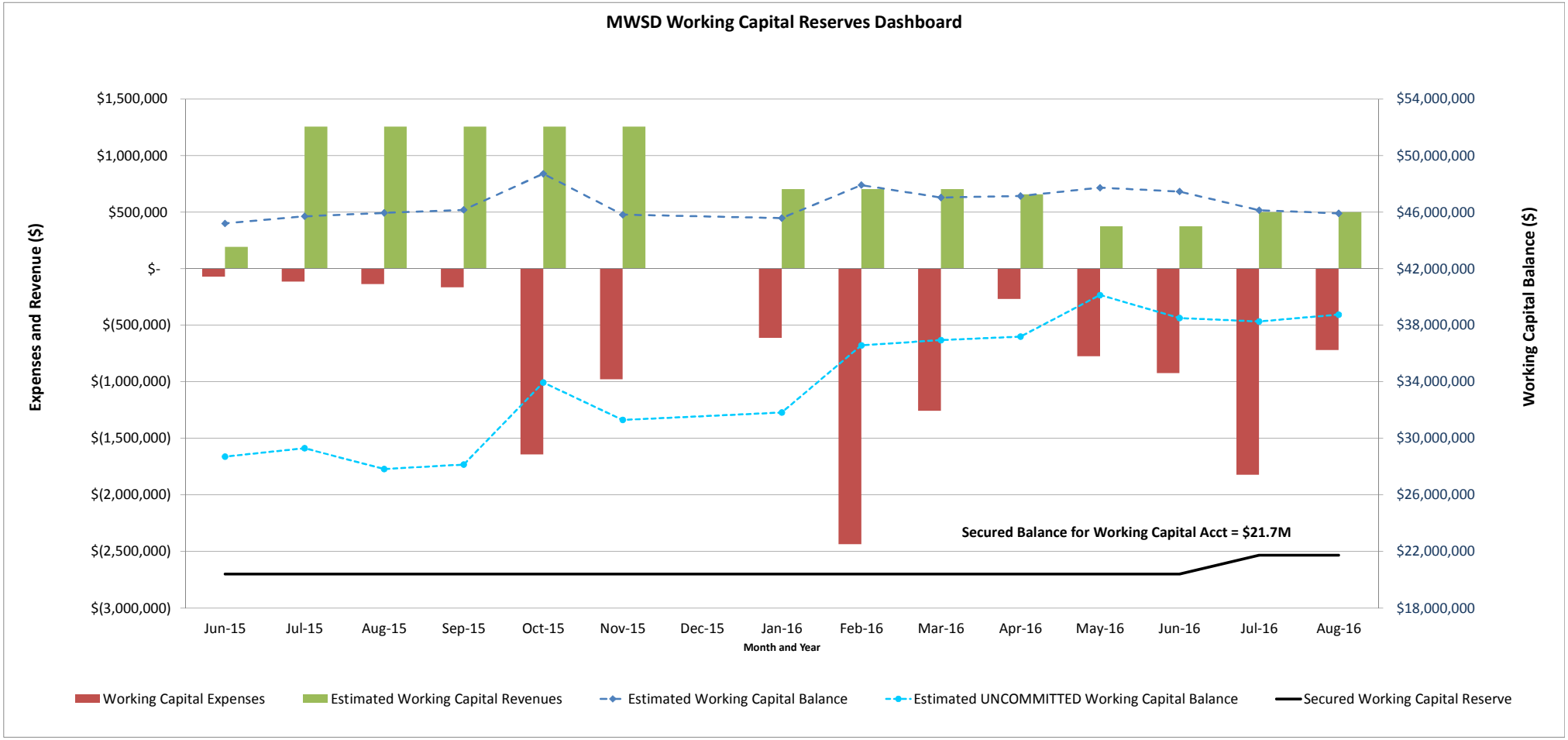
$ 5,800,000

EFFECTIVE UTILITY MANAGEMENT

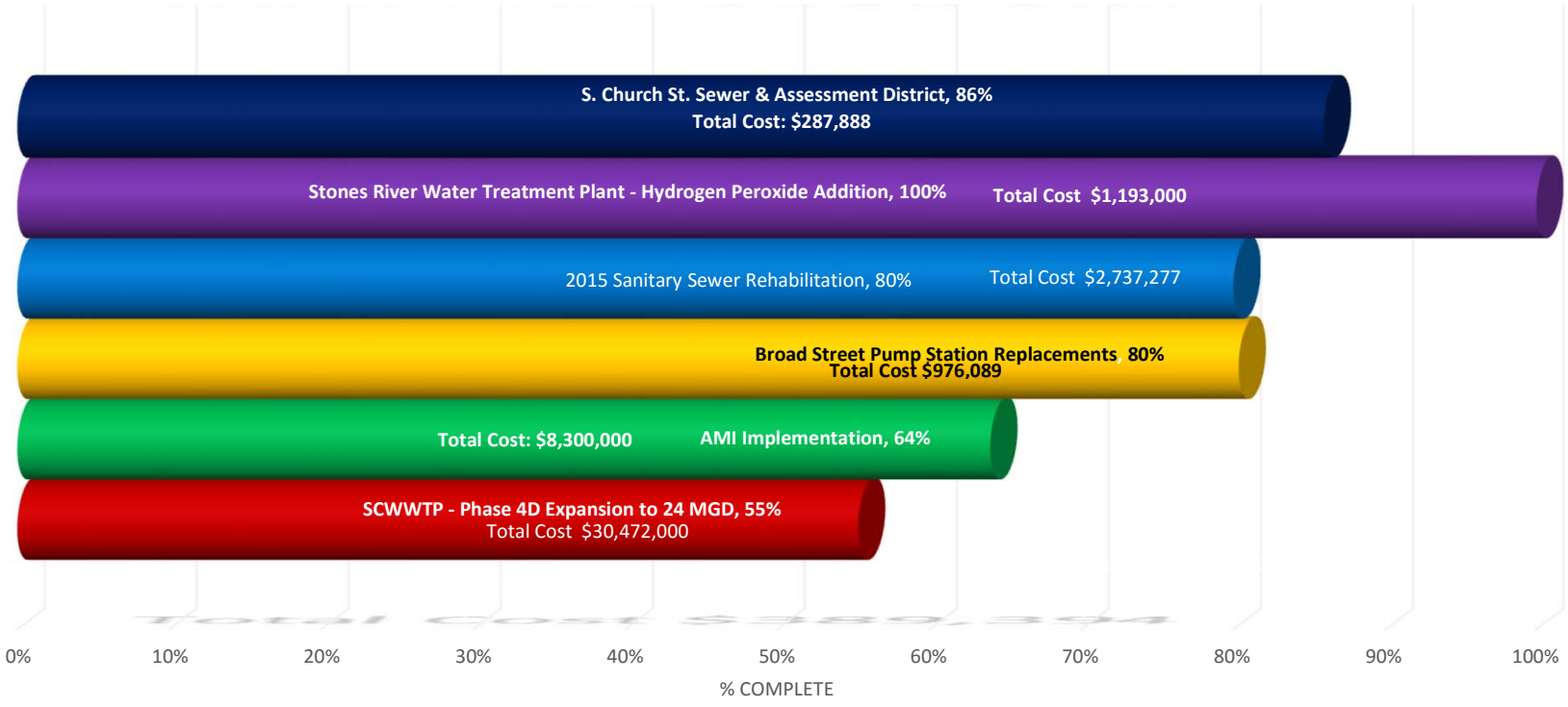
Financial Viability

MWSD WORKING CAPITAL ACCOUNT SUMMARY

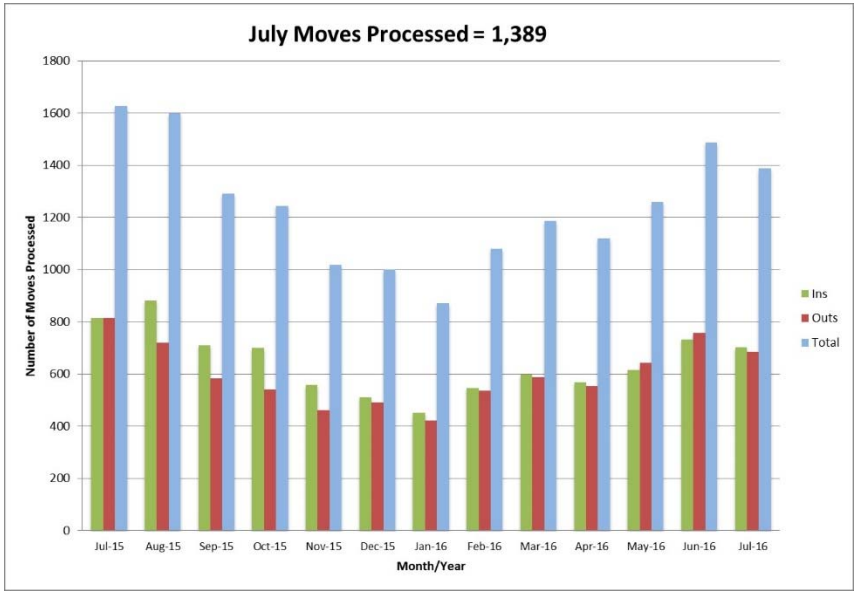
ESTIMATED Working Capital at 7/31/16			
Board Designated (System Dev, Assessments, etc) as of 6/30/15		$ 28,659,579	
Undesignated Excess Funds as of 6/30/15		18,310,430	
Estimated Reserve Revenue thru 7/31/16		10,791,644	
Estimated Reserve Expenditures thru 7/31/16		(11,845,175)	
			45,916,478
COMMITTED Reserves at 8/2/16			
Mid TN Blvd Work Change Directive	32,320		
Pump Station #13 Replacement	1,515,000		
Streaming Current Charge Analyzer	10,593		
Amendment to Stones River Sampling	98,920		
Biosolids Master Plan	84,740		
John Bouchard - Fournier Press Install 15-06	291,709		
MR Systems - Fournier Press Install	27,593		
GAC Effluent Filter Actuator Replacement	30,936		
John Bouchard River Pump #1 - 16-04	12,226		
John Bouchard River Pump #6 - 16-05	29,440		
South Church St. Sewer Extension	52,857		
Wilkinson Pike Utilties Design	24,850		
Eng Design for Raw Water Aux Pumps Generator	17,245		
Sewer Rehab Projects (Littlejohn)	463,817		
Lytle St Ph2 Utility Design Services	11,594		
Lytle St Ph1 Construction Inspection Services	26,615		
Engineering Services - Fournier Biosolids Press Repl	45,195		
Middle TN Blvd Utility Construction	794,675		
Lytle St. Utility Construction	87,734		
Westin Task Order #11 - AMI Implementation Support	78,440		
Pump Stations #3, #19, & #20 Replacement	97,666		
Water Resource Integration Plan (WRIP)	362,157		
Johnson Bailey Architect Fee (O&M, C/S)	22,172		
AMI Implementation	2,168,453		
E. & W. Fork Stones River Water Quality Sampling	105,441		
Pump Station #13 Replacement Design	19,220		
Additional Services Ph4D - SSR Amendment	37,373	6,548,981	
APPROVAL Requests at 8/23/16			
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	521,300	
BALANCE of Working Capital at 8/23/16 after COMMITMENTS			**$ 38,846,197**
DESIGNATED Projects Pending			
New Chiller at SRWTP	100,000	100,000	
ESTIMATED UNCOMMITTED Working Capital Reserves as of July 26, 2016			**$ 38,746,197**
SECURED FY16-17 Operating and Maintenance Expenses			**$ 21,729,755**
UNASSIGNED Working Capital Funds (Est. Uncommitted - Secured)			**$ 17,016,442**

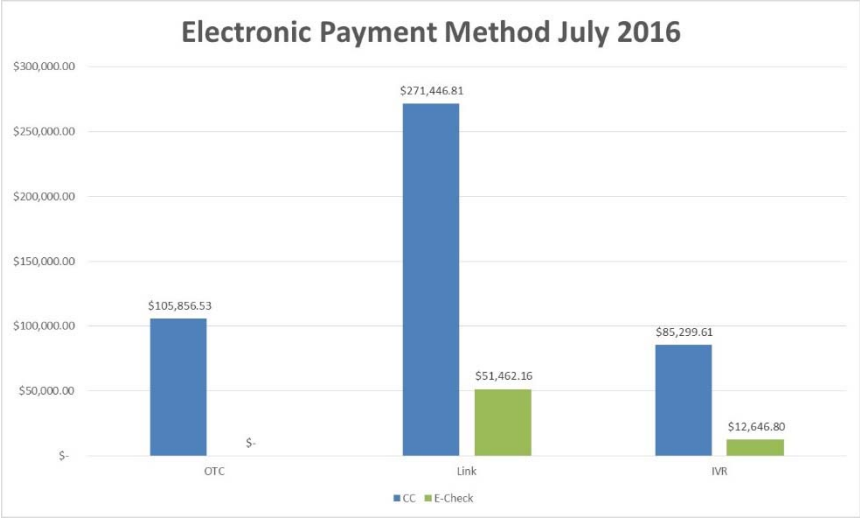

MWSD Working Capital Reserves Dashboard
Expenses and Revenue ($)
Working Capital Balance ($)
$1,500,000
$1,000,000
$500,000
$-
$(500,000)
$(1,000,000)
$(1,500,000)
$(2,000,000)
$(2,500,000)
$(3,000,000)
$54,000,000
$50,000,000
$46,000,000
$42,000,000
$38,000,000
$34,000,000
$30,000,000
$26,000,000
$22,000,000
$18,000,000
Jun-15
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Month and Year
Secured Balance for Working Capital Acct = $21.7M
Working Capital Expenses
Estimated Working Capital Revenues
Estimated Working Capital Balance
Estimated UNCOMMITTED Working Capital Balance
Secured Working Capital Reserve

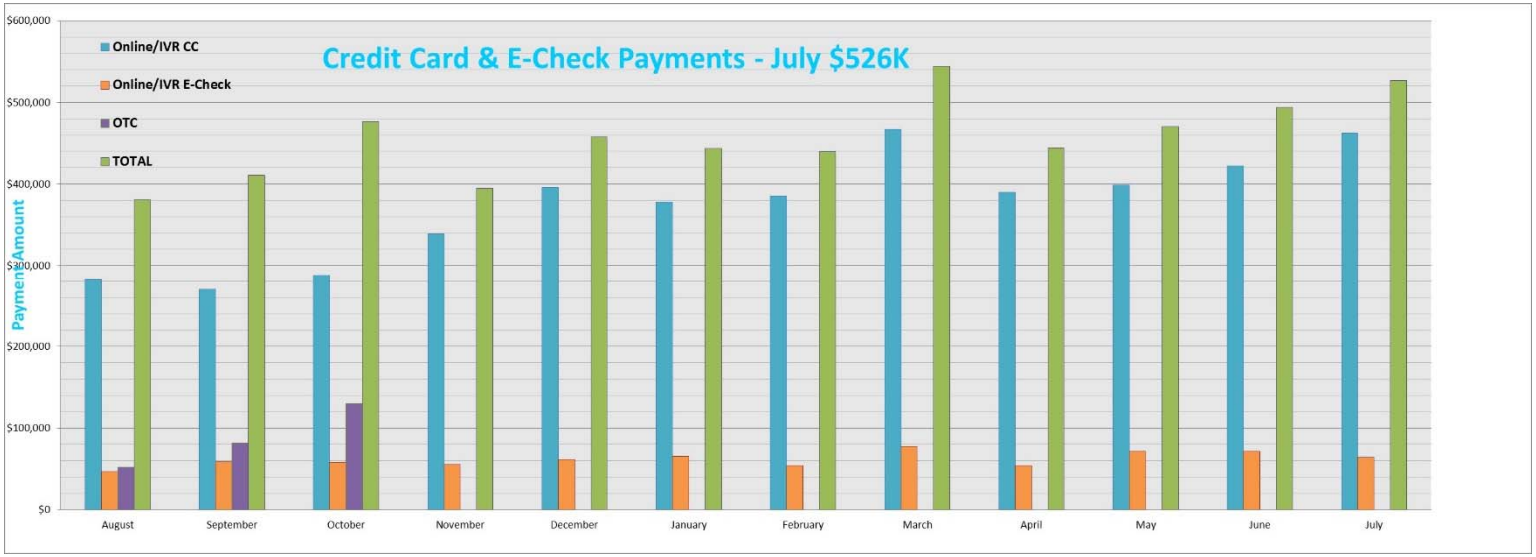
DASHBOARD PERFORMANCE - JULY 2016
CAPITAL PROJECTS



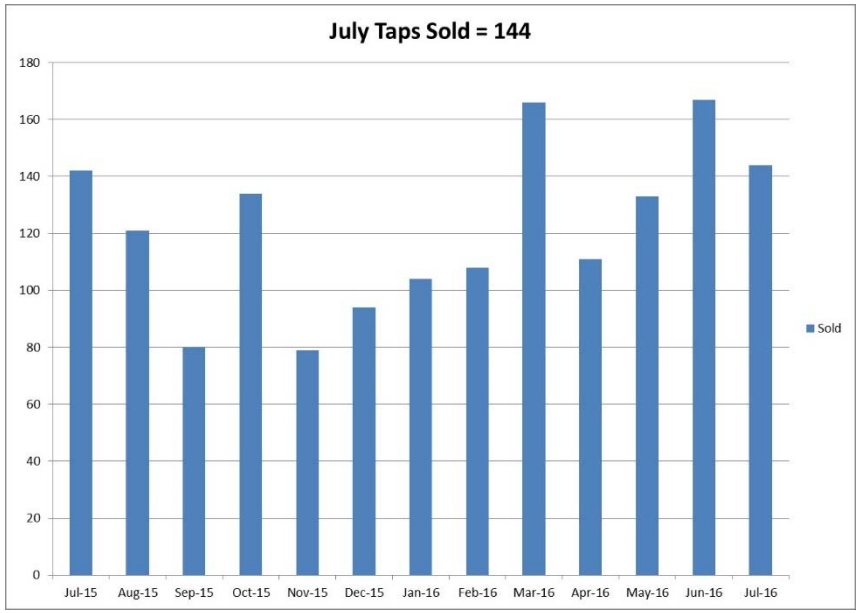
FINANCE DASHBOARD JULY 2016

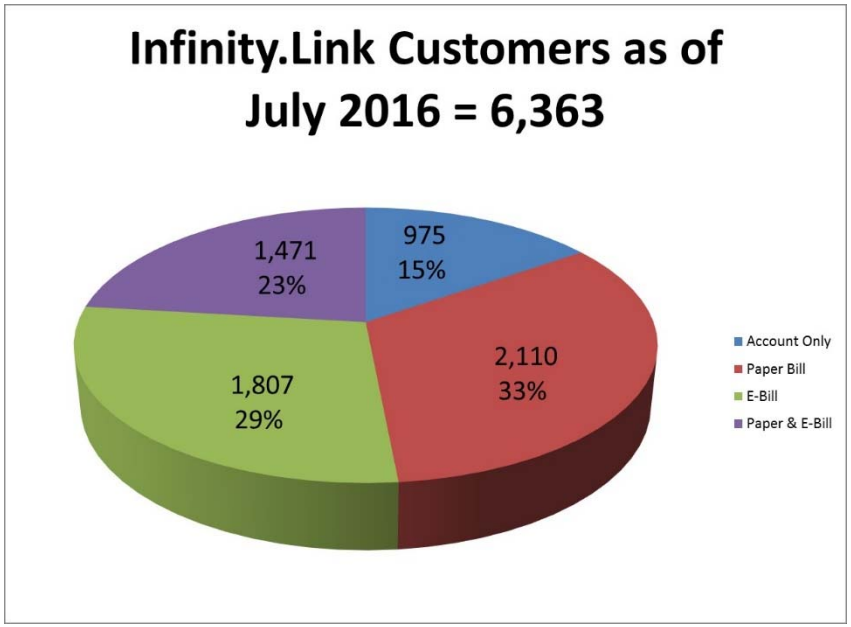


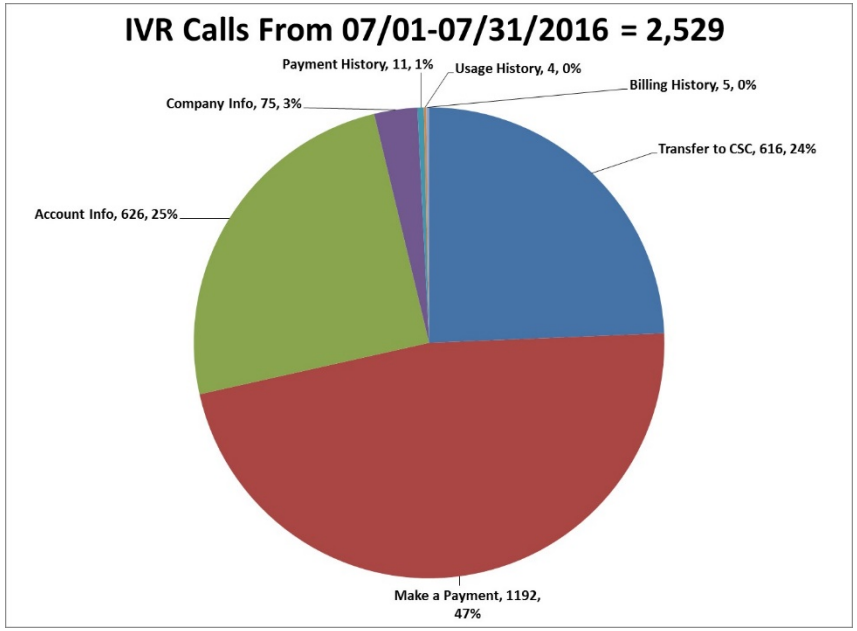


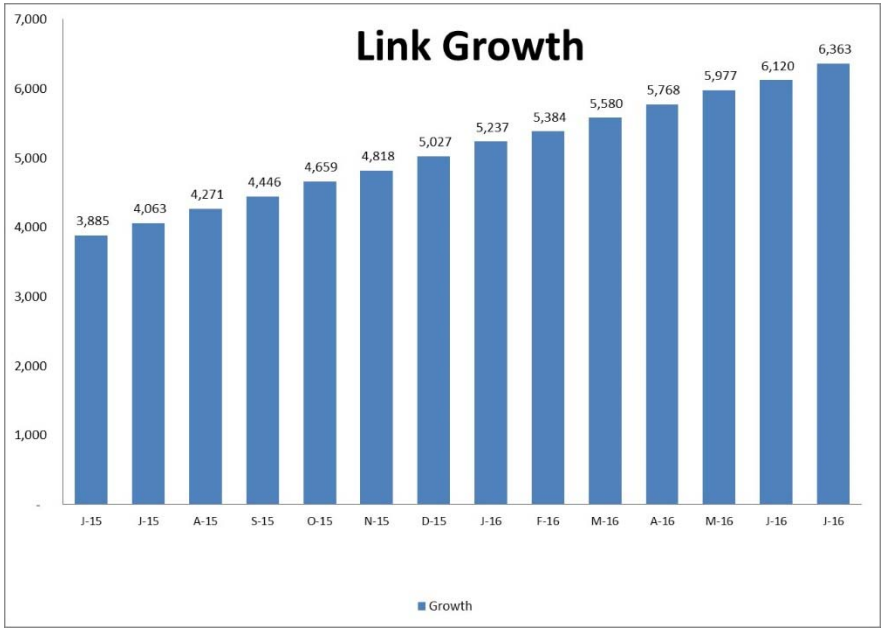


FINANCE DASHBOARD JULY 2016









State Report Coversheet

Month/Year Reported		July 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	100
Disinfection	Number of Samples	100
	Number of days plant operated	31
	Lowest Residual in Distribution System	0.80
	Lowest Residual Entering Distribution System	2.65
	Average Plant Effluent	3.2
Turbidity	Total Hours Planted Operated	744
	Number of Samples	186
	Maximum Turbidity	0.10
Flow	Average Raw Water Flow	13878
	Maximum Raw Water Flow	17695
Pumpage Data	Total Water Pumped (Lake)	263,481.000
	Average Water Pumped (Lake)	8,499.387
	Maximum Day (Lake)	11,081.000
	Minimum Day (Lake)	6,632.000
	Total Water Pumped (River)	166,736.986
	Average Water Pumped (River)	5,378.612
	Maximum Day (River)	8,261.484
	Minimum Day (River)	3,677.538
Water Statistics	Water Treated (Raw)	430,217.986
	Water Pumped (Finished)	400,220.966
	Water Transfer - to Murfreesboro (Smyrna, CUD)	0.000
	Water Metered (Sales, OM/Hydrant)	269,087.911
	Water Metered (Vacant Accounts, Fire Protection)	204.086
	Accounted For Water - (Flushing O&M/Eng, Fire, Street)	3,581.362
	Accounted For Water - (Flushing WTP)	774.043
	Process Water (Distribution,Tank,Water Plant)	10,377.594
	Water Transfer - to CUD	0.000
	Water Transfer - to Smyrna	0.000
	Total Accounted For Water	284,024.996
	Non Revenue Water	116,195.970
	Water Loss - Percentage	29.0%
	Water Cost Per 1,000 gallons	

Subtotals

0	0	
269,062.455	25.456	
0.000	204.086	
1847.907	1718.505	14.95
774043		
587.76	0	9789.834

Reports Needed:

1. MOR - Page 1 & 2 **DECEMBER Check YEAR!**
2. Distribution
3. Monthly Disinfectants Monitoring Report - Page 1 & 2
4. Filter Performance Report
5. Filter Turbidity Exceedance Report (Only if the filter turbidity exceeds standards)
6. Monthly Microbiological Monitoring Report/Disenfectant Monitoring
7. TOC & Enhanced Coagulation Report (Quarterly ADDED Data in March, June, September, December)
8. Pumpage Data Report
9. Bacteria Detail Report (**Check for POSITIVE Bacteria**)
10. 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
11. Copy of Chemicals sheet to Debbie Crocker, Data to WaterLossMonthlyTotals (\\172.19.195.31\ShareA\Admin\Water Loss and Unaccounted for Water)
12. Close out and lock Operator Log, convert to PDF, Add to SS Operator Log Folder
13. High Service Dist. Monitor Logs to SS Folder
14. PALL Data Logs to S3 and HS1 archives to S3
15. BE-BH Correction on RAW Sheet/ **AUTOMATIC FLUSHING to KIM**

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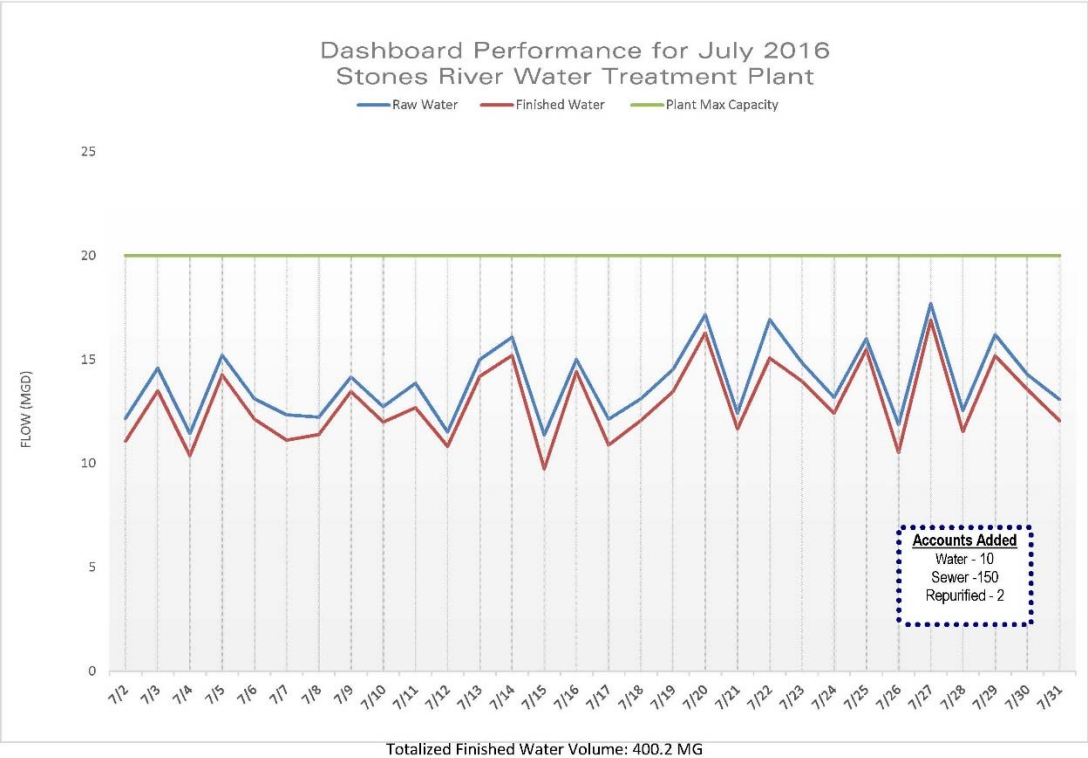
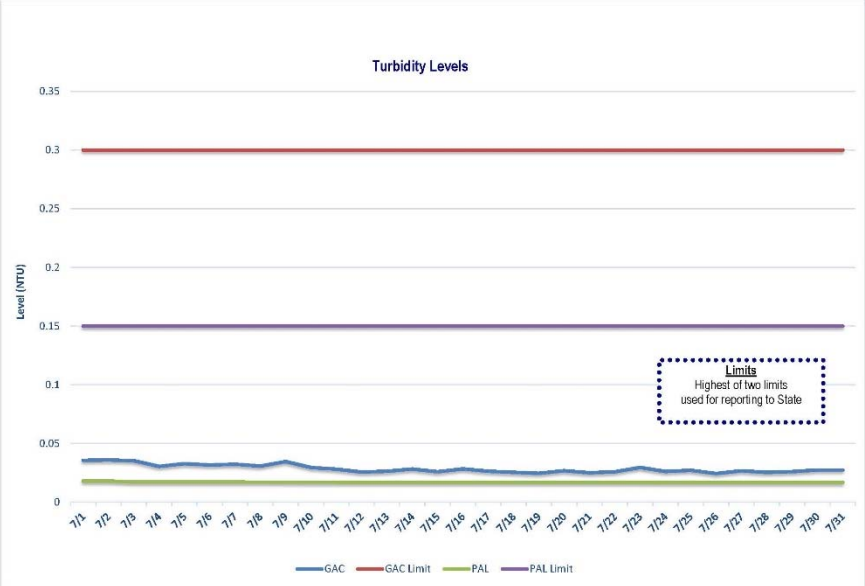
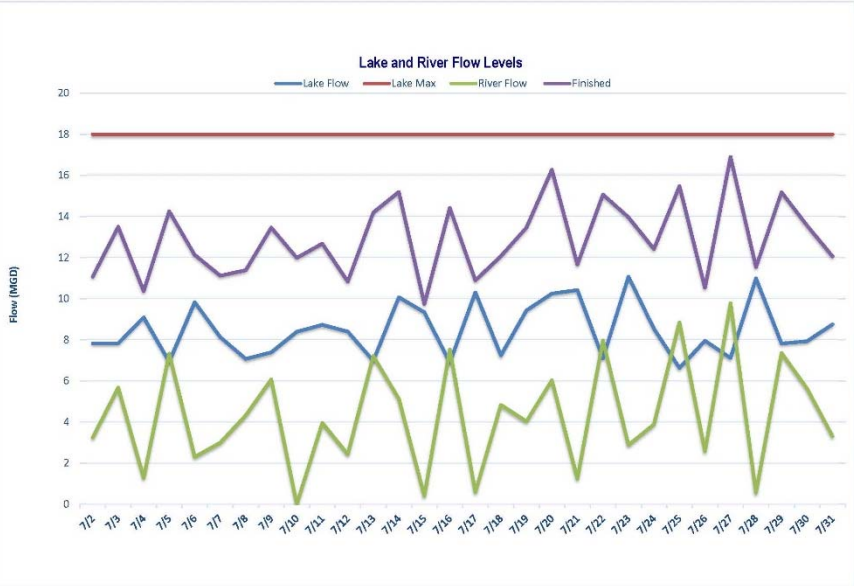
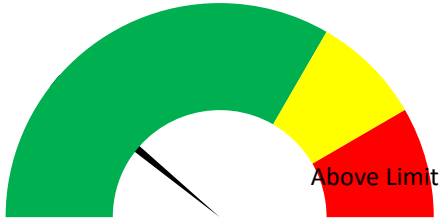


Totalized Finished Water Volume: 400.2 MG
Totalized Billed Water Volume: 284.0 MG
% Unaccounted for Water: 29.0%

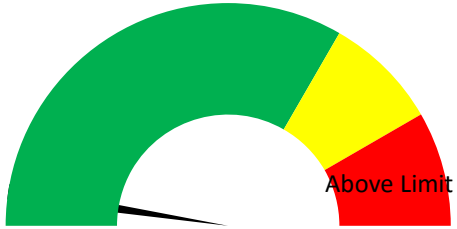




Dashboard Report July 2016
Sinking Creek Wastewater Treatment Plant



98.76%
Removal
BOD

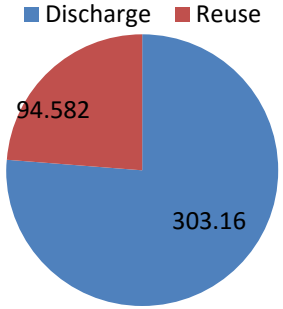


98.22%
Removal
NH3

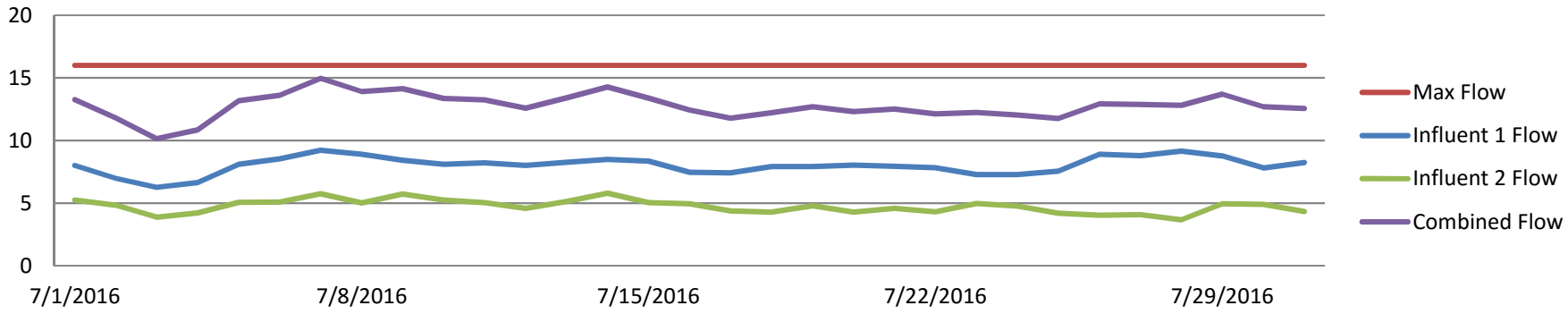
395.735 MG Treated

2040.29 Tons
BioSolids Removed

Effluents

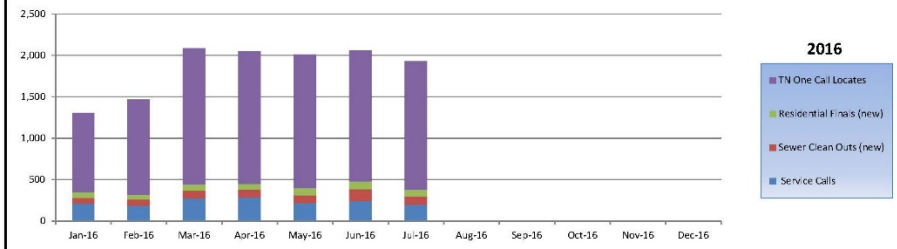


Average Influent Flow



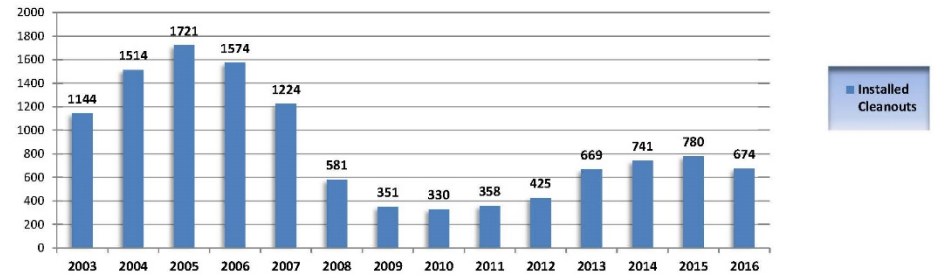
Operations and Maintenance Dashboard
July 2016

OPERATIONS & MAINTENANCE MONTHLY TOTALS



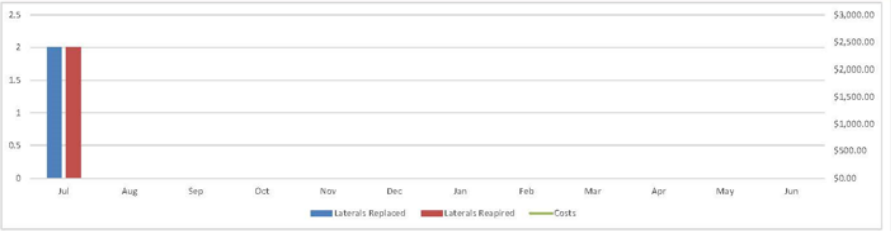
	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total
Service Calls	211	187	274	287	217	240	201						1,617
Sewer Clean Outs (new)	71	77	93	92	96	149	97						675
Residential Finals (new)	67	52	77	73	89	92	81						531
TN One Call Locates	959	1,149	1,644	1,597	1,609	1,577	1,550						10,085
Totals	1,308	1,465	2,088	2,049	2,011	2,058	1,929						12,908

INSTALLED NEW SEWER CLEANOUTS



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Installed Cleanouts	1144	1514	1721	1574	1224	581	351	330	358	425	669	741	780	674

PRIVATE LATERAL PROGRAM
2016



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Laterals Replaced	2												2
Laterals Reapired	2												2
Costs	$2,501.10												$2,501.10

ASPHALT PURCHASES
2016

DATE	PRODUCT PURCHASED	HAWKINS	HOOVER	LOJAC	OTHER	PURCHASED FROM	QTY	AMT PAID	APPROVED BY:	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	N/A	$52.25		Hawkins	89.85	$4,576.06	Taylor	
5/4/2016	BM	N/A		$52.25		Lojac	86.12	$4,499.77	Taylor	Hawkins closed
5/11/2016	Binder	$50.62	N/A	$46.25		Lojac	99.55	$4,145.05	Taylor	Not running state mix
5/11/2016	Topping	$54.18	N/A	$53.00		Lojac			Taylor	Quote good for 1 month Not running state mix
5/13/2016	BM Binder	N/A	$50.79	N/A		Hoover	19.98	$1,014.78	Taylor	Single source
5/18/2016	Binder			$46.25		Lojac			Taylor	Lojac low bid for May
6/6/2016	BM Binder	$50.50	$51.00	$55.78		Hawkins	63.80	$3,221.90	Taylor	Hawkins Low bid for June
6/9/2016	BM	$50.50				Hawkins	305.44	$15,424.72	Taylor	Hawkins low bid for June
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	
7/6/2016	Binder	$50.80	$51.43	$54.18		Hawkins			Taylor	Hawkins - low bid for July
7/6/2016	Topping	$58.60	$59.03	$62.19		Hawkins			Taylor	Hawkins - low bid for July
7/8/2016	Topping	$58.60				Hawkins	81.88	$4,798.17	Taylor	Hawkins - low bid for July

DASHBOARD REPORT

Operations & Maintenance

July 2016 - June 2017

DISTRIBUTION SYSTEMS

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
New Stubs Water Pipe (ft)													
1" Copper	0												**0**
2" Copper	0												**0**
Maintenance													
Fire Hydrants *(New)*	0												**0**
Fire Hydrants *(Blow off)*	5												**5**
Main Water Line Damage	1												**1**
Main Water Line Leak	2												**2**
Taps *(New)*	35												**35**
Stubs *(New)*	0												**0**
Tap *(Replacements)*	1												**1**
Meter Connections	12												**12**

COLLECTION SYSTEMS

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Maintenance													
Sewer Cleanouts *(New)*	97												**97**
Sewer Cleanouts *(GIS Located)*	2												**2**
Televised Lines & Line Cleaning (ft)													
TV Lines	23,095												**23,095**
TV Lines *(Warranty)*	0.00												**0.00**
TV Laterals	757.00												**757.00**
Line Cleaning	56,287.50												**56,287.50**
Sewer Rehab													
Maintenance Projects	5												**5**
Lateral Replacement Pipe *(ft)*	54												**54**
Restoration	20												**20**
Private Lateral													
Laterals Replaced	2												**2**
Laterals Repaired	2												**2**
4" SDR-35 *(ft)*	83												**83**
6" SDR-35 *(ft)*	13												**13**
Stormwater - Televised Lines & Line Cleaning (ft)													
TV Lines	0												**0**
Line Cleaning	0.00												**0.00**

DASHBOARD REPORT

Operations & Maintenance

July 2016 - June 2017

COLLECTION & DISTRIBUTION SYSTEMS

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
SERVICES													
Service Calls	201												**201**
TN One Call Locates	1,550												**1,550**
Inspections (Water & Sewer)	82												**82**
Inspections (Finals)	81												**81**
Total	**1,914**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**1,914**
PAVING *(tons)*													
Asphalt	81.88												**81.88**
Stone	1,293.53												**1,293.53**

NEW CONSTRUCTION

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Water Pipe													
6" C-900	0												**0**
8" C-900	0												**0**
6" Ductile Iron	0												**0**
8" Ductile Iron	0												**0**
1" Copper	345												**345**
2" Copper	0												**0**
Total	**345**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**345**
Sewer Pipe (ft)													
6" SDR-35 (PVC)	157												**157**
8" SDR-35 (PVC)	380												**380**
6" Ductile Iron	0												**0**
8" Ductile Iron	0												**0**
Total	**537**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**537**
Maintenance													
Tap *(Replacements)*	**0**												

FLUSHING REPORT

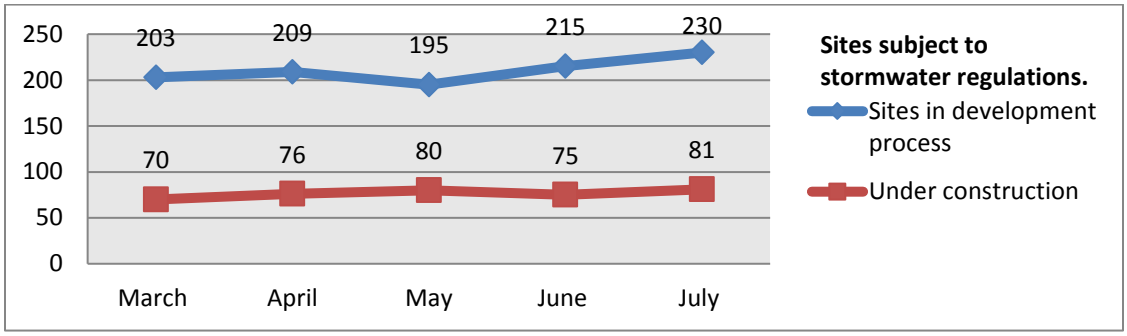
Operations & Maintenance

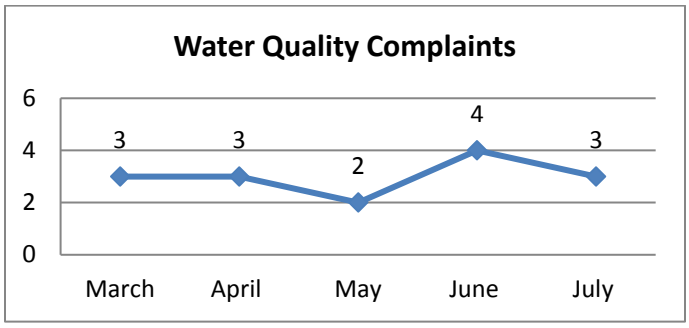
July 2016 - June 2017

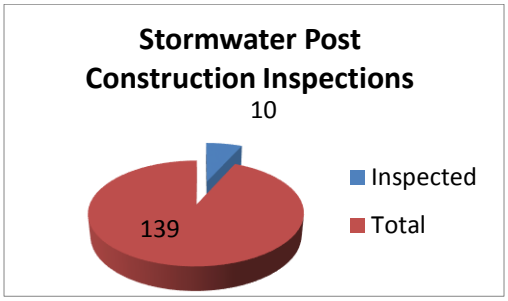
NON-BILLED WATER (O&M)													
	JUL	*AUG*	*SEP*	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*TOTAL*
Meters (Events)	28,275												**28,275**
Fire Hydrants	0												**0**
Jet\Wash Trucks	60,000												**60,000**
Sweepers & Saw	700												**700**
Stub & Meter Connection	5,600												**5,600**
New Construction	0												**0**
Tank Overflow & Main Line Leaks	11,300												**11,300**
Subtotal O&M	**105,875**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**105,875**
NON-BILLED WATER (OTHER DEPTS)													
Engineering Department	1,742,032												**1,742,032**
Fire Department	1,718,505												**1,718,505**
Street Department	14,950												**14,950**
Subtotal Other Depts	**3,475,487**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,475,487**
Total Non-Billed	**3,581,362**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,581,362**
BILLED WATER													
O&M Water Pickup	21,743												**21,743**
Fire Hydrant Meter Rentals	3,713												**3,713**
Total Billed	**25,456**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25,456**
Total	**3,606,818**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,606,818**

**** Displayed in gallons***

Stormwater July 2016







Monitoring and Sampling

Stream Miles Assessed (VSA June 2016)
June - 2 miles
July - 0 miles
Year to Date - 2.2 miles

Samples Taken
June - 8 (biological)
July - 0
Year to Date - 27

Outfall Screenings
June - 0
July - 0
Year to Date - 2

Stormwater Infrastructure

Gravity Mains (ft)
July - 7,092
Year to Date - 32,605

Junction Boxes
July - 88
Year to Date - 313

Weirs/Headwalls/Basins
July - 1/35/3
Year to Date - 11/97/13

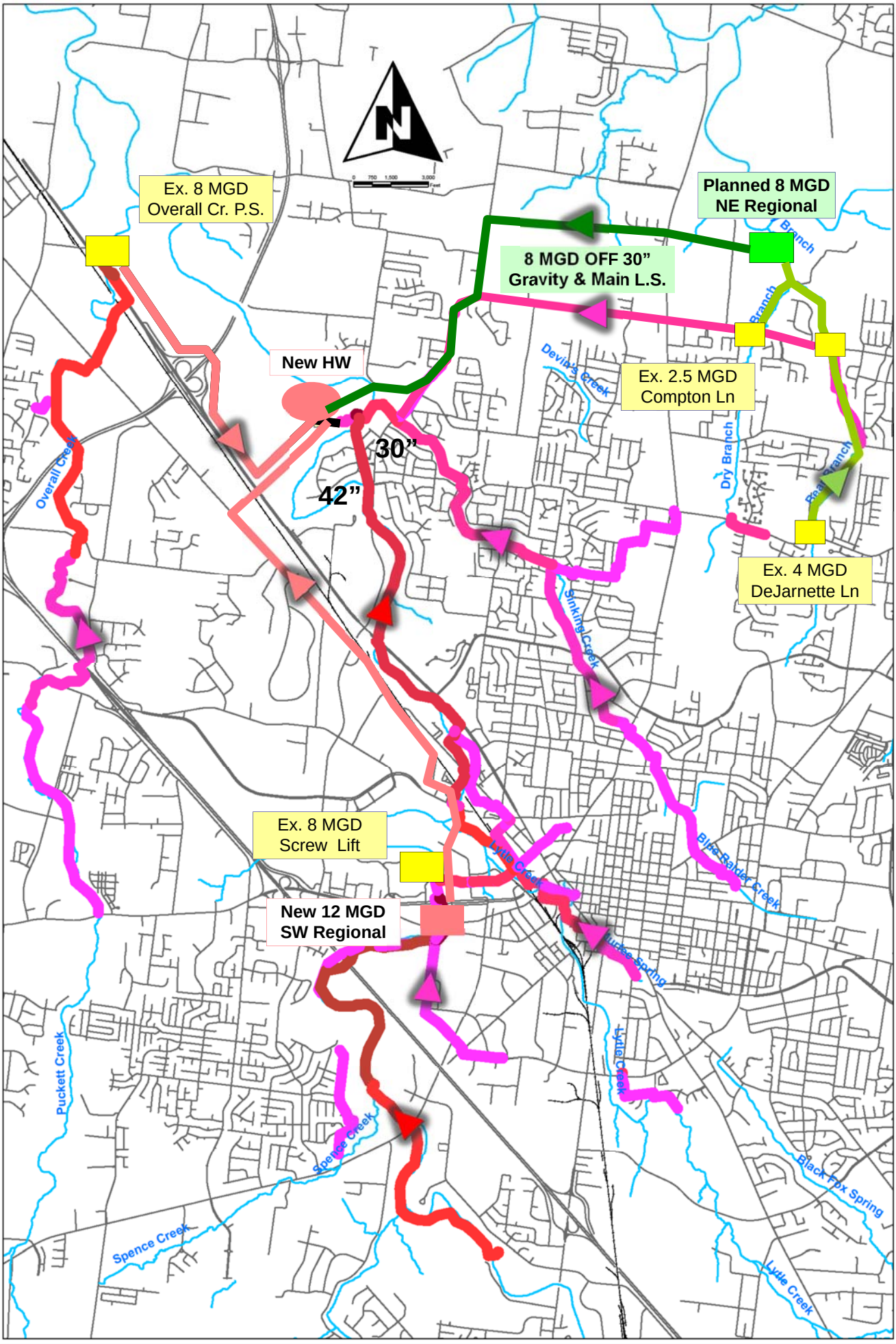
Pavers/ P. Concrete
Total to date: 30.8 acres

Outfalls
June - 0
July - 0
Year to Date - 6

Stormwater Activities

Outreach Events
June - 1
July - 0
Year to Date - 5

Ongoing Projects
- West Fork Stones River bank stabilization
- Invasive aquatic plant treatment and management plan at Murfree Spring Wetlands


Ex. 8 MGD
Overall Cr. P.S.
Planned 8 MGD
NE Regional
8 MGD OFF 30"
Gravity & Main L.S.
New HW
30"
42"
Ex. 2.5 MGD
Compton Ln
Ex. 4 MGD
DeJarnette Ln
Ex. 8 MGD
Screw Lift
New 12 MGD
SW Regional
Overall Creek
Devin's Creek
Dry Branch
Sinking Creek
Lytle Creek
Blue Bandy Creek
Puckett Creek
Spence Creek
Black Fox Spring