

WATER AND SEWER BOARD

Tuesday, January 19, 2016
Operations & Maintenance Facility
1725 South Church Street
3:30 PM

AGENDA

-
1. Consent Agenda:
 - A. Consider purchase of F-350 Class Truck with Crane..... 2
 - B. Consider a request to abandon a sewer easement at Gateway Corner 4
 - C. Consider purchase of O&M replacement vehicles 7
 - D. Consider Change Order 2 for the Coleman Farm Maintenance Building..... 8
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 10. Dashboard
 11. Other business
 12. Adjourn



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MEMORANDUM

DATE: January 11, 2016
TO: Water and Sewer Board
FROM: Darren Gore
SUBJECT: Request to Purchase F-350 Class Truck with Crane

Background

The Department employs several Farm Equipment Operators. In the course of their work, they use trucks to drive between the Department's two farms, haul equipment, and various other tasks. One of these trucks has reached the end of its usefulness.

The Water and Sewer Board approved staff's request to budget funds for the purchase of this replacement truck. An Invitation to Bid to supply this type of equipment was advertised in August of 2013. Country Ford of Southaven, Mississippi was awarded a three (3) year contract with options to renew for up to two (2) additional one (1) year terms. This replacement truck would be purchased in accordance with this standing contract.

Recommendation

Staff recommends the Water and Sewer Board recommend to City Council approving the purchase of one (1) Ford F-350 Truck with Crane from Country Ford of Southaven, MS in the amount of \$54,894 from rate funded capital.

Fiscal Impact

The purchase of the truck was budgeted in the Department's rate funded capital account. Sixty-five thousand (\$65,000) dollars was allotted in the Capital Budget for this purchase.

Exhibits

Price Quote



Country Ford, Inc.
 95 East Goodman Road, Southaven, Mississippi,
 38671
 Office: 662-349-4300

2016 F-350 Chassis, SD Super Cab
 4x4 SD Super Cab 162" WB SRW XL(X3F)

Pricing - Single Vehicle

MSRP

Vehicle Pricing

Vehicle Price	\$38,390.00
Options & Colors	\$9,615.00
Upfitting	\$17,975.00
Destination Charge	\$1,195.00

Subtotal \$67,175.00

Pre-Tax Adjustments

Description	
Discount	(\$12,281.00)

Total \$54,894.00

Customer Signature

Acceptance Date

Prices and content availability as shown are subject to change and should be treated as estimates only. Actual base vehicle, package and option pricing may vary from this estimate because of special local pricing, availability or pricing adjustments not reflected in the dealer's computer system. See salesperson for the most current information.



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MEMORANDUM

DATE: January 14, 2016
TO: Water and Sewer Board
FROM: Valerie H. Smith
SUBJECT: Sewer Easement Abandonment
Gateway Corner Development

Background

This easement abandonment request is from Matt Taylor, the project Engineer with SEC, Inc. on behalf of the Developer. They are requesting the abandonment of an existing sewer main and easement that will be in conflict with the proposed building. The developer will relocate this sewer main in conjunction with the project and new easement will be dedicated for the newly relocated sewer main.

Recommendation

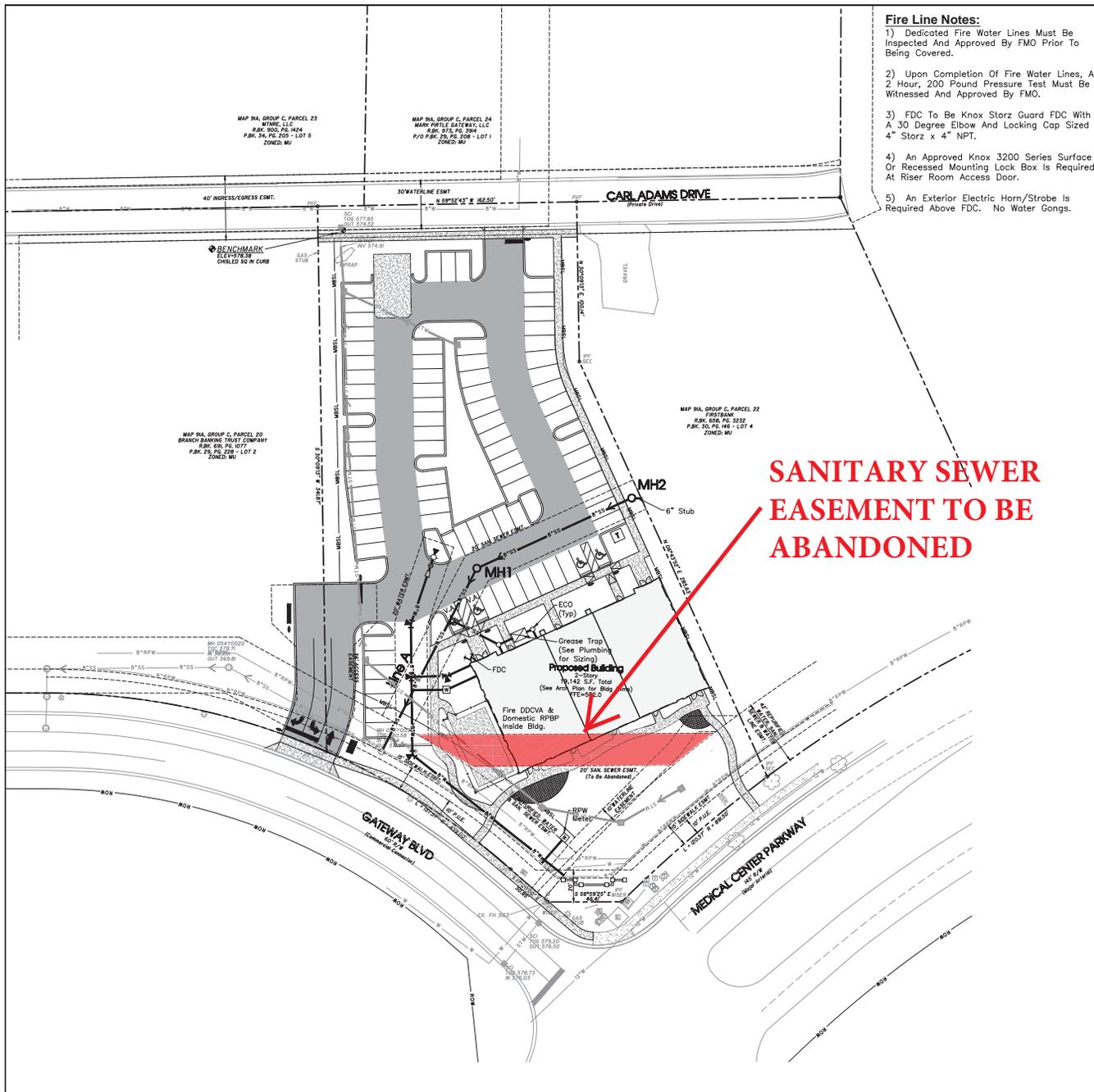
Staff recommends that the Board recommend to the Planning Commission and City Council approval of abandoning this portion of the existing sewer easement.

Fiscal Impact

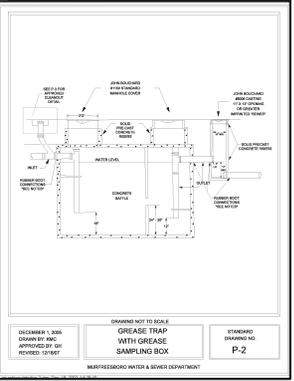
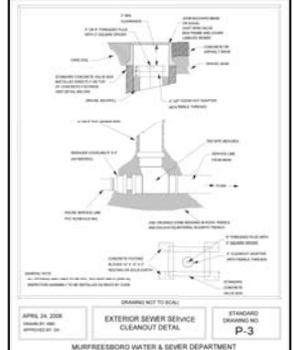
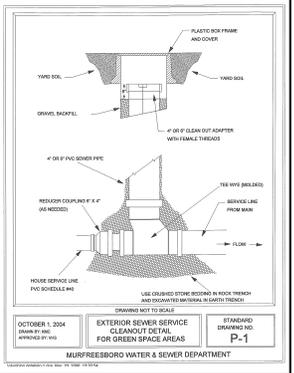
Not applicable. The existing easement was dedicated to the Department by plat.

Attachments

Easement Abandonment Exhibit
SEC, Inc. Request for Abandonment



- Fire Line Notes:**
- 1) Dedicated Fire Water Lines Must Be Inspected And Approved By FMO Prior To Being Covered.
 - 2) Upon Completion Of Fire Water Lines, A 2 Hour, 200 Pound Pressure Test Must Be Witnessed And Approved By FMO.
 - 3) FDC To Be Knox Storz Guard FDC With A 30 Degree Elbow And Locking Cap Sized 4" Storz x 4" NPT.
 - 4) An Approved Knox 3200 Series Surface Or Recessed Mounting Lock Box Is Required At Riser Room Access Door.
 - 5) An Exterior Electric Horn/Strobe Is Required Above FDC. No Horn/Strobe.



Legend:

□	EXIST. CONCRETE MONUMENT	⊕	BENCHMARK
●	IRON PIN SET (P.S.)	♿	HANDICAP PARKING SYMBOL
○	EXIST. SIGN POST	V.A.	VAN ACCESSIBLE HANDICAP DESIGNATION
○	EXIST. SEWER CLEANOUT	⬇	PROPOSED SIGN POST
○	EXIST. MANHOLE (SEWER & PHONE)	⊕	CONCRETE BOLLARD
⊕	EXIST. CATCH BASIN (STORM SEWER)	⊕	WHEEL STOP
⊕	EXIST. WATER/GAS VALVE	⊕	CONCRETE SIDEWALK
⊕	EXIST. TELEPHONE RISER	⊕	EXTRUDED CURB
⊕	EXIST. GAS RISER	⊕	CURB & GUTTER
⊕	ELECTRICAL ENCLOSURE	⊕	TRAFFIC ARROW
⊕	EXIST. WATER METER	⊕	TURN LANE ARROWS
⊕	EXIST. UTILITY POLE	⊕	REVISION NUMBER
⊕	EXIST. FIRE HYDRANT	⊕	DRAINAGE STRUCTURE DESIGNATION
⊕	POST INDICATOR VALVE	⊕	DRAINAGE PIPE DESIGNATION
⊕	BLOW OFF VALVE	⊕	RP RAP
⊕	REDUCER	⊕	RUNOFF FLOW ARROW
⊕	REMOTE FIRE DEPT. CONNECTION	⊕	ALET FILTER PROTECTION
⊕	CONCRETE THRUST BLOCK	⊕	PROPOSED SPOT ELEVATION
⊕	DOUBLE DETECTOR CHECK VALVE	⊕	EXIST. SPOT ELEVATION
⊕	FIRE DEPT. CONNECTION	⊕	SEWER/STORM FLOW DIRECTION
⊕	FIRE HYDRANT	⊕	CATCH BASIN
⊕	GATE VALVE & BOX	⊕	CURB INLET
⊕	WATER METER	⊕	AREA DRAIN
⊕	GAS METER	⊕	HEADWALL
⊕	GREASE TRAP	⊕	WINGED HEADWALL
⊕	EXTERIOR CLEANOUT EGO	⊕	CONCRETE SNALE
⊕	MANHOLE	⊕	TYPE- X- HEADWALL

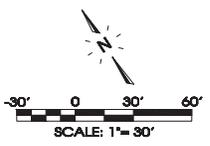
EXISTING PHONE	PH
EXISTING ELECTRIC	OH
PROPERTY LINE	
EASEMENTS	
RIGHT OF WAY	ROW
EROSION CONTROL SILT FENCE	SF SF
EROSION EEL	EEL EEL EEL
EXISTING TREELINE	
EXISTING FENCELINE	X X X
MINIMUM BUILDING SETBACK LINE	MBSL
PHASE BOUNDARY	=====
EXISTING GAS LINE	GAS GAS
PROPOSED GAS LINE	GAS GAS
EXISTING STORM	STW STW
PROPOSED STORM	STW STW
EXISTING CONTOUR LINES	601
PROPOSED CONTOUR LINES	601
EXISTING SANITARY SEWER	SS SS
PROPOSED SANITARY SEWER	SS SS
EXISTING WATER	W W
PROPOSED WATER	W W

SIC Inc.
 SITE ENGINEERING CONSULTANTS
 ENGINEERING & SURVEYING
 1000 N. W. 10th St., Suite 100
 Pompano Beach, FL 33062
 PHONE: (305) 962-7700 FAX: (305) 962-7887
 E-MAIL: info@sicinc.com

REVIEWED
 Not Internet
 Gateway Corner
 Murfreesboro, Tennessee

Utility Plan
 DRAWN: SLA
 DATE: 11-29-15
 CHECKED:
 MAT:
 FILE NAME:
 050903.dwg
 SCALE:
 1" = 30'
 JOB NO.
 05090
 SHEET:
 C2.1

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 CONSIDERED AS CREATING A REPRESENTATION
 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: _____



November 25, 2015

Mrs. Margaret Ann Green
City of Murfreesboro Planning Dept.
111 West Vine Street
Murfreesboro, TN 37133-1139

RE: Waterstone Lot 3
Mandatory Referral
SEC Project No. 05090

Dear Margaret Ann,

Please find the attached documents to support the mandatory referral request for abandonment of a portion of sanitary sewer easement.

Should you need any clarification concerning the request, please feel free to contact me at 615-890-7901 or mtaylor@sec-civil.com.

Sincerely,



Matt Taylor, P.E.
SEC, Inc.



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MEMORANDUM

DATE: January 11, 2016
TO: Water and Sewer Board
FROM: Terry Taylor
SUBJECT: Purchase of Replacement Vehicles

Background

In MWSD’s 2015–2016 approved budget, we included line items under **370 New Equipment - Vehicles** to purchase replacement vehicles for Operations and Maintenance. Jack Hyatt, manager of Fleet Services, approved the replacement of these vehicles on 3/25/15. Staff reviewed the current Tennessee State Vehicle Bid and the Murfreesboro Police Department Bids. The Murfreesboro Bid from Country Ford was lower on all vehicles.

Vehicle Type	Budget Amount	State Bid (Golden Circle)	Murfreesboro Bid (Country Ford)	Over/Under Budget
Ford 350 w/Utility Bed	\$50,000.00	\$53,476.12	\$52,121.00	\$2,121.00
Ford 250 Pickup	\$30,000.00	\$30,090.91	\$26,850.00	-\$3,150.00
Ford 250 Pickup	\$30,000.00	\$30,090.91	\$26,850.00	-\$3,150.00
Ford 250 Pickup	\$30,000.00	\$30,090.91	\$26,850.00	-\$3,150.00
Ford 350 w/Dump Bed	\$60,000.00	\$44,520.00	\$32,746.00	-\$27,254.00
Ford 350 w/ Flat Bed	\$39,500.00	\$39,220.00	\$27,990.00	-\$11,510.00
Total	\$239,500.00	\$227,488.85	\$193,407.00	-\$46,093.00

Recommendation

Staff recommends purchasing vehicles from Country Ford (Murfreesboro Bid).

Fiscal Impact

A total of \$239,500 was budgeted for the purchase of these vehicles. The total cost will be \$193,407 which will be \$46,093 under budget.



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MEMORANDUM

DATE: January 12, 2016
TO: Water and Sewer Board
FROM: Darren Gore
SUBJECT: **Coleman Farm Maintenance Building
Change Order #2**

BACKGROUND

The Coleman Farm maintenance building and O&M equipment storage addition construction project started in May. Trinity Builders was awarded the contract in a base bid amount of \$294,800. Change Order No. 1 requested a modification to the project by adding a 15'-2" by 12'-0" electrically operated door on the maintenance building at being constructed at the Coleman Farm. This added \$3,022.95 to the contract, for a revised contract amount of \$297,822.95.

Change Order No. 2 is to account for some added wood blocking necessary for the installation of the overhead door and some additional concrete apron to accommodate this door. These costs add \$1,452.15 to the contract amount. There is also an additional request for fifty (50) calendar days to the contract as a result of challenges getting the building permit issued. Johnson and Bailey did not submit the plans prior to the bid, so the Building and Codes Department had not reviewed the plans prior to bidding the project.

RECOMMENDATION

Staff recommends the Board approve change order #2 with Trinity Builders, Inc. adjusting the total contract price to \$299,275.10 for the referenced project and adding an additional fifty (50) days to the contract times.

FISCAL IMPACT

The total cost of the project was funded with working capital reserve and the additional cost of \$1,452.15 is recommended to come from working capital reserves.

ATTACHMENTS

Johnson & Bailey Architects letter of recommendation
Equipment Storage Structures & Coleman Farm Maintenance Shop Change Order #2



December 16, 2015

Mr. Darren Gore
Murfreesboro Water & Sewer Department
300 Northwest Broad Street
Murfreesboro, TN 37130

Re: Equipment Storage Structures & Farm Maintenance Shop
Murfreesboro Water & Sewer Department
Operations Maintenance Facility and Irrigation Farm
Murfreesboro, Tennessee
J+B No. 1216-P2

Dear Mr. Gore:

Attached you will find Change Order No. 2 for the referenced project which represents changes to the Maintenance Shop at the Irrigation Farm. It has been signed both by the Contractor and Architect.

The first change is for additional wood required for mounting the tracks for the overhead doors. This was brought to the Contractor's attention by the door supplier when he visited the site. This blocking is in addition to that already shown on the drawings.

The second change is to extend the front concrete apron to include the additional overhead door added in Change Order No. 1 and repositioning of the personnel door. The Contractor did not include the cost of the apron extension when he submitted his cost for the additional door.

A time extension is also included to account for the delay the Contractor encounter between the Notice to Proceed that we issued and the date they actually received their building permit. While the Planning Commission approval we received when we first bid this project was still valid, we ended up having to meet with the planning staff and file some additional paperwork. To avoid problems such as this, we often set the date for the Notice to Proceed as the date when the building permit is actually issued. Since we already had approval from the Planning Commission and we had made no significant changes to the documents that we rebid, I did not anticipate this delay when issuing the Notice to Proceed. Please reference the letter from Trinity Builders attached to Change Order No. 2.

We have review the contractor's breakdown and recommend execution of the this Change Order. If you concur, please sign all three (3) copies, return two (2) copies to our office and retain one (1) copy for your records.

If you have any questions or need additional information, please let us know.

Sincerely,

JOHNSON + BAILEY ARCHITECTS P.C.

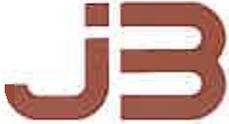
A handwritten signature in black ink, appearing to read 'James Richard Pettit'.

James Richard Pettit, AIA

encl: Charge Order No. 2

Johnson + Bailey Architects P.C.

City Center • Suite 700
100 East Vine Street
Murfreesboro, Tennessee 37130
615 890 4560 • FAX 615 890 4564



CHANGE ORDER

PROJECT: Equipment Storage Structures &
Farm Maintenance Shop
Murfreesboro Water & Sewer Department
Operations Maintenance Facility and
Irrigation Farm
Murfreesboro, Tennessee

CHANGE ORDER NO: Two (2)

DATE: December 16, 2015

CONTRACTOR: Trinity Builders, Inc
1841 Heritage Park Place
Suite 2
Murfreesboro, TN 37129

ARCHITECT'S PROJECT NO: 1216-P2

CONTRACT FOR: Storage & Maintenance
Structures

CONTRACT DATED: May 1, 2015

You are hereby directed to make the following changes in this Contract

DESCRIPTION:

Farm Maintenance Shop - Irrigation Farm

Add wood blocking to facilitate installation of overhead doors
ADD:\$630.00

Extend concrete apron to accommodate overhead door added in Change Order No. 1
ADD:\$822.15

TOTAL:\$1,452.15

Add calendar days to time of completion for building permit delays
ADD:50 Calendar Days

Not valid until signed by both the Owner and Architect.

<u>Signature of the Contractor indicates his agreement herewith, including any adjustment in the Contract Sum or Contract Time.</u>	
The original Contract Sum was	\$294,800.00
Net change by previously authorized Change Orders	\$3,022.95
The Contract Sum prior to this Change Order was	\$297,822.95
The Contract Sum will be increased by this Change Order	\$1,452.15
The new Contract Sum including this Change Order will be	\$299,275.10
The Contract Time will be extended by	50 Calendar Days
<u>The Date of Substantial Completion as of the date of this Change Order therefore is January 10, 2016</u>	

Johnson + Bailey Architects P.C.
ARCHITECT
BY 
DATE 12/16/15

Trinity Builders, Inc.
CONTRACTOR
BY 
DATE 12.16.15

Murfreesboro Water & Sewer Dept.
OWNER
BY _____
DATE _____



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MEMORANDUM

DATE: January 11, 2016
TO: Water and Sewer Board
FROM: Alan Cranford
SUBJECT: Inspection of RW Screen for Repair Quote by JBS & Evoqua Personnel
Task Order No. 15-08 Water/Wastewater Systems Mechanical/Electrical Services Contract

Background

On December 18, 2014, the MWSD accepted and opened bids for the MWSD Water/Wastewater System Mechanical/Electrical Services contract. John Bouchard & Sons Co. was awarded the bid after approval by the Water and Sewer Board and City Council.

Based upon inspection by the Department's Staff of the existing raw water bar screen at the river pump station, it was determined that repairs/maintenance of the bar screen that was beyond the Department's ability to perform. As a result, Staff has requested John Bouchard & Sons Co. to provide a Task Order that would include JB&S staff and a Manufacturer's technician to inspect and determine the extent of repair necessary to get the bar screen back to full operation. The bar screen was installed in 1981 and has not received any major repairs outside of maintenance performed by MWSD maintenance personnel.

Recommendation

Staff recommends that the Water and Sewer Board recommend the City Council approve Task Order 15-08 by John Bouchard & Sons Co.

Fiscal Impact

Funding used to conduct work inspection of the raw water bar screen is in the amount of \$3,273 is from working capital reserves.

Attachments

Task Order 15-08



...

TASK ORDER NO. 15-08

January 8, 2016

BETWEEN

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

UNDER

Water/Wastewater System Mechanical/Electrical Services Contract

DATED

January 28, 2015 thru January 28, 2016

FOR

Inspection of RW Screen for Repair Quote by JBS & Evoqua Personnel

Task Order No. 15-08
Inspect RW Screen
Murfreesboro Water Plant

BACKGROUND

Staff has determined that the Raw Water Screen at the MWSD water plant requires mechanical services to that are outside the scope of the Department's staff. As a result, staff requested John Bouchard & Sons to provide a task order for these repairs. This task order includes labor to visually inspect the RW traveling screen by JBS personnel in the company of a factory service representative from Evoqua. This is the parent company of Rex, who manufactured the screen for MWSD in 1981. As per our agreement, MWSD will be responsible for dewatering the RW pit on the day of the scheduled inspection.

SCOPE OF WORK

Labor by JBS and Evoqua to inspect the existing RW screen and develop a quote to repair the damaged/inoperable parts of the traveling screen.

FISCAL IMPACT

The project will be paid for out of 2014-2015 Budget Account # 773.000

Description	Qty (hrs)	Rate	Extended
Project Mgr (RT)		\$75.00	
Project Mgr (OT)		\$110.00	
Superintendent (RT)		\$65.00	
Superintendent (OT)		\$100.00	
Pipefitter/Welder (RT)	8	\$50.00	\$400.00
Pipefitter/Welder (OT)		\$75.00	
Sprinkler Fitter (RT)		\$42.00	
Sprinkler Fitter (OT)		\$63.00	
Electrician (RT)		\$50.00	
Electrician (OT)		\$75.00	
Apprentice/Helper (RT)		\$36.00	
Apprentice/Helper (OT)		\$54.00	
Expediter/Delivery (RT)		\$28.00	
Expediter/Delivery (OT)		\$42.00	
Machine Shop Millwright (RT)	8	\$56.00	\$448.00
Machine Shop Millwright (OT)		\$88.00	
HVAC/Plb Service Tech (RT)		\$64.00	
HVAC/Plb Service Tech (OT)		\$96.00	
Air Compressor Tech (RT)		\$64.00	
Air Compressor Tech (OT)		\$96.00	
Laborer - Skilled (RT)		\$30.00	
Laborer - Skilled (OT)		\$45.00	
Laborer - Unskilled (RT)		\$21.00	
Laborer - Unskilled (OT)		\$32.00	

Equipment	Qty (hrs)	Rate/Hr	Extended
Welder		\$15.00	
Power Threader		\$15.00	
Mini/Midi Hammer		\$12.00	
Variable Reach Forklift		\$26.00	
Pickup Truck	16	\$15.00	\$240.00
Scissor Lift		\$18.00	
Skid Steer		\$25.00	
Boom Man Lift		\$29.00	
Cat 420D Backhoe		\$33.00	
Street Plate		\$7.00	
185 CFM Compressor		\$15.00	
ECM 350*		N/A	
Air Track Drill*		N/A	
Pipe Laser		\$21.00	
Total Station EDM		\$115.00	
15 ton Boom Truck*		N/A	
30-50 Ton RT Crane*		\$225.00	
80 Ton Crawler Crane*		N/A	
3" Submersible Pump		\$10.00	
6" Hydraulic Pump		\$16.00	

* = not quoted in original bid - will be quoted for each individual scope of work

Materials	
Evoqua Rep & Travel Costs +15% Markup	\$2,185.00

TOTAL (straight time) \$ 3,273.00

SCHEDULE

Description	Date
Notice To Proceed	
Substantial Completion	
Final Payment	

Contractor:

John Bouchard and Sons Company

City:

City of Murfreesboro Water and Sewer Dept.

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Approved as to Form: _____

Susan Emery McGannon, City Attorney

CONTRACTOR NOTICE CONTACT INFORMATION

CITY NOTICE CONTACT INFORMATION

John Bouchard and Sons Company

Murfreesboro Water and Sewer Dept.

Mailing address 1024 Harrison St.
Nashville, TN 37203

Mailing address 300 NW Broad St.
Murfreesboro, TN 37130

Phone number 615-256-0112

Phone number 615-890-0862

Fax number 615-256-2427

Fax number 615-896-4259

Company Contact David Proctor

Company Contact Darren Gore

E-mail David.Proctor@jbouchard.com

E-mail dgore@murfreesborotn.gov



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MEMORANDUM

DATE: January 15, 2016
TO: Water and Sewer Board
FROM: Darren Gore, Doug Swann, Terry Taylor
SUBJECT: **Capital Expenditure Request**

BACKGROUND

Three capital assets were inadvertently left off the FY16 Capital Expenditure budget. Two of these items are replacement items and one is new equipment. All are necessary and need to be purchased during the current fiscal year. The assets have been quoted as follows:

17.5 Ton Hydraulic Puller

Division – Pump Stations
Replacement Equipment
Estimated Cost - \$2,100

Bearing Heater

Division – Pump Stations
Replacement Equipment
Estimated Cost - \$1,400

Air Compressor/Generator/Welder

Division – Pump Stations
New Equipment
Estimated Cost - \$5,500

RECOMMENDATION

Staff recommends the Board approve the purchase of these three assets. Total cost is estimated at \$9,000.

FISCAL IMPACT

The purchase of these assets will come from Reserves.



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MEMORANDUM

DATE: January 14, 2016
TO: Water and Sewer Board
FROM: Valerie Smith
SUBJECT: Contingency Allowance Allocations for Sinking Creek WWTP Phase 4D

Background

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

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

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

Project	Contingency Allowance	Prior Contingency Allocations	Current Contingency Allocations	Remaining Contingency Allowance
Phase 4D Expansion	\$500,000	\$(23,600.00)**	\$ 135,596 *	\$388,004.00

*CCF # – 5-Rev. & 8 (Current)

**CCF #'s (1 Rev. 2, 2, 6, 7 & 9 previously approved)(cumulative)

Recommendation

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

Fiscal Impact

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

Attachments

SSR Recommendation Letter & Change Control Log



January 8, 2016

Mrs. Valerie Smith
Assistant Director, Murfreesboro Water and Sewer Department
P.O. Box 1477
Murfreesboro, TN 37133-1477

RE: **Sinking Creek WWTP Phase 4D – Expansion**
Murfreesboro, TN
Proposed Change Item 7, (CCF No. 8).
CG2 2014-338; SRF 2014-339

Dear Mrs. Smith:

Attached are four (4) copies of proposed Change Item number 7 including a Summary Log of all proposed changes to date. The following summarizes the change item and provides recommendation for its approval.

Change Item No. 7 was requested by SSR to upgrade the HVAC system in the existing Post Aeration Building along with necessary electrical modifications and recommends that MWSD approve it. The cost increase for the change is \$52,740.00.

If approved, Change Item No. 7 result in reduction to the Construction Contingency Allowance from a total of \$523,600.00 to a total of \$470,860.00. There will be no increase in the contract time as a result of these change items.

As stated, SSR has reviewed these proposed changes and recommend they be approved and the contingency allowance be adjusted accordingly. Note that the total contract price will not be adjusted, only the contingency amount. Please review the enclosures and if acceptable to you, execute and forward one (1) signed copy to me.

If you have any questions, please contact me.

Sincerely,

SMITH SECKMAN REID, INC

A handwritten signature in black ink, appearing to read "M Fall", is written over the typed name "Marshall Fall, E.I.".

Marshall Fall, E.I.

cc: Darren Gore (w/encl) – MWSD
BDF (wo/encl) – SSR
RBH (wo/encl) – SSR
File (12) (w/encl) – 12-41-019.0



January 14, 2016

Mrs. Valerie Smith
Assistant Director, Murfreesboro Water and Sewer Department
P.O. Box 1477
Murfreesboro, TN 37133-1477

**RE: Sinking Creek WWTP Phase 4D – Expansion
Murfreesboro, TN
Proposed Change Item 8, (CCF No. 5).
CG2 2014-338; SRF 2014-339**

Dear Mrs. Smith:

Attached are four (4) copies of proposed Change Item number 8 including a Summary Log of all proposed changes to date. The following summarizes the change item and provides recommendation for its approval.

Change Item No. 8 was requested by SSR to revise site electric service from overhead power feeds to underground ductbanks. The cost increase for the change is \$82,856.

If approved, Change Item No. 8 result in reduction to the Construction Contingency Allowance from a total of \$470,860.00 to a total of \$388,004.00. There will be no increase in the contract time as a result of this change item.

As stated, SSR has reviewed this proposed change and recommend it be approved and the contingency allowance be adjusted accordingly. Note that the total contract price will not be adjusted, only the contingency amount. Please review the enclosures and if acceptable to you, execute and forward one (1) signed copy to me.

If you have any questions, please contact me.

Sincerely,

SMITH SECKMAN REID, INC.

A handwritten signature in dark ink, appearing to read "Marshall Fall", is written over a faint, larger signature.

Marshall Fall, E.I.

cc: Darren Gore (w/encl) – MWSD
BDF (wo/encl) – SSR
RBH (wo/encl) – SSR
File (12) (w/encl) – 12-41-019.0

CHANGE CONTROL LOG

Owner: Murfreesboro Water & Sewer Department
Project Name: Sinking Creek WWTP Phase 4D Expansion
Contract No.: N/A
Engineer: Smith Seckman Reid, Inc.
Contractor: 3D Enterprises Contracting Corporation

Original Contract Amount: \$ 30,472,000.00

Contingency Allowance Amount: \$ 500,000.00

Adjusted Contingency Allowance Amount: \$ 388,004.00

- Rejected/Withdrawn
- Under Review
- Approved
- Pending

CCF No.	Change Order No.	Brief Description of Change Item	Status (Under Review/Approved/Rejected)	Date From/To Contractor	Date Submitted to Owner	Date Approved/Rejected by Owner	Add/Deduct (+/-) Amount	Cumulative Add/Deduct Amount	Adjusted Contingency Amount	Adjusted Contract Amount
1	N/A	RFP - Add Headworks paving, irrigation piping and landscaping to Phase 4D scope	Withdrawn	4/15/2015	Withdrawn	Withdrawn	\$ -	\$ -	\$ 500,000.00	\$ 30,472,000.00
1-REV	N/A	RFP - Add Headworks paving partial landscaping to Phase 4D scope	Withdrawn	6/11/2015	Withdrawn	Withdrawn	\$ -	\$ -	\$ 500,000.00	\$ 30,472,000.00
1-REV2	TBD	RFP - Delete landscaping and irrigation	Pending	8/5/2015	Pending	Pending	\$ (25,800.00)	\$ (25,800.00)	\$ 525,800.00	\$ 30,472,000.00
2	2	RFP - Delete diffusers from Post Aeration equipment	Approved	9/1/2015	9/2/2015	9/15/2015	\$ (11,200.00)	\$ (37,000.00)	\$ 511,200.00	\$ 30,446,200.00
3	N/A	FO - Change stairs platform from galv to alum.	Approved	4/23/2015	N/A	N/A	\$ -	\$ (37,000.00)	\$ 511,200.00	\$ 30,446,200.00
4	N/A	RFP - Add signal wiring for Main PS pump discharge valves	Withdrawn	5/28/2015	7/28/2015	8/5/2015	\$ -	\$ (37,000.00)	\$ 511,200.00	\$ 30,420,400.00
5	TBD	RFP - Revise electrical service per MED	Withdrawn	6/18/2015	Withdrawn	Withdrawn	\$ -	\$ (37,000.00)	\$ 511,200.00	\$ 30,394,600.00
5-REV	TBD	RFP - Revise electrical service per MED	Under Review	8/10/2015	Pending	Pending	\$ 82,856.00	\$ 45,856.00	\$ 428,344.00	\$ 30,368,800.00
6	TBD	RFP - Algae Cleaning System attachment arm	Approved	7/20/2015	7/28/2015	9/3/2015	\$ 7,600.00	\$ (29,400.00)	\$ 503,600.00	\$ 30,343,000.00
7	TBD	RFP - Tertiary Filter embed conduit	Approved	7/24/2015	7/28/2015	9/3/2015	\$ 2,500.00	\$ (26,900.00)	\$ 501,100.00	\$ 30,317,200.00
8	TBD	RFP - HVAC upgrade in Post Aeration Control Room	Under Review	9/9/2015	Pending	Pending	\$ 52,740.00	\$ 25,840.00	\$ 448,360.00	\$ 30,291,400.00
9	TBD	RFP - Revise Final Clarifier EDI type	Approved	9/24/2015	10/6/2015	11/5/2015	\$ 3,300.00	\$ 29,140.00	\$ 445,060.00	\$ 30,265,600.00
10	TBD	RFP - Provide sleeves under roadway for future irrigation piping.	Pending	9/1/1939	Pending	Pending	\$ -	\$ 29,140.00	\$ 445,060.00	\$ 30,239,800.00
11	TBD	FO - Electrical changes to MCC and control room layouts	Withdrawn	10/7/2015	Pending	Pending	\$ -	\$ 29,140.00	\$ 445,060.00	\$ 30,214,000.00
11-REV1	TBD	RFP - Various electrical changes	Pending	10/20/2015	Pending	Pending	\$ -	\$ 29,140.00	\$ 445,060.00	\$ 30,188,200.00
12	TBD	RFP - Headworks Facility electrical revisions/clarifications	Pending	10/20/2015	Pending	Pending	\$ -	\$ 29,140.00	\$ 445,060.00	\$ 30,162,400.00
13	TBD	WCD - replacement of existing Filter backwash flow meter	Pending	11/9/2015	Pending	Pending	\$ -	\$ 29,140.00	\$ 445,060.00	\$ 30,136,600.00
14	TBD	RFP - Watertight plate at gate opening for future Ox Ditch	Pending	12/16/2015	Pending	Pending	\$ -	\$ 29,140.00	\$ 445,060.00	\$ 30,110,800.00
Totals							\$ 111,996.00		\$ 388,004.00	\$ 30,472,000.00

- Notes:**
1. CCR - Contractor change request.
 2. CL - Claim.
 3. FO - Field Order.
 4. RFP - Request for proposal.
 5. WCD - Work change directive.



MEMORANDUM

DATE: January 14, 2016
TO: Water and Sewer Board
FROM: Valerie Smith
SUBJECT: Purchase of 4-Wheel Drive
Extended Cab Truck

Background

In the Fiscal Year 2015-2016 approved Stormwater Budget, an additional Stormwater Inspector (Water/Wastewater Project Inspector) was approved to provide inspection and to manage the existing database of the privately owned stormwater quality controls. Also included within the approved budget was one (1) 4x4 Extended Cab truck purchase for Engineering Inspection under *Account 370 – New Equipment-Vehicles*.

Currently most all the inspectors have Ford F-150 extended cab trucks and they have worked out nicely. There is enough room in the back seat to keep their construction drawings with them, but also enough space in the back of the truck for the day to day equipment. Per the City's Police Department vehicle bid the dealer for this particular Ford truck is the Country Ford Dealership in Mississippi. They do not have a truck available on the lot that meets our requirements and is within the budgeted amount therefore the truck will be ordered. Staff would like to move forward with the purchase in hopes that it might be delivered about the time the new Stormwater Inspector is hired.

Recommendation

Staff would like to recommend the purchase of the vehicle off the Police Department's bid and requests the Board to recommend approval from the City Council.

Fiscal Impact

The 2015-2016 budget for this vehicle purchase was \$25,000, Account 370 New Equipment-Vehicles under rate funded capital. The cost of the referenced vehicle is \$24,495.

MINUTES
MURFREESBORO WATER AND SEWER BOARD
December 8, 2015

The Murfreesboro Water and Sewer Board met on Tuesday, December 8, 2015 in the conference room at the Operations and Maintenance Building, 1725 S. Church Street. Present at the meeting were Board members: Mr. John Sant Amour, Mr. Ron Crabtree, Mr. Ron Washington, Dr. Al Carter, and Ms. Sandra Trail. Also present were Darren Gore, Valerie Smith, Michele Pinkston, David Ives, Doug Swann, Steve Tate, Alan Cranford, John Strickland, Terry Taylor, Sharon Seibert, Alison McGee, Jimmy Stacey, Kenny Diehl, Mike Bernard, Lynda Sullivan, and Travis Wilson, along with other members of the public.

The Consent Agenda was presented for the following considerations:

A. Consider purchase of automated refrigerated samplers –

The Tennessee Department of Environment and Conservation dictates that flow proportioned composite samples must be collected daily from a number of locations. To accomplish this the Department maintains automated refrigerated samplers at numerous locations in the industrial community and throughout the treatment plant. These samplers are of the same model. By keeping to a single manufacturer, it is possible to substantially reduce the cost of maintenance by using the components that are interchangeable, such as controls boards, sensors, and pump heads, particularly when usable parts are salvaged from units that are otherwise worn out. More importantly, having the same model sampler reduces the time out of service, since a single set of spare components is usable in all of the units.

In order to maintain this interchangeability, staff recommended purchase of four Teledyne ISCO 6712 refrigerated samplers, complete with four bottle configuration system and vinyl suction lines from Kazmier and Associates for \$28,986. Kazmier and Associates is the single source vendor for this area. Twenty-nine thousand dollars (\$29,000) was allocated in the current fiscal budget for this purchase. Staff recommended the purchase of one ISCO portable refrigerated sampler for \$6,708.20 to allow monitoring in the collection system where a free standing sampler is not suited. Seven thousand dollars (\$7,000) was allocated in the current fiscal budget for this purchase.

Staff also recommended purchasing two ISCO flow meters at \$5,841 to monitor and record low data from new industries. Having wastewater daily flows allows for daily violations to be calculated. There was \$5,750 allocated in the current fiscal budget for this purchase.

B. Consider Change Order 1 and miscellaneous allowance allocation for NW Broad Street Pump Station Replacements –

At the May 2013 Board meeting, the Board approved the design contract with Civil Infrastructure Associates (CIA) to abandon three existing pump stations along NW Broad Street. They are Pump Stations

#2, #19, & #20. The Department received bids for the Pump Station Replacements on April 21, 2015 and the project was awarded to J. Cumby Construction, Inc. in the amount of \$976,089 at the April 28, 2015 Board meeting.

As part of the referenced project, a miscellaneous allowance of \$10,000 was included in the base bid for unforeseen conditions and minor revisions to the current scope of work. These minor revisions and the use of the miscellaneous allowance does not change the contract price, only adjust the remaining balance of the allowance.

Project	Contingency Allowance	Prior Contingency Allocations	Current Contingency Allocations	Remaining Contingency Allowance
NW Broad PS Replace	\$10,000	\$0.00	\$ 3,545	\$6,455

With these minor changes, it became apparent that two bid items needed to be added. One was for a shallower gravity sewer depth and the other was to connect an existing 2” private force main to a proposed manhole. The contractor has also requested an additional 14 days be added to the contract for these changes. The change order reconciles the quantity changes needed for the field revisions, adds unit prices for the added bid items and adds the requested time.

Staff recommended the referenced miscellaneous allowance allocation be authorized and recommended the approval of Change Order #1. A final contract amount will be brought to the Board and City Council for approval in a final balancing change order.

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

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

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

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

Project	Contingency Allowance	Prior Contingency Allocations	Current Contingency Allocations	Remaining Contingency Allowance
Phase 4D Expansion	\$500,000	\$2,200.00**	\$ (25,800) *	\$523,600.00

*CCF # – 1 Rev. 2 (Current)

**CCF #'s (2, 6, 7 & 9 previously approved)(cumulative)

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

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

D. Consider Overall Creek Pumping Station modifications to pump speed –

Staff is requesting approval for Southern Sales to supply OEM parts and the associated labor required to increase the pump speed from 1250 to 1450 rpm on the four pumps located in the Overall Creek Pump Station.

This work is necessary in conjunction with the Sinking Creek Phase 4C Headworks project as the Overall Creek Pump Stations' force main is being directly tied to the new headworks facility and the increased pump speed is necessary.

Southern Sales is the OEM supplier of parts for Gorman Rupp pumps. Gorman Rupp pumps can have their rotations per minute (rpm) easily increased through adjusting and/or replacing the pump sheaves, bushings and V-belts.

Staff recommended that the Board approve the work associated with adjusting the pump speeds at the Overall Creek Pump Station.

The fiscal impact of this requested work is \$14,450. The funding for this replacement is recommended to come from working capital reserves. There is \$2.0M in working reserves budgeted for FY16-FY17, of which \$800,000 is committed to the Broad Street Pump Station Replacement project. There is \$700,000 in remaining FY16 funds available for this project.

E. Consider uniform renewal –

The current amended contract for department uniforms will expire January 3, 2016. There is a new cooperative agreement available for us to use with a longer term. The City's Purchasing Director recommends we use Unifirst's new cooperative agreement to stabilize cost and obtain consistent pricing for several more years. Unifirst has a new contract with NJPA that was executed August 18, 2015 for four years and will expire August 17, 2019 with a fifth year renewal option. The new contract has better service terms.

The Department has been under contract with Unifirst since 2009. In 2012, staff took advantage of the NJPA contract which included Unifirst. There has been only one price increase since 2009 and they have provided outstanding service over the last 6 years and they also provided the new uniforms every two years as stated in the contract.

Uniform pricing information is outlined below and there is no price increase due to increased volume and a longer contract term.

Uniform Type	Current Contract	New Contract
Standard Work Uniform	\$3.33	\$3.33
Dress Uniform	\$3.99	\$3.99
Standard Work Uniform (Cotton)	\$4.46	\$4.46
Cotton Shirt & Denim Jeans	\$6.50	\$6.50

**New uniforms will be issued Jan 2016 & Jan 2018*

Staff concurs with the Purchasing Director to enter into a new contract with Unifirst through NJPA. The length of the new contract will be from January 4, 2016 to August 17, 2019 with the option to extend through 2020.

F. Middle Tennessee Boulevard Reconstruction rebid and award information –

Bids were initially received for the project on June 2, 2015 and approved by the Board at the June meeting. The total construction project cost for these previous bids were \$14,832,735.25. Since this time the City re-bid the project and received new bids on October 8, 2015. Again, the bidders were Jarrett Builders, Inc. and Civil Constructors, LLC. Both sets of bids are shown for your information.

Previous Water & Sewer Bids

Bidder	Water Main Bid	Sewer Main Bid	Total W/S Bid
Jarrett Builders, Inc.	\$962,442.00	\$668,760.50	\$1,631,202.50
Civil Constructors, LLC	\$846,338.65	\$701,342.65	\$1,547,681.30

Current Water & Sewer Bids

Bidder	Water Main Bid	Sewer Main Bid	Total W/S Bid
Jarrett Builders, Inc.	\$971,807.00	\$668,760.50	\$1,640,567.50
Civil Constructors, LLC	\$702,474.15	\$622,571.00	\$1,325,045.15

With regard to the entire project, the responsible bidder is Jarrett Builders even though they did not have the lowest overall project bid. And again, they were not low bidder with regard to the water and sewer main improvements. The construction for the entire project, after re-bidding, is \$15,786,359.60.

This is provided for the Board's information. The project was awarded to Jarrett Builders at the November 19th City Council meeting.

This project was a planned project listed in the 5-year capital improvement plan funded from working capital reserves for years FY16 and FY17. The construction costs were updated in June to fund \$1,630,000. Staff has increased this amount based on the rebid to increase an additional \$10,000 needed for utility improvements in conjunction with the roadway project.

G. Coleman and Jordan farm earnings –

The hay cutting season is finished for 2015. The harvest and earnings are shown below:

Jordan Farm

Harvest	Unit Price	Total
Round Bales – (404)	\$17.26	\$6,973
Square Bales – (5,819)	\$1.26	\$7,332
		\$14,305

Coleman Farm

Harvest	Unit Price	Total
Round Bales – (1126)	\$8.76	\$9,864

During the fall of 2014 and spring of 2015, the Department spent \$19,000 on lime, fertilizer, and seed. This was used on the road frontage and outer perimeter of the farm. Mr. McNabb paid and spread weed killer. The Department’s total earnings for 2015 were \$24,169. Total expenditures were \$19,000. There was \$25,000 budgeted in the 2015/2016 Capital Budget.

2015 Season

Earnings	\$24,169
Expenditures	<u>\$19,000</u>
Net Earnings	\$5,169

In early 2016, staff will request to amend the contract and extend for 2016/2017. This will be the fourth year of the 5 year contract.

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

The October 27, 2015 Board Minutes were unanimously accepted as presented.

The Board considered SSR Engineering Work Order 15-41-029.0, Murfreesboro Auxiliary Raw Water Intake Generators.

Last month, staff brought an informational memo to the Board regarding the design and installation of standby power at the Auxiliary Raw Water Intake. Staff also asked Smith Seckman Reid, Inc. (SSR) to review the quotation provided by Thompson Power in February 2014, and to provide a task order for the design and bidding of the project.

SSR has provided Engineering Work Order 15-41-029.0 for consideration. They have also reviewed the Thompson Power quotation, and have received an updated budgetary equipment proposal from Generac, the preferred system manufacturer. Based upon that budgetary proposal and their experience on similar projects, SSR has recommended increasing the project budget to \$600,000. This increase is primarily due to the need for a General Contractor to be involved in the project due to the magnitude of the construction, appropriate Performance and Payment Bonds to protect the City’s interests and also material inflation since the 2014 quotation.

Staff recommended the Board recommend to City Council approval of SSR Engineering Work Order 15-41-029.0, and to proceed with the design and bidding of this project as soon as possible.

The budgeted estimate by staff for the purchase and installation of the standby generator at the Auxiliary Intake was \$425,000. SSR recommended increasing this budget to \$600,000. Their Task Order for design and bidding services is \$39,960. Construction Administration and Resident Project Representative Services will be negotiated after bidding. These funds are recommended to come from working capital reserves. The 5-yr working reserve CIP has been adjusted to reflect this increase and funds are available for the project.

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

The Board considered John Bouchard and Sons Task Order 15-07 for Pump Station # 28 (V.A. Station) Pump Replacements.

Staff is requesting approval for Task Order 15-07 under the annual Water/Wastewater System Mechanical/Electrical Services Contract with John Bouchard and Sons to furnish all labor to complete the replacement of the existing pumps and discharge valves in pump station # 28 with new pumps and valves furnished by the Department.

Pump Station # 28 (V.A. Station) was installed in 1990; it replaced an existing station that was installed in 1973. The original station had two 1200 gallon per minute (gpm) pumps and was replaced with the current station that has three 975 gpm pumps. With the deterioration and constant maintenance of these pumps and motors it has become a concern to staff that a failure is possible in the near future. At this time, one pump motor has been burnt from a power failure and is running at about 50% efficiency, and another pump is running at about 65% efficiency, the third pump runs constantly to maintain wet well levels. With the increasing development in this area staff feels it has become necessary to replace the pumps.

Staff has received quotes from the original equipment supplier (OEM) to furnish three 1200 gpm pumps that will replace the deteriorated pumps on their pre-existing base plates. The pump replacement is required by the OEM due to the small underground footprint in the "can" of the drywell, and the fact that the new pumps fit within the existing space without need to replace base plates or require major piping modifications.

Pump replacements will be done in conjunction with remedial work required on this pump station's wet well being performed as part of the Department's recent sewer rehabilitation bid. This means while the pump station's wet well is being bypassed using temporary external pumps and aboveground force main, John Bouchard will use that same time period to replace the pumps. This is why the labor is so significantly lower than one would expect. Bypass pumping is a very large expense and it is an opportune time to receive double benefit – wet well rehab and pumps replaced simultaneously.

Staff recommended the Board approve John Bouchard and Sons Task Order 15-07 for Pump Station # 28 (V.A. Station) Pump Replacements and purchase of three Fairbanks Model 5" B5434 vertical non-clog built together pumps.

The total fiscal impact is \$55,153. The pumps will be procured at a cost of \$48,507 and the labor supplied by John Bouchard and Sons is \$6,646. The funding for this replacement is recommended to come from working capital reserves. There is \$2.0M in working reserves budgeted for FY16-FY17, of which \$800,000 is committed to the Broad Street Pump Station Replacement project. There is \$700,000 in remaining FY16 funds available for this project.

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

The Board considered DeJarnette Lane Pump Station # 13 Replacement additional services.

Pump station # 13 is located north of DeJarnette Lane across from Oakland High School. This pump station went into service in 1972 so it has been in operation for 43 years. The approval for the Engineering design needed for the replacement of this station was approved by the Board at the May 28, 2013 meeting and given to Huddleston Steele in an amount not to exceed of \$48,800. The current estimated construction cost of the project prepared by Huddleston Steele is in the amount of \$925,000.

After getting further into the design of the station, H/S is asking for approval to receive assistance with the design of the station outside their area of expertise. They have requested approval for funding for Structural services pertaining to the wet well design, Electrical services pertaining to the electric service requirements of the new station and site lighting, and Geotechnical services to determine subsurface ground conditions that will have some bearing on the design of the wet well, pump station and the replacement of a tower/pole used for telemetry between the pump station and the Water Treatment Plant. The total request for additional services is in the amount \$15,250.

Staff recommended that the Board recommend to City Council approval of Huddleston Steele Engineering's request for additional services to aid in the design of the station in an amount not to exceed \$15,250.

Funding of \$1.5M and \$.5M for FY's 2016 & 2017 respectively, was listed in the updated CIP presented to the Board at the October 2015 meeting for the replacement of PS #'s 13, 2, 19 & 20.

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

The Board considered water meter right-sizing as part of the AMI project.

For many years MWSD has had a common practice of installing 2" water meters for most commercial customers regardless of their business. In fact, many architects and engineers routinely specify 2" water meters for many commercial establishments including restaurants, office buildings, retail stores of many types and sizes, and schools. In recent years, with a heavy emphasis being placed on water loss

reduction, it has become evident that many non-residential water meters are over-sized and should be evaluated by a process called “right-sizing”. Right-sizing provides two important benefits:

- Ensures that the meter is operating within its optimal range for accurate flow measurement and minimal maintenance, and
- Minimizes unmeasured water flow (non-revenue water)

In conjunction with the AMI project, staff has conducted a right-sizing evaluation on our existing 2” water meters. Our current AMI project scope includes replacement of all of our 663- 2” meters. Based on the right-sizing evaluation utilizing actual consumption records over the past 12 months, we have determined that this scope of replacement can be modified to the following:

- 208- replaced with 1” meters
- 196- replaced with 1 ½” meters
- 134- replaced with 2” meters
- 103- retrofitted with radio telemetry only

In so doing, we will realize a project cost savings of ~ \$125,000. However, because the smaller meters carry a lower minimum charge in our rate schedule, we will also incur an annual revenue reduction of \$95,475 (<0.5% of annual operating revenue). We believe this scope change is prudent and justified in that it will enhance our water metering accuracy, reduce our apparent water loss caused by these over-sized meters, and will be true to our stated goal for the AMI project that “everyone pays their fair share”. These meters are for largely commercial and institutional (schools including MTSU) customers.

As to the \$125,000 savings (or credit), our plan is to record this credit as a contingency as shown in Table 1 (Directives 1 and 2) and then maintain a record of additional scope modifications as the project progresses. Directives 3-5 have occurred to date. Our goal will be to end the project with a net difference of zero or higher.

Staff requested Board approval of these actions.

**Table 1
AMI Project Scope Modifications**

Scope Change Directive	Description	Credit	Debit	Net
1	Right Sizing of 2" meters to 1" and 1 1/2"	\$75,866		\$75,866
2	Retrofit 103 Omni 2" meters	\$48,616		\$124,482
3	Change 60- 2" turbines to 2"PD	\$9,000		\$133,482
4	Provide fittings for 65- 2" turbines in 17" setters		\$7,500	\$125,982
5	Purchase 3 additional handhelds		\$16,425	\$109,557
6				
Total		\$133,482	\$23,925	\$109,557

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

Staff presented and discussed the draft Financial Statements and Independent Auditor's Report of Murfreesboro Water and Sewer and Murfreesboro Stormwater Fund for the years ended June 30, 2015. This is a fund statement for the Water and Sewer Department only, and an unqualified opinion from the auditor. This statement will be incorporated into the City of Murfreesboro government wide financial statements.

The Management Discussion and Analysis section provides a narrative explanation from MWSD and Stormwater management of how each organization performed this past year, and also presents a prospective look for both MWSD and Stormwater.

Staff presented and discussed the Water and Sewer Dashboard Performance for November 2015.

Staff proposed to reschedule the January 2016 Board meeting from January 26th to the 19th and the February 2016 Board meeting from February 23rd to the 16th.

There being no further business, the meeting was adjourned.

John Sant Amour, Chairman



MEMORANDUM

DATE: January 14, 2016
TO: Water and Sewer Board
FROM: Sharon Seibert
SUBJECT: Identity Theft Program and Policy Annual Review

Background

As part of the Red Flag regulation, passed in 2007 by the Federal Trade Commission and as prescribed by Section 8 of the Identity Theft Program, on October 28, 2008 the Water and Sewer Board approved our Red Flag Policy and Program. The "Red Flag" Identity Theft Program (RFITP) has been implemented throughout the workflow in the Customer Service department. A working instruction manual has been provided to staff and is accessible on the department server. Individual and group training sessions have been conducted by the RFITP Manager for the Customer Service Clerks, Cashiers and Receptionist.

The regulation requires an annual report to review policy updates, confirm training, disclose monitoring of sensitive information and summarize investigations. A summary of these items is listed below:

- This year staff received request to consider adding Permanent Resident Cards to our list of acceptable identification types. The current policy requires a united states issued driver's license, identification card, military identification card or passport. The Department of Transportation accepts Permanent Resident Cards as a driver's license alternative.
- On July 22nd, staff training addressed critical identity theft alerts and responses.
- Social security monitoring is automatically conducted during every new service transaction. No violations due to duplicate social security number were identified. As part of our prevention program if there were missing or unverified sensitive information staff will withhold making the requested change until the customer can verify their identify.
- Within the 2015 calendar year, the Murfreesboro Water and Sewer Department fielded several claims of identity theft. Only three of such claims lead to written requests warranting an investigation for bank fraud and credit card fraud. On a daily basis social security number monitoring alerts and staff inquiries, allow us to successfully protect accounts from identity theft and fraud. Since the inception of the Red Flag Program,

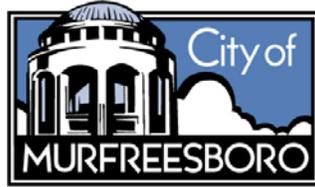
a total of sixty- two accounts have been protected. Heirs have received assistance by waiving new service fees and thousands of aged debt has been collected as a direct result of RFITP.

The below summary chart displays critical identity theft categories threatened and investigated last year:

Date	Threat & Resolution
January 21, 2015	Customers bank account was hacked. They wanted to extend payment on their account to prevent disconnection for non-payment. MWSD Received bank verification then granted their extension.
August 18, 2015	Customer notified MWSD of bounced payment after their water was turned off due to non-payment. Customer claimed a friend stole checks bouncing her bank account. Customer did not provide proof of theft. Staff followed standard non-payment reconnection requirement protocol.
October 13, 2015	Received request from inmate claiming while she was incarcerated her friends used her credit card without permission or approval in 2013. Consulted with MWSD's credit card processor and informed the requester that the time to challenge charges had expired. Directed the requester to direct fraud claims and reimbursement requests to the credit card used for the transaction or file a complaint with the police department. Informed her if judgment was granted for fraud, we would review her claim again.

Recommendation

Staff recommends broadening the list of alternative identifications to include the Permanent Resident Card.



..... *creating a better quality of life*

MEMORANDUM

DATE: January 11, 2016
TO: Water and Sewer Board
FROM: Terry Taylor
SUBJECT: Sealed Bids for Construction Piping Materials

Background

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

Project Name: Farrar St.			
Company	Water	Sewer	Total
Hayes Pipe	\$18,510.00	\$5,640.00	\$24,150.00
HD Supply	\$18,907.34	\$5,349.06	\$24,256.40
Fortiline			\$24,462.41
GC Supply	\$19,228.38	\$5,789.86	\$25,018.24
Southern Pipe	\$24,584.13	\$5,682.00	\$30,266.13
Consolidated	\$23,209.62	\$7,718.00	\$30,927.62

Project: Murfree Ave.	
Company	Water
Hayes Pipe	\$11,346.30
Southern Pipe	\$11,616.55
HD Supply	\$11,647.69
GC Supply	\$12,087.21
Consolidated	No Bid
Fortiline	No bid

Project: Grantland Ave.	
Company	Water
Hayes Pipe	\$32,568.80
HD Supply	\$35,198.94
Southern Pipe	\$35,572.61
GC Supply	\$37,480.84

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

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

Recommendation

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

Fiscal Impact

The overall costs associated with piping material bids for the referenced projects are \$68,065.10. Funds are available per the O&M construction operations accounts tabulated below as approved by the Water and Sewer Board and City Council in the 2015-2016 (FY16) budget.

FY16 APPROVED MWSD O&M CONSTRUCTION ACCOUNTS

Description	TOTAL AMOUNT
CAPITAL ACCOUNTS	
Meters	\$100,000
Water Taps	\$200,000
Sewer Taps	\$100,000
Repurified water taps	\$10,000
Fire Hydrants	\$25,000
Water Lines	\$425,000
Sewer Lines	\$350,000
OPERATING ACCOUNTS	
Materials Pipe (Trans/Dist) Lines	\$23,000
Paving Material (Water)	\$32,000
Pipe & Materials Private Laterals	\$7,000
Materials Pipe Sewer Rehab	\$41,000
Paving Materials (Sewer)	\$56,000

Attachments

Hayes Pipe Supply, Inc. Itemized Water and Sewer Materials Bid
Project Exhibits



HAYES PIPE SUPPLY, INC.

1244 Park Avenue • Murfreesboro, TN 37129
(615) 217-3040 • (888) 298-0042 • Fax (615) 217-3050
www.hayespipe.com

QUO # - 75838

PAGE - 1

TO: MURFREESBORO WATER & SEWER MURFREE AVR
PO BOX 1477 WATER LINE
MURFREESBORO TN 37133

Plan Date	Last Revision	BID DATE	BID TIME	
1/07/2016	TBO	1/07/2016	:00	
QUANTITY	DESCRIPTION	UNIT	PRICE	EXTENSION
850	8IN C900 DR-18 PVC PIPE	FT	5.39	4,581.50
18	6IN CL-52 SJ DUCTILE IRON PIPE DIP	FT	12.60	226.80
1	6x6IN MJ DI TAPPING SLEEVE	EA	600.00	600.00
1	6IN MJ O/L TAPPING VALVE AFC 2506 LESS ACC	EA	630.00	630.00
2	8x6IN MJ SB-DI TEE C/L LESS ACC	EA	82.00	164.00
2	6IN MJ O/L NRS RS GATE VALVE AFC 2506 LESS ACC	EA	452.00	904.00
2	8IN MJ SB-DI 45 DEG ELL C/L LESS ACC	EA	53.00	106.00
1	8x6IN MJ SB-DI REDUCER C/L LESS ACC	EA	38.00	38.00
1	8IN MJ SB-DI L/P SOLID SLEEVE C/L LESS ACC	EA	70.00	70.00
1	8IN MJ O/L NRS RS GATE VALVE AFC 2508 LESS ACC	EA	720.00	720.00
2	5-1/4 B62B MURFREESBORO 3WAY 42IN BURY 6IN SHOE 1.5 PN HYD	EA	1,411.00	2,822.00
4	MURFREESBORO SPEC VALVE BOX F&C 8006	EA	121.00	484.00

** NOTE: 6IN CL-52 DI PIPE SOLD IN 20' LENGTHS ONLY.
LENGTH DIFFERENCE IS NOT REFLECTED IN PRICE /

** PLEASE ORDER PIPE WITHIN 15 DAYS & TAKE POSSESSION
WITHIN 30 DAYS

Total For Quoted Items 11,346.30

Mains - Main Line Accessories - Service Materials - Casing Pipe

- Nashville, TN · (615) 255-4040
- Knoxville, TN · (865) 525-1717
- Lexington, KY · (859) 231-8323
- Tampa, FL · (813) 241-4040
- Longview, TX · (903) 753-5533

- Murfreesboro, TN · (615) 217-3040
- Acworth, GA · (770) 529-8883
- Louisville, KY · (502) 454-8500
- Lake Helen, FL · (386) 228-9819
- Columbia, SC · (803) 695-4040



HAYES PIPE SUPPLY, INC.

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www.hayespipe.com

HAYES PIPE SUPPLY, INC.

These prices are good for order placement through - 2/05/2016 Release of shipment must be made within - 30days from date of order. We are unable to guarantee our take off for quantities or accuracy. The prices listed on our written quotations are quoted as "EACH" or "PER FOOT" basis, Regardless of total prices shown.

BY. _____

- Nashville, TN · (615) 255-4040
- Knoxville, TN · (865) 525-1717
- Lexington, KY · (859) 231-8323
- Tampa, FL · (813) 241-4040
- Longview, TX · (903) 753-5533

Mains - Main Line Accessories - Service Materials - Casing Pipe

- Murfreesboro, TN · (615) 217-3040 □
- Acworth, GA · (770) 529-8883 □
- Louisville, KY · (502) 454-8500 □
- Lake Helen, FL · (386) 228-9819 □
- Columbia, SC · (803) 695-4040 □



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QUO # - 75835

PAGE - 1

TO: MURFREESBORO WATER & SEWER

FARRER STREET

PO BOX 1477

SEWER/WATER LINE

MURFREESBORO TN 37133

Plan Date 1/06/2016 Last Revision TBO

BID DATE 1/06/2016 BID TIME 3:00PM

QUANTITY DESCRIPTION

UNIT PRICE EXTENSION

1 ** SEWER LINE MATERIAL LIST

1,100	8IN x 14FT SDR-35 PVC SEWER PIPE	FT	2.52	
600	6IN x 14FT SDR-35 PVC SEWER PIPE	FT	1.40	
20	8x6IN SDR-35 PVC SEWER WYE	EA	27.10	
40	6IN SDR-35 PVC SEWER 45 DEG BEND BxB	EA	8.85	
20	6IN SDR-35 PVC SEWER WYE	EA	17.30	
20	6IN SDR-35 PVC SEWER CAP	EA	5.30	
20	6x4IN CI/PVC-CONC RUBBER CPLG	EA	34.00	

* * *

TOTAL PER ABOVE ASSEMBLY

 5,640.00 -----
 5,640.00

1 ** WATER LINE MATERIAL LIST

1,425	8IN C900 DR-18 PVC PIPE	FT	5.39	
18	6IN CL-52 SJ DUCTILE IRON PIPE DIP	FT	12.60	
2	8x8IN MJ DI TAPPING SLEEVE	EA	791.00	
2	8IN MJ O/L TAPPING VALVE AFC 2508 LESS ACC	EA	930.00	
3	8IN MJ O/L NRS RS GATE VALVE AFC 2508 LESS ACC	EA	720.00	
2	6IN MJ O/L NRS RS GATE VALVE AFC 2506 LESS ACC	EA	450.00	
2	5-1/4 B62B MURFREESBORO 3WAY	EA	1,411.00	
1	42IN BURY 6IN SHOE 1.5 PN HYD	EA	100.00	
1	8x8IN MJ SB-DI TEE C/L LESS ACC	EA	98.00	
2	8x6IN MJ SB-DI HYDRANT TEE LESS ACC	EA	53.00	
2	8IN MJ SB-DI 45 DEG ELL C/L LESS ACC	EA		

Mains - Main Line Accessories - Service Materials - Casing Pipe

□ Nashville, TN (615) 255-4040
 □ Knoxville, TN (865) 525-1717
 □ Lexington, KY (859) 231-8323
 □ Tampa, FL (813) 241-4040
 □ Longview, TX (903) 753-5533

Murfreesboro, TN (615) 217-3040 □
 Acworth, GA (770) 529-8883 □
 Louisville, KY (502) 454-8500 □
 Lake Helen, FL (386) 228-9819 □
 Columbia, SC (803) 795-4040 □



HAYES PIPE SUPPLY, INC.

QUO # - 75835

PAGE - 2

QUANTITY	DESCRIPTION	UNIT	PRICE	EXTENSION
1	8IN MJ CAP LESS ACC	EA	29.45	
7	MURFREESBORO SPEC VALVE BOX F&C 8006	EA	121.00	
*** TOTAL PER ABOVE ASSEMBLY			-----	-----
			18,510.00	18,510.00

** NOTE: 6IN CL-52 DI PIPE IS SOLD IN 20' LENGTHS ONLY.
 LENGHT DIFFERANCE IS NOT REFLECTED IN FINAL PRICE.
 ** PLEASE ORDER WITHIN 15 DAY & TAKE POSSESSION WITHIN 30
 DAYS.

Total For Quoted Items -----
 24,150.00

HAYES PIPE SUPPLY, INC.

These prices are good for order placement through - 1/21/2016 Release of
 shipment must be made within - 15days from date of order. We are unable to
 guarantee our take off for quantities or accuracy. The prices listed on our
 written quotations are quoted as "EACH" or "PER FOOT" basis, Regardless of
 total prices shown.



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QUO # - 75841

PAGE - 1

TO: MURFREESBORO WATER & SEWER

GRANTLAND AVE

PO BOX 1477

WATERLINE

MURFREESBORO TN 37133

Plan Date 1/07/2016 Last Revision TBO

BID DATE 1/07/2016 BID TIME :00

QUANTITY	DESCRIPTION	UNIT	PRICE	EXTENSION
2,100	8IN C900 DR-18 PVC PIPE	FT	5.39	11,319.00
18	6IN CL-52 SJ DUCTILE IRON PIPE DIP	FT	12.60	226.80
1	16x8IN MJ DI TAPPING SLEEVE	EA	4,080.00	4,080.00
1	8IN MJ O/L TAPPING VALVE AFC 2508 LESS ACC	EA	930.00	930.00
7	8IN MJ O/L NRS RS GATE VALVE AFC 2508 LESS ACC	EA	720.00	5,040.00
6	6IN MJ O/L NRS RS GATE VALVE AFC 2506 LESS ACC	EA	450.00	2,700.00
4	5-1/4 B62B MURFREESBORO 3WAY 42IN BURY 6IN SHOE 1.5 PN HYD	EA	1,411.00	5,644.00
1	8x8IN MJ SB-DI TEE C/L LESS ACC	EA	100.00	100.00
6	8x6IN MJ SB-DI TEE C/L LESS ACC	EA	81.50	489.00
1	8IN MJ SB-DI 11-1/4 DEG ELL C/L LESS ACC	EA	51.00	51.00
1	8IN MJ SB-DI L/P SOLID SLEEVE C/L LESS ACC	EA	68.00	68.00
2	8IN MJ SB-DI 45 DEG ELL C/L LESS ACC	EA	53.00	106.00
15	MURFREESBORO SPEC VALVE BOX F&C 8006	EA	121.00	1,815.00

** NOTE: 6IN CL-52 DI PIPE IS SOLD IN 20' LENTHES ONLY.
LENGTH DIFFERENCE IS NOT REFLECTED IN PRICE.
** PLEASE ORDER PIPE WITHIN 15 DAYS & TAKE POSSESSION
WITHIN 30 DAYS.

Total For Quoted Items -----
32,568.80

□ Nashville, TN (615) 255-4040
□ Knoxville, TN (865) 525-1717
□ Lexington, KY (859) 231-8323
□ Tampa, FL (813) 241-4040
□ Longview, TX (903) 753-5533

Mains - Main Line Accessories - Service Materials - Casing Pipe

Murfreesboro, TN (615) 217-3040 □
Acworth, GA (770) 529-8883 □
Louisville, KY (502) 454-8500 □
Lake Helen, FL (386) 228-9819 □
Columbia, SC (803) 695-4040 □



HAYES PIPE SUPPLY, INC.

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www.hayespipe.com

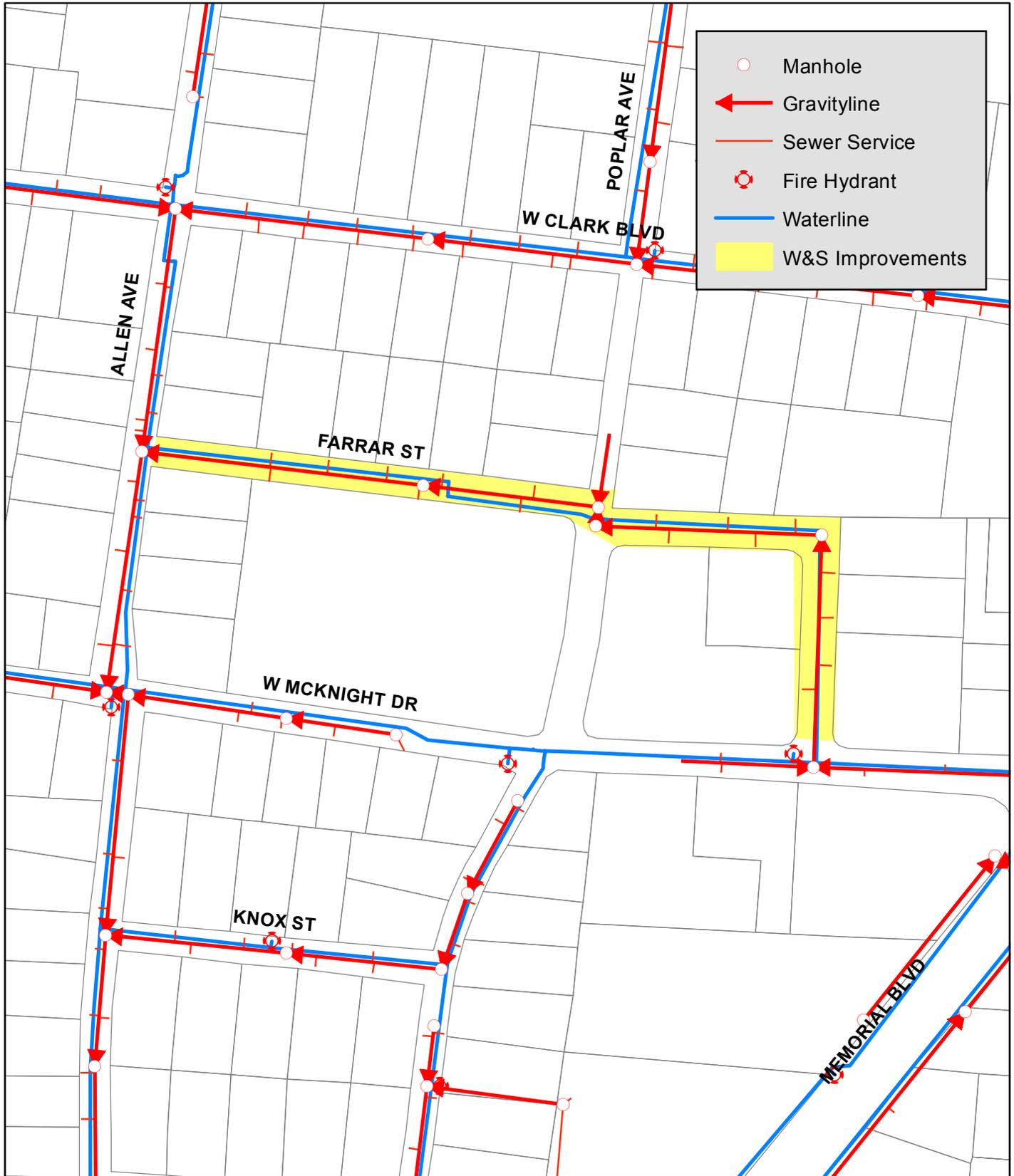
HAYES PIPE SUPPLY, INC.

These prices are good for order placement through - 2/07/2016 Release of
shipment must be made within - 30days from date of order. We are unable to
guarantee our take off for quantities or accuracy. The prices listed on our
written quotations are quoted as "EACH" or "PER FOOT" basis, Regardless of
total prices shown. BY.

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- Lexington, KY • (859) 231-8323
- Tampa, FL • (813) 241-4040
- Longview, TX • (903) 753-5533

Mains - Main Line Accessories - Service Materials - Casing Pipe

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- Acworth, GA • (770) 529-8883 □
- Louisville, KY • (502) 454-8500 □
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- Columbia, SC • (803) 736-0440 □



- Manhole
- ← Gravityline
- Sewer Service
- ⊗ Fire Hydrant
- Waterline
- W&S Improvements

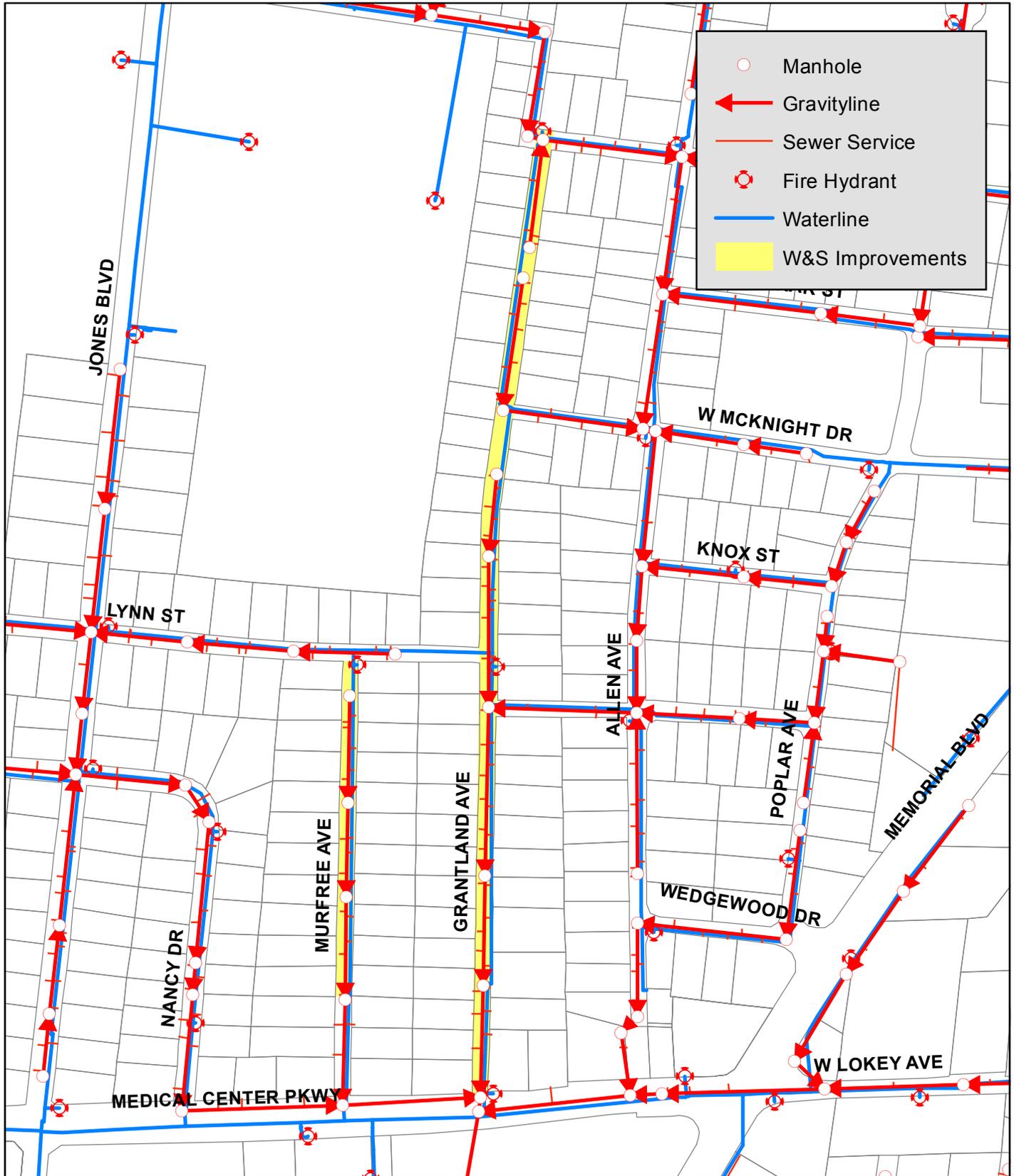


MURFREESBORO WATER AND SEWER DEPARTMENT

Farrar - Water & Sewer Main Replacements



KMC 1/14/2015
Board - W&S Improvements.mxd



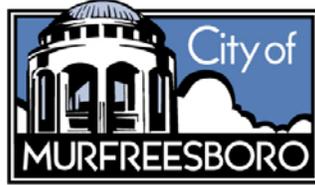
MURFREESBORO WATER AND SEWER DEPARTMENT

Murfree Ave. - Water & Sewer Main Replacements

Grantland - Water Main Replacement



KMC 1/14/2015
Board - W&S Improvements.mxd



..... *creating a better quality of life*

MEMORANDUM

DATE: January 12, 2016
TO: Water and Sewer Board
FROM: Terry Taylor
SUBJECT: Asphalt Purchases

Background

The Legal and Purchasing Departments requested O&M to report monthly asphalt purchases to the Board and Council as consistent with a purchase of a perishable commodity pursuant to the Murfreesboro City Code Section 2-10 (E)(7)A purchase of perishable commodities made on the open market does not require public advertisement and competitive bids if a record is made by the person authorizing the purchase which specifies the amount paid, the items purchased and from whom the purchase was made in accordance with T.C.A. §6-56-304(7). Any such purchases shall be reported at least monthly to the City Council. If this method is used for fuel and fuel products, the purchase should be based, whenever possible, on three (3) competitive prices.

The City Code section merely says “report” not “approval”. Thus, staff will be placing a report (attached) on the Water and Sewer Board and City Council consent agenda monthly, but will be making the purchases prior on an “as needed” basis in conjunction with O&M’s construction projects.

The last sentence of 2-10(E) (7) states that if this method is used for fuel & fuel products (e.g., asphalt), the purchases should be based on 3 competitive prices whenever possible. Staff will seek three (3) competitive quotes; however, it is very rare if all paving manufacturers are paving the necessary “mix” for the application required by O&M crews. O&M uses hot mix binder and topping courses for its work associated with repairing trenches in City roads.

In most instances, the asphalt manufacturers are manufacturing different asphalt mixes and as such O&M’s purchase is a sole source. This will all be documented per the attached report.

Recommendation

The asphalt reporting of purchases, consistent with purchases associated as perishable, fuel-based commodity is provided as information only. No recommendation from the Board to City Council is necessary.

Fiscal Impact

The overall costs associated with asphaltic material purchases for these O&M projects are in the range of \$150,000 to \$175,000 per year. Funds are available per the O&M construction operations accounts tabulated below as approved by the Water and Sewer Board and City Council in the 2015-2016 (FY16) budget.

FY16 APPROVED MWSD O&M CONSTRUCTION ACCOUNTS

Description	TOTAL AMOUNT
CAPITAL ACCOUNTS	
Meters	\$100,000
Water Taps	\$200,000
Sewer Taps	\$100,000
Repurified water taps	\$10,000
Fire Hydrants	\$25,000
Water Lines	\$425,000
Sewer Lines	\$350,000
OPERATING ACCOUNTS	
Materials Pipe (Trans/Dist) Lines	\$23,000
Paving Material (Water)	\$32,000
Pipe & Materials Private Laterals	\$7,000
Materials Pipe Sewer Rehab	\$41,000
Paving Materials (Sewer)	\$56,000

Attachments

Monthly Asphalt Purchase Report



... creating a better quality of life

MEMORANDUM

DATE: January 11, 2016
TO: Water and Sewer Board
FROM: Darren Gore
SUBJECT: Agreement Extension No. 1, January 28, 2016 to January 28, 2017
 MWSD Water/Wastewater System Mechanical/Electrical Services Contract

Background

Staff accepted bids on December 18, 2014 for two (2) base-bid task orders along with supplemental unit prices for outside labor and equipment services. The bid was awarded to John Bouchard and Sons Co (JB&S), and the agreement was executed on January 28, 2015. The agreement allowed for the provision of extending the supplemental unit prices an additional two (2), twelve (12) month terms. Staff is requesting approval from the Board to extend the agreement with JB&S an additional twelve (12) months to January 28, 2017.

The following table identifies the task orders entered into with J&B. Task orders 15-01 and 15-02 were the basis for awarding the bid. Task Orders 15-03 through 15-08 are task orders using the supplemental unit pricing provided by JB&S over the 2015 calendar year. Needless to say, staff has been extremely satisfied with JB&S. A lot of work has been accomplished that would typically put great stress on MWSD's maintenance staff, and typically be delayed due to lack of resources.

John Bouchard Water/Wastewater System Mechanical/Electrical Services Summary

Task Order #	Contractor	Total Cost	Spent to Date
15-01	SRWTP Raw Water Pump Replacements	\$431,873.00	\$205,711.00
15-02	SCTP Repurified Water Pump VFD Repl	\$45,211.00	\$45,211.00
15-03	Rebuild SRWTP #1 Raw Water Pump	\$20,452.00	\$20,452.00
15-04	Aid replacing 3 - 8" Plug Valves @ PS #28	\$3,165.00	\$3,165.00
15-05	Perm Generator Connection to PS #14	\$31,488.00	\$0.00
15-06	SCWTP 3-Rotary Biosolids Press Install	TBD	\$0.00
15-07	Aid to install 3-Pumps @ PS #28	\$6,646.00	\$0.00
15-08	Raw Water Traveling Screen Inspection	\$3,273.00	\$0.00
Total		\$542,108.00	\$274,539.00

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

Recommendation

Staff recommends the Board recommend to the City Council to extend the agreement with John Bouchard & Sons Co. the Water/Wastewater System Mechanical/Electrical Services Contract on and additional twelve (12) month period from January 28, 2016 to January 28, 2017.

Fiscal Impact

A lot of the costs associated with John Bouchard's help can be classified as reactive maintenance due to unforeseen repairs and equipment breakdowns, and will likely be requested as funded from working capital reserves. However, the Department's 5-yr capital improvements plan (attached in the dashboard), does account for \$1.5M in rate funded vehicle and equipment replacement that may fund a portion of the costs associated with JB&S services. Additionally, the largest expected expenditure for JB&S services is in conjunction with the installation of 3-rotary biosolid presses. This project is being designed currently by SSR and the presses approved for purchase through remaining funds in pre-existing State Revolving Fund (SRF) loans. The labor associated with JB&S services will be brought back to the Board for recommendation to the City Council prior engaging them in this work.

Attachments

- Agreement Extension #1 between City of Murfreesboro and John Bouchard & Sons Co. for Water/Wastewater Systems Mechanical/Electrical Services Contract
- John Bouchard & Sons Co. Water/Wastewater Systems Mechanical/Electrical Services Bid Proposal

MURFREESBORO WATER AND SEWER DEPARTMENT
MURFREESBORO, TENNESSEE

EXTENSION OF AGREEMENT

This Agreement Extension is made as of this ____ day of _____ pursuant to the terms of the **Water/Wastewater System Mechanical/Electrical Services Contract** (the "Agreement") dated January 28, 2015, by and between John Bouchard and Sons Co ("Contractor") and the City of Murfreesboro, Tennessee (the "Owner").

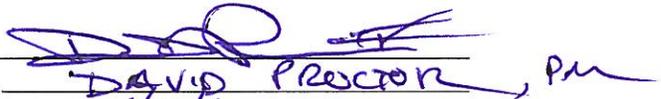
Recitals

- A. Article 3 of the Agreement incorporates by reference the Special Conditions as set forth in the Contract Documents and Specifications for the Water/Wastewater System Mechanical/Electrical Services Contract (2015) dated November 24, 2014.
- B. Section 2 of the Special Conditions of the Agreement provides that Contractor and the City may agree to extend the Agreement for a period of twelve months no more than two times.
- C. No previous extensions of the Agreement have been made and Owner and Contractor now desire to extend the Agreement for a twelve month period.

Agreement

- 1. Contractor and the Owner mutually agree to extend this agreement an additional 12 months, from January 28, 2016 to January 28, 2017, in accordance with Section 2 of the Special Conditions of the Agreement.
- 2. No provisions of the Agreement except as specifically stated herein are amended.

John Bouchard and Sons Co.

By: 
Its: 1/13/16

CITY OF MURFREESBORO

Shane McFarland, Mayor

Approved as to Form:

David Ives, City Attorney

BID PROPOSAL

TO THE MURFREESBORO WATER AND SEWER DEPARTMENT, DIRECTOR
CITY OF MURFREESBORO, TENNESSEE

John Bouchard & Sons Co hereby propose(s) to furnish all material, labor, and appliances and to perform all work required to complete Work Orders 15-01 and 15-02 of the Contract for the **Water/Wastewater System Mechanical/Electrical Services Contract**, located in the City of Murfreesboro, Tennessee, in a workmanlike manner and in accordance with the specifications herewith attached for the Bid Price submitted for each unit of work, which total the amount of

Four Hundred Seventy Seven Thousand, Eighty Four Dollars

Dollars (\$ 477,084.00)

John Bouchard & Sons Co further agree(s) that in case of failure on its part to sign the agreement within ten (10) days, the certified check, Bid Bond, or letter of credit accompanying this proposal and the proceeds thereof shall be the property of the City of Murfreesboro.

Security in the sum of Five Percent of Amount Bid

Dollars (\$ 5% of Bid), in the form of Bid Bond, is submitted herewith in accordance with the Specifications.

In submitting this Bid, it is understood that the right is reserved by the City of Murfreesboro to reject any and all Bids. If written notice of the acceptance of this Bid is mailed or delivered to the undersigned within thirty (30) days after the opening thereof, or at any time thereafter before this Bid is withdrawn, the undersigned agrees to execute and deliver a contract in the prescribed form and furnish any required bond within ten (10) days after the contract is presented to him for signature.

The Bidder is prepared to submit a financial and experience statement upon request.

Description	Payment	Unit	Total Amount
Task Order 15-01: All mechanical, electrical, and other construction-related work as necessary to install two (2) raw water intake pumps at the Stones River Water Treatment Plant, Complete	LS	1	\$431,873.00
Task Order 15-02: All mechanical, electrical, and other construction-related work as necessary to install a Variable Frequency Drive (VFD) on the Reuse Pump at the Sinking Creek Wastewater Treatment Plant, Complete	LS	1	\$ 45,211.00
Total Bid Price (Basis of Award)			\$477,084.00

Note: An itemization of the schedule of hourly labor rates and equipment rates (consistent with the supplemental bid items), and respective hours expected to be employed by each item in performing the work associated with the lump sum task orders 15-01 and 15-02 shall also be submitted with the bid proposal. This breakdown is not intended to examine or modify the lump sum pricing of the bid proposal, but ensure that the supplemental unit pricing is not overly escalated or imbalanced between the immediate work and anticipated future work.

Labor Supplemental Unit Pricing Schedule		
Description	RG Rate	OT Rate
Project Manager	75 ⁰⁰	110 ⁰⁰
Superintendent	65 ⁰⁰	100 ⁰⁰
Pipefitter/Welder	50 ⁰⁰	75 ⁰⁰
Sprinkler Fitter	42 ⁰⁰	63 ⁰⁰
Electrician	50 ⁰⁰	75 ⁰⁰
Apprentice/Helper	36 ⁰⁰	54 ⁰⁰
Expediter/ Delivery	28 ⁰⁰	42 ⁰⁰
Machine Shop Millwright	58 ⁰⁰	88 ⁰⁰
HVAC/Plumb Serv Tech	64 ⁰⁰	96 ⁰⁰
Air Compressor Tech	64 ⁰⁰	96 ⁰⁰
Laborer - Skilled	30 ⁰⁰	45 ⁰⁰
Laborer - Non Skilled	21 ⁰⁰	32 ⁰⁰

Equipment Supplemental Unit Pricing Schedule	
Description	Rate/Hour
Welder	15 ⁰⁰
Power Threader	15 ⁰⁰
Mini / Midi Hammer	12 ⁰⁰
Variable Reach Forklift	26 ⁰⁰
Pickup Truck	15 ⁰⁰
Scissor Lift	18 ⁰⁰
Skid Steer Loader	25 ⁰⁰
Boom Man Lift	29 ⁰⁰
Cat 420D Backhoe	33 ⁰⁰
Street Plate	7 ⁰⁰
185 CFM compressor	15 ⁰⁰
ECM 350	
Air Track Drill	
Pipe laser	21 ⁰⁰
Total station EDM	
15 Ton Boom Truck	115 ⁰⁰
30-50 Ton RT Crane	
80 T crawler crane	
3" Submersible pump	10 ⁰⁰
6" Hydraulic pump	16 ⁰⁰

Date: Dec 18, 2014

State License No.: 319

Treasury No.: NAIC #31194

Official Address (with zip code)

1024 Harrison St

Nashville, TN 37203

John Bouchard & Sons Co

Name of Bidder

By William D. Morgan

Title William D. Morgan, President

Incorporated under the laws of the State of
Tennessee



... creating a better quality of life

MEMORANDUM

DATE: January 12, 2016
TO: Water and Sewer Board
FROM: Valerie H. Smith
SUBJECT: ADS, LLC
Professional Services Contract
Amendment of Contract to Incorporate FlowView Operations

Background

At the April 28, 2015 the Board approved the extension of the contract with ADS, LLC, for Year 3, to operate and maintain the Department's nineteen (19) permanent flow monitors and seven (7) rain gauges, etc. This extension is the third and final year allowing an extension with ADS as part of the 2013 contact with the City of Murfreesboro.

Staff is requesting an amendment of the contract to incorporate FlowView Operations into the Department's existing flow monitoring network. As stated in the attached proposal, ADS has afforded MWSD a few months of a "trial" associated with real-time information from the flow monitors and rain gauges in the sewer collection system; labeled FlowView Operations. Operations and Maintenance has found this tool to be very useful, and the use of it has avoided several sanitary sewer overflows from occurring in the system. Managers can see on their computer screens increased depths at flow monitoring locations "real-time"; indicative of back-ups caused by blockages or pump stations failures. Crews are able to be dispatched and correct the blockage or repair the pumping station prior to an overflow occurring. A sanitary sewer overflow is a violation of the Department's National Pollutant Discharge Elimination System (NPDES) permit, so any time these overflows can be avoided, it is advantageous to maintaining NPDES permit compliance.

As a result of this new tool's benefit, staff is requesting that the contract with ADS be modified to incorporate the cost of FlowView Operations in the next six (6) months of ADS active contract.

Recommendation

It is staff's recommendation that the Water and Sewer Board recommend to the City Council approving the amendment to the Professional Services Agreement with ADS, LLC, Year 3, by incorporating the FlowView Operations into our current flow monitoring network.

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

Fiscal Impact

The amount of the amendment to the contract is itemized in ADS proposal as \$12,740. The current cost for services engaged with ADS per Year 3 of the 2013-2016 professional services contract is \$369,044. The 2015-2016 (FY16) budget has a budgeted amount of \$400,000, so there are funds available to incorporate this additional cost.

Attachments

ADS FlowView Operation Proposal

December 14, 2015

Ms. Valerie Smith, PE
City of Murfreesboro Water and Sewer Board
220 NW Broad Street
P.O. Box 1477
Murfreesboro, Tennessee 37133-1477

RE: FlowView Operations Proposal

Dear Valerie,

ADS is pleased to present this proposal for the provisioning of its FlowView Operations system for the Murfreesboro Water and Sewer Board.

ADS has been demonstrating the capabilities of the FlowView Operations for a few months at no cost so that MWSD can judge whether it would be useful to their operation of the flow and rain monitoring network. The feedback that we have gotten on various occasions is that FlowView Operations has improved the ability of MWSD staff to access near real time information from the flow monitors and rain gauges.

The prices contained in the attached proposal are valid for 60 days.

If you have any questions, please contact me at (256) 508-1628.

Best Regards,



Luis Mijares
Senior Business Development Manager

cc: M. Surber, P.E.
Attachments

Proposal for ADS' Web-Hosted, Near Real-Time Alarming Software for Wet and Dry Weather for the Murfreesboro Water and Sewer Board.



FlowView Operations™ connects clients to an ADS flow monitoring network, delivering near real-time operational intelligence on the status of flow activity throughout the wastewater collection system. FlowView Operations is a dynamic tool for the management and oversight of collection system operation. This state-of-the-art system provides knowledge and early detection of potential problems. It offers dynamic analytical functions for fueling discoveries that will lead to enhanced management of the sewer collection system. FlowView Operations performs data collection, storage, alarm management, and information presentation functions.

ADS will provide the Murfreesboro Water and Sewer Board (MWSB) access to near “real time” and historical flow monitor data via FlowView Operations. The MWSB will have the ability to access the data directly and additional consultants or partners can be provided access with MWSB approval at no additional cost.

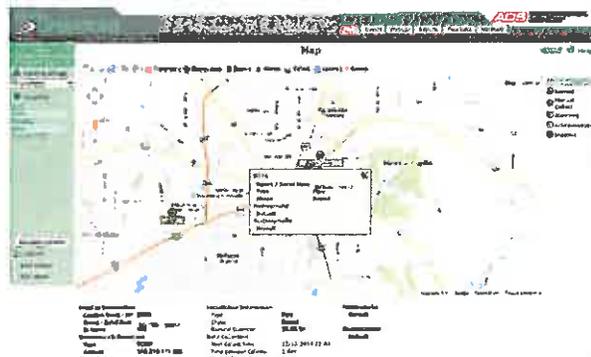
ADS hosts the software on a secure server with direct access to the Internet backbone. The servers have power surge suppression and redundant power backup to protect the MWSB's data. The MWSB will have the ability to automatically collect the data, receive alarms, escalate those alarms, plot the data, export the data, and view the locations on a GIS-based map.

The primary features and functionality of FlowView Operations are described below:

- Google Maps traditional or satellite views
- One click access to detailed site-specific information
- Data in hydrograph and scattergraph format
- Current alarm status and management
- Expanded graphical and tabular reporting
- On-demand and scheduled data collection
- Personalized report templates
- Robust export options

Dynamic Alarming

FlowView Operations utilizes Monitor Level Intelligence (MLI®), which produces learned hydraulic flow patterns that spot flow losses during wet or dry weather on weekdays, weekends, and holidays. MLI initiates and validates each data reading before elevating the reading to an alarm



state in order to keep false alarms to a minimum.

Alarm Management

FlowView Operations' alarm management is designed to inform clients about the occurrence of rain events, flow performance abnormalities, and data anomalies at flow monitoring locations. Monitors and rain gauges send alerts into the hosted FlowView Operations system, which identifies rain, flow, and depth patterns that are outside each location's preconfigured thresholds, and registers these anomalies as alarms. FlowView Operations then initiates a client-customized alarm notification sequence. It combines rain data with high depth indicators to initiate wet- and dry-weather-induced overflow alarm notification as needed.



- **High Depth Alarm**

When a flow depth level exceeds a user-defined threshold, the ADS monitor will call FlowView Operations, and the system will collect and evaluate the latest data. The system will update the alarm on the system map and provide notification to the designated MWSB and ADS staff for review.

- **High – High Depth Alarm**

When a flow depth level exceeds the second user-defined threshold, the above described process will be repeated.

- **Alarm Escalation**

All alarms will be displayed in FlowView Operations and will be escalated if not acknowledged. ADS will coordinate with the MWSB at the start of the project to develop a user-defined escalation of the alarms to specified users.

Automated Data Collection & Warehousing

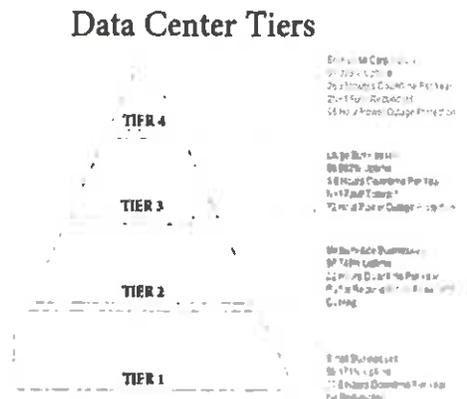
Flow data from a network of ADS flow monitors and rain gauges with static IP SIM cards is collected by FlowView Operations without requiring staff involvement at a customer-requested frequency, usually nightly, seven days a week. FlowView Operations can also collect data from ADS flow monitors with dynamic IP SIM cards when they are configured to deliver data to Operations. An additional feature allows the system to acquire and process specific site installation or system-wide data on demand from ADS monitors with static IP SIM cards. This data is available through the FlowView Operations user interface. FlowView Operations also

supports the automatic delivery of flow data to an FTP site following each data collect making the data available for others to download and view in an application of their choice. FlowView Operations has built-in ad-hoc reports for monitoring collection system performance. All data stored in the warehouse can be exported to software programs such as Microsoft® Excel®, utilized for modeling/engineering/analysis tools, and interfaced with other IT systems.

FlowView Operations stores all of the collected data and alarms in an SQL database. Database backups are performed daily to minimize any loss of data due to server failure.

System Security

The FlowView Operations Hosting Center is a Tier 3 facility with industry-leading IT systems, networks, and infrastructure. It is owned and operated by the nation's leading provider, and is independently recognized for delivering the finest cloud-based solutions and services in the world. This center is comprised of multiple levels of physical, network, and software security systems, and is managed by an expert team specializing in server performance and network security. The hosting center receives protection through video surveillance, 24/7 physical site monitoring, and event notification. Network devices and connectivity equipment are secured through both software and hardware-based firewalls along with state-of-the-art intrusion detection systems.



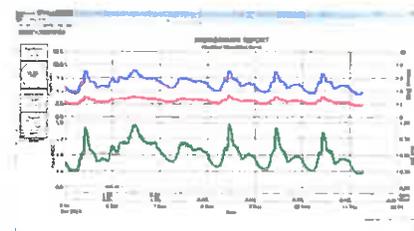
Data Sharing

FlowView Operations allows clients the flexibility to customize the way in which they share data with others. Permission-based security allows clients to specify which users have authorization to acknowledge alarms, access data, and access other system settings. Administrators can control data views through location restrictions on a per-user basis. FlowView Operations provides functionality to customize exactly what kind of data each user can access.

ADS will provide username and login credentials to individuals requiring access to this system, including personnel from the MWSB or any of its consultants, if approved by the MWSB. Data will be available for users to generate reports, plot graphs (including hydrographs and scattergraphs), and create tables for data entities and time frames specified by the user. All data (raw and finalized) and alarms will be available to the MWSB via FlowView Operations.

Data Viewing/Exporting

Each monitoring site's information, data and attachments are accessible via the Web, using a rich set of features. The Web interface also provides versatile graphs and reports for easy access to current monitor data. FlowView



Price

ADS will provide the Murfreesboro Water and Sewer Board FlowView Operations services for the duration of the current contract term as defined in the table below for the unit prices listed in the original contract date of June 18, 2013. The number of units have changed over the course of the contract and therefore extended prices have changed to reflect the new number of devices. These prices are good for 60 days as of the date of the cover letter for the proposal.

Proposal for FlowView Operations for the remainder of the 2015-2106 term (6 months)				
Item	Description	Units	Price	Total
One time Set up Charge	19 Flow Monitors	19	\$ 250.00	\$ 4,750.00
	7 Rain Gauges	7	\$ 250.00	\$ 1,750.00
Monthly Service	19 Flow Monitors	114	\$ 40.00	\$ 4,560.00
	7 rain Gauges	42	\$ 40.00	\$ 1,680.00
Total				\$ 12,740.00

Accepted by:

Client

ADS

Signature

Signature

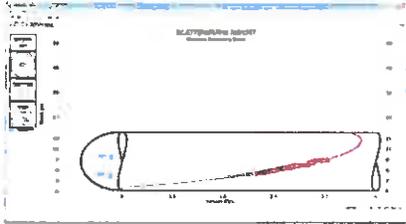
Name

Name

Date

Date

Operations allows clients to view monitor data in hydrograph and scattergraph format.



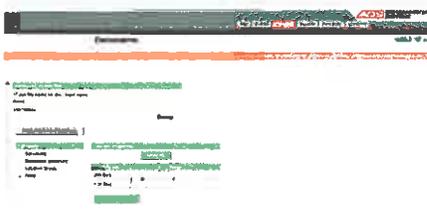
All data and graphics in FlowView Operations can be easily exported to Microsoft Office® (Word®, Excel®, etc.) products for use in documents, spreadsheets, presentations, and emails.

Data Reporting

FlowView Operations also supports a variety of tabular reports to review the flow monitor network's performance (Alarm, Event, Data Collection and Monitor Battery reports) as well as individual location reports (% Full, Daily, Weekly and Weekly Summary reports). All tabular reports can be configured to be automatically sent at a user-defined time and recipients.



Document Viewing



FlowView Operations supports the upload of a variety of documents and files and provides robust settings for organizing and searching the documents that have been uploaded.

System Updates

All updates to FlowView Operations will be provided automatically as they become available, at no additional cost to the MWSB.



MEMORANDUM

DATE: January 14, 2016
TO: Water and Sewer Board
FROM: Valerie H. Smith
SUBJECT: NW Broad Street Pump Station Replacements
 Miscellaneous Allowance & Change Order #2

Background

At the May 2013 Board meeting, the Board approved the design contract with Civil Infrastructure Associates (CIA) to abandon three (3) existing pump stations along NW Broad Street. They are PS #2, #19, & #20. The Department received bids for the Pump Station Replacements on April 21, 2015 and the project was awarded to J. Cumby Construction, Inc. in the amount of \$976,089.00 at the April 28, 2015 Board meeting.

Included in the original bid form were two (2) Add Alternate Items that were not approved with the original project, but J. Cumby agreed to honor the prices should the Department wish to add them to the contract in the future. At this time, staff requests to add one of the two Add Alternate Items to the contract. This Add Alternate Item is the replacement of the existing 6" sewer forcemain for \$30.00 per linear foot. The sewer forcemain was installed with the original International Paper pump station in 1968. Internal investigation of this forcemain determined that there was severe tuberculation which can affect the performance of the new pump station coming on line. Staff would like approval of adding the replacement of this forcemain to the scope of the project. The sewer forcemain is approximately 2730 linear feet and the total add to the contract would be **\$81,900**. The contractor has also requested an additional forty-five (45) days to be added to the contract for this additional work. The attached Change Order #2 reconciles the changes and the addition will bring the contract amount to \$1,057,989.00.

Also, as part of the referenced project, a miscellaneous allowance of \$10,000 was included in the base bid for unforeseen conditions and minor revisions to the current scope of work. Note that these minor revisions and the use of the miscellaneous allowance does not change the contract price, only adjust the remaining balance of the allowance. Attached is a letter of explanation from CIA of the field conditions found this last month and the necessary changes.

Project	Contingency Allowance	Prior Contingency Allocations	Current Contingency Allocations	Remaining Contingency Allowance
NW Broad PS Replace	\$10,000	\$3,545.00	\$ 1,160	\$5,295

Field Change #1- 12/04/15 - \$3545

Recommendation

Staff recommends the referenced miscellaneous allowance allocation be authorized and recommends the approval of Change Order #2. A final contract amount will be brought to the Board and City Council for approval in a final balancing change order.

Fiscal Impact

\$1.5M was committed in the Working Capital Reserves account for FY 2015-2016 for pump station upgrades. The additional costs of \$81,900 to replace the six (6) inch force main on the NW pump station replacements project is covered by this budgeted amount.

Attachments

- CIA Recommendation Letter
- Change Order #2

January 12, 2016

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

RE: Northwest Broad Street SPS Replacements
Proposed Change Order #2
Recommendation Letter
MWSD Project No: 13003, CIA Project No: 2013-02

Dear Valerie:

Attached are four (4) copies of proposed Change Order #2 for the referenced project. The proposed changes are further described below:

Additive Alternate #1 – 6 inch Force Main Replacement:

MWSD engineering department would like to accept the listed additive alternate based on the information provided below:

- The bid price per linear foot is very competitive.
- Television inspection of the interior of the existing force main revealed severe interior tuberculation, likely reducing the effective size to 4 inches or less.
- The significantly reduced interior force main diameter will cause the new pumps to run at a different location on their curve, which is less efficient. Will cause the pumps to pump less flow for the same or more electrical costs. This can also cause other pump issues such as cavitation, vibration, and excessive wear.
- The existing force main is 50 years old and the exterior of the pipe also likely has areas of corrosion which could cause a random failure at any time.

It should be noted that MWSD system personnel has located the existing force main as it was not at the prescribed GIS location. The actual location is in the TDOT right of way, which will not result in a need for additional easements, however, it remains unknown as to whether the railroad spur crossing is cased or uncased, concreted in or not, exact length, etc. These unknowns will have to be field determined and will likely cause an additional small change order to balance the actual quantities used, but should be minor in scope and small in amount and is planned to be taken from the Miscellaneous Allowance rather than as an addition to the contract sum.

The contractor has asked for an additional 45 days to be added to the contract time to do the above listed work, as shown on the attached letter from JCumby, Incorporated.

CIA concurs with MWSD and the above listed information and recommends the addition of 2,730 linear feet of 6 inch force main at \$30/lf be added to the contract sum, for a total of \$81,900.00 as shown as alternate 1 in the bid form and the additional time request be granted.

Gravity Sewer Profile and Manhole Invert Adjustments – GS1, Sheet C1.03, MH#1 and #2:

Ms. Valerie Smith, P.E.
RE: Northwest Broad Street SPS Replacements
01/12/2016
Page 2 of 2

While laying gravity sewer #1, an unmapped drainage pipe was uncovered. The proposed sewer profile was adjusted to accommodate the existing pipe. As a result the inverts of MH#1 and MH#2 will need to be field adjusted. The sewer profile has been field adjusted, resulting in additional cost related to reforming the manhole inverts, but no additional costs related to piping profile adjustments as they were minor. Also attached is a letter from the contractor regarding this cost, which results in a deduct of \$1,160.00 from the Miscellaneous Allowance. These changes do not affect the total contract sum.

MWSD and CIA have reviewed this change and recommend approval and the miscellaneous allowance be adjusted accordingly. Please review the attachments and if acceptable to you, execute and return one (1) signed copy back to both the contractor and CIA.

If you have any questions, please call.

Sincerely,



Linda Sullivan, P.E.
President
CIA - Civil Infrastructure Associates, LLC

Cc: Darren Gore – MWSD
Greg Shirley – Jcumby, Inc.
Charles White - MWSD

PROJECT:
 NW Broad St. SPS Replacements
 Murfreesboro Water and Sewer Department
 220 NW Broad Street
 Murfreesboro Tennessee 37130

CHANGE ORDER NUMBER: 2

DATE OF ISSUANCE: January 12, 2016

ENGINEER PROJECT NO: 2013-02

TO:
 J. Cumby Construction, Inc.
 C/O Mr. Greg Shirley
 165 W. Broad Street
 Cookeville, TN 38501

ENGINEER:
 Civil Infrastructure Associates, LLC
 Linda Sullivan, P.E.
 602 North Walnut Street
 Murfreesboro, TN 37130

The contract is changed as follows (See attached sheets for additional details):

1. Additive Alternate No.1 – 6 inch Force Main Replacement.....(Add) \$81,900.00
2. Item No. 33 – Miscellaneous Allow Lump Sum (\$6,455.00 remaining after CO#1).....C.O. #2 \$1,160.00
3. Request for an additional forty-five (45) days for adding additive alternate no.1.

Original Contract Sum was \$976,089.00
 Net change by previous authorized Change Orders \$00.00
 The Contract Sum prior to this Change Order was \$976,089.00
 The Contract Sum will be (**increased/decreased**) by this Change Order \$81,900.00
 The New Contract Sum including this Change Order \$1,057,989.00
 The Contract Time will be increased by an additional forty-five (45) Days.
 The Date of Substantial Completion as of the date of this Change Order therefore is June 10, 2016.

Authorized:

<p>Engineer: Linda Sullivan, P.E. Civil Infrastructure Associates, LLC 602 North Walnut Street Murfreesboro, Tennessee 37130</p>	<p>Contractor: J. Cumby Construction, Inc. 165 W. Broad Street Cookeville, Tennessee 38501</p>	<p>Owner: MWS Department 220 NW Broad Street Murfreesboro, Tennessee 37130</p>
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Linda Sullivan, P.E.	Greg Shirley	Shane McFarland, Mayor
Date 1/15/2016	Date 1/14/2016	Date



... creating a better quality of life

MEMORANDUM

DATE: January 13, 2016
TO: Water and Sewer Board
FROM: Steve Tate, Darren Gore
SUBJECT: Review of Annual Trends and Strategic Planning Issues Document

BACKGROUND

Staff drafted and introduced its first Annual Review of Trends and Strategic Planning Issues in December of 2013; looking at the challenges and priority issues associated with calendar year 2014. Attached is the third updated document for 2016. This document is intended to identify the major issues, policies, and concerns that should be addressed in the upcoming annual budget and capital improvements deliberations. The purposes of this document are the following:

- Illustrate current trends pertinent to water and wastewater services in the MWSD service area
- Describe priority issues relating to water supply/treatment/distribution and wastewater collection/treatment/disposal/reuse in Murfreesboro
- Present a summary of strategic plans to address each issue in the coming year
- Define the components of each issue/plan that require a financial commitment for the purpose of developing the annual operating budget, 5 yr Capital Improvements Plan (CIP), reserve funds, and financing of debt

The ten attributes of Effective Utility Management (EUM) represent the explicit goals of MWSD and therein define the specific areas of focus in which we plan and execute. Every initiative, every action, every decision, and every dollar expended is explicitly targeted at achieving one or more of our goals for the express benefit of our community.

Staff has attempted to keep the document in a succinct and compact format not only to allow for easier reading by the Board, but more manageable for updating by staff each year.

RECOMMENDATION

No formal adoption/recommendation is required. This document is fluid and updated annually; therefore, the Board can supply input on each topic as relevant material and approvals are presented in the upcoming year in order to shape the future of the Department.

FISCAL IMPACT

There is no immediate fiscal impact associated with accepting this document as a strategic planning guide; however, this document is intended to shape financial decisions through the development of strategic initiatives and priorities.

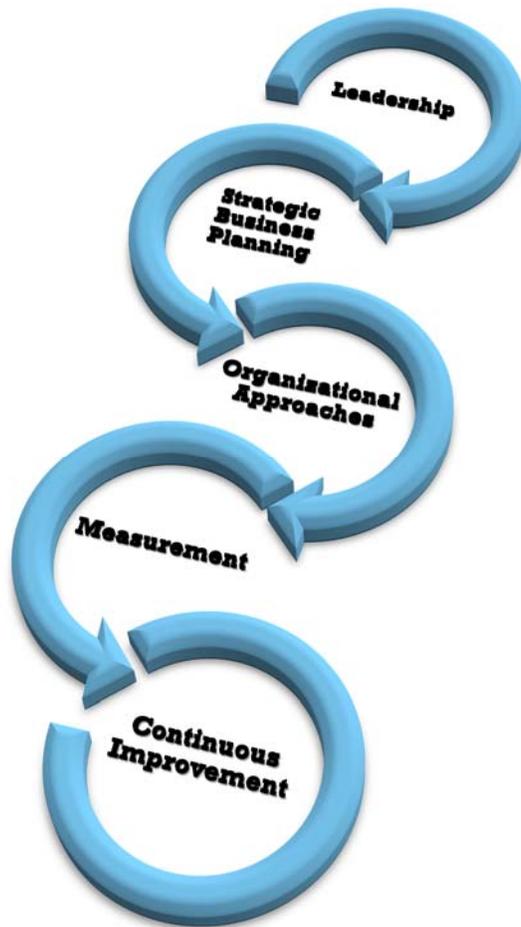
ATTACHMENTS

2016 Annual Review of Trends and Strategic Planning Issues Document

2016

*Annual Review of Trends and
Strategic Planning Issues*

Murfreesboro Water and Sewer Department



December 2015



Table of Contents

- i. Foreword
- ii. Purpose
- ii. Acronyms

- I Water Management
 - A. Advanced Metering Infrastructure and System-wide Fixed Leak Detection
 - B. Water Supply
- II Wastewater Management
 - A. Regaining Collection System Capacity/ Integrity
 - B. Effluent Disposal
 - C. New Collection/Treatment Capacity
 - D. Water Resource Integration and Innovation
 - E. Strategic Partnerships
- III Customer Service Initiatives

Foreword

Our Mission Statement

The Murfreesboro Water and Sewer Department (MWSD) will endeavor to be a leader among public utilities and is committed to a continual process of improvement in all areas of service. As a supplier of products and services that are vital to life and foundational to our quality of life, we recognize and embrace our responsibility and role in sustaining our community and its environment; and take seriously the public trust we must gain and maintain.

Our Goals

The ten attributes of Effective Utility Management (EUM) represent the explicit goals of MWSD and therein define the specific areas of focus in which we plan and execute. Every initiative, every action, every decision, and every dollar expended is explicitly targeted at achieving one or more of our goals for the express benefit of our community. The EUM attributes, Our Goals, are:

- Product Quality
- Customer Satisfaction
- Employee and Leadership Development
- Operational Optimization
- Financial Viability
- Infrastructure Stability
- Operational Resiliency
- Community Sustainability
- Water Resource Adequacy
- Stakeholder Understanding and Support

Our Keys to Success

Our success hinges upon leadership at every level; and as leaders looking forward, our consistent willingness to operate as a team organization. Our progress in pursuit of our goals will be measurable so that we stay on the right track and adjustments can be made if necessary. The keys to success are:

- Leadership
- Strategic Planning
- Organizational Approaches
- Measurement
- Continual Improvement

Purpose

The purposes of this document are the following:

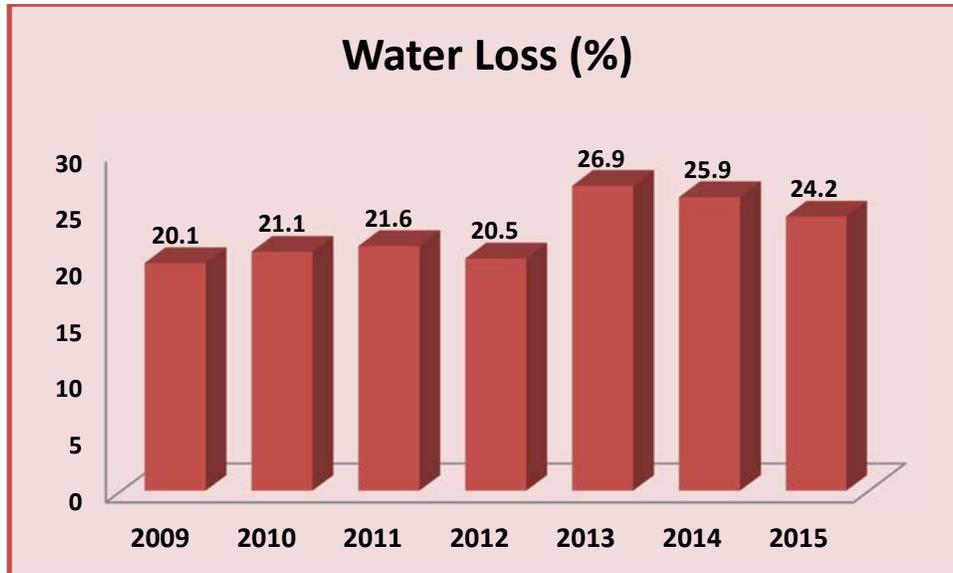
- Illustrate current trends pertinent to water and wastewater services in the MWSD service area
- Describe priority issues relating to water supply/treatment/distribution and wastewater collection/treatment/disposal/reuse in Murfreesboro
- Present a summary of strategic plans to address each issue in the coming year
- Define the components of each issue/plan that require a financial commitment for the purpose of developing the annual operating budget, 5 yr Capital Improvements Plan (CIP), reserve funds, and financing of debt

Acronyms

Acronym	Name
AMI	Advanced Metering Infrastructure
CIS	Customer Information System
COE	US Army Corps of Engineers Nashville District
CY	Calendar Year
EPA	Environmental Protection Agency
EUM	Effective Utility Management
I/I	Infiltration/Inflow
IVR	Interactive Voice Response
lb/day	Pounds per day
mg/L	Milligrams per liter
MGD	Million gallons per day
Mi.	Miles
MWM	Mobile Workforce Management
MWSD	Murfreesboro Water and Sewer Department
NPDES	National Pollutant Discharge and Elimination System
PPR	J. Percy Priest Reservoir
RPW	Repurified water
SCWWTP	Sinking Creek Wastewater Treatment Plant
SSO	Sanitary Sewer Overflow
SRWTP	Stones River Water Treatment Plant
TDEC	Tennessee Department of Environment and Conservation
TN	Total Nitrogen
TP	Total Phosphorus

Water Management

Advanced Metering Infrastructure (AMI) and System-wide Fixed Leak Detection



Although the last 3 years have shown a modest declining trend, our total water loss percentage remains substantially higher than the reported industry average range of 15-18%.

Key Observations:

- AMI will directly address “apparent water loss” which is the result of poor metering accuracy. Our average meter age is ~17 years, about 10 years older than is recommended by AWWA standards. As a rule, older meters measure low, thus giving the illusion of lost water while in reality, the unmeasured water is being consumed by the customer at no charge.
- In the latest AWWA Benchmarking Survey, 67 utilities reported an average of 39 leaks and 24 line breaks per 100 mi. of pipe. Correspondingly, MWSD had 2 leaks and 4 line breaks per 100 mi. of pipe. While this appears to illustrate excellent system integrity, the stark difference is likely the result of no leak detection system coupled with a karst subsurface geology which is prone to drain subsurface leakage.

Actions Needed:

Items	Timing	Board Action		EUM Attributes
		Yes	No	
MWSD maintains a monthly accounting of all known sources of “apparent water loss” including internal uses, unbilled accts, Street and Fire Dept. uses, interconnected water trading with Smyrna, etc.	Ongoing		x	FV, IS,OO SA, WA
AMI and fixed leak detection installation and implementation began in Oct 2015 and will require ~18 mon to complete.	2017		x	
Re-task and train existing meter reading staff as Leak Detection specialists	2016		x	ED

Water Supply

Issues have arisen across the nation in recent years with respect to the functional priorities of US Army Corps of Engineers reservoirs. The “water supply” function has generally received low priority. As a user of Percy Priest Reservoir for water supply, MWSD has a vested interest and as such was invited to participate in a special called meeting of water supply users in Washington D.C. on December 1, 2015. The following “statement of need” was developed by the group.

The water supply purpose is not represented by any national organization. Other purposes of Army Corps reservoirs such as hydropower and navigation have strong national lobbies. The result of not having a group is that decision-makers do not always understand or prioritize water supply issues, and water supply users are often subjected to inconsistent, conflicting and irrational policies and practices. A national network of water supply users is needed to share information, collaborate to promote shared objectives where appropriate, and provide a point of contact for members of Congress and the Army Corps.

Participants included state, local, and regional entities and interstate river basin commissions from across the eastern and western United States. The common thread is reliance on Army Corps projects for water supply. Others who identify with the “water supply interest” are welcome to participate in the future.

Three regulatory and policy developments were identified as potentially affecting water supply interests in the near future:

1. Water Resources Development Act of 2016
2. Government Accountability Office Study of Water Supply and Contracting Issues
3. “Water Supply Rule” Being Developed by the Army Corps

It was postulated that a coordinated group effort could be beneficial and effective in providing input to these developments. Notwithstanding general consensus that greater coordination and communication among water supply users is needed, and strong encouragement from the committee staff, the participants agreed it was premature to determine exactly what form this coordination should take. Alternatives ranged from forming a loose network of contacts to establishing a website as a clearinghouse and discussion board to establishing a formal organization with its own advocacy effort. This issue was deferred for future discussion.

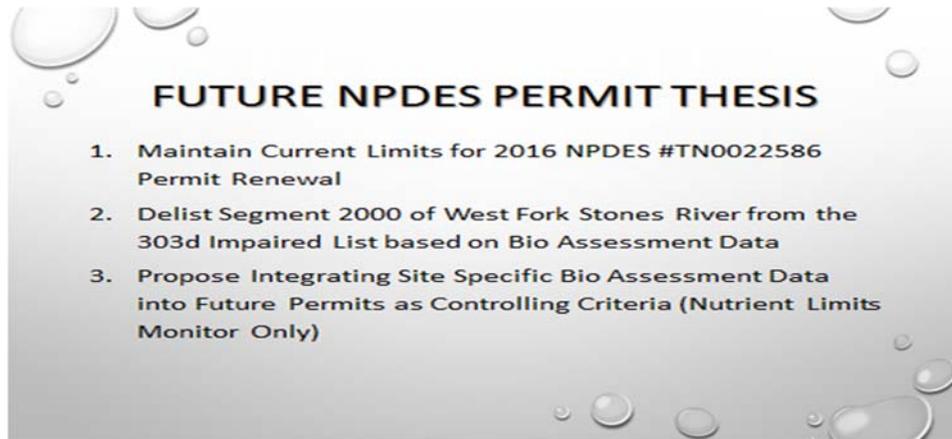
A second meeting will be held in Atlanta on March 1. The focus will be two-fold: (1) to determine if consensus can be reached on a set of guiding principles; and (2) to discuss the form any continuing group might take.

MWSD plans to continue to participate in these discussions.

Wastewater Management



Effluent Disposal



The above summarizes our current and future approach to full utilization of the West Fork as our receiving stream. Current site specific bio-assessment data indicate excellent stream health and full compliance with the designated uses of its stream classification.

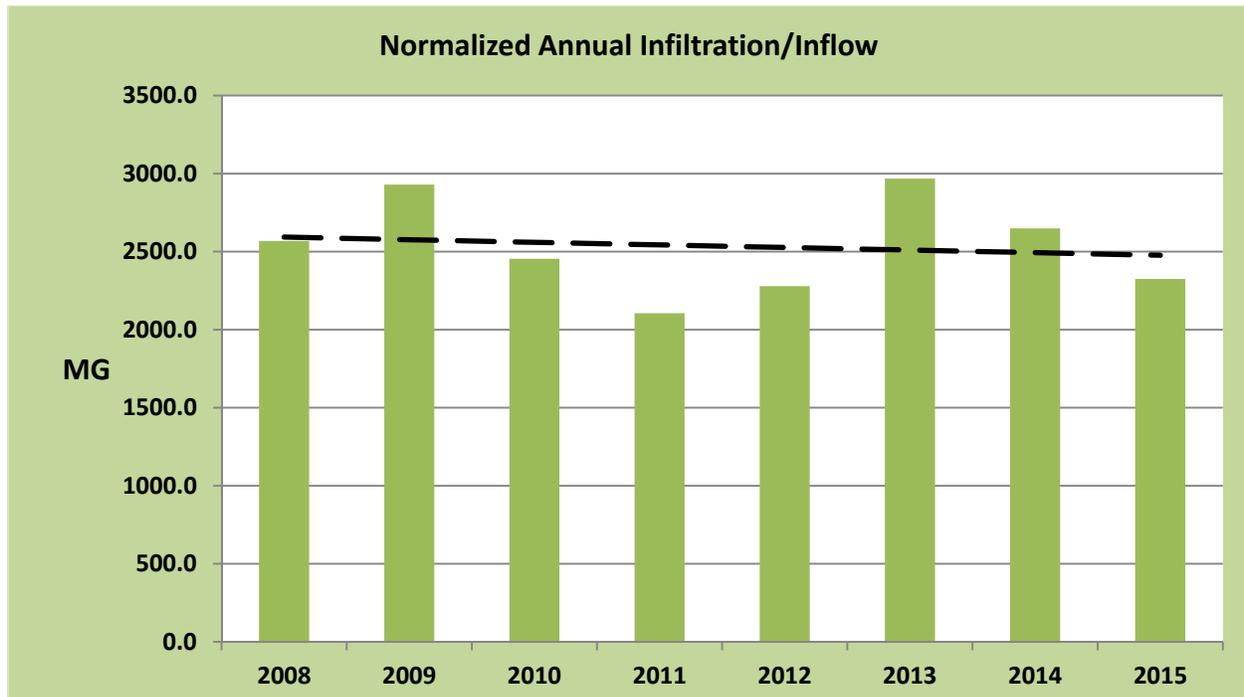
Key Observations:

- Our current effluent disposal avenues consist of direct discharge by NPDES permit to the West Fork of the Stones River and disposal of RPW by land application on two farms and by sales to >100 residential/commercial/institutional customers for other RPW uses.
- Our average daily flow to the SCWWTP is 16.6 MGD in 2015, however peak daily flows have exceeded 40 mgd during substantial wet weather events. The rated capacity of the SCWWTP is 16 MGD and a capacity expansion to 24 MGD is under construction.
- Our sewer service customer base continues to grow rapidly in terms of new residential, commercial, and industrial users and Murfreesboro 2035 population projections estimate our average flow to be ~32 MGD.
- Based on these observations, we must continue the initiative to further expand existing effluent disposal avenues as well as identify and develop new ones.

Actions Needed:

Items	Timing	Board Action		EUM Attribute
		Yes	No	
Acquire West Fork NPDES permit renewal with all effluent limitations unchanged from our current permit	May 2016		x	WA, SU, OR
Maintain collaborative relationship with TDEC with respect to scoping and implementation of stream studies, data interpretation, and required documentation	Ongoing		x	
Commit to ongoing hydrologic/biological sampling of the West Fork to demonstrate site specific stream health conditions	Ongoing	x		
Build a site specific database for the West Fork that effectively documents stream health and its capacity to support its designated use classification	Ongoing		x	

Regaining Collection System Capacity/Integrity



Over the past 8 years, I/I mitigation efforts have essentially held I/I in check, averaging ~2500 MG/yr or 6.8 MGD. That flow represents 42.5% of the current flow capacity of the SCWWTP.

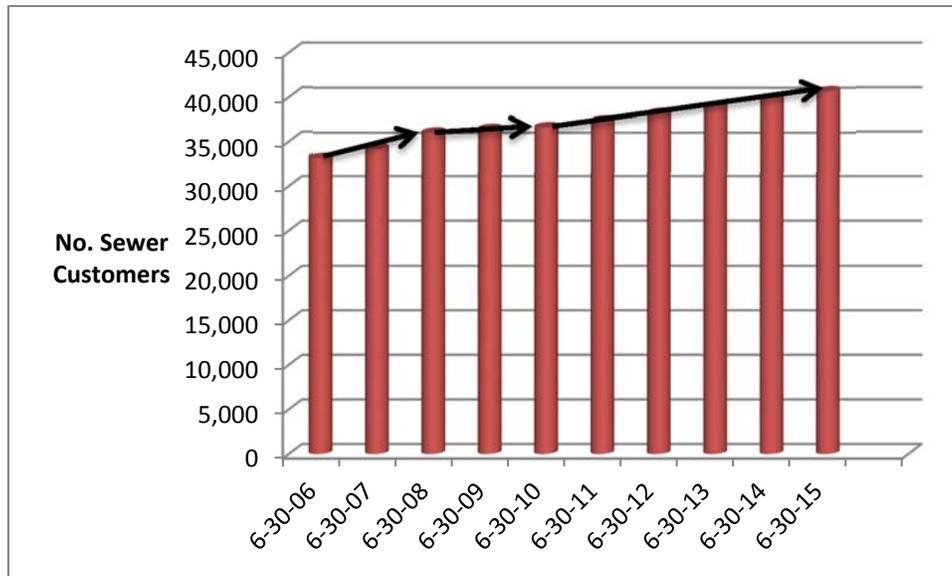
Key Observations:

- The MWSD wastewater collection system consists of more than 600 miles of pipeline and 44 lift stations. Much of the system is >60 yrs old and the average age is estimated to be 30-35 yrs old. The challenge continues to eliminate SSOs and regain collection system and WWTP capacity which I/I currently consumes 35-65%. Annually, substantial manpower and equipment is expended in locating and rehabilitating I/I sources. The nature of wastewater collection demands this ongoing commitment.
- In 2015, MWSD retained the services of Littlejohn Engineers, a subject expert in sewer rehabilitation methods, material and workmanship specifications, and construction inspection.

Actions Needed:

Items	Timing	Board Action		EUM Attribute
		Yes	No	
Private sewer lateral replacement program	Ongoing		X	IS, OO,OR
Initiate a \$2.7 M sewer rehabilitation contract (already Board approved) and executed by Littlejohn Engineers	2016		X	
Continuous wastewater flow monitoring program at 18 locations in collection system	2016		X	
Deploy off-the-road vehicle equipped with sonar technology to TV inspect the Stones River Interceptor	2016		X	
Integrate FlowView Operations for “real time” early-detection information into existing flow monitoring system within wastewater collection system	2016	x		

New Wastewater Collection and Treatment Capacity



Description: The chart illustrates the return of a strong upward trend in sewer tap sales since 2011 following the recession impacted years of 2008-2010.

Key Observations:

- The SCWWTP expansion is currently ~20% complete. It is imperative that this project proceed on schedule to a December 2017 completion date.
- Real estate development within the Murfreesboro Urban Growth Boundary is accelerating and MWSD is the only provider of sewer services. Some major gravity interceptor sewers to the SCWWTP are at 100% capacity in wet weather. In particular, areas to the east and northeast of the SCWWTP need major conveyance relief and expansion. A new Northeast Regional Pump Station (NERPS) of similar size to the recently completed Southwest RPS must be planned and designed in 2016.

Actions Needed:

Items	Timing	Board Action		EUM Attribute
		Yes	No	
Stay on schedule with the SCWWTP Expansion	Ongoing		x	IS, OR, SU
Review and Accept Proposal for NERPS Design	Spring 2016	x		
Complete NERPS Design	Spring 2017		x	

Water Resource Integration and Innovation

Quoting from the WERF document “Sustainable Integrated Water Management, State of the Knowledge”:

“There is also growing concern over sustainability of the current water infrastructure approach. The approach used today is based on solutions from the last century, which in turn are based on concepts from millenia ago (e.g. ancient Rome). This approach typically uses large-scale, municipal systems that take water from the environment, treat it to drinking standards regardless of intended use, use the water once, and then discharge it to the environment.”

A Model of the Wastewater Utility of the Future



Key Observations:

- Given our growth projections, effluent disposal challenges, and small watershed, we will pursue the activities and innovations described above that are cost beneficial and contribute to long term sustainability
- In 2015, MWSD retained the services of SSR, Inc. to prepare the cities first Water Resources Integration Plan (WRIP).

Actions Needed:

Items	Timing	Board Action		EUM Attribute
		Yes	No	
Complete the WRIP	2016		x	SU
Begin the process of initiating WRIP recommendations	2017	x		

Strategic Partnerships



DEVELOP PARTNERSHIPS Utility of the Future

- **AGRICULTURAL PARTNERSHIPS** for Spray Irrigation
 - Williamson Farm
 - MTSU Farm
- **INDUSTRIAL PARTNERSHIPS**
 - General Mills & Indian Hills Collaboration
- **DEVELOPMENT PARTNERSHIPS**
 - Dill/Rushing/Lyons Property – On-Site Treatment, Zero Discharge

Key Observations:

- Integration of our water resource plans and needs will require strategic alliances with other stakeholders. Such stakeholders include:
 - **Our regulator TDEC**
 - **Our neighboring utilities CUD and Smyrna**
 - **Local industry**
 - **Our development community**
- MWSD is undertaking unprecedented and extraordinary actions to measure our impact on the West Fork of the Stones River. Studies to date have demonstrably shown that our highly treated plant effluent is enhancing the biological health of the stream. As such, our credibility with TDEC is at a high level and can serve to bolster a collaborative regulatory approach based on these site specific findings.
- CUD and Smyrna utilize the same raw water source as MWSD. MWSD is the only provider of sewer service for CUD customers within our urban growth boundary. Our three water distribution systems are interconnected. **Our water resource management futures are on the same footing.**
- The viability of our local economy is largely driven by our local industrial customers. MWSD is endeavoring to support and collaborate with existing and prospective industry. General Mills, our largest MWSD customer, is growing in water consumption and wastewater discharge. As such, MWSD has been working to facilitate discussions with the privately owned Indian Hills development to use GM's highly treated wastewater effluent for golf course irrigation. If the plan materializes:
 - Indian Hills will be able to finance a new irrigation system with the new sewer effluent fees received from GM
 - GM will have reduced sewer fees to MWSD which are higher than the new fees to Indian Hills
 - MWSD will free up much needed collection and treatment capacity and will have a significantly reduced phosphorus load to the SCWWTP

Customer Service Initiatives

Over the past three years, MWSD has deployed multiple technologically advanced tools to improve customer service efficiency, accessibility, and interaction. These have included:

- Mobile Workforce Management (MWM)
- Interactive Voice Response (IVR)
- Customer Information System (CIS) Software

Public Outreach has grown with more customer messaging on our Facebook page and Twitter account as well as Web Site enhancements.

AMI Benefits to the Customer

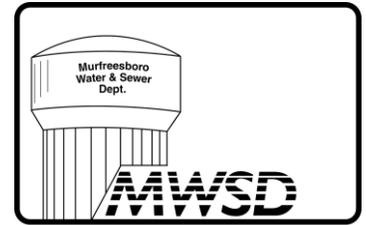
In 2016 with the installation of AMI, customers will begin to experience some new benefits with on-line access to their water usage in real time and early notification of potential water leaks in their household plumbing. This level of customer access and engagement will provide cost savings opportunities for the customer never before available.

Cost of Service Study (COSS) and Rate Forecasting

Although not generally thought of as a customer service initiative, the COSS (performed biannually) serves to keep MWSD financially sound thereby ensuring that MWSD can sustain the vital services we provide. It provides the forecast we need to maintain a rate structure that covers real cost while avoiding the need to significantly increase rates in any given year. It is perhaps our most important ongoing customer service initiative and directly addresses Financial Viability and Customer Satisfaction, two of our highest priority EUM attributes.

Actions Needed:

Items	Timing	Board Action		EUM Attributes
		Yes	No	
Improve our internal proficiency with MWM, CIS, and IVR tools	Ongoing		x	CS, OO, FV
Expand customer engagement in the use of on-line and telephone access to account information and service	Ongoing		x	
Educate customers on the benefits of AMI	Ongoing		x	
Complete Customer Service Area Renovation Design	March 2016		x	
Award Renovation Contract	May 2016	x		
Complete Customer Service Area Renovation	Dec 2016		x	OR



WATER AND SEWER ***DASHBOARD PERFORMANCE***

December 2015



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
	Fournier Press Replacement Sinking Fund	\$375,000	\$375,000	\$375,000	\$375,000	\$375,000	\$1,875,000
	Water Plant Membrane Replacement Sinking Fund	\$400,000	\$400,000	\$400,000	\$0	\$0	\$1,200,000
	Biolsolids Storage Sinking Fund	\$300,000	\$300,000	\$0	\$0	\$0	\$600,000
	Lift Station Replacement Sinking Fund	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$625,000
	NE Regional PS & FM Sinking Fund	\$0	\$0	\$0	\$0	\$0	\$0
	GAC Replacement	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$550,000
	Vehicle and Equipment Replacement	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$7,500,000
	TOTAL Capital Improvements funded from Rates	\$5,195,000	\$5,195,000	\$4,895,000	\$4,495,000	\$4,495,000	\$24,275,000

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	\$2,100,000.00					\$2,100,000.00
	Customer Service Area Security Renovations	\$450,000.00					\$450,000.00
	Contingency Items (Generators, Gear Box, HVAC)	\$775,000.00					\$775,000.00
	NE Regional Engineering Design	\$500,000.00	\$500,000.00	\$500,000.00	\$200,000.00	\$200,000.00	\$1,900,000.00
	NE Regional P.S.				\$2,500,000.00	\$5,000,000.00	\$7,500,000.00
	NE Regional Force Main				\$2,500,000.00	\$5,000,000.00	\$7,500,000.00
	SCWWTP Phase 4D Engineering & Inspection	\$300,000.00	\$250,000.00				\$550,000.00
	Lift Station Rehab/Replacement (#2, #13, #19 & #20)	\$1,500,000.00	\$500,000.00	\$500,000.00	\$500,000.00		\$3,000,000.00
	S. Church St. Sewer @ Joe B. Jackson Pkwy	\$250,000.00					\$250,000.00
	Water Resource Integration Plan (WRIP)	\$400,000.00					\$400,000.00
	WTP Membrane Replacement				\$2,000,000.00		\$2,000,000.00
	Biolsolids Storage Addition			\$1,500,000.00			\$1,500,000.00
	Water Quality Studies		\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$200,000.00
	Subtotal CAPITAL PROJECTS	\$6,275,000.00	\$1,300,000.00	\$2,550,000.00	\$7,750,000.00	\$10,250,000.00	\$28,125,000.00
	TRANSPORTATION (Water/Sewer Imp.)						
	Bradyville Pike		\$500,000.00	\$500,000.00			\$1,000,000.00
	MT Blvd Widening- Greenland to Main	\$750,000.00	\$750,000.00	\$140,000.00			\$1,640,000.00
	Lytle St. Relocation (Ph1 & Ph2)	\$390,000.00	\$1,170,000.00				\$1,560,000.00
	SR 99 Widening- Old Fort to Cason Lane		\$500,000.00	\$500,000.00			\$1,000,000.00
	Cherry Lane Repurified Main Extension (14,600 LF)		\$825,000.00	\$1,000,000.00			\$1,825,000.00
	Maney Avenue Reconstruction - Phase 2		\$250,000.00	\$250,000.00			\$500,000.00
	Wilkinson Pike Reconstruction (MCP to TL)		\$200,000.00				\$200,000.00
	Subtotal TRANSPORTATION PROJECTS	\$1,140,000.00	\$4,195,000.00	\$2,390,000.00	\$0.00	\$0.00	\$7,725,000.00
	REHABILITATION						
	Sewer Rehabilitation - 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	\$50,000.00					\$50,000.00
	Advanced Metering Infrastructure (AMI)	\$4,150,000.00	\$2,850,000.00				\$7,000,000.00
	IT/Computer Systems Hardware Upgrades	\$200,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$400,000.00
	Financial Information Systems (FIS), HRIS						\$0.00
	Electronic Content Management (Scanning/Imaging)		\$150,000.00	\$150,000.00	\$150,000.00		\$450,000.00
	IT Design Services & Consulting	\$100,000.00	\$100,000.00	\$100,000.00	\$100,000.00		\$400,000.00
	Computerized Maintenance Management System (CMMS)			\$200,000.00	\$200,000.00		\$400,000.00
	Subtotal INFORMATION TECHNOLOGY PROJECTS	\$4,500,000.00	\$3,150,000.00	\$500,000.00	\$500,000.00	\$50,000.00	\$8,700,000.00
	TOTAL Projects from Working Capital Reserves	\$13,415,000.00	\$9,645,000.00	\$6,440,000.00	\$9,250,000.00	\$11,300,000.00	\$50,050,000.00

PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)	\$4,500,000	\$4,500,000	\$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	\$1,200,000	\$1,200,000	\$900,000	\$500,000	\$500,000
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	\$37,399,556	\$33,954,556	\$33,664,556	\$31,414,556	\$27,114,556
FUNDS ABOVE SECURED MINIMUM BALANCE	\$16,994,765	\$13,141,669	\$12,435,411	\$9,760,829	\$5,027,754

**Preliminary Draft 5-YR CAPITAL IMPROVEMENTS PLAN (CIP)
STORMWATER UTILITY FUND, FY16-20**

NO.	PROJECT	Originator	2015-2016 2016 FY	2016-2017 2017 FY	2017-2018 2018 FY	2018-2019 2019 FY	2019-2020 2020 FY	TOTAL
			<i>Projected</i>	<i>Budget</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	
	Neighborhood Projects (NP)							
NP-1	Memorial Blvd / Haynes Dr. Drainage Improvements	City Eng	\$50,000	\$150,000	\$125,000			\$325,000
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	\$300,000	\$200,000				\$500,000
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		\$150,000	\$200,000			\$350,000
	Subtotal		\$500,000	\$900,000	\$450,000	\$50,000	\$50,000	\$1,950,000
	Water Quality Improvement (Compliance) Projects (WQ)							
WQ-1	Town Creek Bioretention BMP's @ Cannonsburgh	MWSD		\$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	\$500,000	\$300,000				\$800,000
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	\$100,000					\$100,000
WQ-6	Bear Branch Water Quality Mitigation	City Eng		\$50,000	\$50,000	\$50,000	\$50,000	\$200,000
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	\$75,000	\$150,000	\$150,000	\$150,000		\$525,000
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		\$775,000	\$850,000	\$475,000	\$525,000	\$275,000	\$2,900,000
	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	\$250,000	\$175,000	\$175,000	\$175,000		\$775,000
PD-3	Maple St. Alley Permeable Paver Project	City Eng	\$100,000					\$100,000
	Subtotal		\$350,000	\$175,000	\$175,000	\$175,000	\$0	\$875,000
	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		\$ 1,625,000	\$ 1,925,000	\$ 1,100,000	\$ 750,000	\$ 325,000	\$ 5,725,000

EFFECTIVE UTILITY MANAGEMENT
Financial Viability
MWSD WORKING CAPITAL ACCOUNT SUMMARY

ESTIMATED Working Capital at 12/30/15

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 12/30/15	2,253,750	
Estimated Reserve Expenditures thru 12/30/15	(3,645,499)	
		45,578,260

COMMITTED Reserves at 12/08/15

Eng Design for Raw Water Aux Pumps Generator	39,960	
P.S. #28 (V.A. PS) Pump Replacements	55,153	
P.S. #14 DeJarnette Lane Dedicated Generator	46,830	
Sewer Rehab Projects (Littlejohn)	1,487,278	
Lytle St Ph2 Utility Design Services	44,633	
Lytle St Ph1 Construction Inspection Services	33,967	
Engineering Services - Fournier Biosolids Press Repl	98,525	
Scinor Membrane Module Plant Evaluation	70,000	
Middle TN Blvd Utility Construction	1,640,000	
Lytle St. Utility Construction	315,558	
Advanced CIS Additional Work Order	27,125	
Westin Task Order #11 - AMI Implementation Support	78,440	
Pump Stations #3, #19, & #20 Replacement	359,611	
O&M Storage Addition & Coleman Farm Maintenance	64,998	
Water Resource Integration Plan (WRIP)	364,582	
Johnson Bailey Architect Fee (O&M, C/S)	25,734	
AMI Implementation	6,537,610	
S. Church St. Sewer Design @ Joe B. Jackson Pkwy	5,158	
SRWTP Raw Water Pump Replacements	205,710	
E. & W. Fork Stones River Water Quality Sampling	105,441	
Pump Station #2, #19 and #20 Replacement Design	5,904	
Pump Station #13 Replacement Design	28,820	
Hydrogen Peroxide Feed System at SRWTP	243,367	
Engineering Services - SCWWTP Ph 4D	183,671	12,068,075

APPROVAL Requests at 1/19/16

Added costs to replace 6" FM on PS #2, #19, #20	81,900	
Inspection of RW Traveling Screen	3,273	85,173

BALANCE of Working Capital at 1/19/16 after COMMITMENTS **\$ 33,425,012**

DESIGNATED Projects Pending

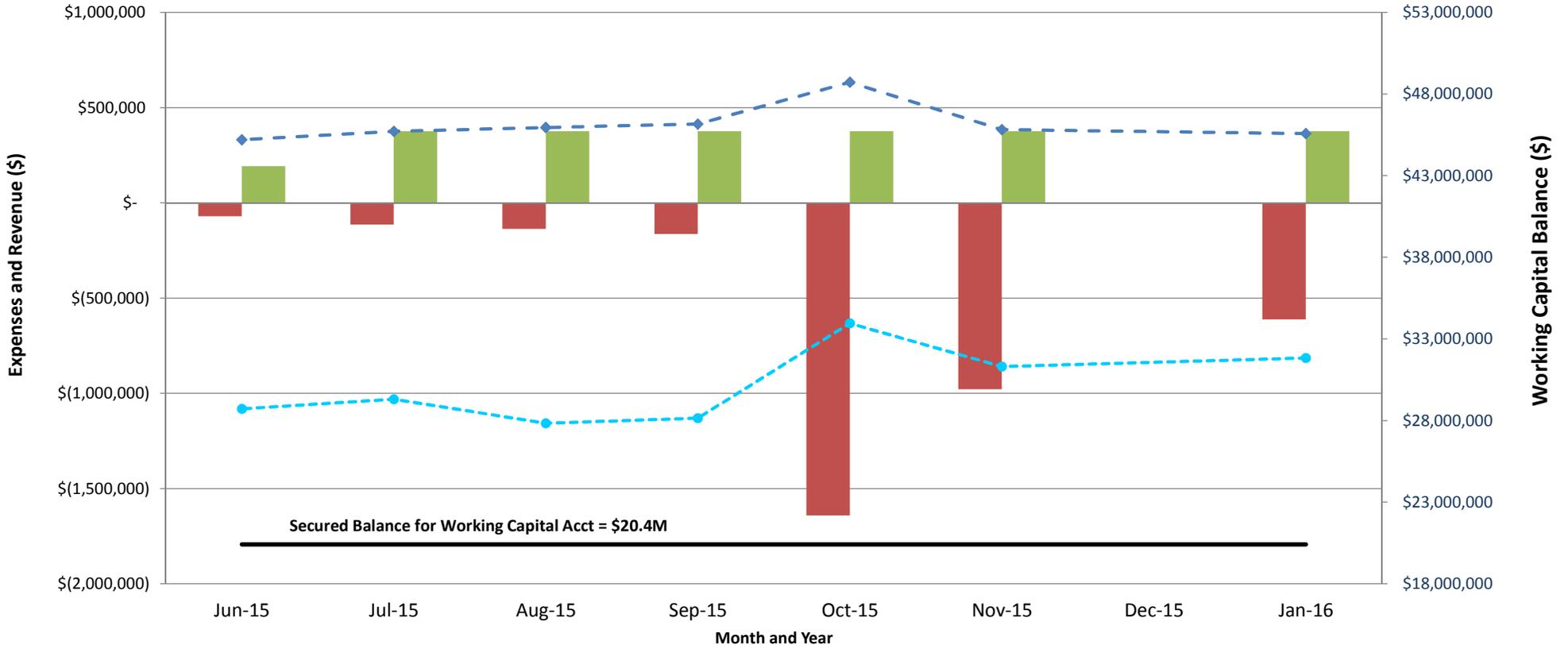
Aux Raw Water Pump Generator	600,000	
Pump Station #13 Replacement	1,000,000	1,600,000

ESTIMATED UNCOMMITTED Working Capital Reserves as of December 30, 2015 **\$ 31,825,012**

SECURED FY15-16 Operating and Maintenance Expenses **\$ 20,404,791**

UNASSIGNED Working Capital Funds (Est. Uncommitted - Secured) **\$ 11,420,221**

MWSD Working Capital Reserves Dashboard

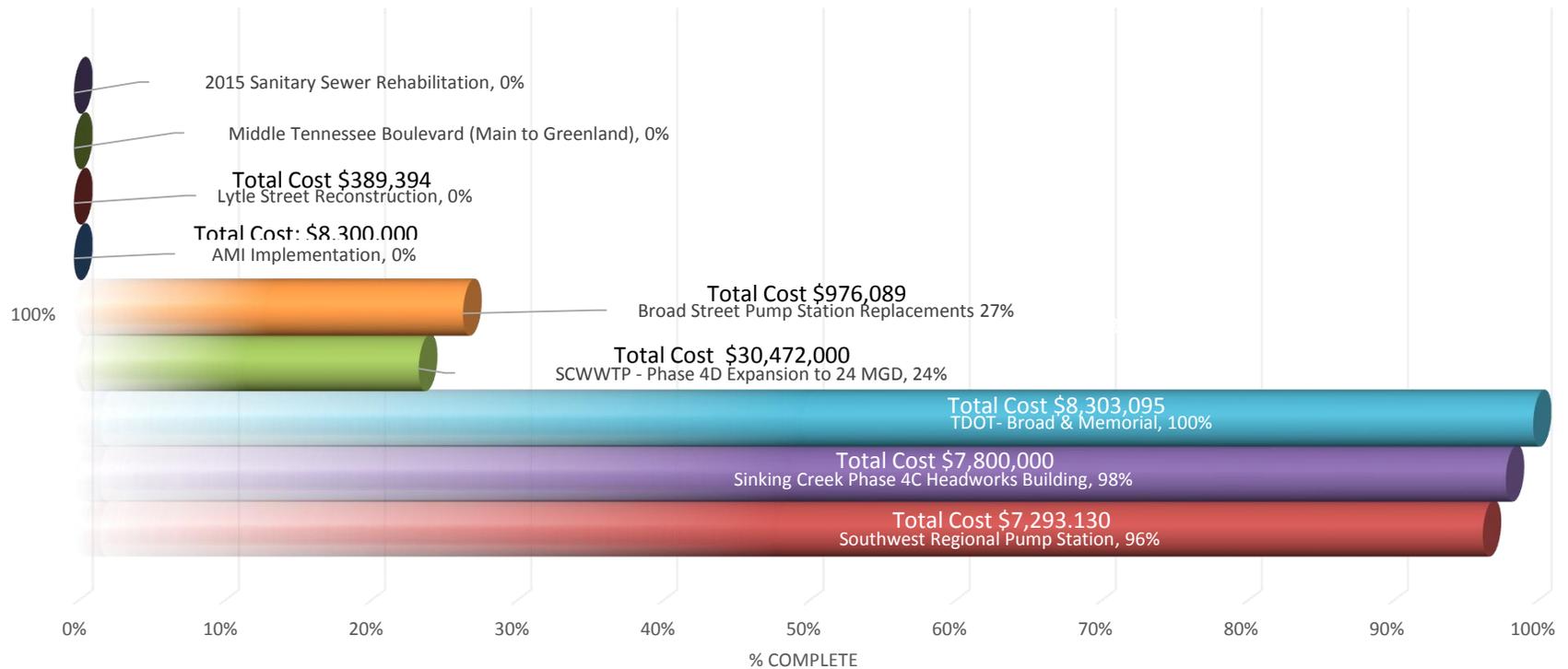


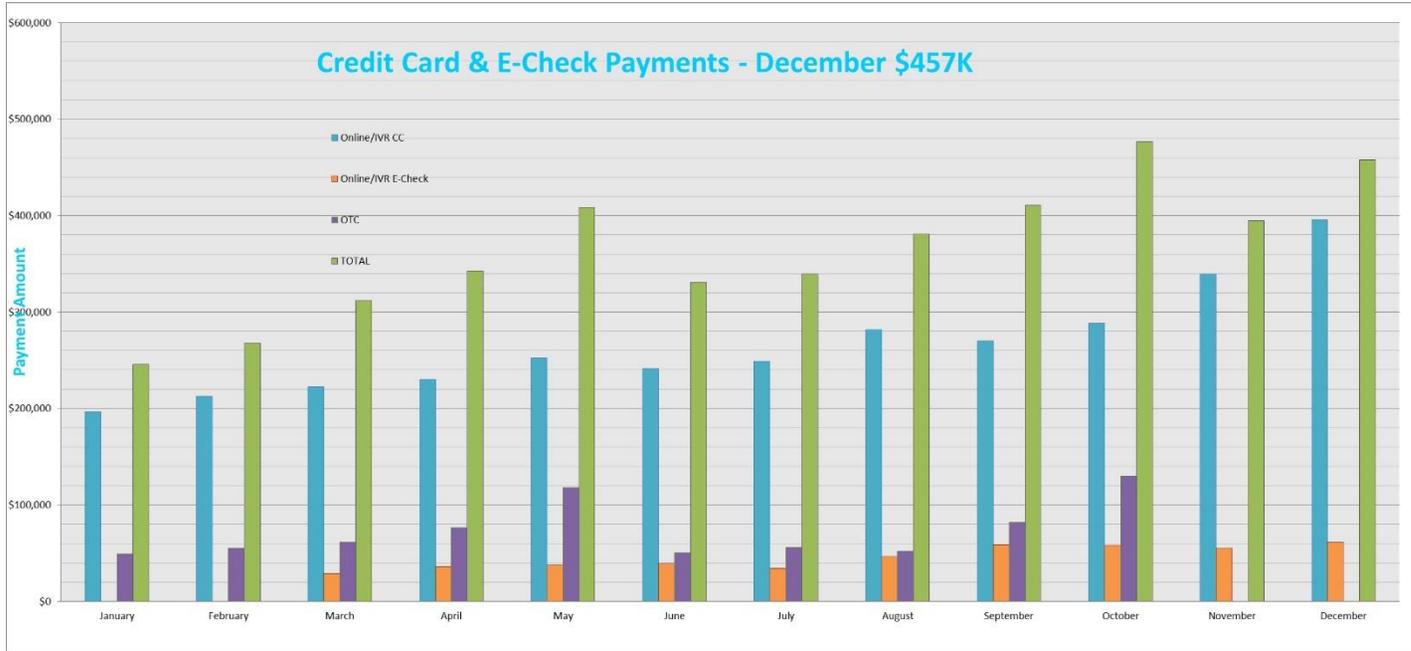
Secured Balance for Working Capital Acct = \$20.4M

- Working Capital Expenses
- Estimated Working Capital Revenues
- ◆ Estimated Working Capital Balance
- Estimated UNCOMMITTED Working Capital Balance
- Secured Working Capital Reserve

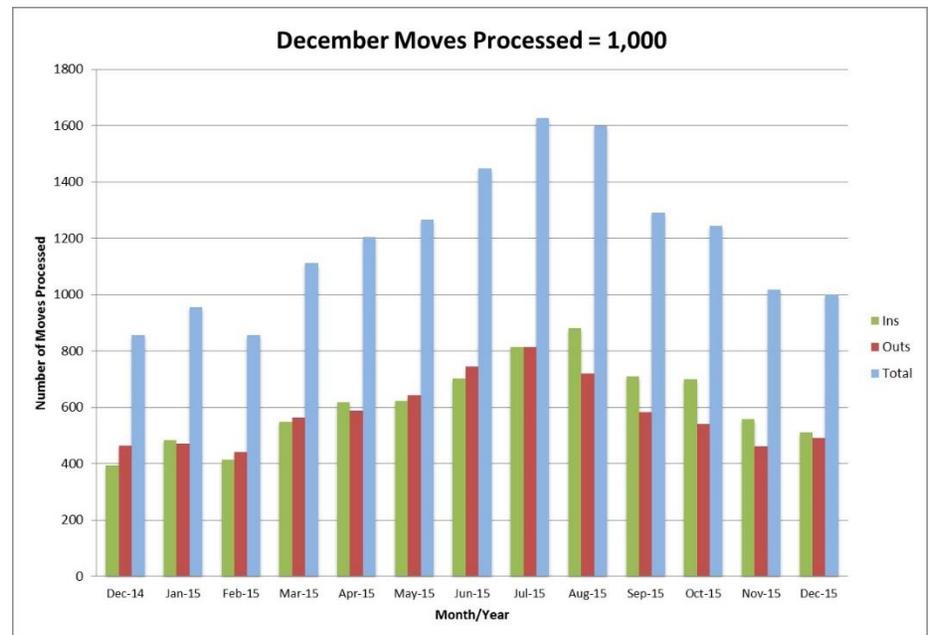
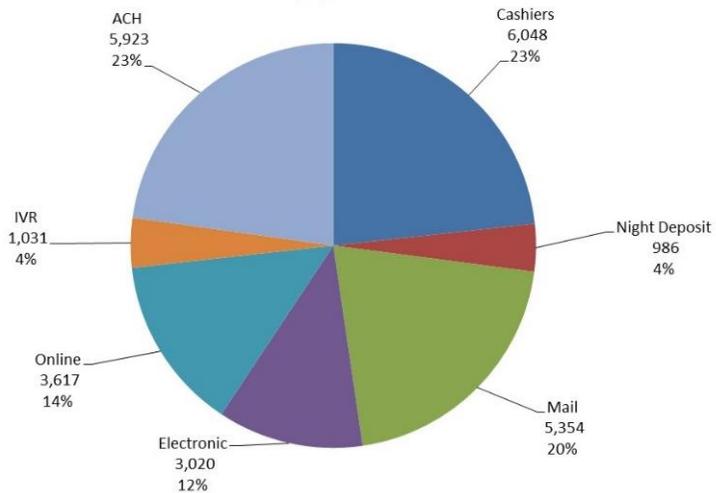
DASHBOARD PERFORMANCE - DECEMBER 2015

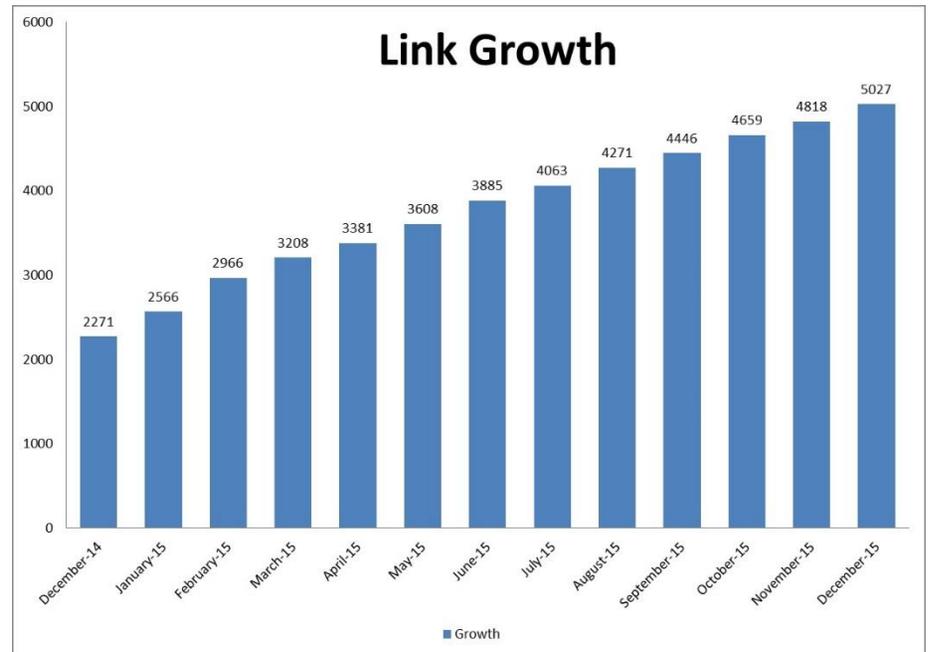
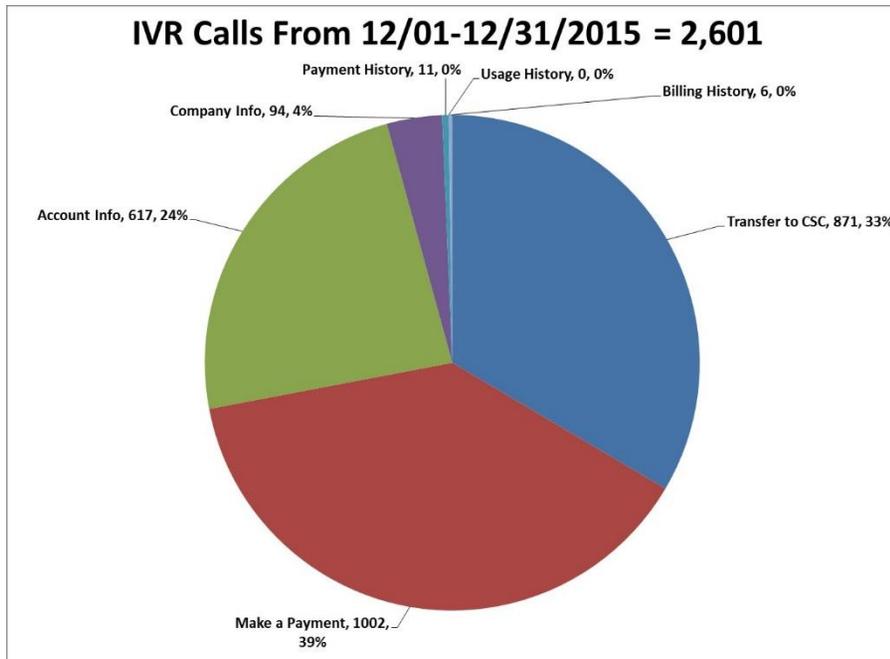
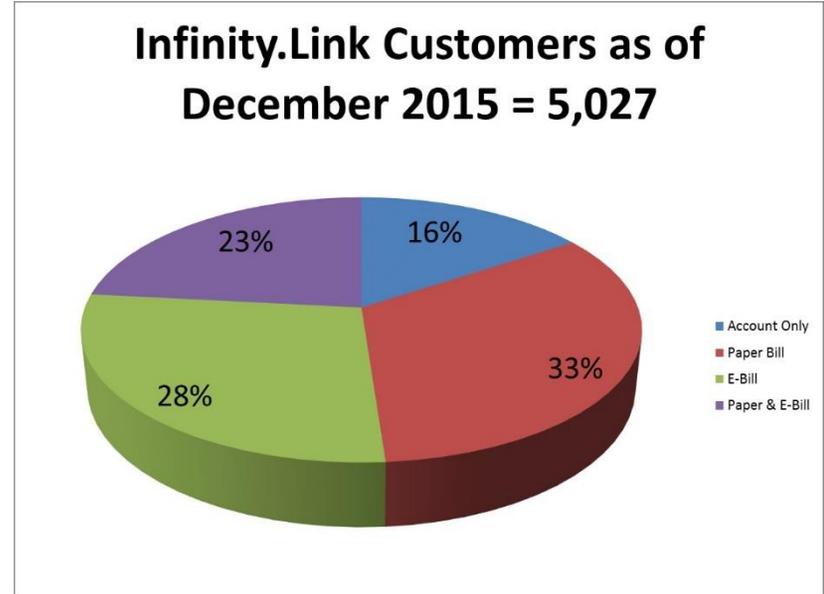
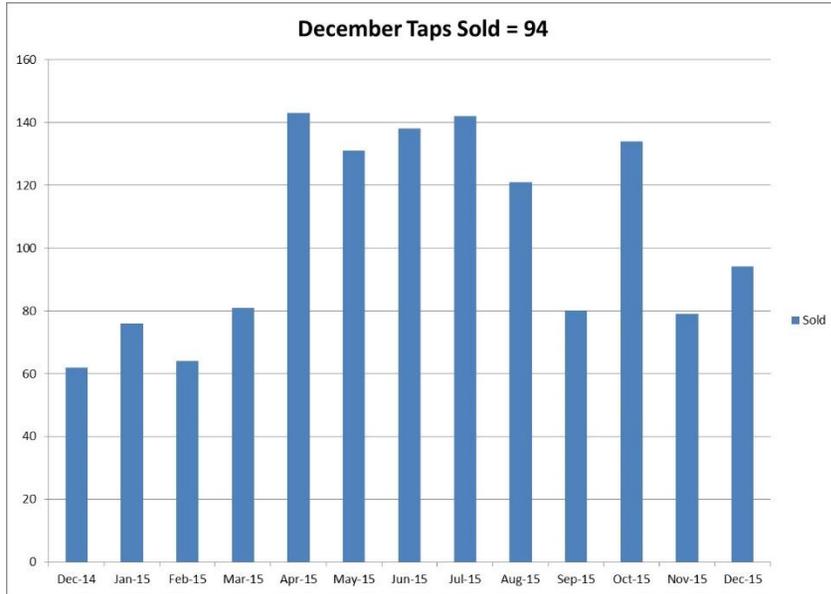
CAPITAL PROJECTS

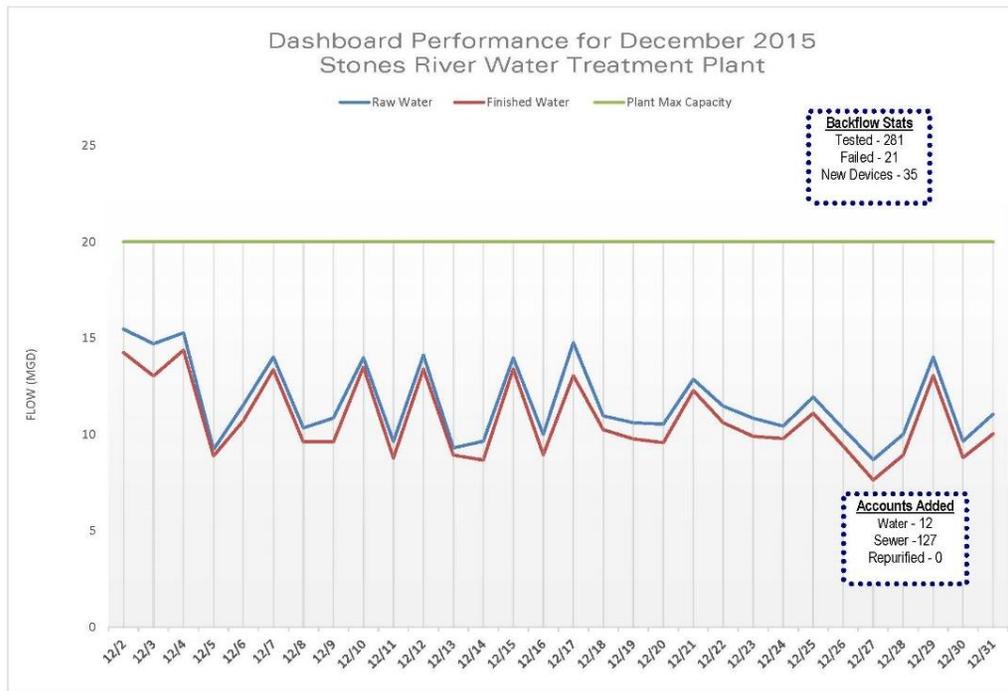




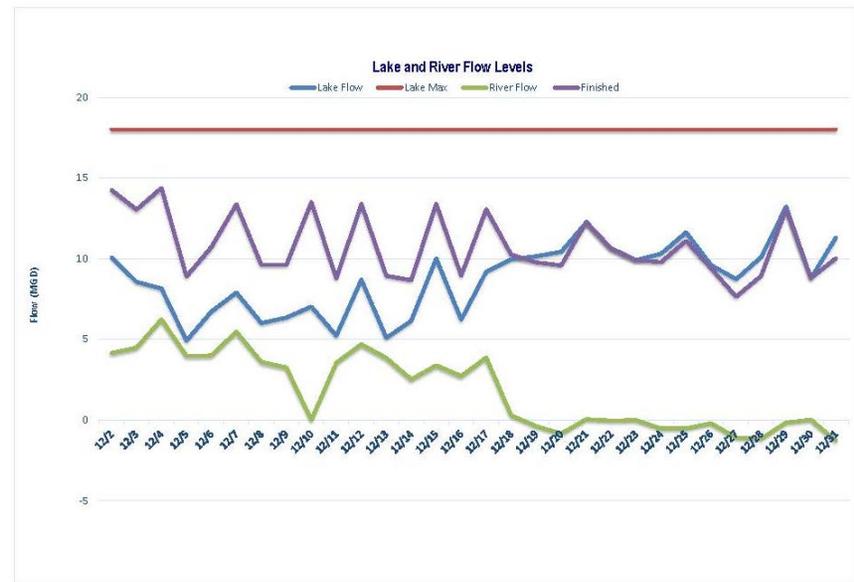
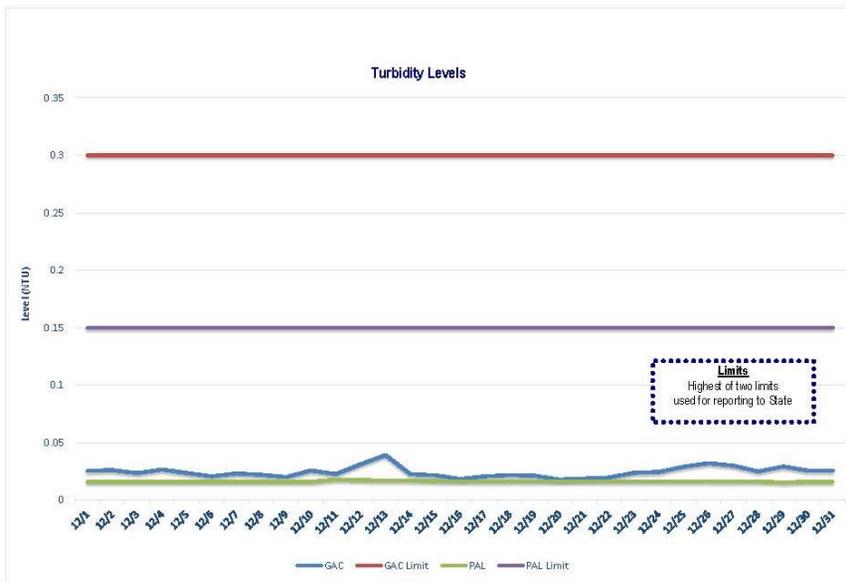
December 2015 Payments by Type







Totalized Finished Water Volume: 366.9 MG
 Totalized Billed Water Volume: 241.4 MG
 % Unaccounted for Water: 28.4%



State Report Coversheet

Month/Year Reported

December 2015

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	110
Disinfection	Number of Samples	110
	Number of days plant operated	31
	Lowest Residual in Distribution System	1.20
	Lowest Residual Entering Distribution System	2.74
	Average Plant Effluent	3.2
Turbidity	Total Hours Planted Operated	744
	Number of Samples	186
	Maximum Turbidity	0.07
Flow	Average Raw Water Flow	11745
	Maximum Raw Water Flow	15466
Pumpage Data	Total Water Pumped (Lake)	276,769.000
	Average Water Pumped (Lake)	8,928.032
	Maximum Day (Lake)	13,422.000
	Minimum Day (Lake)	4,916.000
	Total Water Pumped (River)	87,341.161
	Average Water Pumped (River)	2,817.457
	Maximum Day (River)	7,129.365
Water Statistics	Minimum Day (River)	113.407
	Water Treated (Raw)	364,110.161
	Water Pumped (Finished)	336,934.647
	Water Transfer - to Murfreesboro (Smyrna, CUD)	0.000
	Water Metered (Sales, OM/Hydrant)	224,103.609
	Water Metered (Vacant Accounts, Fire Protection)	0.000
	Accounted For Water - (Flushing O&M/Eng, Fire, Street)	4,075.994
	Accounted For Water - (Flushing WTP)	356.572
	Process Water (Distribution,Tank,Water Plant)	9,240.845
	Water Transfer - to CUD	0.000
	Water Transfer - to Smyrna	3,612.032
Total Accounted For Water	241,389.052	
Non Revenue Water	95,545.595	
Water Loss - Percentage	28.4%	
Water Cost Per 1,000 gallons		

Subtotals		
0	0	
224,103.609		
0.000	0.000	
3939.539	122.405	14.05
356572		
587.76	0	8653.085

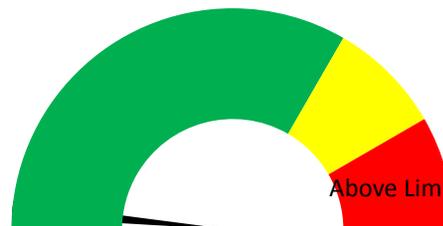
Reports Needed:

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

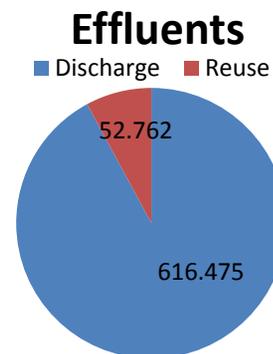
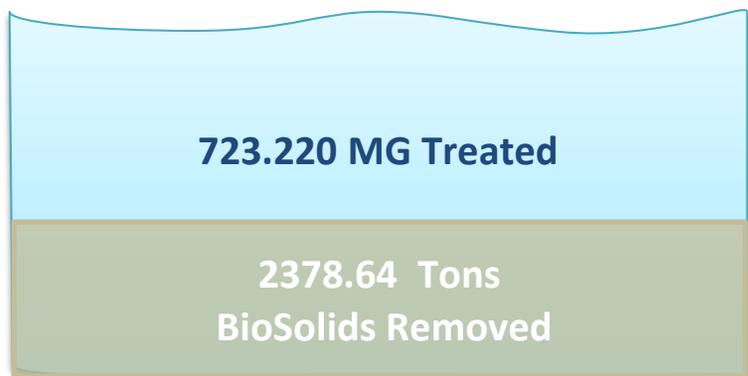
Dashboard Report December 2015
Sinking Creek Wastewater Treatment Plant



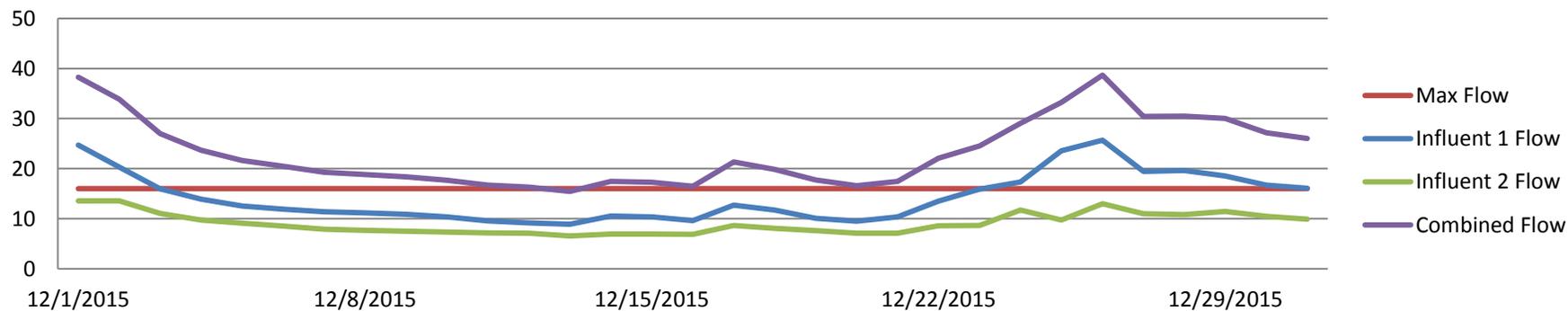
99.08%
Removal
BOD



98.03%
Removal
NH3

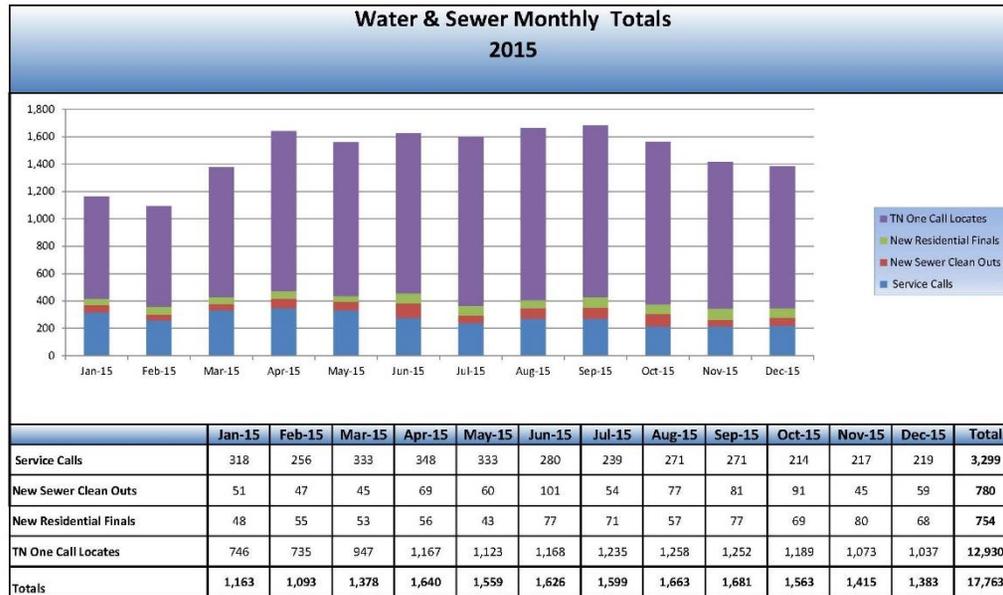


Average Influent Flow



Operations and Maintenance Dashboard

December 2015





MWSD Operations & Maintenance Dashboard Report July 2015 - June 2016

	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Total</i>
Water Pipe (ft) - New Construction													
6" C-900	0	0	0	480	0	0							480
8" C-900	581	0	838	0	0	0							1,419
6" Ductile Iron	9	0	33	8	0	0							50
8" Ductile Iron	0	0	0	0	0	0							0
1" Copper	567	0	19	0	290	0							876
2" Copper	0	0	0	0	0	0							0
Total	1,157	0	890	488	290	0							2,825

Sewer Pipe (ft) - New Construction													
6" SDR-35	0	522	0	0	22	0							544
8" SDR-35	0	726	0	0	0	0							726
6" Ductile Iron	0	0	0	0	0	0							0
8" Ductile Iron	0	0	0	0	0	0							0
Total	0	1,248	0	0	22	0							1,270

Paving (tons)													
Asphalt	400.00	262.66	70.55	292.69	53.77	141.70							1,221.37
Stone	1,065.58	2,714.41	1,496.48	923.12	799.86	695.50							7,694.95

New Stubs Water Pipe (ft)													
1" Copper	488	780	657	700	0	600							3,225
2" Copper	0	0	0	0	0	0							0

Stormwater Televised Lines & Line Cleaning (ft)													
Line Cleaning	3,000	5,078	4,914	13,000	0	0							25,992
Televised Lines	0.00	0.00	0.00	0.00	0.00	0.00							0.00

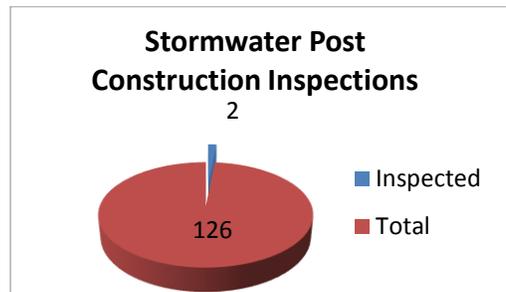
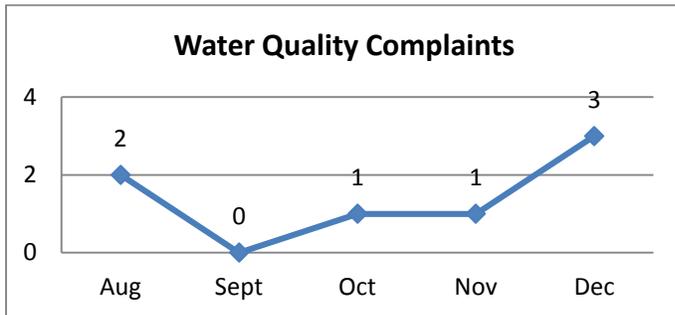
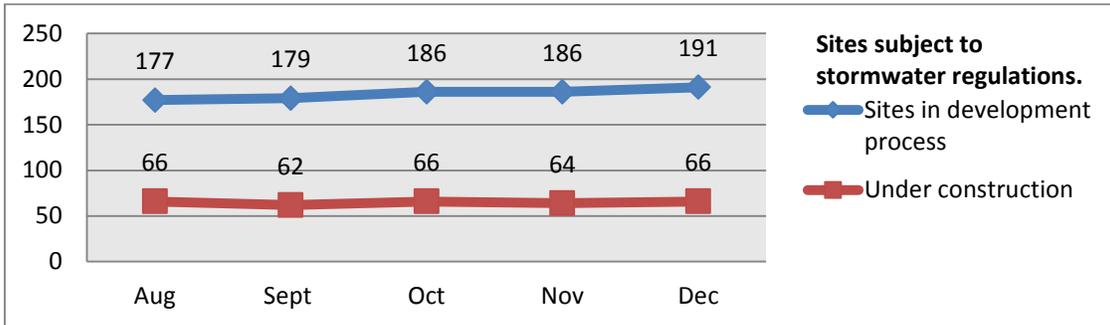
Sewer Televised Lines & Line Cleaning (ft)													
Line Cleaning	71,618	47,702	33,982	109,094	43,160	48,671							354,227
Televised Lines	29,991.30	20,586.00	34,949.00	40,363.40	2,382.00	15,090.90							143,362.60
Televised Laterals	1,254.00	2,395.00	538.00	191.00	1,816.00	855.00							7,049.00
Televised Lines (Warranty)	0.00	0.00	486.00	1,186.00	15,908.90	16,186.60							33,767.50



MWSD Operations & Maintenance Dashboard Report July 2015 - June 2016

	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Total</i>
Sewer Rehab													
Maintenance Projects	16	12	3	10	14	28							83
Lateral Replacement Pipe (ft)	67	20	35	40	49	104							315
Restoration	22	30	36	61	19	1							169
Private Lateral													
Services	4	2	3	3	0	0							12
4" C-900 (ft)	460	110	70	93	0	0							733
6" C-900 (ft)	46	54	27	25	0	0							152
Collection Maintenance													
New Sewer Cleanouts	54	77	81	91	45	59							407
GIS Located cleanouts	9	8	13	6	10	2							48
Distribution Maintenance													
Fire Hydrants - New	4	4	0	2	3	1							14
Fire Hydrants - Blow off	0	0	0	1	0	0							1
Main Water Line Damage	1	0	0	0	0	1							2
Main Water Line Leak	6	3	9	5	8	6							37
New Taps	27	1	5	0	4	2							39
New Stubs	21	15	21	17	0	15							89
Tap (<i>Replacements</i>)	3	0	16	1	0	1							21
Meter Connections	18	11	3	3	19	8							62
Distribution & Collection													
Service Calls	239	271	271	214	217	219							1,431
TN One Call Locates	1,235	1,258	1,252	1,189	1,073	1,037							7,044
Water & Sewer Inspections	110	80	84	103	49	71							497
Water & Sewer Final Insp	71	57	77	69	80	68							422
Total	1,655	1,666	1,684	1,575	1,419	1,395							9,394

Stormwater December 2015



Monitoring and Sampling

Stream Miles Assessed (Overall Watershed 2016)

Nov - 0 miles
Dec - 0 miles
Year to Date - 6.6 miles

Samples Taken

Nov - 9 (bacteria)
Dec - 0
Year to Date - 26

Outfall Screenings

Nov - 1
Dec - 0
Year to Date - 35

Stormwater Infrastructure

Gravity Mains (ft)

Dec - 5,293
Year to Date - 49,433

Junction Boxes

Dec - 43
Year to Date - 356

Weirs/Headwalls/Basins

Dec - 1/35/2
Year to Date - 20/178/28

Pavers/ P. Concrete (sq ft)

Year to Date - 113,511

Outfalls

Nov - 1
Dec - 0
Year to Date - 2

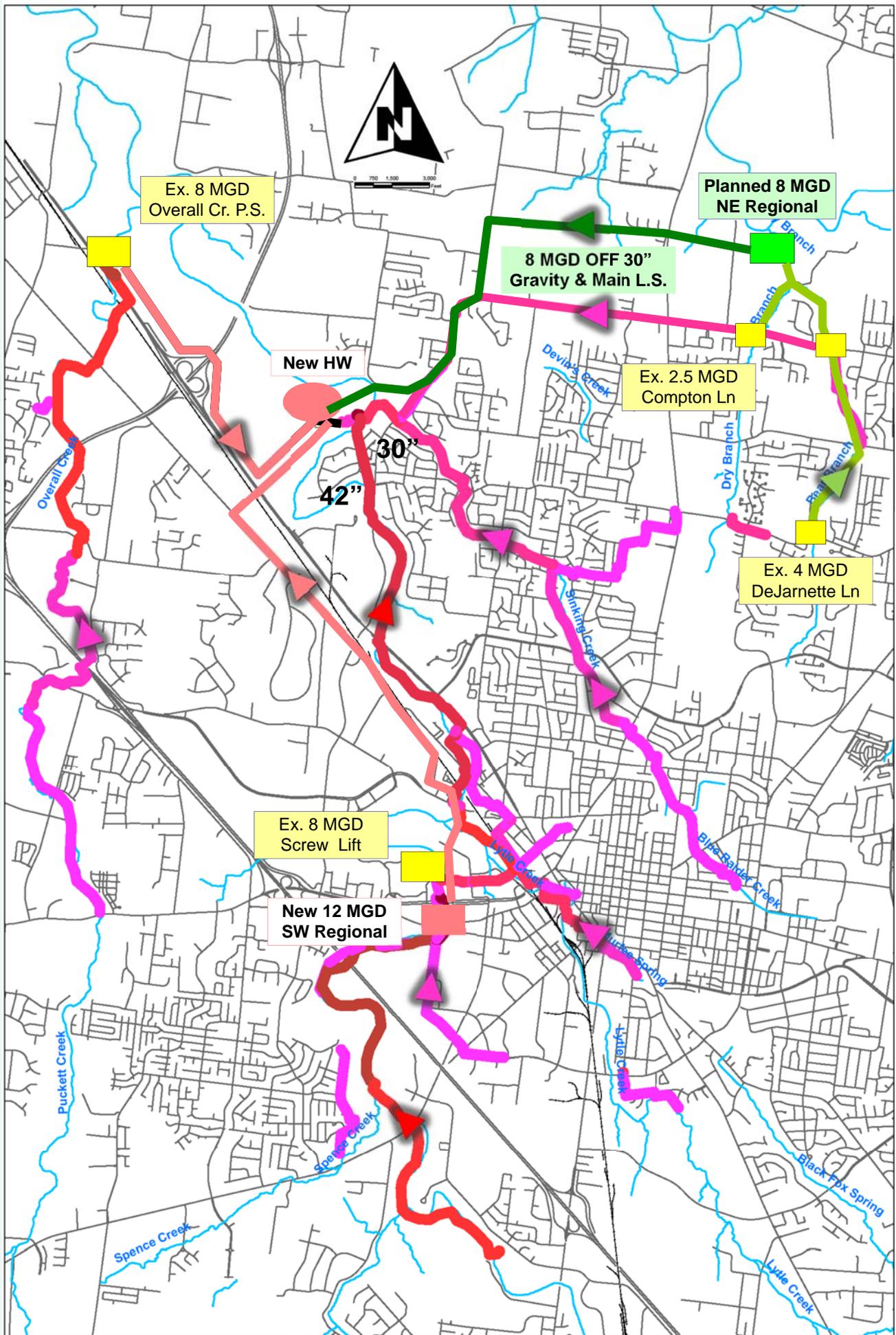
Stormwater Activities

Outreach Events

Nov - 2
Dec - 0
Year to Date - 13

Ongoing Projects

- West Fork Stones River bank stabilization
- Spence Creek watershed study
- Invasive aquatic plant treatment 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

Ex. 2.5 MGD
Compton Ln

30"

42"

Ex. 4 MGD
DeJarnette Ln

Ex. 8 MGD
Screw Lift

New 12 MGD
SW Regional

Puckett Creek

Spence Creek

Spence Creek

Devlin's Creek

Sinking Creek

Dry Branch

Lyle Creek

Lytle Creek

Black Fox Spring

Lytle Creek

