

# **MINUTES**

## **City Council Public Works & Utilities Committee**

**Thursday, May 27, 2021 – 5:30 PM**  
City Council Chambers

Members Present: Maurice Jones, Chair, Council Member (Arrived at 5:44 pm)  
Geraldine Dinkins, Vice-Chair, Council Member  
Jim Fatland, City Manager  
Emory Owen, WWTP Director  
Dennis Richardson, WTP Director

Absent: David Lutz, Public Works Director

Staff Present: Denise Hodsdon, Executive Assistant

Guests: Keith Webb, McGill Associates  
Alvin Fuller, Summit Engineering

### **A. Welcome and Call to Order**

Committee Vice-Chair Geraldine Dinkins called the meeting to order at 5:40 pm.

### **B. Certification of Quorum**

Executive Assistant Denise Hodsdon certified that a quorum was present.

### **C. Approval of Minutes from May 5, 2021 Meeting**

Motion by Mr. Owen, seconded by Mr. Richardson to approve the minutes of the May 5, 2021 meeting as presented. The motion carried unanimously.

### **D. Cathey's Creek French Broad River Intake – Keith Webb, McGill Associates**

Mr. Fatland noted that at the last meeting we had briefly discussed a proposal from McGill Associates for engineering services for a potential future raw water intake and pump station at the confluence of Cathey's Creek and the French Broad River. It was decided that this proposal would be discussed further, together with other potential projects that qualify for American Rescue Plan funds, at this meeting.

Mr. Fatland then introduced Keith Webb of McGill Associates who explained what services are included in their proposal (copy attached). Following Mr. McGill's presentation and further discussion, there was consensus to recommend that City Council approve the proposal from McGill Associates in the amount of \$28,700 for

engineering sturdy for evaluation of future water intake at the confluence of Cathey's Creek and the French Broad River.

#### **E. American Rescue Plan Proposed Projects**

Mr. Fatland noted that at the last meeting, we talked about looking at projects that would qualify for American Rescue Plan funding. Since that meeting, he had a thought that some of these projects may qualify for NCDEQ funding through principal forgiveness and no-interest loans, which would keep ARP funds for some other projects that would not qualify for NCDEQ funding.

Alvin Fuller of Summit Engineering reviewed the projects they have looked at. These projects include water line improvements, water storage tank projects, water distribution projects, greenway projects and pump station improvements. A copy of Mr. Fuller's memo and project cost estimates is attached. Mr. Fuller said the lift station projects and the waterline replacement projects would qualify for SRF principal forgiveness and no-interest loan funding. He said according to NCDEQ, the water storage tanks would be considered an addition versus a repair or replacement and would not score as high for SRF funding. Mr. Fuller said he is still looking for confirmation that ARP funds can be used for greenway projects.

Mr. Fatland said that they have now added stormwater infrastructure as eligible for ARP funding and we want to discuss adding some stormwater projects to the list.

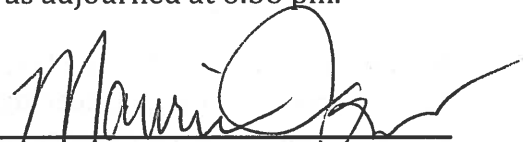
Mr. Fuller will work up a spreadsheet identifying water, sewer and stormwater projects, cost estimates and potential funding sources for each project to present to City Council at its Budget Workshop on June 7th.

#### **F. Set Date for Next Meeting**

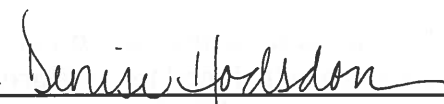
The Public Works & Utilities Committee will meet again as needed.

#### **G. Adjourn**

There being no further business, the meeting was adjourned at 6:58 pm.

X   
Maurice Jones  
Chair, Council Member

Minutes Approved: December 13 2021

X   
Denise Hodsdon  
Executive Assistant

May 3, 2021

Mr. Dennis Richardson – Water Treatment Facility ORC  
City of Brevard  
95 West Main Street  
Brevard, North Carolina 28712

RE: Potential Raw Water Intake  
Confluence Catheys Creek and French Broad River  
Proposal for Engineering Services

Dear Dennis:

McGill Associates appreciates this opportunity to provide consulting engineering services to the City of Brevard for a potential future raw water intake and pump station at the confluence of Catheys Creek and the French Broad River. The intake and pump station would be designed to pump raw water from the new intake location to the City's existing water treatment plant to provide the additional water supply needed to meet current and future demands in the event of drought conditions. Along with the raw water intake and transmission line a future expansion of the water plant will be required as demands grow to exceed the current treatment plant capacity to enable the City to meet these demands.

This proposal focuses on providing engineering services to the City to evaluate the potential raw water intake site and prepare a preliminary intake and pump station layout along with a preliminary routing of the raw water line to convey raw water to the existing Catheys Creek water treatment plant. This first phase effort is to provide the information needed for the City to purchase property (or enter into a long-term lease) for the intake/pump station site and easements for the raw water line across private property where required.

McGill proposes to provide the following scope of services associated with this first phase:

1. Utilizing GIS information available from Transylvania County prepare a base map for the project site showing property lines and property ownership.
2. Utilizing LIDAR topographic information available from NC One Map or other similar information services prepare a base map for the proposed raw water intake/pump station site with topographic information. Include on this map available base flood information.

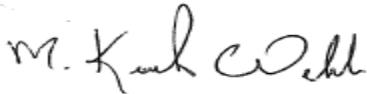
3. Provide a project design memorandum describing the available intake options including a side-stream intake with screening, in channel screen with air burst cleaning, and an off-channel pre-sedimentation channel conveying water to the pump station. The design memorandum will provide preliminary intake and pump station layout for a raw water intake with capacity for 4.0 MGD and the ability to be expanded. The pump station will also provide space for the inclusion of an irrigation pump in the event the adjacent property owners are interested in the installation of an irrigation system utilizing the raw water intake (at their costs) in exchange for easement rights for the raw water line.
4. Provide a preliminary site plan for the proposed raw water intake and pump station based upon the intake configuration agreed upon from the design memorandum described in Task 3. The purpose of this presentation is to begin discussions with the property owner as to the willingness to sell the property or grant easements. Included with the preliminary site plan McGill will provide building sections and a preliminary architectural rendering of pump station building. The preliminary site plan will include a recommendation as to the amount of property required for the intake, pump station and site access road.
5. Prepare a base map and route location for the proposed raw water line from the intake/pump station to the Catheys Creek Water Plant. The base map will identify existing rights-of-ways as well as private property owners along the route.
6. Assist the City of Brevard in meeting with private property owners to discuss the proposed raw water intake and pump station, access road and raw water transmission lines to provide additional information to these property owners as needed.
7. On behalf of the City of Brevard meet with representative of Transylvania County and the Town of Rosman to discuss the project and the need for reclassification of the watershed to a WS-IV designation and obtain feedback and input. Upon completion of the meeting convey this information to the City.
8. On behalf of the City of Brevard meet with representative of North Carolina Department of Environmental Quality – Division of Water Resources to outline the preliminary details of the project and to obtain feedback as to regulations and future permitting steps once the project moves to the Phase Two Design stage. These discussions will include the steps and procedures for the reclassification of Catheys Creek and/or the French Broad River to a WS-IV water supply.
9. Summarize the information associated with the preliminary site plans, raw water intake and pump station design and future permitting in the form of a final report.

10. If required and requested present the preliminary design and report to council as information for consideration of action items.

McGill Associates proposes to provide the above scope of services, if acceptable, for the Lump Sum fee of \$28,700. Should you have any questions or need additional information please let me know. If this proposal is acceptable, I can provide a formal contract, or I have provided a location below for signature and acceptance.

Sincerely,

McGILL ASSOCIATES, P.A.



M. KEITH WEBB, P.E.  
Vice President

Cc: Jim Fatland – Brevard City Manager  
MJ Chen – McGill  
Michael Whittenburg - McGill

P:\2021\2100326\marketing\dr 4may21 raw water intake

**ACCEPTANCE – City of Brevard**

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Jim Fatland – City Manager



**Summit Engineering Group, Inc.**  
9601 Warren H. Abernathy Hwy.  
Spartanburg, SC 29301  
Tel: (864) 949-1111  
Fax: (864) 949-1110

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## MEMORANDUM

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**To:** David Lutz, Public Works Director – City of Brevard  
**From:** Alvin Fuller, Jr., PE, Sr. Vice President – Summit Engineering Group of NC, Inc.  
**Date:** March 23, 2021  
**Subject:** American Rescue Plan – Potential Projects Discussion

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### Overview

Tuesday, March 23, 2021, Alvin Fuller of Summit Engineering Group met with the City of Brevard Public Works Director and Assistant Public Works Director to discuss infrastructure projects that may qualify for funding under the new America Rescue Plan Act of 2021, a \$1.9 Trillion stimulus bill. The bill includes nearly \$350 Billion intended for states and local government, with \$219.8B to States and \$130.2B to local governments (\$65.1B for counties and \$65.1B for cities).

### 4 Primary State and Local Government Items Eligible for Funding

- 1) Responding to COVID-19 emergency  
(aid to households, small business, etc.) (including, tourism & hospitality)
- 2) Premium pay to essential employees
- 3) Providing government services affected by revenue reduction  
(sales taxes, services fees, etc.)
- 4) Investment in water, sewer, and broadband infrastructure

***Funds cannot be spent to support pension plans and loss of revenue due to planned tax decreases.***

Guidance documents for the program are forthcoming.

### Projects Discussed

❖ Water Storage Tank Projects - to provide redundancy at the 4 existing water storage tank sites

The existing tanks have not been serviced (washed out, repainted, etc.) because there are no alternate water sources for the impacted areas, as 4 of the 5 Brevard tank sites only have a single tank. Tank inspection reports have identified multiple repairs and maintenance procedures that must be performed, but the Town are unable to execute said repairs, as some will put the affected communities out of water for weeks. Providing an additional tank at each of these sites will allow the Town to properly maintain the infrastructure. Tank sites include:

- Deerlake Tank Site
- Walmart Tank Site
- Burrell Maintain Tank Site

- Strauss Park Tank Site

The addition of mixers at each of these tank sites was also discussed. The proposed mixers are intended to improve and/or maintain water quality. **We suggest that samples be taken at each tank site and the extremities of the associated service areas to determine if there are any water quality issues.**

❖ Water Distribution Projects

- Illahee Hills water line repairs
- Allison Road – replacement of 1,000 l.f. of 8" ACP
- Boxwood Lane – replacement of 450 l.f. of 2" galvanized
- Maple Street – replace 300 l.f. of 4" with new 6" DIP
- Hampton Road – relocation of an ex. water line located within 3' – 4' of homes
- White Oak Lane – relocation of an ex. water line located under a home

❖ Greenway Projects

- Greenway from Rosman Hwy. to N. Country Club Road
- Greenway from Silversteen Park to Rosman Hwy.

❖ Other potential projects (requires further conversation with other departments)

- Pisgah Forest Pump Station Improvements – Wayne Sims
- Wilson Road Pump Station and Forcemain Improvements – Wayne Sims
- Drying Beds at WTP – Dennis Richardson

Next Steps

- Contact State regarding administration and guidance
- Obtain application and guidelines
- Determine scoring criteria
- Workshop to develop a list of eligible projects
- Prioritize projects based on likelihood of funding and City's needs

## WATER IMPROVEMENTS EXHIBIT "A"

ENGINEER'S OPINION OF PROBABLE COST

ARP Proposed Water Line Improvements

City of Brevard

➔ (SRF RECOMMENDED)

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A. Construction Contract:</b>					
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$140,000.00	\$140,000.00
2	8" DIP, Cl. 350 (Push-On Jt.)	1,600	LF	\$65.00	\$104,000.00
3	6" DIP, Cl. 350 (Push-On Jt.)	7,800	LF	\$60.00	\$468,000.00
4	2" PVC, Cl. 200	600	LF	\$25.00	\$15,000.00
5	Valves				
	a. 8" Gate Valve	5	Ea	\$1,750.00	\$8,750.00
	b. 6" Gate Valve	14	Ea	\$1,500.00	\$21,000.00
	c. 2" Gate Valve	3	Ea	\$1,200.00	\$3,600.00
6	Fire Hydrant Assembly	8	EA	\$5,000.00	\$40,000.00
7	3/4" Blow-off	1	EA	\$1,250.00	\$1,250.00
8	Connect to Ex. Water Distribution Main:				
	a. 8" Cut-In	1	Ea.	\$6,000.00	\$6,000.00
	b. 6-inch Cut-In	2	Ea.	\$5,000.00	\$10,000.00
	c. 6-inch Connection (6"x6" Tapping Sleeve)	6	Ea	\$4,000.00	\$24,000.00
	d. 2-inch Connection (6"x2" Tapping Sleeve)	4	Ea	\$1,500.00	\$6,000.00
8	Cut & Plug Ex. Waterlines				
	a. 8" Water Line	2	Ea	\$1,250.00	\$2,500.00
	b. 6" Water Line	8	Ea	\$1,000.00	\$8,000.00
	c. 2" Water Line	1	Ea	\$750.00	\$750.00
9	New Water Service (3/4" Residential Service)				
	a. Short Side Service (includes tap, meter, dual check, piping, etc. to meter)	58	Ea	\$1,750.00	\$101,500.00
	b. Long Side Service (includes tap, meter, dual check, piping, etc. to meter)	55	Ea	\$2,500.00	\$137,500.00
10	Grassing & Erosion/Sediment Control	2	Ac	\$15,000.00	\$25,895.32
11	Testing:				
	a. Pressure / Leakage / Sterilization	9,400	LF	\$1.50	\$14,100.00
	b. Compaction	9	EA	\$250.00	\$2,350.00
12	Pavement Replacement:				
	a. Trench Line Patch - Roadway	5,700	LF	\$30.00	\$171,000.00
	b. Trench Line Patch - Driveways	160			
	c. Pavement Milling	6,250	SY	\$10.00	\$62,500.00
	d. Asphalt Overlay Pavement	6,250	SY	\$25.00	\$156,250.00
13	Classified Excavation	279	CY	\$150.00	\$41,777.78
	<b>Construction Sub-Total</b>				<b>\$1,571,723.09</b>
	<b>Contingency (10%)</b>				<b>\$157,172.31</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$1,729,000.00</b>
<b>B. Non-Construction Costs:</b>					
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$95,000.00	\$95,000.00
	b. Bidding Services	1	LS	\$10,000.00	\$10,000.00
	c. Construction Administration & Inspection Services	1	LS	\$111,000.00	\$111,000.00
	d. Project Close-out	1	LS	\$30,000.00	\$30,000.00
2	Regulatory Permitting Fees	1	LS	\$5,000.00	\$5,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$251,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$1,980,000.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Hampton, Whitmire, Kings Mill, & White Oak Water Line Improvements  
City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A. Construction Contract:</b>					
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$60,000.00	\$60,000.00
2	8" DIP, Cl. 350 (Push-On Jt.)	1,600	LF	\$65.00	\$104,000.00
3	6" DIP, Cl. 350 (Push-On Jt.)	1,900	LF	\$60.00	\$114,000.00
4	Valves				
	a. 8" Gate Valve	5	Ea	\$1,750.00	\$8,750.00
	b. 6" Gate Valve	5	Ea	\$1,500.00	\$7,500.00
	c. 2" Gate Valve	2	Ea	\$1,200.00	\$2,400.00
5	Fire Hydrant Assembly	3	EA	\$5,000.00	\$15,000.00
6	Connect to Ex. Water Distribution Main:				
	a. 8" Cut-In	1	Ea.	\$6,000.00	\$6,000.00
	b. 6-inch Connection (6"x6" Tapping Sleeve)	2	Ea	\$4,000.00	\$8,000.00
	c. 2-inch Connection (6"x2" Tapping Sleeve)	2	Ea	\$1,500.00	\$3,000.00
7	Cut & Plug Ex. Waterlines				
	a. 8" Water Line	2	Ea	\$1,250.00	\$2,500.00
	b. 6" Water Line	2	Ea	\$1,000.00	\$2,000.00
8	New Water Service (3/4" Residential Service)				
	a. Short Side Service (includes tap, meter, dual check, piping, etc. to meter)	25	Ea	\$1,750.00	\$43,750.00
	b. Long Side Service (includes tap, meter, dual check, piping, etc. to meter)	10	Ea	\$2,500.00	\$25,000.00
9	Grassing & Erosion/Sediment Control	1.00	Ac	\$15,000.00	\$15,000.00
10	Testing:				
	a. Pressure / Leakage / Sterilization	3,500	LF	\$1.50	\$5,250.00
	b. Compaction	10	EA	\$250.00	\$2,500.00
11	Pavement Replacement:				
	a. Trench Line Patch - Roadway	2,700	LF	\$30.00	\$81,000.00
	c. Pavement Milling	3,000	SY	\$10.00	\$30,000.00
	d. Asphalt Overlay Pavement	3,000	SY	\$25.00	\$75,000.00
12	Classified Excavation	50	CY	\$150.00	\$7,500.00
	<b>Construction Sub-Total</b>				<b>\$618,150.00</b>
	<b>Contingency (10%)</b>				<b>\$61,815.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$680,000.00</b>
<b>B. Non-Construction Costs:</b>					
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$31,000.00	\$31,000.00
	b. Bidding Services	1	LS	\$5,000.00	\$5,000.00
	c. Construction Administration & Inspection Services	1	LS	\$31,000.00	\$31,000.00
	d. Project Close-out	1	LS	\$6,200.00	\$6,200.00
2	Regulatory Permitting Fees	1	LS	\$1,500.00	\$1,500.00
	<b>Non-Construction Sub-Total</b>				<b>\$74,700.00</b>
<b>Total Estimated Project Budget</b>					<b>\$754,700.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Chickadee Lane Water Line Improvements

City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$30,000.00	\$30,000.00
3	6" DIP, Cl. 350 (Push-On Jt.)	3,000	LF	\$60.00	\$180,000.00
4	Valves				
	a. 6" Gate Valve	4	Ea	\$1,750.00	\$7,000.00
5	Fire Hydrant Assembly	3	EA	\$5,000.00	\$15,000.00
6	Connect to Ex. Water Distribution Main:				
	a. 6-Inch Connection (6"x6" Tapping Sleeve)	1	Ea	\$4,000.00	\$4,000.00
	b. 2-Inch Connection (6"x2" Tapping Sleeve)	1	Ea	\$1,500.00	\$1,500.00
7	Cut & Plug Ex. Waterlines				
	b. 6" Water Line	2	Ea	\$1,000.00	\$2,000.00
8	New Water Service (3/4" Residential Service)				
	a. Short Side Service (includes tap, meter, dual check, piping, etc. to meter)	8	Ea	\$1,750.00	\$14,000.00
	b. Long Side Service (includes tap, meter, dual check, piping, etc. to meter)	16	Ea	\$2,500.00	\$40,000.00
9	Grassing & Erosion/Sediment Control	1.00	Ac	\$15,000.00	\$15,000.00
10	Testing:				
	a. Pressure / Leakage / Sterilization	3,000	LF	\$1.50	\$4,500.00
	b. Compaction	10	EA	\$250.00	\$2,500.00
11	Pavement Replacement:				
	a. Trench Line Patch - Roadway	100	LF	\$30.00	\$3,000.00
	b. Trench Line Patch - Driveways	160	LF	\$30.00	\$4,800.00
12	Classified Excavation	50	CY	\$150.00	\$7,500.00
	<b>Construction Sub-Total</b>				<b>\$330,800.00</b>
	<b>Contingency (10%)</b>				<b>\$33,080.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$364,000.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$17,000.00	\$17,000.00
	b. Bidding Services	1	LS	\$5,000.00	\$5,000.00
	c. Construction Administration & Inspection Services	1	LS	\$17,000.00	\$17,000.00
	d. Project Close-out	1	LS	\$5,000.00	\$5,000.00
2	Regulatory Permitting Fees	1	LS	\$1,500.00	\$1,500.00
	<b>Non-Construction Sub-Total</b>				<b>\$45,500.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$409,500.00</b>

**WATER IMPROVEMENTS**  
**ENGINEER'S OPINION OF PROBABLE COST**  
**Allison Road 6" Water Line Replacement**  
**City of Brevard**

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$50,000.00	\$50,000.00
2	6" Water Line (Open Cut)				
	a. 6" DIP, Cl. 350 (Push-On Jt.)	2,500	LF	\$65.00	\$162,500.00
3	Valves				
	a. 6" Gate Valve	3	Ea	\$1,750.00	\$5,250.00
4	Fire Hydrant Assembly	1	EA	\$5,000.00	\$5,000.00
5	Connect to Ex. Water Distribution Main:				
	a. 6-Inch Connection (6"x6" Tapping Sleeve)	3	Ea	\$4,000.00	\$12,000.00
6	Cut & Plug Ex. Waterlines				
	a. 6" Water Line	1	Ea	\$1,200.00	\$1,200.00
7	New Water Service (3/4" Residential Service)				
	a. Short Side Service (includes tap, meter, dual check, piping, etc. to meter)	18	Ea	\$1,750.00	\$31,500.00
	b. Long Side Service (includes tap, meter, dual check, piping, etc. to meter)	20	Ea	\$2,500.00	\$50,000.00
8	Grassing & Erosion/Sediment Control	0.10	Ac	\$15,000.00	\$1,500.00
9	Testing:				
	a. Pressure / Leakage / Sterilization	2,500	LF	\$1.50	\$3,750.00
	b. Compaction	3	EA	\$250.00	\$750.00
10	Pavement Replacement:				
	a. Trench Line Patch - Roadway	2,500	LF	\$40.00	\$100,000.00
	b. Trench Line Patch - Driveway/Parking Lot	0	LF	\$30.00	\$0.00
	c. Pavement Milling	2,800	SY	\$10.00	\$28,000.00
	d. Asphalt Overlay Pavement	2,800	SY	\$25.00	\$70,000.00
11	Classified Excavation	100	CY	\$150.00	\$15,000.00
	<b>Construction Sub-Total</b>				<b>\$536,450.00</b>
	<b>Contingency (10%)</b>				<b>\$53,645.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$590,095.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$30,000.00	\$30,000.00
	b. Bidding Services	1	LS	\$2,500.00	\$2,500.00
	c. Construction Administration & Inspection Services	1	LS	\$17,000.00	\$17,000.00
	d. Project Close-out	1	LS	\$3,500.00	\$3,500.00
2	Regulatory Permitting Fees	1	LS	\$1,000.00	\$1,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$54,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$644,095.00</b>

**WATER IMPROVEMENTS**  
**ENGINEER'S OPINION OF PROBABLE COST**  
**Boxwood Lane 2" Water Line Extension**  
**City of Brevard**

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$10,000.00	\$10,000.00
2	2" Water Line (Open Cut)				
	a. 2" PVC, Cl. 200	600	LF	\$25.00	\$15,000.00
3	Valves				
	b. 2" Gate Valve	1	Ea	\$1,000.00	\$1,000.00
4	Blow-Off Assembly				
	b. 2-inch Connection (6"x2" Tapping Sleeve)	1	Ea	\$1,500.00	\$1,500.00
5	Cut & Plug Ex. Waterlines				
	a. 2" Water Line or Smaller	2	Ea	\$1,000.00	\$2,000.00
6	New Water Service (3/4" Residential Service)				
	a. Short Side Service (includes tap, meter, dual check, piping, etc. to meter)	3	Ea	\$1,750.00	\$5,250.00
	b. Long Side Service (includes tap, meter, dual check, piping, etc. to meter)	5	Ea	\$2,500.00	\$12,500.00
7	Grassing & Erosion/Sediment Control	0.10	Ac	\$15,000.00	\$1,500.00
8	Testing:				
	a. Pressure / Leakage / Sterilization	600	LF	\$1.50	\$900.00
	b. Compaction	1	EA	\$250.00	\$250.00
9	Classified Excavation	25	CY	\$150.00	\$3,750.00
	<b>Construction Sub-Total</b>				<b>\$154,150.00</b>
	<b>Contingency (10%)</b>				<b>\$15,415.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$169,565.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$30,000.00	\$30,000.00
	b. Bidding Services	1	LS	\$2,500.00	\$2,500.00
	c. Construction Administration & Inspection Services	1	LS	\$17,000.00	\$17,000.00
	d. Project Close-out	1	LS	\$3,500.00	\$3,500.00
2	Regulatory Permitting Fees	1	LS	\$1,000.00	\$1,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$54,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$223,565.00</b>

**WATER IMPROVEMENTS**  
**ENGINEER'S OPINION OF PROBABLE COST**  
**Maple Street 6" Water Line Replacement**  
**City of Brevard**

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$10,000.00	\$10,000.00
2	6" Water Line (Open Cut)				
	a. 6" DIP, Cl. 350 (Push-On Jt.)	400	LF	\$65.00	\$26,000.00
3	Valves				
	a. 6" Gate Valve	3	Ea	\$1,750.00	\$5,250.00
4	Fire Hydrant Assembly	1	EA	\$5,000.00	\$5,000.00
5	Connect to Ex. Water Distribution Main:				
	a. 6-inch Connection (6"x6" Tapping Sleeve)	1	Ea	\$6,000.00	\$6,000.00
	b. 4-inch Connection (4"x4" Tapping Sleeve)	1	Ea	\$5,000.00	\$5,000.00
6	Cut & Plug Ex. Waterlines				
	a. 6" Water Line	1	Ea	\$1,200.00	\$1,200.00
7	New Water Service (3/4" Residential Service)				
	a. Short Side Service (includes tap, meter, dual check, piping, etc. to meter)	4	Ea	\$1,750.00	\$7,000.00
	b. Long Side Service (includes tap, meter, dual check, piping, etc. to meter)	4	Ea	\$2,500.00	\$10,000.00
8	Grassing & Erosion/Sediment Control	0.10	Ac	\$15,000.00	\$1,500.00
9	Testing:				
	a. Pressure / Leakage / Sterilization	400	LF	\$1.50	\$600.00
	b. Compaction	1	EA	\$250.00	\$250.00
10	Pavement Replacement:				
	a. Trench Line Patch - Roadway	400	LF	\$40.00	\$16,000.00
	b. Trench Line Patch - Driveway/Parking Lot	0	LF	\$30.00	\$0.00
	c. Pavement Milling	450	SY	\$10.00	\$4,500.00
	d. Asphalt Overlay Pavement	450	SY	\$25.00	\$11,250.00
11	Classified Excavation	15	CY	\$150.00	\$2,250.00
	<b>Construction Sub-Total</b>				<b>\$111,800.00</b>
	<b>Contingency (10%)</b>				<b>\$11,180.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$122,980.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$30,000.00	\$30,000.00
	b. Bidding Services	1	LS	\$2,500.00	\$2,500.00
	c. Construction Administration & Inspection Services	1	LS	\$17,000.00	\$17,000.00
	d. Project Close-out	1	LS	\$3,500.00	\$3,500.00
2	Regulatory Permitting Fees	1	LS	\$1,000.00	\$1,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$54,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$176,980.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Water System Tank Additions

City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$250,000.00	\$250,000.00
2	Walmart Tank Improvements	1	LS	\$791,000.00	\$791,000.00
3	Straus Park Tank Improvements	1	LS	\$573,500.00	\$573,500.00
4	Deer Lake Tank Improvements	1	LS	\$523,500.00	\$523,500.00
5	Burrell Mountain Tank Improvements	1	LS	\$598,500.00	\$598,500.00
	<b>Construction Sub-Total</b>				<b>\$2,736,500.00</b>
	<b>Contingency (10%)</b>				<b>\$273,650.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$3,010,000.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	<b>Engineering &amp; Inspection Services:</b>				
	a. Basic Design Engineering Services	1	LS	\$165,000.00	\$165,000.00
	b. Bidding Services	1	LS	\$15,000.00	\$15,000.00
	c. Construction Administration & Inspection Services	1	LS	\$219,000.00	\$219,000.00
	d. Project Close-out	1	LS	\$12,000.00	\$12,000.00
2	Regulatory Permitting Fees	1	LS	\$5,000.00	\$5,000.00
3	Property Acquisitions	4	LS	\$25,000.00	\$100,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$516,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$3,526,000.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Walmart Tank Addition

City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$80,000.00	\$80,000.00
2	Tank Construction	1	LS	\$490,000.00	\$490,000.00
3	Site Grading	1	LS	\$125,000.00	\$125,000.00
4	Site Piping	1	LS	\$50,000.00	\$50,000.00
5	Fencing	200	LF	\$30.00	\$6,000.00
6	Grassing & Erosion/Sediment Control	1.50	Ac	\$25,000.00	\$37,500.00
7	Testing:				
	a. Pressure / Leakage / Sterilization	1	LS	\$5,000.00	\$5,000.00
	b. Compaction	10	EA	\$250.00	\$2,500.00
8	Classified Excavation	500	CY	\$150.00	\$75,000.00
	<b>Construction Sub-Total</b>				<b>\$871,000.00</b>
	<b>Contingency (10%)</b>				<b>\$87,100.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$958,000.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$48,000.00	\$48,000.00
	b. Bidding Services	1	LS	\$7,500.00	\$7,500.00
	c. Construction Administration & Inspection Services	1	LS	\$53,000.00	\$53,000.00
	d. Project Close-out	1	LS	\$7,500.00	\$7,500.00
2	Regulatory Permitting Fees	1	LS	\$1,500.00	\$1,500.00
3	Property Acquisition	1	LS	\$25,000.00	\$25,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$142,500.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$1,100,500.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Straus Park Tank Addition  
City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$60,000.00	\$60,000.00
2	Tank Construction	1	LS	\$300,000.00	\$300,000.00
3	Site Grading	1	LS	\$100,000.00	\$100,000.00
4	Site Piping	1	LS	\$35,000.00	\$35,000.00
5	Paving	250	SY	\$50.00	\$12,500.00
6	Fencing	200	LF	\$30.00	\$6,000.00
7	Grassing & Erosion/Sediment Control	1.50	Ac	\$25,000.00	\$37,500.00
8	Testing:				
	a. Pressure / Leakage / Sterilization	1	LS	\$5,000.00	\$5,000.00
	b. Compaction	10	EA	\$250.00	\$2,500.00
9	Classified Excavation	500	CY	\$150.00	\$75,000.00
	<b>Construction Sub-Total</b>				<b>\$633,500.00</b>
	<b>Contingency (10%)</b>				<b>\$63,350.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$697,000.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$32,000.00	\$32,000.00
	b. Bidding Services	1	LS	\$5,000.00	\$5,000.00
	c. Construction Administration & Inspection Services	1	LS	\$32,000.00	\$32,000.00
	d. Project Close-out	1	LS	\$7,500.00	\$7,500.00
2	Regulatory Permitting Fees	1	LS	\$1,500.00	\$1,500.00
3	Property Acquisition	1	LS	\$25,000.00	\$25,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$103,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$800,000.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Deer Lake Tank Addition

City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$50,000.00	\$50,000.00
2	Tank Construction	1	LS	\$275,000.00	\$275,000.00
3	Site Grading	1	LS	\$75,000.00	\$75,000.00
4	Site Piping	1	LS	\$35,000.00	\$35,000.00
	Paving	250	SY	\$50.00	\$12,500.00
5	Fencing	200	LF	\$30.00	\$6,000.00
6	Grassing & Erosion/Sediment Control	1.50	Ac	\$25,000.00	\$37,500.00
7	Testing:				
	a. Pressure / Leakage / Sterilization	1	LS	\$5,000.00	\$5,000.00
	b. Compaction	10	EA	\$250.00	\$2,500.00
8	Classified Excavation	500	CY	\$150.00	\$75,000.00
	<b>Construction Sub-Total</b>				<b>\$573,500.00</b>
	<b>Contingency (10%)</b>				<b>\$57,350.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$631,000.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$29,000.00	\$29,000.00
	b. Bidding Services	1	LS	\$5,000.00	\$5,000.00
	c. Construction Administration & Inspection Services	1	LS	\$29,000.00	\$29,000.00
	d. Project Close-out	1	LS	\$7,500.00	\$7,500.00
2	Regulatory Permitting Fees	1	LS	\$1,500.00	\$1,500.00
3	Property Acquisition	1	LS	\$25,000.00	\$25,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$97,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$728,000.00</b>

## WATER IMPROVEMENTS EXHIBIT "A"

### ENGINEER'S OPINION OF PROBABLE COST

Burrell Tank Addition

City of Brevard

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract:</b>				
1	Contractor Mobilization / Demobilization (10%)	1	LS	\$60,000.00	\$60,000.00
2	Tank Construction	1	LS	\$300,000.00	\$300,000.00
3	Site Grading	1	LS	\$125,000.00	\$125,000.00
4	Site Piping	1	LS	\$35,000.00	\$35,000.00
	Paving	250	SY	\$50.00	\$12,500.00
5	Fencing	200	LF	\$30.00	\$6,000.00
6	Grassing & Erosion/Sediment Control	1.50	Ac	\$25,000.00	\$37,500.00
7	Testing:				
	a. Pressure / Leakage / Sterilization	1	LS	\$5,000.00	\$5,000.00
	b. Compaction	10	EA	\$250.00	\$2,500.00
8	Classified Excavation	500	CY	\$150.00	\$75,000.00
	<b>Construction Sub-Total</b>				<b>\$658,500.00</b>
	<b>Contingency (10%)</b>				<b>\$65,850.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$724,000.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$33,000.00	\$33,000.00
	b. Bidding Services	1	LS	\$5,000.00	\$5,000.00
	c. Construction Administration & Inspection Services	1	LS	\$33,000.00	\$33,000.00
	d. Project Close-out	1	LS	\$7,500.00	\$7,500.00
2	Regulatory Permitting Fees	1	LS	\$1,500.00	\$1,500.00
3	Property Acquisition	1	LS	\$25,000.00	\$25,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$105,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$829,000.00</b>

## WASTEWATER SYSTEM IMPROVEMENTS EXHIBIT "A"

ENGINEER'S OPINION OF PROBABLE COST  
WILSON ROAD PUMP STATION UPGRADE  
CITY OF BREVARD

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A.</b>	<b>Construction Contract (210 Days):</b>				
1	Contractor Mobilization / Demobilization	1	LS	\$50,000.00	\$50,000.00
2	Contractor Inventory / Verification of Existing Field Conditions	1	LS	\$5,000.00	\$5,000.00
3	Contractor / Vendor Shop Drawing Preparation / Submittals	1	LS	\$25,000.00	\$25,000.00
4	Temporary By-Pass Pumping During Upgrade Period	3	MONTHS	\$11,000.00	\$33,000.00
5	Demolition Tasks: Removal of Ex. Equipment, Piping, Valves, Controls, Etc.	1	LS	\$15,000.00	\$15,000.00
6	New 1000 GPM Submersible Pumps, Motors, & Controls w/VFDs	2	EA	\$100,000.00	\$200,000.00
7	Replacement of Piping, Valves, Etc.	1	LS	\$80,000.00	\$80,000.00
8	General Electrical Upgrade / Modifications	1	LS	\$65,000.00	\$65,000.00
9	SCADA, Instrumentation, Flow Meter Modifications / Upgrade	1	LS	\$55,000.00	\$55,000.00
10	Testing & Start-up Services	1	LS	\$20,000.00	\$20,000.00
11	Miscellaneous	1	LS	\$25,000.00	\$25,000.00
	<b>Construction Sub-Total</b>				<b>\$573,000.00</b>
	<b>Contingency (10%)</b>				<b>\$57,300.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$630,300.00</b>
<b>B.</b>	<b>Non-Construction Costs:</b>				
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$58,000.00	\$58,000.00
	b. Bidding Services	1	LS	\$7,500.00	\$7,500.00
	c. Construction Engineering Administration Services	300	MANHRS.	\$150.00	\$45,000.00
	d. Periodic Construction Inspection Services	150	MANHRS.	\$110.00	\$16,500.00
	e. Start-up Services	40	MANHRS.	\$150.00	\$6,000.00
	f. Project Close-out	1	LS	\$3,500.00	\$3,500.00
	g. Grant Monitoring Visit	1	LS	\$1,500.00	\$1,500.00
2	Regulatory & Other Fees	1	LS	\$5,000.00	\$5,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$143,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$773,300.00</b>

## WASTEWATER SYSTEM IMPROVEMENTS EXHIBIT "A"

ENGINEER'S OPINION OF PROBABLE COST  
PISGAH FISH CAMP PUMP STATION UPGRADE  
CITY OF BREVARD

Item No.	Description	Quantity	Unit	\$/Unit	Total
<b>A. Construction Contract (210 Days):</b>					
1	Contractor Mobilization / Demobilization	1	LS	\$30,000.00	\$30,000.00
2	Contractor Inventory / Verification of Existing Field Conditions	1	LS	\$5,000.00	\$5,000.00
3	Contractor / Vendor Shop Drawing Preparation / Submittals	1	LS	\$25,000.00	\$25,000.00
4	Temporary By-Pass Pumping During Upgrade Period	3	MONTHS	\$9,500.00	\$28,500.00
5	Demolition Tasks: Removal of Ex. Equipment, Piping, Valves, Controls, Etc.	1	LS	\$15,000.00	\$15,000.00
6	New 200 GPM Submersible Pumps, Motors, & Controls w/VFDs	2	EA	\$50,000.00	\$100,000.00
7	Replacement of Piping, Valves, Etc.	1	LS	\$50,000.00	\$50,000.00
8	General Electrical Upgrade / Modifications	1	LS	\$40,000.00	\$40,000.00
9	SCADA, Instrumentation, Flow Meter Modifications / Upgrade	1	LS	\$30,000.00	\$30,000.00
10	Testing & Start-up Services	1	LS	\$20,000.00	\$20,000.00
11	Miscellaneous	1	LS	\$25,000.00	\$25,000.00
	<b>Construction Sub-Total</b>				<b>\$368,500.00</b>
	<b>Contingency (10%)</b>				<b>\$36,850.00</b>
	<b>TOTAL CONSTRUCTION BUDGET</b>				<b>\$405,350.00</b>
<b>B. Non-Construction Costs:</b>					
1	Engineering & Inspection Services:				
	a. Basic Design Engineering Services	1	LS	\$30,000.00	\$30,000.00
	b. Bidding Services	1	LS	\$7,500.00	\$7,500.00
	c. Construction Engineering Administration Services	300	MANHRS.	\$150.00	\$45,000.00
	d. Periodic Construction Inspection Services	150	MANHRS.	\$110.00	\$16,500.00
	e. Start-up Services	40	MANHRS.	\$150.00	\$6,000.00
	f. Project Close-out	1	LS	\$3,500.00	\$3,500.00
	g. Grant Monitoring Visit	1	LS	\$1,500.00	\$1,500.00
2	Regulatory & Other Fees	1	LS	\$5,000.00	\$5,000.00
	<b>Non-Construction Sub-Total</b>				<b>\$115,000.00</b>
	<b>Total Estimated Project Budget</b>				<b>\$520,350.00</b>