

BOARD OF THE METROPOLITAN SEWERAGE DISTRICT
SEPTEMBER 20, 2017

1. Call to Order and Roll Call:

The regular monthly meeting of the Metropolitan Sewerage District Board was held in the Boardroom of MSD's Administration building at 2pm Wednesday, September 20, 2017. Chairman VeHaun presided with the following members present: Ashley, Bryson, Collins, Creighton, Frost, Kelly, Manheimer, Pelly, Root and Wisler. The following members were absent: Pressley.

Others present were: Thomas E. Hartye, General Manager; William Clarke, General Counsel; Joseph Martin with Woodfin Sanitary Water & Sewer District; Ed Bradford, Scott Powell, Jim Hemphill, Matthew Walter, Roger Edwards, Mike Stamey, Ken Stines, Hunter Carson, Spencer Nay and Pam Nolan.

2. Inquiry as to Conflict of Interest:

Mr. VeHaun asked if there were any conflicts of interest with the agenda items. No conflicts were reported.

3. Approval of Minutes of the August 16, 2017 Board Meeting:

Mr. Vahaun asked if there were any changes to the Minutes of the August 16, 2017 Board Meeting. Ms. Wisler moved for approval of the minutes as presented. Mr. Root seconded the motion. Voice vote in favor of the motion was unanimous.

4. Discussion and Adjustment of Agenda:

None

5. Informal Discussion and Public Comment:

Mr. Vahaun welcomed Joe Martin. There was no public comment.

6. Report of General Manager:

Mr. Hartye reported that MSD's French Broad River Reclamation Facility received the Platinum Award for five years of complete and consistent discharge (NPDES) compliance. Congratulations to Roger Edwards and all treatment plant operation and maintenance personnel.

Mr. Hartye reported that attached is an email from Jamie Plot regarding MSD's response time. Thanks to Eric Bryant and our first response team.

Mr. Hartye reported that attached is an article that appeared in the Mountain Xpress regarding some of MSD's current efforts.

Mr. Hartye reported the next regular Board Meeting will be held October 18th at 2pm. The next Right of Way Committee meeting will be held on September 27th at 9am. The employee picnic will be held behind the maintenance building on October 5th.

Mr. Hartye presented slides of construction at the Treatment Plant. He stated this was a pretty critical time about 2 weeks ago as the main that carries everything from the influent pump station and everything in the system to be treated through the plant was suspended with straps and an "I beam".

7. Consolidated Motion Agenda:

a. Consideration of Bids: Elkwood Avenue Sewer Rehabilitation Project:

Mr. Hartye reported that this project is located in Woodfin and runs along Elkwood Avenue from Riverside Drive to Merrimon Avenue. There have been a lot of problems with this line including flooded structures, manhole overflows and many customer service requests. The new line is comprised of 4,882 LF of 8-inch DIP to be installed by dig and replace. The project was advertised and two bids were received on August 31, 2017. Since there were only two bids, the project was re-advertised and again two bids were received on September 7, 2017, as follows: Terry Brothers Construction Company Inc. in the amount of \$1,314,221.00 and Thomas Construction Company in the amount of \$1,215,002.00. The apparent low bidder is Thomas Construction Company with a bid amount of \$1,215,002.00. Thomas Construction Company has completed one MSD project and their work quality was excellent. The FY 17-18 Construction Budget for this project is \$1,364,000.00. Staff recommends award of this contract to Thomas Construction Company in the amount of \$1,215,002.00 subject to review and approval by District Counsel.

b. Consideration of Equipment Sole Source: Soft Start Controls for Weaverville & Erwin Hills Pump Stations:

Mr. Hartye reported that the Weaverville and Erwin Hills pump stations have electrical systems which are aged and do not meet current safety standards. Staff plans to replace the control systems in these stations with safer equipment which meets current standards. In addition, "soft start" controls will be added to reduce mechanical wear, add programmable functionality, and reduce operational costs over time. There is only one manufacturer, Allen Bradley, that will guarantee these types of starters to properly function over 10 cycles per hour, which is needed for these stations, particularly during wet weather events. This purchase will require a sole source of the Allen Bradley SMC-Flex starters. The actual installation of the panels, equipment pad, and new

wiring will be performed by a separate contractor. The price for equipment, panels and programming is \$238,070.00 for all three locations. CITI, Inc. is a systems integrator and will build the new cabinets/panels with the starters and program the new systems. Staff recommends that the District sole-source specify the Allen Bradley SMC-Flex starter systems from CITI, LLC in the amount of \$238,070.00 to be installed at the Weaverville and Erwin Hills pump stations based upon the fact that the performance or price competition for this equipment is not available.

c. Consideration of Developer Constructed Sewer Systems: Craggy Park Phase 1 and Williams-Baldwin Teacher Campus:

Mr. Hartye reported that the Craggy Park Phase 1 project included extending approximately 560 linear feet of 8-inch public gravity sewer to serve the 19 unit single family residential development.

Mr. Hartye reported that the Williams-Baldwin Teacher Campus project included extending approximately 311 linear feet of 8-inch public gravity sewer to serve the 24 unit multi-family residential development.

Staff recommends acceptance of the aforementioned developer constructed sewer systems. All MSD requirements have been met.

d. Cash Commitment/Investment Report Month ended July 30, 2017:

Mr. Powell reported that Page 40 presents the makeup of the District's Investment Portfolio. There has been an approximately \$23 million dollar increase from the previous months report. This is a result of the District issuing debt on July 11. Page 41 presents the MSD Investment Manager report as of the month of July. The weighted average maturity of the investment portfolio is 148 days. The yield to maturity is 1.29% and is exceeding MSD bench marks of the 6 month T-Bill and NCCMT cash portfolio. Page 42 presents the analysis of the District's cash receipts. Monthly domestic sewer revenue is considered reasonable based on historical trends. Monthly and YTD industrial sewer revenue is a little higher than in the past due to the consumption of one of our industrial users. Facility and tap fees are considered reasonable based on historical trends. Page 43 presents the analysis of the District's expenditures. Monthly and YTD expenditures are considered reasonable based on historical trends. Page 45 presents the MSD Variable Debt Service report. The 2008A Series is performing better than budgeted expectations. As of the end of August both issues have saved the District rate payers approximately \$5.1 million dollars in debt service since April 2008.

With no further discussion, Mr. VeHaun called for a motion to approve the Consolidated Motion Agenda. Ms. Wisler moved. Ms. Bryson seconded the motion. Roll call vote was as follows: 11 Ayes; 0 Nays.

8. Old Business:

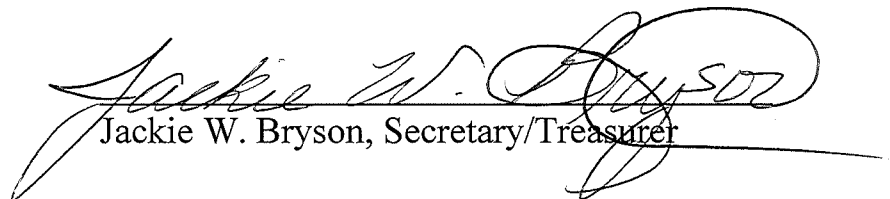
Mr. Hartye asked Mr. Hemphill to explain the “artifact” in the Boardroom. Mr. Hemphill stated that Staff had a clean-up afternoon for Beaverdam Creek, which runs behind the Mull Building. The “artifact” was one of many bricks pulled out of the creek. After further investigation, it appears that these bricks came from the 250 foot smoke stack that was part of the original power plant which was torn down during construction of this building. Basically, this brick came from the smoke stack that was put into operation in 1916, knocked down in approximately 1998 and recovered in 2017.

9. New Business:

None

10. Adjournment:

With no further business, Mr. VeHaun called for adjournment at 2:16 pm.


Jackie W. Bryson, Secretary/Treasurer

MSD

Regular Board Meeting

Metropolitan Sewerage District
of Buncombe County, NC

AGENDA FOR 9/20/17

✓	Agenda Item	Presenter	Time	
	Call to Order and Roll Call	VeHaun	2:00	
	01. Inquiry as to Conflict of Interest	VeHaun	2:05	
	02. Approval of Minutes of the August 16, 2017 Board Meeting	VeHaun	2:10	
	03. Discussion and Adjustment of Agenda.	VeHaun	2:15	
	04. Informal Discussion and Public Comment	VeHaun	2:20	
	05. Report of General Manager	Hartye	2:25	
	06. Consolidated Motion Agenda	Hartye	2:35	
	a. Consideration of Bids: Elkwood Avenue Sewer Rehabilitation Project	Hartye		
	b. Consideration of Equipment Sole Source: Soft Start Controls for Weaverville & Erwin Hills Pump Stations	Hartye		
	c. Consideration of Developer Constructed Sewer Systems: Craggy Park Phase 1 and Williams-Baldwin Teacher Campus	Hartye		
	d. Cash Commitment/Investment Report Month Ended July, 2017	Powell		
	07. Old Business:	VeHaun	3:00	
	08. New Business:	VeHaun	3:05	
	09. Adjournment: (Next Meeting 10/18/17)	VeHaun	3:10	
	STATUS REPORTS			

BOARD OF THE METROPOLITAN SEWERAGE DISTRICT
AUGUST 16, 2017

1. Call to Order and Roll Call:

The regular monthly meeting of the Metropolitan Sewerage District Board was held in the Boardroom of MSD's Administration building at 2pm Wednesday, August 16, 2017. Chairman VeHaun presided with the following members present: Bryson, Creighton, Kelly, Pressley, Root and Wisler. The following members were absent: Ashley, Collins, Frost, Manheimer and Pelly.

Others present were: Thomas E. Hartye, General Manager; William Clarke, General Counsel; Forrest Westall with McGill Associates; Marcus Jones and Commissioner Bill Lapsley with Henderson County; Joseph Martin with Woodfin Sanitary Water & Sewer District; Ed Bradford, Scott Powell, Jim Hemphill, Matthew Walter, Peter Weed, Mike Stamey, Ken Stines, Hunter Carson, Spencer Nay and Pam Nolan.

2. Inquiry as to Conflict of Interest:

Mr. VeHaun asked if there were any conflicts of interest with the agenda items. No conflicts were reported.

3. Approval of Minutes of the July 19, 2017 Board Meeting:

Mr. Vahaun asked if there were any changes to the Minutes of the July 19, 2017 Board Meeting. Mr. Creighton moved for approval of the minutes as presented. Mr. Root seconded the motion. Voice vote in favor of the motion was unanimous.

4. Discussion and Adjustment of Agenda:

None

5. Informal Discussion and Public Comment:

Mr. Vahaun welcomed Marcus Jones, Bill Lapsley and Joe Martin. There was no public comment.

6. Report of General Manager:

Mr. Hartye reported that Commissioner Bill Lapsley and County Engineer Marcus Jones were present to address the Board. Mr. Lapsley introduced himself and stated that he is a member of the Henderson County Board of Commissioners and, based on past experience, finds himself in the default position of dealing with all things water and sewer related in Henderson County. Mr. Lapsley stated that he is in attendance today on behalf of his fellow Commissioners to thank the District for support on the recent action of the General Assembly. He further commented that he is sure all are aware that an action was passed whereby this Board has the option to expand and include what is now a significant portion of the Cane Creek

Water and Sewer District in Henderson County. The Cane Creek Water and Sewer District consists of about 3,600 customers who discharge into the District's system. The first step in this process was for the Henderson County Commissioners to pass a resolution of intent. This Resolution was passed by the Henderson County Board on July 19, 2017 and is included with this Board package. Mr. Lapsley stated that over the next 8-9 months he anticipates further discussions between Henderson County and the District to work through the numerous steps and that he looked forward to working with the District. He stated that again his primary role today was to thank the District for their position in the past on this action in legislature and that they look forward to working with the District in the months and years ahead. Mr. VeHaun asked if there were any questions or comments. There were none. Mr. Hartye reported that Cane Creek Water and Sewer flow does come to the District for treatment. At this time, the District does not maintain Cane Creek's local lines and pump stations, which consist of about 60 miles. The District has looked at this issue several times in the past and it looks favorable and makes sense as the drainage basin flows in this direction. Attached is a copy of the Resolution that Mr. Lapsley referred to, followed by a synopsis of the merger process. Mr. Hartye thanked Mr. Bradford for preparing this summary. The first step, as previously stated, is to have the Resolution which we have today. The second step is for this Board to accept or reject the request. Mr. Hartye stated that after talking with Chairman VeHaun, they thought it would be a good idea to send this to Planning Committee. The final document attached is regarding the Etowah private sewage system and is attached only to keep the Board apprised of this information. Mr. Hartye stated that he has been having discussions with Mr. Lapsley and Mr. Jones regarding this matter. Etowah is not currently part of the Cane Creek Water and Sewer District. There has been talk about Etowah coming into their system and it was referred to in their Master Plan as a potential future area but it was not included in their CIP and it was not included in the District's analysis. Mr. Hartye stated that he is being told now that this will likely not happen. Mr. Hartye stated that his recommendation would be to have a group of representatives consisting of Mr. Clarke, Mr. Westall, Mr. Root and himself to meet with Henderson County representatives and bring something back to the Planning Committee. Mr. VeHaun stated that he would like to officially refer this matter to the Planning Committee, who will then bring a report back to this Board. There were no questions or comments regarding this matter.

Mr. Hartye reported that attached is a blurb from Hartwell Carson, French Broad River Keeper, which was in the ACT editorial section regarding the System Services folks providing emergency response 24/7/365. Mr. Carson happened to be on site and witnessed this and the District appreciates him bringing this up.

Mr. Hartye reported that attached is an e-mail from Ed King regarding MSD's CIP Document.

Mr. Hartye reported that attached is a list of classes for the Collections System Operators School which MSD heads up for the WNC faction of NCAWWA/WEA. Mr. Hartye thanked all who provided great instruction to further the future of our industry.

Mr. Hartye reported the next regular Board Meeting will be held September 20th at 2pm. The next Right of Way Committee meeting will be held on September 27th at 9am.

Mr. Hartye reported that Paul Wilkins, an MSD mechanic, passed away and he asked everyone to keep Mr. Wilkin's family in their thoughts and prayers.

7. Consolidated Motion Agenda:

a. Consideration of Equipment Proposals: Sodium Hypochlorite Tank Replacement:

Mr. Hartye reported that all wastewater plants are required to disinfect effluent prior to discharging into the river. MSD uses sodium hypochlorite for this purpose. Previously, chlorine gas was utilized until 2002. There are four tanks holding the sodium hypochlorite, at 15,000 gallons each. These tanks are now past their functional life span and must be replaced. Staff obtained quotes from two regional companies which manufacture chemical storage tanks as follows: Southeastern Fiberglass Products in the amount of \$118,000.00 and Augusta Fiberglass in the amount of \$94,658.00. The apparent low bidder is Augusta Fiberglass with a bid amount of \$94,658.00. The FY 17-18 Construction Budget for this project is \$183,000.00, which also includes funds for the removal of the old tanks and installation of the new tanks. Staff recommends award of this equipment procurement to Augusta Fiberglass in the amount of \$94,658.00, subject to review and approval by District Counsel.

b. Consideration of Equipment Proposals: Blower MCC Replacement:

Mr. Hartye reported that the MCC (Motor Control Center) replacements are for the Rotating Biological Contactors (RBC's) at the plant. The air is used to rotate the RBC's. The blowers were replaced in 2008. However, the starters were not replaced. The replacement units will be "soft starters" which help reduce both startup current and stress on the motors when they cycle on and off. Staff obtained quotes from two manufacturers of this equipment as follows: Rockwell Automation/Allen-Bradley in the amount of \$209,872.00 and Eaton in the amount of \$202,000.00. The apparent low bidder is Eaton with a bid amount of \$202,000.00. Eaton is a local manufacturer based in Arden, NC, which is beneficial for service and parts availability. The FY 17-18 Construction Budget for this project is \$375,000.00, which also includes costs for ancillary equipment and installation. Staff recommends award

of this equipment procurement to Eaton in the amount of \$202,000.00, subject to review and approval by District Counsel.

**c. Consideration of Bids: Hendersonville Road at Peachtree Road
GSR:**

Mr. Hartye reported that this project is located in South Asheville along Hendersonville Road, in front of Walmart. It consists of 1,150 LF of 8-inch DIP, to be installed by dig and replace. The contract was formally advertised on July 27, 2017, and two bids were received as follows: Thomas Construction Company in the amount of \$486,400.00 and Terry Brothers Construction Company in the amount of \$449,062.00. The apparent low bidder is Terry Brothers Construction Company with a bid amount of \$449,062.00. This bid amount is significantly over the FY17-18 Construction Budget due to the NCDOT requiring the project to be constructed entirely during nighttime hours. The NCDOT is also requiring a certified traffic control contractor to perform traffic control at a reported cost of \$1,500.00 per day. Staff contacted Terry Brothers to see if there were any areas to reduce costs. Terry Brothers did offer to lower the per-foot pipe cost by \$20.00, reducing the bid amount by \$23,000.00. Therefore, Terry Brothers reduced bid is \$426,062.00. In addition, a project awarded at last month's Board Meeting came in \$186,000.00 under budget and \$130,000.00 of that Budget was transferred to the Contingency Fund. \$91,062.00 will be used from the Contingency Fund to cover the overage on this project. Terry Brothers has completed numerous projects for the District and their work continues to be excellent. Staff recommends award of this contract to Terry Brothers Construction Company in the amount of \$426,062, subject to review and approval by District Counsel.

d. Consideration of Developer Constructed Sewer Systems: Asheville Area Habitat for Humanity-Beale Road; Ball Gap Road; Four Seasons Investments-Gibson Road; Monticello Apartments (aka Hawthorne at Weaverville); Newbridge Parkway Apartments; Pinnacle at Arabella Heights; Richland Street; Shelburne Drive; Somerset at Walnut Cove; White Oak (aka Cool Creek Properties):

Mr. Hartye reported that the Asheville Area Habitat for Humanity-Beale Road project included extending approximately 463 linear feet of 8-inch public gravity sewer to serve the 21 unit residential development.

Mr. Hartye reported that the Ball Gap Road Subdivision in Buncombe County included extending approximately 951 linear feet of 8-inch public gravity sewer to serve the 14 unit residential development.

Mr. Hartye reported that the Four Seasons Investments-Gibson Road Subdivision project is located in the City of Asheville and included extending approximately 135 linear feet of 8-inch public gravity sewer to serve the 3 unit residential development.

Mr. Hartye reported that the Monticello Apartments (aka Hawthorne at Weaverville) is located in the Town of Weaverville and included extending approximately 1,495 linear feet of 8-inch public gravity sewer to serve the 168 unit apartment complex.

Mr. Hartye reported that the Newbridge Parkway Apartments project is located in the Town of Woodfin and included extending approximately 598 linear feet of 8-inch public gravity sewer to serve the first phase of the 154 unit apartment complex.

Mr. Hartye reported that the Pinnacle at Arabella Heights project is located in Buncombe County and included extending approximately 3,907 linear feet of 8-inch public gravity sewer to serve the 65 unit residential subdivision.

Mr. Hartye reported that the Richland Street Homes project is located in the City of Asheville and included extending approximately 520 linear feet of 8-inch public gravity sewer to serve the 5 unit residential subdivision.

Mr. Hartye reported that the Shelburne Drive project is located in the City of Asheville and included extending approximately 420 linear feet of 8-inch public gravity sewer to serve the 9 unit residential subdivision.

Mr. Hartye reported that the Somerset at Walnut Cove project is located in Buncombe County and included extending approximately 432 linear feet of 8-inch public gravity sewer to serve the 5 unit residential subdivision.

Mr. Hartye reported that the White Oak (aka Cool Creek Properties) project is located in Buncombe County and included extending approximately 1,020 linear feet of 8-inch public gravity sewer to serve the 10 unit residential development.

Staff recommends acceptance of the aforementioned developer constructed sewer systems. All MSD requirements have been met.

e. Consideration of Reimbursement Resolution for Bond Projects:

Mr. Powell reported that to be in compliance with IRS regulations concerning tax-exempt financing, all expenditures made with non-MSD bond funds and to be reimbursed from MSD bond funds must be properly identified and authorized. The proposed reimbursement resolution identifies major projects intended to be solely or substantially

financed by bonds anticipated to be issued in FY 2023. Board approval is required to obtain the tax-exemption of interest paid on MSD bonds by authorizing reimbursement from bond proceeds of the expenditures for the attached project listing.

f. Fourth Quarter Budget to Actual Review – FY 2017:

Mr. Powell reported that the Domestic Revenue is above budgeted expectations. Staff believes Domestic User Fee variance will end up around 103% when June accounts receivable data is received from its Member Agencies in relation to the District's audit in September. Industrial Revenue is trending better than budgeted expectations due to temporary increased revenue from one new industrial user. Facility and Tap Fees are above budgeted expectations. This is due to the District receiving \$3.7 million from 8 developments as well as the conservative nature in which these funds are budgeted. Interest and miscellaneous income are below budgeted expectations. Short-term interest rates are still experiencing pressures due to Federal Reserve monetary policy. O&M expenditures are at 96.35% of budget. This amount may vary slightly from audited numbers due to final accruals for the fiscal year. Bond principal and interest are better than budgeted expectations due to the interest rate swap associated with Series 2008A revenue refunding bonds. Capital Project expenditures are at approximately 81.89% of budget. CIP projects are continuing to receive favorable pricing.

g. Cash Commitment/Investment Report Month ended June 30, 2017:

Mr. Powell reported that Page 72 presents the makeup of the District's Investment Portfolio. The makeup of the portfolio is substantially the same as compared to last month. Page 73 is the MSD Investment Manager report as of the month of June. The weighted average maturity of the investment portfolio is 125 days. The yield to maturity is 1.06% and is exceeding MSD bench marks of the 6 month T-Bill and NCCMT cash portfolio. Page 76 presents the MSD Variable Debt Service report for the month of July. The 2008A Series Refunding Bonds are performing better than budgeted expectations. As of the end of July this issue has saved the District rate payers approximately \$5.1 million dollars in debt service since April 2008.

With no further discussion, Mr. VeHaun called for a motion to approve the Consolidated Motion Agenda. Mr. Kelly moved. Mr. Creighton seconded the motion. Roll call vote was as follows: 7 Ayes; 0 Nays.

8. Old Business:

None

9. New Business:

None

10. Adjournment:

With no further business, Mr. VeHaun called for adjournment at 2:28 pm.

Jackie W. Bryson, Secretary/Treasurer



MEMORANDUM

TO: MSD Board
FROM: Thomas E. Hartye, P.E., General Manager
DATE: September 14th, 2017
SUBJECT: Report from the General Manager

- NACWA Peak Performance Platinum Award

MSD's French Broad River Reclamation Facility received the Platinum Award recognition for five years of complete and consistent discharge permit (NPDES) compliance. Congratulations to all treatment plant operation and maintenance personnel.

- Kudos

- Attached is an email from Jamie Plot regarding MSD's response time. Thanks to Eric Bryant and our first response team.

- Article in Mountain Xpress

Attached is an article in that appeared in the Mountain Xpress regarding some of MSD's efforts.

- Board/Committee Meetings/Events

The next Regular Board Meeting will be held on October 18th at 2 pm. The next Right of Way Committee meeting will be held on September 27th at 9am. The employee picnic will be held behing Maintenance on October 5th.

Platinum

AWARD



The National Association of Clean Water Agencies

is pleased to present this award to

Metropolitan Sewerage District of Buncombe County, NC
French Broad River Water Reclamation Facility

in recognition of five years of complete and consistent National
Pollutant Discharge Elimination System permit compliance


Adam Krantz, NACWA Chief Executive Officer

7/25/2017
Date Issued

A large graphic at the bottom of the page consisting of two overlapping, curved, wavy lines in shades of blue, resembling water or a stylized 'S' shape.

NACWA
A Clear Commitment to America's Waters

Subject: FW: Sewer issues

Date: Tuesday, August 15, 2017 at 9:48:19 AM Eastern Daylight Time

From: Tolley, Lisa

To: Hartye, Tom

CC: Stines, Ken, Capizzi, Jason, Thomas, Pam

[W:244855 for 26 Lanvale Avenue.](#)

From: Bryant, Eric

Sent: Tuesday, August 01, 2017 3:53 PM

To: Tolley, Lisa

Subject: Fwd: Sewer issues

Sent from my iPhone

Begin forwarded message:

From: Jamie Tara <ptjamie26@yahoo.com>

Date: August 1, 2017 at 3:51:46 PM EDT

To: "EricB@msdbc.org" <EricB@msdbc.org>

Subject: Re: Sewer issues

Reply-To: "ptjamie26@yahoo.com" <ptjamie26@yahoo.com>

Thank you for responding. I must have logged off for no more than 20 minutes when someone showed up!! My mother and I were talking about you guys being faster than an ambulance! We really appreciate your help.

God bless,

Jamie Plott

[Sent from Yahoo Mail on Android](#)

On Tue, Jul 25, 2017 at 4:31 PM, Bryant, Eric
<EricB@msdbc.org> wrote:

Hi Jamie, my name is Eric Bryant with MSD. If you can please give me a call at 225-8248 if you can't get me there call 768-0230 and let's talk and see what's going on so we can help get you straightened out. Thank You, Eric

Sent from my iPhone

MSD upgrades its infrastructure with capital improvement projects

X mountainx.com/news/msd-upgrades-its-infrastructure-with-capital-improvement-projects/

Max
Hunt

September 1,
2017

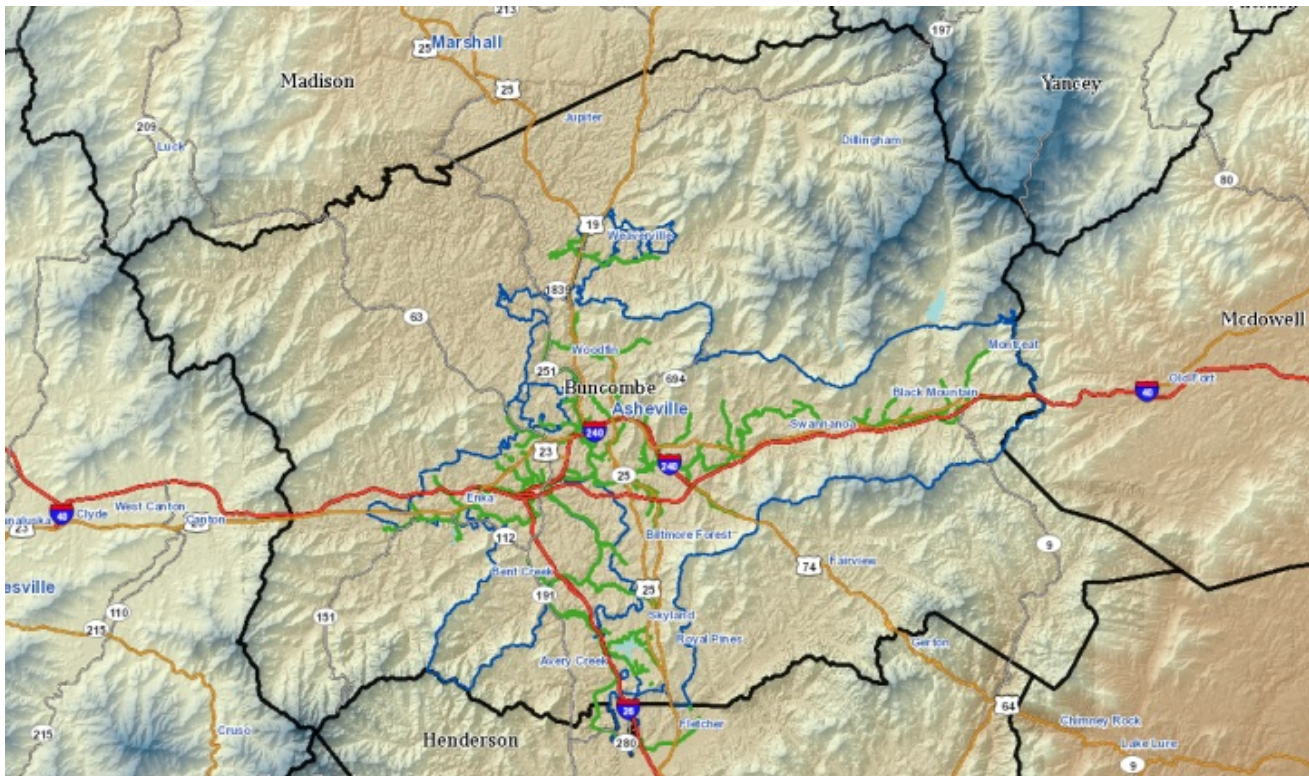


Sewage is something most people choose to ignore — until it becomes a problem. But if you live near or frequently pass by Woodfin's riverfront, chances are you're familiar with the less-than-pleasant odor that sometimes emanates from the plant operated by the Metropolitan Sewerage District on Riverside Drive.

While it may not be the most appealing of fragrances, the smell is the byproduct of an innovative, vital agency. With little fanfare, MSD's team of technicians and engineers work around the clock to process millions of gallons of wastewater each day into harmless byproducts, while maintaining an extensive network of sewage lines that crisscrosses much of Buncombe County.

To fulfill its critical mission and increase its capacity to deal with a growing service area and customer base, MSD is in the midst of a \$266 million capital improvement project, which will help ensure that the community's waste is properly handled and safely disposed of.

At your disposal



CROSS COUNTY PIPES: Buncombe County MSD's service area encompasses more than 180 square miles, stretching from Montreat to Enka, and South from Fletcher to the town of Weaverville in north Buncombe. Utilizing the region's topography and 31 pump stations, MSD maintains more than 1,015 miles of sewer line. Image via MSD

It's hard to miss the MSD plant, located on Riverside Drive in Woodfin. Two geodesic domes rise over a series of white-roofed shelters, bringing to mind the midcentury inventor Buckminster Fuller, who developed the concept of the geodesic form while teaching at Black Mountain College.

Established in 1962 by the N.C. State Stream Sanitation Committee, MSD is charged with constructing and operating facilities for the treatment and disposal of the sewage generated by the municipalities of Asheville, Biltmore Forest, Weaverville, Woodfin, Montreat and Black Mountain, in addition to 10 special districts of unincorporated Buncombe County land and parts of northern Henderson County.

"Prior to MSD's existence, raw sewage would be discarded directly into the French Broad River," says **Jerry Vehaun**, who chairs MSD's board of directors. "Today, we have a clean river which is constantly used for recreation purposes such as boating, fishing and so forth [because of MSD]."

The largest public entity in North Carolina to be registered under ISO 14001, a set of standards established to guide organizations on environmental best practices, MSD has frequently been recognized with awards. In 2003, it was one of two facilities nationwide to receive a National Environmental Achievement Award for its Pipe Rating Project, which compiles closed-captioned footage, test results and maintenance records into a comprehensive database that tracks the condition of the sewer network.

"We provide waste treatment services to over 130,000 people," says **Tom Hartye**, MSD's general manager. "Environmental stewardship is at the core of what we do here."

Process of elimination

That commitment is embodied at MSD's French Broad River Water Reclamation Facility, which Hartye says may be

the largest of its kind in the world.

KEEPING IN FLOW: MSD's current plant improvement projects are aimed at increasing storage capabilities in times of heavy stormwater flow and increasing the efficiency with which the agency is able to remove solid wastes and grit from waste water. Photo courtesy of MSD



As wastewater arrives at the facility, solid waste is separated from the main volume of the flow. Trash is carted off to the landfill, while a three-tiered incineration tower concentrates the remaining solid

sludge into ash, says **Roger Edwards**, a retired N.C. Department of Environmental Quality employee who now serves as operations manager at the plant.

Unlike conventional wastewater treatment facilities, where processing lagoons sprawl over vast expanses, MSD's facility maximizes the limited acreage at its riverside site by utilizing a system of rotating biological contactors — spinning, corrugated waterwheels laden with bacteria that break down and consume the contaminants found in sewage.

"We're essentially bug farmers," jokes Edwards. The 152 rotating mechanisms comprise a surface area equivalent to 400 to 500 acres, providing space for microorganisms to treat the 21.6 million gallons of wastewater that flow through the facility on an average day.

After the bacteria have consumed the pollutants — a process that takes about six hours, according to Edwards — the water is sterilized with a sodium hypochlorite solution (essentially, chlorine bleach) and sluiced back through a network of water clarifiers. The treated water is then dechlorinated and released into the French Broad River.

The MSD plant's processes yield water with levels of suspended solids and contaminants well below what state regulations allow, says Edwards, adding that the water that leaves the plant generally has a lower bacteria count than the river it's going back into.

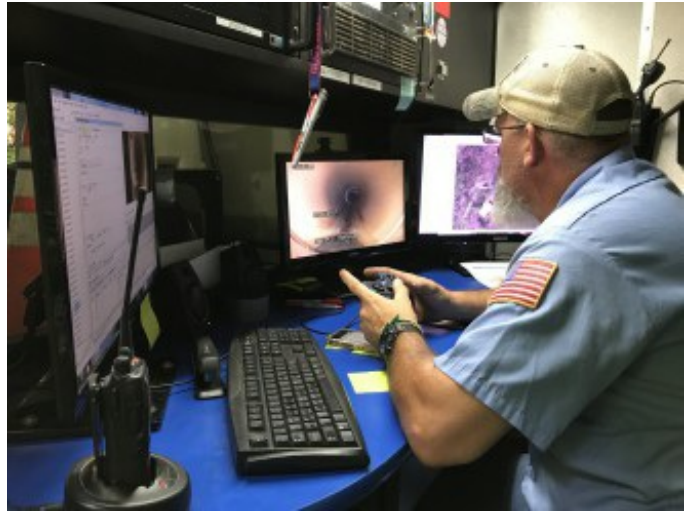
To offset the energy required to power the MSD plant and its pumping stations across the county, the agency operates a hydroelectric facility which is capable of generating 2,880 kilowatts per hour, depending on the French Broad River's flow and water levels. In 2015 alone, MSD avoided \$435,000 by utilizing its the hydroelectric facility.

Thinking ahead

MSD's efforts to upgrade its system with high-efficiency, low-impact technologies and strategies have paid off significantly in the past couple of decades. Sanitary sewer overflows have declined from 288 cases in 2000 to only 37 in 2015, notes Hartye.

Using closed-captioned television footage and "no trench" technology, MSD officials can identify obstructed or damaged sewer lines and replace or repair them without digging down from the surface. Data collected from sewer cameras are stored and cataloged in MSD's Pipe Rating System, allowing staff to keep tabs on the status and maintenance history of its entire pipe network.

INSIDE VIEW: MSD's award-winning Pipe Rating System allows staffers to access footage, data and maintenance histories for its entire sewer line system at will, allowing the agency to keep tabs on the system's status and needs. Photo courtesy of MSD



At the plant, recent upgrades — including a \$10 million AquaDisk polishing filter system and \$7.4 million in upgrades to MSD's incinerator and air emissions system — have increased the amount of contaminants the agency can remove from wastewater, and reduced the labor, time and resources needed to do so.

"We believe in trying to stay ahead of things, in regards to maintenance and infrastructure," says Hartye. By being proactive, he adds, MSD saves its customers money and can put more resources toward improving the system, rather than scrambling to fix problems after they occur.

Leaky pipes

Staying ahead of the curve is crucial, in light of the long list of challenges MSD hopes to address in the coming years. "Buncombe County is growing, so MSD needs to keep up with the growth but at the same time make sure that the older infrastructure is maintained," says Asheville Vice Mayor **Gwen Wisler**, who's also a member of MSD's board of directors. "This can be very cost-prohibitive."

Since taking control of municipal wastewater collection systems in 1990, MSD has invested over \$300 million in replacing and upgrading over 1 million feet of sewer mains, roughly equivalent to 25 percent of the sewer system. The agency plans to upgrade an additional 250,000 feet over the next five years.

Many of these local sewer lines date back to the early 1900s, and are in poor condition, notes Hartye. This includes obsolete, deteriorating clay pipes and, incredibly enough, reinforced wood fiber "Orangeburg pipes" in some instances.

Widely used as piping for electrical conduits in the 20th century, excess Orangeburg pipes were often sold to small municipalities at discounted rates to use for septic systems, Hartye says. "These things have pretty much disintegrated," he notes. "Whenever we come across one of those, we have to replace the line right away."

Antiquated, damaged lines not only leach materials into nearby soil and groundwaters, but also allow dirt, grit and stormwater to infiltrate MSD's system. Rainwater also enters the sanitary sewer system as inflow through pipes or cross-connections with the storm sewer system. According to Hartye, one-third of the 8 billion gallons MSD treated in 2016 came from "infiltration and inflow," which can strain MSD's infrastructure during during storms.

21st century sewage

While MSD currently treats about 20 million gallons of water a day at its Woodfin plant — which represents about half its maximum capacity — current construction projects will increase its storage capabilities and improve its efficiency.

Upgrades include the recently completed replacement of MSD's influent pump station, which allows plant operators to control the energy output of the pumps used to pull waste into the treatment facility to match the flow coming into

the plant on a given day, conserving electricity and prolonging the life of the pumps, says Edwards.

KEEPING INFILTRATION OUT: MSD workers remove roots that have infiltrated a sewer line at Skyview Terrace. Since taking over municipal sewer systems in 1990, MSD has replaced more than 1.1 million feet of sewer mains, including obsolete clay and Orangesburg pipes. Photo courtesy of MSD



The plant headworks project, launched in 2016, will add new screens and grit removal technology to help filter out solid waste. In addition, two decommissioned storage tanks (the geodesic domes visible from Riverside Drive) will be renovated to provide additional storage space, which will allow MSD to treat wastewater more thoroughly during high-flow storm periods. The plant headworks project is expected to be completed by the end of 2018.

The \$10 million High Rate Primary Treatment Project is scheduled to begin by spring. “The technology for this type of clarification process is fairly new and involves quickly and efficiently settling out all the nondissolved solids within the waste stream,” explains Hartye. “The more effective this treatment is, the better the treatment processes downstream can perform in removing the dissolved fraction of the waste stream. MSD’s treatment process already removes over 95 percent of the incoming pollutants and is in many ways cleaner than the river it is going back to. The remaining 5 percent is what we are after with these new technologies in an effort to get it to be closer to be pure water.”

“Facilities such as this cannot afford to have breakdowns because of lack of maintenance or using older technology,” says Vebaun. Plant workers got a glimpse of what such a disaster scenario might look like on April 30, 2013, when a 400-pound gate blew out of position during a replacement of one of the plant’s pumps, spilling raw sewage into the nearby French Broad River and creating a “code red” at the plant. (See “Code Red: How this team helped stop MSD’s record April 30 sewage spill,” June 19, 2013, *Xpress*)

Investing in capital improvements helps to avoid such catastrophes “by keeping us up-to-date with the latest technology and to ensure that all equipment is state-of-the-art,” Vebaun adds.

The current capital improvement projects, when finished, “will increase both the service level of treatment as well as capacity for future customers,” says Hartye.

Trash talk

In tandem with these upgrades, MSD is engaged in communication efforts to dispel misconceptions about its work and inform residents on proper use of the sewer system.

The agency’s “Can the Grease” program provides education on proper disposal methods for cooking greases like animal fat, coconut oils, and other nonwater-soluble materials.

“Flushable” wipes are another problem product MSD is working to address with the public, says Hartye. “They’re advertised as ‘flushable,’ but in reality, they don’t break down so easily,” he notes. “If you swirl a piece of toilet paper around in water for a couple minutes, you’ll see it basically disintegrates, but these wipes don’t do that.”

EXPANDING SERVICE: With Buncombe County rapidly developing and its service base growing, MSD officials hope the capital improvement projects to its plant and sewer lines will prepare it to meet the future needs of its customers. Photo courtesy of MSD

MSD also provides tours of its facility for students and citizens, notes Edwards, and a variety of information is available through the agency's website, including a virtual tour.

Students from the French Broad River Academy, whose boys campus sits near the MSD plant in the Riverside Business Park, learn about the importance of infrastructure for functions like waste management from their neighbor.



“That’s one of my favorite field lessons that we do,” says the school’s co-founder **Will Yeiser**. “Our social studies teacher does a unit about how small ancient cities dealt with sewer and trash, and how big urban areas have to deal with it. We tour the plant and see firsthand what’s going on. Everyone’s grossed out at first, but if you think about it, it’s a pretty awesome thing.”

Doing the dirty work

Edwards hopes expanding the public’s understanding of MSD’s role will inspire more young people to consider the profession. “We need younger folks to come into this line of work,” he says, encouraging those interested in learning more to check out local certification programs at A-B Tech and other regional schools. “There’s room to grow professionally. Plus, you have the best job security out there: The need for MSD isn’t going away.”

And while residents might not like the smell emanating from the plant now and again, that smell would be a lot more prevalent — and dangerous — without MSD to do the dirty work, Wisler says. “Unclean water leads to disease, as we have seen from underdeveloped countries and, unfortunately, even some of our domestic cities,” she notes. “MSD processes and service delivery ensure that our county has a healthy source of water.”

Metropolitan Sewerage District of Buncombe County

BOARD ACTION ITEM

BOARD MEETING DATE: September 20, 2017

SUBMITTED BY: Tom Hartye, P.E. - General Manager

PREPARED BY: Ed Bradford, P.E. - Director of Engineering
Hunter Carson, P.E. - Project Manager

SUBJECT: Consideration of Bids: Elkwood Avenue Sanitary Sewer Rehabilitation Project, MSD Project No. 2011080

BACKGROUND: This project is located in Woodfin, and generally runs the majority of Elkwood Avenue - from Riverside Drive to Merrimon Avenue.

It consists of replacing problematic six-inch clay lines in poor structural condition, which includes offset joints, pipe fractures, and root intrusion. These defects have triggered flooded structures, manhole overflows, and more than 36 customer service requests over the past decade.

The new line is comprised of 4,882 LF of 8-inch DIP, installed by dig & replace.

The project was advertised and two bids were received on August 31, 2017. The project was therefore re-advertised, and two bids were again received on September 7, 2017 in the following amounts:

<u>Contractor</u>	<u>Bid Amount</u>
1) Terry Brothers Const. Co., Inc.	\$1,314,221.00
2) Thomas Const. Company	\$1,215,002.00

The apparent low bidder is Thomas Construction Co. with a bid amount of \$1,215,002.00.

Thomas Construction has completed one MSD sewer rehabilitation project in the past, and their work quality was excellent on that project. They have also completed multiple water line projects for the City of Asheville.

Please refer to the attached documentation for further details.

FISCAL IMPACT: The FY17-18 Construction Budget for this project is \$1,364,000.00.

STAFF RECOMMENDATION: Staff recommends award of this contract to Thomas Construction Co. in the amount of \$1,215,002.00, subject to review and approval by District Counsel.

METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, NORTH CAROLINA

ELKWOOD AVENUE SEWER REHABILITATION

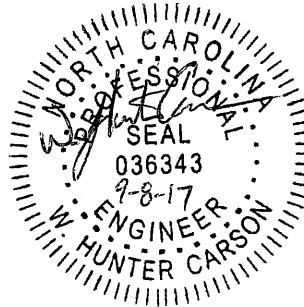
PROJECT NO. 2011080

BID TABULATION

September 7, 2017

BIDDER	Bid Bond	MBE Form	Bid Forms (Proposal)	TOTAL BID AMOUNT
Terry Brothers Construction Co. Leicester, NC	5%	1	Yes	\$1,314,221.00
Thomas Construction Company Johnson City, TN	5%	1	Yes	\$1,215,002.00

APPARENT LOW BIDDER



W. Hunter Carson, PE
Project Engineer
Metropolitan Sewerage District of
Buncombe County, North Carolina

This is to certify that the bids tabulated herein were publicly opened and read aloud at 2:00 p.m. on the 7th day of September, 2017, in the W.H. Mull Building at the Metropolitan Sewerage District of Buncombe County, Asheville, North Carolina, and that said bids were accompanied by acceptable bidders bonds in the amount of 5% of the bid. The project was first scheduled to be bid on August 31, 2017. Only 2 bids were received; therefore, the project was re-advertised.

Interoffice Memorandum

TO: Tom Hartye, General Manager

FROM: Ed Bradford, Engineering Manager
Hunter Carson, Project Manager

DATE: September 8, 2017

RE: Elkwood Avenue Sewer Rehabilitation, MSD Project No. 2011080

The Elkwood Avenue Sewer Rehabilitation project is located in Woodfin between Beaver Lake and I-26. The project incorporates two different drainage systems, both of which originate at the intersection of Elkwood Avenue and Lakeshore Drive. The northern part of the project runs to the intersection of Elkwood Avenue and Merrimon Ave., while the southern part of the project runs down Elkwood Avenue and Old Burnsville Hill Road, ending close to Riverside Drive.

Approximately 4,882 linear feet of 8-inch DIP sewer line will be installed to replace existing 6-inch VCP. Offset joints, pipe fractures, root intrusion, flooded structures, and manhole overflows resulted in more than 36 customer service requests over the past decade, as well as multiple point repairs to the system. This project ranks highly in the CIP pipe rating system with a score of 66. The high pipe rating is attributed primarily to the number of manhole overflows, flooded structures, and CSRs.

On August 31, 2017, two (2) sealed bids were received at 2:00pm. A minimum of three bids are required per NCGS 143-132, so bids were rejected and the project was re-advertised. On September 7, 2017, two (2) sealed bids were received at 2:00 pm. Results were as follows:

<u>Contractor</u>	<u>Bid Amount</u>
1) Terry Brothers Construction Co., Inc.	\$1,314,221.00
2) Thomas Construction Company	\$1,215,002.00

The apparent low bidder is Thomas Construction Company with a bid amount of \$1,215,002.00. The FY17-18 construction budget for this project is \$1,364,000.00. Thomas Construction Company has completed one CIP project for the District (Old US 70 @ Pine Circle in FY14-15) and the District was pleased with workmanship and quality exhibited.

Staff recommends award of this contract to Thomas Construction Company contingent upon review and approval by District legal counsel.

Metropolitan Sewerage District of Buncombe County, North Carolina

CAPITAL IMPROVEMENT PROGRAM

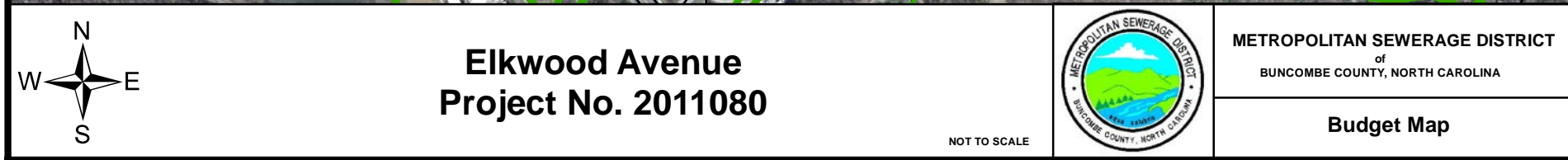
BUDGET DATA SHEET - FY 2017 - 2018

PROJECT:	Elkwood Ave.	LOCATION:	Woodfin
TYPE:	General Sewer Rehab.	PIPE RATING:	66
PROJECT NO.	2011080	TOTAL LF:	4,736
PROJECT BUDGET:	\$1,443,050.00	PROJECT ORIGIN:	SSO's; Work Orders; Line Condition

DESCRIPTION	ESTIMATED PROJECT COST	TOTAL EXPENDS THRU 12/31/16	EST. COST JAN - JUNE 2017	BUDGET FY 17-18
55310 - PRELIM. ENGINEERING				
55320 - SURVEY - DESIGN	\$11,000.00	\$11,000.00		
55330 - DESIGN				
55340 - PERMITS				
55350 - SPECIAL STUDIES				
55360 - EASEMENT PLATS	\$2,250.00		\$2,250.00	
55370 - LEGAL FEES	\$3,000.00			\$3,000.00
55380 - ACQUISITION SERVICES				
55390 - COMPENSATION	\$35,000.00			\$35,000.00
55400 - APPRAISAL	\$3,500.00			\$3,500.00
55410 - CONDEMNATION	\$7,500.00			\$7,500.00
55420 - CONSTRUCTION	\$1,364,000.00			\$1,364,000.00
55430 - CONST. CONTRACT ADM.				
55440 - TESTING	\$5,000.00			\$5,000.00
55450 - SURVEY - ASBUILT	\$11,800.00			\$11,800.00
TOTAL AMOUNT	\$1,443,050.00	\$11,000.00	\$2,250.00	\$1,429,800.00

ENGINEER:	MSD	HC	ESTIMATED BUDGETS - FY '19 -'27	
R.O.W. ACQUISITION:	MSD	# PLATS: [3]	FY 18-19	\$0.00
CONTRACTOR:			FY 19-20	\$0.00
CONSTRUCTION ADM:	MSD		FY 20-21	\$0.00
INSPECTION:	MSD		FY 21-22	\$0.00
			FY 22-23	\$0.00
			FY 23-24	\$0.00
PROJECT DESCRIPTION: This project is located in Woodfin, east of I-26 along Elkwood Ave. and Old Burnsville Hill Rd. It consists of replacement of approximately 4,736 LF of 8-inch ductile iron pipe. The existing line has offset joints, fractures, root intrusion, multiple point repairs, and is the source of frequent problems.			FY 24-25	\$0.00
			FY 25-26	\$0.00
			FY 26-27	\$0.00

SPECIAL PROJECT NOTES:



METROPOLITAN SEWERAGE DISTRICT
of
BUNCOMBE COUNTY, NORTH CAROLINA

Budget Map

NOT TO SCALE

Metropolitan Sewerage District of Buncombe County

BOARD ACTION ITEM

BOARD MEETING DATE: **September 20, 2017**

SUBMITTED BY: Tom Hartye, P.E. - General Manager

REVIEWED BY: Billy Clarke, Esq. - District Counsel

PREPARED BY: Ed Bradford, P.E. - Director of Engineering
Owen Herbert, P.E. - Project Manager

SUBJECT: Consideration of Equipment Sole Source: Soft Start Controls for Weaverville and Erwin Hills Pump Stations, MSD Project No. 2017034

BACKGROUND: The Weaverville and Erwin Hills pump stations have electrical systems which are aged and do not meet current safety standards, particularly in regard to Arc-Flash hazards. When performing maintenance on the equipment, workers can be exposed to unsafe conditions.

In addition, these stations utilize mechanical “hard” starters to operate the pumps. These are high horsepower stations (up to 75 HP) and combined with the high frequency of starts during wet weather events, the mechanical starters undergo considerable wear.

Staff proposes to replace the electrical control systems in these three stations with safer equipment which meets current standards. In addition, “soft start” controls will be added in order to reduce mechanical wear, add programmable functionality, and reduce operational costs over time.

Soft starter technology is specialized among various manufacturers. Further, there is only one manufacturer (Allen Bradley) that will guarantee their starters to properly function over 10 cycles per hour, which occurs at these stations during wet weather conditions.

Due to the unique operating conditions particular to these pump stations, it is not possible obtain performance competition. This is due to the high number of on-off cycles; therefore, this purchase will require a sole-source of the Allen-Bradley SMC-Flex starters. Allen Bradley is a quality manufacturer, and MSD staff has had excellent results with other Allen-Bradley equipment at the plant.

The price for equipment, panels, and programming is \$238,070.00, for all three locations. CITI, Inc. is a systems integrator and will build the new cabinets/panels with the starters and program the new systems. The actual installation of the panels, equipment pad, and new wiring will be performed by a separate contractor.

Please refer to the attached documentation for further details.

FISCAL IMPACT: The FY17-18 Construction Budget for this project is \$325,000.00. This amount also includes costs for installation by an electrical contractor.

STAFF RECOMMENDATION: Staff recommends that the District sole-source specify the Allen Bradley SMC-Flex starter systems from CITI, LLC in the amount of \$238,070.00 to be installed at the Weaverville and Erwin Hills pump stations based upon the fact that:

- 1) Performance or price competition for this equipment is not available due to the high number of cycles per hour, which occurs during operation of these stations.

Interoffice Memorandum

TO: Tom Hartye, General Manager

FROM: Ed Bradford, CIP Manager
Owen Herbert, Project Manager

DATE: September 1, 2017

RE: Soft Start Controls for Weaverville Nos. 1 & 2 and Erwin Hills Pump Stations,
MSD Project No. 2017034

All three pump stations (Weaverville No. 1, No. 2, and Erwin Hills) have existing electrical systems that are functional, but nearing the end of their design life. They pose an arc flash danger to the employees trying to service the stations. Only those with proper protection and planning can provide routine and emergency maintenance work. Given the existing conditions of many of the electrical components, it is recommended that a new electrical system be installed in all three pump stations.

A part of this new electrical installation will be the addition of soft-starts. Soft start motor controllers are designed for centrifugal pumps over 20-25 Hp. They create a delay in the amperage drawn by the motor for approximately 2-5 seconds. This "soft" start (reduced current) decreases the initial rate of acceleration of the water which then creates a hydraulic surge and results in a water hammer that can jar the entire pumping system. This pressure surge can be quite significant for larger pumps and leads to increased wear of pump station components. Ultimately adding soft starters will reduce mechanical wear and long term pump maintenance costs.

Variable Frequency Drives were also examined for this application. This technology provides pulse width modulation. Meaning it switches the inverter semi-conductors in varying widths and times, when averaged, to create a sine waveform; thereby, providing the capacity to create variable ranges of programmable efficiency. This can result in energy savings, fully adjustable speeds, controlled starting/stopping (in a sense acting like a soft start), and dynamic torque control. It does have its advantages over a soft starter, but due to the high static head conditions at all three station we would not be able to take full advantage of the programmable efficiency and the extra \$10,000 a piece does not justify using them as a soft starter.

There is only one manufacturer (Allen Bradley) that will guarantee their starters to properly function over 10 cycles per hour. This is an important aspect because during wet weather conditions, this occurs at these stations. Allen Bradley is one of the few manufacturers of these soft starters, and MSD staff has had excellent results from other Allen-Bradley equipment at the plant.

MSD engaged CITI, LLC to build and program the equipment. CITI has performed multiple installations at MSD, and their work quality and attention to detail are excellent.

Per the proposal provided by CITI, LLC dated August 25, 2017, the amounts are as follows:

<u>Equipment Location</u>	<u>Cost</u>
1) Weaverville No. 1	\$ 54,797.00
2) Weaverville No. 2	\$ 51,862.00
3) Erwin Hills	\$ 52,154.00
4) CITI Field Instrumentation (testing)	\$ 16,227.00
5) CITI Summary for services (custom build)	<u>\$ 63,030.00</u>
Total	\$238,070.00

A proposal for all the electrical installation work to install the enclosures will be obtained when the final enclosure design is complete. Costs were included for this work at each station, and will be finalized when the final enclosure dimensions, etc. are known and the equipment order is complete.

CITI, LLC has an extensive history completing District rehabilitation pump stations and plant work with excellent workmanship and quality. Staff recommends award of this contract to CITI, LLC contingent upon review and approval by District Counsel.

CITI PROPOSAL C16284R2

August 25, 2017

Mr. Dale Maxwell
Metropolitan Sewerage District of Buncombe County (MSD)
2028 Riverside Dr.
Asheville, NC 28804
Mobile: (828) 691-5310
DMaxwell@msdbc.org

Ref. MSD - Weaverville 1, Weaverville 2 and Erwin Hills Pump Station Upgrades

Dear Mr. Maxwell:

Thank you for the opportunity to present this proposal. The following tables show a detailed description of the materials and services we offer to furnish.

CITI Scope Summary

Materials

Weaverville 1 Pump Station:

<u>Item</u>	<u>Qty</u>	<u>Description of materials</u>
1	1	UL698 listed Weaverville 1 Pump Station Pump Control Panel that includes the following major components: <ul style="list-style-type: none"> - NEMA 4X 304 stainless steel enclosure with rear subplate, floor stands and NEMA 4X External main breaker disconnect; - 480 VAC power surge protection; - 480 VAC breakers for main disconnect, air conditioner and grinder; - 480 VAC shunt trip breakers for soft starters; - Restart/shunt trip timers for soft starters; - Two 100 HP Allen Bradley SMC Flex soft starters; - One NEMA 4X 304 stainless steel 460 VAC air conditioner; - 120-Volt control power transformer; - Restart/shunt trip timers for soft starters; - Strobe light and horn; - Selector switches, pilot lights and push buttons; - Intrinsically safety barriers for float switches;
2	1	UL508A listed Weaverville 1 PLC Control Panel that includes the following major components: <ul style="list-style-type: none"> - NEMA 4X 304 stainless steel enclosure with rear subplate and floor stands; - One MicroLogix 1400 PLC CPU and required IO modules; - One 10" color touchscreen operator interface with Ethernet communications;

<u>Item</u>	<u>Qty</u>	<u>Description of materials</u>
		<ul style="list-style-type: none"> - One 8-port unmanaged Ethernet switch; - 24 VDC power supplies; - Eight analog signal surge protectors; - One True online UPS; - One UPS bypass switch; - One 4G cell modem including power adapter and DIN rail mounting bracket; - One external antenna; - One router; - Interposing relays.

Weaverville 2 Pump Station:

<u>Item</u>	<u>Qty</u>	<u>Description of materials</u>
1	1	<p>UL698 listed Weaverville 2 Pump Station Pump Control Panel that includes the following major components:</p> <ul style="list-style-type: none"> - NEMA 4X 304 stainless steel enclosure with rear subplate, floor stands and NEMA 4X External main breaker disconnect; - 480 VAC power surge protection; - 480 VAC breakers for main disconnect, air conditioner and grinder; - 480 VAC shunt trip breakers for soft starters; - Restart/shunt trip timers for soft starters; - Two 100 HP Allen Bradley SMC Flex soft starters; - One NEMA 4X 304 stainless steel 460 VAC air conditioner; - 120-Volt control power transformer; - Restart/shunt trip timers for soft starters; - Strobe light and horn; - Selector switches, pilot lights and push buttons; - Intrinsically safety barriers for float switches;
2	1	<p>UL508A listed Weaverville 2 PLC Control Panel that includes the following major components:</p> <ul style="list-style-type: none"> - NEMA 4X 304 stainless steel enclosure with rear subplate and floor stands; - One MicroLogix 1400 PLC CPU and required IO modules; - One 10" color touchscreen operator interface with Ethernet communications; - One 8-port unmanaged Ethernet switch; - 24 VDC power supplies; - Eight analog signal surge protectors; - One True online UPS; - One UPS bypass switch; - One 4G cell modem including power adapter and DIN rail mounting bracket; - One external antenna; - One router; - Interposing relays.

Erwin Hills Pump Station:

<u>Item</u>	<u>Qty</u>	<u>Description of materials</u>
1	1	<p>UL698 listed Erwin Hills Pump Station Pump Control Panel that includes the following major components:</p> <ul style="list-style-type: none"> - NEMA 12 painted steel two door enclosure with rear subplate and floor stands; - 208 VAC breakers and power surge protection; - Four 40 HP Allen Bradley SMC Flex soft starters; - Shunt trip breakers for soft starters; - Restart/shunt trip timers for soft starters; - One NEMA 4 painted steel air conditioner; - One step down transformer - Selector switches, pilot lights and push buttons - Strobe light and horn; - Intrinsically safety barriers for float switches; - Interposing relays; - On delay timers for second stage of pumps.
2	1	<p>UL508A listed Erwin Hills PLC Control Panel that includes the following major components:</p> <ul style="list-style-type: none"> - NEMA 12 painted steel single door enclosure with rear subplate; - One MicroLogix 1400 PLC CPU and required IO modules; - One 10" color touchscreen operator interface with Ethernet communications; - One 8-port unmanaged Ethernet switch; - 24 VDC power supplies; - One True online UPS; - One UPS bypass switch; - One 4G cell modem including power adapter and DIN rail mounting bracket; - One external antenna; - One router; - Interposing relays.

Field instrumentation:

<u>Item</u>	<u>Qty</u>	<u>Description of materials</u>
1	1	Siemens Milltronics Hydromanager 200 open channel flow transmitter for the Weaverville 1 Pump Station with transducer rated for class 1 division 1 application and 10 meters of interconnecting cable
2	2	Siemens Milltronics Hydromanager 200 level transmitters for the Weaverville 1 Pump Station with transducer rated for class 1 division 1 application and 10 meters of interconnecting cable
3	2	Siemens Milltronics Hydromanager 200 level transmitters for the Weaverville 2 Pump Station with transducer rated for class 1 division 1 application and 10 meters of interconnecting cable

Item	Qty	Description of materials
4	2	Siemens Milltronics Hydromanager 200 level transmitters for the Erwin Hills Pump Station with transducer rated for class 1 division 1 application and 10 meters of interconnecting cable
5	2	Float switches for the Weaverville 1 Pump Station
6	2	Float switches for the Weaverville 2 Pump Station
7	2	Float switches for the Erwin Hills Pump Station

Services

Qty	Description of services
1	Combined Weaverville 1, Weaverville 2 and Erwin Hills Pump Stations Control Panel and Field Instrumentation design and submittal
1	PLC software development for new Pump Control Panels at all 3 stations. PLC program to include the following: <ul style="list-style-type: none"> ▪ Calculating pump drawdown for export to SCADA; ▪ Generating pump number of starts for current day, previous day and continuous. Continuous register is adjustable from SCADA; ▪ Generating pump run times for current day, previous day and continuous. Continuous register is adjustable from SCADA; ▪ Tracking number of times that more than one pump ran simultaneously for current day, previous day and continuous. Continuous register is adjustable from SCADA;
1	PLC software development for Master communications PLC. PLC program to include the following: <ul style="list-style-type: none"> ▪ Calculating pump efficiency for each pump at each site based on setpoint entered in SCADA and drawdown calculated value received from remote site; ▪ Creating communications alarm based on heartbeat coming from remote sites as well as setpoint for number of communications retries; ▪ Providing three polling tiers for the entire system and allowing operators to assign a tier to each remote site; ▪ Providing ability to manually poll sites; ▪ Generating a communications reliability register and providing option to manually reset it.
1	OIT software development for new Pump Control Panels
1	SCADA development coordination for creation of new tags
1	Programming of new cellular modems and configuration of new routers
1	Field instrumentation configuration for devices provided in this scope
1	Field modifications to existing RTU panel at Weaverville 1 to remove PLC hardware and install new open channel flow meter inside it
1	Site demonstration testing for new equipment provided under this scope
1	Digital operation and maintenance manuals for new equipment provided under this scope
1	Operator training session

CITI Price Summary for Weaverville 1 Pump Station

<i>Total price for Weaverville 1 materials =</i>	<i>\$54,797 excluding taxes</i>
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CITI Price Summary for Weaverville 2 Pump Station

<i>Total price for Weaverville 2 materials =</i>	<i>\$51,862 excluding taxes</i>
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CITI Price Summary for Erwin Hills Pump Station

<i>Total price for Erwin Hills materials =</i>	<i>\$52,154 excluding taxes</i>
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CITI Price Summary for Field Instrumentation

<i>Total price for materials =</i>	<i>\$16,227 excluding taxes</i>
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CITI Price Summary for Services

<i>Total price for services =</i>	<i>\$63,030</i>
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Clarifications:

- The scope of this proposal excludes all of the following:
 - SCADA programming services;
 - Configuration of system to use an alternate communications method in the event of cell modem failure;
 - Decommissioning of existing panels or equipment unless specifically listed in our services scope;
 - Demolition, relocation or modification of existing instrumentation and panels;
 - Equipment mounting racks, sensor support brackets, support anchors and hardware, etc. unless specifically listed in our materials scope;
 - Communication adapters for soft starters or VFDs;
 - Field wiring materials and terminations, power disconnect switches, conduits, and junction boxes;
 - Materials not specifically listed in our scope;
 - Onsite supervision of equipment installation;
 - Installation of panels and field process components/instruments and field wiring;
 - Work permits;
 - Startup for items supplied by others, unless mentioned above.

2. Specific SCCR rating of panels have not been determined. Please inform us whether a specific rating is required for these panels and this proposal can be adjusted to include the right materials to achieve them.
3. After your completion of equipment installation and field wiring terminations, we will begin the field services for commissioning our panels, field instruments, and controls. You will need to have qualified staff present during this testing to assist in verifying that each external connection to the equipment is correctly wired and to operate the interconnected field process equipment and panels furnished by others.
4. Materials will be released for manufacture and shipment to the job site upon receipt of the approved submittal for the respective equipment unless otherwise directed. You must assume custody upon delivery and provide suitable facilities in accordance with the specifications for onsite storage until materials are installed and powered. Our submittals will be available within 6-8 weeks after acceptance of your order. Materials will be ready for delivery within 8-10 weeks after approval of the submittal.
5. Our insurance coverage is: general liability - \$1,000,000/\$2,000,000; auto liability - \$1,000,000; excess liability - \$1,000,000; and workers compensation - \$500,000. If any additional coverage or endorsements are required, the charges for additions to our policy will be charged to you as an extra expense at actual cost times a multiplier of 1.1.
6. All materials are warranted for 18 months after delivery, 12 months after completion of their respective acceptance testing, or 12 months after the original project completion date, whichever occurs first.
7. We will retain all rights to Intellectual Property developed under this project and will grant the end user non-transferable rights to its use and modification.
8. We will accept a purchase order for our scope of supply subject to these clarifications and the attached CITI, LLC "Conditions of Sale".
9. Shipping is FOB factory, freight cost allowed. Payment terms for this project are net 30 days after the date of each invoice. Materials that are delivered or approved for storage in our facility will be billed complete at time of delivery/ storage. Services will be billed on a percentage of work completed.
10. This proposal is valid for 60 days.

If you have any questions about our scope of supply please call us. Thank you for your consideration.

CITI, LLC



Mario Gonzalez
Project Manager

Attachments: CITI, LLC Conditions of Sale

CITI, LLC CONDITIONS OF SALE

1. **GENERAL:** Sales by CITI, LLC, (herein CITI) are made solely under the conditions expressly set forth herein. Any proposed changes or exceptions to these conditions, or additional terms and conditions, included or referenced in Purchaser's order or acceptance of this offer, are hereby rejected by CITI, and shall be of no force or effect upon CITI unless expressly accepted in writing by CITI.

This Contract shall bind and inure to the benefit of Purchaser and CITI, as well as their respective successors and assigns; however, neither party may assign this Contract without prior written consent of the other.

Neither party shall be deemed to have waived its rights by failing to enforce any particular provision of this Contract.

If a court invalidates any portion of this Contract, the rest of this Contract shall remain valid and be construed as if not containing the invalidated provision.

North Carolina law shall govern the rights and obligations of the parties. Either party may pursue any legal means available to resolve disputes or claims arising out of or relating to this Contract. Both parties agree to the jurisdiction for resolution of disputes under this order as Buncombe County, North Carolina. Each party shall be responsible for their own legal fees in any matter related to this agreement.

2. **CREDIT APPROVAL:** If at any time information available on Purchaser's financial condition or credit history, in CITI's judgment, does not justify the terms of payment specified herein, CITI may require full or partial payment in advance, or an acceptable form of payment guarantee such as a bank letter of credit, or other modifications to the terms of payment.

3. **PROPRIETARY INFORMATION:** All information, data, drawings, instruction and operation manuals furnished by CITI with this Contract are proprietary to CITI, submitted in strict confidence, and are to be used by Purchaser solely for the purposes of this Contract, and shall not be reproduced, transmitted, disclosed or used in any other manner without CITI's written authorization.

4. **RISK OF LOSS:** Risk of loss or damage to the Products, or any part thereof, shall pass to Purchaser at the f.o.b. ship point stated herein.

5. **EXCUSABLE DELAY:** CITI shall not be liable for failure to perform or for delay in performance due to fire, flood, or any other act of God; strike or other labor difficulty, including the bankruptcy of any suppliers to CITI, act of any civil or military authority or of Purchaser; riot; embargo; delay in or shortage of transportation facilities; or any other delay beyond CITI's reasonable control. In the event CITI's performance is delayed by any such cause, CITI's schedule for performance shall be extended accordingly. If Purchaser's actions delay CITI's performance, Purchaser shall pay CITI any additional costs incurred by CITI resulting from such delay. If Purchaser delays shipment of Products, or any part thereof, in addition to paying CITI for additional costs incurred, Purchaser shall also pay for the Products or the parts on the date CITI is prepared to make shipment.

6. **TAXES AND LICENSES:** The Purchase Price does not include any licenses or State or local taxes of any kind applicable to the sale, use or delivery of the Products or services covered under this Contract. Purchaser shall pay direct or reimburse CITI for any such license fees or taxes that CITI or CITI's subcontractors or suppliers are required to pay.

7. **INSPECTION BY PURCHASER:** Purchaser may inspect the Products at Purchaser's expense at the point of manufacture, provided that such inspection is arranged and conducted so as not to unreasonably interfere with CITI's or the manufacturer's operations. Purchaser's inspection of the Products and release for shipment shall constitute Purchaser's acceptance of the Products as conforming to the requirements of this Contract.

8. **WARRANTY:** CITI warrants the Products from defects in material and workmanship for a period of one (1) year from date the Products are initially placed in operation, or eighteen (18) months from date the Products are shipped, whichever occurs first, provided that the Products are stored, installed, maintained and operated in accordance to the manufacturers recommendations and are protected from harm or damage including but not limited to fire, water, physical damage, exposure to inclement weather, extreme temperatures, and not subjected to misuse, neglect or accident. Upon prompt written notice of and determination that such defect is covered under the foregoing warranty, CITI's responsibility is limited to correction of the

defect by, at CITI's option, repair or replacement of the defective part or parts, f.o.b. factory. CITI will not accept responsibility for incidental or consequential damages. Unless stated elsewhere herein, CITI provides no warranty of product performance or process results. The foregoing warranties are exclusive and in lieu of all other warranties of any kind, including any implied warranty of merchantability or fitness for a particular purpose.

Any products repaired or replaced under this warranty will be warranted for the remainder of the original warranty period. CITI shall have no responsibility for the condition of primed or finish painted surfaces after the Products leave their point of manufacture.

Field touch-up of shop primed or painted surfaces is normal and shall be at Purchaser's expense. Any touch-up or repainting required to shop primed or painted surfaces, for reasons other than improper or incorrect application in the shop, shall be Purchaser's responsibility.

Purchaser shall be responsible for unpacking and inspecting all shipped Products and noting any damage on the shipper's bill of lading. Any damage must be reported to CITI within 48 hours of receipt of shipment by Purchaser.

9. **PAYMENT TERMS.** CITI's payment terms are Net 30 days from date of CITI invoice. If Purchaser is late in paying the Purchase Price or any partial payment due under this Contract, or otherwise breaches this Contract, CITI shall be entitled to interest at 1½% per month on the overdue amount, and on its damages, calculated from the date of default in payment or other breach, plus court costs, reasonable attorneys' fees and other expenses incurred in any effort to collect.

No retainage on the equipment, products, services, or any part thereof, is allowed unless prior approved by CITI. Full retainage release must be made within the earlier of: seven days after purchaser receives payment of retainage, 60 days from the completion of CITI's scope of work, or 180 days after delivery, whichever occurs first.

10. **BACKCHARGES:** CITI shall not be liable for any charges incurred by Purchaser for work, repairs, replacements or alterations to the Products, without CITI's prior written authorization, and any adverse consequences resulting from such unauthorized work shall be Purchaser's full responsibility.

11. **LIMITATION OF LIABILITY:** CITI shall not be liable to purchaser for any special, indirect, incidental or consequential damages arising from CITI's obligations under this contract, whether such damages are based upon breach of contract, breach of warranty, tort, strict liability or otherwise. In any event, CITI's liability to purchaser shall not exceed the purchase price of the products or parts of the products on which such liability is based.

12. **CANCELLATION BY PURCHASER:** If Purchaser cancels this Contract or refuses to accept delivery of the Products, Purchaser shall be liable to CITI for reasonable cancellation charges, including loss of anticipated profits, administrative costs, commissions to sales representatives, costs incurred by CITI for all work performed or in process up to the time of cancellation or refusal to accept delivery, cancellation charges from CITI's suppliers or subcontractors, and any other expenses incurred by CITI in connection with Purchaser's cancellation or refusal to accept delivery.

13. **DEFAULT BY PURCHASER:** Without incurring any liability or waiving any claim for damages CITI may have against Purchaser, CITI may refuse to make or delay making delivery, and/or withhold any service, and/or ship C.O.D., and/or apply payments to open balances at CITI discretion, if:

(a) Purchaser breaches this or any contract with CITI, or; (b) CITI fails to receive payment within 30 days from date of invoice, or; (c) CITI becomes aware of facts which, in its judgment, render Purchaser's financial condition unsatisfactory or cast doubt on Purchaser's willingness or ability to pay for the Products and/or services, or; (d) Purchaser engages in or consents to liquidation, commission of any act of insolvency, appointment of a receiver of assets or assignment for the benefit of creditors, or if Purchaser becomes the subject of any bankruptcy or insolvency proceeding.

Rev 01/20/17

Metropolitan Sewerage District of Buncombe County, North Carolina

CAPITAL IMPROVEMENT PROGRAM

BUDGET DATA SHEET - FY 2017 - 2018

PROJECT:	Weaverville Pump Stations - Soft Start	LOCATION:	Asheville
TYPE:	Treatment Plant	PIPE RATING:	N/A
PROJECT NO.	2017034	TOTAL LF:	0
PROJECT BUDGET:	\$325,000.00	PROJECT ORIGIN:	System Services

DESCRIPTION	ESTIMATED PROJECT COST	TOTAL EXPENDS THRU 12/31/16	EST. COST JAN - JUNE 2017	EST. BUDGET FY 17-18
55310 - PRELIM. ENGINEERING				
55320 - SURVEY - DESIGN				
55330 - DESIGN				
55340 - PERMITS				
55350 - SPECIAL STUDIES				
55360 - EASEMENT PLATS				
55370 - LEGAL FEES				
55380 - ACQUISITION SERVICES				
55390 - COMPENSATION				
55400 - APPRAISAL				
55410 - CONDEMNATION				
55420 - CONSTRUCTION	\$325,000.00			\$325,000.00
55430 - CONST. CONTRACT ADM.				
55440 - TESTING				
55450 - SURVEY - ASBUILT				
TOTAL AMOUNT	\$325,000.00	\$0.00	\$0.00	\$325,000.00

ENGINEER:	MSD	EB	ESTIMATED BUDGETS - FY '19 -'27	
R.O.W. ACQUISITION:	N/A	# PLATS: [0]	FY 18-19	\$0.00
CONTRACTOR:			FY 19-20	\$0.00
CONSTRUCTION ADM.:	N/A		FY 20-21	\$0.00
INSPECTION:	N/A		FY 21-22	\$0.00
PROJECT DESCRIPTION: This project is located at Weaverville #1, #2 and Erwin Hills pump stations. These pump stations experience frequent pump starts due to their full capacity and will benefit greatly from soft start or Variable Frequency Drive (VFD) technology. The results produce less mechanical wear and maintenance.			FY 22-23	\$0.00
			FY 23-24	\$0.00
			FY 24-25	\$0.00
			FY 25-26	\$0.00
			FY 26-27	\$0.00

SPECIAL PROJECT NOTES:



**Weaverville #1 & #2/Erwin Hills - Soft Start
Project No. 2017034**

NOT TO SCALE



METROPOLITAN SEWERAGE DISTRICT
of
BUNCOMBE COUNTY, NORTH CAROLINA

Budget Map

Metropolitan Sewerage District of Buncombe County

Board Action Item

BOARD MEETING DATE: September 20, 2017

SUBMITTED BY: Tom Hartye, P.E. - General Manager

REVIEWED BY: Ed Bradford, P.E. - Engineering Director

PREPARED BY: Kevin Johnson, P.E. - Planning & Development Manager

SUBJECT: Acceptance of Developer Constructed Sewer System for the Craggy Park Phase 1 Subdivision, MSD Project No. 2014164

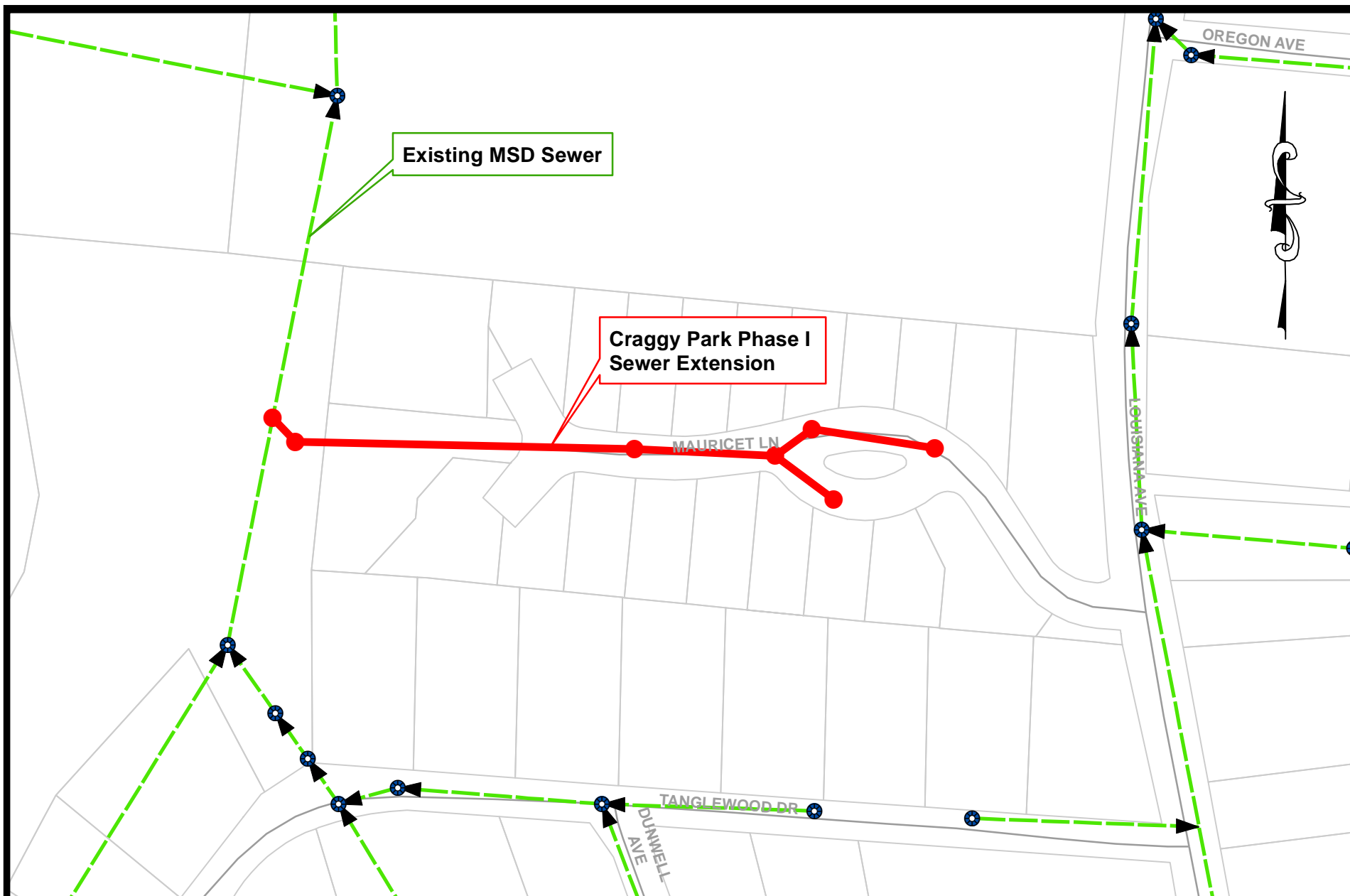
BACKGROUND: This project is located inside the District boundary off Louisiana Road in the City of Asheville. The developer for this project is Brian Nelson of East West Craggy Estate, LLC.

The project included extending approximately 560 linear feet of 8-inch public gravity sewer to serve the development.

A wastewater allocation was issued in the amount of 5,700 GPD for Phase 1 consisting of nineteen (19) single family residential units. The estimated cost of the sewer construction is \$85,000.00.

All MSD requirements have been met.

STAFF RECOMMENDATION: Staff recommends acceptance of this developer constructed sewer system.



MSD
Engineering Division

Craggy Park Phase I Sewer Extension
MSD Project # 2014164
Metropolitan Sewerage District of Buncombe County

09/07/17

Metropolitan Sewerage District of Buncombe County

Board Action Item

BOARD MEETING DATE: September 20, 2017

SUBMITTED BY: Tom Hartye, P.E. - General Manager

REVIEWED BY: Ed Bradford, P.E. - Engineering Director

PREPARED BY: Kevin Johnson, P.E. - Planning & Development Manager

SUBJECT: Acceptance of Developer Constructed Sewer System for the Williams-Baldwin Teacher Campus, MSD Project No. 2015166

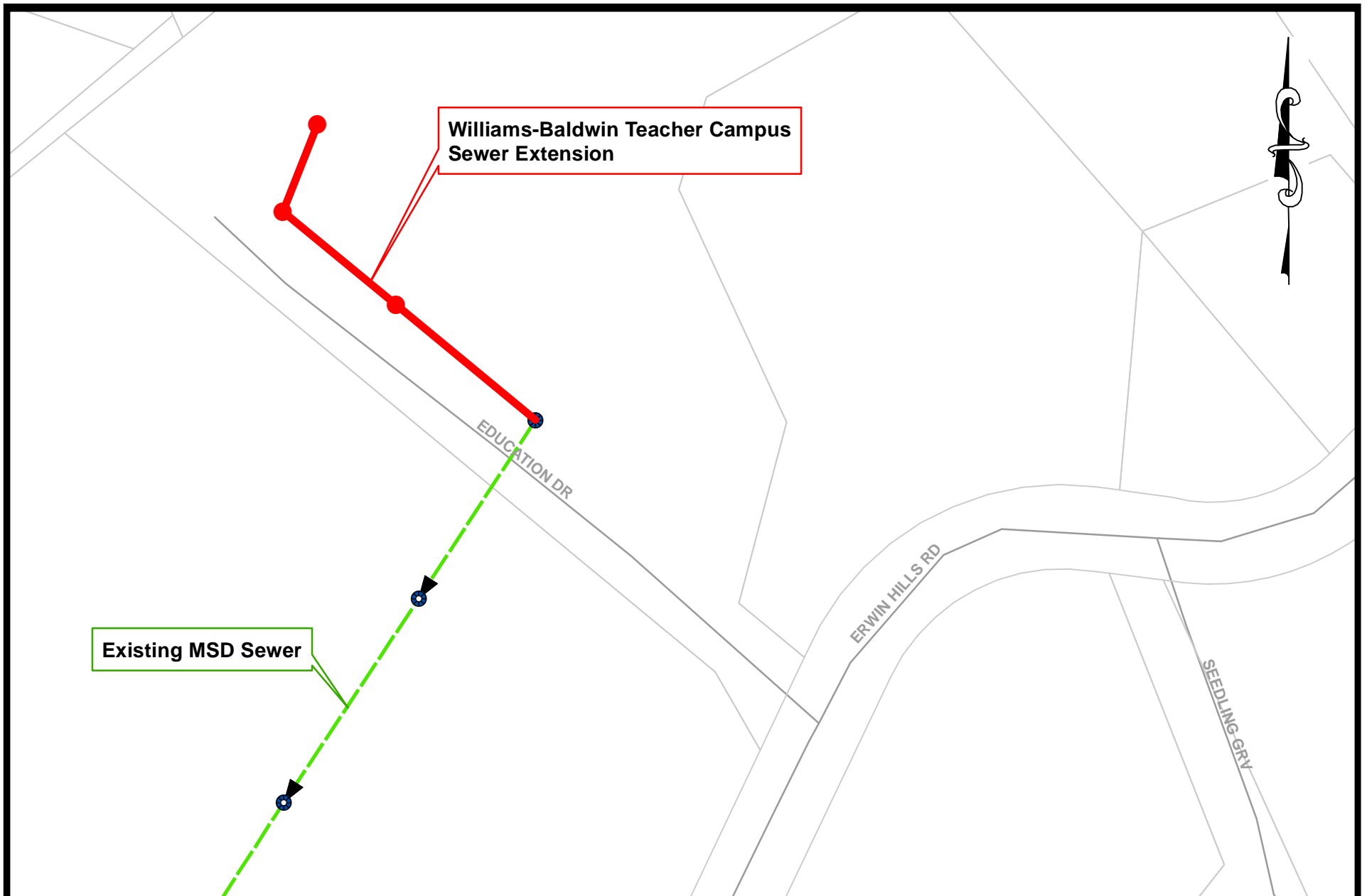
BACKGROUND: This project is located inside the District boundary off Erwin Hills Road in Buncombe County. The developer for this project is Dewey Andrew of Asheville Buncombe Educational Housing, LLC.

The project included extending approximately 311 linear feet of 8-inch public gravity sewer to serve the development.

A wastewater allocation was issued in the amount of 2,400 GPD for the twenty-four (24) unit multi-family residential development. The estimated cost of the sewer construction is \$123,000.00.

All MSD requirements have been met.

STAFF RECOMMENDATION: Staff recommends acceptance of this developer constructed sewer system.



MSD
Engineering Division

Williams-Baldwin Teacher Campus Sewer Extension MSD Project # 2015166

Metropolitan Sewerage District of Buncombe County

09/07/17

Metropolitan Sewerage District of Buncombe County

BOARD INFORMATIONAL ITEM

Meeting Date: September 20, 2017

Submitted By: Thomas E. Hartye, PE., General Manager

Prepared By: W. Scott Powell, CLGFO, Director of Finance
Cheryl Rice, Accounting Manager

Subject: Cash Commitment/Investment Report-Month Ended July 31, 2017

Background

Each month, staff presents to the Board an investment report for all monies in bank accounts and specific investment instruments. The total investments as of July 31, 2017 were \$76,822,612. The detailed listing of accounts is available upon request. The average rate of return for all investments is 0.729%. These investments comply with North Carolina General Statutes, Board written investment policies, and the District's Bond Order.

The attached investment report represents cash and cash equivalents as of July 31, 2017 do not reflect contractual commitments or encumbrances against said funds. Shown below are the total investments as of July 31, 2017 reduced by contractual commitments, bond funds, and District reserve funds. The balance available for future capital outlay is \$19,509,262.

Total Cash & Investments as of 07/31/2017		76,822,612
Less:		
Budgeted Commitments (Required to pay remaining FY18 budgeted expenditures from unrestricted cash)		
Construction Funds	(27,747,030)	
Operations & Maintenance Fund	(15,648,993)	
		(43,396,023)
Bond Restricted Funds		
Bond Service (Funds held by trustee):		
Funds in Principal & Interest Accounts	(33,299)	
FY18 Principal & Interest Due	(8,744,838)	
		(8,778,137)
District Reserve Funds		
Fleet Replacement	(589,939)	
Pump Replacement	(51,213)	
WWTP Replacement	(453,584)	
Maintenance Reserve	(962,631)	
		(2,057,367)
District Insurance Funds		
General Liability	(188,803)	
Worker's Compensation	(120,418)	
Post-Retirement Benefit	(1,566,685)	
Self-Funded Employee Medical	(1,205,915)	
		(3,081,823)
Designated for Capital Outlay		19,509,262

Staff Recommendation

None. Information Only.

Action Taken

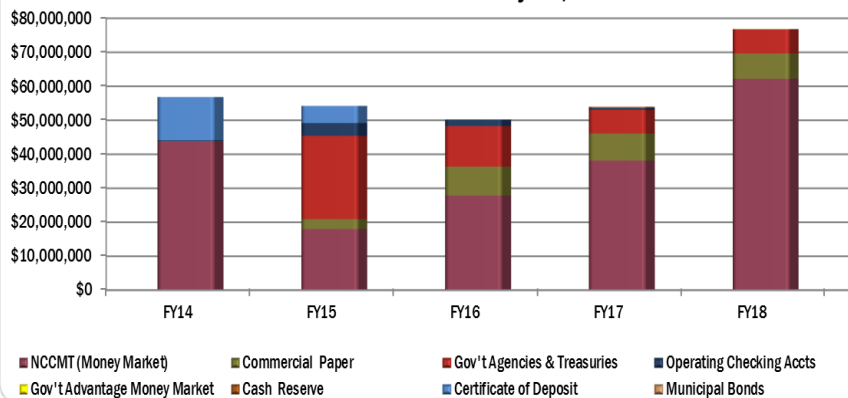
Motion by:	to	Approve	Disapprove
Second by:		Table	Send to Committee
Other:			
Follow-up Required:		Person Required:	Deadline:

Metropolitan Sewerage District of Buncombe County Investment Portfolio

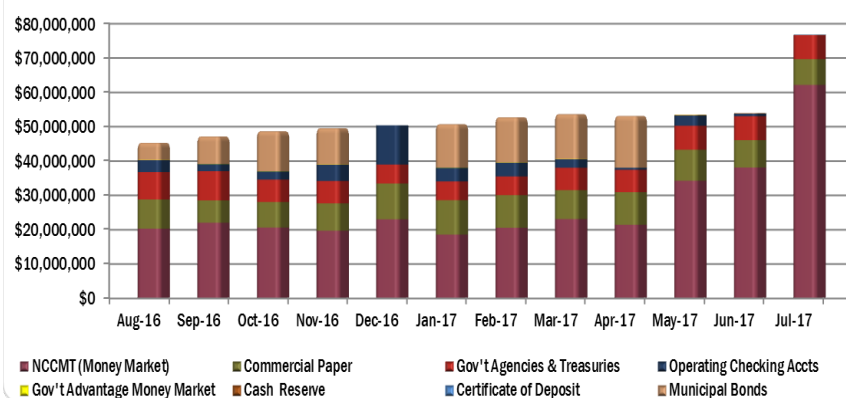
	Operating Checking Accounts	Gov't Advantage Money Market	NCCMT (Money Market)	Certificate of Deposit	Commercial Paper	Municipal Bonds	Cash Reserve	Gov't Agencies & Treasuries	Total
Held with Bond Trustee	\$ -	\$ -	\$ 28,228,757	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,228,757
Held by MSD	93,865	46,674	33,971,328	-	7,488,545	-	-	6,993,443	48,593,855
	\$ 93,865	\$ 46,674	\$ 62,200,085	\$ -	\$ 7,488,545	\$ -	\$ -	\$ 6,993,443	\$ 76,822,612

Investment Policy Asset Allocation	Maximum Percent	Actual Percent	
U.S. Government Treasuries,			
Agencies and Instrumentalities	100%	9.10%	No significant changes in the investment portfolio as to makeup or total amount.
Bankers' Acceptances	20%	0.00%	
Certificates of Deposit	100%	0.00%	
Commercial Paper	20%	9.75%	
Municipal Bonds	100%	0.00%	The District 's YTM of 1.29% is exceeding the YTM benchmarks of the 6 month T-Bill and NCCMT Cash Portfolio.
North Carolina Capital Management Trust	100%	80.97%	
Checking Accounts:	100%		All funds invested in CD's, operating checking accounts, Gov't Advantage money market are fully collateralized with the State Treasurer.
Operating Checking Accounts		0.12%	
Gov't Advantage Money Market		0.06%	

**MSD of Buncombe County
Investment Portfolio - As of July 31, 2017**



**MSD of Buncombe County
Investment Portfolio - 12 Month Trend**

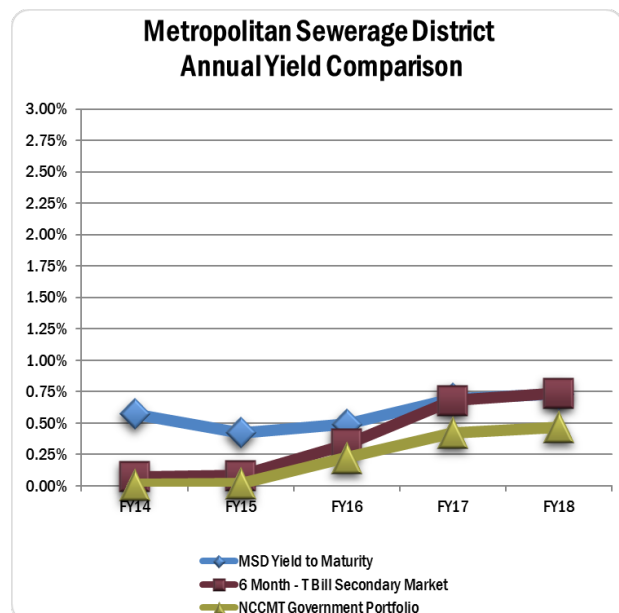
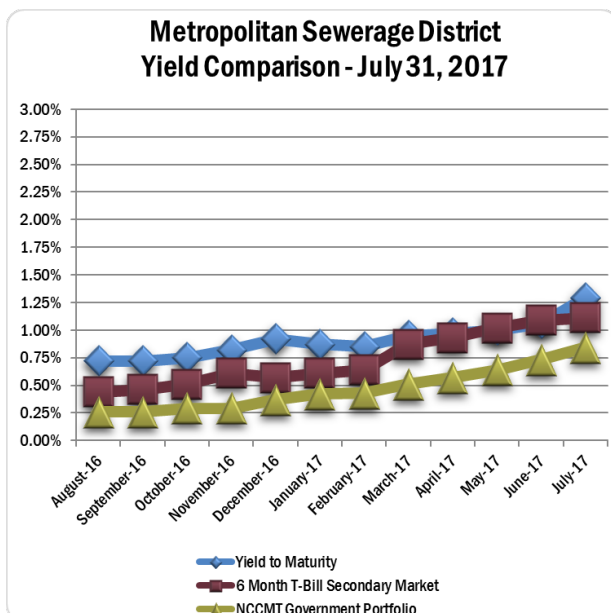


**METROPOLITAN SEWERAGE DISTRICT
INVESTMENT MANAGERS' REPORT
At July 31, 2017**

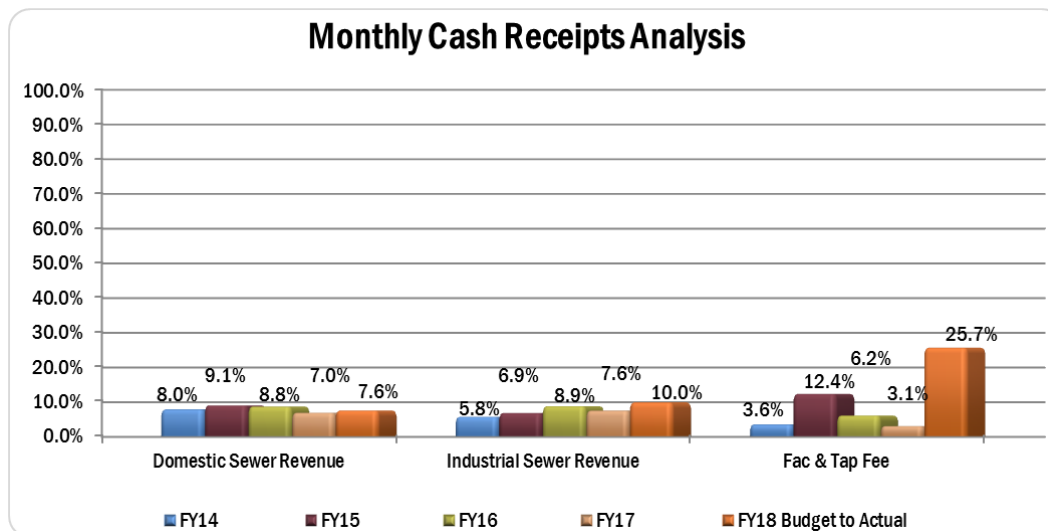
Summary of Asset Transactions			
	Original Cost	Market	Interest Receivable
Beginning Balance	\$ 45,494,378	\$ 45,488,091	\$ 17,150
Capital Contributed (Withdrawn)	729,007	729,007	-
Realized Income	29,706	29,706	(710)
Unrealized/Accrued Income		17,952	5,552
Ending Balance	<u>\$ 46,253,091</u>	<u>\$ 46,264,756</u>	<u>\$ 21,991</u>

Value and Income by Maturity			
	Original Cost	Income	
Cash Equivalents <91 Days	\$ 39,261,349	\$ 44,564	
Securities/CD's 91 to 365 Days	1,992,491	2,262	
Securities/CD's > 1 Year	4,999,250	5,674	
	<u>\$ 46,253,091</u>	<u>\$ 52,500</u>	

Month End Portfolio Information	
Weighted Average Maturity	148
Yield to Maturity	1.29%
6 Month T-Bill Secondary Market	1.11%
NCCMT Government Portfolio	0.84%

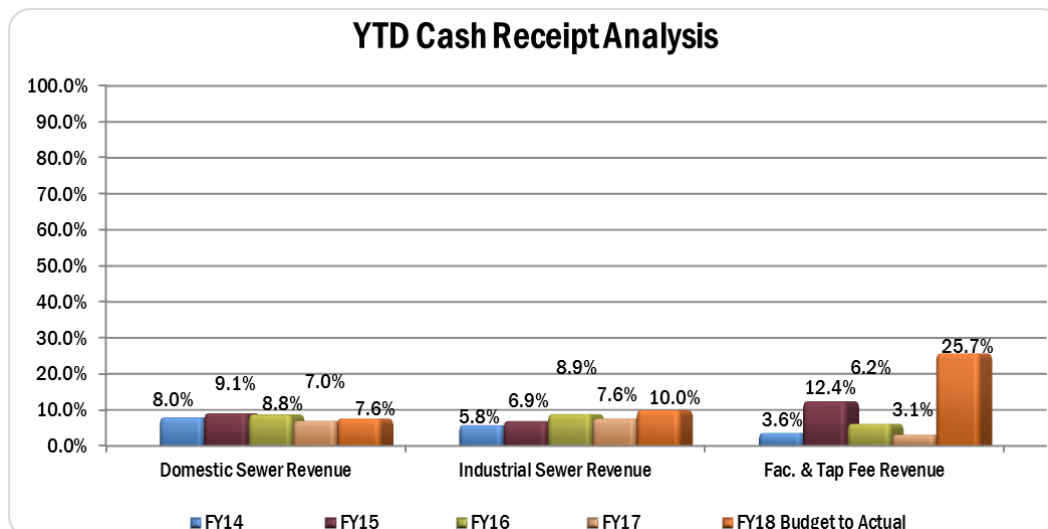


**METROPOLITAN SEWERAGE DISTRICT
ANALYSIS OF CASH RECEIPTS
As of July 31, 2017**



Monthly Cash Receipts Analysis:

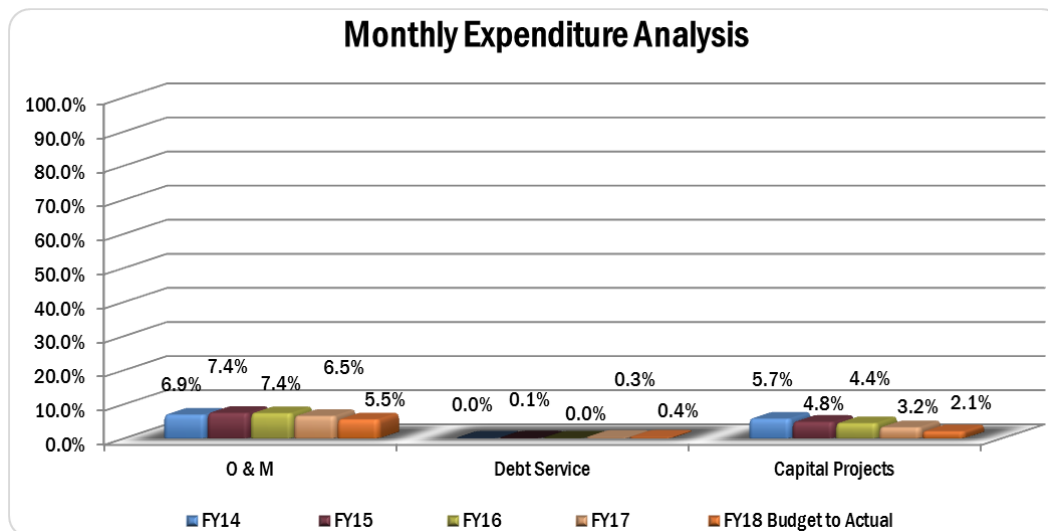
- ◀ Monthly domestic sewer revenue is considered reasonable based on timing of cash receipts in their respective fiscal periods.
- ◀ Monthly industrial sewer revenue is reasonable based on historical trends.
- ◀ Due to the unpredictable nature of facility and tap fee revenue, staff considers facility and tap fee revenue reasonable.



YTD Actual Revenue Analysis:

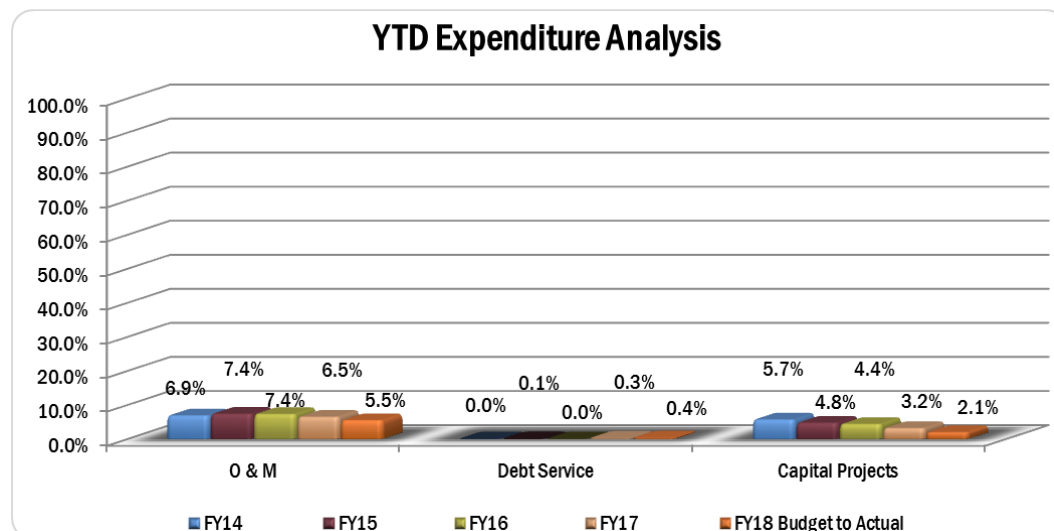
- ◀ YTD domestic sewer revenue is considered reasonable based on historical trends.
- ◀ YTD industrial sewer revenue is reasonable based on historical trends.
- ◀ Due to the unpredictable nature of facility and tap fee revenue, staff considers facility and tap fee revenue reasonable.

**METROPOLITAN SEWERAGE DISTRICT
ANALYSIS OF EXPENDITURES
As of July 31, 2017**



Monthly Expenditure Analysis:

- Monthly O&M expenditures are considered reasonable based on historical trends and timing of expenditures in the current year.
- Due to the nature of the variable rate bond market, monthly expenditures can vary year to year. Based on current variable interest rates, monthly debt service expenditures are considered reasonable.
- Due to nature and timing of capital projects, monthly expenditures can vary from year to year. Based on the current outstanding capital projects, monthly capital project expenditures are considered reasonable.

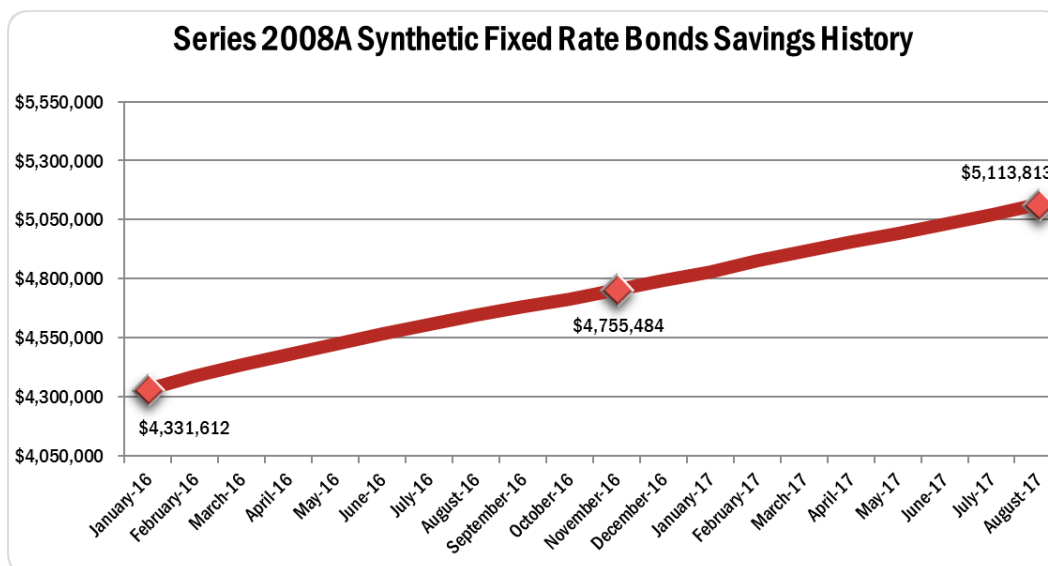
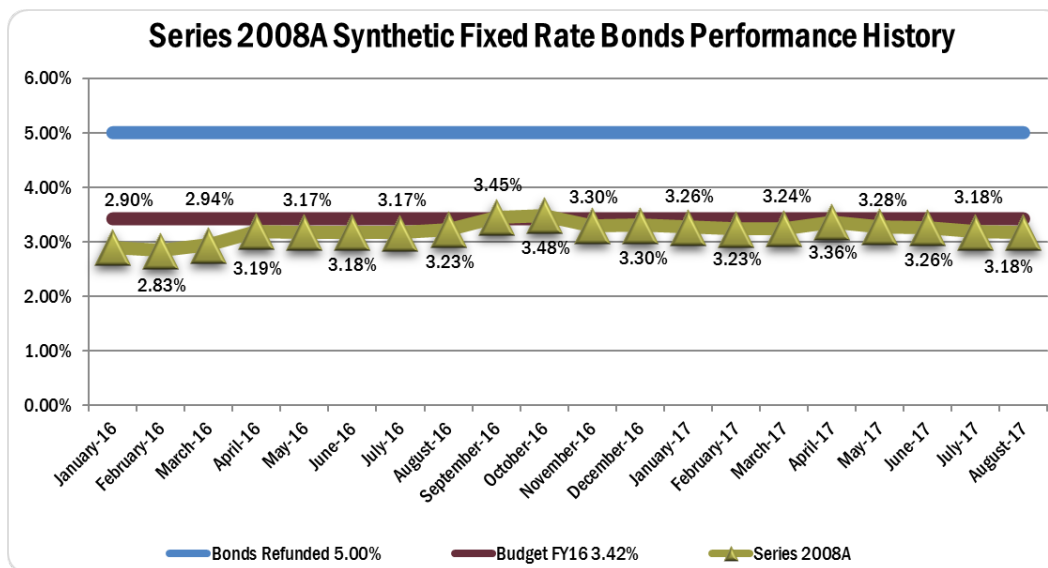


YTD

Expenditure Analysis:

- YTD O&M expenditures are considered reasonable based on historical trends.
- Due to the nature of the variable rate bond market, YTD expenditures can vary year to year. Based on current variable interest rates, YTD debt service expenditures are considered reasonable.
- Due to nature and timing of capital projects, YTD expenditures can vary from year to year. Based on the current outstanding capital projects, YTD capital project expenditures are considered reasonable.

**METROPOLITAN SEWERAGE DISTRICT
VARIABLE DEBT SERVICE REPORT
As of August 31 2017**



Series 2008A:

- Savings to date on the Series 2008A Synthetic Fixed Rate Bonds is \$5,113,813 as compared to 4/1/2008 fixed rate of 4.85%.
- Assuming that the rate on the Series 2008A Bonds continues at the current all-in rate of 3.9475%, MSD will achieve cash savings of \$4,670,000 over the life of the bonds.
- MSD would pay \$4,057,198 to terminate the existing Bank of America Swap Agreement.

STATUS REPORTS

MSD System Services In-House Construction	
FY 17-18 PROJECTS	
1	MSD System Services In-House Construction
2	FY 17-18 PROJECTS

[illegible]

PROJECT NAME	LOCATION	ZIP CODE	ESTIMATED FOOTAGE	ESTIMATED PROJECT DATES	WO#	CREW	COMPLETION DATE	ACTUAL FOOTAGE	NOTES
11 Greenbriar Emergency Repair	Asheville	TBA	50	7/1/17 - 7/10/17	244238	632	7/7/2017	52	complete
Sycamore Drive @ Walnut Street (Phase 2)	Arden	28704	290	7/1/17 - 7/31/17	244350	631	7/14/2017	291	complete
Windsor Road @ Beaverbrook Road	North Asheville	28804	726	7/8/17-7/31/17	228305	632	7/31/2017	725	complete
Nebraska Street Emergency Rehabilitation (Ph. 1)	W. Asheville	28806	415	8/1/17 - 9/1/17	240563	631	8/10/2017	414	complete
Celia Place at Bond Street (Rework)	N. Asheville	28801	250	8/1/17 - 8/11/17	244891	632	8/10/2017	80	complete
Sycamore Drive @ Walnut Street (Phase 3)	Arden	28704	494	9/4/17 - 10/2/17	245100	631	8/30/2017	479	complete
Windsor Road @ Beaverbrook Road (Ph. 2)	North Asheville	28804	250	8/14/17 - 9/1/17	244938	632	8/17/2017	124	complete
Penelope Street @ W. Cotton Ave	Black Mountain	28711	250	9/2/17 - 10/2/17	222331	632			Construction 10% complete
Cedar Lane @ Oak Terrace	Arden	28704	1500	9/5/17 - 9-30/17	237374	631			Construction just begun
185 Mississippi Road	Montreat	28757	125	9/5/17 - 9/12/17	246783	632			Construction scheduled to begin 9/6/17
Rallegth Avenue @ Marietta Street	Asheville	28803	655	10/1/17 - 11/1/17	237100	631			ready for construction
Governors View Road @ Bull Mountain Road	Asheville	28805	785	10/3/17 - 11/3/17	238394	632			Design nearing completion
44 Forsythe St	Asheville	28801	350	11/2/17 - 12/2/17	237035	631			ready for construction
Royal Pines @ Oak Terrace	Arden	28704	1000	FY17-18	237372	TBA			ready for construction
905 Patton Avenue	Asheville	28806	187	FY 16-17	220384	TBA			ready for construction
15 Dew Waite Road	Ridgecrest	28770	533	FY17-18	236553	TBA			In Design
252 Kenilworth Road	Asheville	28803	800	FY17-18	234632	TBA			In Design
26 Wilshire Drive Sewer Rehabilitation	West Asheville	28806	1250	FY17-18	235158	TBA			Preliminary Engineering
Williamette Circle Sanitary Sewer Rehabilitation	Weaverville	28787	183	FY17-18	233748	TBA			In Desaign
817 Montreat Road	Black Mountain	28711	340	FY17-18	228942	TBA			In Design
Lapsley Lane @ Brevard Road	Avery's Creek	28704	576	FY17-18	237319	TBA			Preliminary Engineering
139 Weaverville Road	North Asheville - Woodfin	28804	405	FY17-18	237340	TBA			Preliminary Engineering
Tabernacle Road @ Avena Street	Black Mountain	28711	600	FY17-18	237353	TBA			Preliminary Engineering
38 Dunsmore Avenue	Black Mountain	28711	260	FY17-18	237426	TBA			Preliminary Engineering
Carlyle Way @ Sweeten Creek Rd	South Asheville	28803	100	FY17-18	232211	TBA			Preliminary Engineering
Asheville Country Club Phase 1C	North Asheville	28804	1210	FY17-18	237431	631			In ROW
165 Coleman Avenue	Asheville	28801	200	FY17-18	233875	TBA			Preliminary Engineering
72 Dillingham Road	Asheville	28805	234	FY17-18	39327	TBA			Preliminary Engineering
Sunset Dr. @ Vance Drive	Black Mountain	28711	1010	FY17-18	237499	TBA			Preliminary Engineering
Charlotte Street @ N Ridgeway Avenue	Black Mountain	28711	1073	FY 17-18	232699	TBA			Preliminary Engineering
Empire Drive @ Hendersonville Road	Asheville	28803	287	FY 17-18	229444	TBA			Preliminary Engineering
School Road at Cranford Road	W. Asheville	28806	360	FY 16-17	224943	TBA			ready for construction
4 Westview Rd	Asheville - Oakley	28803	740	FY 16-17	238683	TBA			In Design
Saint Johns Street Force Main Replacement	Arden	28704	1040	FY17-18	28704	TBA			Preliminary Engineering



CONSTRUCTION TOTALS BY DATE COMPLETED - Monthly

From 7/1/2017 to 7/31/2017

	Dig Ups	Emergency Dig Ups	Dig Up ML Ftg	Dig Up SL Ftg	Manhole Repairs	Taps Installed	ROW Ftg	IRS Rehab Ftg *	Const Rehab Ftg *	D-R Rehab Ftg *	Manhole Installs	Bursting Rehab Ftg *	Total Rehab Ftg *
July 2017	34	3	148	1,187	28	28	10,760	0	8	632	11	436	1076
Grand Totals	34	3	148	1,187	28	28	10,760	0	8	632	11	436	1076

* Used to calculate Total Rehab Footage

09/08/2017



PIPELINE MAINTENANCE TOTALS BY DATE COMPLETED - Monthly

July 01, 2017 to July 31, 2017

	Main Line Wash Footage	Service Line Wash Footage	Rod Line Footage	Cleaned Footage	CCTV Footage	Smoke Footage	SL-RAT Footage
2017							
July	98,213	1,440	4,785	102,998	24,704	5,840	3,104
Grand Total:	98,213	1,440	4,785	102,998	24,704	5,840	3,104
Avg Per Month:	98,213	1,440	4,785	102,998	24,704	5,840	3,104



CUSTOMER SERVICE REQUESTS

Monthly - All Crews

CREW	MONTH	JOBS	AVERAGE RESPONSE TIME	AVERAGE TIME SPENT
DAY 1ST RESPONDER				
	July, 2017	93	32	31
		93	32	31
NIGHT 1ST RESPONDER				
	July, 2017	16	29	31
		16	29	31
ON-CALL CREW *				
	July, 2017	41	47	31
		41	47	31
Grand Totals:		150	36	31

* On-Call Crew Hours: 8:00pm-7:30am Monday-Friday, Weekends, and Holidays

CAPITAL IMPROVEMENT PROGRAM

STATUS REPORT SUMMARY

September 13, 2017

PROJECT	LOCATION OF PROJECT	CONTRACTOR	AWARD DATE	NOTICE TO PROCEED	ESTIMATED COMPLETION DATE	*CONTRACT AMOUNT	*COMPLETION STATUS (WORK)	COMMENTS
COMMERCE STREET	Downtown Asheville 28801	Terry Brothers Construction Company	6/14/2017	7/17/2017	10/1/2017	\$190,657.00	60%	Project is going well.
ELKWOOD AVENUE	Woodfin 28804	TBA	TBA	TBA	TBA	TBA	0%	Bids were opened on September 7th. Thomas Construction Company is the apparent low bidder. Project will be presented at the September Board meeting.
FRENO DRIVE PSR	Asheville 28803	Terry Brothers Construction Company	2/15/2017	5/1/2017	9/28/2017	\$511,623.00	98%	Clean up and final inspection yet to be done.
LINING CONTRACT NO. 8	Various	IPR Southeast, LLC	1/18/2017	2/20/2017	10/15/2017	\$777,622.50	90%	Project is progressing well.
LOUISIANA AVENUE @ BRUCEMONT CIRCLE	Asheville 28806	Terry Brothers Construction Company	7/19/2017	8/21/2017	11/19/2017	\$363,252.00	15%	Project is progressing well.
POINT REPAIR CONTRACT NO. 2	Various	Patton Construction Group	7/19/2017	8/14/2017	6/30/2018	\$215,610.00	0%	Contractor is mobilizing to sites for first three point repairs.
PLANT HEADWORKS IMPROVEMENTS	Woodfin 28804	Judy Construction Company	1/18/2017	4/3/2017	2/25/2019	\$8,481,600.00	13%	Walls for the effluent well are being formed. Construction of 48-inch effluent main to diversion structure has begun. Roof work on surge tank electrical room ongoing. Work has begun on Pista Grit vortex chambers. Work to install 12-inch drain to future High Rate Primary project has begun.
SWEETEN CREEK ROAD @ BUSBEE VIEW	Asheville 28803	Terry Brothers Construction Company	2/15/2017	4/10/2017	9/1/2017	\$192,315.00	100%	Complete and in close out.

*Updated to reflect approved Change Orders and Time Extensions

<p style="text-align: center;">Planning & Development Project Status Report</p> <p style="text-align: center;">Active Construction Projects Sorted by Work Location and Project Number</p> <p style="text-align: center;">September 8, 2017</p>								
#	Project Name	Project Number	Work Location	Zip Code	Units	LF	Pre-Construction Conference Date	Comments
1	Isaac Dickson School Relocation	2013033	Asheville	28801	School	504	1/13/2014	Final Inspection complete, awaiting close-out docs
2	Hunt Hill Apartments	2013111	Asheville	28801	180	1,729	3/5/2014	Final Inspection complete, awaiting close-out docs
3	Dillingham Woods	2014048	Asheville	28805	27	375	3/4/2015	Waiting on final inspection - Project delayed
4	Franklin School of Innovation	2014096	Asheville	28806	School	359	11/4/2016	Final Inspection complete, awaiting close-out docs
5	Rivermill Lofts Relocation	2014125	Asheville	28803	254	314	8/21/2015	Waiting on final inspection
6	First Baptist Relocation	2015032	Asheville	28801	Comm.	333	7/21/2015	Final Inspection complete, awaiting close-out docs
7	Ascot Point Apartments Phase 3	2015114	Asheville	28803	104	213	9/9/2016	Punchlist pending, awaiting closeout documents
8	8 Sulphur Springs Road	2015116	Asheville	28806	6	80	11/22/2016	Waiting on final inspection
9	The District	2015113	Asheville	28803	309	912	2/26/2016	Waiting on final inspection
10	Hampton Inn & Suites	2015144	Asheville	28806	Comm.	286	11/8/2016	Waiting on final inspection
11	Fairfield Inn & Suites - Tunnel Road	2015203	Asheville	28805	Comm.	350	4/29/2016	Punchlist pending, awaiting closeout documents
12	Atkins Street	2016009	Asheville	28803	45	903	1/20/2017	Waiting on final inspection
13	88 Southside Avenue	2016015	Asheville	28801	18	400	2/21/2017	Waiting on final inspection
14	Woodbridge Park	2016082	Asheville	28803	20	615	2/17/2017	Waiting on final inspection
15	Hounds Ear (Mears Ave Cottages)	2016123	Asheville	28806	18	402	8/18/2017	Pre-con held, construction not yet started
16	Lausch Subdivision	2016153	Asheville	28805	4	248	5/16/2017	Installing
17	Bear Creek Homes	2016220	Asheville	28806	30	1,400	3/28/2017	Waiting on Final Inspection
18	Grindstaff Subdivision	2016246	Asheville	28805	4	132	6/23/2017	Pre-con held, construction not yet started
19	Shiloh Cottages	2016252	Asheville	28803	7	180	3/3/2017	Pre-con held, construction not yet started
20	Onteora	2017002	Asheville	28803	6	417	7/18/2017	Testing
21	West Keesler Avenue	2007176	Black Mountain	28711	6	410	11/15/2016	Testing
22	Settings at Black Mountain	2008016	Black Mountain	28711	30	907	11/13/2015	Final Inspection complete, awaiting close-out docs
23	808 Montreat Road	2015126	Black Mountain	28711	4	371	4/18/2017	Pre-con held, construction not yet started
24	Tudor Croft (aka Roberts Farm) Ph.2	2016170	Black Mountain	28711	46	1,320	1/3/2017	Installing
25	Swannanoa Valley Christian Min.	2017043	Black Mountain	28711	12	195	8/1/2017	Testing
26	Cherokee Trail	2017065	Black Mountain	28711	4	90	8/18/2017	Pre-con held, construction not yet started
27	Peregrine's Ridge	2006160	Buncombe Co.	28730	14	635	11/8/2016	Waiting on final inspection
28	Hyde Park Phase 2	2013058	Buncombe Co.	28704	14	500	12/3/2013	Waiting on final inspection
29	Creekside Cottages	2014095	Buncombe Co.	28704	7	504	3/12/2015	Final Inspection complete, awaiting close-out docs
30	Governor's Western Residence	2014100	Buncombe Co.	28804	Comm.	636	7/22/2015	Awaiting Easement Plat/Conveyance of Sewer System
31	Glenn Bridge Road	2014157	Buncombe Co.	28704	30	1,400	1/20/2017	Waiting on final inspection
32	Avondale Subdivision	2015052	Buncombe Co.	28803	4	215	4/7/2017	Pre-con held, construction not yet started
33	Greymont Apartments	2015108	Buncombe Co.	28806	312	3,193	5/17/2016	Testing
34	Liberty Oaks Ph. 1A	2015157	Buncombe Co.	28715	125	705	1/17/2017	Waiting on final inspection
35	Bee Tree Village	2015158	Buncombe Co.	28778	26	1,118	3/17/2017	Installing
36	The Haven at Enka Lake	2015191	Buncombe Co.	28715	259	1,595	9/27/2016	Waiting on Final Inspection
37	Greenwood Fileds Phase 1	2015204	Buncombe Co.	28804	158	2,830	6/16/2016	Final Inspection complete, awaiting close-out docs
38	Skyland Exchange	2015217	Buncombe Co.	28704	292	1,090	2/7/2017	Testing
39	Weatherwood Subdivision	2016034	Buncombe Co.	28704	19	785	7/21/2017	Pre-con held, construction not yet started
40	Moody Ave	2016050	Buncombe Co.	28715	3	180	6/15/2017	Final Inspection complete, awaiting close-out docs
41	Long Shoals Apts.	2016070	Buncombe Co.	28704	475	930	7/10/2017	Testing
42	The Preserve at Avery's Creek	2016089	Buncombe Co.	28704	141	4,000	6/16/2017	Installing
43	Long Shoals Village Phase 2	2016109	Buncombe Co.	28704	Comm.	330	8/16/2016	Waiting on testing
44	Biltmore Lake Block I, Phase 3	2016234	Buncombe Co.	28803	23	1,887	5/23/2017	Installing
45	Biltmore Lake Block D2-E	2016243	Buncombe Co.	28803	19	3,265	5/23/2017	Installing
46	The Ramble Block G	2017025	Buncombe Co.	28803	34	1,980	8/29/2017	Pre-con held, construction not yet started
47	The Ramble Block H, Phase 1	2017039	Buncombe Co.	28803	4	1,440	5/23/2017	Testing
48	South Cliff Village	2017041	Buncombe Co.	28730	34	1,345	9/1/2017	Installing
49	Greenwood Park Phase 1	2014067	Weaverville	28787	7	283	9/1/2015	Final Inspection complete, awaiting close-out docs
50	Creekside Village Phases III, IV, & V	2015167	Weaverville	28787	45	1,835	1/17/2017	Testing
51	New Homes at North Main (Crittter)	2016052	Weaverville	28787	54	1,808	2/10/2017	Waiting on Final
52	Maple Trace Phase 3	2016245	Weaverville	28787	24	1,260	5/2/2017	Waiting on Final
53	Crest Mountain Phase 3B	2013041	Woodfin	28806	69	1,329	10/15/2013	Punchlist pending, awaiting closeout documents
54	Reese & Jan Lasher (High Hopes)	2015152	Woodfin	28806	14	320	4/26/2016	Punchlist pending, awaiting closeout documents
55	Ventana Phase 2A	2016059	Woodfin	28806	8	900	2/17/2017	Waiting on Final
56	West Skyland Circle	2016083	Woodfin	28806	4	280	8/15/2017	Pre-con held, construction not yet started
57	Skyfin	2016205	Woodfin	28806	40	978	8/8/2017	Installing
TOTAL					3,392	53,001		