RICHLAND COUNTY

DEVELOPMENT & SERVICES COMMITTEE AGENDA

Tuesday, OCTOBER 23, 2018

5:00 PM

The Honorable Greg Pearce, Chair	**County Council District 6**
The Honorable Seth Rose	**County Council District 5**
The Honorable Gwen Kennedy	**County Council District 7**
The Honorable Jim Manning	**County Council District 8**
The Honorable Chip Jackson	**County Council District 9**

RICHLAND COUNTY COUNCIL 2017-2018

VICE CHAIR
Bill Malinowski
District 1

CHAIR
Joyce Dickerson
District 2

Yvonne McBride
District 3

Paul Livingston
District 4

Seth Rose
District 5

Greg Pearce
District 6

Gwendolyn Kennedy
District 7

Jim Manning
District 8

Calvin "Chip" Jackson
District 9

Dalhi Myers
District 10

Norman Jackson
District 11

Richland County Development & Services Committee

October 23, 2018 - 5:00 PM

2020 Hampton Street, Columbia, SC 29201

1. CALL TO ORDER — The Honorable Greg Pearce

2. APPROVAL OF MINUTES — The Honorable Greg Pearce

a. Regular Session: September 25, 2018 [PAGES 4-158]

3. ADOPTION OF AGENDA — The Honorable Greg Pearce

4. ITEMS FOR ACTION

a. Water Feasibility Study

b. Private Pond Outfall Silt Removal Standard Operating Procedure (SOP) [PAGES 159-165]

c. County Council is requested to provide guidance on whether to allow private entities / individuals / associations to install flashing speed limit radar signs within County Rights-Of-Way [PAGES 166-167]

d. City of Columbia's Request for permission to Survey, Soil Testing, Geotechnical Services & Environmental (Wetland) Inspection [PAGES 168-179]

5. ITEMS PENDING ANALYSIS: NO ACTION REQUIRED

a. Council Motion: State and/or Federal law prohibitions against a county plastic bag ordinance [MALINOWSKI and N. JACKSON]

6. ADJOURNMENT

Special Accommodations and Interpreter Services Citizens may be present during any of the County's meetings. If requested, the agenda and backup materials will be made available in alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), as amended and the federal rules and regulations adopted in implementation thereof. Any person who requires a disability-related modification or accommodation, including auxiliary aids or services, in order to participate in the public meeting may request such modification, accommodation, aid or service by contacting the Clerk of Council's office either in person at 2020 Hampton Street, Columbia, SC, by telephone at (803) 576-2061, or TDD at 803-576-2045 no later than 24 hours prior to the scheduled meeting.

Richland County Council

DEVELOPMENT AND SERVICES COMMITTEE
September 25, 2018 – 5:00 PM
Council Chambers
2020 Hampton Street, Columbia, SC 29204

COMMITTEE MEMBERS PRESENT: Greg Pearce, Chair; Calvin "Chip" Jackson, Gwen Kennedy

OTHER COUNCIL MEMBERS PRESENT: Norman Jackson, Dalhi Myers, Yvonne McBride and Bill Malinowski

OTHERS PRESENT: Brandon Madden, Michelle Onley, Kim Williams-Roberts, Trenia Bowers, Sandra Yudice, Stacey Hamm, Larry Smith, Stephen Staley, Shahid Khan, and Melissa Watts

1. **CALL TO ORDER** – Mr. Pearce called the meeting to order at approximately 5:00 PM.

2. **APPROVAL OF MINUTES**

   a. July 24, 2018 – Mr. C. Jackson moved, seconded by Ms. Kennedy, to approve the minutes as distributed.

      In Favor: C. Jackson, Pearce, and Kennedy

      The vote in favor was unanimous.

3. **ADOPTION OF AGENDA** – Mr. N. Jackson stated Item 4(b) states that Council moves immediately forward with the revised Lower Richland Sewer Plan. There was never a motion to revise the sewer plan. Council approved a sewer plan. We had discussions from the community, and then it went to Court. We won the case. There was never a motion to revise the plan. He is hearing now a motion to move forward with the revised plan. He stated this is not properly before us because it was never revised. Council did not give authority to revise it, so why has it been revised and who gave authority to revise it?

   Mr. Pearce stated we are at the point of adopting the agenda, and Mr. N. Jackson was questioning the item being inappropriate to be on the agenda because of the word revision. He is questioning this revision.

   Ms. Myers stated when she came on Council was in the middle of the sewer process. This sewer project is entirely within her district. There was a lawsuit. One of the schools was not included in the plan. There were private property owners who were not going to allow their property to be used for the plant. She spoke with the Chair, in fact she asked all of Council, to give her leave to discuss this in the community and get buy-in for the project, and figure out what is objectionable to the people who are going to be the recipients, so that we can move forward. The revisions that you see are the result of that. The Chair, Mr. Malinowski, Mr. Pearce…she came to everybody and asked that question because it is a project that is critical, but just because it is critical you cannot do it with that much public backlash. Given that the Gadsden Elementary School was not in the project, and she has the 2013 commitment letter, which is the only commitment letter.

Mr. Pearce stated he is going to rule that this item is properly on the agenda, and then we will discuss it.

Mr. C. Jackson moved, seconded by Ms. Kennedy, to adopt the agenda as published.

In Favor: C. Jackson, Pearce, and Kennedy

The vote in favor was unanimous.

4. **ITEMS FOR ACTION**

a. County Utility System – Mr. Pearce stated this is a follow-up to our work session on utilities. The item is before us to with the recommendation of the staff to proceed with the combined utility system, allow the working group to present an emergency financing plan to address the consent order, accept the Capital Improvement Plan schedule and priorities as it relates to the County utility infrastructure as information, and allow the working group to continue efforts to update the preliminary Utility Rate Study Report vis-à-vis the Willdan Rate Study as information. He stated this is a huge item with significant ramifications. He recommended the committee consider forwarding this on for full Council discussion, without a recommendation.

Mr. C. Jackson moved, seconded by Mr. Pearce, to forward to Council without a recommendation.

In Favor: C. Jackson and Pearce

The vote in favor was unanimous.

b. 1. Council Motion: Move that Council immediately move forward with the revised Lower Richland Sewer Plan, which has been (1) improved to remove lift stations from private property (consolidated into 3 on public property), (2) expanded to replace all failed, closed septic systems at Richland One Schools (Hopkins Elementary and Middle Schools and Gadsden Elementary School) and the Franklin Park subdivision, (3) clarified to ensure that access to public sewer is available, without tap fees, to any requesting resident along the revised route, who requests service as the lines are being constructed. No resident will be required to tap on to the system unless they wish to. Staff is further instructed to expedite the planning and procurement process to facilitate commencement of construction by April 2019, and targeted build out to residents, schools, and McIntyre Air Force Based by August 2019 [MYERS]

2. Council Motion: Move forward with approved Sewer System which has been delayed since February 2018 for unknown reasons. Citizens have signed up and are depending on the service [N. JACKSON]

Mr. Pearce stated the motions are basically dealing with the same subject, so he suggested grouping and taking them up together.

Ms. Myers stated she appreciates all of Mr. N. Jackson's hard work, and the work of all of you that came before she was on Council. In fact, (a) takes in all that as (b) and adds to it. It adds to it because the Gadsden Elementary School was never technically included in the plan because it failed in 2015, and the original plan was adopted in 2013. If we were to use the original plan, we would be leaving out one of the schools that was included in the video last week. That school would be left with no

solution while we move forward with the original plan that is not the plan the people in the impacted district want.

Mr. N. Jackson stated any changes made to the plan you have to have a public hearing/input. Any changes that Council makes has to be done through a motion by the Council member before we can make any revised changes. There was never a motion made to revise the plan. He was asked, by Ms. Myers, if he would accept some additional changes. He told her he could accept it as a Phase II or III, but not to adjust the original plan that was already approved because we went to Court. We had several public meetings. People came here. Some were screaming for and some against. It went to court and we won the case. He said he could support moving forward with the original plan, and any changes as a Phase II or III. You make a motion, if Council decides to do it, then you can do it that way. Gadsden Elementary School was added to the system. Former Councilman Kelvin Washington made sure that Gadsden Elementary School was added to the system in 2014. He stated he made this same motion in September 2017, and he was asked to withdraw it to clean up some things. A constituent came in February because the original plan was supposed to start in February. The constituent was told that it was delayed to September. Staff has continued to work on a revised. The Administrator or staff cannot work on a revised plan unless it has been through a motion by Council, and Council approves it to move forward. That was never done.

Mr. Pearce stated his interpretation is that is what Ms. Myers motion is all about.

Mr. N. Jackson stated to move with the revised plan. The plan has been revised before the motion. You have to make a motion to do, then do it. You do not do it, then come to Council and say, "move forward with revised plan." There was never a motion.

Mr. Khan stated we are talking about two different plans. One is an original plan, which went to the Court, and has been approved for construction by DHEC and all of the public hearings are completed. As of today, the approved plan does not have Gadsden Elementary School in it.

Mr. N. Jackson stated, for clarification, the school district said it was included, and they have the money for the Gadsden Elementary School. He stated, if you check the minutes, it was included. Maybe it did not get somewhere in the minutes, but there is documentation it was include, and they have the money for it.

Mr. Khan stated he cannot comment on the school district, but the County produced the plans. The County submitted the plans to DHEC, and followed the approval from DHEC. The plans approved by DHEC do not include Gadsden Elementary School.

Mr. N. Jackson stated he understands. He is only saying what the school district is saying. He is not sure where the breakdown is. His concern is that it was never a motion to move forward.

Ms. Myers stated the school district might not have the information because it is a Richland County plan, not a Richland County School District plan. The fact that the school district itself thinks that the plan is in one state, when it is in another. We are in control of the facts, and Dr. Yudice, Mr. Khan, and the whole team has sat with her painstakingly to go through every detail of this plan, and it does not include Gadsden Elementary. And in fact, as of 2014, Gadsden Elementary had not been cited by DHEC. Any revisions in 2014 would, by definition, not have taken in Gadsden Elementary because it failed in 2015. She stated she has spent the last 8 months in conversations with Rural Ag, and they also have no plans that include Gadsden Elementary. To the extent, that this plan is critically necessary, she would respectfully ask, since she represents the district where the schools sit, and the constituents in that district, that the committee rely on the information that she is providing given it is in her Council district, the schools, and all of the accoutrements, save for one connecting line, will

lie in her district. She concedes that she was not on Council when the initial plan was drafted, but she has spent approximately 10 hours every month since she has been on Council with nothing but this plan. She thinks she is pretty well versed in what is there. She does think there is a lot of misinformation. She thinks a lot of people misunderstand what the documents say, but the documents are very clear that if we go forward, as approved by the Court, exactly as Mr. Khan, who is the engineer in charge of the plan, has said we will leave out a school with a lagoon, and solid waste on the ground.

Mr. Pearce inquired if Mr. Khan could assist us in how best to move this sewer project forward.

Mr. N. Jackson stated his clarification is not necessarily whether Gadsden Elementary is on the original plan or not. His concern is that a motion was never made and approved by this Council to have a revision to the plan. The revision includes rerouting it up to Air Base Road and taking a way part from Cabin Creek Road when we went to the citizens and wanted the numbers and they signed on for the system. We are taking half of them off the system. We are sending it down a road that has no houses and the people are starting to complain. His thing is with the policy and how we proceed. He stated everything he has done since he has been here, he has made a motion. The motion was sent to a committee and staff had the authority to investigate and make any changes, and bring back a recommendation. A motion was never made, and he has been saying that since September of last year when he was asked to remove this same motion until that motion was made, and it was never made. It is irrelevant whatever changes can be made or done. A motion was never made.

Mr. Khan stated we have a project in place called Lower Richland Sewer Project. It had been on the books since 2005. If you read the briefing document he submitted, it highlights the milestones. It started in 2005. There was a motion in 2010. There was a preliminary report engineering report developed, which was submitted with the layout. The layout was presented to Council, and that approved and formed the original project. Then the project went to the next layer of milestones going through DHEC review, approval, and public hearing. However, when he came aboard he had been to a couple of meetings for that project, and from the business perspective, he sees no benefit of having a program or infrastructure if the end user or beneficiary for that infrastructure is not in favor of that. They tried to work around, and answer the questions the constituents had. They did not go too far, except winning the case in Court. The previous Administrator, Mr. Seals, when he came in, called Mr. Khan on the table and asked if there was a way to solve this problem. Mr. Khan stated the only way to solve the problem is to get the customers satisfied, and there are ways to do that. He suggested looking at multiple options to work for us. They went back to the drawing board. They went back to the preliminary engineering stage that was completed in 2011 – 2012 timeframe, which was presented and approved by Council. The preliminary engineering report presented multiple options, which are included in the briefing document provided in the agenda packet. There are several options, which were reviewed internally from the engineering perspective, as well as, Administration and the Council members, Ms. Myers and Mr. N. Jackson. They looked at those plans and came to the conclusion was that Alternate 5 was the best plan for the project, and the needs of the community. From the engineering perspective, water flows to the pipeline. All it needs is force. It can go either direction. You can put it along Lower Richland Blvd., Air Base Rd., etc. The next step was for him to look at the Master's Plans objectives. He asked what would it serve 50 years down the road, if we build it this route or that route. Those were rationalizations that supported the objective of going the route that we are going right now. If you choose to go a different route, he can do it. It is doable, but his recommendation is that we adopt Alternate 5. To go forward and implement it serving the best interests of this community and Richland County. He stated the differences between the alternates is different routes.

Mr. N. Jackson inquired about which alternates was the original plan.

Mr. Khan stated it is not in the alternates. The layout of the permitted design is the original plan.

Mr. Pearce stated, for clarification, that would be a revision of the original plan.

Mr. Khan stated, his understanding was the motion was to do the same exercise and bring the layout here for Council to bless. Once it is blessed, he will proceed forward with the design, approval, and construction stages.

Mr. N. Jackson stated, for clarification, that is revised and we would have to have a public hearing. The citizens would have to have input on any changes that done to the plan.

Mr. Khan stated they would have to first design it and submit it to DHEC. DHEC has to conduct the process, which includes hearings.

Mr. N. Jackson stated, for clarification, to go back through the whole system with public input.

Mr. Khan stated that is typically required by DHEC.

Mr. N. Jackson stated what you have here before you is something that was redesigned/revised, but there was never a motion to do it.

Ms. Myers stated the point of her putting in the motion was that she felt like it was in the public interest, the interest of the Council, and the interest of the County to have the motion to begin again and have 3 readings and a public hearing. In harmony with what Mr. N. Jackson is saying, while we are in this stage if there are people who have been left out that is not the point, but there is one way to get to Gadsden Elementary School, which is down Air Base Road. If in fact, we need to pick up a piece that was left off she is not opposed to that, but we have to get to that school. That is why Air Base Road has to be in design; otherwise, you cannot reach the school.

Mr. Pearce moved, seconded by Mr. C. Jackson, to forward to Council with a recommendation to proceed with an alternative, that in effect, would revise the approved plan and reopen that for discussion, at which time the issues of which road(s) would be debated and to have a public hearing to hear from the citizens.

Mr. Malinowski inquired as to where the additional funds are coming from because we are going from a permitted, original approved phase at $14 million and jumping it up to 2 ½ times that at $34 million and doubling the linear footage.

Mr. Khan stated we are not looking a project, but building infrastructure in the territory. The way it will get built is in 3 phases. Phase 1 is $16.4 million, which will be immediate. Phase 2 will be done in later years (anticipated 2025) and Phase 3 he will probably be dead by that time.

Mr. Malinowski inquired, for clarification, if Phase 1 accomplish the immediate needs that are down there.

Mr. Khan responded in the affirmative.

In Favor: C. Jackson and Pearce

The vote in favor was unanimous.

c. 1. Council Motion: Move to authorize Dr. Yudice and staff to utilize emergency funds to facilitate third party well testing in areas potentially impacted by Westinghouse's previously undisclosed 2011 uranium leak. Funds would be available for testing over the next thirty days, subject to individual requests [MYERS and DICKERSON] – Mr. Madden stated they have identified approximately $70,000 in the current budget to be used for this effort. They would request direction on whether Council would want to proceed with the motion.

Mr. Pearce inquired if anyone had confronted Westinghouse about paying for this.

Ms. Myers stated this has been a really interesting month. We have formed a community group and are working with that group. They have been meeting with Westinghouse. Dr. Yudice, and other members of staff, have provided invaluable information and guidance, and they are midway through. She met today with Senator Jackson and representatives of Westinghouse to look at what is going on, what has happened, and ways forward. We are actively undertaking that, but when we get to the point where there is obviously discussion she will put in a motion to get authority from Council to asks specifics of Westinghouse. Right now, we are just trying to get information and an understanding. We have told them that we do not think Richland County should bear these costs.

Mr. C. Jackson stated he wanted to be sure he understood what Ms. Myers said. Even from the onset, having Westinghouse on notice, is there a reluctance on their part to pay for the 3rd party testing.

Ms. Myers stated they have not evinced a reluctance, but she never takes kindness as an answer until she has it in writing. They have said they will partner with Richland County to resolve the problem. The reason we have been kind of reluctance to ask them for a dollar amount is because they are still investigating the extent of the damage. So, she is nervous about asking for money or any of those other things until we know what the damage is. The 2011 spill is the critical one, and they have not even begun to bore until the building to know the depth and scope of it yet. We are waiting to get a damage assessment, and then to move forward. The reason we asked for emergency funds was because residents are worried about their well water. She does not want to ask Westinghouse for $70,000, and then later realize they have wrought on the community is more like $70 million. That is an exaggeration, but we need more information before we know what to specifically ask for.

Mr. C. Jackson moved, seconded by Mr. Pearce, to forward to Council with a recommendation to identify funds that would be used in a temporary mode, and once it is determined Westinghouse's liability, that these same funds that are being used now would then be attached to whatever liability they have, so it would be clear this is not a donation by the County, and should be paid back, at a later date.

Mr. N. Jackson stated he also had a meeting in Lower Richland. He did not have the privilege to have staff at the meeting. Staff was not allowed to attend his meeting. He hired someone to take the notes. DHEC said they were doing the well testing. If DHEC is doing the well testing, and they are the authority, then why do we need to do it separate from DHEC, find another company to do it, and spend our money when DHEC is already doing it. Then, why try to get the money back from Westinghouse, when DHEC, the authority, is ready and willing to test these wells. When he saw this before him, and DHEC is already doing the job, he does not see why we should give money to do it to a separate company, when the authority is already doing it.

Ms. Myers stated the issue with DHEC testing was that because DHEC, in some residents' view, was complicit in allowing the company to not report, and under report. They were not comfortable with DHEC doing the testing, and were specific about asking for 3rd party, independent testing of their

water source to be sure it was safe. She agrees that DHEC could, and should, do testing. She has no problem conceding that point to Mr. N. Jackson. The issue, however, for the residents in the impacted area was they do not trust the DHEC testing, and that is why we asked, on an emergent basis, to please find a source to do testing.

Mr. Malinowski stated if we started making decisions based on people not being comfortable with a particular agency or business, he thinks we are going down the wrong road. He stated if you get a recall on your vehicle, and it tells you to take it back to that dealership, because you do not like that dealership they are not going to allow you to go to your private mechanic and have it done. He thinks we need to follow the rules, as Mr. N. Jackson said. If they are already doing the testing, then we need to follow along with the protocol. They are the agency that is responsible for it, and they are doing it. Whether someone does or does not like them is not for us to make a decision on, and spend taxpayers' money, otherwise.

In Favor: C. Jackson and Pearce

The vote in favor was unanimous.

2. Council Motion: To resolve the water contamination issues in the Lower Richland community and put the citizens at ease I move that Richland County move forward with the water system already approved with partnership with Westinghouse nuclear energy plant, International Paper, SCE&G and others to provide seed funds as they all have contributed to water quality in the area [N. JACKSON] – Mr. Pearce inquired if this matter is a part of the utility plan presented by Mr. Khan.

Mr. Khan stated it is. Council approved for him to proceed with a feasibility study, preliminary engineering study, for water supply. That is in progress, and is scheduled to be presented to Council at a later date in October. That will be able to lay out where we are going, and how we should be going.

Mr. Pearce inquired if Mr. N. Jackson understood this a part of the plan that we voted on earlier in the meeting.

Mr. N. Jackson stated, because of the contamination problems in the area, to move it forward. If Westinghouse, International Paper, etc. has contributed to contamination of the soil, that affects the water, to have them contribute to the seed money to build a system because they are one of the causes of the problem we are having. He does not know how we can do that, but if there is a lawsuit against well contamination, they have to pay a price. They have to try to resolve it and help also. If it possible to get them to commit to some seed money to move this as soon as possible. If we do it, we have to find a bond to build the project. It may take a lot of years before it is done. If they can contribute because of what they have done to the community, then he sees it makes sense.

Mr. Khan stated, from his perspective, it would help a lot. At the end of the day, all assets require dollars, and dollars have to come from somewhere. If you have a source that would allow him to expand the system in an expeditious manner, for the interest of the community, that could be an option that he would like to have.

Mr. Pearce moved, seconded by Mr. C. Jackson, to forward to Council with a recommendation to direct the Utilities Director to explore the potential of receiving seed money to expedite the project.

Mr. C. Jackson stated the only concern he heard in Mr. Khan's comments is that, while it is noble and laudable to investigate possible partnerships, if none of those things materialize, at the end of the day, the project still needs to get done and there still needs to be an identified funding source.

Mr. Pearce stated, it is his understanding, that is part of the first motion we made for the utility package.

Mr. Khan stated, as he said earlier, a few months back you directed him to proceed and look at the possibility of supplying water. A consultant is working on that, so that feasibility will come on the table and we will be able to make a recommendation that we can supply water. This is how we can supply, and these are the dollars attached to that, if you want to go in that direction.

Mr. C. Jackson stated he is very happy to hear that. All he wanted to be clear on tonight is that whatever investigating that goes on does not hamper/hinder/delay this coming back to us for it to move forward.

Mr. Khan stated he would need some political, as well as, legal leverage to get too far.

Mr. Pearce stated Council directed you to explore, assuming it goes to Council and full Council approves that.

In Favor: C. Jackson and Pearce

The vote in favor was unanimous.

d. An Ordinance authorizing deed to the City of Columbia water lines for Richland Library Northeast, 7490 Parklane Road; Richland County TMS # 17707-08-01 (Portion); CF # 340-15 – Ms. Kennedy moved, seconded by Mr. C. Jackson, to forward to Council with a recommendation for approval.

In Favor: C. Jackson, Pearce, and Kennedy

The vote in favor was unanimous.

5. **ITEMS PENDING ANALYSIS: NO ACTION REQUIRED:**

a. Council Motion: State and/or Federal law prohibitions against a county plastic bag ordinance [MALINOWSKI and N. JACKSON]

6. **ADJOURNMENT** – The meeting adjourned at approximately 5:44 p.m.

RICHLAND COUNTY GOVERNMENT
ADMINISTRATION
2020 Hampton Street, Suite 4069, Columbia, SC 29204
P 803-576-2050 | F 803-576-2137 | TDD 803-576-2045
richlandcountysc.gov

Development & Services Committee Meeting
Briefing Document

Agenda Item
Water Feasibility Study

I. Southeast Area

A. Background
The County has an existing Master Plan that provides a guide for the development of water systems to serve Richland County. Burkhold Panning and Management with Engineering assistance from Joel Wood & Associates prepared "Richland County Master Plan" (2002 Plan) dated October of 2002 and that "Plan" was followed in the development of the Hopkins Community Water System. In 2016 AECOM prepared "Water and Sewer Master Plan for Richland County Utilities (2016 Plan). These two "Plans" are adopted by reference and will be implemented into the preparation of a Feasiblity Report for a water system to serve the southeastern portion of Richland County. The water system proposed will meet the current and long-range needs for water service in the southeastern section of Richland County. The planning area for the southeastern portion of Richland County is as shown on the attached map (*Figure 1).* The proposed water system will be planned for a thirty (30) year growth period with materials selected for a forty (40) year useful life cycle.

At this time, there are three public or private water service providers in the planning area. These service providers are as shown on Figure 2 contained herein. The City of Columbia provides water service to users surrounding the planning area and is a potential source of water supply for the southeast portion of the County. This option will be explored in Section V of this Report. Richland County Utilities (RCU), a Department of Richland County, owns, operates and maintains two systems in the planning area. The Pond Drive system serves approximately 27 customers on a small distribution system, well and 7,500 gallon hydro pneumatic water storage tank. The Hopkins Community Water System serves approximately 562 customers on a distribution system consisting of 2"-12" water distribution lines, a 300,000 gallon elevated water storage tank and four wells with an aggregate yield of approximately 790 gallons per minute (GPM). The Town of Eastover owns and operates a groundwater well system that includes two wells, two treatment plants (to provide pH adjustment and chlorine for disinfection) and a 250,000 gallon elevated water storage tank. (ref. 2016 Plan)

The southeast planning area has great potential for growth but there are no private or existing public utilities other than Richland County that will undertake the task of providing the much-needed water system. Richland County realizes the need and is willing to undertake the task of providing a safe and dependable water supply for this portion of the County. This project was initiated by a concern, on the part of the Richland County Council, that: 1) growth within the County be orderly; 2) adequate water service be provided to prevent a proliferation of small water systems; 3) the number of single home systems be reduced and, more specifically a safe and dependable water supply be provided for an area that has not received sufficient assistance in the past, and 4) the potential health hazard resulting from the contamination found in shallow private wells that serve many of the residents of the area.

The overall objective of the project is to provide the most cost-effective method to provide water service to a low to moderate, income community that has a great need for a safe and dependable water supply.

B. Issues

The primary issue is to find the best long term approach for the System to provide reliable water service to this portion of the County moving forward. Initially, there will not be enough customers to pay for the Operation and Maintenance (O&M) cost and debt service.

There are three (3) possible long term solutions:

1. **No Action**: This alternative maintains the status quo and is not recommended..

2. **Bulk Purchase Water from City of Columbia at Outside City Rates**: Under this second alternative arrangement, Richland County will have to enter into IGA wherein City of Columbia will commit to sell bulk water to Richland County which will then be distributed to the customers in the project area. The County began discussions with the City to determine if an agreement could be reached whereby the City would provide water service to the Phase I project area. RCU and its consultant met with the City of Columbia on several occasions to explore the possibilities of RCU purchasing water from the City at bulk rates. The typical annual cost for water from the City for bulk water purchase would be approximately $183,000.00 per year which would have a major negative impact on the O&M Budget when compared with the third alternative. The proposed pre-design project cost would be approximately $8,740,000.00. There are approximately 265 users in the project area and with an initial project sign up rate of 40% you could expect that 106 users would be added to the 589 existing customers on the Hopkins and Pond Drive systems. The enlarged system would require the addition of one employee to assist with operation and maintenance.

3. **Expansion of the Existing Hopkins Water System:** The third alternative considered was to maximize the use of existing resources within the existing Hopkins Community Water System to provide a safe dependable water system at the lowest possible cost. This alternative will utilize the existing deep well systems at Hopkins Elementary School, Hopkins Middle School, and the Gadsden Elementary School. These wells are currently owned and operated by RCU and meet all public drinking water standards. Even in an instance when largest existing well is temporarily taken out of service, the existing well capacity still exceeds the required water source load (required well capacity). The existing wells are being chlorinated. The proposed water distribution system will consist of approximately 78,230 linear feet of water lines. The proposed water distribution lines will connect the existing elevated water storage tank to existing deep wells currently owned and operated by the RCU. The proposed pre-design project cost is $8,529,000. The increased O&M cost would be due to the additional electricity required to pump the additional water sold and the cost of additional chemicals added to the water, which should be less than $10,000 per year. There are approximately 265 users in the project area and with an initial project sign up at a rate of 40% one could expect that 106 users would be added to the 589 existing customers on the Hopkins and Pond Drive systems. The enlarged system would require the addition of one employee to assist with operation and maintenance. As the customer base grows to approximately 2,500 residential equivalents, RCU should consider constructing a water purification plan on the Wateree River.

C. Fiscal Impact

Bulk Purchase Water from City of Columbia at Outside City Rates: Purchasing the water at a bulk rate will require increase in the rates charged to customers to cover the purchase of the water and debt service unless grant funds can be secured to cover the project cost. The O&M budget for this alternative will include approximately $183,000 for water purchase and the increased cost to operate the expanded system for the first full year of operation, which would be approximately $678,542. This does not include any funds for additional debt service. This alternative has an O&M cost of approximately $179,512 more than Alternative Three (Expansion of the existing Hopkins Water system).

Expansion of the Existing Hopkins System: This expansion, will require an increase in the rates charged to customers to cover the purchase of the water and debt service unless a grant fund can be secured to cover the project cost. The O&M budget for this alternative would include approximately $10,000 additional funds needed for electricity and chemicals to provide water for the additional customers. The estimated increased cost to operate the expanded system for the first full year of operation would be approximately $499,030 and this does not include any funds for additional debt service. This alternative has an O&M cost of approximately $179,512 less than the bulk purchase alternative.

D. Past Legislative Actions

None.

E. Alternatives

1. Consider the information presented and take no action. This would maintain the status quo, which is not recommended.

2. Enter into IGA wherein City of Columbia will commit to sell bulk water to Richland County which then will construct a new distribution system to distribute water to the customers in the project area.

3. Improve the existing Hopkins System and construct a new distribution system to distribute water to the customers in the project area. **(Best Alternative)**

F. Staff Recommendation

Summary of Alternatives Considered			
	Alternate # 1	**Alternate # 2**	**Alternate # 3**
Project Cost	N/A	$8,740,000	$8,529,000
Customers Served	0	695	695
Potential Customers	0	1,094	1,094
Operation Cost (Yearly)	N/A	$678,542	$499,030
Grant Funds Needed	N/A	$8,740,000 (100%)	$8,529,000 (100%)

In light of the presentation given by the consultant and the feasibility report provided, staff concurs and recommends the adoption of the conclusion made by the consultant as noted below:

The Southeast Planning area has: 1) a safe and dependable water supply that can be expanded at a reasonable cost; 2) adequate elevated water storage; and 3) a strong customer base. These reasons make expansion of the existing system feasible under certain conditions. These conditions are listed below:

- Development and implementation of an ordinance that will define the County's service area and that will restrict other service providers from entering the County's service area. Without a defined County service area, other water providers could expand into the existing water system's growth areas and limit expansion of its revenue stream.

- Development of a program to promote the water system and to actively seek new customers in the project area. After a three to six-month sign-up period, develop cost estimates for the required expansion to serve those desiring service and actively seek grants and loans to fund the expansion of the system.

- Consultation with the County's Economic Development staff to see if there are areas where water lines could be installed that would promote economic growth in the area and seek grant funding for those lines.

- Review the "Rate Study" currently being conducted by RCU and adopt the necessary changes to the rates to cover the operating cost and debt retirement for current loans and for future loans required to expand the system. Rate adjustments should be based on existing and new customers on the expanded system at the current average water usage.

- As expansion projects are determined, prepare Preliminary Engineering Reports and Environmental Assessments for each project required to get funding approval then prepare construction plans and specifications and obtain construction permits for the project.

II. North - Northwest Area

A. Background

The County has an existing Master Plan that provides a guide for the development of water systems to serve Richland County. Burkhold Panning and Management with Engineering assistance from Joel Wood & Associates prepared "Richland County Master Plan" (2002 Plan) dated October of 2002. In 2016 AECOM prepared "Water and Sewer Master Plan for Richland County Utilities (2016 Plan). These two "Plans" are adopted by reference and will be implemented into the preparation of a Feasibility Report for a water system to serve the north and northwest portions of Richland County. The water system proposed will meet the current and long-range needs for water service in the north-northwest sections of Richland County. The planning area for the north-northwest portions of Richland County is as shown on the attached map (*Figure 1).* The proposed water system will be planned for a thirty (30) year growth period with materials selected for a forty (40) year useful life cycle.

At this time, there are five public or private water service providers in the planning area. These service providers are as shown of Figure 2 contained herein. The City of Columbia, the Town of Winnsboro and Newberry County Water and Sewer Authority (NCWSA) provide water service to users surrounding the planning area and are a potential source of water supply for the north and northwest portions of the County. Carolina Water Services and Ni America provide water to customers in the area but are not a potential source for water supply in the north and northwest portions of the County. RCU, a Department of Richland County, owns, operates and maintains the Murray Point Water System in the northwest planning area. The Murray Point water system serves approximately 20 customers with an existing well, a 7,000-gallon hydro pneumatics water storage tank and approximately 3,100 linear feet of 6" water distribution line. The Murray Point Water System does not have the capacity to serve the proposed project area but RCU could build a new water purification plant on the Broad River to serve the north and

northwest sections of the project area. Another option for water supply is to purchase water from the City of Columbia at bulk rates, purchase water at bulk rates from Newberry County Water and Sewer Authority, or purchase water from the Town of Winnsboro. The County does not have an existing water system in the north planning area.

The north and northwest planning areas have great potential but there are no private or existing public utilities that RCU is aware of that have plans for the task of expanding into these areas. Richland County realizes the need and is exploring the task of providing a safe and dependable water supply for this portion of the County. This project was initiated by an action of Richland County Council to explore the feasibility of developing a water system, that: 1) promotes orderly growth within the County; 2) adequate water service be provided to prevent a proliferation of small water systems; 3) the number of single home systems be reduced and, more specifically a safe and dependable water supply be provided for the planning area, and 4) will provide potential to serve proposed industrial areas in the north-northwest planning area.

The overall objective of the project is to provide the most cost-effective method to provide water service to the planning area that would benefit from a safe and dependable water supply and to provide water to existing and potential industrial users.

B. Issues

The primary issue is to find the best long term approach for RCU to provide reliable water service to this portion of the County moving forward. Initially, there will not be enough customers to pay for the Operation and Maintenance (O&M) cost and debt service.

There are four (4) possible long term solutions:

1. **Bulk Purchase Water from City of Columbia at Outside City Rates**: Under this alternative arrangement, Richland County will have to enter into IGA wherein City of Columbia will commit to sell bulk water to Richland County which will then be distributed to the customers in the project area. The County began discussions with the City to see if an agreement could be reached whereby the City would provide water service to the project area. RCU and its consultant met with the City of Columbia on several occasions to explore the possibilities of RCU purchasing water from the City at bulk rates. The typical annual cost for water from the City for bulk water purchase would be approximately $193,324.00 per year. The proposed pre-design project cost would be approximately $38,059.00 for the construction of the distribution system and two elevated storage tanks. RCU has 20 existing customers on the Murray Point system. There are approximately 31,478 potential customers (users) in the project area and with an initial project sign up rate of 5% for the north area and 2% for the northwest area you could expect that 720 users would be added to the 20 existing customers on the Murray Point system. The enlarged system would require the addition of one employee to assist with operation and maintenance when the system is fully operational.

2. **Bulk Purchase Water from Newberry County Water and Sewer Authority (NCWSA)**: Under this alternative arrangement, Richland County would enter into IGA wherein NCWSA will commit to sell bulk water to Richland County which will then be distributed to the customers in the project area. The County began discussions with NCWSA to see if an agreement could be reached whereby NCWSA would provide water service to the project area. RCU and its consultant met with NCSWA on several occasions to explore the possibilities of RCU purchasing water from the

City at bulk rates. NCWSA indicated that a new larger water line would have to be constructed to provide adequate water to Richland County. NCWSA estimates the cost of the new water supply line would be approximately $5,864,000.00 at the expense of Richland County. NCWSA would also require RCU to pay a "Capacity Fee" of $726.00 per residential equivalent which would total $2,420,000 for the projected number of users. The typical annual cost for water from NCWSA for bulk water purchase would be approximately $160,450 per year. The proposed pre-design project cost would be approximately $46,343,000 for the construction of the distribution system and two elevated storage tanks. This total includes the cost of the water main upgrades required to supply the water along with the "Capacity Charge" from NCWSA. RCU has 20 existing customers on the Murray Point system. There are approximately 31,478 potential customers (users) in the project area and with an initial project sign up rate of 5% for the north area and 2% for the northwest area you could expect that 720 users would be added to the 20 existing customers on the Murray Point system. The enlarged system would require the addition of one employee to assist with operation and maintenance when the system is fully operational.

3. **Construct a New Water Purification Plant for Water Supply:** This alternative involves RCU constructing a new water purification plant on the Broad River that could provide water for the north and northwest planning areas. The initial plant would be constructed to produce two million gallons per day with options to expand up to eight million gallons per day in the future as demand increases. The proposed pre-design project cost would be approximately $48,237,000 for the construction of the distribution system, two elevated storage tanks and the new water purification plant. RCU has 20 existing customers on the Murray Point system. There are approximately 31,478 potential customers (users) in the project area and with an initial project sign up rate of 5% for the north area and 2% for the northwest area you could expect that 720 users would be added to the 20 existing customers on the Murray Point system. The enlarged system would require the addition of four employees to assist with operation and maintenance when the system is fully operational.

4. **Developer Driven Option:** This alternative is a developer driven option wherein the County adopts and strictly enforces an ordinance defining the north and northwest project areas as the County's service area. The ordinance would require all utility infrastructure constructed in the service area be deeded to RCU. RCU would then own, operate, and maintain the infrastructure and charge the users at the RCU prevailing utility rates. The County, as part of the ordinance, could release a project to another utility but should require a fee be paid by the entity requesting the release. Any fees collected from the entity should be committed to a project development fund that can be used for future system expansion. RCU would develop bulk purchase agreements with the City of Columbia and/or the Newberry County Water and Sewer Authority (NCWSA) for water to serve the customers. A "Rate Study" would be required to determine the charges to customers once the bulk rate is determined in negotiations with the City of Columbia or NCWSA. This option would not require an initial capital outlay by the County and the O & M budget of RCU would not be negatively impacted and could be adjusted as the customer base grows. As the customer base grows, RCU may be required to construct storage to meet SCDHEC storage requirements for the system. However, by the time storage will be needed the customer base would have grown enough where the cost for debt service should be covered by the existing customer base. Also, as the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant on the Broad River that could serve the north-northwest project areas. The cost of a two million gallon per day water purification plant is approximately $10,200,000.

C. Fiscal Impact

Bulk Purchase Water from City of Columbia at Outside City Rates: Purchasing the water at a bulk rate will require increase in the rates charged to customers to cover the purchase of the water and debt service unless grant funds can be secured to cover the project cost. The O&M budget for this alternative will include approximately $193,324 for water purchase and the increased cost to operate the expanded system for the first full year of operation will be $453,462. This does not include any funds for additional debt service to cover the capital cost of the distribution system.

Bulk Purchase Water from Newberry County Water and Sewer Authority (NCWSA): Purchasing the water at a bulk rate will require increase in the rates charged to customers to cover the purchase of the water and debt service unless grant funds can be secured to cover the project cost. The O&M budget for this alternative will include approximately $160,450 for water purchase and the increased cost to operate the expanded system for the first full year of operation will be $420,588. This does not include any funds for additional debt service to cover the capital cost of the distribution system and NCWSA line upgrades and capacity charge.

Construct a New Water Purification Plant for Water Supply: Purchasing the water at a bulk rate will require increase in the rates charged to customers to cover the purchase of the water and debt service unless grant funds can be secured to cover the project cost. The O&M budget for this alternative to operate the expanded system for the first full year of operation will be $522,672. This does not include any funds for additional debt service to cover the capital cost of the distribution system and water purification plant.

Developer Driven Option: The developer driven option will not require an initial capital outlay by the County and the O&M budget of RCU would not be negatively impacted. The O&M budget will be adjusted as the customer base grows with the additional customers helping to offset any increase in the O&M cost required.

D. Past Legislative Actions

None.

E. Alternatives

1. Consider the information presented and take no action. This would maintain the status quo, which is not recommended.

2. Enter into IGA wherein City of Columbia will commit to sell bulk water to Richland County which then will construct a new distribution system to distribute water to the customers in the project area.

3. Enter into IGA wherein Newberry County Water & Sewer Authority (NCWSA) will commit to sell bulk water to Richland County which then will construct a new distribution system to distribute water to the customers in the project area.

4. Richland County Utilities will construct a new water purification plant and distribution system to distribute water to the customers in the project area.

5. Richland County will adopt and strictly enforce an ordinance defining the north and northwest project areas as the County's service area. The ordinance would require all utility infrastructure constructed by developers in the service area be deeded to RCU. RCU would then own, operate, and maintain the infrastructure and charge the users at the RCU prevailing utility rates. The County, as part of the Ordinance, could release a project to another utility but should require a fee be paid by the entity requesting the release. Any fees collected should be committed to a project development fund that can be used for future system expansion. RCU would develop bulk purchase agreements with the City of Columbia and/or the Newberry County Water and Sewer Authority (NCWSA) for water to serve the customers. **(Best Alternative)**

Summary of Alternatives Considered					
	Alt. # 1	**Alt. # 2**	**Alt. # 3**	**Alt. # 4**	**Alt. # 5**
Project Cost	N/A	$38,059,000	$46,343,000	$48,237,000	$0
Customers Served	0	740	740	740	T.B.D.
Potential Customers	0	31,478	31,478	31,478	T.B.D.
Operation Cost (Yearly)	N/A	$453,462	$420,588	$522,672	No Change
Grant Funds Needed	N/A	$38,059,000 (100%)	$46,343,000 (100%)	$48,237,000 (100%)	$0

F. Staff Recommendation

In light of the presentation given by the consultant and the feasibility report provided, staff concurs and recommends the adoption of the conclusion made by the consultant as noted below:

The North - Northwest Planning areas do not have an economical water supply source and the cost of entry is high without a strong customer base. Unfortunately, only potential near future option is to buy bulk water from City of Columbia. City of Columbia's current rate structure for bulk is as high as outside City customer, which makes it economically not feasible. Without an economical water supply and customer base it is not feasible to create a water system to serve the North- Northwest Planning area at this time. However, if the County wishes to develop a water system in the North – Northwest planning areas the expansion is feasible under certain conditions. These conditions are listed below:

- Develop and implement an ordinance that will define the County's service area and that will restrict other service providers from entering the County's service area. Without a defined County service area, other water providers could expand into the potential water system's growth areas and limit future expansion of its revenue stream.
- The ordinance would require all utility infrastructure constructed in the service area be deeded to RCU. RCU would then own, operate, and maintain the infrastructure and charge the users at the RCU prevailing utility rates.

- The County, as part of the Ordinance, could release a project to another utility but should require a fee be paid by the entity requesting the release. Any fees collected should be committed to a project development fund that can be used for future system expansion.

- RCU would develop bulk purchase agreements with the City of Columbia and/or the Newberry County Water and Sewer Authority (NCWSA) for water to serve the customers. The bulk purchase would have to negotiated to an affordable level equal or similar to "inside city rates".

- RCU has delegated plan review and all water projects constructed in the planning area would have to be reviewed and approved by RCU prior to construction.

- A "Rate Study" would be required to determine the charges to customers once the bulk rate is determined in negotiations with the City of Columbia or NCWSA. There will not be any required initial capital outlay by the County for any new expansions and the O & M budget of RCU would not be negatively impacted and could be adjusted as the customer base grows.

- As the customer base grows, RCU may be required to construct storage to meet SCDHEC storage requirements for the system. However, by the time storage will be needed the customer base would have grown enough where the cost for debt retirement should be covered by the existing customer base.

- As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant that could serve the north-northwest project areas. The cost of a two million gallon per day water purification plant is approximately $10.2 million.

- Once adequate storage and a RCU operated water supply are in place the County should develop a program to promote the water system and to actively seek new customers in the project area. After a three to six-month sign-up period, develop cost estimates for the required expansion to serve those desiring service and actively seek grants and loans to fund the expansion of the system. Also, the County should consult with the County's Economic Develop staff to see if there are areas where water lines could be installed that would promote economic growth in the area and seek grant funding for those lines.

FEASIBILITY REPORT

SOUTHEAST RICHLAND COUNTY WATER SYSTEM IMPROVEMENTS

FOR

RICHLAND COUNTY UTILITIES
7525 BROAD RIVER ROAD
IRMO, SOUTH CAROLINA 29063

REV. OCTOBER 16, 2018

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

P.O. BOX 296
CLOVER, SOUTH CAROLINA 29710
2160 FILBERT HIGHWAY
YORK, SOUTH CAROLINA 29745
TEL: (803) 684-3390 • FAX: (803) 628-2891
EMAIL: joelwood@comporium.net

DRAFT

Feasibility Report
For
Southeast Richland County Water System Improvements

TABLE OF CONTENTS

APPENDIX
(Beginning on Page 32)

I. GENERAL

The Richland County, South Carolina (County) is legally constituted under the laws of the State of South Carolina. As such, the County is legally capable of receiving grants and loans for the purpose of owning and operating a public utility system within the County's service area as shown in Figure 1 contained herein. The County has or is in the process of exploring options to apply for loans and grants to finance the construction of a water system to serve the residents and businesses within the southeastern portion of Richland County which is within the County's service area. The County has constructed a public water system in the Hopkins School Community in southern Richland County. This community was without a safe and dependable water supply. The groundwater in portions of the Hopkins Community has contamination from an old gas station and there has long been a need for a public water supply and distribution system to alleviate the potential health hazards resulting from the consumption of drinking water that does not meet current water quality standards. The existing system consists of four wells with an aggregate yield of 790 gallons per minute, a 300,000 gallon elevated water storage tank, and a distribution system that serves approximately 562 customers.

The County has an existing Master Plan that provides a guide for the development of water systems to serve Richland County. Burkhold Panning and Management with engineering assistance from Joel E. Wood & Associates prepared "Richland County Master Plan" (2002 Plan) Dated October of 2002 and that "Plan" was followed in the development of the Hopkins Community Water System. In 2016 AECOM prepared an additional master plan being called "Water and Sewer Master Plan for Richland County Utilities" (2016 Plan). These two "Plans" are adopted by reference and will be implemented into the preparation of a Feasibility Study (Study) for a water system to serve the southeastern portion of Richland County. The water plan developed in this Report will meet the current and long-range needs for water service in the southeastern section of Richland County. The planning area for the southeastern portion of

Richland County is as shown on the attached map (*Figure 1).* The proposed water system will be planned for a thirty (30) year growth period with materials selected for a forty (40) year useful life cycle. Detailed build-out projections for the project area were taken from the 2016 Master Plan. Build-out projections taken from the 2016 Plan were used to size the water system components to meet the current and future needs for the southeastern portion of Richland County.

At this time, there are three public or private water service providers in the planning area. These service providers are as shown on Figure 2 contained herein. The City of Columbia provides water service to users surrounding the planning area and is a potential source of water supply for the southeast portion of the County. This option will be explored in Section V of this Report. Richland County Utilities (RCU), a Department of Richland County, owns, operates and maintains two systems in the planning area. The Pond Drive system serves approximately 27 customers on a small distribution system, well and 7,500 gallon hydro pneumatic water storage tank. The Hopkins Community Water System serves approximately 562 customers on a distribution system consisting of 2"-12" water distribution lines, a 300,000 gallon elevated water storage tank and four wells with an aggregate yield of approximately 790 gallons per minute (GPM). The Town of Eastover owns and operates a groundwater well system that includes two wells, two treatment plants (to provide pH adjustment and chlorine for disinfection) and a 250,000 gallon elevated water storage tank. (ref. 2016 Plan)

The southeast planning area has great potential for growth but there are no private or existing public utilities other than Richland County that will undertake the task of providing the much-needed water system. Richland County realizes the need and is willing to undertake the task of providing a safe and dependable water supply for this portion of the County.

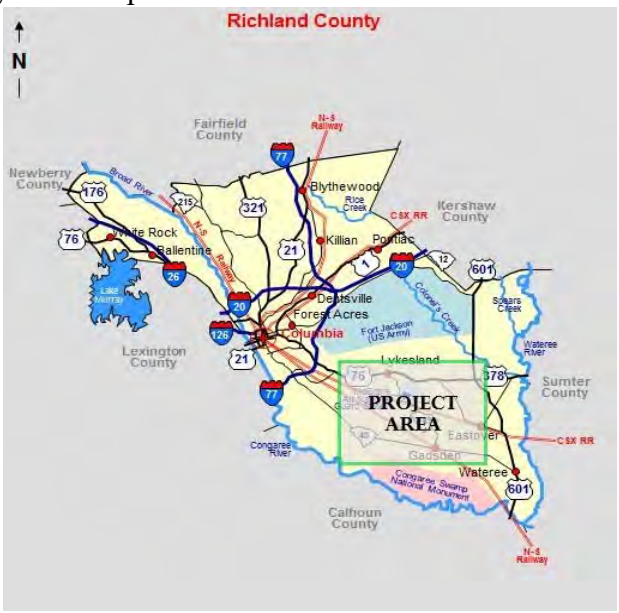
This project was initiated by a concern, on the part of the Richland County Council, that: 1) growth within the County be orderly; 2) adequate water service be provided to prevent a proliferation of small water systems; 3) the number of single home systems be reduced and, more specifically a safe and dependable water supply be provided for an area that has not received sufficient assistance in the past; and 4) the potential health hazard resulting from the contamination found in shallow private wells that serve many of the residents of the area be reduced.

The overall objective of the project is to provide the most cost-effective method to provide water service to a low to moderate, income community that has a great need for a safe and dependable water supply. The engineering design contained herein meets or exceeds the South Carolina Department of Health and Environmental Control's (SCDHEC) minimum requirements. The County contracted with Joel E. Wood & Associates, L.L.C. to prepare a Feasibility Report for a construction project that will provide a means to serve the southeast planning area that will be in compliance with the prior 2002 Plan and 2016 Plan. The conclusions and recommendations presented in this Feasibility Report are based on a systematic evaluation of each alternative available to the County to provide water service to the southeast planning area. Joel E. Wood & Associates, L.L.C. has taken the information produced by this analysis and prepared a Preliminary Engineering Design and developed Preliminary Cost Estimates for the proposed alternatives and from those costs selected the best alternative to provide service to the southeast planning area. The Proposed Cost Estimates can be found in Appendix of this report. For any of the proposed alternatives presented in this study to be successful it is important that the County create an Ordinance that will define the County's service area and that will restrict any other service provider from entering the service area without the approval of County Council. In addition, the proposed Ordinance shall require that any water infrastructure constructed in the southeast planning area be dedicated to the County.

II. PROJECT PLANNING AREA

A. LOCATION

The water system proposed by the County is located in the southeastern section of Richland County and is depicted on Figure 3 "System Map" contained herein. All linear line extensions will be in existing SCDOT highway rights-of-way and/or within rights-of-way granted by individual property owners to the County. Any required improvements to existing wells, new wells, master meters, booster pumps, proposed elevated water storage tank, or other infrastructure will be on existing sites that have been used as utility sites by Richland County or on sites donated or purchased by the County.



B. ENVIRONMENTAL RESOURCES PRESENT

The proposed project lies entirely within the County's designated service area as shown on Figure 1 contained in the Appendix of this Report. The location of each proposed component of the system is shown on Figure 3 "System Map" contained herein. An alternative will be selected that, if implemented, will not have an adverse impact on the natural ecosystems within the area, as well as no impact on agricultural functions.

C. GROWTH AREAS AND POPULATION TRENDS

The County's proposed service area had a recorded population in 2010 Census of 384,507 based on 2.52 persons per household. The 2016 Master Plan projects the population of Richland County to grow by approximately 32% between 2010 and 2035. The 2016 Master

Plan projects the growth in the majority of the southeast planning area to be moderate growth with a portion of the area as low growth. The Central Midlands Council of Governments (COG) has published growth projections for Richland County as follows:

TABLE ONE
POPULATON TREND
Central Midland Council of Governments

	2010	2020	2030	2040	2050
Richland County	384,507	456,027	532,702	613,854	706,818
Planning Area	12,570	14,500	18,750	22,225	26,312

The 2016 Master Plan projects the design population for southeast study area in 2035 to be 23,964 which is slightly higher than the COG projection but lies within acceptable variances when using County wide trends to develop population projections for a specific study area while using spatial distribution of a projected growth based on census block data. Population growth was a baseline parameter used to project future resource needs in the 2002 Master Plan and the 2016 Master Plan. However, other factors such as economic expansion can have an impact of growth in an area. The proposed project should not foster unusual growth patterns or stimulate any unusual increases in growth rate. Richland County does NOT have a mandatory connection ordinance nor is there any indication that one will be enacted, that requires connection to a system or a clause forcing one to pay a water availability fee once the system is constructed. Therefore, it can be expected that all the potential customers will not connect to a new water system in the project area. We expect that 35 % of the potential customers will connect to the system within the first five years and approximately 65% of the potential customers will be connected by 2038.

III. EXISTING FACILITIES

A. LOCATION

The planning area for the southeastern portion of Richland County is as shown on the attached map (*Figure 1).* At this time, there are three public or private water service providers in the planning area. These service providers are as shown of Figure 2 contained herein. The City of Columbia provides service to users surrounding the planning area and is a potential source of water supply for the southeast portion of the County. This option will be explored in other sections of this Report. Richland County Utilities (RCU), a Department of Richland County, owns, operates and maintains two systems in the planning area. The Pond Drive system serves approximately 27 customers on a small distribution system, well and 7,500 gallon hydro pneumatic water storage tank. The Hopkins Community Water System serves approximately 562 customers on a distribution system consisting of 2"-12" water distribution lines, a 300,000 gallon elevated water storage tank and four wells with an aggregate yield of approximately 790 gallons per minute (GPM). The Town of Eastover owns and operates a groundwater well system that includes two wells, two treatment plants (to provide pH adjustment and chlorine for disinfection) and a 250,000 gallon elevated water storage tank. (ref. 2016 Plan)

B. HISTORY

Richland County (County) is legally constituted under the laws of the State of South Carolina.

As such, the County is legally capable of receiving grants and loans for the purpose of owning and operating a public utility system within the County's service area as shown in Figure 1 in Section One of This Report. The existing water systems located in the area are as shown on Figure 2 in of this Report.

C. CONDITION OF FACILITIES

RCU currently operates two water systems in the Southeast portion of the County. The Hopkins Community Water System and the Pond Drive System. The two existing systems are supplied with potable water through deep wells that meet the requirements of the South Carolina Department of Health and Environmental Control (SCDHEC) and the Safe Drinking Water Act. The RCU wells that that serve the Hopkins Community is the sole source of water that serves approximately 562 users through an existing water distribution system. The existing wells exceed the minimum requirements for a potable water supply to serve the system and the system is operating in accordance with SCDHEC regulations. The yield of the existing wells is as follows:

HOPKINS MIDDLE SCHOOL WELLS (WATER SYSTEM # 4020002)

Well # 1	500 Gallons Per Minute
Well # 2	500 Gallons Per Minute (back-up to Well #1)
TOTAL	500 Gallons Per Minute

HOPKINS ELEMENTARY SCHOOL WELLS (WATER SYSTEM # 4020002)

Well # 1	100 Gallons Per Minute
Well # 2	190 Gallons Per Minute
TOTAL	290 Gallons Per Minute

The existing wells currently meet SCDHEC requirements and there are no major improvements needed for the wells. The water distribution system and elevated storage tank have been in operation since 2008 and have been maintained in accordance with SCDHEC regulations. There are no known system deficiencies or reported violations of SCDHEC regulations. The system received a satisfactory rating during the 2017 "Sanitary Survey" by SCDHEC.

The Pond Drive System (SC4050042) is supplied by an existing well with SCDHEC permitted capacity of approximately 72,960 gallons per day and an existing 7,500 gallon hydropneumatics tank. The distribution system consists of approximately 3,800 L.F. of 4" water distribution line and was placed in operation in 2004. The system received a satisfactory rating during the 2017 "Sanitary Survey" by SCDHEC and there are no known deficiencies or violations of SCDHEC regulations.

IV. NEED FOR THE PROJECT

A. HEALTH AND SAFETY

There are over 265 potential users in Phase I of the Southeast Richland County project area. It is estimated that approximately 106 of these potential users will become water users during the first full year of operation of Phase I of the proposed Southeast Richland County Water System Improvement Project. Currently there are approximately 589 users on the Hopkins / Pond Drive water systems and with the additional 106 users from Phase I it will bring the total users in the Southeast Richland County project area to 695 users. If the County does not take steps to provide these additional users with a safe dependable water supply, the users in the Phase I project area will have a different level of service as their neighbors. The 265 potential users in the Phase I Project area will not have safe and dependable water system as enjoyed by their neighbors. The construction of a water distribution system to serve the Southeast Richland County project area will assure that a safe dependable water supply will be made available to all residents within the expansion area. Expansion of the existing well system or the purchase of water at wholesale rates from an outside source will ensure that the Southeast Richland County project area is provided with an adequate water supply to meet SCDHEC requirements and that an adequate supply of water is available to meet the short term and long-term water needs of the project area. A water supply that meets the requirements of the Safe Drinking Water Act and that is continually monitored by SCDHEC will greatly reduce the potential for illnesses caused by water borne pathogens and the users of the proposed water distribution system will generally live healthier lives than could be expected without a safe dependable water supply.

B. SYSTEM O & M

Richland County Utilities currently operates a wastewater utility and a water utility. The Utility Department operates several wastewater utilities and four water systems, and each system is treated as an enterprise fund. The aggregate sum of the enterprise funds comprises the total operating budget for the Richland County Utilities Operating Budget. The Hopkins School Community Water System and the Pond Drive Water systems are set up as an enterprise fund of the aggregate Annual Operating Budget for the Richland County Utilities Department (RCU). Personnel cost and equipment cost are divided among the different enterprise funds with direct expenses charged to each enterprise fund. It is projected that the proposed Southeast Richland County Water System in year one of operation will add an additional 106 users to the existing 589 users. These total 695 users are projected to use, on the average, 3,339 gallons per user per month which will generate an annual revenue of $257,873.00 per year in revenue from the sale of water. See Table 3 and Table 4 in the Appendix of this report that documents current water use and revenue and projects revenue for the first full year of operation after the completion of Phase I. Table 5 outlines the projected budget for the first full year of operation after the completion of Phase I. Richland County Utilities currently has operation, maintenance and administrative staff that are successfully operating the various systems that comprise the Richland County Utilities Department. The personnel are on twenty-four hour a day call schedule if needed to maintain the Utilities in accordance with South Carolina Department of Health and Environmental Control regulations. The addition of the proposed Southeast Richland County Water System components will not have a major impact on the cost of operation of the Utilities Department. The personnel cost and administrative cost will be allocated between the different enterprise funds that constitute the Richland County Utilities Department with the Southeast Richland County Water System paying its fair share. The overall cost of operating the Richland County Utilities Department will be impacted by the addition of the Southeast Richland County Water Distribution System. In fact, principal of "economies of scale" may have an overall positive impact on the cost to operate the Richland County Utility Department.

C. GROWTH

The proposed service area for the Southeast Richland County project has a recorded population in 1990 of 10,309 the population has grown by 2,261 to 12,570 in 2010. This is a 2.19 percent increase in population over the twenty-year period. The 2010 population is based on 2.52 people per household as reported by Central Midlands Council of Governments. If the residents of the Southeast Richland County planning area have an option for a safe and dependable water supply and distribution system, we should see the population continue to expand during the next twenty years. The proposed project should not foster unusual growth patterns or stimulate any unusual increases in growth rate.

V. ALTERNATIVES CONSIDERED

A. DESCRIPTION

The County has an existing Master Plan that provides a guide for the development of water systems to serve Richland County. Burkhold Panning and Management with engineering assistance from Joel Wood & Associates, L. L. C. prepared "Richland County Master Plan" (2002 Plan) Dated October of 2002 and that "Plan" was followed in the development of the Hopkins Community Water System. In 2016 AECOM prepared "Water and Sewer Master Plan for Richland County Utilities" (2016 Plan). These two "Plans" are adopted by reference and will be utilized in the preparation of a Feasibility Report for a water system to serve the southeastern portion of Richland County. Any alternative considered in this Report should comply with the current and long-range needs for water service as defined in the above referenced master plans.

First Alternative Considered (No Action): The first option available for Richland County would be to choose to take no action. To choose the "no action" alternative would mean that a large number of households in the Phase I project area of Southeast Richland County would be without a safe and dependable water supply. Many homes would have to continue to rely on wells that produce water that is of poor quality. Because of the potential negative impacts on the health of the residents of the Phase I project area, Richland County should initiate action to provide a safe dependable water supply for the residents. Therefore, the "No Action" alternative was discarded as an acceptable alternative.

Second Alternative Considered: The second alternative considered was to find an existing public utility that would extend their existing water lines and construct the required infrastructure to serve Phase I of the Southeast Richland County project area. The City of Columbia was the closest public utility to the proposed project area with existing infrastructure that could serve Phase I of the Southeast Richland County project area. The County began negotiations with the City to see if an agreement could be reached whereby the City would provide water service to the Phase I project area. RCU and its consultant met with the City of Columbia on several occasions to explore the possibilities of RCU purchasing water from the City at bulk rates. The City indicated that they could serve the Phase I project area and the existing Hopkins Water System with water that consistently meets SCDHEC quality standards. A copy of the proposed "Bulk Purchase Contract" is contained in the Appendix of this Report. The City would provide water in accordance with the general terms as follows:

- "The Purchaser engineer must provide recommended meter size and location required to meet the demands of the Purchaser."

- "The City does not guarantee any level of service including water quality beyond Purchaser's meter connection. Purchaser is responsible for all aspects of maintaining water quality standards."

- "Purchased water shall only be distributed within Purchaser's service area. Purchaser may sell water to water providers (Bulk Water Customers) provided that the customers are not contiguous to the City's service area and the Purchaser does not solely rely on the City's water service to provide adequate water service."

- "The City may terminate service for any reason after twenty-four (24) hour notification. Service may be limited at any time for emergencies such as water main break and/or maintenance purposes."

- "Rates for service shall be in accordance with the current (Outside) rate schedule and are subject to and future increases as approved by Council.

- "Purchaser is responsible for obtaining any easements and/or permits associated with the Bulk Sale."

- A typical water bill from the City for Bulk Water Purchase to serve the Phase I project area and the existing Hopkins Water System would be approximately $15,209.35 per month or $182,512.20 per year.

A summary of the cost for Alternative Two is summarized below. A detailed cost breakdown can be found in the Appendix of this report.

PRELIMINARY COST ESTIMATE ALTERNATIVE TWO PHASE 1	
TOTAL ESTIMATED CONSTRUCTION COST	$7,036,000
CONSTRUCTION CONTINGENCY (10%)	$703,600
ENGINEERING & SURVEYING (7%)	$493,000
CONSTRUCTION ADMINISTRATION (4%)	$282,000
PERMITTING	$10,000
RAILROAD AGREEMENT FEES	$15,000
LAND PURCHASE/EASEMENTS	$0
LEGAL	$200,000
TOTAL PROJECT COST	**$8,740,000**

Third Alternative Considered: The third alternative considered was to maximize the use of existing resources within the existing Hopkins Community Water System to provide a safe dependable water system at the lowest possible cost. This alternative will utilize the existing deep well systems at Hopkins Elementary School, Hopkins Middle School and Gadsden Elementary School. These wells are currently owned and operated by Richland County Utilities (RCU) and meet all public drinking water standards. The capacity of these wells are as follows:

HOPKINS MIDDLE SCHOOL WELLS (WATER SYSTEM # 4020002)

Well # 1	500 Gallons Per Minute
Well # 2	500 Gallons Per Minute (back-up to Well #1)
TOTAL	500 Gallons Per Minute

HOPKINS ELEMENTARY WELLS (WATER SYSTEM # 4020002)

Well # 1	100 Gallons Per Minute
Well # 2	190 Gallons Per Minute
TOTAL	290 Gallons Per Minute

GADSDEN ELEMENTARY SCHOOL

Well #1	20 Gallons Per Minute

The "Water Source Load" for the existing users, Phase I users, and a 50% growth factor is computed as follows:

Existing Users	589
Phase I users	106
50% Growth	350
Design	1,045

$$\text{Water Source Load} = \frac{\text{Number of Users X 400 Gal./User/Day}}{\text{16 Hour Pumping Cycle (960 Minutes)}}$$

$$\text{Water Source Load} = \frac{\text{1,045 Users X 400 Gal./User/Day}}{\text{960 Minutes}}$$

Water Source Load = 435 gallons per minute

The existing wells have sufficient capacity to meet the current and future needs of the proposed service area. If the largest existing well is taken out of service, the existing well capacity will still exceed the required water source load (required well capacity). The existing wells are deep wells constructed to SCDHEC standards and are in an aquifer not impacted by the ground water contamination in portions of the project area. The existing wells are being chlorinated. In addition, we did a search of the South Carolina Department of Natural Resources, Hydrology Section, Coastal Plain Water Well Inventory (www.dnr.scgov/water/hydro/Wellrecords/locatewells/index.html) and found that there are existing gravel pack commercial wells in the proposed project area that can produce up to 1,000 gallons per minute. If growth warrants, additional wells can be constructed to provide additional water supply as needed.

This alternative will utilize the existing 300,000 gallon elevated water storage tank to provide the SCDHEC required storage. The proposed water distribution system will consist of approximately 72,130 L. F. of 12" water lines, 42,420 L. F. of 10" water lines, 8,630 L. F. of 8" water lines, 5,080 L. F. of 6" water lines, valves, fittings and appurtenances constructed in two phases. The proposed water distribution lines will be connected to the existing elevated water storage tank and to existing deep wells currently owned and operated by the RCU. As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant on the Wateree River that could serve the southeast project area. The cost of a two million gallon per day water purification plant would be approximately $10.2 million.

A summary of the cost for the Alternative Three proposed system expansion is highlighted below. A detailed breakdown can be found in the Appendix of this report.

PRELIMINARY COST ESTIMATE ALTERNATIVE THREE PHASE 1	
TOTAL ESTIMATED CONSTRUCTION COST	$6,861,000
CONSTRUCTION CONTINGENCY (10%)	$686,100
ENGINEERING & SURVEYING (7%)	$481,000
CONSTRUCTION ADMINISTRATION (4%)	$275,000
PERMITTING	$10,000
RAILROAD AGREEMENT FEES	$15,000
LAND PURCHASE/EASEMENTS	$0
LEGAL	$200,000
TOTAL PROJECT COST	**$8,529,000**

B. ALTERNATIVE OVERVIEW

The table below summarizes the three alternatives considered.

Summary of Alternatives Considered			
	Alternate # 1	**Alternate # 2**	**Alternate # 3**
Project Cost	N/A	$8,740,000	$8,529,000
Customers Served	0	695	695
Potential Customers	0	1,094	1,094
Operation Cost (Yearly)	N/A	$678,542	$499,030
Grant Funds Needed	N/A	$8,740,000 (100%)	$8,529,000 (100%)

C. DESIGN CRITERIA

The design parameters used during the evaluation process for this Feasibility Report are in general compliance with the criteria established in USDA RUS Instruction 1780 and with normal and customary practices acceptable within the State of South Carolina. All criteria are in general compliance with the regulations and guidelines established by the South Carolina Department of Health and Environmental Control (SCDHEC).

D. MAP

Figure 3 presents a schematic map of the system detailing the proposed improvements.

E. ENVIRONMENTAL IMPACTS

A general analysis of the project as proposed indicated that there would be no negative impact to the environment if proposed project was implemented. Alternative 1 (No Action) would possibly have a negative impact on the environment but those negative impacts were not documented because the "No Action" alternative was rejected as an acceptable alternative by Richland County. A formal "Environmental Report" will be required for the best alternative selected and is not included as part of this study.

E. LAND REQUIREMENTS

No new land would be required for Alternative Two or Alternative Three. All new linear construction will be within existing Richland County or SCDOT road rights-of-way. Encroachment Permits will be required from Richland County or the SCDOT for placement of the water distribution lines within existing road rights-of-way. No land purchase is required for the linear construction.

F. CONSTRUCTION PROBLEMS

There are no anticipated major construction problems associated with any of the options considered that would have an impact on the selection of an Alternative as the Best Alternative. The new construction proposed is normal and customary utility work that will occur within existing Richland County and SCDOT rights-of-way. At the writing of this Feasibility Report, there are no known construction problems for the proposed water system construction as described by this Report as the best option. If unforeseen problems arise during the final design phase, the problems will be addressed immediately, and the appropriate officials notified before continuing with the final design.

G. COST ESTIMATES

The major "Probable Cost Estimates" used to determine the best alternative for the Phase I expansion of the Southeast Richland County Water System are included in the Appendix of this Report.

H. FINANCIAL STATUS

Table 1 located in the Appendix of this report shows the existing "Water Rate Schedule" implemented by RCU. Table 2 shows the annual water usage used by existing RCU customers (Hopkins System & Pond Drive System) for the twelve-month period beginning July 1, 2017 and ending June 30, 2018. Table 3 shows the projected water users for the first full year of operation by category for the proposed system expansion. Table 4 lists the projected operating budget for Alternative Two for the first full year of operation after all proposed improvements are in place. Table 5 lists the projected operating budget for Alternative Three for the first full year of operation after all proposed improvements are in place. Table 6 shows the breakdown of water costs to buy water from the City of Columbia which is part of Alternative Two. The County reports that they are current with all debt and that all reserve funds are current. A comparison between the two alternatives considered for the Year 2020 Projected Operating Budget is highlighted below. Note that the proposed budget does include the cost of the Phase 1 system expansion. See Tables 4 & 5 in the Appendix for a more detailed breakdown.

Projected Year 2020 Projected Operating Budget		
	Alt. # 2	**Alt. # 3**
Total Operating Revenue	$372,940	$372,940
Total Operating Expense	$678,542	$499,030
Fund Balance	($305,602)	($126,090)

VI. PROPOSED PROJECT

A. GENERAL

The Richland County, South Carolina (County) is legally constituted under the laws of the State of South Carolina. As such, the County is legally capable of receiving grants and loans for the purpose of owning and operating a public utility system within the County's service area as shown in Figure 1 contained herein. The County has the ability to apply for loans and grants to finance the construction of a water system to serve the residents and businesses within the southeastern portion of Richland County which is within the County's service area. There has long been a need for a public water supply and distribution system in the Southeast Richland County service area to alleviate the potential health hazards resulting from the consumption of drinking water that does not meet current SCDHEC water quality standards.

The Southeast Richland County Water System Improvements Project, as presented herein, will meet the long-standing needs for a safe water supply, water storage, and water distribution system within a portion of the southeast Richland County service area. The County has two existing Water Master Plans that provide a guide for the development of a water system to serve this portion of Richland County. The water system presented herein complies with the Water Master Plan as adopted by Richland County. The Project will be designed to meet the current and long range needs for water service in the service area as defined in the County's Water Master Plan. The planning period for the Hopkins School Community Project was planned for a thirty (30) year growth period with materials selected for a forty (40) year useful life cycle build-out projections for the project area were taken from the 2016 Master Plan. Build-out projections taken from the 2016 Master Plan were used to size the water system components to meet the current and future needs for the southeast portion of Richland County.

The proposed Southeast Richland County Water System Improvements Project will maximize the use of existing resources within the existing Hopkins Community Water System to provide a safe dependable water system at the lowest possible cost. This Project will utilize the existing deep well systems at Hopkins Elementary School, Hopkins Middle School and Gadsden Elementary School. The existing wells have sufficient capacity to meet the current and future needs of the proposed service area. If the largest existing well is taken out of service, the existing well capacity will still exceed the required water source load (required well capacity). The existing wells are deep wells constructed to SCDHEC standards and are in an aquifer not impacted by the ground water contamination in portions of the project area. The existing wells are being chlorinated. This Project will also utilize the existing 300,000 gallon elevated water storage tank of the Hopkins Community Water System to provide the SCDHEC required storage.

To provide water to these potential customers the County would be required to extend water distribution lines throughout the area identified on Figure 1 contained in the Appendix of this Report. The proposed water distribution system will consist of approximately 72,130 L. F. of 12" water lines, 42,420 L. F. of 10" water lines, 8,630 L. F. of 8" water lines, 5,080 L. F. of 6" water lines, valves, fittings and appurtenances constructed in two phases. Figure 3 in the Appendix of this report outlines the proposed routes and phases of the water main extension. The proposed water distribution lines will be connected to the existing elevated water storage tank and to existing deep wells currently owned and operated by the RCU. The Probable Cost Estimate for this alternative is contained in the Appendix of this Report.

B. WATER SUPPLY

RCU currently operates two water systems in the Southeast portion of the County. The Hopkins Community Water System and the Pond Drive System. The two existing systems are supplied with potable water through deep wells that

meet the requirements of the South Carolina Department of Health and Environmental Control (SCDHEC) and the Safe Drinking Water Act. The RCU wells that that serve the Hopkins Community is the sole source of water that serves approximately 562 users through an existing water distribution system. The existing wells exceed the minimum requirements for a potable water supply to serve the system and the system is operating in accordance with SCDHEC regulations. The yield of the existing wells is as follows:

HOPKINS MIDDLE SCHOOL WELLS (WATER SYSTEM # 4020002)

Well # 1	500 Gallons Per Minute
Well # 2	500 Gallons Per Minute (back-up to Well #1)
TOTAL	500 Gallons Per Minute

HOPKINS ELEMENTARY WELLS (WATER SYSTEM # 4020002)

Well # 1	100 Gallons Per Minute
Well # 2	190 Gallons Per Minute
TOTAL	290 Gallons Per Minute

GADSDEN ELEMENTARY SCHOOL

Well #1	20 Gallons Per Minute

The "Water Source Load" for the existing users, Phase I users, and a 50% growth factor is computed as follows:

Existing Users	589
Phase I users	106
50% Growth	350
Design	1,045

Water Source Load = Number of Users X 400 Gal./User/Day
16 Hour Pumping Cycle (960 Minutes)

Water Source Load = 1,045 Users X 400 Gal./User/Day
960 Minutes

Water Source Load = 435 gallons per minute

The existing wells have sufficient capacity to meet the current and future needs of the proposed service area. If the largest existing well is taken out of service, the existing well capacity will still exceed the required water source load (required well capacity). The existing wells are deep wells constructed to SCDHEC standards and are in an aquifer not impacted by the ground water contamination in portions of the project area. The existing wells are being chlorinated. As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant on the Wateree River that could serve the southeast project area. The cost of a two million gallon per day water purification plant would be approximately $10.2 million.

C. STORAGE

The existing 300,000 gallon elevated water storage tank located at the Hopkins Middle School has elevated storage that will meet or exceed SCDHEC recommended storage volume requirements for the Phase I expansion and a 7% growth factor. When the system users nears the 750

user mark, or with the construction of Phase II additional storage will be required to meet SCDHEC Standards.

Required Storage= number of users X 400 gallons per user per day

Required Storage = 750 users X 400 gallons / user / day

Required Storage = 300,000 gallons therefore the existing 300,000 gallon tank will meet storage requirements until the customers on the system reaches 750 users.

System Control and Data Acquisition (SCADA) hardware and software will be provided to control the operation of the well pumps and to control the level in the existing elevated water storage tank.

D. SYSTEM LAYOUT

Please refer to Figure 3 in the Appendix of this report for a layout of the existing system and proposed improvements to the system. Figure 4 highlights the Phase 1 project components and Figure 5 highlights the Phase 2 project components.

E. HYDRAULIC CALCULATION

A complete hydraulic analysis of the proposed water system was prepared by Joel E. Wood & Associates, L.L.C. and a copy of the "Hydraulic Analysis" is included in Appendix A of this Report. The following assumptions or factors were used when developing the model:

NO. OF CUSTOMERS DESIGN	**= 1045 USERS AT 300 GPD/USER**
AVG. DAY MODELED	**= 217.8 GAL/MIN**
PEAK DAY MODELED	**= 1.5 X AVG. DAY MODEL**
FIRE FLOW	**= 1000 GAL/MIN + PEAK DAY FLOW**

In order to assure that the existing water distribution system along with the proposed improvements will meet the demands of average day flow, peak flow, and fire flow adequately a computer model of the system was created. The model evenly distributes the average daily flow (ADF) and peak daily flow (PDF) of the community over the entire water distribution system.

F. ANNUAL OPERATING BUDGET

A proposed operating budget is shown in **Table 5** of the Appendix of this Report.

G. PAYMENT HISTORY

Richland County Utilities is current with all debt payments to the best of our knowledge, information and belief.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. GENERAL

The purpose of this section is to give the reader a brief overview of the contents of this Report and to give a summary of the selected alternative. The Report was initiated by a concern, on part of the Richland County Council that 1) growth within the county be orderly; 2) adequate water service be provided to the residents of the Southeast Richland County service area; and 3) reduce the number of single family homes that rely on individual wells for water supply. The project can be divided into three main categories and they are as follows:

1. SYSTEM EXPANSION

See Figure 1 contained in this Report that defines the proposed project service area. The system expansion will consist of new distribution lines constructed within Richland County and SCDOT right-of-way. The system expansion will be constructed in two phases. Figure 3 contained in the Report outlines the proposed system expansion.

2. WATER SUPPLY

See Figure 2 contained in this Report that defines the possible water sources to serve the proposed system expansion. The water supply source chosen was to maximize the use of existing resources within the existing Hopkins Community Water System to provide a safe dependable water system at the lowest possible cost. This alternative will utilize the existing deep well systems at Hopkins Elementary School, Hopkins Middle School and Gadsden Elementary School. These wells are currently owned and operated by Richland County Utilities (RCU) and meet all public drinking water standards. As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant on the Wateree River that could serve the southeast

project area. The cost of a two million gallon per day water purification plant would be approximately $10.2 million.

3. FUNDING SOURCES

There are numerous financing options for RCU to evaluate. The following provides a brief overview of the various options.

South Carolina Rural Infrastructure Authority (RIA) – The RIA was created by the General Assembly to select and assist in financing qualified rural infrastructure projects. Such infrastructure must meet an essential public purpose of protecting public health and the environment by improving environmental facilities and services or building infrastructure capacity to support economic development and employment opportunities RIA offers assistance to local government and other eligible entities primarily through competitive grants for new or improved infrastructure facilities. This assistance helps communities close the gap between needs and resources and builds a strong foundation for the future. The maximum grant amount is $500,000. The grants can only be used for construction costs and Richland County would be required to provide a 25% match for construction cost.

State Revolving Fund (SRF) – SRF funding is provided through the South Carolina Department of Health and Environmental Control (SCDHEC) for project management and South Carolina Rural Infrastructure Authority, Office of Local Government (OLG) for financial assistance. The SRF program provides long-term, low interest loans. The Drinking Water SRF program finances water supply and distribution facilities and relocation

of lines for road widening for up to 30 years at a standard rate of 2.6%. There is a very limited amount of funds available a principal forgiveness for projects facing health or environmental threats.

United States Department of Agriculture Rural Development (RD) – The Rural Utilities Service, through its Water and Environmental Programs, provides financial assistance to eligible bodies to construct, enlarge, or improve water, wastewater, and solid waste disposal systems on rural areas, RD provides loans and grant funding. Funding through RD would be applicable to projects in the southern portion of the RCU service area and potentially the North region.

Bonds- The sale of bonds can be used for water and wastewater projects in the County. For revenue bonds, Richland County would need to obtain a good rating and get the bonds insured to receive the best interest rate. The interest rate for the revenue bonds can be lower than other funding mechanisms such as SRF loans. General obligation bonds typically carry a lower interest rate than revenue bonds. The ad valorem tax revenue generated is utilized to pay for the general obligation.

A benefit to funding with bonds is RCU can secure all or a large percentage of the financing for a project and recoup the cost over a period of time that would be similar to the useful life of the infrastructure. This would be done for revenue bonds through debt service payments and included in the rate schedule. This would allow more equitable funding between generations of taxpayers. Revenues must be sufficient to meet a debt service coverage requirement, so careful financial planning must be undertaken. Bonds could be used for projects in any RCU region.

Ad Velorem Taxes – The County could use ad valorem property taxes for capital funding of water and wastewater infrastructure. The tax is levied based on the value of property. The tax is more stable than user charges, since they are billed to each parcel or property within the service area, which may include undeveloped properties in the service area. These properties may connect to the system in the future and receive benefit for the existing facilities.

B. SUMMARY

- The system expansion will provide an opportunity for approximately 505 existing residences, businesses, churches, and other users to be provided with a safe dependable water supply and distribution system.
- This project will provide availability of a safe and dependable water source that meets SCDHEC standards is available for use by the residents of the Southeast Richland County service area.
- If no action is taken many residences located within the Southeast Richland County service area will have to continue to rely on individual wells for water supply. Many of these wells are in poor condition and can be considered a health risk for its users.
- The project as defined by this Report should not have an adverse impact on the environment.

C. RECOMMENDATIONS

The Southeast Planning area has: 1) a safe and dependable water supply that can be expanded at a reasonable cost; 2) adequate elevated water storage; and 3) a strong customer base. These reasons make expansion of the existing system feasible under certain conditions. These conditions are listed below:

- It is important that the County create an ordinance that will define the County's service area and that will restrict other service providers from entering the County's service area. Without a defined County service area, other water providers could expand into the existing water system's growth areas and limit expansion of its revenue stream.
- Develop a program to promote the water system and to actively seek new customers in the project area. After a three to six-month sign-up period, develop cost estimates for the required expansion to serve those desiring service and actively seek grants and loans to fund the expansion of the system.

- Consult with the County's Economic Development staff to see if there are areas where water lines could be installed that would promote economic growth in the area and seek grant funding for those lines.
- Review the "Rate Study" currently being conducted by RCU and adopt the necessary changes to the rates to cover the operating cost and debt retirement for current loans and for future loans required to expand the system. Rate adjustments should be based on existing and new customers on the expanded system at the current average water usage.
- As expansion projects are determined, prepare Preliminary Engineering Reports and Environmental Assessments for each project required to get funding approval then prepare construction plans and specifications and obtain construction permits for the project.

APPENDIX

TABLES

FIGURES

OTHER ITEMS

TABLES

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

TABLE 1

RICHLAND COUNTY UTILITIES
EXISTING WATER RATE SCHEDULE
&
TAP FEES

WATER RATE SCHEDULE

Usage (Gallons)	Southeast Richland County Service Area
	(Per 1,000 Gallons)
Base (First 1,000 Gallons)	$ 20.00
Next 8,000 Gallons	$ 4.67
Next 11,000 Gallons	$ 4.37
Next 10,000 Gallons	$ 4.12
Next 30,000 Gallons	$ 3.87
Next 60,000 Gallons	$ 3.87

WATER TAP FEES

Meter Size	Southeast Richland County Service Area
¾” Meter	$ 1,000.00
1” Meter	$ 1,500.00
1 ½” Meter	$ 1,500.00
2” Meter	$ 1,500.00

RCU
Richland County Utilities

TABLE 2

ACTUAL WATER USE FOR A 12 MONTH PERIOD

JULY 1, 2017 TO JUNE 30, 2018
Based on 589 Users

	GALLONS
JULY, 2017	2,386,205
AUGUST, 2017	2,252,291
SEPTEMBER, 2017	1,908,218
OCTOBER, 2017	2,045,325
NOVEMBER, 2017	1,385,540
DECEMBER, 2017	1,995,088
JANUARY, 2018	1,943,720
FEBRUARY, 2018	2,664,370
MARCH, 2018	1,773,530
APRIL, 2018	1,254,782
MAY, 2018	2,108,760
JUNE, 2018	1,881,987
TOTAL	**23,599,780 GALLONS**

Average Water Use per Month = $\frac{23,599,780}{12}$ = 1,966,648 gallons

Average Water Use Per Customer = $\frac{1,966,648}{589}$ = 3,339 gallons per user

Average Water Bill = $20.00 first 1000 gallons

3,339 gal. (-) 1000 gal = 2,339 x $4.67 / 1,000 gal. = $10.92

$30.92 per user

Annual Water Sales = $30.92 x 589 customers x 12 months = $218,542.56

TABLE 3

PROJECTED USERS CONNECTED TO THE SOUTHEAST RICHLAND COUNTY WATER SYSTEM AND POTENTIAL REVENUE

FIRST FULL YEAR OF OPERATION

WATER USERS

POTENTIAL USERS	**TOTAL NO. UNITS**
Existing Number of Users	589
Projected Number of Users Phase I[*1]	106
Potential Users First Year of Operation	695

[*1] (Projected Users = (265 potential users along route) times 40% subscription rate
= 106 Potential Users)

WATER USAGE PER MONTH

Potential Water Use Per Month = Average Monthly Use Per Customer[*2] x Number of Customers

Potential Water Use Per Month = 3,339 Gal / User/ Month x 695 Users

Potential Water Use Per Month = 2,320,605 Gal. / Month

PROJECTED ANNUAL REVENUE

Annual Water Sales = $30.92 x 695 Users x 12 months = $257,872.80

[*2] Average Monthly Water Bill for Hopkins and Pond Drive Water Systems with 589 Users (See Table 2)

TABLE 4

SOUTHEAST RICHLAND COUNTY WATER SYSTEM
PROJECTED OPERATING BUDGET FOR ALTERNATIVE TWO
For the year ending June 30, 2020

OPERATING REVENUES (*See Note on Page 34)	
SALE OF WATER	$257,873
TAP REVENUES	$12,538
INTEREST EARNED	$3,000
MISC. REVENUE- UTILITY FEES	$99,529
TOTAL REVENUE	**$372,940**
OPERATING EXPENSES	
PERSONNEL EXPENSE	
SALARIES AND WAGES	$185,073
OVERTIME	$24,900
FICA EMPLOYER'S SHARE	$15,047
WORKER'S COMPENSATION	$321
SC REGULAR RETIREMENT	$25,550
HEALTH INSURANCE EMPLOYER'S SHARE	$27,692
VISION INSURANCE EMPLOYER'S SHARE	$60
DENTAL INSURANCE EMPLOYER'S SHARE	$1,400
LIFE INSURANCE EMPLOYER'S SHARE	$207
TOTAL PERSONNEL EXPENSE	**$280,250**
GENERAL EXPENSE	
OFFICE SUPPLIES	$1,100
PETROL OIL AND LUBRICANT	$8,125
WORK PERMITS AND FEES	$8,187
AUTOMOTIVE NON CONTRACT	$3,400
ELECTRICITY	$30,000
SERVICE CONTRACTS	$5,500
REPAIRS- EQUIPMENT	$39,500
BUILDING MAINTENANCE	$6,000
SHOP SUPPLIES	$800
LAB SUPPLIES	$1,400
CHEMICALS	$12,960
RENT	$500
PRINCIPAL	$22,868
INTEREST	$75,440
WATER PURCHASE CITY OF COLUMBIA	$182,512
TOTAL GENERAL EXPENSE	**$398,292**
TOTAL OPERATING EXPENSE	**$678,542**
TOTAL REVENUE	**$372,940**
FUND BALANCE	**($305,602)**

TABLE 4 (Continued)

**Note: Operating Revenues based on 695 users (589 existing & 106 new) and current usage and expense by Hopkins Water System and Pond Drive Water System)*

Three different scenarios are explored below that would fund the project and how the selected funding along with total number of customers will influence the customer's average bill for the new and existing users.

Scenario #1: If a grant is obtained to cover 100% of the cost for the water system expansion and the total number of users is 695 the average water bill would need to be increased by $36.64 per month for a total monthly bill of $67.56 in order to cover operating costs. This would be an average monthly bill increase of 118.5% for existing customers.

$$\text{Monthly Bill Increase} = \frac{\$305{,}602 / 12 \text{ Months}}{695 \text{ Users}} = \$36.64 + \$30.92 = \$67.56$$

Scenario #2: If a grant is obtained to cover 100% of the cost for the water system expansion and the total number of users is 1,529 (825 more than what is projected) the average water bill would not need to be increased in order to cover operating costs. The average monthly bill will remain at $30.92 for existing and new customers.

Scenario #3: If a grant is obtained to cover 50% of the cost for the water system expansion and the total number of users is 2,116 (1,421 more than what is projected) the average water bill would not need to be increased in order to cover operating costs and debt on capital. The average monthly bill will remain at $30.92 for existing and new customers.

Alternate #2 Funding Scenarios			
	Scenario # 1	**Scenario # 2**	**Scenario # 3**
Total Grant Obtained	$8,740,000 (100%)	$8,740,000 (100%)	$4,370,000 (50%)
Number of Users	695	1,520	2,116
Avg. Monthly Bill / User	$67.56	$30.92	$30.92
Avg. Monthly Bill Increase	$36.64	$0.00	$0.00

TABLE 5

SOUTHEAST RICHLAND COUNTY WATER SYSTEM
PROJECTED OPERATING BUDGET FOR ALTERNATIVE THREE
For the year ending June 30, 2020

OPERATING REVENUES (*See Note on Page 36)	
SALE OF WATER	$257,873
TAP REVENUES	$12,538
INTEREST EARNED	$3,000
MISC. REVENUE- UTILITY FEES	$99,529
TOTAL REVENUE	**$372,940**
OPERATING EXPENSES	
PERSONNEL EXPENSE	
SALARIES AND WAGES	$185,073
OVERTIME	$24,900
FICA EMPLOYER'S SHARE	$15,047
WORKER'S COMPENSATION	$321
SC REGULAR RETIREMENT	$25,550
HEALTH INSURANCE EMPLOYER'S SHARE	$27,692
VISION INSURANCE EMPLOYER'S SHARE	$60
DENTAL INSURANCE EMPLOYER'S SHARE	$1,400
LIFE INSURANCE EMPLOYER'S SHARE	$207
TOTAL PERSONNEL EXPENSE	**$280,250**
GENERAL EXPENSE	
OFFICE SUPPLIES	$1,100
PETROL OIL AND LUBRICANT	$8,125
WORK PERMITS AND FEES	$8,187
AUTOMOTIVE NON CONTRACT	$3,400
ELECTRICITY	$33,000
SERVICE CONTRACTS	$5,500
REPAIRS- EQUIPMENT	$39,500
BUILDING MAINTENANCE	$6,000
SHOP SUPPLIES	$800
LAB SUPPLIES	$1,400
CHEMICALS	$12,960
RENT	$500
PRINCIPAL	$22,868
INTEREST	$75,440
WATER PURCHASE CITY OF COLUMBIA	$0
TOTAL GENERAL EXPENSE	**$218,780**
TOTAL OPERATING EXPENSE	**$499,030**
TOTAL REVENUE	**$372,940**
FUND BALANCE	**($126,090)**

TABLE 5 (Continued)

**Note: Operating Revenues based on 695 users (589 existing & 106 new) and current usage and expense by Hopkins Water System and Pond Drive Water System)*

Three different scenarios are explored below that would fund the project and how the selected funding along with total number of customers will influence the customer's average bill for the new and existing users.

Scenario #1: If a grant is obtained to cover 100% of the cost for the water system expansion and the total number of users is 695 the average water bill would need to be increased by $15.12 per month for a total monthly bill of $46.04 in order to cover operating costs. This would be an average monthly bill increase of 48.9% for existing customers.

$$\text{Monthly Bill Increase} = \frac{\$126{,}090 \,/\, 12 \text{ Months}}{695 \text{ Users}} = \$15.12 + \$30.92 = \$46.04$$

Scenario #2: If a grant is obtained to cover 100% of the cost for the water system expansion and the total number of users is 1,035 (340 more than what is projected) the average water bill would not need to be increased in order to cover operating costs. The average monthly bill will remain at $30.92 for existing and new customers.

Scenario #3: If a grant is obtained to cover 50% of the cost for the water system expansion and the total number of users is 1,632 (937 more than what is projected) the average water bill would not need to be increased in order to cover operating costs and debt on capital. The average monthly bill will remain at $30.92 for existing and new customers.

Alternate #3 Funding Scenarios			
	Scenario # 1	**Scenario # 2**	**Scenario # 3**
Total Grant Obtained	$8,529,000 (100%)	$8,529,000 (100%)	$4,264,500 (50%)
Number of Users	695	1,035	1,632
Avg. Monthly Bill / User	$46.04	$30.92	$30.92
Avg. Monthly Bill Increase	$15.12	$0.00	$0.00

TABLE 6

SOUTHEAST RICHLAND COUNTY WATER SYSTEM PROJECTED WATER COST FROM CITY OF COLUMBIA FOR ALTERNATIVE TWO

I. PROJECTED WATER PURCHASE

Average Water Use	2,320,605 Gal./Month
Flushing Water and Water Loss (15%)	348,090 Gal./Month
Projected Water Purchase Per Month	2,668,695 Gal./Month

2,668,695 Gal./Month = 356,777 Cubic Feet

II. AVERAGE MONTHLY WATER BILL

Meter Charge 300 Cu. Ft.		$ 1,024.25
Volume Change	9,700 Cu. Ft. /100 x $4.40	$ 426.80
	90,000 Cu. Ft. / 100 x $4.16	$ 3,744.00
	256,777 Cu. Ft. / 100 x $3.90	$10,014.30
Average Monthly Water Bill		$15,209.35

III. PROJECTED ANNUAL WATER BILL

Projected Annual Water Bill = Average Monthly Bill x 12 Months

Projected annual Water Bill= $15,209.35 x 12 Months

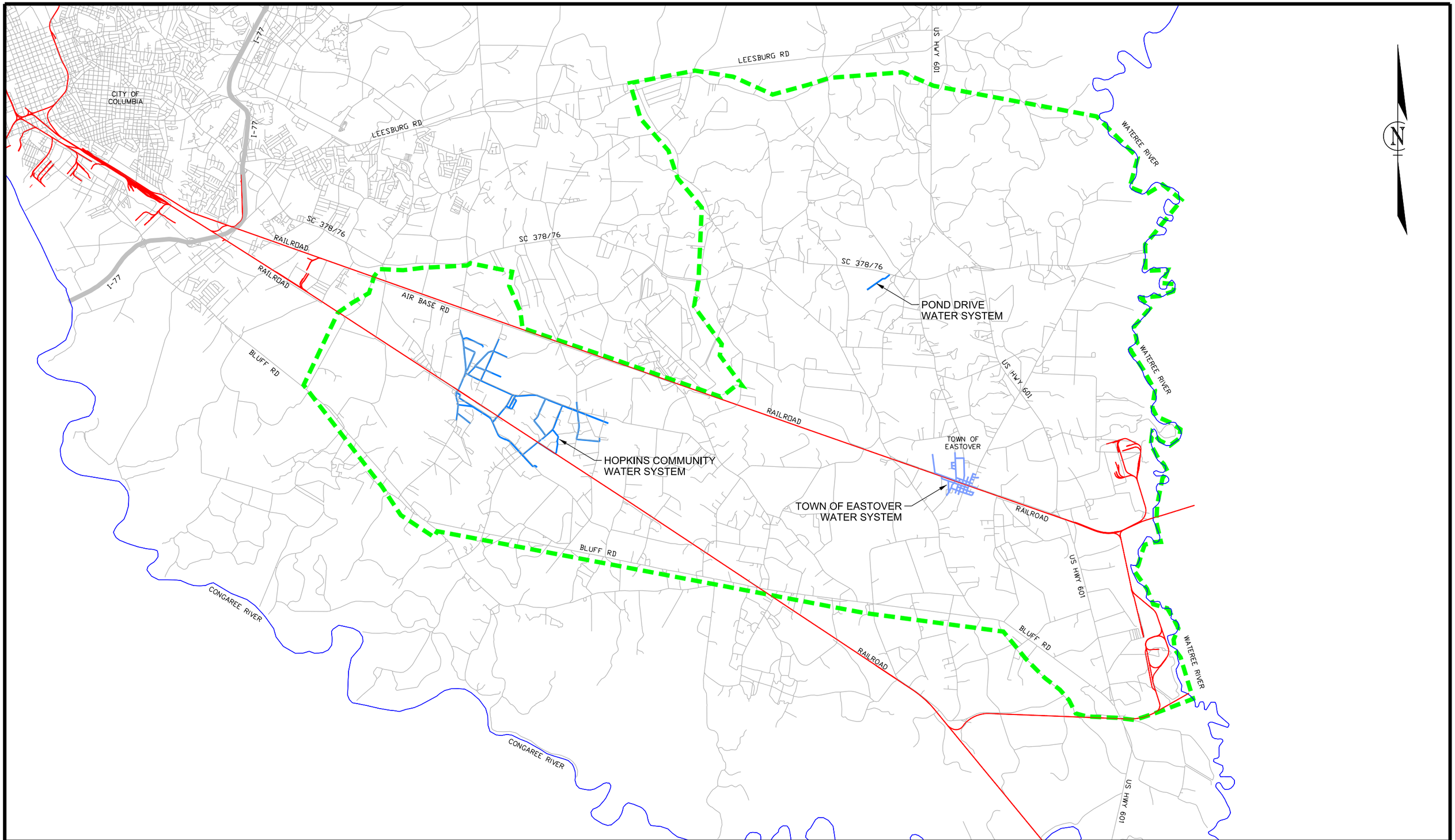
Projected Annual Water Bill = $182,512.20 per Year

FIGURES

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018



LEGEND

- WATER SERVICE AREA
- ROADWAY
- INTERSTATE
- RAILROAD
- RIVER
- EXISTING WATER SYSTEM

RCU
Richland County Utilities

SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

SOUTHEAST RICHLAND COUNTY SERVICE AREA

SHEET TITLE

FIGURE 1

DATE:10/1/2018
SCALE:N.T.S.
JOB NO.: 180611
SHEET: 1 OF 1

CITY OF COLUMBIA
WATER CONNECTION

HOPKINS COMMUNITY WATER
SYSTEM SUPPLY SOURCE

GARNERS FERRY RD
AIR BASE RD
LOWER RICHLAND BLVD
EX. WELLS
CABIN CREEK RD
CLARKSON RD
MINERVAVILLE RD
COUNTRY HAVEN RD
CONGAREE RD
ZEIGLER RD S
GOODWIN MAY
BLUFF RD
MARTIN LUTHER KING BLVD
MEETING HOUSE RD
DRY BRANCH RD
GOODWIN RD
CONGAREE CHURCH RD
GRIFFINS CREEK RD
OLD BLUFF RD
EX. WELLS
EX. TANK

N

LEGEND

- EXISTING WATER MAIN (HOPKINS COMMUNITY SYSTEM)
- PROP. PHASE 1 WATER MAIN
- PROP. PHASE 2 WATER MAIN
- WELL
- WATER TANK

RCU
Richland County Utilities

SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

POSSIBLE WATER SUPPLY SOURCES
RICHLAND COUNTY UTILITIES

SHEET TITLE	DATE: 10/1/2018
FIGURE 2	SCALE: N.T.S.
	JOB NO.: 180611
	SHEET: 1 OF 1

GARNERS FERRY RD
AIR BASE RD
LOWER RICHLAND BLVD
EX. WELLS
CABIN CREEK RD
CLARKSON RD
MINERVAVILLE RD
COUNTRY HAVEN RD
CONGAREE RD
ZEIGLER RD S
GOODWIN MAY
EX. WELLS
EX. TANK
MARTIN LUTHER KING BLVD
BLUFF RD
MEETING HOUSE RD
DRY BRANCH RD
GOODWIN RD
CONGAREE CHURCH RD
OLD BLUFF RD
GRIFFINS CREEK RD
N

LEGEND

- EXISTING WATER MAIN (HOPKINS COMMUNITY SYSTEM)
- PROP. PHASE 1 WATER MAIN
- PROP. PHASE 2 WATER MAIN
- WELL
- WATER TANK

RCU Richland County Utilities

SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

PROPOSED LAYOUT MAP
RICHLAND COUNTY UTILITIES

SHEET TITLE

FIGURE 3

DATE: 10/1/2018
SCALE: N.T.S.
JOB NO.: 180611
SHEET: 1 OF 1

GARNERS FERRY RD

LOWER RICHLAND BLVD

PROP. 6,100 LF OF
10" WATER MAIN

AIR BASE RD

EX.
WELLS

CABIN CREEK RD

CLARKSON RD

MINERVAVILLE RD

COUNTRY HAVEN RD

CONGAREE RD

ZEIGLER RD S

EX.
WELLS

EX.
TANK

BLUFF RD

MARTIN LUTHER KING BLVD

PROP. 9,940 LF OF
12" WATER MAIN

GOODWIN MAY

PROP. 13,690 LF OF
12" WATER MAIN

OLD BLUFF RD

MEETING HOUSE RD

DRY BRANCH RD

GOODWIN RD

CONGAREE CHURCH RD

PROP. 31,870 LF OF
12" WATER MAIN

PROP. 3,550 LF OF
12" WATER MAIN

GRIFFINS CREEK RD

PROP. 13,080 LF OF
12" WATER MAIN

N

LEGEND

- EXISTING WATER MAIN (HOPKINS COMMUNITY SYSTEM)
- PROP. 12" WATER MAIN
- PROP. 10" WATER MAIN
- WELL
- WATER TANK

RCU
Richland County Utilities

SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

PHASE 1 - PROPOSED LAYOUT MAP
RICHLAND COUNTY UTILITIES

SHEET TITLE	DATE: 10/1/2018
FIGURE 4	SCALE: N.T.S.
	JOB NO.: 180611
	SHEET: 1 OF 1

GARNERS FERRY RD

AIR BASE RD

LOWER RICHLAND BLVD

EX. WELLS

CABIN CREEK RD

CLARKSON RD

MINERVAVILLE RD

PROP. 15,550 LF OF 10" WATER MAIN

CABIN CREEK RD

COUNTRY HAVEN RD

PROP. 5,080 LF OF 6" WATER MAIN

PROP. 6,300 LF OF 10" WATER MAIN

CONGAREE RD

ZEIGLER RD S

PROP. 8,630 LF OF 10" WATER MAIN

GOODWIN MAY

PROP. 5,840 LF OF 10" WATER MAIN

GOODWIN RD

CONGAREE RD

CONGAREE CHURCH RD

PROP. 8,630 LF OF 8" WATER MAIN

GRIFFINS CREEK RD

BLUFF RD

EX. WELLS

EX. TANK

MARTIN LUTHER KING BLVD

MEETING HOUSE RD

DRY BRANCH RD

OLD BLUFF RD

N

LEGEND

- EXISTING WATER MAIN (HOPKINS COMMUNITY SYSTEM)
- PROP. PHASE 1 WATER MAIN
- PROP. 10" WATER MAIN
- PROP. 6" WATER MAIN
- PROP. 8" WATER MAIN
- WELL
- WATER TANK

RCU Richland County Utilities

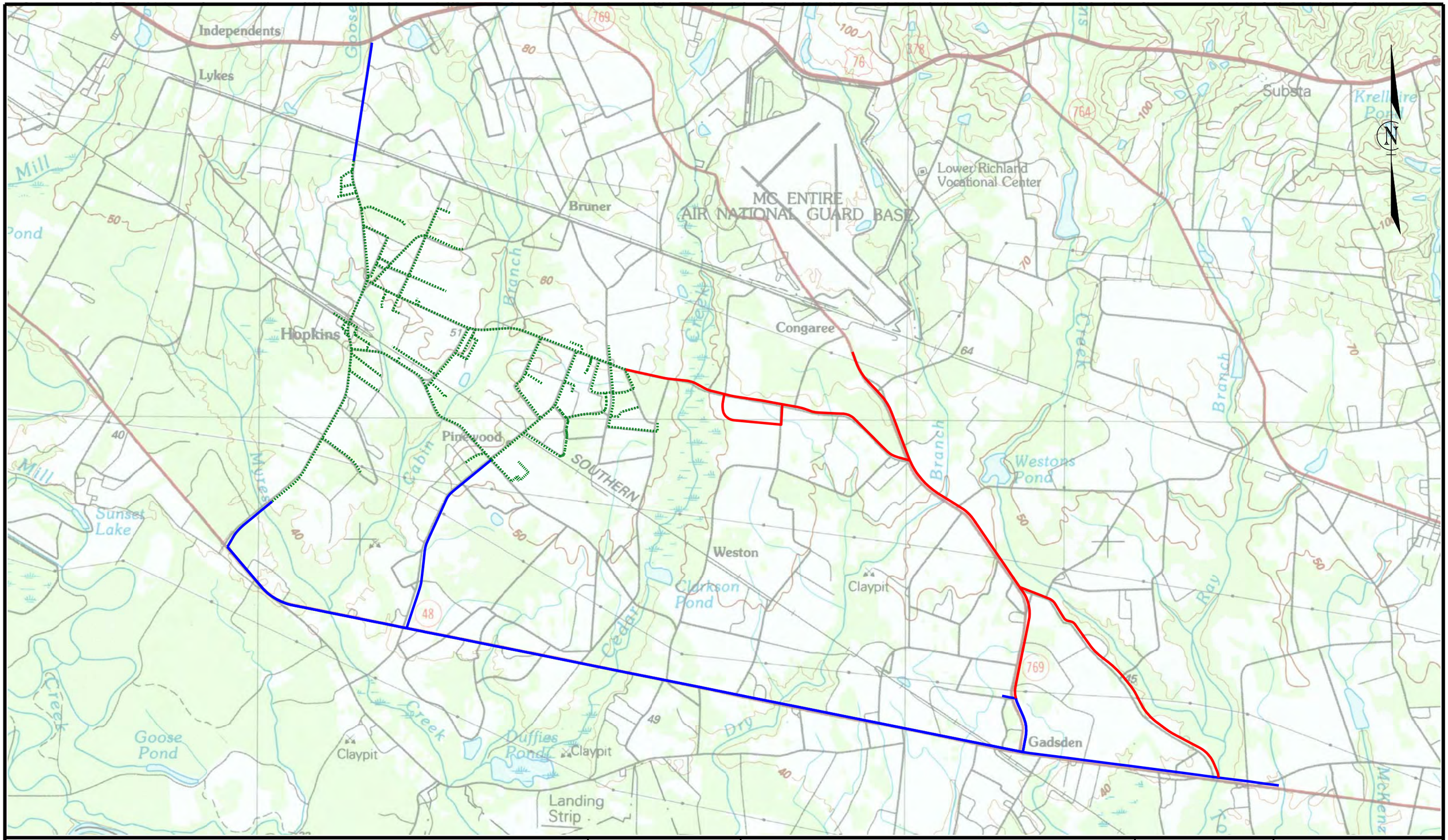
SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

PHASE 2 - PROPOSED LAYOUT MAP
RICHLAND COUNTY UTILITIES

SHEET TITLE

FIGURE 5

DATE: 10/1/2018
SCALE: N.T.S.
JOB NO.: 180611
SHEET: 1 OF 1



LEGEND

- EXISTING WATER MAIN (HOPKINS COMMUNITY SYSTEM)
- PROP. PHASE 1 WATER MAIN
- PROP. PHASE 2 WATER MAIN

RCU
Richland County Utilities

SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

USGS - PROPOSED LAYOUT MAP
RICHLAND COUNTY UTILITIES

SHEET TITLE

FIGURE
6

DATE:10/1/2018
SCALE:N.T.S.
JOB NO.: 180611
SHEET: 1 OF 1

PROBABLE COST ESTIMATES

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

SOUTHEAST RICHLAND WATER SYSTEM - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE ALTERNATIVE TWO PHASE 1

09/21/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$115,000.00	$115,000.00
2	CLEAR RIGHT OF WAY	31	AC	$5,300.00	$164,300.00
3	TRAFFIC CONTROL	1	LS	$20,000.00	$20,000.00
4	CONSTRUCTION STAKING	1	LS	$30,000.00	$30,000.00
5	SEDIMENT & EROSION CONTROL	55,000	LF	$4.00	$220,000.00
6	GRASSING, SEEDING, FERTILIZER	25	AC	$3,500.00	$87,500.00
7	12" (DR 18 C900) PVC WATER LINE	62,200	LF	$41.00	$2,550,200.00
8	12" (PC 250) DUCTILE IRON WATER MAIN	5,500	LF	$80.00	$440,000.00
9	10" (DR 18 C900) PVC WATER LINE	5,600	LF	$35.00	$196,000.00
10	10" (PC 250) DUCTILE IRON WATER MAIN	200	LF	$75.00	$15,000.00
11	DUCTILE IRON FITTINGS	300	EA	$1,000.00	$300,000.00
12	14" HORIZONTAL DIRECTIONAL DRILL UNDER STREAM	3700	LF	$240.00	$888,000.00
13	BORE AND JACK UNDER RAILROAD	500	LF	$400.00	$200,000.00
14	BORE & JACK 20" STEEL CASING W/ 12" D.I. (PC 250) CARRIER PIPE	400	LF	$300.00	$120,000.00
15	BORE & JACK 18" STEEL CASING W/ 10" D.I. (PC 250) CARRIER PIPE	100	LF	$250.00	$25,000.00
16	12" GATE VALVE AND VALVE BOX	24	EA	$4,500.00	$108,000.00
17	10" GATE VALVE AND VALE BOX	5	EA	$3,000.00	$15,000.00
18	WATER BOOSTER PUMP "IN-LINE"	1	EA	$35,000.00	$35,000.00
19	1" AIR RELEASE VALVES	10	EA	$3,000.00	$30,000.00
20	FIRE HYDRANT ASSEMBLY	65	EA	$3,500.00	$227,500.00
21	TIE TO EXISTING LINE	3	EA	$4,500.00	$13,500.00
22	ASPHALT DRIVEWAY REPAIR	12000	SY	$60.00	$720,000.00
23	CONCRETE DRIVEWAY REPAIR	1000	SY	$40.00	$40,000.00
24	GRAVEL DRIVEWAY REPAIR	500	TONS	$25.00	$12,500.00
25	3/4" SERVICE CONNECTION WITH METER	106	EA	$2,500.00	$265,000.00
26	3/4" POLYETHYLENE SERVICE LINE	2000	LF	$3.50	$7,000.00
27	3/4" POLYETHYLENE SERVICE LINE UNDER PAVEMENT	3,000	LF	$5.50	$16,500.00
28	10" MASTER METER	1	EA	$175,000.00	$175,000.00
				TOTAL ESTIMATED CONSTRUCTION COST	$7,036,000.00
				CONSTRUCTION CONTINGENCY (10%)	$703,600.00
				ENGINEERING & SURVEYING (7%)	$493,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$282,000.00
				PERMITTING	$10,000.00
				RAILROAD AGREEMENT FEES	$15,000.00
				LAND PURCHASE/EASEMENTS	$0.00
				LEGAL	$200,000.00
				TOTAL PROJECT COST	**$8,740,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

SOUTHEAST RICHLAND WATER SYSTEM - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE ALTERNATIVE THREE PHASE 1

09/21/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$115,000.00	$115,000.00
2	CLEAR RIGHT OF WAY	31	AC	$5,300.00	$164,300.00
3	TRAFFIC CONTROL	1	LS	$20,000.00	$20,000.00
4	CONSTRUCTION STAKING	1	LS	$30,000.00	$30,000.00
5	SEDIMENT & EROSION CONTROL	55,000	LF	$4.00	$220,000.00
6	GRASSING, SEEDING, FERTILIZER	25	AC	$3,500.00	$87,500.00
7	12" (DR 18 C900) PVC WATER LINE	62,200	LF	$41.00	$2,550,200.00
8	12" (PC 250) DUCTILE IRON WATER MAIN	5,500	LF	$80.00	$440,000.00
9	10" (DR 18 C900) PVC WATER LINE	5,600	LF	$35.00	$196,000.00
10	10" (PC 250) DUCTILE IRON WATER MAIN	200	LF	$75.00	$15,000.00
11	DUCTILE IRON FITTINGS	300	EA	$1,000.00	$300,000.00
12	14" HORIZONTAL DIRECTIONAL DRILL UNDER STREAM	3,700	LF	$240.00	$888,000.00
13	BORE AND JACK UNDER RAILROAD	500	LF	$400.00	$200,000.00
14	BORE & JACK 20" STEEL CASING W/ 12" D.I. (PC 250) CARRIER PIPE	400	LF	$300.00	$120,000.00
15	BORE & JACK 18" STEEL CASING W/ 10" D.I. (PC 250) CARRIER PIPE	100	LF	$250.00	$25,000.00
16	12" GATE VALVE AND VALVE BOX	24	EA	$4,500.00	$108,000.00
17	10" GATE VALVE AND VALE BOX	5	EA	$3,000.00	$15,000.00
18	WATER BOOSTER PUMP "IN-LINE"	1	EA	$35,000.00	$35,000.00
19	1" AIR RELEASE VALVES	10	EA	$3,000.00	$30,000.00
20	FIRE HYDRANT ASSEMBLY	65	EA	$3,500.00	$227,500.00
21	TIE TO EXISTING LINE	3	EA	$4,500.00	$13,500.00
22	ASPHALT DRIVEWAY REPAIR	12,000	SY	$60.00	$720,000.00
23	CONCRETE DRIVEWAY REPAIR	1000	SY	$40.00	$40,000.00
24	GRAVEL DRIVEWAY REPAIR	500	TONS	$25.00	$12,500.00
25	3/4" SERVICE CONNECTION WITH METER	106	EA	$2,500.00	$265,000.00
26	3/4" POLYETHYLENE SERVICE LINE	2,000	LF	$3.50	$7,000.00
27	3/4" POLYETHYLENE SERVICE LINE UNDER PAVEMENT	3,000	LF	$5.50	$16,500.00
				TOTAL ESTIMATED CONSTRUCTION COST	$6,861,000.00
				CONSTRUCTION CONTINGENCY (10%)	$686,100.00
				ENGINEERING & SURVEYING (7%)	$481,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$275,000.00
				PERMITTING	$10,000.00
				RAILROAD AGREEMENT FEES	$15,000.00
				LAND PURCHASE/EASEMENTS	$0.00
				LEGAL	$200,000.00
				TOTAL PROJECT COST	**$8,529,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

SOUTHEAST RICHLAND WATER SYSTEM - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE ALTERNATIVE THREE PHASE 2

09/21/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$80,000.00	$80,000.00
2	CLEAR RIGHT OF WAY	15	AC	$5,300.00	$79,500.00
3	TRAFFIC CONTROL	1	LS	$10,000.00	$10,000.00
4	CONSTRUCTION STAKING	1	LS	$15,000.00	$15,000.00
5	SEDIMENT & EROSION CONTROL	25,000	LF	$4.00	$100,000.00
6	GRASSING, SEEDING, FERTILIZER	15	AC	$3,500.00	$52,500.00
7	10" (DR 18 C900) PVC WATER LINE	29,800	LF	$35.00	$1,043,000.00
8	10" (PC 250) DUCTILE IRON WATER MAIN	4,000	LF	$75.00	$300,000.00
9	8" (DR 18 C900) PVC WATER LINE	7,680	LF	$28.00	$215,040.00
10	8" (PC 250) DUCTILE IRON WATER MAIN	750	LF	$68.00	$51,000.00
11	6" (DR 18 C900) PVC WATER LINE	4,880	LF	$28.00	$136,640.00
12	6" (PC 250) DUCTILE IRON WATER MAIN	200	LF	$59.00	$11,800.00
13	DUCTILE IRON FITTINGS	175	EA	$1,000.00	$175,000.00
14	12" HORIZONTAL DIRECTIONAL DRILL UNDER STREAM	1,000	LF	$250.00	$250,000.00
15	BORE & JACK 18" STEEL CASING W/ 10" D.I. (PC 250) CARRIER PIPE	1,560	LF	$250.00	$390,000.00
16	BORE & JACK 16" STEEL CASING W/ 8" D.I. (PC 250) CARRIER PIPE	200	LF	$200.00	$40,000.00
17	10" GATE VALVE AND VALVE BOX	6	EA	$3,000.00	$18,000.00
18	8" GATE VALVE AND VALVE BOX	18	EA	$2,500.00	$45,000.00
19	6" GATE VALVE AND VALE BOX	5	EA	$2,000.00	$10,000.00
20	1" AIR RELEASE VALVES	10	EA	$3,000.00	$30,000.00
21	FIRE HYDRANT ASSEMBLY	45	EA	$3,500.00	$157,500.00
22	TIE TO EXISTING LINE	3	EA	$4,500.00	$13,500.00
23	ASPHALT DRIVEWAY REPAIR	8,000	SY	$60.00	$480,000.00
24	CONCRETE DRIVEWAY REPAIR	500	SY	$40.00	$20,000.00
25	GRAVEL DRIVEWAY REPAIR	300	TONS	$25.00	$7,500.00
26	3/4" SERVICE CONNECTION WITH METER	96	EA	$2,500.00	$240,000.00
27	3/4" POLYETHYLENE SERVICE LINE	2,100	LF	$3.50	$7,350.00
28	3/4" POLYETHYLENE SERVICE LINE UNDER PAVEMENT	1,000	LF	$5.50	$5,500.00
				TOTAL ESTIMATED CONSTRUCTION COST	$3,983,830.00
				CONSTRUCTION CONTINGENCY (10%)	$398,383.00
				ENGINEERING & SURVEYING (7%)	$279,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$160,000.00
				PERMITTING	$10,000.00
				RAILROAD AGREEMENT FEES	$0.00
				LAND PURCHASE/EASEMENTS	$0.00
				TAP FEES	$0.00
				LEGAL	$200,000.00
				TOTAL PROJECT COST	**$5,032,000.00**

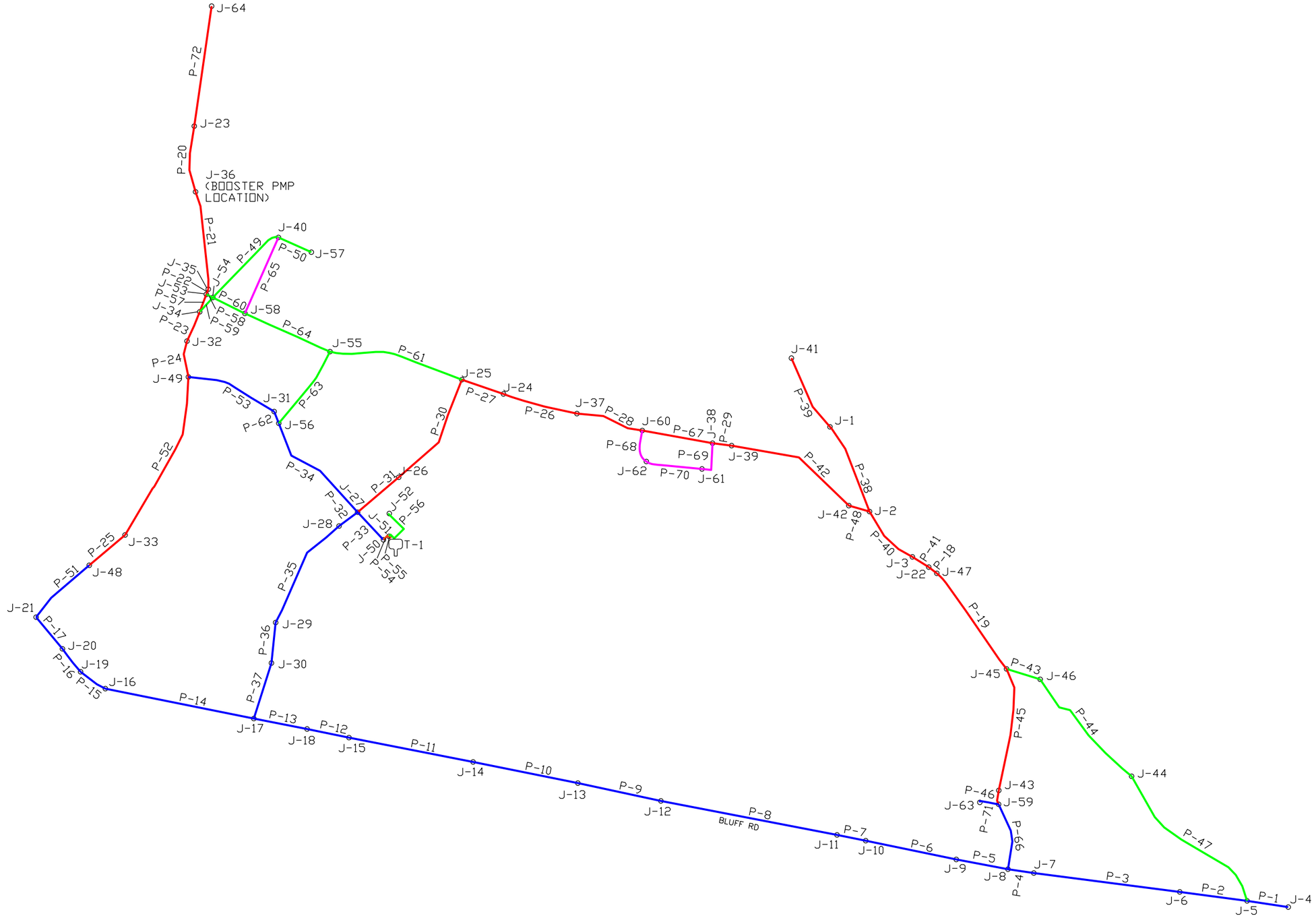
This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

HYDRAULIC ANALYSIS

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018



LEGEND

- 6" WATER MAIN
- 8" WATER MAIN
- 10" WATER MAIN
- 12" WATER MAIN
- 24" WATER MAIN
- JUNCTION
- WATER TANK

RCU Richland County Utilities

SOUTHEAST RICHLAND COUNTY WATER IMPROVEMENTS

WATER MODEL SCHEMATIC MAP
RICHLAND COUNTY UTILITIES

SHEET TITLE	DATE: 10/1/2018
FIGURE 1	SCALE: N.T.S.
	JOB NO.: 180611
	SHEET: 1 OF 1

Average Day Flow Results

Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-1	200.0	3.63	339.4	60
J-2	180.0	3.63	339.4	69
J-3	155.0	3.63	339.4	80
J-4	130.0	3.63	339.4	91
J-5	120.0	3.63	339.4	95
J-6	140.0	3.63	339.4	86
J-7	150.0	3.63	339.4	82
J-8	140.0	3.63	339.4	86
J-9	150.0	3.63	339.4	82
J-10	150.0	3.63	339.4	82
J-11	150.0	3.63	339.5	82
J-12	150.0	3.63	339.5	82
J-13	150.0	3.63	339.5	82
J-14	150.0	3.63	339.6	82
J-15	190.0	3.63	339.6	65
J-16	130.0	3.63	339.7	91
J-17	140.0	3.63	339.7	86
J-18	180.0	3.63	339.6	69
J-19	160.0	3.63	339.7	78
J-20	160.0	3.63	339.7	78
J-21	160.0	3.63	339.7	78
J-22	110.0	3.63	339.4	99
J-23	210.0	3.63	339.7	56
J-24	190.0	3.63	339.6	65
J-25	190.0	3.63	339.7	65
J-26	190.0	3.63	339.8	65
J-27	170.0	3.63	339.8	73
J-28	170.0	3.63	339.8	73
J-29	140.0	3.63	339.7	86
J-30	140.0	3.63	339.7	86
J-31	160.0	3.63	339.7	78
J-32	166.0	3.63	339.7	75
J-33	140.0	3.63	339.7	86
J-34	170.0	3.63	339.7	73
J-35	170.0	3.63	339.7	73
J-36	200.0	3.63	339.7	60
J-37	190.0	3.63	339.6	65
J-38	190.0	3.63	339.5	65
J-39	190.0	3.63	339.5	65
J-40	200.0	3.63	339.7	60
J-41	220.0	3.63	339.4	52
J-42	180.0	3.63	339.4	69
J-43	160.0	3.63	339.4	78
J-44	140.0	3.63	339.4	86
J-45	160.0	3.63	339.4	78
J-46	140.0	3.63	339.4	86
J-47	140.0	3.63	339.4	86
J-48	130.0	3.63	339.7	91

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-49	164.0	3.63	339.7	76
J-50	170.0	3.63	340.0	74
J-51	170.0	3.63	340.0	74
J-52	170.0	3.63	340.0	74
J-53	167.0	3.63	339.7	75
J-54	170.0	3.63	339.7	73
J-55	170.0	3.63	339.7	73
J-56	155.0	3.63	339.7	80
J-57	200.0	3.63	339.7	60
J-58	166.0	3.63	339.7	75
J-59	156.0	3.63	339.4	79
J-60	175.0	3.63	339.5	71
J-61	180.0	3.63	339.5	69
J-62	170.0	3.63	339.5	73
J-63	156.0	3.63	339.4	79
J-64	240.0	3.63	339.7	43

Average Day Flow Results

Pipe Report:

Pipe	Dia (In)	Length	Start Node	End Node	Material	Roughness	Flow (GPM)	Velocity (fps)
P-1	12	1728	J-4	J-5	PVC	150	-3.63	0.01
P-2	12	2819	J-5	J-6	PVC	150	-8.70	0.02
P-3	12	6109	J-6	J-7	PVC	150	-12.33	0.03
P-4	12	1083	J-7	J-8	PVC	150	-15.96	0.05
P-5	12	2184	J-8	J-9	PVC	150	-34.39	0.10
P-6	12	3840	J-9	J-10	PVC	150	-38.02	0.11
P-7	12	1215	J-10	J-11	PVC	150	-41.65	0.12
P-8	12	7444	J-11	J-12	PVC	150	-45.28	0.13
P-9	12	3526	J-12	J-13	PVC	150	-48.91	0.14
P-10	12	4434	J-13	J-14	PVC	150	-52.54	0.15
P-11	12	5250	J-14	J-15	PVC	150	-56.17	0.16
P-12	12	1777	J-15	J-18	PVC	150	-59.80	0.17
P-13	12	2253	J-18	J-17	PVC	150	-63.43	0.18
P-14	12	6284	J-17	J-16	PVC	150	2.75	0.01
P-15	12	1248	J-16	J-19	PVC	150	-0.88	0.00
P-16	12	1215	J-19	J-20	PVC	150	-4.51	0.01
P-17	12	1710	J-20	J-21	PVC	150	-8.14	0.02
P-18	10	421	J-22	J-47	PVC	150	9.17	0.04
P-19	10	4917	J-47	J-45	PVC	150	5.54	0.02
P-20	10	2789	J-23	J-36	PVC	150	-7.26	0.03
P-21	10	4081	J-36	J-35	PVC	150	-10.89	0.04
P-22	10	227	J-35	J-53	PVC	150	-14.52	0.06
P-23	10	1324	J-34	J-32	PVC	150	-25.87	0.11
P-24	10	1529	J-32	J-49	PVC	150	-29.50	0.12
P-25	10	1947	J-33	J-48	PVC	150	15.40	0.06
P-26	10	3160	J-24	J-37	PVC	150	52.73	0.22
P-27	10	1827	J-24	J-25	PVC	150	-56.36	0.23
P-28	10	2841	J-37	J-60	PVC	150	49.10	0.20
P-29	10	797	J-38	J-39	PVC	150	34.58	0.14
P-30	10	4977	J-25	J-26	PVC	150	-52.10	0.21
P-31	10	2237	J-26	J-27	PVC	150	-55.73	0.23
P-32	12	960	J-27	J-28	PVC	150	80.69	0.23
P-33	12	1567	J-27	J-50	PVC	150	-221.43	0.63
P-34	12	5108	J-27	J-56	PVC	150	81.38	0.23
P-35	12	4908	J-28	J-29	PVC	150	77.06	0.22
P-36	12	1690	J-29	J-30	PVC	150	73.43	0.21
P-37	12	2417	J-30	J-17	PVC	150	69.80	0.20
P-38	10	3902	J-1	J-2	PVC	150	-7.26	0.03
P-39	10	3304	J-41	J-1	PVC	150	-3.63	0.01
P-40	10	2651	J-2	J-3	PVC	150	16.43	0.07
P-41	10	801	J-3	J-22	PVC	150	12.80	0.05
P-42	10	5717	J-39	J-42	PVC	150	30.95	0.13
P-43	8	1461	J-46	J-45	PVC	150	-5.82	0.04
P-44	8	5636	J-46	J-44	PVC	150	2.19	0.01
P-45	10	5165	J-45	J-43	PVC	150	-3.91	0.02
P-46	10	595	J-43	J-59	PVC	150	-7.54	0.03
P-47	8	7290	J-44	J-5	PVC	150	-1.44	0.01
P-48	10	893	J-42	J-2	PVC	150	27.32	0.11
P-49	8	3765	J-40	J-54	PVC	150	-4.62	0.03
P-50	8	1497	J-40	J-57	PVC	150	3.63	0.02
P-51	12	3096	J-48	J-21	PVC	150	11.77	0.03
P-52	10	7213	J-49	J-33	PVC	150	19.03	0.08
P-53	12	3918	J-49	J-31	PVC	150	-52.16	0.15
P-54	24	326	J-50	J-51	Ductile Iron	130	-225.06	0.16
P-55	24	111	J-51	T-10	Ductile Iron	130	-232.32	0.16

Pipe	Dia (In)	Length	Start Node	End Node	Material	Roughness	Flow (GPM)	Velocity (fps)
P-56	8	1790	J-51	J-52	PVC	150	3.63	0.02
P-57	10	776	J-53	J-34	PVC	150	-14.64	0.06
P-58	8	303	J-53	J-54	PVC	150	-3.51	0.02
P-59	8	809	J-54	J-34	PVC	150	-7.60	0.05
P-60	8	1483	J-54	J-58	PVC	150	-4.15	0.03
P-61	8	5687	J-55	J-25	PVC	150	7.90	0.05
P-62	12	522	J-56	J-31	PVC	150	55.79	0.16
P-63	8	3673	J-56	J-55	PVC	150	21.96	0.14
P-64	8	3872	J-58	J-55	PVC	150	-10.43	0.07
P-65	6	3445	J-58	J-40	PVC	150	2.64	0.03
P-66	12	2823	J-59	J-8	PVC	150	-14.80	0.04
P-67	10	2966	J-60	J-38	PVC	150	35.44	0.14
P-68	6	1390	J-60	J-62	PVC	150	10.04	0.11
P-69	6	1491	J-61	J-38	PVC	150	2.78	0.03
P-70	6	2345	J-62	J-61	PVC	150	6.41	0.07
P-71	12	848	J-63	J-59	PVC	150	-3.63	0.01
P-72	10	5030	J-23	J-64	PVC	150	3.63	0.01

Peak Day Flow Results

Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-1	200.0	5.44	338.8	60
J-2	180.0	5.44	338.8	69
J-3	155.0	5.44	338.8	80
J-4	130.0	5.44	338.8	90
J-5	120.0	5.44	338.8	95
J-6	140.0	5.44	338.8	86
J-7	150.0	5.44	338.8	82
J-8	140.0	5.44	338.8	86
J-9	150.0	5.44	338.8	82
J-10	150.0	5.44	338.8	82
J-11	150.0	5.44	338.8	82
J-12	150.0	5.44	338.9	82
J-13	150.0	5.44	339.0	82
J-14	150.0	5.44	339.1	82
J-15	190.0	5.44	339.2	65
J-16	130.0	5.44	339.3	91
J-17	140.0	5.44	339.3	86
J-18	180.0	5.44	339.2	69
J-19	160.0	5.44	339.3	78
J-20	160.0	5.44	339.3	78
J-21	160.0	5.44	339.3	78
J-22	110.0	5.44	338.8	99
J-23	210.0	5.44	339.3	56
J-24	190.0	5.44	339.2	65
J-25	190.0	5.44	339.3	65
J-26	190.0	5.44	339.5	65
J-27	170.0	5.44	339.6	73
J-28	170.0	5.44	339.6	73
J-29	140.0	5.44	339.4	86
J-30	140.0	5.44	339.3	86
J-31	160.0	5.44	339.4	78
J-32	166.0	5.44	339.3	75
J-33	140.0	5.44	339.3	86
J-34	170.0	5.44	339.3	73
J-35	170.0	5.44	339.3	73
J-36	200.0	5.44	339.3	60
J-37	190.0	5.44	339.1	64
J-38	190.0	5.44	338.9	64
J-39	190.0	5.44	338.9	64
J-40	200.0	5.44	339.3	60
J-41	220.0	5.44	338.8	51
J-42	180.0	5.44	338.8	69
J-43	160.0	5.44	338.8	77
J-44	140.0	5.44	338.8	86
J-45	160.0	5.44	338.8	77
J-46	140.0	5.44	338.8	86
J-47	140.0	5.44	338.8	86
J-48	130.0	5.44	339.3	91

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-49	164.0	5.44	339.3	76
J-50	170.0	5.44	340.0	74
J-51	170.0	5.44	340.0	74
J-52	170.0	5.44	340.0	74
J-53	167.0	5.44	339.3	75
J-54	170.0	5.44	339.3	73
J-55	170.0	5.44	339.3	73
J-56	155.0	5.44	339.4	80
J-57	200.0	5.44	339.3	60
J-58	166.0	5.44	339.3	75
J-59	156.0	5.44	338.8	79
J-60	175.0	5.44	339.0	71
J-61	180.0	5.44	338.9	69
J-62	170.0	5.44	338.9	73
J-63	156.0	5.44	338.8	79
J-64	240.0	5.44	339.3	43

Peak Day Flow Results

Pipe Report:

Pipe	Dia (In)	Length	Start Node	End Node	Material	Roughness	Flow (GPM)	Velocity (fps)
P-1	12	1728	J-4	J-5	PVC	150	-5.44	0.02
P-2	12	2819	J-5	J-6	PVC	150	-13.05	0.04
P-3	12	6109	J-6	J-7	PVC	150	-18.49	0.05
P-4	12	1083	J-7	J-8	PVC	150	-23.94	0.07
P-5	12	2184	J-8	J-9	PVC	150	-51.58	0.15
P-6	12	3840	J-9	J-10	PVC	150	-57.02	0.16
P-7	12	1215	J-10	J-11	PVC	150	-62.47	0.18
P-8	12	7444	J-11	J-12	PVC	150	-67.91	0.19
P-9	12	3526	J-12	J-13	PVC	150	-73.36	0.21
P-10	12	4434	J-13	J-14	PVC	150	-78.80	0.22
P-11	12	5250	J-14	J-15	PVC	150	-84.25	0.24
P-12	12	1777	J-15	J-18	PVC	150	-89.69	0.25
P-13	12	2253	J-18	J-17	PVC	150	-95.14	0.27
P-14	12	6284	J-17	J-16	PVC	150	4.12	0.01
P-15	12	1248	J-16	J-19	PVC	150	-1.32	0.00
P-16	12	1215	J-19	J-20	PVC	150	-6.77	0.02
P-17	12	1710	J-20	J-21	PVC	150	-12.21	0.03
P-18	10	421	J-22	J-47	PVC	150	13.76	0.06
P-19	10	4917	J-47	J-45	PVC	150	8.32	0.03
P-20	10	2789	J-23	J-36	PVC	150	-10.89	0.04
P-21	10	4081	J-36	J-35	PVC	150	-16.34	0.07
P-22	10	227	J-35	J-53	PVC	150	-21.78	0.09
P-23	10	1324	J-34	J-32	PVC	150	-38.81	0.16
P-24	10	1529	J-32	J-49	PVC	150	-44.25	0.18
P-25	10	1947	J-33	J-48	PVC	150	23.10	0.09
P-26	10	3160	J-24	J-37	PVC	150	79.10	0.32
P-27	10	1827	J-24	J-25	PVC	150	-84.55	0.35
P-28	10	2841	J-37	J-60	PVC	150	73.66	0.30
P-29	10	797	J-38	J-39	PVC	150	51.88	0.21
P-30	10	4977	J-25	J-26	PVC	150	-78.15	0.32
P-31	10	2237	J-26	J-27	PVC	150	-83.59	0.34
P-32	12	960	J-27	J-28	PVC	150	121.04	0.34
P-33	12	1567	J-27	J-50	PVC	150	-332.14	0.94
P-34	12	5108	J-27	J-56	PVC	150	122.07	0.35
P-35	12	4908	J-28	J-29	PVC	150	115.59	0.33
P-36	12	1690	J-29	J-30	PVC	150	110.15	0.31
P-37	12	2417	J-30	J-17	PVC	150	104.70	0.30
P-38	10	3902	J-1	J-2	PVC	150	-10.89	0.04
P-39	10	3304	J-41	J-1	PVC	150	-5.44	0.02
P-40	10	2651	J-2	J-3	PVC	150	24.65	0.10
P-41	10	801	J-3	J-22	PVC	150	19.21	0.08
P-42	10	5717	J-39	J-42	PVC	150	46.43	0.19
P-43	8	1461	J-46	J-45	PVC	150	-8.73	0.06
P-44	8	5636	J-46	J-44	PVC	150	3.29	0.02
P-45	10	5165	J-45	J-43	PVC	150	-5.86	0.02
P-46	10	595	J-43	J-59	PVC	150	-11.31	0.05
P-47	8	7290	J-44	J-5	PVC	150	-2.16	0.01
P-48	10	893	J-42	J-2	PVC	150	40.99	0.17
P-49	8	3765	J-40	J-54	PVC	150	-6.92	0.04
P-50	8	1497	J-40	J-57	PVC	150	5.44	0.03
P-51	12	3096	J-48	J-21	PVC	150	17.66	0.05
P-52	10	7213	J-49	J-33	PVC	150	28.55	0.12
P-53	12	3918	J-49	J-31	PVC	150	-78.25	0.22
P-54	24	326	J-50	J-51	Ductile Iron	130	-337.59	0.24
P-55	24	111	J-51	T-10	Ductile Iron	130	-348.48	0.25
P-56	8	1790	J-51	J-52	PVC	150	5.44	0.03
P-57	10	776	J-53	J-34	PVC	150	-21.96	0.09
P-58	8	303	J-53	J-54	PVC	150	-5.26	0.03
P-59	8	809	J-54	J-34	PVC	150	-11.40	0.07

Pipe	Dia (In)	Length	Start Node	End Node	Material	Roughness	Flow (GPM)	Velocity (fps)
P-60	8	1483	J-54	J-58	PVC	150	-6.23	0.04
P-61	8	5687	J-55	J-25	PVC	150	11.85	0.08
P-62	12	522	J-56	J-31	PVC	150	83.69	0.24
P-63	8	3673	J-56	J-55	PVC	150	32.93	0.21
P-64	8	3872	J-58	J-55	PVC	150	-15.64	0.10
P-65	6	3445	J-58	J-40	PVC	150	3.97	0.05
P-66	12	2823	J-59	J-8	PVC	150	-22.20	0.06
P-67	10	2966	J-60	J-38	PVC	150	53.16	0.22
P-68	6	1390	J-60	J-62	PVC	150	15.05	0.17
P-69	6	1491	J-61	J-38	PVC	150	4.16	0.05
P-70	6	2345	J-62	J-61	PVC	150	9.61	0.11
P-71	12	848	J-63	J-59	PVC	150	-5.44	0.02
P-72	10	5030	J-23	J-64	PVC	150	5.44	0.02

Fire Flow Results

Fire Flow Scenario #1
Lower Richland Blvd (J-64)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-64	240.0	1005.5	317.7	34.00

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-72	10	5030	150	-1005.5	4.11

Lowest System Pressure: J-64, 34 psi
* In order to have sustainable pressure in the system a booster pump must be installed at J-36

Fire Flow Scenario #2
Horrell Hill Road (J-57)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-57	200.0	1005.5	272.8	32

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-50	8	1497	150	1005.5	6.42

Lowest System Pressure: J-57, 32 psi

Fire Flow Scenario #3
Bluff Road (J-21)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-21	160.0	1005.5	320.0	69.00

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-51	12	3096	150	431.1	1.22

Lowest System Pressure: J-41, 47 psi

Fire Flow Scenario #4
Bluff Road (J-17)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-17	140.0	1005.5	325.1	80.00

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-37	12	2417	150	680.1	1.93

Lowest System Pressure: J-41, 47 psi

Fire Flow Scenario #5
Congaree Road (J-41)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-41	220.0	1005.5	270.8	22.00

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-39	10	3304	150	-1005.5	4.11

Lowest System Pressure: J-41, 22 psi

Fire Flow Scenario #6
Goodwin Road (J-63)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-63	156.0	1005.5	295.3	60.00

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-71	12	848	150	-1005.5	2.85

Lowest System Pressure: J-41, 39 psi

Fire Flow Scenario #7
Bluff Road (J-4)
Junction Report:

Junction	Elev (Ft)	Demand (GPM)	HGL (Ft)	Pressure (psi)
J-4	130.0	1005.5	283.8	67.00

Pipe Report:

Pipe	Dia (In)	Length	Roughness	Flow (GPM)	Velocity (fps)
P-1	12	1728	150	-1005.5	2.85

Lowest System Pressure: J-41, 39 psi

CITY OF COLUMBIA
BULK PURCHASE CONTRACT

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

ORIGINAL
STAMPED IN RED

RESOLUTION NO.: R-2013-038

Establishing a Bulk Water Policy with respect to the Sale of Potable Water

WHEREAS, the City of Columbia owns, operates and maintains a regional water treatment and distribution system; and,

WHEREAS, it is the intent and desire of Columbia City Council to promulgate a policy with respect to the provision of bulk water sales; NOW, THEREFORE,

BE IT RESOLVED by the Mayor and City Council this 19th day of March, 2013, that the following policy be adopted with regard to the provision of bulk water sales to third parties:

1. **Bulk Water Agreements are approved by Council with recommendation by Utilities and Engineering when in the best interest of the City.**
Consideration will be made on a case by case basis depending on operating capacities at the point of sale combined with future growth needs of the City's distribution system.

2. **Capacity is verified by Purchaser's engineer using current City of Columbia and SCDHEC Regulations.**
Calculations are to be provided to the City of Columbia for review and approval. City reserves the right to approve or disapprove based current and/or future capacity needs of the City's distribution system. Purchaser's engineer must provide recommended meter size and location required to meet the demands of the purchaser.

3. **City does not guarantee any level of service including water quality or quantity beyond Purchaser's meter connection.**
Purchaser is responsible for all aspects of maintaining water quality standards

4. **Purchased water shall only be distributed within Purchaser's service area. Purchaser may sell to other water providers (Bulk Water Customers) provided that the customers are not contiguous to the City's service area and the Purchaser does not solely rely on the City's water service to provide adequate service.**

5. **The City may terminate service for any reason after twenty-four (24) hour notification. Service may be limited at any time for emergencies such as water main break and/or maintenance purposes.**

6. **Rates for service shall be in accordance with the current rate schedule and are subject to any future increases as approved by Council.**

7. **Purchaser is responsible for obtaining any easements and/or permits associated with the Bulk Water Sale.**

Requested by:

Mayor and City Council

MAYOR

Approved by:

City Manager

Approved as to form:

City Attorney

ATTEST:

City Clerk

Introduced: 3/19/2013
Final Reading: 3/19/2013

Last revised: 3/20/2013
13030554

STATE OF SOUTH CAROLINA)
)
) **INTERGOVERNMENTAL AGREEMENT FOR**
) **BULK WATER SALE**
COUNTY OF RICHLAND)

This PURCHASE AGREEMENT FOR BULK WATER ("Agreement"), effective as of the [DAY] of [MONTH], [YEAR], is made by and between RICHLAND COUNTY, SOUTH CAROLINA ("County"), and the CITY OF COLUMBIA, SOUTH CAROLINA ("Columbia").

WHEREAS, Columbia is a body politic and corporate and is vested with all powers granted to municipal corporations by the Constitution and the general laws of the State of South Carolina ("State"), including the power to make and execute contracts and operate utility systems;

WHEREAS, the County is a Municipality, authorized to conduct business in the State and is vested with all corporate powers under the Constitution and general laws of the State, including the power to make and execute contracts;

WHEREAS, the County desires to purchase water from Columbia on a bulk basis to serve the property more particularly described on the attached Exhibit A ("Service Area");

WHEREAS Columbia is willing to sell water to the County on a bulk basis.

NOW, THEREFORE, in consideration of the mutual covenants, benefits and promises herein, the sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Columbia agrees to supply and County agrees to purchase bulk water from Columbia, not to exceed VOLUME gallons per day, to serve within its Service Area as understood and agreed upon by Columbia and County. County shall determine that the level of service available to the specified service delivery points is adequate to serve within its agreed to service area. Columbia does not guarantee or warrant any specific level of service, but will use all reasonable efforts to provide County with bulk water from Columbia, not to exceed VOLUME gallons per day. Water delivered to the specified service delivery points, shall meet all applicable South Carolina Department of Health and Environmental Control SCDHEC standards for potable water. Columbia shall monitor the water quality on Columbia's side of the meter(s) at the service delivery points, at such times and in such manner as Columbia deems appropriate, to confirm that the water delivered to County at the service delivery points meets all applicable SCDHEC standards for potable water. If Columbia determines that the water does not meet all applicable SCDHEC standards for potable water, Columbia shall immediately notify County, shut off service to County and take appropriate measures to cause the water to meet all applicable SCDHEC standards for potable water.

2. Water furnished by Columbia shall be measured at the service delivery points by metering equipment owned and maintained by Columbia and paid for and installed by County. County shall purchase the appropriate size meter from Columbia. Metering equipment shall be installed in housing constructed by County, at County's cost and expense, at a service delivery points mutually acceptable to both Columbia and County. Columbia and County shall have mutual free access to the metering equipment.

3. In the event County requires additional service delivery points in addition to the current service delivery point, County shall construct, entirely at its own expense, any water main extensions and appurtenances of appropriate size, as approved by Columbia, required to provide water to the service delivery points. Such water main extensions shall be installed within exclusive

easements and in accordance with plans approved by Columbia. County will not place the system in operation until final inspection and final approval is given by Columbia. County shall obtain all approvals from the South Carolina Department of Health and Environmental Control or any other federal or state entities required to construct, operate and maintain the system.

4. Columbia shall read the metering equipment installed at the service delivery point at periodic intervals of approximately thirty (30) days to determine the amount of water provided by Columbia to County. The volume of water measured through the metering equipment shall be used to calculate monthly service charges. Monthly service charges for water supplied and billed to County are to be paid on or before the due date indicated on the monthly bill. If monthly service charges for water supplied and billed to County are fifteen (15) days in arrears, Columbia shall have the right, thirty (30) days after the mailing of written notice of the default to County, to terminate this Agreement and cease furnishing water to County.

5. County shall pay to Columbia monthly service charges for all water provided under the terms of this Agreement in accordance with the rates set forth in Appendix "A", which is attached hereto and incorporated herein by specific reference thereto.

6. The rates specified in Paragraph 5, Appendix A, above, may be increased or decreased by Columbia City Council, from time to time, by Ordinance, in its sole and exclusive discretion.

7. Installation, ownership, operation and maintenance of any and all portions of the water distribution system past the service delivery points shall be the sole responsibility of County, at no cost to Columbia.

8. County shall have the exclusive right to assess and collect any tap-on fees and service charges for any connections to any portions of the water distribution systems that are located past the service delivery points.

9. Columbia shall use reasonable diligence to provide a regular and uninterrupted supply of water to the service delivery points, but shall not be liable to County for damages, breach of contract or other variations of service occasioned by any cause whatsoever. Such causes may include by way of illustration, but not limitation, acts of God or of the public enemy, acts of any federal, state or local government in either its sovereign or contractual capacity, fires, droughts, floods, epidemics, quarantine restrictions, strikes, failure or breakdown of transmission or other facilities, or temporary interruptions of water service. Columbia shall notify County as soon as is practicable in advance of any reduction in the amount of water made available to County. In the event the City restricts water use during a water shortage as provided for by City Ordinance Sec. 23-70, such restrictions shall apply equally to County and City of Columbia customers affected by the water shortage and subject to the restrictions. Upon receiving such notice from Columbia, County shall, within twenty-four (24) hours, initiate adequate measures to reduce its water demands from Columbia to an amount identified by Columbia. Columbia reserves the right, at any time without notice to County or its customers, to shut the water off its mains for the purpose of making repairs, performing maintenance or installing lines, mains hydrants or other connections. No claims shall be made against Columbia by County by reason of the breakage of any service pipe or service cock, or from any other damage that may result from shutting off water for repairing, laying or relaying mains, hydrants or other connections. Columbia shall assume no responsibility, financially or otherwise, for water quantity or quality past the service delivery points, including responsibility for compliance with all state and/or federal regulations relating to drinking water.

10. This Agreement shall be for a period of five (5) years from the date this Agreement is executed by County. County may extend this Agreement for an additional five (5) year term by giving Columbia written notice ninety (90) days prior to the end of the initial five (5) year term.

11. Upon execution of this Agreement, Columbia and County mutually agree to terminate the existing agreement between Columbia and County by written agreement to terminate and such agreement shall be null and void and no longer legally binding upon Columbia or County. This Agreement is contingent upon the execution of a written agreement to terminate by Columbia and County.

12. County may terminate this Agreement upon ninety (90) days written notice to the City.

13. Waiver of any breach of this Agreement shall not constitute waiver of any subsequent breach hereof. County shall not assign this Agreement or transfer any rights and obligations hereunder without written consent of Columbia. Such consent will not be unreasonably withheld by Columbia or County. This Agreement may not be amended or modified unless such amendments or modifications are in writing and signed by the parties hereto.

14. Any notice as may be required herein shall be sufficient, if in writing and sent by certified U.S. mail with sufficient pre-paid postage affixed thereto, to the following addresses, unless otherwise changed by written notice:

City of Columbia	Attention: City Manager Post Office Box 147 Columbia, SC 29217	With a copy to:	City Attorney Post Office Box 667 Columbia, SC 29202
COUNTY	Attention: County Administrator XXX	With a copy to:	County Attorney XXX

15. If any one or more of the terms of this Agreement should be determined by a court of competent jurisdiction to be contrary to law, Columbia and County agree to amend such term or terms to bring the Agreement in compliance with law if such term or terms are essential to the validity or operation of this Agreement otherwise such terms shall be deemed severable from the remaining terms of this Agreement and shall in no way affect the validity of the other terms of this Agreement.

16. Ambiguities in the terms of this Agreement, if any, shall not be construed against Columbia or County. Jurisdiction of any action brought by Columbia or County under this Agreement shall be in the Court of Common Pleas with venue in Richland County.

17. This Agreement contains the entire agreement between the parties and shall be binding upon the parties, their respective successors and assigns, as may be applicable to the particular entity.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by duly authorized officials the date first written above.

WITNESSES: COUNTY

APPENDIX A

ORIGINAL
STAMPED IN RED

Sec. 23-149. Sewer service rates.

(a) Generally. Except as otherwise provided by contract, the monthly sewer service charge shall be as follows:

Size of Meter (inches)	In City	Out of City
5/8	7.58	12.90
1	7.58	12.90
1½	7.58	12.90
2	12.14	20.63
3	24.28	41.27
4	37.94	64.49
6	75.88	129.00
8	121.42	206.40
10	189.71	322.50

Monthly Water Use (cubic feet)	Monthly Sewer Service Charge In City	Out of City
Each 100 cubic feet	3.94	6.71

(b) Consumers using water cooling towers for air conditioning. Consumers using water cooling towers for air conditioning systems shall be given a credit of 30 cubic feet per ton per month during the service periods commencing in the months of April through October. The minimum charge shall be:

Size of Meter (inches)	In City	Out of City
5/8	12.30	15.65
1	17.35	22.91
1½	22.38	30.17
2	32.46	44.65
3	52.60	73.67
4	92.88	131.69
6	193.58	276.76
8	274.13	392.82
10	603.90	867.93

(c) Limitation on charge on single-family residences. Maximum sewer charge on single-family residences during the service periods commencing in the months of April through October will be 1,400 cubic feet.

(d) Apartments and trailer parks. Sewer rates for apartment buildings and trailer parks shall be the base rate of a single-family residence per dwelling unit plus a base fee based on meter connection size plus the rate per 100 cubic feet as reflected by water consumption.

(e) Hotels, motels, dormitories and roominghouses. Sewer rates for hotels, motels, dormitories and roominghouses shall be one-half the base rate of a single-family residence per room plus a base fee based on meter connection size plus the rate per 100 cubic feet as reflected by water consumption.

(f) Contaminated groundwater. Separate meters for discharges of contaminated groundwater are required. In city or out of city customers discharging contaminated ground water shall pay the out of city base monthly sewer service charge times one and one-half plus the out of city monthly sewer service charge for each 100 cubic feet times one and one-half.

This ordinance is effective as of July 1, 2018.

Requested by:

Mayor and City Council

Approved by:

City Manager

Approved as to form:

City Attorney

Public Hearing: 6/5/2018
Introduced: 6/5/2018
Final Reading: 6/19/2018

Mayor

ATTEST:

City Clerk

ORIGINAL
STAMPED IN RED

Last revised: 5/18/2018

FEASIBILITY REPORT

NORTH-NORTHWEST RICHLAND COUNTY WATER SYSTEM IMPROVEMENTS

FOR

RICHLAND COUNTY UTILITIES
7525 BROAD RIVER ROAD
IRMO, SOUTH CAROLINA 29063

REV. OCTOBER 16, 2018

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

P.O. BOX 296
CLOVER, SOUTH CAROLINA 29710
2160 FILBERT HIGHWAY
YORK, SOUTH CAROLINA 29745
TEL: (803) 684-3390 • FAX: (803) 628-2891
EMAIL: joelwood@comporium.net

DRAFT

Feasibility Report
For
North-Northwest Richland County Water System Improvements

TABLE OF CONTENTS

APPENDIX

(Beginning on Page 28)

I. GENERAL

The Richland County, South Carolina (County) is legally constituted under the laws of the State of South Carolina. As such, the County is legally capable of receiving grants and loans for the purpose of owning and operating a public utility system within the County's service area as shown in Figure 1 contained herein. The County is in the process of exploring options to apply for loans and grants to finance the construction of a water system to serve the residents and businesses within the north and northwest portions of Richland County. The County currently owns and operates the Murray Point Water system within the proposed project area. The Murray Point Water System is approximately 30 years old and serves approximately twenty (20) users. The SCDHEC approved water system consist of a deep well, a 7,000-gallon hydropneumatics tank and approximately 3,100 feet of 6" water line. RCU plans to enter into an agreement to purchase water from the City of Columbia as a solution for the need of additional water supply for the Murray Point water system.

The County has an existing Master Plan that provides a guide for the development of water systems to serve Richland County. Burkhold Planning and Management with engineering assistance from Joel Wood & Associates prepared "Richland County Master Plan" (2002 Plan) dated October of 2002. In 2016 AECOM prepared and additional master plan being called "Water and Sewer Master Plan for Richland County Utilities (2016 Plan). These two "Plans" are adopted by reference and will be implemented into the preparation of a Feasibility Study (Study) for a water system to serve the north and northwest portions of Richland County. The water system developed in this Study will meet the current and long-range needs for water service in the north and northwest sections of Richland County.

The planning area for the north-northwest portion of Richland County is as shown on the attached map (Figure 1). The proposed water system will be planned for a thirty (30) year growth period with materials selected for a forty (40) year useful life cycle. Detailed build-out projections for

the project area were taken from the 2016 Plan. Build-out projections taken from the 2016 Plan were used to size the water system components to meet the current and future needs for the north and northwest portion of Richland County.

At this time, there are five public or private water service providers in the planning area. These service providers are as shown of Figure 2 contained herein. The City of Columbia, the Town of Winnsboro and Newberry County Water and Sewer Authority (NCWSA) provide water service to users surrounding the planning area and are a potential source of water supply for the north and northwest portions of the County. Carolina Water Services and Ni America provide water to customers in the area but are not a potential source for water supply in the north and northwest portions of the County. The potential water sources are explored in further detail in a later section of this Report.

Richland County Utilities (RCU), a Department of Richland County, owns, operates and maintains the Murray Point Water System in the northwest planning area. The Murray Point water system serves approximately 20 customers with an existing well, a 7,000-gallon hydropneumatics water storage tank and approximately 3,100 linear feet of 6" water distribution line. The Murray Point Water System does not have the capacity to serve the proposed project area but RCU could build a new water purification plant on the Broad River to serve the north and northwest sections of the project area. Another option for water supply is to purchase water from the City of Columbia at bulk rates, or purchase water at bulk rates from Newberry County Water and Sewer Authority, or purchase water from the Town of Winnsboro. These options are explored in other sections of this Report. The County does not have an existing water system in the north planning area.

The north and northwest planning areas have great potential but there are no private or existing public utilities that we are aware of that have plans for the task of expanding into these areas. Richland County realizes the need and is exploring the task of providing a safe and dependable water supply for this portion of the County.

This project was initiated by an action of Richland County Council to explore the feasibility of developing a water system, that: 1) promotes orderly growth within the County; 2) adequate water service be provided to prevent a proliferation of small water systems; 3) the number of single home systems be reduced and, more specifically a safe and dependable water supply be provided for the planning area, and 4) will provide potential to serve proposed industrial areas in the north-northwest planning area.

The overall objective of the project is to provide the most cost-effective method to provide water service to the planning area that would benefit from a safe and dependable water supply and to provide water to existing and potential industrial users. The water system contained herein will meet or exceed the South Carolina Department of Health and Environmental Control's (SCDHEC) minimum requirements. The County contracted with Joel E. Wood & Associates, L.L.C. to prepare a Study for a construction project that will provide a means to serve the north and northwest planning areas and that will be in compliance with the 2002 and 2016 Plan. The conclusions and recommendations presented in this Study are based on a systematic evaluation of each alternative available to the County to provide service to the north and northwest planning areas. Joel E. Wood & Associates, L.L.C. has taken the information produced by this analysis and prepared a Feasibility Study that includes development of Preliminary Cost Estimates for the proposed alternatives. From those cost estimates the best alternative to provide service to the north and northwest planning areas was selected. The Proposed Cost Estimates can be found in Appendix of this report.

For any of the proposed alternatives to be successful it is important that the County create an Ordinance that will define the County's service area and that restricts any other service provider from entering the service area without the approval of County Council. In addition, the proposed Ordinance shall require that any water infrastructure constructed in the north and northwest planning areas be dedicated to the County.

II. PROJECT PLANNING AREA

A. LOCATION

The water system proposed by the County is located in the north and northwest sections of Richland County and is depicted on Figure 3 "System Map" contained herein. All linear line extensions, master meters, booster pumps valves, etc. will be constructed in existing SCDOT highway rights-of-way. If a new water plant or new elevated water tanks are constructed they would require the acquisition of sites from individual property owners. Site selection was not part of this Study but general areas for such infrastructure are shown. If the County selects an alternative and moves forward an Environmental Assessment (EA) and a Preliminary Engineering Report (PER) will be required. During this process, adjustments can be made to accommodate availability of property and minimize impacts to the environment.

B. ENVIRONMENTAL RESOURCES PRESENT

The proposed project lies entirely within the County's designated service area as shown on Figure 1 contained in Section One of the Report. The location of each proposed component of the system is shown on Figure 3 "System Map" contained herein. An alternative will be selected that, if implemented, will not have an adverse impact on the natural ecosystems within the area, as well as no impact on agricultural functions.

C. GROWTH AREAS AND POPULATION TRENDS

The County's proposed service area has a recorded population in 2010 Census of 384,507 based on 2.52 persons per household. The 2016 Plan projects the population of Richland County to grow by approximately 32% between 2010 and 2035. The projected growth in the majority of the north planning area can be classified as low to moderate growth with a portion of the area designated for a major industrial park by Richland County. The projected growth in the majority of the northwest planning area can be classified

as rapid to moderate growth. The Central Midlands Council of Governments (COG) has published growth projections for Richland County as Follows:

TABLE ONE
POPULATON TREND
Central Midland Council of Governments

	2010	2020	2030	2040	2050
Richland County	384,507	456,027	532,702	613,854	706,818
North	5,505	7,250	9,400	13,150	21,238
Northwest	45,230	57,300	68,300	78,150	89,795

The North Planning area has 2.8 persons per household, therefore in 2020 there should be a potential of 2,589 households in the project area. With an initial user sign up of 6% you could expect to have 151 users in 2020. The Northwest Planning area has 2.4 persons per household, therefore in 2020 there should be a potential of 23,875 households in the project area. With an initial sign up of 2.3% you could expect to have 569 users in 2020. Population growth was a baseline parameter used to project future resource needs in the 2002 Plan and the 2016 Plan. However, other factors such as economic expansion can have an impact of growth in an area. The proposed project should not foster unusual growth patterns or stimulate any unusual increases in growth rate. Richland County does NOT have a mandatory connection ordinance nor is there an indication that one will be enacted, that requires connection to a system. There are also no requirements to pay a water availability fee once the system is constructed. Therefore, it can be expected that all the potential customers will not connect to a new water system in the project area. We expect that 15 % of the potential customers will connect to the system within the first five years and approximately 35% of the potential customers will be connected by 2035.

III. EXISTING FACILITIES

A. LOCATION MAPS

The proposed project lies entirely within the County's designated service area as shown on Figure 1 contained in Section One of the Report. The location of each proposed component of the system is shown on Figure 3 "System Map" contained herein.

B. HISTORY

At this time, there are five public or private water service providers in the planning area. These service providers are as shown of Figure 2 contained herein. The City of Columbia, the Town of Winnsboro and Newberry County Water and Sewer Authority provide water service to users surrounding the planning area and are a potential source of water supply for the north and northwest portions of the County. Carolina Water Services and Ni America provide water to customers in the area but are not a potential source for water supply in the north and northwest portion of the County. The potential water sources are explored in further detail in a later section of this Report.

Richland County Utilities (RCU), a Department of Richland County, owns, operates and maintains the Murray Point Water System in the northwest planning area. The Murray Point Water System does not have the capacity to serve the proposed project area. The Murray Point water system serves approximately 20 customers with an existing well, a 7,000-gallon hydropneumatics water storage tank an approximately 3,100 linear feet of 6" water distribution line. The County does not have an existing water system in the north planning area

C. CONDITION OF FACILITIES

RCU currently operates the Murray Point Water System in the Northwest portion of the County. The Murray Point Water System currently meets the requirements of the South Carolina Department of Health and Environmental Control (SCDHEC) and the Safe Drinking Water Act. RCU plans to enter into an agreement to purchase water from the City of Columbia

as a solution for the need of additional water supply for the Murray Point Water System. additional water supply for the Murray Point Water System. The well and distribution system have been in operation for approximately 30 years and have been maintained in accordance with SCDHEC regulations. Currently, RCU is purchasing water from the City of Columbia under an emergency agreement until a bulk purchase contract can be negotiated with the City.

D. FINANCIAL STATUS

Table 1 located in the Appendix of this report shows the existing "Water Rate Schedule" implemented by RCU. Table 2 shows the annual water usage used by existing RCU customers for the Hopkins Water System & Pond Drive System for the twelve-month period beginning July 1, 2017 and ending June 30, 2018. Although, these systems are located outside the proposed project area a similar water usage can be expected for the north and northwest service areas. Table 3 shows the projected water users for the first full year of operation by category for the proposed system expansion. Table 4 lists the projected operating budget for Alternative Two for the first full year of operation after all proposed improvements are in place. Table 5 lists the projected operating budget for Alternative Three for the first full year of operation after all proposed improvements are in place. Table 6 lists the projected operating budget for Alternative Four for the first full year of operation after all proposed improvements are in place. Table 7 shows the breakdown of water costs to buy water from the City of Columbia which is part of Alternative Two. Table 8 shows the breakdown of water costs to buy water from Newberry County Water & Sewer Authority which is part of Alternative Three. The County reports that they are current with all debt and that all reserve funds are current. A comparison between alternatives considered for the Year 2020 Projected Operating Budget is highlighted below. Note that the proposed budget does include the capital cost of the system expansion. See Tables in the Appendix for a more detailed breakdown.

Projected Year 2020 Projected Operating Budget				
	Alt. # 2	**Alt. # 3**	**Alt. # 4**	**Alt. # 5**
Total Operating Revenue	$411,070	$411,070	$411,070	No Change
Total Operating Expense	$453,462	$420,588	$522,672	No Change
Fund Balance	($42,392)	($9,518)	($111,602)	No Change

IV. NEED FOR THE PROJECT

A. HEALTH AND SAFETY

The North Planning area has 2.8 persons per household, therefore in 2020 there should be a potential of 2,589 households in the project area. With an initial sign up of 6% you could expect to have 151 users in 2020. The Northwest Planning area has 2.4 persons per household, therefore in 2020 there should be a potential of 23,875 households in the project area. With an initial sign up of 2.3% you could expect to have 569 users in 2020. If there is a 10% growth in customers per year you could reasonably expect to have 945 users. Population growth was a baseline parameter used to project future resource needs in the 2002 Plan and the 2016 Plan.

From the basic population data available on the north and northwest planning areas you can see that there is a growing need for a safe dependable water supply. The 740 potential users in the Project area will not have safe and dependable water system as enjoyed by their neighbors. The construction of a water distribution system to serve the project area will ensure that a safe dependable water supply will be made available to residents within the expansion area as the demand for service increases. A water supply that meets the requirements of the Safe Drinking Water Act and that is continually monitored by SCDHEC will greatly reduce the potential for illnesses caused by water born pathogens and the users of the proposed water distribution system will generally live healthier lives than could be expected without a safe dependable water supply.

B. SYSTEM O & M

Richland County Utility Department currently operates a wastewater utility and a water utility. The Utility Department operates several wastewater utilities and four water systems, and each system is treated as an enterprise fund. The aggregate sum of the enterprise funds comprises the total operating budget for the Richland County Utility Department Operating Budget. The Murray Point Water System is set up as an enterprise fund of the aggregate Annual Operating Budget for the Richland County Utility Department (RCU). Personnel cost and equipment cost are divided among the different enterprise funds with direct expenses charged to each enterprise fund. It is projected that the proposed North- Northwest Richland County Water System will have seven hundred forty users that use, on the average, 3,339 gallons per user per month. This which will generate an annual revenue of $411,070.00 per year from the sale of water and other charges. See Table 2 and Table 3 that document current water use, revenue, and projects revenue for the first full year of operation after the completion of the distribution system. In Table 4, we have shown the projected budget for the first full year of operation after the completion of the distribution system if you buy water at a bulk rate from the City of Columbia. In Table 5, we have shown the projected budget for the first full year of operation after the completion of the distribution system if you buy water at a bulk rate from Newberry Water and Sewer Authority. In Table 6, we have shown the projected budget for the first full year of operation after the completion of the distribution system if Richland County Utilities constructs a water purification plant and is a regional supplier of water. Richland County Utilities currently has operation, maintenance and administrative staff that are successfully operating the various systems that comprise the Department. The personnel are on twenty-four hour a day call if needed to maintain the Utilities in accordance with South Carolina Department of Health and Environmental Control regulations. The addition of the proposed North-Northwest Richland County Water System will not have a major impact on the operation cost of the Department. The personnel cost and administrative cost will be allocated between the different enterprise funds that constitute Richland County

Utilities with the North-Northwest Richland County Water system paying its fair share. The overall cost of operating Richland County Utilities will not be negatively impacted by the addition of the North-Northwest Richland County Water System. In fact, principal of "economies of scale" may have an overall positive impact on the cost to operate the Richland County Utility Department

C. GROWTH

The proposed service area for the North-Northwest Richland County project has a recorded population in 2010 of 50,735 and the population is expected to grow to 77,700 in 2030. This is a 53.15 percent increase in population over the twenty-year period. The 2010 population is based on 2.8 people per household in the north project area and 2.4 persons per household in the northwest project area as reported by Central Midlands Council of Governments. If there is a 35% sign up rate by Year 2030 it would be reasonable to project that there would be 10,450 users on the system. If the residents of the north-northwest Richland County planning area have a safe and dependable water supply and distribution system, the population should continue to expand during the next twenty years. The proposed project should not foster unusual growth patterns or stimulate any unusual increases in growth rate.

V. ALTERNATIVES CONSIDERED

A. DESCRIPTION

The County has an existing Master Plan that provides a guide for the development of water systems to serve Richland County. Burkhold Panning and Management with engineering assistance from Joel Wood & Associates, L. L. C. prepared "Richland County Master Plan" (2002 Plan) dated October of 2002 and that "Plan". In 2016 AECOM prepared and additional master plan "Water and Sewer Master Plan for Richland County Utilities (2016 Plan). These two "Plans" are adopted by reference and will be implemented into the preparation of a "Feasibility Report" for a water system or systems to serve the north and northwest portions of Richland County. Any alternatives considered in this Report will comply with the current and long-range needs for water service as defined in the above referenced master plans.

Alternative One (No Action): The first option available to Richland County would be to choose to take no action. To choose the "no action" alternative would mean that a large number of households in the north-northwest planning area would go without a safe and dependable water supply. Many homes would have to continue to rely on wells that produce water that is of poor quality. Because of the potential negative impacts on the health of the residents of the project area, Richland County should initiate action to provide a safe dependable water supply for the residents of the north-northwest planning area. Therefore, "No Action" was discarded as an acceptable alternative.

Second Alternative Considered: The second alternative considered was to find an existing public utility that would extend their existing water lines and construct the required infrastructure to serve the distribution system of the north-northwest project planning area. The City of Columbia is the closest public utility with existing infrastructure that could serve the North-Northwest Richland County project area. The County began negotiations with the City to see if an agreement could be reached whereby the City would provide water service to the project area. RCU and its consultant met with the City of Columbia on several occasions to explore the possibilities of RCU purchasing water from the City at bulk rates. The City indicated that they could serve the project area with water that consistently meets SCDHEC quality standards. A copy of the proposed "Bulk Purchase Contract" is contained in the Appendix of this Report. The City would provide water in accordance with the general terms as follows:

- "The Purchaser engineer must provide recommended meter size and location required to meet the demands of the Purchaser."
- "The City does not guarantee any level of service including water quality beyond Purchaser's meter Connection. Purchaser is responsible for all aspects of maintaining water quality standards."
- "Purchased water shall only be distributed within Purchaser's service area. Purchaser may sell water to water providers (Bulk Water Customers) provided that the customers are not contiguous to the City's service area and the Purchaser does not solely rely on the City's water service to provide adequate water service."
- "The City may terminate service for any reason after twenty-four (24) hour notification. Service may be limited at any time for emergencies such as water main break and/or maintenance purposes."
- "Rates for service shall be in accordance with the current (Outside) rate schedule and are subject to and future increases as approved by Council
- "Purchaser is responsible for obtaining any easements and/or permits associated with the Bulk Sale."

- A typical water bill from the City for Bulk Water Purchase to serve the Phase I project area would be approximately $16,110.29 per month or $193,323.48 per year.

Columbia Water
Drinking Water • Wastewater • Stormwater

Using Richland County's current rate schedule and a projection of Operation and Maintenance (O & M) cost there is a negative fund balance of $42,392.00 per year and that does not include funds for debt retirement on the cost to construct the distribution system. See Table 4 in the Appendix of this Report for a detailed breakdown.

A summary of the cost for Alternative Two is summarized below. Detailed cost breakdowns can be found in the Appendix of this report.

PRELIMINARY COST ESTIMATE ALTERNATIVE TWO	
NORTH SERVICE AREA SYSTEM EXPANSION	$15,013,000
NORTHWEST SERVICE AREA SYSTEM EXPANSION	$16,857,000
BROAD RIVER CROSSING	$2,715,000
TWO (2) 500,000 GAL. ELEVATED STORAGE TANKS	$3,474,000
CAPACITY CHARGE	$0
WATER MAIN UP-GRADES	$0
TOTAL PROJECT COST	**$38,059,000**
YEARLY OPERATING BUDGET (YEAR 2020)	**$453,462**

Third Alternative Considered: The third alternative considered was to find an additional existing public utility that would be willing to sell water at bulk rates to serve the north-northwest project area. The Newberry County Water and Sewer Authority (NCWSA) was contacted and they are willing to sell water at bulk rates to Richland County for the north-northwest planning area. In initial conversations with NCWSA, they indicated that a new larger water line would have to constructed to provide adequate water to Richland County. NCWSA estimates the cost of the new water supply line would be approximately $5,864,000. See the Appendix of this report that shows the proposed route for the new line and the estimated cost provided by NCWSA. NCWSA would require Richland County Utilities to pay a "Capacity Fee" of $726.00 per residential equivalent. If the County reserves 500,000 gallon per day capacity the "Capacity Fee" would be $2,420,000.00. If this alternative is selected, a "Bulk Purchase Contract" will have to be negotiated with NCWSA.

Using Richland County's current rate schedule and a projection of Operation and Maintenance (O & M) cost there is a negative fund balance of $9,513.00 per year and that does not include funds for debt retirement on the capital cost to construct the distribution system. See Table 5 in the Appendix of this Report for a detailed breakdown.

A summary of the cost for Alternative Three is summarized below. Detailed cost breakdowns can be found in the appendix of this report.

PRELIMINARY COST ESTIMATE ALTERNATIVE THREE	
NORTH SERVICE AREA SYSTEM EXPANSION	$15,013,000
NORTHWEST SERVICE AREA SYSTEM EXPANSION	$16,857,000
BROAD RIVER CROSSING	$2,715,000
TWO (2) 500,000 GAL. ELEVATED STORAGE TANKS	$3,474,000
CAPACITY CHARGE	$2,420,000
WATER MAIN UP-GRADES	$5,864,000
TOTAL PROJECT COST	**$46,343,000**
YEARLY OPERATING BUDGET (YEAR 2020)	**$420,588**

Fourth Alternative Considered: The fourth alternative considered was for Richland County Utilities to construct a new water purification plant on the Broad River that could provide water for the north and northwest planning areas. A map (Figure 3) showing the general area where the plant could be located is contained in the Appendix of this Report. The initial plant would be constructed to produce two million gallons per day with options to expand up to eight million gallons per day in the future as demand increases.

Using Richland County's current rate schedule and a projection of Operation and Maintenance (O & M) cost there is a negative fund balance of $111,602.00 per year and that does not include funds for debt retirement on the cost to construct the plant and distribution system. See Table 6 in the Appendix of this Report for a detailed breakdown.

A summary of the cost for Alternative Four is summarized below. Detailed cost breakdowns can be found in the appendix of this report.

PRELIMINARY COST ESTIMATE ALTERNATIVE FOUR	
NORTH SERVICE AREA SYSTEM EXPANSION	$15,013,000
NORTHWEST SERVICE AREA SYSTEM EXPANSION	$16,857,000
BROAD RIVER CROSSING	$2,715,000
TWO (2) 500,000 GAL. ELEVATED STORAGE TANKS	$3,474,000
2.0 MGD WATER TREATMENT PLANT	$10,178,000
CAPACITY CHARGE	$0
WATER MAIN UP-GRADES	$0
TOTAL PROJECT COST	**$48,237,000**
YEARLY OPERATING BUDGET (YEAR 2020)	**$522,672**

Fifth Alternative Considered: The fifth alternative considered is a developer driven option where Richland County adopts and strictly enforces an ordinance defining the north and northwest project areas as the County's service area. The ordinance would require all utility infrastructure constructed in the service area be deeded to RCU. RCU would then own, operate, and maintain the infrastructure and charge the users at the RCU prevailing utility rates. The County, as part of the Ordinance, could release a project to another utility but should require a fee be paid by the entity requesting the release. Any fees collected should be committed to a project development fund that can be used for future system expansion. RCU would develop bulk purchase agreements with the City of Columbia and/or the Newberry County Water and Sewer Authority (NCWSA) for water to serve the customers. A "Rate Study" would be required to determine the charges to customers once the bulk rate is determined in negotiations with the City of Columbia or NCWSA. This option would not require an initial capital outlay by the County and the O & M budget of RCU would not be negatively impacted and could be adjusted as the customer base grows. As the customer base grows, RCU may be required to construct storage to meet SCDHEC storage requirements for the system. However, by the time storage will be needed the customer base would have grown enough where the cost for debt retirement should be covered by the existing customer base.

As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant on the Broad River that could serve the north-northwest project areas. The cost of a two million gallon per day water purification plant can be found in the Appendix of this report.

A summary of the cost for Alternative Five is summarized below. There are no capital cost or changes in the operating budget for this alternative.

PRELIMINARY COST ESTIMATE ALTERNATIVE FIVE	
NORTH SERVICE AREA SYSTEM EXPANSION	$0
NORTHWEST SERVICE AREA SYSTEM EXPANSION	$0
BROAD RIVER CROSSING	$0
TWO (2) 500,000 GAL. ELEVATED STORAGE TANKS	$0
2.0 MGD WATER TREATMENT PLANT	$0
CAPACITY CHARGE	$0
WATER MAIN UP-GRADES	$0
TOTAL PROJECT COST	**$0**
YEARLY OPERATING BUDGET (YEAR 2020)	**NO CHANGE**

B. ALTERNATIVE OVERVIEW

The Best Option Alternative, Alternative Five, is as the most cost effective means of providing service to the north-northwest project area on condition that a reasonable bulk purchase agreement can be reached with the City of Columbia or the NCWSA. If agreements cannot be negotiated then Alternative One or Alternative Four would need to be considered. The table below summarizes the five alternatives considered.

Summary of Alternatives Considered					
	Alt. # 1	**Alt. # 2**	**Alt. # 3**	**Alt. # 4**	**Alt. # 5**
Project Cost	N/A	$38,059,000	$46,343,000	$48,237,000	$0
Customers Served	0	740	740	740	T.B.D.
Potential Customers	0	31,478	31,478	31,478	T.B.D.
Operation Cost (Yearly)	N/A	$453,462	$420,588	$522,672	No Change
Grant Funds Needed	N/A	$38,059,000 (100%)	$46,343,000 (100%)	$48,237,000 (100%)	$0

C. DESIGN CRITERIA

The design parameters used during the evaluation process for this Feasibility Report are in general compliance with the criteria established in RUS Instruction 1780 and with normal and customary practices acceptable within the State of South Carolina. All criteria are in general compliance with the regulations and guidelines established by the South Carolina Department of Health and Environmental Control (SCDHEC).

D. MAP

There is no capital outlay by Richland County for this alternative. The expansion will be developer drive within the service area as defined by a County ordinance. See Figure 1 in the Appendix of this report.

E. ENVIRONMENTAL IMPACTS

A general analysis of the project as proposed indicated that there would be no negative impact to the environment if the proposed project was implemented. Alternative 1 (No Action) would probably have a negative impact on the environment but those negative impacts were not documented because the "No Action" alternative was rejected as an acceptable alternative by RCU in the early stages of study. The project, as outlined in Alternative Five will not require an "Environmental Report" at this time. Expansion of the system will be developer driven and each project will be designed and permitted on a case by case basis by the developer and will require SCDHEC and RCU approval prior to implementation. No projects will be approved that will have a negative impact on the environments.

E. LAND REQUIREMENTS

All options for all Alternatives with the exception of Alternatives Four would require the same amount of land. Alternative Two and Alternative Three would require two one-half acre lots for elevated water storage tanks. Alternative Four would require two one-half acre lots for new elevated tanks and six to ten acres of land for a new water purification plant. All new linear construction will be within existing Richland County or SCDOT road rights-of-way. Encroachment Permits will be required from Richland County or the SCDOT for placement of the water distribution lines within existing road rights-of-way. No land purchase is required for the linear construction.

F. CONSTRUCTION PROBLEMS

There are no major construction problems associated with any of the options considered that would have an impact on the selection of an Alternative as the Best Alternative. The new construction proposed will be normal and customary utility work that will occur within existing Richland County and SCDOT rights-of-way or on land described above. At the writing of this Feasibility Report, there are no known construction problems for the proposed water system construction as described by this Report as the best option. If unforeseen problems arise, the problems will be addressed immediately, and the appropriate officials notified before continuing with any construction.

G. COST ESTIMATES

The major "Probable Cost Estimates" used to determine the best alternative for the expansion of the North-Northwest Water System are included in the Appendix of this Report.

VI. PROPOSED PROJECT

A. GENERAL

Richland County (County) was created, by the General Assembly of the State of South Carolina for the purpose of providing general governmental services to the citizens of Richland County, South Carolina. The County's Utility Department currently owns and operates a large public utility. The South Carolina Department of Health and Environmental Control (SCDHEC) acknowledges the ability of the County to operate a water utility that will meet all of SCDHEC's requirements.

To provide water to these potential customers the County would be required to extend water distribution lines throughout the area identified on Figure 1 contained in the Appendix of this Report or develop means to facilitate the extension of water distribution lines within the north-northwest planning area. The project can be divided into three main categories and they are as follows:

B. SYSTEM EXPANSION

See Figure 1 contained in the appendix of this Report that defines the proposed project service area. The system expansion would be is a developer driven option where Richland County adopts and strictly enforces an ordinance defining the north and northwest project areas as the County's service area. The County as part of the Ordinance could release a project to another utility but should require an impact fee to be committed to a project development fund for future system expansion. The ordinance would require all utility infrastructure constructed in the service area be deeded to RCU. RCU would then own, operate, and maintain the infrastructure and charge the users at the RCU prevailing utility rates. A "Rate Study" would be required to determine the charges to customers once the bulk rate is determined in negotiations with the City of Columbia or the NCWSA.

C. WATER SUPPLY

RCU would develop bulk purchase agreements with the City of Columbia and or Newberry County Water and Sewer Authority for water to serve the customers. This option would not require an initial capital outlay by the County and the O & M budget of RCU would not be negatively impacted and could be adjusted as the customer base grows. As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification facility on the Broad River that could serve the north-northwest project area. The cost of a two million gallon per day water purification facility is detailed in the Appendix of this report.

D. STORAGE

As the customer base grows, RCU may be required to construct storage to meet SCDHEC storage requirements for the system. However, by the time storage will be needed the customer base would have grown enough where the cost for debt retirement should be covered by the existing customer base.

E. SYSTEM LAYOUT

The system expansion will be developer driven and will be determined on a case by case basis. Please refer to Figure 1 for the proposed service area for the north-northwest planning area. It will be important to the future development of the system that the Ordinance developed by the County that requires all new water infrastructure be deeded to RCU is strictly adhered to. It would be advantageous to the development of the north-northwest planning areas that any infrastructure of proposed industrial parks in the planning area be deeded to RCU. This will strengthen the system customer base.

F. HYDRAULIC CALCULATION

A develop driven expansion of the system will require that hydraulic calculation be submitted to RCU for review and approval on a case by case basis. Any utility infrastructure constructed shall be in compliance with the 2016 Water Master Plan referenced above and be in accordance with SCDHEC regulations.

G. ANNUAL OPERATING BUDGET

There should be no change in the RCU operation budget until the customer base begins to grow and at that time the additional revenue from the new customers will offset any additional cost in the O & M budget.

H. PAYMENT HISTORY

Richland County Utilities is current with all debt payments to the best of our knowledge, information and belief.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. GENERAL

The purpose of this section is to give the reader a brief overview of the contents of this Report and to give a summary of the selected alternative. This project was initiated by an action of Richland County Council to explore the feasibility of developing a water system, that: 1) promotes orderly growth within the County; 2) adequate water service be provided to prevent a proliferation of small water systems; 3) the number of single home systems be reduced and, more specifically a safe and dependable water supply be provided for the planning area, and 4) will explore potential to serve proposed industrial areas in the north-northwest planning area.

1. SYSTEM EXPANSION

See Figure 1 contained in this Report that defines the proposed project area. The system expansion will be developer driven and the infrastructure dedicated to RCU. Any new utility infrastructure required for system expansion that is to be constructed within Richland County and SCDOT rights-of-way will require RCU to make application for encroachment permits since the infrastructure will be deeded to RCU. RCU has the legal authority to apply for encroachment permits

2. WATER SUPPLY

See Figure 2 contained in the Appendix of this Report that defines the possible water sources to serve the north-northwest project planning area. The proposed best alternative requires the County to develop bulk purchase agreements with the City of Columbia or the Newberry County Water and Sewer Authority (NCWSA). Other public utilities in the area did not have adequate water supply or did not respond to request for bulk purchase agreements. A "Rate

Study" would be required to determine the charges to customers once the bulk rate is determined in negotiations with the City of Columbia or the NCWSA. As developers approach RCU for service, each project will require coordination with the City of Columbia or the NCWSA to determine the best source of water for the project and to develop a willingness and capability letter from the water provider so the project can move forward.

3. FUNDING SOURCES

The system expansion will be developer driven with all new utility infrastructure constructed in the north-northwest planning area deeded to RCU at no cost. This option would not require an initial capital outlay by the County. The O & M budget of RCU would not be negatively impacted and could be adjusted as the customer base grows. As the customer base grows, RCU may be required to construct storage to meet SCDHEC storage requirements for the system. However, by the time storage will be needed the customer base would have grown enough where the cost for debt retirement should be covered by the existing customer base.

As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant on the Broad River that could serve the north-northwest project area. The cost of a two million gallon per day water purification plant is detailed in the Appendix of this report.

B. SUMMARY

- This project will ensure that a safe and dependable water system that meets SCDHEC standards is available for use by the residents of the north-northwest planning area.
- The project as defined by this Report should not have any adverse impacts on the environment.

C. RECOMMENDATIONS

The North - Northwest Planning areas do not have an economical water supply source and the cost of entry is high without a strong customer base. Without an economical water supply and customer base it is not feasible to create a water system to serve the North-Northwest Planning area at this time. However, if the County wishes to develop a water system in the North – Northwest planning areas the expansion is feasible under certain conditions. These conditions are listed below:

- It is important that the County create an ordinance that will define the County's service area and that will restrict other service providers from entering the County's service area. Without a defined County service area, other water providers could expand into the potential water system's growth areas and limit future expansion of its revenue stream.

- The ordinance would require all utility infrastructure constructed in the service area be deeded to RCU. RCU would then own, operate, and maintain the infrastructure and charge the users at the RCU prevailing utility rates.

- The County, as part of the Ordinance, could release a project to another utility but should require a fee be paid by the entity requesting the release. Any fees collected should be committed to a project development fund that can be used for future system expansion.

- RCU would develop bulk purchase agreements with the City of Columbia and/or the Newberry County Water and Sewer Authority (NCWSA) at affordable rates for water to serve the RCU customers.

- RCU has delegated plan review and all water projects constructed in the planning area would have to be reviewed and approved by RCU prior to construction.

- A "Rate Study" would be required to determine the charges to customers once the bulk rate is determined in negotiations with the City of Columbia or NCWSA. There will not be any required initial capital outlay by the County for any new expansions and the O & M budget of RCU would not be negatively impacted and could be adjusted as the customer base grows.

- As the customer base grows, RCU may be required to construct storage to meet SCDHEC storage requirements for the system. However, by the time storage will be needed the customer base would have grown enough where the cost for debt retirement should be covered by the existing customer base.

- As the customer base grows to approximately 2,500 residential equivalents (RE) RCU should consider developing a water purification plant that could serve the north-northwest project areas. The cost of a two million gallon per day water purification plant is approximately $10.2 million.

- Once adequate storage and a RCU operated water supply are in place the County should develop a program to promote the water system and to actively seek new customers in the project area. After a three to six-month sign-up period, develop cost estimates for the required expansion to serve those desiring service and actively seek grants and loans to fund the expansion of the system. Also, the County should consult with the County's Economic Develop staff to see if there are areas where water lines could be installed that would promote economic growth in the area and seek grant funding for those lines.

APPENDIX

TABLES

FIGURES

OTHER ITEMS

Probable Cost Estimates
- North Service Area System Expansion
- Northwest Service Area System Expansion
- Horizontal Directional Bore Under Broad River
- 2.0 MGD Water Treatment Plant
- 500,000 Gallon Elevated Water Storage Tank

City of Columbia Bulk Purchase Contract
NCWSA Conditions for Sale

TABLES

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

TABLE 1

RICHLAND COUNTY UTILITIES
EXISTING WATER RATE SCHEDULE
&
TAP FEES

WATER RATE SCHEDULE

Usage (Gallons)	Southeast Richland County Service Area
	(Per 1,000 Gallons)
Base (First 1,000 Gallons)	$ 20.00
Next 8,000 Gallons	$ 4.67
Next 11,000 Gallons	$ 4.37
Next 10,000 Gallons	$ 4.12
Next 30,000 Gallons	$ 3.87
Next 60,000 Gallons	$ 3.87

WATER TAP FEES

Meter Size	Southeast Richland County Service Area
¾” Meter	$ 1,000.00
1” Meter	$ 1,500.00
1 ½” Meter	$ 1,500.00
2” Meter	$ 1,500.00

RCU
Richland County Utilities

TABLE 2

ACTUAL WATER USE FOR A 12 MONTH PERIOD

JULY 1, 2017 TO JUNE 30, 2018
Based on 589 Users

	GALLONS
JULY, 2017	2,386,205
AUGUST, 2017	2,252,291
SEPTEMBER, 2017	1,908,218
OCTOBER, 2017	2,045,325
NOVEMBER, 2017	1,385,540
DECEMBER, 2017	1,995,088
JANUARY, 2018	1,943,720
FEBRUARY, 2018	2,664,370
MARCH, 2018	1,773,530
APRIL, 2018	1,254,782
MAY, 2018	2,108,760
JUNE, 2018	1,881,987
TOTAL	**23,599,780 GALLONS**

Average Water Use per Month = $\frac{23,599,780}{12}$ = 1,966,648 gallons

Average Water Use Per Customer = $\frac{1,966,648}{589}$ = 3,339 gallons per user

Average Water Bill = $20.00 first 1000 gallons

3,339 gal. (-) 1000 gal = 2,339 x $4.67 / 1,000 gal. = $10.92
$30.92 per user

Annual Water Sales = $30.92 x 589 customers x 12 months = $218,542.56

TABLE 3

PROJECTED USERS CONNECTED TO THE NORTH AND NORTHWEST RICHLAND COUNTY WATER SYSTEM AND POTENTIAL REVENUE

FIRST FULL YEAR OF OPERATION

WATER USERS

POTENTIAL USERS	TOTAL NO. UNITS
Existing Number of Users	20
Projected Number of Users Phase I[*1] North	151
Projected Number of Users Phase I[*2] Northwest	569
Potential Users First Year of Operation	740

[*1] (Projected Users North = (3,020 potential users along route) times 5% subscription rate = 151 Potential Users)

[*2] (Projected Users Northwest = (28,458 potential users along route) times 2% subscription rate = 569 Potential Users)

WATER USAGE PER MONTH

Potential Water Use Per Month = Average Monthly Use Per Customer[*3] x Number of Customers

Potential Water Use Per Month = 3,339 Gal / User/ Month x 740 Users

Potential Water Use Per Month = 2,470,860 Gal. / Month

PROJECTED ANNUAL REVENUE

Annual Water Sales = $30.92 x 740 Users x 12 months = $274,569.60

[*3] Average Monthly Water Bill for Richland County Water Customers. See the "Table 2".

TABLE 4

NORTH-NORTHWEST RICHLAND COUNTY WATER SYSTEM
PROJECTED OPERATING BUDGET FOR ALTERNATIVE TWO
WATER PURCHASE CITY OF COLUMBIA
For the year ending June 30, 2020

OPERATING REVENUES 740 users based on current usage and expense by RCU	
SALE OF WATER	$274,570
TAP REVENUES	$74,000
INTEREST EARNED	$3,000
MISC. REVENUE- UTILITY FEES	$59,500
TOTAL REVENUE	**$411,070**
OPERATING EXPENSES	
PERSONNEL EXPENSE	
SALARIES AND WAGES	$131,873
OVERTIME	$19,900
FICA EMPLOYER'S SHARE	$10,722
WORKER'S COMPENSATION	$229
SC REGULAR RETIREMENT	$18,212
HEALTH INSURANCE EMPLOYER'S SHARE	$19,875
VISION INSURANCE EMPLOYER'S SHARE	$60
DENTAL INSURANCE EMPLOYER'S SHARE	$1,400
LIFE INSURANCE EMPLOYER'S SHARE	$207
TOTAL PERSONNEL EXPENSE	**$202,478**
GENERAL EXPENSE	
OFFICE SUPPLIES	$550
PETROL OIL AND LUBRICANT	$6,500
WORK PERMITS AND FEES	$7,350
AUTOMOTIVE NON CONTRACT	$2,000
ELECTRICITY	$15,000
SERVICE CONTRACTS	$4,500
REPAIRS- EQUIPMENT	$12,500
BUILDING MAINTENANCE	$3,000
SHOP SUPPLIES	$800
LAB SUPPLIES	$1,400
CHEMICALS	$3,560
RENT	$500
WATER PURCHASE CITY OF COLUMBIA	$193,324
TOTAL GENERAL EXPENSE	**$250,984**
TOTAL OPERATING EXPENSE	**$453,462**
TOTAL REVENUE	**$411,070**
FUND BALANCE	**($42,392)**

TABLE 5

NORTH-NORTHWEST RICHLAND COUNTY WATER SYSTEM
PROJECTED OPERATING BUDGET FOR ALTERNATIVE THREE
WATER PURCHASE NEWBERRY COUNTY WSA
For the year ending June 30, 2020

OPERATING REVENUES 740 users based on current usage and expense by RCU	
SALE OF WATER	$274,570
TAP REVENUES	$74,000
INTEREST EARNED	$3,000
MISC. REVENUE- UTILITY FEES	$59,500
TOTAL REVENUE	**$411,070**
OPERATING EXPENSES	
PERSONNEL EXPENSE	
SALARIES AND WAGES	$131,873
OVERTIME	$19,900
FICA EMPLOYER'S SHARE	$10,722
WORKER'S COMPENSATION	$229
SC REGULAR RETIREMENT	$18,212
HEALTH INSURANCE EMPLOYER'S SHARE	$19,875
VISION INSURANCE EMPLOYER'S SHARE	$60
DENTAL INSURANCE EMPLOYER'S SHARE	$1,400
LIFE INSURANCE EMPLOYER'S SHARE	$207
TOTAL PERSONNEL EXPENSE	**$202,478**
GENERAL EXPENSE	
OFFICE SUPPLIES	$550
PETROL OIL AND LUBRICANT	$6,500
WORK PERMITS AND FEES	$7,350
AUTOMOTIVE NON CONTRACT	$2,000
ELECTRICITY	$15,000
SERVICE CONTRACTS	$4,500
REPAIRS- EQUIPMENT	$12,500
BUILDING MAINTENANCE	$3,000
SHOP SUPPLIES	$800
LAB SUPPLIES	$1,400
CHEMICALS	$3,560
RENT	$500
WATER PURCHASE NEWBERRY COUNTY	$160,450
TOTAL GENERAL EXPENSE	**$218,110**
TOTAL OPERATING EXPENSE	**$420,588**
TOTAL REVENUE	**$411,070**
FUND BALANCE	**($9,518)**

TABLE 6

NORTH-NORTHWEST RICHLAND COUNTY WATER SYSTEM PROJECTED OPERATING BUDGET FOR ALTERNATIVE FOUR - **COUNTY OWNED WATER PURIFICATION**

For the year ending June 30, 2020

OPERATING REVENUES 740 users based on current usage and expense by RCU	
SALE OF WATER	$274,570
TAP REVENUES	$74,000
INTEREST EARNED	$3,000
MISC. REVENUE- UTILITY FEES	$59,500
TOTAL REVENUE	**$411,070**
OPERATING EXPENSES	
PERSONNEL EXPENSE	
SALARIES AND WAGES	$224,250
OVERTIME	$43,900
FICA EMPLOYER'S SHARE	$18,284
WORKER'S COMPENSATION	$429
SC REGULAR RETIREMENT	$31,057
HEALTH INSURANCE EMPLOYER'S SHARE	$33,875
VISION INSURANCE EMPLOYER'S SHARE	$60
DENTAL INSURANCE EMPLOYER'S SHARE	$1,400
LIFE INSURANCE EMPLOYER'S SHARE	$207
TOTAL PERSONNEL EXPENSE	**$343,462**
GENERAL EXPENSE	
OFFICE SUPPLIES	$550
PETROL OIL AND LUBRICANT	$6,500
WORK PERMITS AND FEES	$7,350
AUTOMOTIVE NON CONTRACT	$2,000
ELECTRICITY	$45,000
GENERATOR FUEL	$550
SERVICE CONTRACTS	$14,500
REPAIRS- EQUIPMENT	$19,500
BUILDING MAINTENANCE	$9,000
SHOP SUPPLIES	$800
LAB SUPPLIES	$19,400
CHEMICALS	$53,560
RENT	$500
WATER PURCHASE	$0
TOTAL GENERAL EXPENSE	**$179,210**
TOTAL OPERATING EXPENSE	**$522,672**
TOTAL REVENUE	**$411,070**
FUND BALANCE	**($111,602)**

TABLE 7

NORTH-NORTWEST RICHLAND COUNTY WATER SYSTEM PROJECTED WATER COST FROM CITY OF COLUMBIA FOR ALTERNATIVE TWO

I. PROJECTED WATER PURCHASE

Average Water Use	2,470,860 Gal./Month
Flushing Water and Water Loss (15%)	370,629 Gal./Month
Projected Water Purchase Per Month	2,841,489 Gal./Month

2,841,489 Gal./Month = 379,878 Cubic Feet

II. AVERAGE MONTHLY WATER BILL

Meter Charge 300 Cu. Ft.		$ 1,024.25
Volume Change	9,700 Cu. Ft. /100 x $4.40	$ 426.80
	90,000 Cu. Ft. / 100 x $4.16	$ 3,744.00
	279,878 Cu. Ft. / 100 x $3.90	$10,915.24
Average Monthly Water Bill		$16,110.29

III. PROJECTED ANNUAL WATER BILL

Projected Annual Water Bill = Average Monthly Bill x 12 Months

Projected annual Water Bill= $16,110.29 x 12 Months

Projected Annual Water Bill = $193,323.48 per Year

TABLE 8

NORTH-NORTWEST RICHLAND COUNTY WATER SYSTEM
PROJECTED WATER COST FROM NCWSA
FOR ALTERNATIVE THREE

I. PROJECTED WATER PURCHASE

Average Water Use	2,470,860 Gal./Month
Flushing Water and Water Loss (15%)	370,629 Gal./Month
Projected Water Purchase Per Month	2,841,489 Gal./Month

II. AVERAGE MONTHLY WATER BILL

Meter Charge		$ 300.00
Volume Charge	2,841,489 Gal./1,000 x $4.60	$ 13,070.85
Average Monthly Water Bill		$ 13,370.85

III. PROJECTED ANNUAL WATER BILL

Projected Annual Water Bill = Average Monthly Bill x 12 Months

Projected Annual Water Bill= $13,370.85 x 12 Months

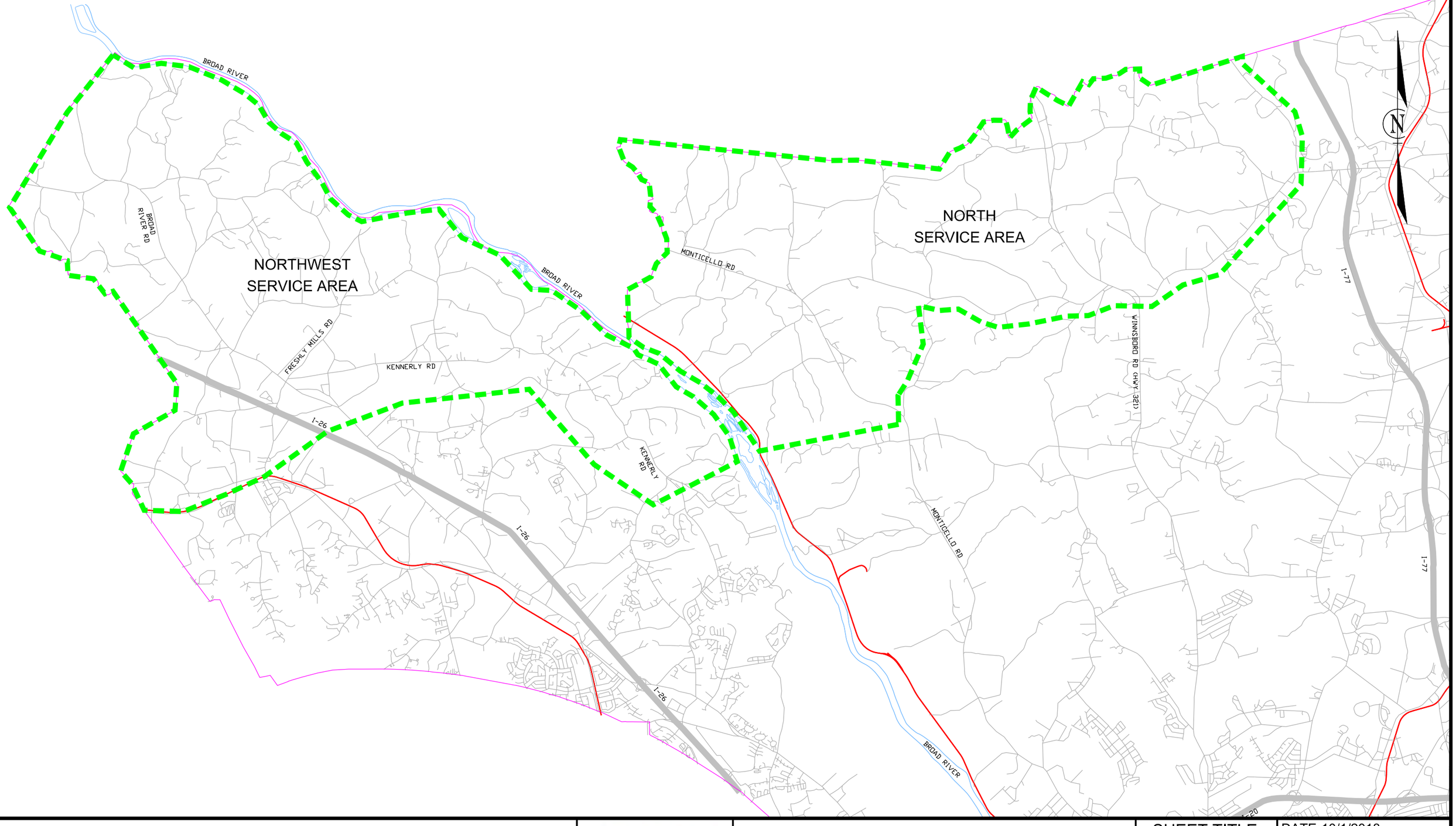
Projected Annual Water Bill = $160,450.20 per Year

FIGURES

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018



LEGEND

- WATER SERVICE AREA
- ROADWAY
- INTERSTATE
- RAILROAD
- RIVER

RCU Richland County Utilities

NORTH-NORTHWEST RICHLAND COUNTY WATER IMPROVEMENTS

NORTH - NORTHWEST RICHLAND COUNTY SERVICE AREA

SHEET TITLE

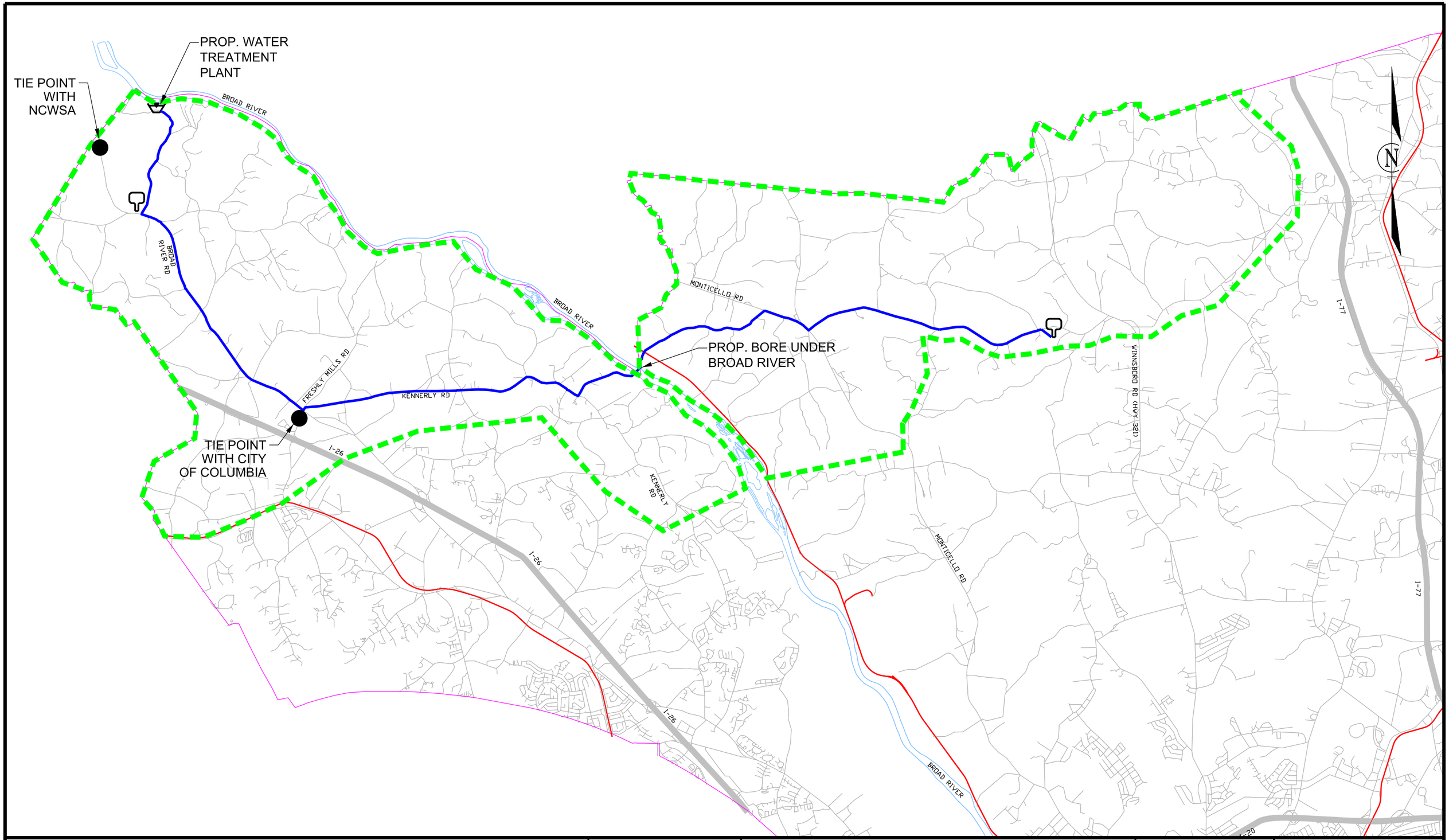
FIGURE 1

DATE:10/1/2018

SCALE:N.T.S.

JOB NO.: 180611

SHEET: 1 OF 1



LEGEND

- PROP. WATER MAIN
- PROP. WATER TREATMENT PLANT
- PROP. WATER TANK

RCU
Richland County Utilities

NORTH-NORTHWEST RICHLAND COUNTY WATER IMPROVEMENTS

POSSIBLE WATER SUPPLY SOURCES

SHEET TITLE

FIGURE 2

DATE:10/1/2018
SCALE:N.T.S.
JOB NO.: 180611
SHEET: 1 OF 1

PROP. WATER TREATMENT PLANT

PROP. WATER STORAGE TANK

PROP. BORE UNDER BROAD RIVER

PROP. WATER STORAGE TANK

BROAD RIVER

BROAD RIVER RD

FRESHLY MILLS RD

KENNERLY RD

MONTICELLO RD

WINNSBORO RD (HWY. 321)

I-77

I-26

BROAD RIVER

LEGEND

- PROP. WATER MAIN
- PROP. WATER TREATMENT PLANT
- PROP. WATER TANK

RCU Richland County Utilities

NORTH-NORTHWEST RICHLAND COUNTY WATER IMPROVEMENTS

NORTH - NORTHWEST SYSTEM LAYOUT MAP

SHEET TITLE

FIGURE 3

DATE:10/1/2018

SCALE:N.T.S.

JOB NO.: 180611

SHEET: 1 OF 1

PROBABLE COST ESTIMATES

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

NORTH RICHLAND COUNTY WATER SYSTEM - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE

10/01/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$100,000.00	$100,000.00
2	CLEAR RIGHT OF WAY	25	AC	$5,300.00	$132,500.00
3	TRAFFIC CONTROL	1	LS	$20,000.00	$20,000.00
4	CONSTRUCTION STAKING	1	LS	$30,000.00	$30,000.00
5	SEDIMENT & EROSION CONTROL	57,800	LF	$4.00	$231,200.00
6	GRASSING, SEEDING, FERTILIZER	25	AC	$3,500.00	$87,500.00
7	24" (PC 350) DUCTILE IRON WATER LINE	57,800	LF	$110.00	$6,358,000.00
8	DUCTILE IRON FITTINGS	300	EA	$1,800.00	$540,000.00
9	24" HORIZONTAL DIRECTIONAL DRILL UNDER STREAM	3700	LF	$650.00	$2,405,000.00
10	BORE AND JACK UNDER RAILROAD	300	LF	$650.00	$195,000.00
11	BORE & JACK STEEL CASING W/ 24" D.I. (PC 350) CARRIER PIPE	500	LF	$375.00	$187,500.00
12	24" BUTTERFLY VALVE AND VALVE BOX	25	EA	$8,500.00	$212,500.00
13	1" AIR RELEASE VALVES	20	EA	$3,000.00	$60,000.00
14	FIRE HYDRANT ASSEMBLY	53	EA	$3,500.00	$185,500.00
15	ASPHALT DRIVEWAY REPAIR	8000	SY	$60.00	$480,000.00
16	CONCRETE DRIVEWAY REPAIR	525	SY	$40.00	$21,000.00
17	GRAVEL DRIVEWAY REPAIR	300	TONS	$25.00	$7,500.00
18	3/4" SERVICE CONNECTION WITH METER	151	EA	$2,500.00	$377,500.00
19	3/4" POLYETHYLENE SERVICE LINE	1510	LF	$3.50	$5,285.00
20	3/4" POLYETHYLENE SERVICE LINE UNDER PAVEMENT	3,020	LF	$5.50	$16,610.00
21	BOOSTER PUMP	1	EA	$160,000.00	$160,000.00
22	ROCK EXCAVATION	2,850	CY	$150.00	$427,500.00
				TOTAL ESTIMATED CONSTRUCTION COST	$12,240,095.00
				CONSTRUCTION CONTINGENCY (10%)	$1,224,009.50
				ENGINEERING & SURVEYING (7%)	$857,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$490,000.00
				PERMITTING	$10,000.00
				RAILROAD AGREEMENT FEES	$15,000.00
				LAND PURCHASE/EASEMENTS	$0.00
				LEGAL	$176,000.00
				TOTAL PROJECT COST	**$15,013,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

NORTHWEST RICHLAND COUNTY WATER SYSTEM - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE

10/01/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$115,000.00	$115,000.00
2	CLEAR RIGHT OF WAY	33	AC	$5,300.00	$174,900.00
3	TRAFFIC CONTROL	1	LS	$20,000.00	$20,000.00
4	CONSTRUCTION STAKING	1	LS	$30,000.00	$30,000.00
5	SEDIMENT & EROSION CONTROL	62,000	LF	$4.00	$248,000.00
6	GRASSING, SEEDING, FERTILIZER	33	AC	$3,500.00	$115,500.00
7	30" (PC 350) DUCTILE IRON WATER LINE	6,600	LF	$130.00	$858,000.00
8	24" (PC 350) DUCTILE IRON WATER MAIN	52,300	LF	$110.00	$5,753,000.00
9	DUCTILE IRON FITTINGS	300	EA	$2,500.00	$750,000.00
10	30" HORIZONTAL DIRECTIONAL DRILL UNDER STREAM	3700	LF	$650.00	$2,405,000.00
11	BORE & JACK STEEL CASING W/ 30" D.I. (PC 350) CARRIER PIPE	400	LF	$450.00	$180,000.00
12	BORE & JACK STEEL CASING W/ 24" D.I. (PC 250) CARRIER PIPE	100	LF	$375.00	$37,500.00
13	30" BUTTERFLY VALVE AND VALVE BOX	6	EA	$10,000.00	$60,000.00
14	24" BUTTERFLY VALVE AND VALE BOX	21	EA	$8,500.00	$178,500.00
15	1" AIR RELEASE VALVES	25	EA	$3,000.00	$75,000.00
16	FIRE HYDRANT ASSEMBLY	72	EA	$3,500.00	$252,000.00
17	ASPHALT DRIVEWAY REPAIR	9900	SY	$60.00	$594,000.00
18	CONCRETE DRIVEWAY REPAIR	725	SY	$40.00	$29,000.00
19	GRAVEL DRIVEWAY REPAIR	600	TONS	$25.00	$15,000.00
20	3/4" SERVICE CONNECTION WITH METER	569	EA	$2,500.00	$1,422,500.00
21	3/4" POLYETHYLENE SERVICE LINE	5690	LF	$3.50	$19,915.00
22	3/4" POLYETHYLENE SERVICE LINE UNDER PAVEMENT	11,380	LF	$5.50	$62,590.00
23	ROCK EXCAVATION	2,500	CY	$150.00	$375,000.00
				TOTAL ESTIMATED CONSTRUCTION COST	$13,770,405.00
				CONSTRUCTION CONTINGENCY (10%)	$1,377,040.50
				ENGINEERING & SURVEYING (7%)	$964,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$551,000.00
				PERMITTING	$10,000.00
				LAND PURCHASE/EASEMENTS	$0.00
				LEGAL	$184,000.00
				TOTAL PROJECT COST	**$16,857,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

HORIZONTAL DIRECTIONAL BORE UNDER BROAD RIVER

PRELIMINARY COST ESTIMATE

10/01/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$24,000.00	$24,000.00
2	CONSTRUCTION STAKING	1	LS	$4,500.00	$4,500.00
3	CLEAR SITE	1.25	AC	$4,000.00	$5,000.00
4	SEDIMENT & EROSION CONTROL	1	LS	$10,000.00	$10,000.00
5	GRASSING: SEEDING, FERTILIZER, & MULCH	1.25	AC	$3,500.00	$4,375.00
6	HORIZONTAL DIRECTIONAL DRILL 30"HDPE UNDER BROAD RIVER	1,800	LF	$1,200.00	$2,160,000.00
				TOTAL ESTIMATED CONSTRUCTION COST	$2,207,875.00
				CONSTRUCTION CONTINGENCY (10%)	$220,787.50
				ENGINEERING & SURVEYING =	$155,000.00
				CONSTRUCTION ADMINISTRATION =	$89,000.00
				PROJECT ADMINISTRATION	$15,000.00
				PERMITTING =	$1,500.00
				LAND PURCHASE	$25,000.00
				TOTAL PROJECT COST =	**$2,715,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

2.0 MGD WATER TREATMENT PLANT - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE

10/01/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$100,000.00	$100,000.00
2	RAW WATER PUMP STATION				
A	RAW WATER PUMPS	1	LS	$150,000.00	$150,000.00
B	RAW WATER PIPING AND VALVES	1	LS	$275,000.00	$275,000.00
C	INSTALLATION	1	LS	$75,000.00	$75,000.00
D	PRECAST STATION	1	LS	$450,000.00	$450,000.00
E	RAW WATER PUMP STATION SUB-TOTAL				$950,000.00
3	SITE PIPING				
A	RAW WATER MAIN	1	LS	$76,000.00	$76,000.00
B	YARD PIPING	1	LS	$85,000.00	$85,000.00
C	EFFLUENT PIPE	1	LS	$95,000.00	$95,000.00
D	SITE PIPING SUB-TOTAL				$256,000.00
4	SITE WORK				
A	CLEARING, GRADING & EXCAVATION	1	LS	$65,000.00	$65,000.00
B	STORM DRAINAGE	1	LS	$15,400.00	$15,400.00
C	CURBS, GUTTERS & SIDEWALKS	1	LS	$7,500.00	$7,500.00
D	PAVING	1	LS	$45,000.00	$45,000.00
E	LANDSCAPING	1	LS	$14,000.00	$14,000.00
F	SITE WORK SUB-TOTAL				$146,900.00
5	FLASH MIX				
A	RAW WATER CONTROL VALVE & FLOW TUBE	1	LS	$15,400.00	$15,400.00
B	STEEL	1	LS	$23,750.00	$23,750.00
C	MIXER	1	LS	$16,500.00	$16,500.00
D	SPLITTER GATE	1	LS	$11,250.00	$11,250.00
E	INSTALLATION	1	LS	$8,500.00	$8,500.00
F	METALS	1	LS	$12,500.00	$12,500.00
G	FLASH MIX SUB-TOTAL				$87,900.00

2.0 MGD WATER TREATMENT PLANT - RICHLAND COUNTY UTILITIES					
PRELIMINARY COST ESTIMATE					
10/01/18					
ITEM NO.	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
6	PULSATORS - 2 UNITS				
A	STEEL SHELL	1	LS	$275,000.00	$275,000.00
B	CONCRETE UNDER THE FOUNDATION	1	LS	$75,000.00	$75,000.00
C	EQUIPMENT	1	LS	$950,000.00	$950,000.00
D	INSTALLATION & PAINTING	1	LS	$125,000.00	$125,000.00
E	METALS WITH INSTALLATION	1	LS	$45,000.00	$45,000.00
F	PULSATORS SUB-TOTAL				$1,470,000.00
7	FILTERS - 4 FILTER CELLS				
A	STEEL TANKAGE	1	LS	$160,000.00	$160,000.00
B	CONCRETE UNDER THE FILTER	1	LS	$65,000.00	$65,000.00
C	EQUIPMENT	1	LS	$500,000.00	$500,000.00
D	MEDIA	1	LS	$55,000.00	$55,000.00
E	INSTALLATION & PAINTING	1	LS	$110,000.00	$110,000.00
F	METALS WITH INSTALLATION	1	LS	$45,000.00	$45,000.00
G	ISOLATION & REWASH PIPING	1	LS	$35,000.00	$35,000.00
H	FILTERS SUB-TOTAL				$970,000.00
8	CLEARWELL (1 - 250,000 GALLON CLEARWELL)				
A	FOUNDATION PREPARATION	1	LS	$75,000.00	$75,000.00
B	POURED IN PLACE CONCRETE	1	LS	$175,000.00	$175,000.00
C	CLEARWELL SUB-TOTAL				$250,000.00
9	FINSHED WATER PUMP STATION				
A	PUMPS (4 FW)	1	LS	$175,000.00	$175,000.00
B	PUMP STARTERS	1	LS	$65,000.00	$65,000.00
C	PUMP CONTROL VALVES	1	LS	$67,500.00	$67,500.00
D	INSTALLATION & PAINTING	1	LS	$86,000.00	$86,000.00
E	METALS	1	LS	$35,000.00	$35,000.00
F	CANS FOR PUMPS	1	LS	$90,000.00	$90,000.00
G	PUMP STATION SUB-TOTAL				$518,500.00
10	SLUDGE BLOWDOWN LAGOON FOR BACKWASH & CLARIFIER				
A	CONCRETE & EXCAVATION	1	LS	$157,850.00	$157,850.00
B	DECANTER	1	LS	$25,000.00	$25,000.00
C	INSTALLATION, GROUTING & PAINTING	1	LS	$34,000.00	$34,000.00
D	DECANT PUMP STATION	1	LS	$75,000.00	$75,000.00
E	SLUDGE PUMP STATION	1	LS	$85,000.00	$85,000.00
F	METALS	1	LS	$15,000.00	$15,000.00
G	SLUDGE BLOWDOWN LAGOON SUB-TOTAL				$391,850.00

2.0 MGD WATER TREATMENT PLANT - RICHLAND COUNTY UTILITIES					
PRELIMINARY COST ESTIMATE					
10/01/18					
ITEM NO.	**DESCRIPTION**	**QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
11	BULK CHEMICAL STORAGE				
A	CONCRETE	1	LS	$40,000.00	$40,000.00
B	BULK TANKS, CAUSTIC & ALUM	1	LS	$50,000.00	$50,000.00
C	MIXER, DAY TANKS & CIRCULATION PUMPS	1	LS	$25,000.00	$25,000.00
D	INSTALLATION & START-UP	1	LS	$45,000.00	$45,000.00
E	BULK CHEMICAL STORAGE SUB-TOTAL				$160,000.00
12	CHEMICAL FEED SYSTEM				
A	CHEMICAL EQUIPMENT & START-UP				
	TWO ALUM PUMPS WITH AUTOMATIC CONTROLS	1	LS	$18,750.00	$18,750.00
	TWO CAUSTIC PUMPS WITH AUTOMATIC CONTROLS	1	LS	$18,750.00	$18,750.00
	TWO POLYHOSPHATE PUMPS WITH AUTOMATIC CONTROLS	1	LS	$18,750.00	$18,750.00
	TWO FLOURIDE PUMPS WITH AUTOMATIC CONTROLS	1	LS	$18,750.00	$18,750.00
	THREE POLYMER PUMPS WITH AUTOMATIC CONTROLS	1	LS	$18,750.00	$18,750.00
	HYPOCHLORITE BULK & FEED SYSTEM	1	LS	$115,000.00	$115,000.00
	ONE GAS AUTOMATIC AMMONIA SYSTEM	1	LS	$45,000.00	$45,000.00
B	CHEMICAL FEED PIPING	1	LS	$35,000.00	$35,000.00
C	INSTALLATION	1	LS	$75,000.00	$75,000.00
D	CHEMICAL FEED SUB-TOTAL				$363,750.00
13	OPERATIONS BUILDING				
A	GENERAL CONSTRUCTION	1	LS	$250,000.00	$250,000.00
B	LABORATORY EQUIPMENT	1	LS	$95,000.00	$95,000.00
C	CHEMICAL HANDLING EQUIPMENT	1	LS	$12,500.00	$12,500.00
D	OPERATIONS BUILDING SUB-TOTAL				$357,500.00
14	INSTRUMENTATION, ANALYTICAL & METERING				
A	FIELD INSTRUMENTS, ANALYTICAL, COMPUTER SYSTEM	1	LS	$275,000.00	$275,000.00
B	START-UP	1	LS	$25,000.00	$25,000.00
C	INSTALLATION	1	LS	$60,000.00	$60,000.00
D	INSTRUMENTATION SUB-TOTAL				$360,000.00
15	ELECTRICAL COMPONENTS				
A	GENERAL ELECTRICAL CONSTRUCTION	1	LS	$850,000.00	$850,000.00
B	GENERATOR	1	LS	$125,000.00	$125,000.00
C	ELECTRICAL SUB-TOTAL				$975,000.00

2.0 MGD WATER TREATMENT PLANT - RICHLAND COUNTY UTILITIES

PRELIMINARY COST ESTIMATE

10/01/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
16	MECHANICAL CONSTRUCTION	1	LS	$75,000.00	$75,000.00
17	SUBTOTAL				$7,432,400.00
18	CONTRACTORS OVERHEAD (2%)				$148,648.00
19	CONTRACTORS PROFIT (8%)				$594,592.00
				TOTAL ESTIMATED CONSTRUCTION COST	$8,176,000.00
				CONSTRUCTION CONTINGENCY (10%)	$817,600.00
				ENGINEERING & SURVEYING (6%)	$491,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$328,000.00
				PERMITTING	$90,000.00
				LAND PURCHASE/EASEMENTS	$100,000.00
				LEGAL	$175,000.00
				TOTAL PROJECT COST	**$10,178,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

500,000 GALLON CAPACITY (NEW OR USED) ELEVATED WATER STORAGE TANK

PRELIMINARY COST ESTIMATE

10/01/18

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION	1	LS	$24,000.00	$24,000.00
2	CONSTRUCTION STAKING	1	LS	$2,500.00	$2,500.00
3	CLEAR SITE	1.25	AC	$4,000.00	$5,000.00
4	SITE GRADING	1	LS	$22,000.00	$22,000.00
5	SEDIMENT & EROSION CONTROL	1	LS	$10,000.00	$10,000.00
6	GRASSING: SEEDING, FERTILIZER, & MULCH	1.25	AC	$3,500.00	$4,375.00
7	NEW 500,000 GALLON ELEVATED WATER STORAGE TANE	1	EA	$750,000.00	$750,000.00
8	CONCRETE FOUNDATION FOR ELEVATED TANK	1	LS	$225,000.00	$225,000.00
9	ALTITUDE VALVE AND VAULT	1	LS	$125,000.00	$125,000.00
10	TANK SIGN	1	LS	$5,500.00	$5,500.00
11	TANK LOT FENCE AND GATE	1	LS	$15,400.00	$15,400.00
12	24" DUCTILE IRON PIPE	1500	LF	$110.00	$165,000.00
13	24" BUTTERFLY VALVES	3	EA	$8,000.00	$24,000.00
14	ASPHALT DRIVE	1	LS	$35,000.00	$35,000.00
				TOTAL ESTIMATED CONSTRUCTION COST	$1,412,775.00
				CONSTRUCTION CONTINGENCY (10%)	$141,277.50
				ENGINEERING & SURVEYING (7%)	$99,000.00
				CONSTRUCTION ADMINISTRATION (4%)	$57,000.00
				PERMITTING	$1,500.00
				LAND PURCHASE/EASEMENTS	$25,000.00
				TOTAL PROJECT COST	**$1,737,000.00**

This is a preliminary construction cost estimate. The Client understands that Joel E. Wood & Associates has no control over the costs or the price of labor, equipment, materials, or the Contractor's method of pricing. The opinions of estimated cost provided herein are made on the basis of Joel E. Wood & Associates qualifications and experience. Joel E. Wood & Associates makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to the bid or actual cost.

CITY OF COLUMBIA
BULK PURCHASE CONTRACT

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

ORIGINAL
STAMPED IN RED

RESOLUTION NO.: R-2013-038

Establishing a Bulk Water Policy with respect to the Sale of Potable Water

WHEREAS, the City of Columbia owns, operates and maintains a regional water treatment and distribution system; and,

WHEREAS, it is the intent and desire of Columbia City Council to promulgate a policy with respect to the provision of bulk water sales; NOW, THEREFORE,

BE IT RESOLVED by the Mayor and City Council this 19th day of March, 2013, that the following policy be adopted with regard to the provision of bulk water sales to third parties:

1. **Bulk Water Agreements are approved by Council with recommendation by Utilities and Engineering when in the best interest of the City.**
Consideration will be made on a case by case basis depending on operating capacities at the point of sale combined with future growth needs of the City's distribution system.

2. **Capacity is verified by Purchaser's engineer using current City of Columbia and SCDHEC Regulations.**
Calculations are to be provided to the City of Columbia for review and approval. City reserves the right to approve or disapprove based current and/or future capacity needs of the City's distribution system. Purchaser's engineer must provide recommended meter size and location required to meet the demands of the purchaser.

3. **City does not guarantee any level of service including water quality or quantity beyond Purchaser's meter connection.**
Purchaser is responsible for all aspects of maintaining water quality standards

4. **Purchased water shall only be distributed within Purchaser's service area. Purchaser may sell to other water providers (Bulk Water Customers) provided that the customers are not contiguous to the City's service area and the Purchaser does not solely rely on the City's water service to provide adequate service.**

5. **The City may terminate service for any reason after twenty-four (24) hour notification. Service may be limited at any time for emergencies such as water main break and/or maintenance purposes.**

6. **Rates for service shall be in accordance with the current rate schedule and are subject to any future increases as approved by Council.**

7. **Purchaser is responsible for obtaining any easements and/or permits associated with the Bulk Water Sale.**

Requested by:

Mayor and City Council

MAYOR

Approved by:

City Manager

Approved as to form:

City Attorney

ATTEST:

City Clerk

Introduced: 3/19/2013
Final Reading: 3/19/2013

Last revised: 3/20/2013
13030554

STATE OF SOUTH CAROLINA)
)
) INTERGOVERNMENTAL AGREEMENT FOR
) BULK WATER SALE
COUNTY OF RICHLAND)

This PURCHASE AGREEMENT FOR BULK WATER ("Agreement"), effective as of the [DAY] of [MONTH], [YEAR], is made by and between RICHLAND COUNTY, SOUTH CAROLINA ("County"), and the CITY OF COLUMBIA, SOUTH CAROLINA ("Columbia").

WHEREAS, Columbia is a body politic and corporate and is vested with all powers granted to municipal corporations by the Constitution and the general laws of the State of South Carolina ("State"), including the power to make and execute contracts and operate utility systems;

WHEREAS, the County is a Municipality, authorized to conduct business in the State and is vested with all corporate powers under the Constitution and general laws of the State, including the power to make and execute contracts;

WHEREAS, the County desires to purchase water from Columbia on a bulk basis to serve the property more particularly described on the attached Exhibit A ("Service Area");

WHEREAS Columbia is willing to sell water to the County on a bulk basis.

NOW, THEREFORE, in consideration of the mutual covenants, benefits and promises herein, the sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Columbia agrees to supply and County agrees to purchase bulk water from Columbia, not to exceed VOLUME gallons per day, to serve within its Service Area as understood and agreed upon by Columbia and County. County shall determine that the level of service available to the specified service delivery points is adequate to serve within its agreed to service area. Columbia does not guarantee or warrant any specific level of service, but will use all reasonable efforts to provide County with bulk water from Columbia, not to exceed VOLUME gallons per day. Water delivered to the specified service delivery points, shall meet all applicable South Carolina Department of Health and Environmental Control SCDHEC standards for potable water. Columbia shall monitor the water quality on Columbia's side of the meter(s) at the service delivery points, at such times and in such manner as Columbia deems appropriate, to confirm that the water delivered to County at the service delivery points meets all applicable SCDHEC standards for potable water. If Columbia determines that the water does not meet all applicable SCDHEC standards for potable water, Columbia shall immediately notify County, shut off service to County and take appropriate measures to cause the water to meet all applicable SCDHEC standards for potable water.

2. Water furnished by Columbia shall be measured at the service delivery points by metering equipment owned and maintained by Columbia and paid for and installed by County. County shall purchase the appropriate size meter from Columbia. Metering equipment shall be installed in housing constructed by County, at County's cost and expense, at a service delivery points mutually acceptable to both Columbia and County. Columbia and County shall have mutual free access to the metering equipment.

3. In the event County requires additional service delivery points in addition to the current service delivery point, County shall construct, entirely at its own expense, any water main extensions and appurtenances of appropriate size, as approved by Columbia, required to provide water to the service delivery points. Such water main extensions shall be installed within exclusive

easements and in accordance with plans approved by Columbia. County will not place the system in operation until final inspection and final approval is given by Columbia. County shall obtain all approvals from the South Carolina Department of Health and Environmental Control or any other federal or state entities required to construct, operate and maintain the system.

4. Columbia shall read the metering equipment installed at the service delivery point at periodic intervals of approximately thirty (30) days to determine the amount of water provided by Columbia to County. The volume of water measured through the metering equipment shall be used to calculate monthly service charges. Monthly service charges for water supplied and billed to County are to be paid on or before the due date indicated on the monthly bill. If monthly service charges for water supplied and billed to County are fifteen (15) days in arrears, Columbia shall have the right, thirty (30) days after the mailing of written notice of the default to County, to terminate this Agreement and cease furnishing water to County.

5. County shall pay to Columbia monthly service charges for all water provided under the terms of this Agreement in accordance with the rates set forth in Appendix "A", which is attached hereto and incorporated herein by specific reference thereto.

6. The rates specified in Paragraph 5, Appendix A, above, may be increased or decreased by Columbia City Council, from time to time, by Ordinance, in its sole and exclusive discretion.

7. Installation, ownership, operation and maintenance of any and all portions of the water distribution system past the service delivery points shall be the sole responsibility of County, at no cost to Columbia.

8. County shall have the exclusive right to assess and collect any tap-on fees and service charges for any connections to any portions of the water distribution systems that are located past the service delivery points.

9. Columbia shall use reasonable diligence to provide a regular and uninterrupted supply of water to the service delivery points, but shall not be liable to County for damages, breach of contract or other variations of service occasioned by any cause whatsoever. Such causes may include by way of illustration, but not limitation, acts of God or of the public enemy, acts of any federal, state or local government in either its sovereign or contractual capacity, fires, droughts, floods, epidemics, quarantine restrictions, strikes, failure or breakdown of transmission or other facilities, or temporary interruptions of water service. Columbia shall notify County as soon as is practicable in advance of any reduction in the amount of water made available to County. In the event the City restricts water use during a water shortage as provided for by City Ordinance Sec. 23-70, such restrictions shall apply equally to County and City of Columbia customers affected by the water shortage and subject to the restrictions. Upon receiving such notice from Columbia, County shall, within twenty-four (24) hours, initiate adequate measures to reduce its water demands from Columbia to an amount identified by Columbia. Columbia reserves the right, at any time without notice to County or its customers, to shut the water off its mains for the purpose of making repairs, performing maintenance or installing lines, mains hydrants or other connections. No claims shall be made against Columbia by County by reason of the breakage of any service pipe or service cock, or from any other damage that may result from shutting off water for repairing, laying or relaying mains, hydrants or other connections. Columbia shall assume no responsibility, financially or otherwise, for water quantity or quality past the service delivery points, including responsibility for compliance with all state and/or federal regulations relating to drinking water.

10. This Agreement shall be for a period of five (5) years from the date this Agreement is executed by County. County may extend this Agreement for an additional five (5) year term by giving Columbia written notice ninety (90) days prior to the end of the initial five (5) year term.

11. Upon execution of this Agreement, Columbia and County mutually agree to terminate the existing agreement between Columbia and County by written agreement to terminate and such agreement shall be null and void and no longer legally binding upon Columbia or County. This Agreement is contingent upon the execution of a written agreement to terminate by Columbia and County.

12. County may terminate this Agreement upon ninety (90) days written notice to the City.

13. Waiver of any breach of this Agreement shall not constitute waiver of any subsequent breach hereof. County shall not assign this Agreement or transfer any rights and obligations hereunder without written consent of Columbia. Such consent will not be unreasonably withheld by Columbia or County. This Agreement may not be amended or modified unless such amendments or modifications are in writing and signed by the parties hereto.

14. Any notice as may be required herein shall be sufficient, if in writing and sent by certified U.S. mail with sufficient pre-paid postage affixed thereto, to the following addresses, unless otherwise changed by written notice:

City of Columbia	Attention: City Manager Post Office Box 147 Columbia, SC 29217	With a copy to:	City Attorney Post Office Box 667 Columbia, SC 29202
COUNTY	Attention: County Administrator XXX	With a copy to:	County Attorney XXX

15. If any one or more of the terms of this Agreement should be determined by a court of competent jurisdiction to be contrary to law, Columbia and County agree to amend such term or terms to bring the Agreement in compliance with law if such term or terms are essential to the validity or operation of this Agreement otherwise such terms shall be deemed severable from the remaining terms of this Agreement and shall in no way affect the validity of the other terms of this Agreement.

16. Ambiguities in the terms of this Agreement, if any, shall not be construed against Columbia or County. Jurisdiction of any action brought by Columbia or County under this Agreement shall be in the Court of Common Pleas with venue in Richland County.

17. This Agreement contains the entire agreement between the parties and shall be binding upon the parties, their respective successors and assigns, as may be applicable to the particular entity.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by duly authorized officials the date first written above.

WITNESSES: COUNTY

APPENDIX A

ORIGINAL
STAMPED IN RED

Sec. 23-149. Sewer service rates.

(a) Generally. Except as otherwise provided by contract, the monthly sewer service charge shall be as follows:

Size of Meter (inches)	In City	Out of City
5/8	7.58	12.90
1	7.58	12.90
1½	7.58	12.90
2	12.14	20.63
3	24.28	41.27
4	37.94	64.49
6	75.88	129.00
8	121.42	206.40
10	189.71	322.50

Monthly Water Use (cubic feet)	Monthly Sewer Service Charge In City	Out of City
Each 100 cubic feet	3.94	6.71

(b) Consumers using water cooling towers for air conditioning. Consumers using water cooling towers for air conditioning systems shall be given a credit of 30 cubic feet per ton per month during the service periods commencing in the months of April through October. The minimum charge shall be:

Size of Meter (inches)	In City	Out of City
5/8	12.30	15.65
1	17.35	22.91
1½	22.38	30.17
2	32.46	44.65
3	52.60	73.67
4	92.88	131.69
6	193.58	276.76
8	274.13	392.82
10	603.90	867.93

(c) Limitation on charge on single-family residences. Maximum sewer charge on single-family residences during the service periods commencing in the months of April through October will be 1,400 cubic feet.

(d) Apartments and trailer parks. Sewer rates for apartment buildings and trailer parks shall be the base rate of a single-family residence per dwelling unit plus a base fee based on meter connection size plus the rate per 100 cubic feet as reflected by water consumption.

(e) Hotels, motels, dormitories and roominghouses. Sewer rates for hotels, motels, dormitories and roominghouses shall be one-half the base rate of a single-family residence per room plus a base fee based on meter connection size plus the rate per 100 cubic feet as reflected by water consumption.

(f) Contaminated groundwater. Separate meters for discharges of contaminated groundwater are required. In city or out of city customers discharging contaminated ground water shall pay the out of city base monthly sewer service charge times one and one-half plus the out of city monthly sewer service charge for each 100 cubic feet times one and one-half.

This ordinance is effective as of July 1, 2018.

Requested by:

Mayor and City Council

Approved by:

City Manager

Approved as to form:

City Attorney

Public Hearing: 6/5/2018
Introduced: 6/5/2018
Final Reading: 6/19/2018

Mayor

ATTEST:

City Clerk

ORIGINAL
STAMPED IN RED

Last revised: 5/18/2018

NCWSA CONDITIONS FOR SALE

JOEL E. WOOD & ASSOCIATES

PLANNING • ENGINEERING • MANAGEMENT

Southeast Richland County
Water System Improvements
10/1/2018

Joel E Wood

From: Brent Richardson <brichardson@newberrycountywsa.com>
Sent: Wednesday, August 29, 2018 11:31 AM
To: joelwood@comporium.net
Cc: 'Daniel Quattlebaum'
Subject: NCWSA - Cost Estimate
Attachments: Richland Co Water.pdf; Richland.Co.Water.US.176.pdf

See attached.

NCWSA's large user (avg. use is greater than 1,000,000 gallons/month) water rate is currently $4.60/1,000 Gallons with a base fee of $300.00/month.

The connection fee would include an Installation Component (actual cost of connection) plus a Capacity Component (replace WTP capacity). The Capacity Component is currently $726.00/REU (150 GPD). At 500,000 GPD, the Capacity Component is approximately $2,420,000.00.

Thanks

Brent A. Richardson, NCWSA Manager
13903 CR Koon Hwy. | Newberry, SC 29108
P (803) 276-7020 | M (803) 924-5937
brichardson@newberrycountywsa.com
Quality Water…Reliable Service


16” Ductile Iron
Water Line
POMARIA
773
176
213
202
PEAK
12” Ductile Iron
Water Line
26
LITTLE
MOUNTAIN
76

Newberry County Water & Sewer Authority

Water Service to Richland County @ US 176

Cost Estimate

Item	Description	Quantities	Unit	Unit Cost	Total
1	Interstate & Creek Crossings	1	Ea	$150,000.00	$150,000.00
2	16" Ductile Iron Water Line	21,000	Ft	$80.00	$1,680,000.00
3	12" Ductile Iron Water Line	37,000	Ea	$50.00	$1,850,000.00
4	Gate Valves	30	Ea	$10,000.00	$300,000.00
5	Air Release Valves	30	Ea	$5,000.00	$150,000.00
6	Fire Hydrants	30	Ea	$5,000.00	$150,000.00
	Subtotal				**$4,280,000.00**
	Mobilization & Miscellaneous			10%	$428,000.00
	Contingency			15%	$642,000.00
	Engineering			12%	$513,600.00
	Total Project Costs				**$5,863,600.00**

RICHLAND COUNTY GOVERNMENT
ADMINISTRATION
2020 Hampton Street, Suite 4069, Columbia, SC 29204
P 803-576-2050 | F 803-576-2137 | TDD 803-576-2045
richlandcountysc.gov

Development & Services Committee Meeting
Briefing Document

Agenda Item
Private Pond Outfall Silt Removal Standard Operating Procedure (SOP)

Background
In 2005, County Council approved a Private Pond Policy developed by the Department of Public Works (DPW). Since the adoption, the extent of the policy has expanded, and in some cases, the County performed maintenance that went far beyond the scope of the original 2005 policy. The expansion of the interpretation of the policy led to various requests for the County to assist with more expensive dredging and sediment removal projects.

The Private Pond Policy was reviewed in 2010 with no changes. After the 2015 flood, more requests came to DPW dredging assistance and dam repair. The Private Pond Policy was reviewed by the DPW staff for updates and changes needed to revert back to the original intent of the policy. Attached with this document is the revised and renamed Private Pond Outfall Silt Removal SOP.

The newly revised policy focuses on removing silt / sediment from County maintained outfalls that discharge into a privately owned pond. In these cases the County maintained system discharges directly into a private water body which is providing a measure of public good and, thereby, should quality for assistance from the County.

Issues
Not having a policy or procedure in place makes it unclear what type of assistance, if any, the County can provide. Having a policy which isn't clearly defined can lead to misinterpretation of the intent of the policy. This leaves the door open to various requests that must be considered on a case-by-case basis, and, in turn, can lead to inequity when delivering services to the citizens of Richland County. A written SOP also helps ensure compliance with The State Attorney General's opinion regarding using public resources on private property.

Fiscal Impact
The revised policy only allows for assistance with sediment removal around outfalls connected to The County Road Maintenance System that discharge into a private pond. The removal will be conducted by Public Works' forces and equipment, eliminating the need for outside contractors or engineering services. No additional funding is needed at this time to support this initiative.

Past Legislative Actions
May 3, 2005 – County Council unanimously approved the Private Pond Policy.

Alternatives
1. Approve the revisions and renaming of the Private Pond Outfall Silt Removal SOP.

   Or,

2. Do not approve the revisions and renaming of the Private Pond Outfall Silt Removal SOP.

Staff Recommendation
Staff recommends County Council approve the revisions and renaming of the SOP.

Submitted by: Department of Public Works – SH2O **Date:** September 26, 2018

DEPARTMENT OF PUBLIC WORKS
STANDARD OPERATING PROCEDURE

DPW SOP #: **TBD**

TITLE: Private Pond Outfall Silt Removal SOP

LEAD DIVISION: Stormwater Management Division

EFFECTIVE DATE: **TBD**

REVIEW DATE: Three-year review cycle / November 2021

PREPARED BY: Synithia Williams, Stormwater General Manager

APPROVED BY: **TBD**

REFERENCES: USACE/Dam and Reservoir Safety Act

ATTACHMENTS: None

I. PURPOSE

To establish standard criteria, policy, and procedures that will allow Richland County to provide appropriate assistance to mitigate or reduce the negative impacts of the accumulation of silt a privately owned pond or lake caused by connection to the County Road Maintenance System and the associated area drainage system outfall.

II. DEFINITIONS

A. Dredging – The removal of sediments and debris from the bottom of lakes, rivers, harbors, and other water bodies. The US Army Corps of Engineers issues permits for the disposal of dredged material.

B. Homeowners Association (HOA) - An organization in a subdivision, planned community, or condominium that makes and enforces rules for the properties within its jurisdiction.

C. Perpetual maintenance – Permanent and continual responsibility for the maintenance of a pond, lake, detention, or stormwater retention facility.

D. Pond – A water body that, under normal circumstances, holds water. This water may be stormwater runoff or groundwater from an active spring. They may be naturally occurring or constructed. Ponds are considered an amenity (as opposed to infrastructure). However, they may be connected to a public drainage system.

E. Pond Owners Association (POA) – An organization in a subdivision, planned community or condominium that makes and enforces rules for the pond or lake within its jurisdiction.

F. Private water-bodies – Receiving waters (most often ponds, lakes or basins) that are privately owned by individuals or an association for which Richland County has no ownership or formal maintenance responsibilities. Private water-bodies may be connected to a public drainage system.

G. Property owner (Owner) – A holder or proprietor of land.

H. Public drainage system – A stormwater conveyance system whose maintenance is the responsibility of a public entity that provides area drainage to a publicly maintained road network. Private water-bodies may receive stormwater runoff from these systems.

I. Routine maintenance – Efforts toward effective management of a lake or pond such as the harvesting and cut back of dead vegetation, clearing accumulated debris, and other preventative maintenance.

J. Waters of the state - Lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially within or bordering the State or within its jurisdiction.

III. BACKGROUND

The County owns and maintains an extensive network of stormwater drainage assets including pipes, ditches, catch basins, etc. Some of these drainage assets are connected to private water bodies such as

ponds or lakes either directly or indirectly through a public drainage system. Perpetual and routine maintenance of privately owned water bodies is the responsibility of the property owner(s), but by accepting the drainage from the public system, the private water body is providing a measure of public benefit and, in some cases, may qualify for assistance from the County to ensure the water body's proper function.

IV. POLICY

This policy only relates to the removal of sediment accumulated in and around outfalls from a County maintained public drainage system. The County Engineer or his/her designee will determine if the pond or lake is connected to a County maintained public drainage system and if runoff from the drainage system contributed significantly to the silt removal maintenance requirement.

The County will only remove the blockages using force account equipment and staff. Blockages that require rental of equipment, hiring of an outside engineer, or capital project status do not fall under this policy and will be reviewed as a separate issue by the County Engineer and his/her designee.

In order to mitigate or reduce the negative impact of connection of private water bodies (lakes, ponds, and dry detention basins) to County maintained public drainage systems, the following criteria must be met:

A. Direct connection with a County maintained drainage system that discharges stormwater runoff into the water body;

B. Maintenance activity will not disturb any known or delineated wetland area;

C. The owners dedicate temporary drainage easements and hold harmless agreements at no cost to the County, as determined appropriate by the County Engineer;

D. The property owner, POA, or HOA have made no significant changes to the water body or surrounding area which caused damage or the need for County assistance;

E. The County will provide this assistance no more than once every five years. The property owner, HOA, or POA must contact the County for assistance related to this policy.

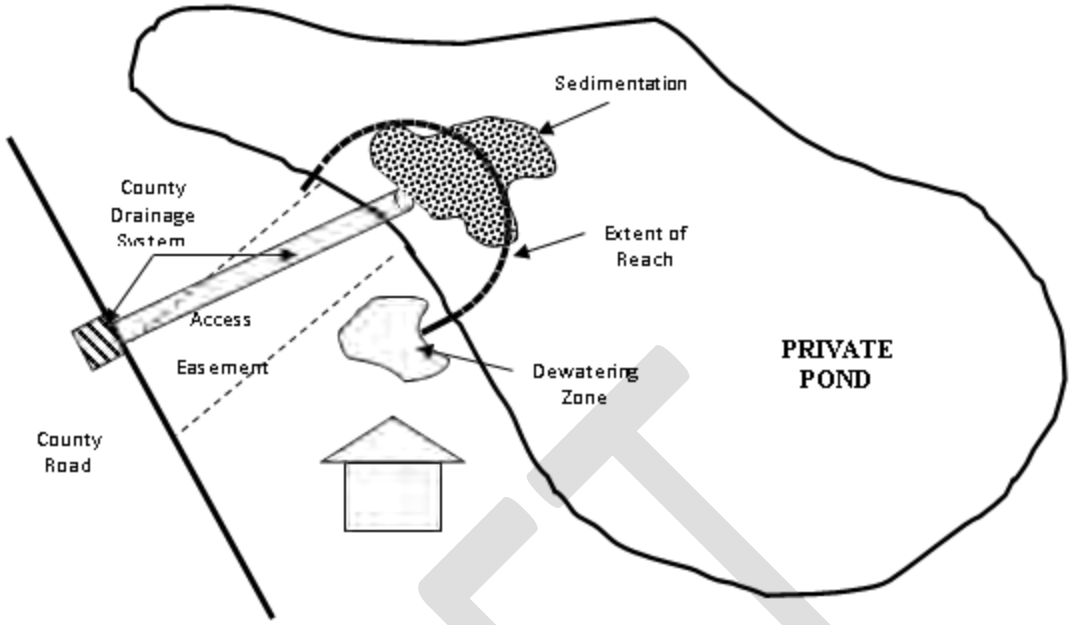


Figure 1

V. EXCEPTIONS

The policy does not apply in the following circumstances:

A. Water bodies with the Waters of the State designation that are under the jurisdiction of the US Army Corps of Engineers;

B. Removal of materials, including sediment, from the entire pond outside of the reach of County equipment and in proximity to the County outfalls (See Figure 1);

C. Litter removal;

D. Vegetation management;

E. Wildlife control and/or replenishment of fish;

F. Privately owned dry detention basins designed as a stormwater management feature;

G. Dam modifications and maintenance subject to the SC Dams and Reservoirs Safety Act and under the jurisdiction of the SC Department of Health and Environmental Control.

H. Sediment removal around outfalls associated with a SC Department of Transportation drainage network;

I. Haul off and disposal of sediment or other materials removed from a pond by the property owner, HOA, or POA.

VI. PROCEDURE

A. When a property owner, HOA, or POA contacts the county for assistance, the structure will be evaluated by the County Engineer or his/her designee to determine if all criteria are met;

B. The County Engineer will assess the water body's connection to the public drainage system and determine the extent of blockage caused by sediment in stormwater runoff from the public drainage system;

C. A document package will be prepared to obtain the property owner's consent for the County to access the pipes, ditches, or inlet into the pond to remove the blockage from the water body;

D. The property owner, HOA, or POA is responsible for providing unobstructed access to the outfall and lowering the water levels if needed to provide maintenance;

E. Water bodies that meet qualifications, and the work required can be accomplished by County staff, will be added to the County's maintenance schedule in the order that the project is received;

F. All easements and hold harmless agreements shall be recorded prior to any maintenance activity is performed.

This policy will provide a general guidance when providing assistance on privately owned ponds, lakes and basins. All situations may not fit this policy and in those circumstances the request will be evaluated on an individual case-by-case basis.

The private pond policy was originally approved Richland County Council in their meeting of May 3, 2005, reviewed by the Department of Public Works in May 2010 and revised to the private pond outfall silt removal policy in September 2018.

RICHLAND COUNTY GOVERNMENT
ADMINISTRATION
2020 Hampton Street, Suite 4069, Columbia, SC 29204
P 803-576-2050 | F 803-576-2137 | TDD 803-576-2045
richlandcountysc.gov

Development & Services Committee Meeting
Briefing Document

Agenda Item

County Council is requested to provide guidance on whether to allow private entities / individuals / associations to install flashing speed limit radar signs within County Rights-Of-Way.

Background

A request was received from a representative of The Summit Homeowners Association (HOA) asking for approval to mount flashing speed limit radar signs to existing County speed limit sign posts and also to existing Summit HOA "Slow Down. We Love Our Children" sign posts. The request is for permission to install these along several streets in the Summit and periodically relocate them from one sign post to another.

This request was forwarded to the Legal Department staff who recommended that a policy decision be made by County Council.

This request was also forwarded to the Sheriff's Department staff who stated that it needed to be made clear to the citizens that no traffic citations, warnings, or law enforcement action could be taken based on any device that is placed in the community by private parties.

The Sheriff's Department does have a limited capacity for the temporary placement of trailer mounted radar speed indicator signs.

Issues

- ☐ The additional weight of these signs added to existing sign posts may require re-installing posts with concrete foundations.
- ☐ The HOA would need to apply for and receive an approved encroachment permit.
- ☐ The HOA would need to be aware that the County would not maintain these flashing signs nor assume any associated liability.
- ☐ PWD would need to approve the device and location so as to not allow visual obstruction of roadway.

Fiscal Impact

No significant fiscal impact is anticipated; if any upgrade to the strength of the existing sign posts is needed, that can be made a condition of the encroachment permit (as will any other general or special conditions necessary to protect the County).

Past Legislative Actions

None

Alternatives

1. Allow external individuals and/or associations to install flashing speed limit radar signs in County Rights-Of-Way (with proper encroachment permits).

   Or,

2. Do not allow external individuals and/or associations to install flashing speed limit radar signs in County Rights-Of-Way.

Staff Recommendation

There are no recommendations from staff; this policy decision is at the discretion of County Council.

Submitted by: Department of Public Works – EGR **Date:** September 27, 2018

RICHLAND COUNTY GOVERNMENT
ADMINISTRATION
2020 Hampton Street, Suite 4069, Columbia, SC 29204
P 803-576-2050 | F 803-576-2137 | TDD 803-576-2045
richlandcountysc.gov

Development & Services Committee Meeting
Briefing Document

Agenda Item
City of Columbia's Request for permission to Survey, Soil Testing, Geotechnical Services & Environmental (Wetland) Inspection

Background
Staff is in receipt of two requests from the City for permission to perform a survey, soil testing, and geotechnical services & environmental inspections on County owned property located along Broad River Rd. and Farrow Rd. The County does not receive water and/or sewer services from the City on these properties.

The letters from the City are attached.

Issues
The is requesting permission to send its staff, consultants, agents and equipment on the property to perform the necessary survey work, soil testing and environmental inspections as a component of is water/sewer system improvement study.

Fiscal Impact
None.

Past Legislative Actions
None.

Alternatives
1. Consider the requests and proceed accordingly by granting permission.

2. Consider the requests and do not grant permission.

Staff Recommendation
Staff recommends granting permission to the City as requested.

Columbia Water
Drinking Water • Wastewater • Stormwater

Engineering / Real Estate Division
PO Box 147 | Columbia, SC 29217 | (803) 545-3400

October 5, 2018

Re: Permission to Survey, Soil Testing, Geotechnical Services & Environmental (Wetland) Inspection for the Water Main Relocation along Farrow Road; Richland County TMS# 17300-02-35; CIP Project #WM4451

Richland County
PO Box 192
Columbia, SC 29202

Dear Sir/Madam:

The City of Columbia is planning water system improvements within your area in the near future. A study is underway to determine the location of such improvements and as part of the study it is necessary to perform survey work, soil testing and environmental (wetland) inspections on a portion of property which is understood to belong to you. This property is identified as Richland County TMS#17300-02-35. A small map is attached depicting the general area where survey work and soil testing are to be performed.

Your permission is required to send staff, consultants, agents and equipment on your property to perform the necessary survey work, soil testing and environmental inspections. No trees will be cut or other physical damages inflicted to your property or its improvements. However, it may be necessary to clear underbrush in the survey area.

Please indicate your approval by signing the permission statement below, provide contact information for future communications, and return the original to me in the envelope provided by **October 19, 2018**. A copy is enclosed for your file. For your convenience, you may also scan the signed permission and email it to me at Vincent.Lyde@columbiasc.gov.

If you should have any questions concerning this matter or should problems arise while the work is being conducted, please do not hesitate to contact me at (803) 545-3363.

Sincerely,

Vincent A. Lyde
Right-of-Way Agent
Real Estate Division

Attachments
Val

Columbia Water

Drinking Water • Wastewater • Stormwater

Engineering / Real Estate Division
PO Box 147 I Columbia, SC 29217 I (803) 545-3400

I hereby grant permission for the City of Columbia to send staff and equipment on the property described above for the purposes stated.

Richland County

_____ / ____ / 2018
Date

_____
(Signature)

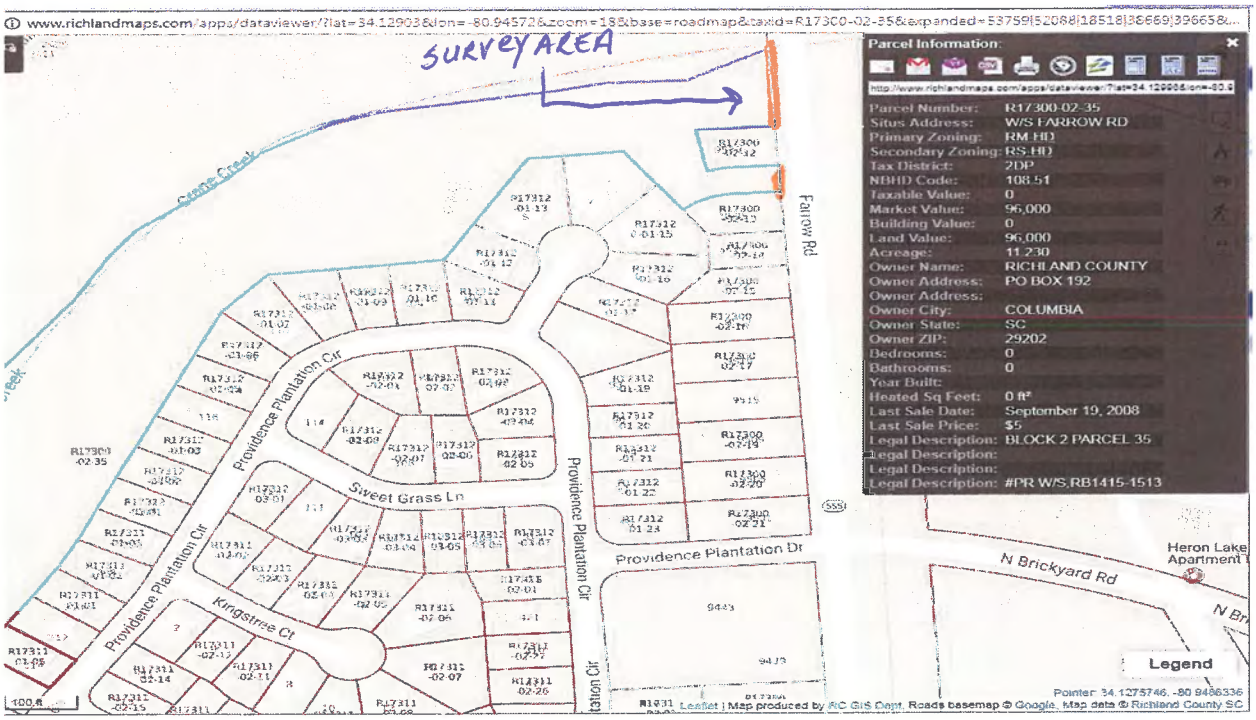
By: _____
(Print Name)

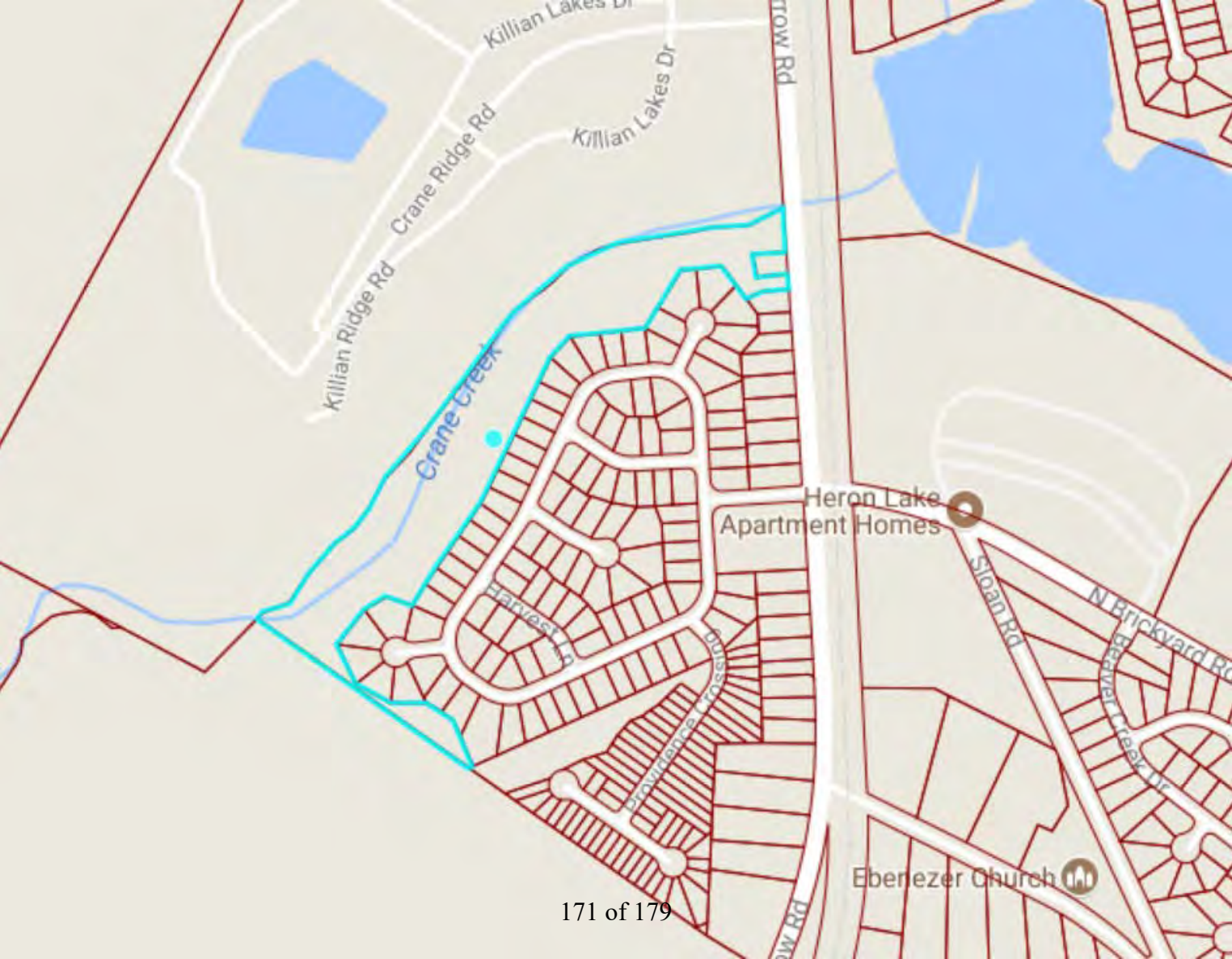
Title: _____
(Print Title)

Contact Person:_____

Phone:_____

Email: _____




Killian Lakes Dr
Crane Ridge Rd
Killian Lakes Dr
Killian Ridge Rd
Crane Creek
Heron Lake
Apartment Homes
Harvest Ln
Providence Crossing Dr
Sloan Rd
N Brickyard Rd
Ebenezer Church

Columbia Water
Drinking Water • Wastewater • Stormwater

Engineering / Real Estate Division
PO Box 147 | Columbia, SC 29217 | (803) 545-3400

September 17, 2018

Re: Permission to Survey, Soil Testing, Geotechnical Services & Environmental (Wetland) Inspection for the Broad River Force Main & Capacity Improvements, located on the West side of Broad River Road; Richland County TMS#07415-01-01; CIP Project #SS7454

Richland County
P.O. Box 192
Columbia, SC 29202

Dear Sir or Madam:

The City of Columbia is planning improvements to the sanitary sewer system within your area in the near future. A study is underway to determine the location of such improvements and as part of the study it is necessary to perform survey work, soil testing and environmental (wetland) inspections on a portion of property which is understood to belong to you. This property is identified as Richland County TMS#07415-01-01. A small map is attached depicting the general area where survey work and soil testing are to be performed.

Your permission is required to send staff consultants, agent and equipment on your property to perform the necessary survey work, soil testing and environmental inspections. It may be necessary to clear the easement area for vehicles and equipment. Grantee will make reasonable efforts to restore the property and leave it in a condition suitable for its previous use.

Please indicate your approval by signing the permission statement below, provide contact information for future communications, and return the original to me in the envelope provided by **September 24, 2018**. A copy is enclosed for your file. For your convenience, you may also scan the signed permission and email it to me at Natalia.Johnson@columbiasc.gov.

If you should have any questions concerning this matter or should problems arise while the work is being conducted, please do not hesitate to contact me at (803) 545-3234.

Sincerely,

Natalia "Lia" Johnson
Right-of-Way Agent
Real Estate Division

Attachments
nlj

Columbia Water
Drinking Water • Wastewater • Stormwater

Engineering / Real Estate Division
PO Box 147 | Columbia, SC 29217 | (803) 545-3400

I hereby grant permission for the City of Columbia to send staff and equipment on the property described above for the purposes stated.

Richland County

_____ / ____ / 2018
Date

_____
(Signature)

By: _____
(Print Name)

Title: _____
(Print Title)

Contact Person:_____

Phone:_____

Email: _____

U.S. Army Corps of Engineers – Charleston District - Regulatory Division

JURISDICTIONAL DETERMINATION REQUEST

For Identifying Waters of the U.S., Including Wetlands and Tributaries, and Jurisdictional Status

This form is intended for use by anyone requesting a jurisdictional determination from the U.S Army Corps of Engineers, Charleston District (Corps). Please supply the following information and supporting documents described below. This document can be completed electronically and then printed. **This document must be signed by the current property owner(s) to be considered a formal request.** We require original signatures; faxes and emails with scanned copies are not acceptable. Per the required property owner's signature below, please be advised that submitting this request authorizes the Corps to conduct on-site investigations, if necessary, to inform the jurisdictional determination process. Please contact us if you need any assistance with filling out this form, as well as for jurisdictional determination requests associated with corridor projects involving multiple property owners. You may attach extra pages/authorizations if needed. The printed form and supporting documents should be mailed to the appropriate office (refer to the enclosed service area map):

Charleston Office:	**Columbia Office:**	**Conway Office:**
US Army Corps of Engineers Regulatory Division 69A Hagood Avenue Charleston, SC 29403 (ph) 843-329-8044	US Army Corps of Engineers Regulatory Office 1835 Assembly Street, Room 865 B-1 Columbia, SC 29201 (ph) 803-253-3444	US Army Corps of Engineers Regulatory Office 1949 Industrial Park Road, Room 140 Conway, SC 29526 (ph) 843-365-4239

Directions: Sections I-V must be completed upon submittal. Failure to do so may result in additional delays.

I. PROPERTY AND AGENT INFORMATION

A. Project Details/Location:

Project Name: Broad River Force Main & Capacity Improv. Date: September 13, 2018
County: Richland Latitude/Longitude:
Tax Map Sequence (TMS) #(s): 07415-01-01
Property Address(es): Western side of Broad River Road, Columbia, SC 29210
Acreage(s):

B. Property Owner(s): (if there are multiple property owners, please attach additional pages)

Name:
(*Current Legal Property Owner Name and Contact Information are required.)
Company Name (*if applicable*): Richland County
Address: P.O. Box 192, Columbia, SC 29202
Phone: Email:

C. Requestor Of Jurisdictional Determination (*check here* ☐ *if same as Property Owner*)**:**

Name: Natalia Johnson, Right-of-Way Agent, Real Estate Division
Company Name (*if applicable*): City of Columbia, Department of Utilities & Engineering
Address: P.O. Box 147, Columbia, SC 29217
Phone: 803-545-3400 Email: natalia.johnson@columbiasc.gov

Select one:

- ☐ I am the current property owner
- ☐ I am an interested buyer or am under contract to purchase the property
- ☑ Other, please explain.
  City of Columbia designing a sanitary sewer project along property

D. Consultant/Agent (*if applicable*)**:**

Consultant/Agent Name:
Company Name (*if applicable*): Stantec Industrial Engineering Company
Address: 1411 Gervias Street, Suite 325, Columbia, SC 29201
Phone: 803-748-7843 Email: david.taylor@stantec.com

II. PROPERTY ACCESS AUTHORIZATION

I, the undersigned, a duly authorized owner of record of the below parcel number(s), do hereby authorize representatives of the U.S. Army Corps of Engineers, Charleston District, to enter upon the below parcel number(s) for the purposes of conducting on-site investigations (e.g., digging and refilling shallow holes) and issuing a jurisdictional determination associated with Waters of the U.S. subject to Federal Jurisdiction under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899.

I acknowledge that under South Carolina common law, a person who authorizes, advises, encourages, procures, or incites another to commit a trespass, is liable along with the actual perpetrator.

I further acknowledge that 18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

P.O. Box 192, Columbia, SC 29202	West side of Broad River Rd, Columbia, SC 29210
Mailing Address of Property Owner	Property Address
07415-01-01	Richland County
TMS #(s)	Property Owner Name (please print)
Signature of Property Owner:	Date:

III. AGENT/CONSULTANT AUTHORIZATION ☐ Not applicable

I, the undersigned, do authorize the agent/consultant listed above (on page 1) to act in my behalf in the processing of this request and to furnish supplemental information in support of this request.

I acknowledge that 18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Richland County

Property Owner Name (or Requestor Name) (please print)

Signature of Property Owner (or Requestor): Date:

The Consultant/Agent is acting on behalf of the *(check all that apply)*:

☑ Property Owner ☐ Requestor ☐ Other, please explain: _____

IV. Type of Submittal (Select one)

☐ A. I am an environmental/wetland consultant representing a JD requestor who is submitting a wetland delineation for review and verification by the Corps. Please refer to pages 4-8 for the "Information Required for Wetland Delineations and Jurisdictional Determination Submittals."

☐ B. I am a JD requestor without an environmental/wetland consultant requesting that the Corps investigate the above property for the presence or absence of wetlands, tributaries, or other Waters of the U.S., and establish the geographic extent of these areas. *Please note that while the Corps offers wetland delineation services, time frames to fulfill requests are dependent on site size, property conditions, workload priorities, and staffing levels. To expedite the wetland delineation process, property owners and/or requestors are encouraged to hire an environmental consultant. A courtesy list of environmental consultants can be found on our website at www.sac.usace.army.mil/Missions/Regulatory/PermittingProcess.aspx.*

For requestors with no environmental/wetland consultant for box IV. B. above, the first three items listed below MUST accompany your request. Complete only this page and disregard the following pages.

1. Accurate location maps (from County Map, USGS Quad Sheet, etc.), street address and directions to site from a nearby major intersection.
2. Copy of Survey Property Plat, Tax Map of Property, or depiction showing project review area/property boundary with GPS coordinates.
3. Statement that the project review area/property boundaries are marked and a description of how the project review area/property boundaries are marked onsite. See below note* for more information.
4. Additional information, such as soil survey information, aerial photographs, etc.

*Note: The project review area/property boundaries must be accurately marked onsite PRIOR to the Corps site visit. The property owner may need to hire a registered land surveyor to locate and mark the property corners and/or boundaries. Small sites and/or sparsely vegetated sites may only require the property corners be marked. However, sites that are large, oddly shaped, and/or have thick vegetative cover may require additional marking efforts, such as cut sight lines, the use of a series of flags, etc., in order for Corps staff to identify and locate the boundaries while onsite.

V. Type of Jurisdictional Determination Requested (select one):

☐ A. Accurate-Approved ☐ B. Approximate-Approved ☑ C. Accurate-Preliminary * ☐ D. Approximate-Preliminary

Description of the Types of Jurisdictional Determinations:

Preliminary – Preliminary determinations will identify whether wetlands or other waters are present on the site and will presume that they are jurisdictional. Preliminary jurisdictional determinations may be completed more quickly than Approved jurisdictional determinations and do not expire.

Approved – Approved jurisdictional determinations will identify whether wetlands or other waters are present on the site and will include a determination of their jurisdictional status. Approved jurisdictional determinations expire in 5 years.

Description of the Types of Delineations:

Accurate: Location and extent (boundaries) of all Waters of the U.S. are identified and surveyed by a registered land surveyor. Project review area/property boundary must be surveyed or represented by a tax map (or by GPS points if no Waters of the U.S. are present).

Approximate: Location and extent (boundaries) of all Waters of the U.S. are identified and depicted approximately on a sketch. Project review area/property boundary must be surveyed or represented by a tax map or GPS coordinates.

***Note: For Accurate-Preliminary Jurisdictional Determinations, although the jurisdictional determination will not expire, the surveyed location and extent (boundaries) of wetlands and/or waters will expire after 5 years.**

RICHLAND COUNTY – W/S BROAD RIVER


side Golf Center
e Enclave I, II
Broad River
Broad River
Romain Dr
Romain Dr
Columbia Rowing Club