Richland County Transportation Ad Hoc Committee

May 28, 2019 - 1:00 PM
Council Chambers
2020 Hampton Street, Columbia, SC 29201

1. CALL TO ORDER — The Honorable Calvin "Chip" Jackson

2. APPROVAL OF MINUTES — The Honorable Calvin "Chip" Jackson

a. Regular Session: April 23, 2019 **[PAGES 1-13]**

3. ADOPTION OF AGENDA — The Honorable Calvin "Chip" Jackson

4. ITEMS FOR ACTION — The Honorable Calvin "Chip" Jackson

A. Approval of Blythewood Right of Way Condemnation (Page 14)

B. Approval of Spears Creek Service Order (Pages 15-41)

C. Approval of Public Information Summary Letters (Pages 42-48)

D. Approval of Blythewood Widening SUP Maintenance Agreement with SCDOT (Pages 49-51)

E. Approval of Future Scopes of Work (Pages 52-235)

1) Lower Richland BLVD. (Pages 52-80)
2) McNulty Street Improvemens (Pages 81-102)
3) Polo Road Widening (Pages 103-134)
4) Smith Rocky Branch Section C (Pages 135-150)
5) Creech Road Extension (Pages 151-176)
6) Broad River Corridor (Pages 177-197)
7) Shop Road Extension (Pages 198-199
8) Trenholm Acres/ Newcastlye (Pages 200-219)
9) Crane Creek Greenway (Pages 220-235

5. ITEMS FOR INFORMATION/DISCUSSION

The Honorable Calvin "Chip" Jackson

A. Discussion: Maintenance Items (Pages 236-264)
B. Discussion: Scope Alignment- History of Actions (Pages 265-276)
C. Information Only: Tall Oaks Drive: RCU Utility Relocation Design Services - Holt #12 Service Order Modification (Pages 277-280)

6. ADJOURNMENT

Richland County Council
Transportation Ad Hoc Committee
April 23, 2019 – 1:00 PM
Council Chambers
2020 Hampton Street, Columbia 29204

COMMITTEE MEMBERS PRESENT: Calvin "Chip" Jackson, Chair; Paul Livingston, Jim Manning, Dalhi Myers and Chakisse Newton

OTHER COUNCIL MEMBERS PRESENT: Allison Terracio and Joe Walker

OTHERS PRESENT: Michelle Onley, John Thompson, Eden Logan, Kimberly Toney, Michael Niermeier, Allison Steele, Mohammed Al-Tofan, Nathaniel Miller, and Quinton Epps

1. **Call to Order** – Mr. Jackson called the meeting to order at approximately 1:00 PM.

2. **Approval of Minutes: March 26, 2019** – Mr. Livingston moved, seconded by Ms. Myers, to approve the minutes as distributed.

   In Favor: Jackson, Myers and Livingston

   The vote in favor was unanimous.

3. **Adoption of the Agenda** – Ms. Newton moved, seconded by Mr. Livingston, to adopt the agenda as published.

   In Favor: Jackson, Newton, Myers, and Livingston

   The vote in favor was unanimous.

4. **Discussion: Three Rivers Greenway CSX Railroad Condemnation** – Mr. Niermeier stated this item has previously been discussed in committee. It was stated that a section of the projected trail had been washed out resulting in the need to adjust the path. Options to build a bridge or construct a cover over the path were outlined. The recommendation was to entertain condemnation actions; however, discussion continue with CSX to come up with an amicable resolution where we would not have to move to condemnation and we would have permission to build the trail across their right-of-way.

   Mr. Beaty stated they still recommend that Council allow the process of condemnation to proceed while they have further discussions with the railroad to avoid condemnation. The railroad did find out that they previously recommended, and Council had deferred it. When the railroad found that out, they became more receptive to working with us. He is optimistic the railroad will continue to work with them, but it would improve their chances if Council approved the ability to go to condemnation.

Ms. Myers inquired about the value of the property in question.

Mr. Beaty stated they have not had a formal appraisal done of the property, but based on other projects in the vicinity, it would be approximately $10,000 - $15,000 is what the real property would be valued at. Then, they have estimated the construction of the path and covered walkway at $35,000.

Ms. Myers stated, if we condemn it, it will cost tons more. She inquired if this has been presented to Mr. Smith. She stated, for clarification, if we do not have an appraisal we are a step or 2 ahead.

Mr. Niermeier stated, if they are authorized to go to condemnation, that would start the process to obtain an appraisal.

Ms. Myers stated you get an appraisal and make an offer. If the person declines your offer, then you have no other alternative but condemnation. She stated maybe the County has a process that is different from the normal process. Normally, you make an offer, and someone says they will never sale it to it you. Then, you say the government must have it. If they still refuse to sale, then you go to condemnation. You have a fair market value of it before you move to that point.

Mr. Niermeier stated Mr. Smith is aware that this discussion is ongoing, and he has enlightened him on the condemnation process, which is why it was brought back for discussion.

Mr. Beaty stated his recommendation would be for Council to approve the County to move forward with condemnation, but no action would be taken immediately by staff or the PDT. That would allow them to tell the railroad that condemnation is going to happen if they do not negotiate with them. If the County does not move forward with condemnation, he would expect the railroad to remain silent.

Ms. Myers renewed her concerns that we have not done the steps that preceded condemnation, which is making an offer to buy based on an appraisal.

Mr. Beaty stated Ms. Myers is correct. They have not done a formal appraisal of this piece of property, but in their discussions with the railroad, that is irrelevant to them. Whether it is valued at $5,000, $10,000 or $15,000; they are going to deny. They could go get an appraisal and come back to them in a month or 2, and the answer would most likely still be the same.

Mr. Livingston moved, seconded by Mr. Manning, to move forward with the appraisal and condemnation consecutively.

Ms. Newton stated, for clarification, in this instance, we are approving the appraisal, which begins the process, but a condemnation is already approved in the wings.

Mr. Jackson stated, as he understands the motion, it would be that we would approve the appraisal, which would then allow them to make an offer. As Mr. Beaty suggested, whatever offer we make, the railroad will probably turn down. Then, rather than coming back to Council a 2nd time to request condemnation, we would have given staff authorization, once the appraised amount was turned out, to proceed with condemnation.

Ms. Newton inquired as to what the objections are from the railroad.

Mr. Beaty stated the railroad's typical response is that they occupied the right-of-way prior to the State of South Carolina and SCDOT. It is their property and they do not want anyone encroaching on their right-of-

way for any reason. It could be the smallest encroachment, but it could theoretically be the smallest amount of liability for the railroad, so their immediate response, to most things, is "No".

Ms. Myers stated, like any landowner, the railroad may come back and counteroffer, but we have foreclosed that opportunity, once we say, if they decline our offer, then we are going to move to condemnation.

Mr. Livingston stated his is motion is to do an appraisal and make an offer. If the offer is rejected, you try to negotiate. If that does not work, you go to condemnation. The process is all there, so you do not have to worry about coming back.

Ms. Myers inquired if we are under a time crunch.

Mr. Beaty stated the gap, in the overall greenway, exists today, but the River Alliance has constructed access to Boyd Island. Therefore, a person could physically walk on the greenway, then they would trespass on railroad right-of-way for 100 ft. before getting back on the trail.

Ms. Terracio stated she was out there today, and she did witness a father take his daughter down toward the walkway. It is not an emergency, but people are making their way onto the paths.

In Favor: Jackson, Manning and Livingston

Opposed: Myers

The vote was in favor.

5. **Approval of the Broad River Corridor Neighborhood Improvement Project Executive Summary and Recommendations** – Mr. Niermeier stated there are few matters within the document that he wants to bring to your attention, so you are fully informed. Some of this goes back to allowables, under the SCDOT guidelines, such as beautifications. Based on the guidelines, and feedback from the attorneys, they have concerns about landscaped medians, burial of aerial wires, etc. In addition, this is a SCDOT maintained road, and there are certain aspects, if we build, they will not maintain, which drives operation and maintenance costs down the line for somebody else. For example, SCDOT will not maintain sidewalks wider than 5 ft., medians, and light poles with mast arms on them. It would be responsibility of the County to do. He does not have the costs of what that would be.

Mr. Manning inquired what other neighborhood plans have similar situations where the voters passed the money for the neighborhood improvement plans that had these light arrangements, medians, and moving utility lines.

Mr. Niermeier stated North Main is one which he is aware of, which may have been driven by movement of the road for relocation purposes. He believes there are 2 or 3 others.

Mr. Beaty stated North Main does have burying of the utilities. Although that was a separate widening category project. There were 7 neighborhood projects in the referendum. The Decker/Woodfield Neighborhood, Trenholm Acres/ Newcastle Neighborhood and the Broad River Corridor had a combination of potentially burying the utilities, landscaped medians, mast arms and lightening.

Mr. Manning stated, so there are 4 neighborhood plans, that the County Neighborhood Improvement Program and Planning Department did charrette meeting for, then they revisited it. The plans came to Council and were approved. Most of the plans did not have funding, to do what we are talking about today, so

Council put that before the voters. In 2012, the referendum passed, that had all of that included. Since that time, because there was not enough money to all "pie in the sky" projects that were in the plans, we have had people go back out and meet with the neighborhoods and show them what they had put in their neighborhood plans, and got feedback from them about how they would want the money to be spent, related to the plans they had worked to develop, Council had passed, and the voters passed in the referendum.

Ms. Newton inquired about the mandate for this project (i.e. road widening and beautification or just beautification). She stated when she looks at the recommendation, that requests that we approve the Executive Summary and authorize the advancement final design, she would like to understand what that specifically means because there are a number of unresolved questions that are presented in the document.

Mr. Beaty stated, in the 2012 referendum, there were 7 neighborhood projects that were included. Prior to 2012, the total value of the neighborhood plans was over $100 million. At that time, County staff scaled each of those 7 down and removed items from the neighborhood plans (i.e. pools, parks, etc.) to get the cost down to $63 million. That did include transportation related items, specifically turn lanes and sidewalks. Then arguably, landscaped medians and lighting, because one could make the argument whether or not that is directly related to a road. When we went to the public, we identified what the neighborhood plan included. The public gave input on what was important to them. On Broad River Corridor, they presented to the public these 3 intersections, which would have roadway improvements, and could have lighting, burying of utilities, and landscaped medians. Based on the public's input, the majority of the respondents would prefer to see these 3 intersections improved from a traffic standpoint, and include landscaped medians, mast arm light poles and lighting at the intersections.

Mr. Niermeier stated staff is recommending is to approve the Executive Summary, as presented, with the exception of the areas in question, such as landscaped medians, which there is a question about whether it is allowable or not. They would recommend undergrounding of utilities, if they are a result of the intersection improvements. He stated they can proceed with mast arm light poles, but there is a consequence to that with operation and maintenance funds in the future.

Mr. Manning moved, seconded by Mr. Livingston, to proceed with the Executive Summary, and, if at any point, the SCDOR, puts in writing, that there are any elements that are not allowable by State law, they are removed, at that point.

Mr. Livingston stated can we just move forward on those things that our attorney, based on his understanding, and not include those things that are considered not permissible.

Ms. Myers stated, from reading the documents, everybody wanted lighting, which is a safety issue. There are questions about some of the sidewalks areas, and whether or not we can improve them in the way that we would like to. She stated we know that SCDOT will not maintain flora and fauna, so anything other than grass, we have to have plan for long-term maintenance. She does not think the County wants to be in the business of maintaining SCDOT's roads.

Ms. Myers made a substitute motion, seconded by Ms. Newton, to move forward with lighting and safety features of the plan, and to continue addressing the questions that are raised by the document, so that we can keep the plan moving.

Mr. Livingston inquired, if the lighting is permissible.

Mr. Beaty stated he does not know if lighting is permissible by SCDOR, but he does know that transportation projects typically have lighting because it provides a safer environment for both vehicles and pedestrians. He

believes there is a way to accomplish both goals simultaneously. Instead of carrying the design forward to 100% design, if we could engage the consultant to design it to 70%, so they could design a median, and there is no additional effort, at this point, to make it concrete or landscaped. They would only design where you would have a closed median. They could move forward with the lighting studies, traffic counts, and any additional preliminary design. It would not cost any additional money, if, and when, this decision is made later.

Ms. Myers inquired if the design would have to be revisited when somebody got ready to do the work.

Mr. Beaty stated they would do the traffic studies and preliminary design. They could draw the outline of where a closed median needs to go and stop. Then, Council could direct them to complete the design later, and, at that time, they could show the median being landscaped or concrete.

Ms. Myers stated we would design 70% now, and conceivably design 30% later. Because you are revisiting the design it may or may not be the same company, and they may or may not want to pick up these designs and use them. Her concern is, knowing that this design is not ready to go full-bore, but there are pieces are ready. She does not know why we would pay to have someone put placeholders in those spaces, knowing that we have to come back and somebody is going to start from scratch and we are going to pay that cost too. She would like to see the money used on designs for things that we are definitely do rather than a template for a later design. If we know that we do not have answers to a lot of questions, she does not know how wise it is to spend money on a design to design, and then spend money on a real design later.

Mr. Beaty stated there are 4 topics that could be a question: lighting, landscaped medians, mast arm light poles, and undergrounding of utilities. He believes lighting is allowable for transportation projects. Putting in a concrete median is a safety feature to prevent left turns in or out. According to SCDOT policy, if Richland County chooses to landscape that median, they will allow you to do so, but you will have to maintain it. Typically, most signals are put up with steel poles with wires. A mast pole is a straight pole and a cantilevered arm that looks better. There is some greater cost for a mast pole, but it is not a lot percentagewise. There is very little, to no, maintenance of these poles in the future. The risk would be if the pole got hit by a car. Then, the County would have to pay for a new pole. To his understanding, undergrounding utilities is an allowable expense if the roadway project requires it. It is not an allowable expense if it purely for aesthetics.

Mr. Livingston stated, if you are only talking about design, how do those things effect the design.

Mr. Beaty stated the design work to show the landscaped median or mast arm would be between 70% and 100%. There would be minimal, to no, risk to the County having to pay additional money. He sees Ms. Myers' point. If a different designer were to pick up those plans, they would have review them and assume some liability, and that would come at a cost.

Mr. Livingston stated, his concern is, if you chose not to do anything, and you wait to try to get these things resolved, there is no telling how long it will be before you do a design because we do not know when we will get resolution of these things. That is why it is important to him to at least go ahead and do the design.

Mr. Manning stated, in terms of if a car hits a pole, the County is self-insured and has a risk account to cover that, so that is very different than monies to maintain. The concern that he has is that an element of Richland Renaissance was not only dealing with getting rid of blight, but also doing things in regards to beautification, a historic trail, and gateways signs. It seems like on the one hand we are trying to look at how long-term we do some things to make our County look better, and here they are built into plans that our citizens had input, and we can at least get paid for upfront with the Penny funds, but we are going to make a decision that we do

not want to make these things pretty, like our citizens told us 10 – 15 years ago, when they put together the plan while we are looking at plans to go other places, and spend County money that will require County maintenance.

Ms. Myers stated, her issue with the maintenance is, the County planted beautiful flowers on Olympia Avenue, but it is a SCDOT road. She gets calls because we are not allowed to go and maintain it, so SCDOT comes in and they clear cut it. For things like this where we know there is going to be a conflict, we can do it in a way that does not cost us to throw money down a hole because we know we are not going to be allowed to go out and maintain those roads. There is liability associated with it, and other things that go with maintaining stuff that belongs to someone else. She would like to see us do the non-controversial stuff.

In Favor: Newton and Myers

Opposed: Jackson, Manning and Livingston

The substitute motion failed.

Mr. Livingston made a substitute motion to proceed with 70% design. The motion died for lack of a second.

In Favor: Jackson, Manning and Livingston

Opposed: Newton and Myers

The vote was in favor.

- **Approval of Budget Transfers Between Penny Projects** – Mr. Niermeier stated the item before you are the projects that require additional funding for them to continue and pay certain invoices. Most of the items were planned for, but were moving faster than anticipated and require additional funding. What is being present is the amount of money needed to make that whole, and move forward, as well as, the areas where the money can come from in the current budget. He was requested to provided information on the particular projects that are over referendum. Those projects are highlighted in red, and the amounts are on the right side of the document. The projects are as follows, and equates to $17.4 million:

    - Blythewood Widening - $7.8 million
    - Screaming Eagle/Percival Road - $2.1 million
    - Alpine Road Sidewalk - $3.9 million
    - Harrison Road Sidewalk - $1.3 million
    - Sunset Sidewalk - $2.1 million

Ms. Newton stated, for example, the Shop Road Extension has the ordinance amount, the budget request, and the amount needed. The recommendation she sees here is that money would come from the Dirt Road Paving Project, correct.

Mr. Niermeier responded in the affirmative.

Ms. Newton stated, if this specific example, were to be approved that means the budget available for the Dirt Road Paving Project is reduced and those funds are gone.

Mr. Niermeier stated you will see the amount needed is $4.4 million, and the funding can come from the Dirt

Road Paving Program construction category that has a balance of $8.3 million. In this fiscal year, they are not using that budget for the dirt roads. They have 2 dirt road packages coming out within the next 2 months, and that funding is available because they planned on it in FY19. They are not going to be executing the construction until FY20-21. The Shop Road Extension Phase I and II funding budgeted in the next fiscal year would then move back to the dirt road package to make them whole again.

Ms. Newton stated, for clarification, for every item here the proposal is to borrow money from this budget into the budget that is at a deficit. Then, at a specific point and time, we will return funds from that same budget, that temporarily needed the infusion of cash to the budget that it was originally borrowed from.

Mr. Niermeier responded in the affirmative.

Mr. Manning moved, seconded by Mr. Livingston, to proceed with the transfer.

Ms. Myers stated this is the list that full Council has been asking for. It might be wise to have a work session where the full Council is present to discuss the prioritization of these projects and any issues with moving the money because there are projects that are wildly over budget. So, moving the money, by default, says that we are recommending approval that we build these over the referendum amount. She believes that is a discussion that should be had by the full Council.

Mr. Jackson stated that one of the things full Council did, and we probably need to revisit before that conversation, is that when they heard the report of how the entire Penny Project could be brought back into alignment, by making some modifications and adjustments on 3 – 4 significant areas of funding. If he is not mistaken, we voted on and approved that. Then, for some reason we seem to have backpedaled from that decision because there was some heartburn in different districts about what was being proposed. The vote was to scale back projects, and with the scaling back of those projects, those funds that would not be expended for those projects would bring back solvency to the overall Penny Program. When he hears us say that budgets are out of line, but we are not acknowledging that the decision of Council was to authorize the approval of those adjustments. If this was to be revisited, and substantiated that it had been approved by Council and implemented, then the issues that we are dealing with now would be a moot point.

Ms. Newton stated what has been troubling for her is not necessarily transferring money, or budget approval, but that she feels like transferring that is making an interesting policy decision to allow things to go over budget. She inquired if it is accurate that we are approving the funds to go over, and then we are saying, "Please continue to exceed the referendum amount." She stated she understands that projects are moving forward and they allocated into different "pockets" and they need funds to continue, but is this the only way that we have to allow those projects to continue.

Mr. Jackson stated when we referred to referendum amounts in 2012, now 7 years ago, versus actual dollar amounts for projects in 2019, there was a conversation and discussion, in terms of the reality of 7-year-old estimates for projects that are now coming online. We also need to have a conversation about that, in terms of the reality of what we reference when we talk about referendum dollar amounts, and whether they are still relevant now.

Ms. Myers inquired if there was any harm with moving forward with the ones that in construction and leaving the others that are acquisition or design phase for a large discussion. If it is in construction, we have already agreed to build it, but, if it is in design or acquisition, the larger conversation with everybody might be helpful.

Mr. Beaty stated there is some harm with not moving forward with some that are not in construction. There

are some that are in design, where a designer has been working, and has provided the product, but because there is not enough money in the budget, staff cannot pay invoices that due.

Ms. Myers stated, if there are amounts in design work, or any other work, that has been done, those should be separated out and given to us, so we can approve payment of those bills. If they are months behind, they ought not be. Her question is to prospective work, and a decision of Council as to what our policy should be going forward on how we are spending this money, where we are prioritizing projects, and what we continue to design knowing where we are going to end up with 2020 money, rather than 2012 money. We should pay what we owe, and those projects under construction we cannot slow down. Where there are issues to allocating prospective funds, it is her opinion that full Council should be involved.

Ms. Myers moved, seconded by Ms. Newton, to approve the reallocation of funds for projects under construction and to take steps necessary to make payment to outstanding invoices for work that has already been done. In addition, to discuss the movement of other funds with full Council to arrive at a policy decision as to prioritization regarding any prospective projects.

Mr. Manning stated, for clarification, in terms of the full Council making policy decisions, does that not generally happen after a committee sends something to full Council. His experience on Council has been that there are committees. Committees meet, and make their best decisions. The decision is sent to full Council for vetting.

Ms. Myers stated her motion had a recommendation that the full Council be tasked to prioritize, as we have said previously we need to, this list as to where we are, and what projects are more important than others. We have tons of discussion about needing to do that, and she does not think her motion does any damage to the way this Council make decisions. It just recognizes the Penny Project is unique, and it is not like we are approving a $50,000 - $300,000 for a particular project. This is probably the biggest project that we have. The decision as to where money gets moved around, and what projects get the priority, knowing at some point we will not have enough money to finish all of them, is something she would like to hear from her colleagues on.

Mr. Jackson requested Ms. Myers restate her motion.

Ms. Myers stated for the items where there is construction underway that we recommend approving the reallocation of budgeted money for 2019 to the items, as suggested. Where there are items, as Mr. Beaty has stated, where design work has been done and people have not been paid for their work, that we are given an accounting of that, and Council make a decision to pay those bills in the FY19 budget. For the items that are under design and acquisition, those items be forwarded to Council, so that full Council can weigh in, with proposals from the Transportation Department. She stated these are just the ones that we have tasked the PDT with working on, and they may or may not have been put in the priority that Council would have approved. At the last Council meeting, the question was who prioritized these, and were some of them put before others.

Mr. Manning stated, for clarification, we are going to recommend a hybrid. We are going to recommend a portion of this for approval to Council. All the rest is going to Council without a recommendation.

Ms. Myers stated the recommendation would be that the full Council review this list, and a complete and a more fulsome list that will contain staff's recommendation, as to what priority projects there are, where the money should be put, and what ranking they should receive. This presupposes a ranking and a priority, and basically answers the question as to where the money will go before we discuss 2020 money vs. 2012 money.

Mr. Manning stated he is fine as long as he knows that he is going to be at a Council meeting and he is going to see all of this there, and not that some of this did not get to Council because of the way the motion was made.

Mr. Jackson stated, prior to this being presented at full Council, Mr. Niermeier and Mr. Beaty are going to have to show those areas that are not being listed today where funds need to be approved, and how much needs to be approved in those areas.

Ms. Myers stated this is something that needs a separate work session because it is a prioritization and reallocation of funds discussion.

Mr. Manning stated his concern is that the last time we had a work session, related to the Penny, we did not let Mr. Beaty or anyone with the PDT to address Council. Many of the questions that were asked, nobody had the answer to. The answers were provided on 21 pages, in the middle of the Council meeting, with no time to review. So, he has a real concern about work sessions now.

In Favor: Jackson, Newton and Myers

Opposed: Manning and Livingston

The vote was in favor.

7. **Approval of Dirt Road Package J** – Mr. Beaty stated they have opened and received bids on Dirt Road Package J. They had 4 bidders. The lowest bidder was Cherokee, Inc., at approximately $830,000, which was below the engineer's estimate. The recommendation is for approval of the contract for construction.

Mr. Livingston moved, seconded by Mr. Jackson, to approve the recommendation to award the contract to Cherokee, Inc.

In Favor: Jackson, Newton, Myers and Livingston

The vote in favor was unanimous.

8. **Approval of the On-Call Engineering Services Agreement** – Mr. Niermeier stated Holt Consulting had come forward with a rate increase request to the rates they had put forth in their base contract in 2015. Upon review of their contract, there is no authority within the contract to allow a lump sum increase, which is what we primarily use.

Ms. Newton inquired if this is a normal process and allowed. She stated she herself is a vendor, and she has an agreement that she signs that she is going to abide to throughout the terms of the agreement. She is curious to know what the agreement was. Was the agreement that for "X" time period this will be your rate, and then you can renegotiate? Is this type of renegotiating common? How does it fit in? What kind of precedent does this set for others? And, what is the potential budgetary impact that we are looking at across the whole program?

Mr. Niermeier stated all 5 of the OETs contracts are very similar. They propose their own rates, so they were set for lump sum fee service orders. There was no language that says you can go back and request escalation of those rates. The only language that suggests they could do that applied to fix cost, plus portion of a service order should that have been let to them.

Dr. Thompson stated this type of request is not standard and consistent with the terms of the original agreement with the vendor.

Ms. Myers moved, seconded by Ms. Newton, to deny the request.

In Favor: Jackson, Newton, Myers and Livingston

Opposed: Manning

The vote was in favor.

9. **Program Summary Update** – Mr. Beaty stated 2019 has the potential to be a good year for roadway widenings.

- Atlas Road Widening – Should be advertised for construction in May
- Bluff Road Phase I – Complete
- Blythewood Road Widening – Could be advertised in October/November 2019
- Blythewood Area Improvements – OETs has started to do further design work
- Broad River Road Widening – At 65% plans; once they are 70% the right-of-way can start to be acquired, which will take approximately 18 months to 2 years
- Clemson Road – Under construction
- Hardscrabble – Under construction
- Leesburg Road – Managed by the SCDOT; advertise for construction in September 2019
- Lower Richland Boulevard – In design
- North Main Street – In construction; approximately one year of construction left
- Polo Road – In design
- Shop Road Widening – In right-of-way acquisition

Mr. Jackson inquired if a 2nd public input meeting been scheduled for Polo Road.

Mr. Beaty stated they are engaging the On-Call firm to move forward with design to go from 30% to 100%. Once they get to the 70% design a 2nd public input meeting will be scheduled.

Mr. Jackson inquired, if we will make them aware of their feedback and comments, and how we responded to them, at that meeting or prior to the meeting.

Mr. Beaty stated it would be done at that meeting.

Mr. Jackson stated it makes him a little nervous, if it is going to be done at that meeting, it presupposes that what we are going to do we are going do whether they like it or not.

Mr. Beaty stated this is the normal process, not just for the Penny Program, but for SCDOT Transportation projects. An initial public meeting is held. The public provides input, and then the governing body makes a decision. This body made a decision to move forward with a 3-lane widening of Polo Road and 10 ft. Shared-Use path on one side. The designer will design for 9 – 12 months, and come back with a 2nd public meeting. Mr. Jackson is correct that the public may find out for the 1st time what Council's action was. That is a common part of the process. An alternative could be, that they reply to the citizens that came to the public meeting, with a standard letter, telling them the path forward, and inviting them to the 2nd public meeting. This would educate those that came to the meeting.

Mr. Jackson stated we do not want to show up at the 2nd meeting with the group being made aware of the outcome of their last comments for the 1st time.

Mr. Manning inquired as to how the "public information" would be paid for (i.e. Is this one of the things SCDOR said we could not use Penny funds for?)

Dr. Thompson stated he considers this "public information" and not "public relations". Based on that, SCDOR does not frown up public information.

Mr. Walker inquired if email addresses were collected.

Mr. Beaty stated oftentimes they were collected.

Mr. Walker stated electronic correspondence could be an option, as it pertains to public awareness.

Mr. Beaty stated there were 15 intersections in the referendum. As of today, 8 have been constructed, 2 are under construction, and 4 are scheduled to go to construction this calendar year. That leaves the major intersection of Clemson/Sparkleberry, which would be scheduled to go to construction in 2020.

Mr. Beaty stated, of the Special Projects, the only 2 that have not had any work done on them, to date, is Commerce Drive Improvements and the Kelly Mill Road. Spears Creek Church Road Widening is the only other project that has had no work done on it.

Mr. Jackson stated, in regard to Spears Creek, we are apparently waiting on a decision because this item went through 1st Reading in October and we have not taken any additional action on that. He would like to have this put back on the Council agenda.

Mr. Beaty stated:

- Shop Road Phase I – Under construction, approximately 2 months until completion
- Shop Road Phase II – Completed 30% design and moving forward with scoping the remaining design
- Greene Street Phase I – Complete
- Greene Street Phase II –Preparing to be advertised to go to construction next month
- Crane Creek Neighborhood – In design
- Decker/Woodfield Park Neighborhood – In design
- Broad River Neighborhood – Begin construction in the next month
- Candlewood Neighborhood – 50% complete construction; other 50% has begun
- Southeast Richland Neighborhood – Begin construction in the next month
- Trenholm Acres/Newcastle Neighborhood – In design

Ms. Newton inquired if this is the complete list of dirt road for the Penny Program.

Mr. Beaty stated he believes it is. The Dirt Road Program Manager is not in attendance tonight, but he will be at the Dirt Road Ad Hoc Committee meeting.

Ms. Newton stated the 269 roads are the complete list of dirt roads covered by the Penny Program.

Mr. Beaty stated, that are actively being worked on, at this time. He does not know that there will be more after these.

Ms. Newton inquired, for clarification, if there are other roads that were on the original referendum that are not being worked on and not represented here.

Mr. Beaty stated there were some that were originally unfunded, so those have not been worked on. There may be some shown here where they have been removed through the consent/denial process.

Ms. Myers stated, for clarification, this is not the complete list of the roads that were on the list. This is the list of the roads where we have made progress and we expect to pave them.

Mr. Beaty responded in the affirmative.

Ms. Myers stated, with the roads they have determined we do not have funding for, they are not even under discussion, because there is no listing of roads lacking funding, how did we decide which ones would get paved.

Mr. Beaty stated County staff took all the dirt roads in the County and listed them by district and then ranked each of them within the district. Therefore, each district had #1, #2, etc. and the funds were prorated across each district. So, if a district had twice as many dirt roads, it got twice as much money. Staff come up with a years 1 and 2, and a years 3 and 4 dirt road list. There were more roads than could be funded. Over time, due to price escalation, even some of the roads in the funded category will not get done. As the original Dirt Road Program Manager and staff worked through the funded lists, some fell off. Now that the PDT is involved, we are continuing the process. He does not know that staff, the Dirt Road Program Manager or PDT selected dirt roads that would not be paved. They went down the list and went through the consent/denial process. If it dropped off, per that process, they went to the next road.

Ms. Myers stated those decisions predated her, but she thinks she gets more questions about this than anything else. She would like to request the committee take action to get the entirety of the list of road, so that we can tell people which roads have fallen off the list, or which ones are not going to be paved.

Mr. Jackson recommended the Dirt Road Ad Hoc Committee take this matter up.

Ms. Myers stated she does not want to give the public the impression that the Transportation Ad Hoc Committee is prioritizing some roads over their roads, and we have decided that we can handle the widenings, but we are going to farm out the dirt roads. She thinks, given the number of those roads, the 2 Council members on that committee are inadequately staffed and do not have the information or purview to handle the whole.

10. **Pending Approvals**

- Procurement
  - Resurfacing Package Q – Complete by PDT; with County staff for review, upon review can be advertised
  - Resurfacing Package R – Going through permitting process with County staff
  - Polo/Harrison Shared Use Path and Sidewalk – Has been advertised
  - North Springs /Harrington Intersection – Has gone to DHEC
- Greene Street Phase 2 (May 2019 advertisement)
  - County/City Intergovernmental Agreement – City and County staff need to execute IGA
  - Railroad Agreements – Need signatures from Railroads; County and City have signed
- Atlas Road Widening (May 2019 advertisement)
  - Conditional letter of Map Revision (floodway impacts) – FEMA

    - 100% Construction Plans approval – SCDOT
- Chatsworth Connector Land Disturbance Permit and Determination of Maintenance – County staff
- Spears Creek Widening start Authorization – County Council
- Garners Ferry/Harmon Intersection and Screaming Eagle/Percival Intersection 100% Construction Plans approval – SCDOT
- Items approved by Council at 3-5-19; awaiting staff signature – County staff
    - Percival Sidewalk SUE Service Order
    - Atlas Road Widening SCE&G Utility Agreement
    - Clemson Sparkleberry Intersection Design Service Order
    - Broad River Widening Design Service Order
    - Construction contracts for the SERN, Dirt Road I, and Broad River Neighborhood
- Items approved by Council on 4-2-19 awaiting staff signature – County staff
    - Decker/Woodfield NIP AT&T Utility Agreement
    - Letter to SCDOT requesting closure of Gadsden Street as part of Greene Street Phase 2 project
- Bluff Road Widening Phase I R/W transfer to SCDOT from County (as part of project closeout)
- Garners Ferry/Harmon Intersection design approval for minor waterline

11. **ADJOURN** – The meeting adjourned at approximately 2:37 PM.

TRANSPORTATION PROGRAM

Condemnation Summary

Project Name		Project Type	Tract No.	Initial Contact w/ Property Owner (Date)	Area of Acquisition (AC/SF)	Initial Offer (Date)	Initial Offer Amount	Number of Contacts Attempted (written or verbal)	Current Counter Offer by Property Owner	Current Offer Amount from Richland Penny Program	Recommended Action	Miscellaneous Notes
Blythewood Road – S-59	Sharpe Properties, LLC	Widening	8	11/6/18	O.206 AC/8,963 SF	1/28/19	$34,000	19	$134,445	NONE	condemnation	Mr. Sharpe stated he wanted $15.00 SF for all four of his properties!
Blythewood Road – S-59	Chris Jernigan DMD, LLC	Widening	16	11/12/18	0.085 AC/3,710 SF permanent ROW plus 0.115 AC/4,992 SF temp. ROW	3/7/19	$31,900	17	None	NONE	Condemnation	Never received a counter-offer
Blythewood Road – S-59	Blythewood Lodge No. 395, Ancient Free Masons	Widening	19	1/15/19	0.751AC/32,720 SF	3/6/19	$147,300	10	$310,835	NONE	Condemnation	Justification for counter-offer wasn't acceptable
Blythewood Road – S-59	Sharpe Properties, LLC	Widening	22	1/15/19	1.847 AC/80,448 SF	3/11/19	$257,500	12	$1,206,720	NONE	Condemnation	Mr. Sharpe stated he wanted $15.00 SF for all four of his properties
Blythewood Road – S-59	Sharpe Properties, LLC	Widening	24	11/15/18	0.559 AC/ 24,340 SF	1/28/19	$251,500	19	$365,100	NONE	Condemnation	Mr. Sharpe stated he wanted $15.00 SF for all four of his properties
Blythewood Road – S-59	Village at Blythewood Owner's Association	Widening	25	12/3/18	0.056 AC/2,441 SF	3/6/19	$5,600	17	$39,215	$10,000 REFUSED by Property owner	Condemnation	Property owner counter offered @ $15 SF plus landscaping & site improvements
Blythewood Road – S-59	Blythewood Oil Company, Inc (Mr. Larry Sharpe)	Widening	26	12/3/18	0.070AC/3,046 SF	1/28/19	$37,100	12	$45,690	None	Condemnation	Mr. Sharpe indicated he wish to settle all four parcels at once.

Service Order
For
On Call Engineering Services Agreement

SERVICE ORDER NO. Holt #15

Date: August 17, 2018

This Service Order No. Holt #15 is issued by Richland County, South Carolina (the "County"), to Holt Consulting Company, LLC. (the "Consultant") pursuant to that Agreement dated February 11, 2015 between the County and the Consultant called "On Call Engineering Services Agreement Related to the Richland County, South Carolina Sales Tax Public Transportation Improvement Plan" (the "Agreement").

This Service Order, together with the Agreement, form a Service Agreement. A Service Agreement represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations, or agreements, either written or oral. A Service Agreement may be amended or modified only by a Change Order or Change Directive as provided for in the Agreement.

I. Scope of Services.

A. Unless otherwise provided in an exhibit to this Service Order, this Service Order and the Service Agreement are based on the information set forth below:

See Exhibit A – Scope of Services

B. Unless otherwise provided in an exhibit to this Service Order, the Consultant's Services to be provided pursuant to this Service Order are:

See Exhibit A – Scope of Services

C. Unless otherwise provided in an exhibit to this Service Order, the County's anticipated dates for commencement of the Services and Completion of the Services are set forth below:

1. Commencement Date: September 3, 2018
2. Completion Date: *See Exhibit A – Scope of Services - Schedule*

D. Key personnel assigned by Consultant to this Service Scope of Work:

1. Paul A. Holt, P.E. (Principal)
2. Jeff Mulliken, P.E. (Sr. Project Manager)

II. Insurance

The Consultant shall maintain insurance as set forth in the Agreement. If the Consultant is required to maintain insurance exceeding the requirements set forth in the Agreement, those additional requirements are as follows:

N/A

III. Owner's Responsibilities.

In addition to those responsibilities the County may have as stated in the Agreement, the County in connection with this Service Order only shall:

N/A

IV. Consultant's Compensation.

A. The Consultant shall be compensated for Services provided under this Service Order as follows:

Lump Sum		*$*	*449,289.62*
Approved Direct Expenses		*$*	*7,017.50*
Cost Plus Fixed Fee		*$*	*0.00*
	Total	*$*	*456,307.12*
*Contingency – Not to Exceed**		*$*	*44,928.96*

**Requires approval from Richland County to authorize contingency*

B. Additional Services. Unless otherwise provided in an exhibit to this Service Order, any Additional Services by the Consultant shall be paid as Additional Services as provided in the Agreement.

V. Additional Exhibits.

The following exhibits and/or attachments are incorporated herein by reference thereto:

Exhibit A – Scope of Services

VI. Execution of Service Agreement

The Execution of this Service Order by the County below constitutes a Service Order to the Consultant. The execution of this Service Order by the Consultant creates the Service Agreement.

NOW, THEREFORE, in consideration of the foregoing, the sufficiency of which is hereby acknowledged by the parties, this Service Agreement is entered into Under Seal as of the Effective Date of _____, 2018.

WITNESS:

_____

RICHLAND COUNTY, SOUTH CAROLINA

By:_____(L.S.)

Its:_____

Date: _____

CONSULTANT:

WITNESS:

_____

HOLT CONSULTING COMPANY, LLC

By:_____(L.S.)

Its: Principal

Date: August 17, 2018

EXHIBIT A: SCOPE OF SERVICES

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE
SPEARS CREEK CHURCH ROAD (S-53) WIDENING

Introduction

Holt Consulting Co. (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for the widening of Spears Creek Church Road (S-53) in Richland County, South Carolina. Spears Creek Church Road is considered a Rural Minor Arterial by the South Carolina Department of Transportation (DEPARTMENT). The DEPARTMENT holds all public rights-of-way adjacent to the project corridor and assumes all maintenance responsibilities for those said rights-of-way.

The project will consist of widening the existing roadway to five lanes (two lanes in each direction with center median) between Two Notch Road (US 1) and just before the westbound I-20 entrance / exit ramps, for a total length of approximately 2.20 miles. The project is proposed to include bicycle and pedestrian accommodations.

Project Location - The project is located in Richland County, northeast of the City of Columbia; however, a large portion of the project is within the City of Columbia municipal limits – between Jacobs Millpond Road (S-1097) and the end of project.

Existing Conditions – Spears Creek Church Road is an existing 2-lane, earthen shoulder and ditch section roadway for the majority of the alignment, from just past Two Notch Road to just before Earth Road, for approximately 1.23 miles. The road transitions to a 3-lane, earthen shoulder and ditch section facility from Earth Road to just past the intersection with Pontiac Business Center Drive / Southridge Way, for an approximate distance of 0.63 miles where the roadway transitions back to a 2-lane roadway until the proposed end of project at the I-20 ramps.

Spears Creek Church Road crosses Spears Creek and associated floodway via dual 60-inch, reinforced concrete pipes between Jacobs Millpond Road and Earth Rd. Walden Pond and associated dam structure is situated adjacent to the southbound direction of Spears Creek Church Road at this crossing. The Walden Pond dam failed during the 2015 flood event, breaching the spillway, overtopping Spears Creek Church Road and demolishing the roadway south of the existing dual 6'x6' reinforced concrete box culvert. The new RCPs were installed in this damaged area of roadway to the south of the culvert. This dam has not been repaired to pre-flood conditions to-date. Most recent coordination from 2016 stated that the owners of the pond and dam were planning for permanent breach of the dam.

Proposed Project Scope (Roadway Widening) – A Concept Report, Traffic Analysis & Report, Preliminary Roadway and Conceptual Structure Plans, and other associated services, will be developed to reflect the implementation of the widening of Spears Creek Church Road to five lanes with the following;

- 45 mph design speed;
- 12-foot wide travel lanes;
- The addition of a two-way left turn lane along the length of the roadway (assumed 15 foot wide center media);
- Curb and gutter, closed-drainage system;
- The addition of bicycle and pedestrian accommodations along the length of the roadway;
- Hydraulic evaluations of existing FEMA crossing of Spears Creek;
- Potential replacement of existing RC box culvert and dual, RC pipes with a new structure;
- Review vertical/horizontal and intersection alignments and design, and revise, if necessary, to meet design criteria; and,
- Pedestrian accommodations along Earth Road which connect to the Clemson Road Widening project.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 - Project Management
Task 2 - Environmental Services / Permitting
Task 3 - Traffic Analysis
Task 4 – Aerial Mapping / Field Surveys
Task 5 – Concept Report
Task 6 – Preliminary Roadway Design
Task 7 – Conceptual Structure Design
Task 8 – Preliminary Stormwater Management / Hydraulic Design

Quality Control

The CONSULTANT shall implement all necessary quality control measures to produce plans and reports that conform to COUNTY guidelines and standards. Prior to submittal to the COUNTY, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program as well. The COUNTY reserves the right to request QA/QC documents (red-lines, checklists, etc) from the CONSULTANT with project deliverables.

Task 1

PROJECT MANAGEMENT

The CONSULTANT shall institute a program for conformance with COUNTY requirements for monitoring and controlling project engineering budget, schedule and invoicing procedures. The CONSULTANT's subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the COUNTY. Included in management of the project will be:

- Project meetings between the COUNTY, DEPARTMENT and CONSULTANT for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the COUNTY.

- The CONSULTANT will prepare meeting agenda and meeting materials as well as record the minutes of each meeting in which it participates and distribute to the appropriate COUNTY personnel.

- Prepare monthly invoices, status reports, and schedule updates. Assume a 9-month design schedule which will impact the duration of preparing invoices, status reports, and schedule updates.

  At this time, no assumptions should be made for the preparation of invoices, reports and updates during the construction duration of the project. All *Construction Phase Services* to be negotiated under a future contract modification.

- The CONSULTANT will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume a 9-month design schedule.

- The CONSULTANT will include the COUNTY in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

The CONSULTANT will attend meetings with the COUNTY and stakeholders from various organizations affected by this project in order to incorporate the needs and desires of these organizations into the decision-making process. It is assumed that the CONSULTANT will attend 9 project meetings (1 each month during the design services) and two (2) additional review coordination meetings with the DEPARTMENT, COUNTY and others, as applicable. The CONSULTANT will be in attendance at these meetings and will prepare all necessary display materials, meeting agendas and minutes.

Deliverables:

1. Nine (9) status reports (approximately monthly) and updated schedule. Two (2) additional meetings may be held specific to miscellaneous coordination efforts.
2. Meeting agendas and meeting minutes covering all project meetings. Meeting agendas are to be provided to the COUNTY within two (2) business days prior to all meetings. Meeting

minutes are to be provided to the COUNTY within three (3) business days after all meetings.

Task 2

ENVIRONMENTAL SERVICES/PERMITTING

Within two weeks of the date that the COUNTY provides a Notice to Proceed (NTP) for the subject project, and prior to commencement of design, the CONSULTANT shall make a determination of the environmental and/or navigational permits expected to be required for the subject project on a permit determination form. This information will inform the COUNTY of the anticipated permits and will be incorporated in the project schedule to ensure compliance.

No Jurisdictional Determination services shall be conducted during this scope of services. Desk-top level wetland mapping (National Wetland Inventory, NWI) shall be used as a general guide during the development of the roadway alignment for preparation of the concept report and preliminary plans.

No permitting services shall be conducted during this scope of services; however, the Concept Report (see Task 5) shall include potential permitting requirements and other environmental issues.

No NEPA documentation services are assumed for this scope of work.

Technical Reports

Hazardous Waste and Underground Storage Tanks – In assessing the environmental liabilities associated with the proposed new rights of way, the COUNTY may conduct appropriate / applicable elements of a Phase I Environmental Site Assessment in accordance with procedures established by ASTM Designation E 1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". This approach complies with the Standards and Practices for All Appropriate Inquiries (AAI), Final Rule published in 40 CFR Part 312. A Phase 2 Site investigation may be conducted by the COUNTY for those sites recommended for additional study as stated in the Phase 1 ESA. The results / deliverable provided from a Phase 1 ESA and any potential Phase 2 Site Investigations will be provided to the CONSULTANT.

Public Coordination/Public Meeting – One (1) public meeting is proposed for this phase of the project. The meeting is proposed to be conducted following development of the concept report.

The CONSULTANT will develop and provide to the COUNTY a list of property owners and stakeholders such as businesses, schools, shopping centers and home owners associations.

The public meeting will tentatively be scheduled for 5:00 pm to 7:00 pm on a Monday or Thursday at a venue along, or near, the project corridor. The CONSULTANT, with input from the

COUNTY, will be responsible for procuring the venue and determination of date and time. The CONSULTANT will be responsible for the preparation of public notice letters and draft media release necessary for promoting the meeting. The COUNTY will provide sample documentation from a previous public meeting. Following COUNTY approval of the public notice letter, the CONSULTANT will mail letters to the list of property owners and stakeholders.

The CONSULTANT, with input from the COUNTY, shall prepare necessary public meeting materials, (deliverables would include project design displays, project overview displays, project typical sections and right of way data tables, as applicable). The CONSULTANT will provide necessary boards and display easels. The CONSULTANT shall also be responsible for the development and printing of handouts, comment cards and sign-in sheets for the public meeting. The COUNTY will provide a base template (with language utilized for previous public meetings) for the handout, comment card and sign-in sheets. The CONSULTANT shall provide draft copies of all materials to be used in the public meeting to the COUNTY for review a minimum of 15 business days prior to printing. The CONSULTANT will also provide the COUNTY with PDF versions of all final deliverables, as stated above, for the public information meeting one week prior to the meeting for posting on the COUNTY website.

The public meeting is assumed to be held as an open-house style meeting. The COUNTY may conduct a brief formal presentation at some time during the public information meeting. The CONSULTANT shall attend the scheduled public meeting and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The CONSULTANT's role at the meeting is to discuss the project alternatives, proposed design and impacts with the public in attendance.

The COUNTY may secure security guards from local law enforcement agencies or private security firms for all public meetings. The COUNTY will also be responsible for fabricating and erecting signs to be placed on the projects as well as any directional signage needed at the public meeting venue.

The CONSULTANT shall prepare a summary of the public meeting comments within seven (7) business days from the close of the public comment period and receipt of the comments from the COUNTY. The COUNTY will provide a sample from a previous public meeting on a similar project. The COUNTY will be responsible for development of public comment responses and individual response letters, at their discretion. The CONSULTANT may be asked to assist with the development of appropriate responses, as necessary.

Assumptions:

- The CONSULTANT will conduct property owner research and develop property owner and stakeholder contact/mailing list in Excel format. Assume 125 contacts.

- The CONSULTANT will submit a draft media release to the COUNTY one month prior to the public meeting.
- The CONSULTANT will prepare public notice letters and mail/deliver to stakeholders one month prior to the public meeting. Assume 125 letters.
- The center alignment reflecting both typical sections to be presented at public meeting (see Task 5 below).
- The CONSULTANT will provide printed and PDF copies of all displays (up to 12 – 36-in x 48-in). Draft copies of the displays shall be submitted to the COUNTY in full size hardcopies 15 days prior to the Public Meeting. The CONSULTANT assumes two (2) rounds of revisions on public meeting materials and displays.
- The CONSULTANT assumes up to 100 comments will be received and included in the public meeting summary.
- Meeting Preparation and Debrief meetings will be held at Richland County Penny Offices in Columbia, SC.
- Participation of four (4) CONSULTANT team members at one (1) Public Meeting

Deliverables

1. Permit Determination Form
2. Property Owner and Stakeholder list
3. Public Notice Letters
4. Draft Media Release
5. Attendance at one (1) Public Meeting and preparation of Public Meeting materials (as stated in scope)
6. Public Meeting Summary

Task 3

TRAFFIC ANALYSIS

Data Collection – The CONSULTANT will collect data necessary to perform a detailed traffic analysis of existing and future design conditions. The data collection will include the following activities:

Field Investigation – The CONSULTANT will conduct a field visit to examine the existing roadway conditions and adjacent land use characteristics present within the study area, including:

1. Existing roadway speed limits
2. Number of lanes
3. Type and length of turn lanes
4. Traffic control

The field investigation will also identify those locations where horizontal and/or vertical sight distance may be limited at roadway and driveway intersections and identify locations where access management principles may be applied to consolidate driveway curb cuts.

Accident Data Collection – The COUNTY will obtain the most recent three years crash data along the study corridor.

Traffic Signal Timing Data Plan Collection – The CONSULTANT will obtain existing traffic signal timing information from the DEPARTMENT for the following signalized intersection along Spears Creek Church Road within the corridor:

1. Spears Creek Church Road at Two Notch Road
2. Spears Creek Church Road at Earth Road / Woodcreek Farms Road

Traffic Volume Data Collection – The CONSULTANT will conduct manual turning movement counts in 15-minute intervals during the weekday A.M. peak (7:00 to 9:00 A.M.) and P.M. peak (4:00 to 6:00 P.M.) on either Tuesday, Wednesday or Thursday at the signalized intersections indicated above and the following unsignalized intersections:

1. Spears Creek Church Road and Jacobs Millpond Road on North End of Project
2. Spears Creek Church Road and Jacobs Millpond Road on South End of Project
3. Spears Creek Church Road and I-20 Ramps
4. Spears Creek Church Road at Greenhill Parish Parkway/Jacobs Drive
5. Spears Creek Church Road at Pontiac Business Center Drive/Southridge Way

The CONSULTANT will conduct 24-hour bi-directional counts during the mid-week at the following locations:

1. Spears Creek Church Road between I-20 and Earth Road/Woodcreek Farm Road
2. Spears Creek Church Road between Earth Road and Two Notch Road/Woodcreek Farm Road

All counts will be conducted while the local public schools are in session.

The CONSTULANT will utilize travel demand models and/or average annual growth rates to establish design year and background traffic growth.

Development Data Collection – The CONSULTANT will obtain information concerning planned and approved development projects affecting traffic within the corridor area. Information concerning projected land uses, zoning and development planning documents will also be obtained.

Traffic Analysis – The CONSULTANT will perform the necessary analyses of the proposed improvement alternatives using the information obtained during the Data Collection task.

Conceptual Analysis – The CONSULTANT will identify the opening year and design year (20 years past opening date) peak hour Levels of Service for roadway segments and intersections within the study area using the procedures and methodologies outlined in the current editions of Special Report 209: Highway Capacity Manual 2000 edition and traffic analysis software, such as Highway Capacity Software (HCS) or Synchro 7.0 or 8.0 SimTraffic. The results of the conceptual design analysis will include:

1. The number and type of lanes on each approach of the study area intersections
2. Length of turn lanes to provide sufficient vehicle storage
3. LOS Tables
4. Opening year ADT and design year ADT

Accident Analysis – The CONSULTANT will identify the existing high crash locations within the corridor and will determine:

1. the total number of crashes, number of fatal crashes and fatalities, number of injury crashes and injuries;
2. the probable cause, time and location of all the fatal crashes;
3. the total number of the property damage crashes;
4. the lighting and pavement condition of all the crash occurrences

The CONSULTANT will summarize the different crash types and determine the primary causes of the existing crashes. The CONSULTANT will identify those locations with frequent and/or severe crash histories that may be able to be addressed through design and traffic control measures implemented as part of this project. The CONSULTANT will evaluate the most recent three years of available crash data.

Report Preparation – The CONSULTANT will prepare a traffic study that will outline the evaluations performed and the recommended improvements along the corridor and comparative analysis of the existing roadway to the post improvement roadway. The results will provide Levels-of-Service for each scenario studied. The CONSULTANT will submit a PDF of the traffic study to the COUNTY. Upon receipt of any comments, the CONSULTANT will revise the study accordingly and submit a PDF and two (2) final copies to the COUNTY for submittal to the DEPARTMENT for review. The CONSULTANT will revise the study as necessary per DEPARTMENT comments for final approval. After approval of the recommended improvements, the CONSULTANT will proceed with the development of preliminary roadway plans.

Traffic Signal Warrant Analysis will not be performed under this scope of work; however, recommended intersections, if applicable, for traffic signal warrant studies will be indicated in the report.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site.

Task 4

AERIAL MAPPING / FIELD SURVEY

Aerial Photography and Aerial LiDAR Mapping – The CONSULTANT will conduct Aerial Photography and Aerial LiDAR Mapping services to SCDOT standards for use during the preparation of the concept report, design and roadway plan development. Mapping will be conducted to the contour accuracy of 0.5 foot (one-foot contour interval) and prepared for use in

plans developed to a horizontal scale of 1" = 20'. The vertical and horizontal accuracy will be equal to or better than 0.05-ft RMS on hard surfaces and equal to or better than 0.5-ft on non-paved surfaces. Aerial mapping deliverables shall include a 2D planimetric file, 3D digital terrain model (DTM) file, in SCDOT Standard Symbology, and orthophotography (TIF, or other geospatial digital file format).

Field annotation of aerial topography will be performed by the CONSULTANT.

Mapping limits are shown in the attached Exhibit 1.

Field Survey – The CONSULTANT shall conduct necessary field surveys for the proper development / control of aerial LiDAR mapping services. Field survey services for the preparation of aerial LiDAR mapping shall include the placement of aerial panels at pre-determined and coordinated locations within the project area. Panels shall be either V-shaped (2-foot legs with 1 foot width) or X-shaped (1 foot legs on each side with 1 foot width). Field survey of the panels will be performed utilizing the South Carolina VRS Network to establish horizontal coordinates referenced to the South Carolina State Plane Coordinate System (NAD 83/2011) for each panel point. Elevations referenced to the NAVD 88 Vertical Datum will be established for each panel by performing differential level loops to the accuracy necessary for LiDAR mapping accuracy.. An ASCII or .txt file shall be provided containing the horizontal coordinates and vertical elevations of each panel point.

Additionally, the CONSULTANT will obtain two (2) field surveyed cross sections upstream (one (1) at the face of existing drainage structures and one (1) at the existing rights-of-way) and one (1) downstream at the face of the existing drainage structures for use in the development of the preliminary hydraulic models necessary to perform a preliminary hydraulic study of the FEMA Special Flood Hazard Area along Spears Creek Church Road. Detailed hydraulic models and studies of the FEMA Special Flood Hazard area will be completed in subsequent phases of work for this project - see Task 8.

The intent is to utilize the Aerial LiDAR mapping conducted in this stage of work for future design services, specifically, pavement surveys. Control, LiDAR mapping checks, supplemental surveys, obscured areas, drainage / outfall surveys, property monumentation, etc to be conducted upon further development of this project.

Assumptions:

1. The COUNTY will advertise the Eminent Domain notification prior to the CONSULTANT conducting the field work.

Task 5

CONCEPT REPORT

Documentation of Existing Conditions and Identification of Deficiencies – Aerial LiDAR mapping and photography (as conducted under this scope of work) of the proposed project area will be utilized for all design and plan development under this scope of work. The CONSULTANT will review the project corridor through the use of existing roadway plans, aerial photography & LiDAR mapping, site visits, and other available desktop-level data / information (ie; County GIS data, wetland inventory, cultural resources, etc) to determine existing and proposed land-use of properties within corridor, roadway data inventory (for existing intersecting roadways within corridor) to include lane widths, intersection configurations, types of accesses provided, natural drainage patterns, opinion of pavement conditions upon visual observation, observation of utilities, and potential impacts to the surrounding community. At the same time, any deficiencies that exist throughout the project such as sight distance problems at intersections or inadequate horizontal or vertical clearances, areas of insufficient shoulders, and areas where the existing pavement structure has deteriorated will be identified. Photography and videotaping may be used to document these conditions; copies of which to be submitted to COUNTY

Develop Design Criteria – The CONSULTANT will prepare the project Design Criteria in accordance with the following;

- ***SCDOT Roadway Design Manual (2017 Edition)****;*
- *Applicable* ***Instructional Bulletins****,* ***Preconstruction Advisory Memos*** *and* ***Preconstruction Design Memos****;*
- ***Road Design Plan Preparation Guide-2000****;*
- ***Standard Drawings for Road Construction*** *(latest revisions per Notice to Proceed of this work);*
- *All applicable* ***American Association of State Highway Transportation Officials (AASHTO)*** *publications.*

Any exceptions and/or deviations from established design guides and standards will be identified. The CONSULTANT will notify the COUNTY of any exceptions and/or deviations from the Design Criteria as soon as identified. The COUNTY will coordinate the Design Criteria with the DEPARTMENT for final approval. Development of a formal Design Exception is not included as part of this contract.

Typical Section, Alternate Alignment and Intersection Studies – Existing features of the project will be considered during development of the roadway typical sections and alignment studies. Environmental constraints, railroads, utilities, businesses, and residences will be considered in the development of the typical sections and proposed alignments.

Project Concept Report – The CONSULTANT will prepare a Project Concept Report for COUNTY approval. The report shall include, but not limited to the following:

- Project overview;
- Existing conditions;

- Environmental constraints / design and coordination issues (includes utilities and railroads); COUNTY to provide documentation of utilities within corridor (SC 811) prior to alignment studies and typical section production.
- Project layout based on aerial LiDAR mapping and aerial photography;
- Approved design criteria;
- Typical section; (assume two)
    - Typical No. 1: On-street bike lanes with sidewalk behind curb
    - Typical No. 2: Shared-Use Pathways
- Alignment studies; (assume left, right and center alignments)
- Impact comparisons (rights-of-way, utilities, environmental, traffic, costs, etc
- Conceptual bridge data;
- Project schedule and cost estimates (to include any existing COUNTY estimates), and;
- Recommendations for design and potential design refinements / enhancements.

The COUNTY will provide to the CONSULTANT a template, in Word format, of previously prepared concept report(s).

Task 6

PRELIMINARY ROADWAY DESIGN

Preliminary Roadway Plans – Following Project Concept Report approval, Traffic Study recommendations, and discussions with COUNTY regarding the recommended design approach, the CONSULTANT will prepare Preliminary Roadway Plans. The plans will be developed to the level of detail of approximately 30% Complete Construction Plans. The Preliminary Roadway Plans for the project will be prepared at a scale of 1"=20' scale to illustrate pertinent information associated with roadway design. The plans will be sufficiently developed to illustrate the construction limits and right-of-way requirements of the entire project. The plans will incorporate information obtained during data collection / site visits and any utility information discovered during coordination with utility owners (COUNTY to conduct), and the design will be adjusted where possible to minimize impacts. Additionally, the design will be adjusted to minimize impacts to developed properties and wetlands. Preliminary Plans will include plan, profile and cross-sections of the recommended design, to include (at a minimum) the following;

- Typical Sections
- Horizontal / vertical alignments (mainline and relocated side roads only)
- Play Layout (lane widths, radii, directional arrows, storage, tapers, etc)
- Review of sight distance considerations
- Review of non-standard driveway grades and tie-ins
- Limits of existing rights-of-way, easements and adjacent properties
- Property lines and parcel numbers (from County GIS data)
- Anticipated location, type and size of necessary drainage culverts, major cross-lines, outfall improvements, retaining walls, and other miscellaneous roadway structures and proposed bridge

- Cross-sections at 100 foot intervals on tangents and 50-foot intervals in curves (mainline and relocated side roads only)
- Construction limits
- Proposed rights-of-way and easements
- Labeling (type, size and location) of existing, major utility features

It is assumed that the mainline Spears Creek Church Road alignment may be a combination of left and right alignment shifts in order to accommodate the necessary typical section with reduced impacts. It is assumed that such alignment will be reflected in the preliminary plans.

Upon completion of the Preliminary Roadway Plans, the CONSULTANT will submit the plans to the COUNTY for review and comment. The CONSULTANT will be responsible for addressing comments and resubmitting revised Preliminary Roadway Plans. The COUNTY will provide the Preliminary Roadway Plans to the DEPARTMENT for review and comment following receipt of revisions.. It is assumed the DEPARTMENT will provide a matrix of comments with their review. The CONSULTANT will be responsible for providing appropriate comment responses; however, no plan changes or plan resubmittals to the DEPARTMENT are assumed at this stage.

A cost estimate will be prepared by the CONSULTANT and submitted along with the Preliminary Roadway Plans for use by the COUNTY. The COUNTY will use this cost estimate in order to determine whether or not the scope of the project needs to be reduced or expanded due to budgetary constraints.

Upon completion of the Preliminary Roadway Plans, the CONSULTANT will provide the COUNTY with two (2) half-sized, hard copy sets of plans along with a PDF (half-size and full size). The CONSULTANT at this time will also provide the COUNTY with preliminary new rights-of-way areas for use in developing an estimated right-of-way cost.

Task 7

CONCEPTUAL STRUCTURE DESIGN

This task includes the analysis for a potential new structure installation along Spears Creek Church Road at the Spears Creek crossing and associated roadway widening. Existing conditions at this crossing are dual 60-inch, reinforced concrete pipes placed after the 2015 flood event which demolished the roadway south of the existing dual 6'x6' reinforced concrete box culvert. No more than three (3) different structural concepts will be evaluated for inclusion in the Concept Report. The plans for this Task will include a conceptual plan and profile sheet and typical section sheet including construction staging anticipated.

Design Criteria – Structure design criteria will be developed in accordance with the following DEPARTMENT and AASHTO (as noted) publications;

- ***Bridge Design Manual, 2006****;*
- ***Road Design Plan Preparation Guide, 2000****;*

- ***SCDOT Roadway Design Manual, 2017 Edition****;*
- ***Standard Drawings for Road Construction;***
- ***Standard Specifications for Highway Construction, 2007;***
- ***Bridge Design Memoranda****; and,*
- *All applicable* ***American Association of State Highway and Transportation Officials (AASHTO)*** *publications.*

The following design and construction specifications will be used in the design and preparation of preliminary bridge plans:

- ***Bridge Design Manual, 2006****;*
- ***Standard Specifications for Highway Construction, 2007;***
- ***AASHTO's LRFD Bridge Design Specifications, 6th edition (2012)*** *and the latest Interim Specifications in place at the time of contract execution;*
- ***AASHTO's LRFD Bridge Construction Specifications, 3rd edition (2010)*** *and the latest Interim Specifications in place at the time of contract execution;*
- ***Geotechnical Design Manual, v. 1.1, 2010****;*
- ***Seismic Design Specifications for Highway Bridges, v. 2, 2008;***
- ***Supplemental and Technical Supplemental Specifications*** *as already prepared by the DEPARTMENT for bridge design and/or construction.*
- ***Bridge design memoranda*** *issued by the DEPARTMENT dated April 2006 or later.*
- *The latest edition of the* ***ANSI/AASHTO/AWS D1.5-2002 Bridge Welding Code****, with additions and revisions as stated in the special provisions.*
- ***AASHTO "Guide Specifications"*** *as may be applicable to the project.*

For any proposed bridges, they are to be assumed to have an Operational Classification = II and is in Seismic Design Category "A."

Conceptual Plans – The CONSULTANT will evaluate alternate layouts based on the parameters of the horizontal and vertical design(s) and submit a drawing showing the preferred layout and any alternates considered. Concurrence from the DEPARTMENT on the preferred alternate is necessary prior to development of preliminary plans in subsequent phases of this project. Conceptual design for bridge components will be performed to the extent necessary for verification of structure type, determination of approximate component sizes and feasibility of recommended foundations.

The CONSULTANT shall prepare a conceptual cost estimate based on the conceptual structure design to be included with the preliminary roadway estimate.

Task 8

PRELIMINARY STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The CONSULTANT will perform preliminary roadway drainage design, stormwater management, and hydraulic design consistent with the level of completion for the roadway design of the project.

The roadway drainage and hydraulic design will be based on the information obtained in the associated services in this scope of work. The following subtasks will be performed as part of this task:

Drainage Field Review / Data Acquisition – The CONSULTANT will perform a detailed review of the project site. The purpose of the field review is to evaluate the existing drainage conditions and document potential design issues for the project. The following items shall be documented during the field review:

- Jurisdictional Stream / FEMA Special Flood Hazard Areas and Crossings
- Existing conditions at major cross-lines (major cross-lines are designated as cross-line structures including and larger than 48" pipe); CONSULTANT to verify existence;
- Outfall conditions and potential drainage concerns for areas adjacent to the roadway;
- Adjacent Stormwater Basins which may be impacted by the project;
- Determine sizes of existing and proposed box culverts and cross-line pipes at and above 48” in diameter;
- Existing / potential erosion control issues along the project.

The CONSULTANT shall obtain all available effective FEMA data for FEMA floodplain crossings, water quality data, and any stormwater as-built data available for adjacent developments. The water quality data shall include any stream impairments at downstream outfalls.

Drainage Design Criteria – The CONSULTANT shall prepare a summary of the roadway drainage, stormwater management, and hydraulic analysis design criteria. The design criteria will be based on the SCDOT’s *Requirements for Hydraulic Design Studies* (2009) as a minimum. The CONSULTANT will review Richland County Design Standard and prepare recommendations for any conflicts in the design criteria. The drainage design criteria shall address the requirements for stream impairments downstream of the project.

Major Cross-Line Studies – In the course of the field review, the CONSULTANT shall identify all existing cross-lines and to determine the existence of any major cross-lines (structures including and larger than 48” pipe). It is assumed for this scope of services that one major cross-line exist within the project limits, along Spears Creek. Should additional major cross-line be identified, a contract modification will be negotiated for additional hydraulic studies as stated below.

The CONSULTANT shall perform a hydrologic and hydraulic study for each major cross-line drainage structure along the project. The study will include a watershed study to determine the design flows at the structure and hydraulic analysis of the cross-line in accordance with SCDOT design standards. The CONSULTANT will estimate cross-line inverts and channel topography based on field reviews. The evaluation of the cross-line should be based on the preliminary roadway design. Based on the evaluation, the CONSULTANT will provide recommendations for retaining, replacing, or other roadway drainage alternatives for each cross-line structure.

The design storm for each cross-line shall be based on the design criteria identified as part of this task. The design storm shall be based on the SCDOT's *Requirements for Hydraulic Design Studies*.

All major cross-lines will be identified and shown on the preliminary roadway plans.

Outfall Studies – The CONSULTANT shall perform a preliminary pre-construction versus post-construction analysis at each outfall. The pre-construction versus post-construction analysis shall be based on the preliminary roadway design. The outfall analysis shall address the potential increase in flows from the project and include any recommendations (if needed) for stormwater best management practices to address water quantity or quality. Best management practices which should be considered include stormwater basins, outfall improvements, water quality devices, etc. A preliminary design for the best management practice shall be performed to approximate the area of impact to adjacent property. Examples include a preliminary size for stormwater basins, length of outfall improvements, and size / type for water quality devices.

The preliminary plans shall be used by the CONSULTANT to show cross-line extensions, replacements, etc. Any potential outfall improvements or best management practices should also be shown on the preliminary plans.

The CONSULANT will be responsible for preparing a Drainage Summary Report to include the calculations performed as part of this scope of services, recommended improvements for cross-lines and outfalls, and recommendations for FEMA floodplain and Jurisdictional Stream crossings. The Drainage Summary Report shall include a narrative description of the drainage conditions along the project and a summary of any potential roadway drainage issues along the project.

Detailed ditch design and closed storm system design is not included in this scope of work. The CONSULTANT will be required to approximate roadway drainage areas for each outfall based on the preliminary roadway plans; however no interior drainage system design is required for this phase of the project. Field surveys of drainage structures / cross-lines will not be performed as part of this phase of the project.

Sediment and erosion control design is not required for this phase of the project. As part of the field reviews, the CONSULTANT shall identify any areas which are highly susceptible to erosion or sedimentation issues. These areas should be identified in the field review and summarized in the drainage report. These areas may require additional erosion and sediment control above the normally accepted methods for roadway improvement projects. Example areas include existing ponds located downstream of the project, areas of large cut and fill, etc.

Preliminary Hydraulic Analysis – The proposed improvements along Spears Creek Church Road will likely impact the FEMA-defined Special Flood Hazard Area associated with the Spears Creek crossing and associated floodway. The project will include a preliminary hydraulic study to evaluate the existing and/or proposed hydraulic structures.

The existing hydraulic structure under Spears Creek Church Road along Spears Creek consists of dual 60-inch, reinforced concrete pipes which were added to the south of the existing dual 6'x6' reinforced concrete box culvert in the area demolished during the 2015 flood event which also

breached the Walden Pond dam. The stream crossing within the project corridor is designated Zone AE Special Flood Hazard Area. The CONSULTANT will obtain and verify all existing hydraulic data and utilize available, existing models, as the basis of the studies, where applicable. The existing models will be updated to reflect the limited additional field survey data of the project area obtained for this phase of work. The existing hydraulic model (or developed model from survey) will be utilized to evaluate the potential impacts of extending the pipes and/or culvert conveying Spears Creek. If necessary, the hydraulic models will be utilized to evaluate potential replacement structures as well. The proposed conditions models will be developed based on the proposed design to analyze the potential impacts of the project. The analysis of the existing hydraulic data will include a review of the watershed and FEMA calculated design flows to ensure their accuracy with existing conditions.

The preliminary hydraulic studies will be based on DEPARTMENT requirements and will include an evaluation of the impacts from the proposed construction.

Assumptions:

1. If needed, the CONSULTANT will utilize geotechnical data from reports developed for the nearby Clemson Road widening project to develop input to the preliminary hydraulics study.
2. CONSULTANT to obtain FEMA model data and COUNTY will provide available LiDAR data.
3. A Conditional Letter of Map Revision (CLOMR) or a No-Impact Certification will be completed as part of a future work order as required.
4. The CONSULTANT will complete more detailed hydraulic studies and the hydraulic study documentation as required by the United States Army Corps of Engineers as part of the environmental permit as part of a future work order as required.

Services Not Provided

Services not provided by the CONSULTANT include, but are not limited to, the following:

- Lighting and Electrical plans
- Landscaping and irrigation plans
- Pavement coring or pavement design
- Environmental Assessment Documentation
- Falling Weight Deflectometer (FWD) testing
- Video Pipe Inspection
- The CONSULTANT shall not be the "responsible engineer" referenced IN 2009-04 who evaluates the structural condition and performs the preliminary inspection of existing pipes and culverts to determine if they can be retained. The DEPARTMENT shall determine if existing pipes and culverts are to be retained due to structural conditions. The CONSULTANT will indicate the retention/extension of all existing pipes/culverts which meet the hydraulic requirements unless otherwise directed by the DEPARTMENT
- Sight-specific Response Analysis study
- Utility relocation design and plans
- Utility coordination
- Right-of-way acquisition, exhibits, negotiations, or appraisals
- Right-of-way or construction phase design services and plans
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Construction Engineering and Inspection (CEI)
- Location of water and sewer utility services for each utility customer in the project area.
- All other services not specifically included in this scope of work
- Construction Phase Services (proposed contract modification for these services)

Services of the COUNTY

The COUNTY agrees to provide to the CONSULTANT, and at no cost to the CONSULTANT, the following upon request:

- Access to and use of all reports, data and information in possession of the COUNTY which may prove pertinent to the work set forth herein.
- Existing Policies and Procedures of the COUNTY with reference to geometrics, standards, specifications and methods pertaining to all phases of the CONSULTANT's work.
- Eminent Domain advertisement notice.
- Coordinate, advertise, fabricate and erect signs, and approve location for Public Meeting.
- Provide Security guard for the public information meeting.
- Existing roadway plans.
- Provide existing signalized intersection coordination timing(s), existing interconnect plan, and location of master, if applicable.
- Provide Existing utility data provided by Utility Owners within the project area
- Final moving, demolition and reset items list. An initial list will be provided by the CONSULTANT.
- Contract documents (project-specific special provisions to be supplied by CONSULTANT)
- Right-of-Way acquisition.
- As-built roadway plans.
- Construction Engineering and Inspection (CEI)
- Phase 1 Environmental Site Assessment
- Approved pavement design

Project Deliverables

The CONSULTANT will provide to the COUNTY the deliverable items shown below within the time allotted for each phase of work. Delivery may not be in the order shown.

- Meeting Agendas and Meeting Minutes
- Photography / Video (project documentation)
- Roadway and Bridge Design Criteria
- Project Concept Report
- Project Traffic Analysis / Study
- Public Information Meeting materials (as detailed in scope of work)
- Preliminary Roadway Plans
- Bridge Concept Layout(s)
- Conceptual Structure Plans
- Drainage Summary Report
- Preliminary Plans construction cost estimate
- Documentation of areas of new rights-of-way (per parcel)
- CADD files

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

Project Concept Report ……..……	4	months from NTP
Public Information Meeting …….	5	months from NTP
Preliminary Roadway & Bridge Plans …….	7	months from NTP
assume COUNTY review (1 month) ……...	8	months from NTP
Preliminary Roadway & Bridge Plans (revised) ** ……	9	months from NTP
assume SCDOT review (25 business days) ……...	10	months from NTP

The submittal dates include time for COUNTY/DEPARTMENT review as noted. Per the Intergovernmental Agreement between the COUNTY and the DEPARTMENT, the DEPARTMENT has 25 business days for their review.

**** - Theoretical completion date of services under this scope of work.**

Exhibit 1: Aerial Photography & Aerial Mapping Limits

Exhibit 1 - Aerial Photography and Aerial Mapping Limits

Legend

Survey Limits

Redbay Rd
Gillon Ln
Beaver Lake Ct
Beaver Lake Dr
Upper Lake Dr
Beaver Ridge Dr
Southridge Dr
Parish Wk
Longfield Ln
Still Wild Ln
Pocosin Ct
Jacobs Millpond Rd
Dial Creek Rd
Greenhill Parish Pkwy
Woodcreek Farms Rd
Jacobs Mill Pond Rd
Two Notch Rd
State Rd S-40-53
Spears Creek Church Rd
Jacobs Dr
Spears Dr
Sandy Haven Dr
David Dr
Jabay Dr
Peach Grove Cir
Earth Rd
Spears Creek Ct
Spear Creek Rd
SC-40-12
Clemson Rd
Old Clemson Rd
Wynette Way
Fore Ave
Burmaster Dr
N Donar Dr
1
20
Google Earth
© 2018 Google
N
3000 ft

Spears Creek Church Road Widening (8-17-18)								
Task	Total	Holt	Neel-Schaffer	CSS	GPI	AECOM		
Task 1: Project Management	$38,525.00	$38,525.00						
Task 2: Environmental / Public Meeting	$38,263.50	$12,918.00				$25,345.50		
Task 3: Traffic Analysis	$37,851.50	$0.00				$37,851.50		
Task 4: Aerial Mapping / Field Surveys	$66,513.62	$0.00		$32,843.00	$33,670.62			
Task 5: Concept Report	$47,058.00	$47,058.00						
Task 6: Preliminary Roadway Design	$160,435.00	$160,435.00						
Task 7: Conceptual Structure Design	$19,530.00	$0.00	$19,530.00					
Task 8: Prelim Stormwater / Hydraulic Design	$48,130.50	$0.00	$48,130.50					
Total	$456,307.12	$258,936.00	$67,660.50	$32,843.00	$33,670.62	$63,197.00		
Total %	100.0%	56.7%	14.8%	7.2%	7.4%	13.8%		

DBE Certified			x				
SLBE Certified	x		x				

DBE Utilization	7.2%
SLBE Utilization	63.9%

Lump Sum	$449,289.62
Approved Direct Expenses	$7,017.50
Cost Plus Fixed Fee	$0.00
Total	$456,307.12

	Directs		
Neel-Schaffer	Task 8	$454.50	*mileage, FEMA data fee*
AECOM	Task 2	$1,337.50	*mileage, printing*
AECOM	Task 3	$2,665.50	*mileage, traffic counts, printing*
GPI	Task 4	$635.00	*mileage, per diem, lodging*
CSS	Task 4	$1,925.00	*traffic control*
	Total Directs	**$7,017.50**	

RICHLAND COUNTY GOVERNMENT
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richlandcountysc.gov

May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: Crane Creek Greenway Public Meeting – January 15, 2019

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the Crane Creek Greenway Project as presented at the Tuesday, January 15, 2019 public meeting. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received, stakeholder coordination and further engineering reviews of this project, Richland County Council has approved that this project design development be advanced per Section B that was presented at the meeting. This section starts at the north end of the Canal River Walk and will end at Mountain Drive. Other project design elements will also be considered and evaluated as the project is progressed further.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

RICHLAND COUNTY GOVERNMENT
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richlandcountysc.gov

May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: Broad River Road Corridor Neighborhood Improvements Public Meeting – March 7, 2019

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the Broad River Road Corridor Neighborhood Improvements Project as presented at the Thursday, March 7, 2019 public meeting. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received, stakeholder coordination and further engineering reviews of this project, Richland County Council has approved that this project design development be advanced. The improvements include intersection improvements at the intersection of Saint Andrews Road and Broad River Road, the intersection of Bush River Road and Broad River Road, and the intersection of Greystone Boulevard and Broad River Road. These improvements could include modifications to turn lanes, encompass new signals with mast arms, sidewalk repairs and upgrades, signage upgrades, ADA upgrades, pedestrian crossing upgrades, raised medians and landscaped areas. These and potentially other design elements will be considered and evaluated as the project is progressed further. At this time, the schedule for additional public meetings is not known.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

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richlandcountysc.gov

May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: Smith/Rocky Branch Greenway Sections A, B & C Public Meetings February 13 & 21, 2019

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the Smith/Rocky Branch Greenways Sections A, B & C Projects as presented at the Wednesday, February 13, 2019 and Thursday, February 21, 2019 public meetings. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received, stakeholder coordination and further engineering reviews of this project, Richland County Council has approved that the project design development of Rocky Branch, Section C that was presented at the meetings be advanced. This greenway will start near Olympia Park and follow Rocky Branch to Granby Park. Other project design elements will also be considered and evaluated as the project is progressed further. A second public meeting is proposed to be conducted prior to finalization of the project design in order for the public to view the proposed design and provide additional comments. At this time, the schedule for this second public meeting is not known.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

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May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: Trenholm Acres/ New Castle Neighborhood Improvements Public Meeting – November 15, 2018

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the Trenholm Acres/ New Castle Neighborhood Improvements Project as presented at the Thursday, November 15, 2018 public meeting. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received, stakeholder coordination and further engineering reviews of this project, Richland County Council has approved that this project design development be advanced for the seven proposed sidewalks. Sidewalks are proposed to be constructed along Claudia Drive, Nancy Avenue, Sprott Street, Humphrey Drive, Shakespeare Road, Warner Drive and Westmore Drive. Additionally, landscaped medians will be evaluated for feasibility and potential construction at various locations along Fontaine, Two Notch, and Parklane. Final design details will be determined as the projects further progress. A second public meeting is proposed to be conducted prior to finalization of the project design in order for the public to view the proposed design and provide additional comments. At this time, the schedule for additional public meetings is not known.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

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richlandcountysc.gov

May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: Shop Road Extension Phase 2 Public Meeting – December 6, 2018

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the Shop Road Extension Phase 2 project as presented at the Thursday, December 6, 2018 public meeting. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received as well as consideration of project impacts and costs, Richland County Council has approved that this project design development be advanced per alignment Alternative 4 with a two-lane roadway section extending from Longwood Road to Garners Ferry Road/Trotter Road as presented at the public meeting. Please refer to Exhibit A. The design and plan development includes a 200-ft total width of Right-of-Way to accommodate a future four-lane roadway and bridge crossings over Mill Creek and Norfolk Southern railroad. Other project design elements will also be considered and evaluated as the project is progressed further.

A second public meeting is proposed to be conducted prior to finalization of the project design in order for the public to view the proposed design and provide additional comments. At this time, the schedule for this second public meeting is not known.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

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richlandcountysc.gov

May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: Polo Road Widening Public Meeting – January 31, 2019

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the Polo Road Widening project as presented at the Thursday, January 31, 2019 public meeting. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received as well as consideration of safety and project impacts, Richland County Council has approved that this project design development be advanced per Typical Section B, as presented at the public meeting, with a shared-use path on one side only. This typical section includes a three-lane roadway from Two Notch Road to Mallet Hill Road, one travel lane in each direction with a two-way left turn lane, and a separated shared-use path on the west side only. As the design is progressed, minor modifications to the roadway typical section will be evaluated to further address public comments and minimize impacts.

A second public meeting is proposed to be conducted prior to finalization of the project design in order for the public to view the proposed design and provide additional comments. At this time, the schedule for this second public meeting is not known.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

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richlandcountysc.gov

May 1, 2019
Resident Name
Resident Address 1
Resident Address 2

RE: McNulty Street Improvements Public Meeting – January 24, 2019

Dear Resident,

On behalf of the Richland County Transportation Program, we would like to thank you for your comments regarding the McNulty Street Improvements Project as presented at the Thursday, January 24, 2019 public meeting. Your commitment to the Richland County community and interest in this project is greatly appreciated.

Per review of the comments received, stakeholder coordination and further engineering reviews of this project, Richland County Council has approved that this project design development be advanced per Typical Section B that was presented at the meeting. This typical section included a two-lane roadway section from Blythewood Road to US 21 (Main Street) with on-street bike lanes, curb and gutter and sidewalks on both sides of the roadway. Other project design elements will also be considered and evaluated as the project is progressed further. A second public meeting is proposed to be conducted prior to finalization of the project design in order for the public to view the proposed design and provide additional comments. At this time, the schedule for this second public meeting is not known.

The Richland County Transportation Department values your suggestions, concerns and carefully considers all feedback before any final project decisions are made. Your comments are part of the official records for this project and helped guide our recommendations.

Thank you again for your input. If you have further questions, please contact me at our office, 1-803-766-5605, or by email at *transportationpenny@richlandcountysc.gov*.

Sincerely,

Michael Niermeier, MPA, PMP
Director of Transportation
Richland County Government

Blythewood Widening Phase 1 Shared Use Path

Maintenance Agreement

Transportation Ad Hoc Committee

May 28, 2019

- Blythewood Road Widening is currently 95% complete with design and greater than 50% complete with Right of Way acquisition.
- The project includes 10' wide Shared Use Paths on both sides of the road for a total of 1.6 miles
- The County has an existing agreement with the Town of Blythewood for the Town to accept all maintenance responsibilities completed May 6, 2019.
- As the County has an existing Intergovernmental Agreement with SCDOT, it is requested that the County enter into a Maintenance Agreement with SCDOT. These responsibilities will then be assigned to the Town of Blythewood.

APPENDIX 1 – MAINTENANCE PARTNERSHIP AGREEMENT

2/17/00

THIS AGREEMENT is entered this _____ day of _____, 20__, by and between Richland County, hereinafter referred to as County, and the South Carolina Department of Transportation, hereinafter referred to as SCDOT.

WHEREAS, in accordance with Sections 57-3-110 (1) and (10), 57-3-650, 57-23-10, 57-23-800(E), 57-25-140, and the SCDOT's Policy of Vegetation Preservation on SC Highways, SCDOT is authorized to allow landscaping and beautification efforts on SCDOT right of ways;

WHEREAS, the County has previously obtained a Cooperative Intergovernmental Agreement (IGA) for the coordination of the Richland County Sales Tax Transportation Program to access SCDOT's right of way for construction and/or improvement of transportation facilities. Said IGA is described as follows:

IGA Number: 25-14 Date Issued: February 7, 2014

Location: Blythewood Road from I-77 to Syrup Mill Road;

WHEREAS, SCDOT and the County are desirous of entering into this Agreement to grant a continuous license to the County to enter the SCDOT's right of way to conduct routine maintenance of landscaping, beautification and/or enhancements permitted by the aforesaid IGA;

NOW THEREFORE, in consideration of mutual promises, SCDOT and the County agree to the following:

1) SCDOT grants the County a license to enter onto the SCDOT right of way at the area defined by the intergovernmental agreement. The purpose of the license to enter is limited to routine maintenance of the intergovernmental agreement area. Such entry will be limited to the scope of the work identified in the intergovernmental agreement. No additional encroachment beyond that contemplated by the original intergovernmental agreement is allowed. If additional maintenance, enhancement and/or beautification efforts, different from the original scope of work identified in the intergovernmental agreement, is requested, the County will be required to submit a new intergovernmental agreement identifying the new scope of work. Entry onto SCDOT right of way pursuant to this agreement may be without notice to the SCDOT.

2) The County agrees to post all necessary traffic control devices and take all necessary precautions in conformance with SCDOT traffic control standards and as required by the SCDOT, along the SCDOT right of way prior to and during the performance of any routine maintenance, enhancement and/or beautification efforts.

3) SCDOT agrees to accept maintenance responsibilities for the shared use path concrete structure not to include cleaning or hazardous weather maintenance of the surface.

4) The County agrees to accept maintenance responsibilities for maintenance of the shared use path’s surface to include cleaning and hazardous weather maintenance of the surface.

5) The County agrees to maintain the vegetation zone located between the edge of roadway and the shared use path as well as the vegetation zone on the outside shoulder of the path. This maintenance includes, but is not limited to, mowing and clearing/limbing vegetation management.

6) The County agrees to accept maintenance responsibilities for all handrails constructed as part of the project.

7) The County agrees to be responsible for all claims or damages arising from the work performed by the County, its employees or agents, but only within the limits of the SC Tort Claims Act. In

addition, should the County use a contractor for performance of the work, the County shall insert a hold harmless and indemnification clause in its contract with all contractors and subcontractors which requires the contractor and subcontractor to indemnify and hold harmless the County and the State of South Carolina, specifically the SCDOT, from any liability, claims or damages which may arise from the performance of the work on SCDOT right of way. Nothing in this Agreement shall be construed to expand County liability for its actions in SCDOT's right of way beyond the limits of the S. C. Tort Claims Act. Further, the County agrees that they are subject to S. C. Code Section 57-5-140, which provides that SCDOT shall not be liable for damages to property or injuries to persons, as otherwise provided for in the Torts Claims Act, as a consequence of the negligence by a municipality in performing such work within the State highway right of way.

8) This Agreement shall not be modified, amended or altered except upon written consent of the parties. Neither party shall assign, sublet, or transfer its interest in this Agreement without the written consent of the other.

9) This Agreement may be terminated upon thirty days' written notice to the other party; however, in cases where the County is not performing in accordance with this Agreement, SCDOT shall give written notice to the County of the failure in performance and, if the County does not correct or cure the performance within three days of receipt of the notice, SCDOT shall have the option to terminate this license immediately, and shall, thereafter, give written notice of such termination to the County.

IN WITNESS HEREOF, the above parties have hereunto set their hands and seals.

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

By: _____
Its: _____
Recommended by: _____

RICHLAND COUNTY

By: _____
Its: _____

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE

LOWER RICHLAND BOULEVARD (S-37) WIDENING – Phase II

Introduction

Mead & Hunt, Inc. (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for the widening of Lower Richland Boulevard (S-37) in Richland County, South Carolina. Lower Richland Boulevard is considered an Urban Minor Arterial by the South Carolina Department of Transportation (DEPARTMENT). The DEPARTMENT holds all public rights-of-way adjacent to the project corridor and assumes all maintenance responsibilities for those said rights-of-way.

The project will consist of widening the existing roadway to five lanes (two lanes in each direction with a center median) between Garners Ferry Road (US 76 / 378) and Rabbit Run (S-2089 / 404) to include bicycle and pedestrian accommodations. A roundabout will be constructed at the intersection of Lower Richland Boulevard and Rabbit Run.

Phase I is complete and included field surveys, a conceptual report, traffic analysis, public meeting and 30% plan design, Phase II is a continuation of Phase I. The scope for Phase II will take the 30% plans through final design and bid documents.

Project Location - The project is located in southwest Richland County, in the Lower Richland / Hopkins community. Lower Richland High School and associated buildings, parking lots and athletic fields border the project limits along the northbound side of the roadway throughout the proposed project termini. The southbound side is bordered by undeveloped and wooded property

Existing Conditions – Lower Richland Boulevard Road is an existing 2-lane roadway with a dedicated right turn lane at its intersection with Garners Ferry Road, for approximately 0.06 miles where it transitions to a 2-lane roadway and retains this section for the remainder of the project area, to the proposed termini at Rabbit Run Road – for an approximate total project length of 0.60 miles. The entire limits include earthen shoulders and roadway ditches.

Goose Branch and associated FEMA floodway parallels Lower Richland Boulevard, west of the project limits; however, proposed roadway improvements are not anticipated to affect this FEMA floodway.

Proposed Project Scope (Roadway Widening) – Phase II – Right-of-Way through Final Construction plans, and other associated services, will be developed to reflect the implementation of the widening of Lower Richland Boulevard to five lanes with the following;

- 35 mph design speed;
- 12-foot wide travel lanes;

- The addition of a two-way left turn lane along the length of the roadway (assumed 15-foot wide center media);
- Curb and gutter, closed-drainage system;
- The addition of a shared use path on one side of the road and a sidewalk on the other side along the length of the roadway.
- Provide an eight-foot sidewalk on the west side of Lower Richland Boulevard for the entire length of the project.
- Retaining walls to reduce environmental/right-of-way impacts, if necessary;
- Review vertical/horizontal and intersection alignments and design, and revise, if necessary, to meet design criteria.
- Traffic signal upgrades and / or modifications to existing signal.
- Roundabout at the intersection of Lower Richland Boulevard and Rabbit Run
- Limited geometric improvements at the intersection of Lower Richland Boulevard and Garners Ferry Road
- A design exception is assumed for the vertical alignment on Lower Richland Boulevard approaching Garners Ferry Road.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 – Project Management
Task 2 – Surveys and Mapping
Task 3 – Environmental Services/Permitting
Task 4 – Roadway Design
Task 5 – Pavement Marking and Signing Plans
Task 6 – Traffic Signal Design
Task 7 – Roadway Lighting
Task 8 – Transportation Management Plan
Task 9 – Stormwater Management/ Hydraulic Design
Task 10 – Sediment and Erosion Control/NPDES Permitting
Task 11 – Geotechnical Exploration and Engineering Services
Task 12 – Roadway Structures Design and Plans
Task 13 – Subsurface Utilities Engineering (SUE)
Task 14 – Utility Coordination Assistance
Task 15 – Construction Phase Services

Quality Control

The CONSULTANT shall implement all necessary quality control measures to produce plans and reports that conform to COUNTY guidelines and standards. Prior to submittal to the COUNTY,

all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program as well. The COUNTY reserves the right to request QA/QC documents (red-lines, checklists, etc) from the CONSULTANT with project deliverables.

Task 1

PROJECT MANAGEMENT

The CONSULTANT shall institute a program for conformance with COUNTY requirements for monitoring and controlling project engineering budget, schedule and invoicing procedures. The CONSULTANT's subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the COUNTY. Included in management of the project will be:

- Project meetings between the COUNTY, DEPARTMENT and CONSULTANT for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the COUNTY.

- The CONSULTANT will prepare meeting agenda and meeting materials as well as record the minutes of each meeting in which it participates and distribute to the appropriate COUNTY personnel.

- Prepare monthly invoices, status reports, and schedule updates. Assume a 14 month design schedule which will impact the duration of preparing invoices, status reports, and schedule updates.

  At this time, no assumptions should be made for the preparation of invoices, reports and updates during the construction duration of the project. All *Construction Phase Services* to be negotiated under a future contract modification.

- The CONSULTANT will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume a 14 month design schedule.

- The CONSULTANT will include the COUNTY in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

The CONSULTANT will attend meetings with the COUNTY and stakeholders from various organizations affected by this project in order to incorporate the needs and desires of these organizations into the decision-making process. It is assumed that the CONSULTANT will attend 20 project meetings (1 each month during the design services) and two (2) additional review coordination meetings with the DEPARTMENT, COUNTY and others, as applicable. The

CONSULTANT will be in attendance at these meetings and will prepare all necessary display materials, meeting agendas and minutes.

Task 2

SURVEYS AND MAPPING

Design Surveys – Additional field surveys will be performed by the CONSULTANT as necessary during the design phases of the project.

Field surveys will be performed by the CONSULTANT to update field changes, properly tie in construction slopes and grades and to capture additional drainage features not shown in the existing surveys.

Field surveys will be needed to connect the new shared use path that will be constructed with Richland County's SERN project to the shared use path and sidewalk that will be constructed with scope of work as described in this contract.

Additional surveys will we needed to include a new gas station located in the northwestern quadrant of the Lower Richland Blvd / Garners Ferry Intersection.

The CONSULTANT will stake and obtain boring elevations for all geotechnical borings performed on the project by the CONSULTANT.

The CONSULTANT will stake the proposed and present right-of-way for approximately 20% of the total parcels (assume 8 parcels) to be improved. Right-of-way staking will consist of placing 36-inch stakes (or paint in paved areas) at all proposed right-of-way breaks, sight triangles and spaced at 100-foot intervals in tangents and 50-foot intervals in curves. These stakes shall be placed after Final Right-of-Way Plans have been developed and the Project Manager would contact the CONSULTANT when a property owner requests the right-of-way to be staked. The Right-of-way staking will be separate from the lump sum amount for Task 4 and will be invoiced as a cost plus fixed not to exceed unless authorized. The CONSULTANT should assume multiple trips as the staking may involve one or several parcels.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site. The CONSULTANT will not be responsible for obtaining permissions from property owners for surveys outside of the existing Right-of-Way.

The survey shall be performed to the requirements of the SCDOT "Preconstruction Survey Manual" dated August 2003 (or latest edition).

Assumptions:

1) *Primary Survey Control. Main Survey Control and Temporary Benchmarks were established in Phase I of the Lower Richland Blvd Widening project.*
2) *Design surveys were performed in phase I.*
3) *Additional surveys will only be needed for right of way staking, locations for geotechnical exploration, site condition changes or locations where the design requirements exceed available survey information.*

Deliverables

1) *All Survey files on CD: Provide all planimetric and topographic files including property file, DTM and .TIN files, and other files as necessary in Microstation format.*

Task 3

ENVIRONMENTAL SERVICES/PERMITTING

As there are no wetlands adjacent to the project site, nor those that would be directly affected by the project, no wetland permitting is assumed necessary. No environmental documentation or reports are assumed for this scope of services.

Permit Determination Form – The CONSULTANT provided a Permit Determination Form during Phase I. Within two weeks of the date that the COUNTY provides a Notice to Proceed (NTP) for the subject project, and prior to commencement of design, the CONSULTANT shall review the Permit Determination Form based on the updated design and revise the form if necessary.

No Jurisdictional Determination services shall be conducted during this scope of services. Desk-top level wetland mapping (National Wetland Inventory, NWI) shall be used as a general guide during the development of the roadway alignment for preparation of the concept report and preliminary plans. Field verification of NWI boundaries will be conducted to confirm avoidance of wetland impacts.

Public Coordination/Public Meeting –

The CONSULTANT, with input from the COUNTY, shall prepare related public meeting materials, (deliverables would include plan view displays, project overview maps, typical sections, right of way data tables, etc). The CONSULTANT shall provide draft copies (hard copy and pdf) of all display materials to be used in public meetings to the COUNTY for review, a minimum of 15 business days prior to the meeting. The CONSULTANT will also provide the COUNTY with PDF versions of the displays for the public information meeting one week prior to the meeting for

posting on the COUNTY website. The CONSULTANT should assume one (1) meeting with COUNTY staff as a planning session to review the public meeting plan.

The COUNTY may provide security guards from local law enforcement agencies or private security firms for all public meetings. The COUNTY will also be responsible for fabricating and erecting signs to be placed on the projects as well as hard copies of all handouts, comment forms, sign-in sheets, etc. The COUNTY will also procure and bring all easels (for project display boards (provided by CONSULTANT, see below) and all other items not specifically mentioned below to be provided by CONSULTANT.

The public meeting is planned as an open-house style meeting. The COUNTY will conduct a brief, formal presentation at some time during the public information meeting. The CONSULTANT shall attend the scheduled public meeting and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The CONSULTANT's role at this meeting is to discuss the project design and impacts with the public in attendance. The CONSULTANT will be responsible for bringing hard copies of the project displays (plan view, typical sections, overview boards, etc) as well as display boards (typical black, foam boards; "GATOR" board, or equivalent) to the meeting; assume two (2) copies of each display to be provided at the meeting.

The public meeting will tentatively be scheduled for 5:00 pm to 7:00 pm on a Tuesday or Thursday at a venue near the project corridor or along the corridor. The COUNTY will be responsible for procuring the venue and determination of date and time.

Upon conclusion of the public comment period, the CONSULTANT will prepare public meeting summaries and will be responsible for development of public comment responses and individual response letters, at their discretion.

Assumptions

1. One (1) public information meeting will be scheduled prior to finalizing Right-of-Way plans.
2. All permitting deliverables will be submitted to the COUNTY for final processing.

Deliverables

1. Applications and Drawings for required permits
2. Preparation of all meeting materials (as stated in scope).
3. Preparation of meeting/comment summary and comment responses (as stated in scope).

Technical Reports

Hazardous Waste and Underground Storage Tanks – In assessing the environmental liabilities associated with the proposed new rights of way, the COUNTY may conduct appropriate / applicable elements of a Phase I Environmental Site Assessment in accordance with procedures

established by ASTM Designation E 1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". This approach complies with the Standards and Practices for All Appropriate Inquiries (AAI), Final Rule published in 40 CFR Part 312. A Phase 2 Site investigation may be conducted by the COUNTY for those sites recommended for additional study as stated in the Phase 1 ESA. The results / deliverable provided from a Phase 1 ESA and any potential Phase 2 Site Investigations will be provided to the CONSULTANT.

Task 4

ROADWAY DESIGN

Right-of-Way Plans

Utilizing the Preliminary Roadway Plans design, Concept Report, Traffic Study, stakeholder coordination and SCDOT comments, the CONSULTANT will prepare Final Right-of-Way Plans according to standard DEPARTMENT criteria and format. Plans will be developed to the level of detail of approximately 70% Complete Construction Plans. New right-of-way will be annotated by the station and offset methodology in accordance with standard DEPARTMENT policy and procedures. Right of Way through Construction Plans will be developed at 1"=20' scale (horizontal) with all cross-sections developed at 50 foot intervals.

Right-of-Way Plans – Right-of-Way Plans will be developed in accordance with the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010, with the following exceptions:

- Moving Items will only be shown on the Moving Items Sheet.
- The owner's name and any needed permissions will not be shown on the Plan Sheets. The only property information shown on the plan sheets will be the Tract Number.

The CONSULTANT will incorporate information obtained during the SUE phase of the project.

The CONSULTANT will provide curb grades for the project as necessary for drainage design and to facilitate construction.

The CONSULTANT will establish horizontal and vertical alignments along with necessary cross sections in order to study the re-connection of driveways to the widened roadways. This design data will be shown in the plans in order to convey the extent/impact of the re-configuration / regrading of driveways necessary to provide access to the property. Driveways that are level with the widened roadway will not have a horizontal or vertical alignment set, but will be handled by only showing their connection in the roadway cross section and plan view based on the roadway cross section.

New driveway locations and designs and limits of Control of Access shall comply with SCDOT's Access and Roadside Management Standards manual. Driveways will be detailed in Task 4 Roadway Construction plans to show design of the driveway through the radius returns.

A design exception is assumed for the vertical alignment on Lower Richland Boulevard approaching Garners Ferry Road.

The CONSULTANT will attend the Right-of-Way Plans Design Review meeting with the COUNTY / DEPARTMENT to review the project design. The CONSULTANT will prepare meeting minutes / summary of discussions from the design review. The design review will be scheduled approximately 2 weeks after submittal of the preliminary right-of-way plans to SCDOT (COUNTY to coordinate review).

The CONSULTANT will be responsible for providing a preliminary list of moving and demolition items to the COUNTY for use by the right-of-way agent. This information shall be shown on the Moving Items / Demo Items sheet and shown with the preliminary right of way plans. The COUNTY will provide a final list of moving and demolition items to be shown in the construction plans.

A set of preliminary Right-of-Way Plans will be submitted to the COUNTY for review and comment. Following the review of the preliminary Right-of-Way Plans, the CONSULTANT will submit final Right-of-Way Plans for review and approval. As applicable, the final Right-of-Way plans will address comments on the preliminary Right-of-Way plans. Following review, comment and approval of each of the plan submittals (preliminary R/W and final R/W), the COUNTY shall not provide the plans to the DEPARTMENT for their review and comments. Right-of-way plans as prepared by the CONSULTANT shall be developed to the level of detail necessary of 70% plans and per typical SCDOT plan requirements. The CONSULTANT shall also be responsible for providing responses to all COUNTY documented within typical comment matrices. The CONSULTANT should assume that the DEPARTMENT will not conduct a full review of the plans at each submittal (at 65% and 70% complete).

Electronic media receivables for Right-of-Way Plans will be provided on CD (or other electronic data storage device) and will include the information outlined in the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010.

The CONSULTANT will provide final right-of-way CADD files to the COUNTY for the preparation of the right-of-way exhibits.

During the course of completing the final plans for construction, should changes be necessary which will affect right-of-way; these revisions will be promptly made, documented as revisions on plans, and identified to those implementing right-of-way appraisal and acquisition. The

CONSULTANT will provide updated CADD files to the COUNTY to update the right-of-way exhibits.

The CONSULTANT should assume 30% of the tracts shown with new rights-of-way (assume 8 tracts total) on the final right-of-way plans to require right-of-way revisions. The CONSULTANT shall submit plan changes due to right-of-way revisions per the following schedule (necessary sheets only);

- One (1) full-size
- Eight (8) half-size

The CONSULTANT will develop and provide to the COUNTY an updated cost estimate for the project, to be submitted with the final right-of-way plans.

Final Roadway Design and Plans

Roadway Construction Plans – The construction plans will be a continuation of Right-of-Way Plans. Original Right-of-Way Plans will be retained by the CONSULTANT after appropriate COUNTY reviews and signatures and then developed into construction plans.

Plan and profile sheets will show information necessary to permit construction stakeout and to indicate and delineate details necessary for construction.

New driveway locations and designs and limits of Control of Access shall comply with SCDOT's Access and Roadside Management Standards manual. Driveways shall be detailed to show design of the driveway through the radius returns.

A design exception is assumed for the vertical alignment on Lower Richland Boulevard approaching Garners Ferry Road.

Construction plans shall incorporate all items presented in the Roadway Construction Plans section of the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010.

The CONSULTANT will attend the Final Roadway Plans Design Field Review with the COUNTY / DEPARTMENT to review the project design in the field. The CONSULTANT will prepare meeting minutes / summary of discussions from the design field review. The final design field review will be scheduled approximately 2 weeks after submittal of the preliminary construction plans (COUNTY to coordinate review).

A set of Preliminary Construction Plans (assumed 95% complete) will be submitted to the COUNTY for review and comment prior to final plan delivery. Following review of the preliminary construction plans, the CONSULTANT shall finalize the plans and submit the Final Construction plans (signed and sealed by a Professional Engineer licensed in the state of South Carolina). As applicable, the final construction plans will address comments on the preliminary construction plans. Following review, comment and approval of each of the plan submittals (preliminary const and final const), the COUNTY shall provide the plans to the DEPARTMENT for their review, comment and/or concurrence. The CONSULTANT will be responsible for

updating all plan deliverables, as applicable and as necessary, per DEPARTMENT reviews. The CONSULTANT shall also be responsible for providing responses to all COUNTY and DEPARTMENT comments documented within typical comment matrices.

The Preliminary Construction cost estimate will be updated by the CONSULTANT and submitted with the Preliminary Construction Plans for use by the COUNTY.

On or before the contract completion date, the CONSULTANT will deliver to the COUNTY one complete set of Final Construction Plans, an Engineer's Estimate, and "Project Specific" Special Provisions. See Project Special Provisions and Engineer's Estimate for the description of the Engineer's Estimate and "Project Specific" Special Provisions.

Project Special Provisions and Engineer's Estimate – The CONSULTANT will prepare all "Project Specific" Special Provisions and include them in the format compatible with the DEPARTMENT Construction Administration Section. The CONSULTANT will work closely with COUNTY personnel in the COUNTY'S development of the construction document package.

Also, utilizing recent bid data from similar projects in the area, the CONSULTANT will prepare an Engineer's Estimate for construction of this project. The estimates will be based on the final summary of quantities and will be used in the final bid analysis and award. An independent estimate will be conducted by the COUNTY, and upon review of the Engineer's Estimate, the CONSULTANT will attend an estimate rectification meeting with the COUNTY to review unit prices.

The CONSULTANT will provide one full size (22"x36") and two half size sets (too scale) at each review stage.

For this task and all other tasks contained in this scope, the CONSULTANT will utilize the DEPARTMENT standard drawings, specifications, and design manuals that are current as of the first issuance of the task order scope by the COUNTY to the CONSULTANT.

Task 5

PAVEMENT MARKING AND SIGNING

Final pavement marking/signing plans will be prepared at a scale of 1"=20' unless otherwise agreed upon. The plans will consist of an itemized listing of estimated quantities; typicals for installation (DEPARTMENT typicals may be used where applicable), details showing lane lines, edge lines, stop bars, symbol and word messages and other appropriate markings and sign designation numbers and locations. The plans will include dimensions sufficient for field layout. The *Manual on Uniform Traffic Control Devices (MUTCD): 2009 Edition* and DEPARTMENT details will be incorporated into the plans.

Task 6

TRAFFIC SIGNAL DESIGN

Traffic Signal Design & Plans- The CONSULTANT shall develop traffic signal plans to accommodate necessary signal timing and pedestrian signals and appurtenances and new signal poles (where necessary). The CONSULTANT shall prepare traffic signal design and plans at a scale of 1"=30' as required for the project. Traffic signal plans shall conform to the *Manual on Uniform Traffic Control Devices (MUTCD): 2009 Edition*, DEPARTMENT Standard Drawings, SCDOT Traffic Signal Design Guidelines: 2009 edition and SCDOT's latest Traffic Signal Memos. Pedestrian signal features such as pedestrian signal poles, pedestrian signal heads, push-buttons, signs etc. shall be included as per current SCDOT Traffic Signal Design Guidelines. The plans shall also include pedestrian signal timing parameters. The CONSULTANT shall prepare Special Provisions for Traffic Signal Installation based on current DEPARTMENT guidelines.

Traffic Signal plans shall be prepared for the following signalized intersections:

- Lower Richland Boulevard and Garners Ferry Road - Signal modifications

The COUNTY will provide existing signal timing and plans, as available from the DEPARTMENT.

Traffic signal designs (as required, per signal location) will be coordinated with the DEPARTMENT. The CONSULTANT will be responsible for addressing any comments from the DEPARTMENT pertinent to any traffic signal design reviews.

For this scope of work, services specific to interconnection of signals is not included. Should these services ultimately be required, a contract modification will be negotiated.

Task 7

ROADWAY LIGHTING PLAN

A lighting plan will be provided for the roundabout only and will be prepared at a scale of 1"=20' unless otherwise agreed upon. The lighting plan will also include a photometric analysis. The plans will include dimensions sufficient for field layout. The plan will follow the guidelines as required by *Design Guide for Roundabout Lighting, NCHRP Report 672 Roundabouts: An Information Guide – 2nd edition,* and DEPARTMENT details will be incorporated into the plans.

Task 8

TRANSPORTATION MANAGEMENT PLAN

Work Zone Traffic Control Plans **–** The design and preparation of one set of Work Zone Traffic Control plans will be accomplished for the roadway project. The plans will include a description of the sequential steps to be followed in implementing the plans and will be developed at a scale of 1"= 50', unless otherwise agreed upon. The traffic control plans will include lane closures, traffic control devices, temporary lane markings, and construction signing and sequencing notes. The plans will identify lane widths, transition taper widths, and any geometry necessary to define temporary roadway alignments. Also, the plans will address the type of surface to be used for all temporary roadways. Standard traffic control details will be incorporated into the plans for most work activities, but detailed staging plans will be required where impacts upon the normal traffic flow are significant.

Conceptual traffic control plans will be submitted with the right-of-way plans. Preliminary traffic control plans will be submitted in conjunction with the 95% complete roadway plans, and the final signed and sealed traffic control plans along with quantities will be submitted with the final roadway construction plans.

Transportation Operations Plan **–** The CONSULTANT will prepare a Transportation Operations Plan which will address the traffic operations within the work zone impact area and strategies for minimizing the impact to traffic operations. Some of the Work Zone Management Strategies for use in the Transportation Operations Plan can be found in Table 5B of the DEPARTMENT's *Rule on Work Zone Safety and Mobility.*

Public Information Plan **–** The CONSULTANT will develop a Public Information Plan in conjunction with the COUNTY which will contain strategies for providing information to the public and other impacted entities. Some Public Information strategies which may be used in the development of the Public Information Plan can be found in Table 5C of the DEPARTMENT's *Rule on Work Zone Safety and Mobility*.

Task 9

STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The CONSULTANT will perform the Stormwater Management and Hydraulic Design for the project based on SCDOT Design Guidelines. Design procedures specified by the South Carolina Department of Health and Environmental Control as well as Richland County will be incorporated as needed. Any conflicts in design criteria for the review agencies will be evaluated with the COUNTY to determine the appropriate design procedure for the project. This task includes inspection of the existing drainage structures and roadway drainage.

Roadway Drainage - The roadway drainage design for the project will be completed utilizing design procedures that comply with stormwater management and sediment and erosion control regulations and the NPDES general permit. All drainage calculations will be performed with

methods suggested in the DEPARTMENT's *Requirements for Hydraulic Design Studies* dated May 26, 2009 and be made available to the COUNTY for approval.

The CONSULTANT will perform a field review of the project and a visual inspection of the existing drainage systems within the project area. The inspections performed will not include any material testing or structural analysis. The CONSULTANT will document any irregularities in the existing drainage system and provide the data to the COUNTY. If needed, the CONSULTANT will meet with the COUNTY in the field to review and discuss the condition of the existing drainage system prior to reuse in the proposed design. If additional testing or inspection (video pipe inspection) is recommended, the CONSULTANT will prepare the recommendation and submit to the COUNTY for submittal to the DEPARTMENT.

Roadway drainage design for the project is dictated by the project horizontal and vertical geometry. The design will be terminated at available existing outfall locations or at new locations that will be constructed as a part of the project. Drainage areas will be defined from the existing topography as determined from available mapping and field survey. Design year storms will be established in conjunction with DEPARTMENT guidelines for on-site and off-site runoff. For the design year storm, rainfall intensities appropriate for the project area will be determined and the runoff will be calculated for each drainage area. For each contributing sub-area, a structure will be identified to accept the runoff (inlet, cross-pipe, ditch, etc.). Based on accumulation of runoff, appropriate pipe sizes will be chosen to convey the runoff to the outfall. As part of the project design, alternate pipe designs will be developed as per DEPARTMENT Engineering Directive Memorandum No. 24.

The hydrologic analysis of each watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre- and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with DEPARTMENT and NPDES regulations. If required to control stormwater quality or quantity, water quality or detention basins will be added using a hydraulic routing method. Energy dissipaters may also be utilized based on HEC-14 procedures. Outfall channel protective measures will be based on design methods in HEC-15 and/or HEC-11.

Roadway cross-lines will be designed and analyzed according to the principles given in FHWA's Hydraulic Design Series No. 5. Cross-line pipes will be sized based on DEPARTMENT criteria and possible backwater effects. To reduce backwater, multiple pipes or multiple barrel culverts may be used in lieu of a single structure. Closed storm sewer systems will be analyzed with GEOPAK Drainage or XP-SWMM. Roadway inlets will be located based on FHWA's Urban Drainage Design Manual HEC-22. Any roadway ditches will be sized with Manning's equation, and designed using HEC-15 methodologies.

The storm sewer design for the project will be performed to minimize impacts to existing utilities if possible. Existing utility data will be obtained by the COUNTY from the utility owners within the project area. The CONSULTANT will utilize this data as part of the design for the storm sewer systems. The CONSULTANT will adjust pipe locations and inverts if possible. If conflicts cannot be avoided, the CONSULTANT will evaluate the use of utility conflict boxes or other devices to minimize the need for utility relocations. The CONSULTANT and the COUNTY acknowledge not all utility relocations can be avoided.

The CONSULTANT will evaluate the potential impacts from the project on water quality. If dictated by project permitting, the CONSULTANT will utilize water quality best management practices to provide treatment to pavement runoff prior to entering environmentally sensitive areas.

The location of the storm drainage systems will be shown on the roadway plan sheets or replicated drainage sheets. Additional plan information will include pipe and drainage structure size, location, type and elevation. A Stormwater Management Design Report will be prepared for the project based on SCDOT guidelines and will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

Task 10

SEDIMENT AND EROSION CONTROL/NPDES PERMITTING

Sediment and Erosion Control – The project will include the development of Sediment and Erosion Control Plans as well as the preparation of Supporting Documentation for the Land Disturbance Permit Application.

The erosion control plans will be prepared on replications of the roadway plan sheets at a scale of 1"=20', unless otherwise agreed upon. The erosion control plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment control design will include the temporary placement of sediment ponds, sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the DEPARTMENT's Standard Drawings for Roadway Construction to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed right-of-way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed right-of-way. Quantities for erosion and sediment control items will be calculated based on DEPARTMENT typical drawings. Any required erosion control computations will be completed with approved methods and submitted to the COUNTY.

NPDES Permitting – The project will require the acquisition of a National Pollutant Discharge Elimination System (NPDES) permit for construction activities. The NPDES permit is required by the South Carolina Department of Health and Environmental Control (SCDHEC) for all land disturbing activities in South Carolina.

The CONSULTANT will assist the COUNTY with the development of the NPDES permit application as well as with the submission of any required supporting data. The Stormwater Management Report for the project will contain all supporting data developed by the

CONSULTANT for the project. The CONSULTANT will provide additional calculations and make revisions to the construction plans as required by the permit reviewer. This scope of services does not include redesign of any elements of the roadway design as a result of comments from the NPDES permit reviewer. Any required revisions would be completed under a separate contract modification.

Task 11

GEOTECHNICAL EXPLORATIONS AND ENGINEERING SERVICES

General – The CONSULTANT will perform a preliminary and final geotechnical exploration for embankments, new slopes, storm-drain cross-lines, shared-use path, and shoulder widening. The CONSULTANT will gather samples, conduct tests, and analyze necessary soil and foundation data for embankments and/or new slopes. The results of the sampling, testing, analysis, and recommendations concerning the design will be compiled into preliminary & final reports for submittal to the COUNTY. The following design standards will apply:

- 2007 SCDOT Standard Specifications for Highway Construction
- SCDOT Standard Supplemental Specifications and Special Provisions
- 2019 SCDOT Geotechnical Design Manual (GDM), Version 2.0

Field Exploration (Preliminary Subsurface Exploration) – Prior to beginning the preliminary subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed that COUNTY will obtain permission from property owners for CONSULTANT to perform borings outside of the DEPARTMENT right-of-way.

Preliminary boring locations will be located along or adjacent to the proposed alignments of the roadway, shoulder widening, shared-use path, new slopes, or cross-line pipes within the DEPARTMENT's right-of-way and/or outside the DEPARTMENT's right-of-way. The preliminary boring locations will complement the final boring locations. Boring locations in the final exploration may occur outside and/or inside DEPARTMENT right-of-way. The CONSULTANT shall be responsible for providing notification to utility owners prior to geotechnical field work in order to obtain clearance of utilities and marking of utility lines and services. A request for utility marking will be made to the Statewide Utility One-call Service (SC811) at least 3-days prior to field work. The CONSULTANT will mark utilities that are not marked by SC811 as part of Task 13. Information obtained in Task 13 will be shared with geotechnical staff prior to field exploration work. Proposed boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed preliminary subsurface exploration plans including the anticipated final boring locations to the COUNTY prior to initiation of field work for review and acceptance. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The preliminary subsurface exploration plan will include, as a

minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Embankments and New Slopes – Subsurface Exploration

- Roadway soil test borings will be performed in general accordance with the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that cut and fill sections will be ten (10) feet or less for the roadway improvements as shown on the preliminary plans.
- Six (6) roadway embankment soil test borings (hand auger borings with dynamic cone penetrometers DCP or Standard Penetration Test [SPT] borings) will be performed up to depths ranging from 5 to 30 feet or auger refusal (whichever occurs first) inside the DEPARTMENT right-of-way. The borings will consist of standard penetration testing on 2-foot intervals in the upper 10 feet and on 5-foot intervals thereafter. DCP testing will be performed on approximate 1 foot intervals. Preliminary soil test borings will be spaced approximately 1,000 feet along the new alignment some distance right or left of centerline. For quantity estimation purposes, assume 75 feet of SPT boring for roadway embankments.
- Two (2) bulk samples will be obtained from proposed cut areas for the purposes of remolded shear strength and laboratory classification testing to be used as part of new slope analysis.
- Auger Probes: hollow stem auger drilling will be performed within 5 feet of selected roadway embankment borings in order to obtain bulk samples. Auger probes will be paid per foot. Estimate a total of two (2) auger probe borings to a depth of ten (10) feet each (total of 20 linear feet of auger probe drilling)
- At this time the quantity, location, length and height of the proposed embankment expansion is generally defined.
- Twenty-four hour water measurements will be made in borings outside the existing travel lanes if the borings can be left open safely overnight. If twenty-four hour water level measurements are not practical, time of boring water level measurements will be obtained.

Bore holes will be backfilled with auger cuttings or bentonite chips. Cores holes in the pavement needed for boring access will be backfilled with cold-patch asphalt.

Other Field Testing Items

- Mobilization: Mobilization will be estimated for one truck or ATV-mounted drill rig and will be paid per mile. Unit price includes portal to portal, per rig, with an estimated round trip of 200 miles.

- Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 2 days of lane closures will be necessary to safely access the boring locations. Assumes that all fieldwork can be performed during the daytime.
- Mechanized clearing is anticipated to access embankment borings located off the existing roadway. Assume eight (8) hours of mechanized clearing.
- Pavement coring will be performed through existing asphalt pavement and the resulting core hole will be patched. Thickness shall be reported. Assume six (6) cores.
- Lodging: For quantity estimation purposes, estimate nine (9) man-days for lodging. This estimate assumes a two man crew on the drill rig and one field engineer.
- Meals: For quantity estimation purposes, estimate nine (9) man-days for lodging. This estimate assumes a two man crew on the drill rig and one field engineer/geologist.
- Measurement of hammer energy (ASTM D4633) for each SPT drill rig used shall be performed or have been performed within the last one year prior to mobilization.
- Soil and rock samples shall be stored for seven years or until completion of substructure installation, whichever is earlier
- At the completion of field work, test locations will be surveyed for latitude and longitude, elevation and station as part of Task 2.

Field Engineering – The CONSULTANT will provide oversight of drill rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (ASTM D2488) will be performed by a field engineer and/or field geologist who will have a minimum of 3-years of experience in supervision of field equipment and field personnel.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing for the preliminary exploration will be the following:

- 14 Natural Moisture Content Tests
- 14 Grain Size Distributions with wash No. 200 Sieve
- 14 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
- 2 Remolded Tri-axial Shear Tests (CU) or Direct Shear Tests depending on soil classification
- 2 Standard Proctor Tests.

Preliminary Roadway Geotechnical Engineering Report – The Preliminary Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the preliminary geotechnical subsurface exploration in accordance with the GDM Chapter 7. The preliminary geotechnical engineering report shall be written in general accordance with the GDM Chapter 21. The preliminary report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted at least 7-days prior to the submittal of preliminary right-of-way plans.

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Field Exploration (Final Subsurface Exploration) – Prior to beginning the final subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed that COUNTY will obtain permission from property owners for CONSULTANT to perform borings outside of the DEPARTMENT right-of-way

CONSULTANT will request an updated SC811 ticket prior to starting field work for the final exploration.

Final boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed final subsurface exploration plans to the COUNTY prior to initiation of field work for review and acceptance. The testing locations will be coordinated with the preliminary exploration to avoid testing in the same location. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The final subsurface exploration plan is to include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Embankments, storm-drain cross-lines and New Slopes – Subsurface Exploration

- Roadway soil test borings will be performed as specified in the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that generally cut and fill sections will be ten (10) feet or less in height, as shown on the preliminary plans.
- Final soil test borings will be performed at a frequency of approximately 1,000 feet within the DEPARTMENT's right-of-way or on private property with access permission obtained by the COUNTY. The combined preliminary and final boring spacing should be approximately 500 feet.
- Six (6) roadway soil test borings (hand auger borings with dynamic cone penetrometers (DCP) or Standard Penetration Test [SPT] borings) will be performed up to depths ranging from 5 to 20 feet, or auger refusal (whichever occurs first) inside and/or outside the DEPARTMENT right-of-way. The borings will consist of standard penetration testing on 2-foot intervals in the upper 10 feet and on 5-foot intervals thereafter. . DCP testing will be performed on approximate 1 foot intervals. For quantity estimation purposes, assume 65 feet of SPT boring for roadway embankments.
- The quantity and location of cross-line culverts are not known, but six (6) storm-drain cross-lines are approximated. Twelve (12) cross-line culvert test borings (SPT borings) are proposed up to depths ranging from 10 to 20 feet, or auger refusal (whichever occurs first) inside and/or outside the DEPARTMENT right-of-way. The borings will consist of standard penetration testing on 2-foot intervals in the upper 10 feet and on 5-foot intervals thereafter. For quantity estimation purposes, assume 180 feet of SPT boring for cross-line culverts.

- Two (2) undisturbed samples (Shelby Tubes) may be obtained if a soft clay layer is identified.
- Auger Probes: Mud rotary drilling will be performed within 5 feet of selected roadway embankment borings in order to obtain undisturbed soil samples. Auger probes will be paid per foot. Estimate a total of two (2) auger probe borings to a depth of twenty (20) feet each (total of 40 linear feet of auger probe drilling)

Other Field Testing Items

- Mobilization: Mobilization will be estimated for one truck or ATV-mounted drill rig and will be paid per mile. Unit price includes portal to portal, per rig, with an estimated round trip of 200 miles.
- Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 2 days of lane closures will be necessary. Assumes that all fieldwork can be performed during the daytime.
- Mechanized clearing is anticipated to access embankment borings located off the existing roadway. Assume eight (8) hours of mechanized clearing.
- Pavement coring will be performed through existing asphalt pavement and the resulting core hole will be patched. Thickness shall be reported. Assume twelve (12) cores.
- Lodging: For quantity estimation purposes, estimate twelve (12) man-days for lodging. This estimate assumes a two man crew on the drill rig and one field engineer.
- Meals: For quantity estimation purposes, estimate twelve (12) man-days for lodging. This estimate assumes a two man crew on the drill rig and one field engineer/geologist.
- Measurement of hammer energy (ASTM D4633) for each SPT drill rig used shall be performed or have been performed within the last one year prior to mobilization.
- Soil and rock samples shall be stored for seven years or until completion of substructure installation, whichever is earlier
- At the completion of field work, test locations will be surveyed for latitude and longitude, elevation and station as part of Task 2.

Field Engineering – The CONSULTANT will provide oversight of hand auger borings, drill rig and cone rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (ASTM 2488) will be performed by a field engineer and/or field geologist who will have a minimum of 3-years of experience in supervision of field equipment and field personnel.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing may include, as estimate, the following:

- 26 Natural Moisture Content Tests
- 26 Grain Size Distributions with wash No. 200 Sieve
- 26 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
- 1 Consolidation test

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- 2 tri-axial shear tests on Shelby tube samples

Final Roadway Geotechnical Engineering Report – The Final Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the final geotechnical subsurface exploration in accordance with the GDM Chapter 7. The final geotechnical engineering report will be written in general accordance with the GDM Chapter 21. The final report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted with the Preliminary Construction Plans.

The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

This scope of services does not include any work or activities associated with geotechnical investigations for the development of pavement designs. The COUNTY will provide approved pavement design(s) to the CONSULTANT.

Task 12

ROADWAY STRUCTURES DESIGN AND PLANS

General – This task includes design and plan development criteria for potential retaining walls and culvert extensions that may be required due to the proposed improvements throughout the project corridor. There will be no aesthetic requirements for the retaining walls or culverts. Location and quantities of any temporary shoring required for roadway construction will be included in the roadway construction plans; the shoring design and detailing is the responsibility of the contractor. The following design and construction specifications will be used in the design and preparation of retaining wall and culvert plans:

- The 2007 edition of the DEPARTMENT's *Standard Specifications for Highway Construction.*
- AASHTO's *LRFD Bridge Design Specifications*, 6th edition (2012) and the latest Interim Specifications in place at the time of contract execution.
- AASHTO's *LRFD Bridge Construction Specifications,* 3rd edition (2010) and the latest Interim Specifications in place at the time of contract execution.
- The DEPARTMENT's *Geotechnical Design Manual, v. 1.1, 2010.*
- Supplemental and Technical Supplemental Specifications as already prepared by the DEPARTMENT for design and/or construction.
- DEPARTMENT's Standard Drawings for Road and Bridge Construction.
- DEPARTMENT's *Highway Design Manual.*
- DEPARTMENT's *Road Design Plan Preparation Guide.*
- AASHTO "Guide Specifications" as may be applicable to the project.

Retaining Wall Design and Plans – A retaining wall(s) may be required. The roadway retaining walls are assumed to be cast-in-place, reinforced brick masonry, and/or keystone retaining walls and will be represented in the plans by plan views, envelope drawings, and associated notes and details. It is assumed that approximately 200 linear feet of retaining wall between STA 101-50 RT and STA 103+50 RT from 2' to 3'high.

Noise wall design is excluded from this scope of services.

Task 13

SUBSURFACE UTILITIES ENGINEERING (SUE)

Within 45 days of Notice to Proceed for the contract, the CONSULTANT will provide the COUNTY with a recommendation as to the extent of SUE services to be provided. This should include as much information as can be assembled on utility type, approximate location, owner, and material type. This information will be used to specifically define the limits of the SUE work to be performed.

The CONSULTANT shall perform work in two phases. The first phase consists of utility research (Quality Level D) and designating services (Quality Level B and C). For the purpose of this agreement, "designate" shall be defined as indicating (by marking) the presence and approximate horizontal position of the subsurface utilities by the use of geophysical prospecting techniques. The second phase consists of test hole services (Quality Level A). For the purpose of this agreement, "locate" means to obtain the accurate horizontal and vertical position of the subsurface utilities by excavating a test hole. The CONSULTANT shall provide these services as an aide in the design of right-of-way and construction plans for the project.

Unless specifically stated otherwise, the CONSULTANT shall adhere to the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

Designating shall be estimated on a cost per linear foot basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Locating shall be estimated on a per each basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Traffic control shall be estimated on a per day basis and shown separately. Direct charges for mileage, meals, lodging, and reproductions shall be shown separately. No separate payment will be made for mobilization and should be included in the per linear foot or per each price for designating or locating.

Designating –

A. In the performing of designating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level B information for approximately 33,800 LF of underground utilities.
2. Provide all equipment, personnel and supplies necessary for the completion of Quality Level C information for approximately 5,900 LF of underground utilities.
3. Provide all equipment, personnel and supplies necessary for the completion of Quality Level D information for approximately 5,900 LF of underground utilities.
4. Provide all equipment, personnel, and supplies necessary for the accurate recording of information for approximately 65 power poles carrying aerial utilities.
5. Provide all equipment, personnel, and supplies necessary for the accurate recording of information for approximately 20 sanitary sewer manholes.
6. Conduct appropriate records and as-built plans research and investigate site conditions. Digital copies of records and as-built plans research to be provided to COUNTY.
7. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of way.
8. Designate the approximate horizontal position of existing utilities by paint markings or pin flags in accordance with the APWA Uniform Color Code scheme along the utility and at all bends in the line in order to establish the trend of the line. All utilities shall be designated as well as their corresponding lateral lines up to the point of distribution, existing right-of-way limits, or whichever is specifically requested and scoped for each individual project.
9. Survey designating marks, which shall be referenced to project control provided by the surveyor of record.
10. Draft survey information using SCDOT CADD guidelines for Subsurface Utility Engineering consultants (latest version).
11. Final review and seal of all appropriate work by a professional engineer and/or land surveyor licensed in South Carolina in responsible charge of the project.

B. In the performing of designating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

The above quantities are based on the Level B designation assuming 4,300 feet along Lower Richland Boulevard beginning 400 feet south of the intersection with Garners Ferry Road and ending and 400 feet north of the Rabbit Run intersection. Quantities also include 400 feet along Garners Ferry Road west of the intersection of Lower Richland Boulevard and 400 feet east of the intersection with Lower Richland Boulevard. Quantities also include 400 feet along Rabbit Run east of the Lower Richland Boulevard intersection and 400 feet west of the Lower Richland Boulevard intersection. It is assumed that there will be 6 designated utilities along Lower Richland Boulevard, 7 designated utilities along Garners Ferry Road, 3 designated utilities along Rabbit Run. The CONSULTANT will notify the COUNTY immediately should additional SUE be recommended. The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

Locating –

No locating services (Level A test holes) are included as a direct service associated with this scope of work. Should locating services be deemed necessary during the design and utility coordination services, these services shall be paid for through the project contingency budget on a per Level A test hole cost. CONSULTANT to provide a per test hole cost for future use, should locating services be needed. The per test hole cost will be based on performing a minimum of 10 test holes in a single mobilization.

The services to be conducted by the CONSULTANT, in the performance of locating services, only as directed and by prior approval by the COUNTY, include the following:

A. In the performance of locating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level A test holes.
2. Conduct appropriate records and as-built research and investigate site conditions. All records and as-built research to be made available to the COUNTY.
3. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of-way.
4. Perform electronic or ground penetrating radar sweep of the proposed conflict and other procedures necessary to adequately "set-up" the test hole.
5. Excavate test holes to expose the utility to be measured in such a manner that insures the safety of excavation and the integrity of the utility to be measured. In performing such excavations, the CONSULTANT shall comply with all applicable utility damage prevention laws. The CONSULTANT shall schedule and coordinate with the utility companies and their inspectors, as required, and shall be responsible for any damage to the utility during excavation.
6. Provide notification to the COUNTY concerning 1) the horizontal and vertical location of the top and/or bottom of the utility referenced to the project survey datum; 2) the elevation of the existing grade over the utility at a test hole referenced to the project survey datum; 3) the estimated outside diameter of the utility and configuration of non-encased, multi-conduit systems; 4) the utility structure material composition, when reasonably ascertainable; 5) the benchmarks and/or project survey data used to determine elevations; 6) the paving thickness and type, where applicable; 7) the general soil type and site conditions; and 8) such other pertinent information as is reasonable ascertainable from each test hole site.
7. When an attempt to locate a utility line over an area where SUE was performed does not provide valid vertical data, the test hole shall not be reimbursable by the COUNTY. In the following cases, test holes shall be reimbursed by the COUNTY regardless of obtaining valid vertical data:
    a. Utility lines buried in materials that cannot be removed by vacuum techniques other than duct banks,

The CONSULTANT to provide a separate unit cost for "test holes attempted" and any test holes that do not provide valid vertical data, shall be paid at this rate.

8. Provide permanent restoration of pavement within the limits of the original cut. When test holes are excavated in areas other than roadway pavement, these disturbed areas shall be restored as nearly as possible to the condition that existed prior to the excavation.
9. Draft horizontal location and, if applicable, profile view of the utility on the project plans using CADD standards as outlined above. A station and offset distance and/or northing and easting coordinates (State Plane) with elevations shall be provided with each test hole.
10. Test hole information shall be formatted and presented on CONSULTANT's certification form and listed in a test hole data summary sheet.
11. Certification form shall be reviewed and sealed by a professional engineer and/or land surveyor licensed in South Carolina and in responsible charge of the project.

B. In the performance of locating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

Task 14

UTILITY COORDINATION ASSISTANCE

The CONSULTANT shall coordinate the project development with the COUNTY's Utility Coordinator. Coordination shall involve inviting the COUNTY's Utility Coordinator to necessary project meetings, providing updates to schedule, and providing project files as requested by COUNTY's Utility Coordinator. The CONSULTANT will provide electronic copies and pdf's of the Survey and Subsurface Utility Engineering as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The COUNTY'S Utility Coordinator will handle coordination of the project development with utility companies. The CONSULTANT will anticipate approximately () meetings for Utility Coordination.

Task 15

CONSTRUCTION PHASE SERVICES

Pre-Construction/Partnering Conference – The CONSULTANT will attend the Pre-Construction/Partnering Conference and respond to questions by the CONTRACTOR pertinent to the design and proposed construction methodology. Assume one Pre-Construction/Partnering Conference.

Construction Phase Project Meetings – The CONSULTANT will attend meetings with the COUNTY to discuss construction issues as needed during the construction of this project. Assume 18 meetings. The CONSULTANT will not be responsible for agendas, minutes, or other materials for this task.

Construction Phase Assistance - The CONSULTANT will assist COUNTY personnel during the construction phase when problems or questions arise relating to the design and proposed construction methodology. Assume 6 hours per month for project construction duration of 18 months.

Construction Revisions – The CONSULTANT will make necessary revisions to construction plans that arise during the construction phase of the project. Assume 4 construction revisions.

Shop Plans and Working Drawings Review – It is assumed no shop plans and working drawings reviews would be required.

Geotechnical Design and Construction Services – The CONSULTANT shall also provide geotechnical construction engineering services which shall include the following items:

- General embankment construction troubleshooting
- Written evaluation of soil strength testing on borrow excavation materials
- The scope of services shall be conducted according to the DEPARTMENT's Standard Specifications, supplemental specifications, and/or plan notes.

The CONSULTANT should anticipate 40 total hours for this task.

As-Built Plans – The CONSULTANT will not be responsible for the development of As-Built Plans for this project.

Services Not Provided

Services not provided by the CONSULTANT include, but are not limited to, the following:

- Electrical plans
- Landscaping and irrigation plans
- Pavement coring or pavement design
- Environmental Assessment Documentation
- No CLOMR/LOMR

- Falling Weight Deflectometer (FWD) testing
- Video Pipe Inspection
- The CONSULTANT shall not be the "responsible engineer" referenced IN 2009-04 who evaluates the structural condition and performs the preliminary inspection of existing pipes and culverts to determine if they can be retained. The DEPARTMENT shall determine if existing pipes and culverts are to be retained due to structural conditions. The CONSULTANT will indicate the retention/extension of all existing pipes/culverts which meet the hydraulic requirements unless otherwise directed by the DEPARTMENT
- Sight-specific Response Analysis study
- Utility relocation design and plans
- Right-of-way acquisition, exhibits, negotiations, or appraisals
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Construction Engineering and Inspection (CEI)
- Location of water and sewer utility services for each utility customer in the project area.
- All other services not specifically included in this scope of work

Services of the COUNTY

The COUNTY agrees to provide to the CONSULTANT, and at no cost to the CONSULTANT, the following upon request:

- Access to and use of all reports, data and information in possession of the COUNTY which may prove pertinent to the work set forth herein.
- Existing Policies and Procedures of the COUNTY with reference to geometrics, standards, specifications and methods pertaining to all phases of the CONSULTANT's work.
- Eminent Domain advertisement notice.
- Coordinate, advertise, fabricate and erect signs, and approve location for Public Meeting.
- Provide security guard for the public information meeting.
- Payment of fees required by state and federal review/approval agencies.
- Final processing of JD and Wetlands Permit and coordination with the agencies.
- Existing roadway plans.
- Base mapping for Lower Richland Blvd. The CONSULTANT will perform check cross sections to verify the data provided by the COUNTY.
- Approved Design Criteria.
- Preliminary Plans and associated CADD files.

- Provide existing signalized intersection coordination timing(s), existing interconnect plan, and location of master, if applicable.
- Drainage Summary Report.
- Provide existing utility data provided by Utility Owners within the project area
- Final moving, demolition and reset items list. An initial list will be provided by the CONSULTANT.
- Contract documents (project specific special provisions to be supplied by CONSULTANT)
- Pavement design.
- Right-of-Way acquisition.
- Right-of-Way verification.
- As-built roadway plans.
- Construction Engineering and Inspection (CEI)

Project Deliverables

The CONSULTANT will submit the deliverable items shown below within the time allotted for each phase of work. Delivery may not be in the order shown.

- Monthly status updates
- Meeting agendas and minutes
- Attendance at one (1) public meeting
- Public Meeting displays
- PDF versions of the Public Meeting displays
- Recommendation for extent of SUE services – 45 days from NTP
- Full size color plots of U-sheets along with Microstation/PDF electronic files
- Preliminary Right-of-Way Plans
- Final Right-of-Way Plans
- Final Right-of-Way Microstation files
- Right-of-Way Plans stage construction cost estimates
- Preliminary and final traffic signal design
- Transportation Operations Plan and Public Information Plan
- Stormwater Management Report
- Preliminary Roadway Construction Plans
- Final Roadway Construction Plans, project specific specifications, and Engineer's construction cost estimate
- NPDES permit application/Notice of Intent
- Erosion control computations, if necessary
- Preliminary and final geotechnical roadway reports

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

SUE	2	months from NTP
Preliminary Right-of-Way Plans	5	months from NTP
assume COUNTY review (1 month)	6	months from NTP
Final Right-of-Way Plans	8	months from NTP
assume COUNTY review (1 month)	9	months from NTP
Preliminary Construction Plans	11	months from NTP
assume COUNTY review (1 month)	12	months from NTP
assume SCDOT review (1 month)	13	months from NTP
Final Construction Plans	14	months from NTP

The submittal dates include time for COUNTY/DEPARTMENT review as noted. Per the Intergovernmental Agreement between the COUNTY and the DEPARTMENT, the DEPARTMENT has 25 business days for their review.

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE
McNulty Street (S-1362) Improvements
BLYTHEWOOD ALTERNATIVE PROJECTS

Introduction

Parrish and Partners, LLC (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for improvements to McNulty Street in the town limits of Blythewood (TOWN) in Richland County, South Carolina. McNulty Street is considered an Urban Local between Blythewood Road and US 21 (Main Street) by the South Carolina Department of Transportation (DEPARTMENT). The DEPARTMENT holds all public rights-of-way adjacent to the roadway between Boney Road and US 21 (Main Street) and assumes all maintenance responsibilities for those said rights-of-way. Richland County (COUNTY) holds a majority of the public rights-of-way adjacent to McNulty Street between Blythewood Road and Boney Road, while a small portion (approaching and at the intersection of Boney Road) is privately held.

The project will consist of improvements to the existing roadway between US 21 (Main St.) and Blythewood Road (S-59). Bicycle and pedestrian accommodations throughout the corridor are to be included. A single lane roundabout is also proposed to be constructed with this project at, or near, the intersection of McNulty Street and Boney Road in the approximate center of the project. The proposed improvements assume the construction of a curb and gutter roadway with closed drainage system within the termini of the project.

Project Location - The project is located in northern Richland County located in the Town of Blythewood.

Existing Conditions – The proposed McNulty Street Improvements project begins at its intersection with US-21 (Main Street) and extends 0.27 miles west to the intersection with Boney Road. This portion of the project is owned and maintained by the DEPARTMENT. From Boney Road, McNulty continues west southwest for approximately 900 feet. This portion of McNulty is owned by the COUNTY. From this point, McNulty intersects with a privately-owned paved connection with Blythewood Road between the McDonald's and Carolina Wings.

The current posted speed along McNulty Street is 25 mph. McNulty Street is currently a 2-lane facility with sections of valley gutter, shoulder section with roadside ditches, and curb and gutter.

Proposed Project Scope–Final Construction plans will be developed to reflect the implementation of the improvements along McNulty Street to include the following;

- 20-25 mph design speed.
- 11-foot wide travel lanes.
- The addition of bicycle and pedestrian accommodations along the length of the roadway. Bicycle accommodations to be provided via on-street bike lanes. Sidewalks are proposed to be constructed directly behind the curb and gutter.

- Single-lane roundabout at, or near, the intersection of McNulty Street and Boney Road.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 - Project Management
Task 2 - Environmental / Public Meeting
Task 3 – Field Surveys
Task 4 - Roadway Design
Task 5 - Pavement Marking and Signing Design
Task 6 – Lighting Plan
Task 7 - Transportation Management Plan
Task 8 - Stormwater Management / Hydraulic Design
Task 9 - Sediment & Erosion Control / NPDES Permitting
Task 10 - Geotechnical Investigations and Engineering Services
Task 11 - Subsurface Utilities Engineering (SUE)
Task 12 - Utility Coordination Assistance
Task 13 - Construction Phase Services

Quality Control

The CONSULTANT shall implement all necessary quality control measures to produce plans and reports that conform to COUNTY guidelines and standards. Prior to submittal to the COUNTY, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Sub-consultants for this project will be required to implement and maintain a stringent quality control program as well. The COUNTY reserves the right to request QA/QC documents (red-lines, checklists, etc) from the CONSULTANT with project deliverables.

Task 1

PROJECT MANAGEMENT

The CONSULTANT shall institute a program for conformance with COUNTY requirements for monitoring and controlling project engineering budget, schedule and invoicing procedures. The CONSULTANT's sub-consultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the COUNTY. Included in management of the project will be:

- Project meetings between the COUNTY, DEPARTMENT, TOWN and CONSULTANT for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the COUNTY.

- The CONSULTANT will prepare meeting agenda and meeting materials as well as record the minutes of each meeting in which it participates and distribute to the appropriate COUNTY personnel.

- Prepare monthly invoices, status reports, and schedule updates. Assume an 8 month design schedule which will impact the duration of preparing invoices, status reports, and schedule updates.

- The CONSULTANT will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume an 8 month design schedule.

- The CONSULTANT will include the COUNTY in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

The CONSULTANT will attend meetings with the COUNTY, TOWN, DEPARTMENT and other stakeholders affected by this project in order to incorporate the needs and desires of these organizations into the decision-making process. It is assumed that the CONSULTANT will attend 10 project meetings (1 each month during the design services) and two (2) additional review coordination meetings with the DEPARTMENT, COUNTY and the TOWN, as applicable. The CONSULTANT will be in attendance at these meetings and will prepare all necessary display materials, meeting agendas and minutes.

Task 2

ENVIRONMENTAL /PUBLIC MEETING

As there are no wetlands adjacent to the project site, nor those that would be directly affected by the project, no wetland permitting is assumed necessary. No environmental documentation or reports are assumed for this scope of services.

Public Coordination/Public Meeting – The CONSULTANT, with input from the COUNTY, shall prepare related public meeting materials, (deliverables would include plan view displays, project overview maps, typical sections, right of way data tables, etc). The CONSULTANT shall provide draft copies (hard copy and pdf) of all display materials to be used in public meetings to the COUNTY for review, a minimum of 15 business days prior to the meeting. The CONSULTANT will also provide the COUNTY with PDF versions of the displays for the public information meeting one week prior to the meeting for posting on the COUNTY website. The CONSULTANT should assume one (1) meeting with COUNTY staff as a planning session to review the public meeting plan. The meeting would be assumed to be held in conjunction with Preliminary Construction Plans.

The COUNTY may provide security guards from local law enforcement agencies or private security firms for all public meetings. The COUNTY will also be responsible for fabricating and erecting signs to be placed on the projects as well as hard copies of all handouts, comment forms, sign-in sheets, etc. The COUNTY will also procure and bring all other items not specifically mentioned below to be provided by CONSULTANT.

The public meeting is planned as an open-house style meeting. The COUNTY may conduct a brief, formal presentation at some time during the public information meeting. The CONSULTANT shall attend the scheduled public meeting and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The CONSULTANT's role at this meeting is to discuss the project design and impacts with the public in attendance. The CONSULTANT will be responsible for bringing hard copies of the project displays (plan view, typical sections, overview boards, etc) as well as display boards (typical black, foam boards; "GATOR" board, or equivalent) to the meeting; assume three (3) copies of each display to be provided at the meeting. The CONSULTANT will also procure and bring all easels necessary for project display boards.

The public meeting will tentatively be scheduled for 5:00 pm to 7:00 pm on a Tuesday or Thursday at a venue near the project corridor or along the corridor. The COUNTY will be responsible for procuring the venue and determination of date and time.

Upon conclusion of the public comment period, the CONSULTANT will prepare a public meeting summary to include a summary of the public comments received. The CONSULTANT will also prepare and provide a document (Word or Excel), in matrix format, which includes the public comment, citizen name and contact info, and space for COUNTY response to each comment. The COUNTY will be responsible for development of all responses and individual response letters.

Assumptions

1. One (1) public information meeting will be scheduled prior to finalizing Construction plans.

Deliverables

1. Attendance at one (1) Public Meeting and preparation of all meeting materials.
2. Public meeting summary

Task 3

FIELD SURVEYS

Aerial Photography and LiDAR Mapping – The CONSULTANT secured all necessary Aerial Photography and LiDAR Mapping surveys for use during the environmental studies and preparation of the Roadway Plans during the 30% plan preparation stage. Mapping surveys were prepared to the contour accuracy of 0.5 feet (1-foot contour interval). The aerial LiDAR mapping will be prepared for use in plans developed to a horizontal scale of 1" = 20'.

Field annotation of supplementary topographic surveys, and verification of mapping accuracy will be performed by the CONSULTANT.

Control Surveys – The CONSULTANT will establish the Primary, Main and Secondary Survey Control Points to be used during the supplemental topographic surveys and the construction of this project. All surveys will be in accordance with SCDOT's *Pre-Construction Survey Manual* dated October 2012. The CONSULTANT will notify the COUNTY of any required temporary traffic control measures (e.g. shoulder/lane closures, etc.) within seven (7) days before such closure due to survey activities.

Control survey and information provided on plans shall be consistent with SCDOT Preconstruction Design Memorandum 08 (PCDM-08).

Design Surveys **–** Additional field surveys will be performed by the CONSULTANT as necessary during the design phases of the project. All surveys conducted should be adequate for the design, permitting and construction of the project.

Supplemental field surveys will be conducted by the CONSULTANT to obtain all topographic and planimetric data within the project corridor. CONSULTANT to assume 12 hours for supplemental surveys.

Field surveys will be performed by the CONSULTANT to establish existing rights-of-way and to locate frontal property boundary monumentation for developing property maps per the DEPARTMENT format.

Property owner data will be obtained from county records (plat and deed research) for use in the property surveys and to incorporate property ownership data into the Preliminary Construction Plans. The property monumentation and property owner data will be used to develop a closed out property drawing.

Level runs between existing primary vertical control points will be performed to establish additional benchmarks to be referenced on the contract drawings.

Periodic cross-sections of the existing pavement and ground surface will be performed for aerial LiDAR verification. Periodic sections should be performed at approximately 750 foot intervals (maximum) along the proposed project route. Assume four (4) cross sections to be performed. The CONSULTANT should bring to the attention of the COUNTY in the instance any

discrepancies found between field surveyed cross-sections (pavements) and those as shown in the aerial survey provided by LIDAR (under previous contract).

Survey data will be shown on Reference Data Sheets in the '5 series sheets' of the plans due to lack of room on the 1"=20' scale plan sheets.

The CONSULTANT will locate all drainage, stormwater, sanitary sewer structures and above ground utility structures within 100 ft. of the proposed roadway alignments. For drainage, stormwater, sanitary sewer structures, the pipe size, pipe type, structure type and invert / rim elevations shall be obtained. The CONSULTANT will locate and survey the next connecting structure (if outside the 100 ft. area) in order to determine grades / depths of existing facilities.

The CONSULTANT will horizontally and vertically locate all potential outfall drainage ditches and streams. At these outfalls, cross sections will be obtained 400 feet upstream and downstream at 50-foot intervals, or as necessary to define the channel alignment, from the proposed roadway alignment. All cross sections will be extended from bank to bank of the existing channel plus 10 feet on either side. Assume 4 outfalls for survey.

The CONSULTANT shall update the existing project DTM / topo files (as prepared under previous contract by CONSULTANT) with all supplemental field survey data as shown above.

The CONSULTANT will stake and obtain boring elevations for all geotechnical borings performed on the project by the CONSULTANT.

The CONSULTANT will stake the proposed and present rights-of-way for approximately 50% of the total parcels to be affected, upon direction – assume 12 tracts for this scope of work. Right-of-way staking will consist of placing 36-inch stakes (or paint in paved areas) at all proposed right-of-way breaks, sight triangles and spaced at 100-foot intervals in tangents and 50-foot intervals in curves. These stakes shall be placed after Final Right-of-Way Plans have been developed and only after the Project Manager contacts the CONSULTANT when a property owner requests the right-of-way to be staked.

All right-of-way staking services will be separate from the lump sum amount for Task 3 and will be invoiced on a cost plus, fixed not to exceed amount, only when authorized by the COUNTY.

The CONSULTANT should assume multiple trips as the staking may involve several parcels.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site. The CONSULTANT will not be responsible for obtaining permissions from property owners for surveys outside of the existing Right-of-Way.

Task 4

ROADWAY DESIGN

For this task and all other tasks contained in this scope, the CONSULTANT will utilize the DEPARTMENT standard drawings, specifications, and design manuals that are current as of the first issuance of the task order scope by the COUNTY to the CONSULTANT. For the design of the single-lane roundabout at the intersection of McNulty Street and Boney Road, the CONSULTANT will also utilize the *NCHRP Report 672, Roundabouts: An Information Guide - 2nd edition*.

Traffic Study & Analysis – The Traffic Study & Analysis was developed as part of the 30% design phase of this project by the CONSULTANT.

Preliminary Roadway Plans – The Preliminary Roadway Plans were developed as part of the 30% design phase of this project by the CONSULTANT.

Roundabout Design

A single-lane roundabout at, or near the intersection of McNulty Street and Boney Road is proposed and reflected in the Preliminary Plans The CONSULTANT shall progress the roundabout design by evaluating the roundabout location and / or type/configuration and associated impacts. The proposed roundabout and associated improvements must have no impacts to the Bethel Baptist Church property at the intersection of McNulty Street and Boney Road.

Work associated with the refinement of the roundabout design should begin immediately upon Notice to Proceed in order to expedite the project and discussion with the COUNTY and stakeholders. CONSULTANT should assume one (1) meeting with stakeholders associated with the roundabout. It is assumed that the roundabout design will need to include appropriate turning templates and fastest path exhibits when submitting to SCDOT for encroachment permit review.

Final Roadway Design and Plans

Roadway Construction Plans – The construction plans will be a continuation of Preliminary Plans (30% complete) and will address comments from the COUNTY review of the preliminary plans.

Construction Plans will be developed in general accordance with the DEPARTMENT's requirements, with the following exceptions:

- Moving Items will only be shown on the Moving Items Sheet.
- The owner's name and any permissions will not be shown on the Plan Sheets. The only property information shown on the plan sheets will be the Tract Number.

The plans will be reviewed by DEPARTMENT District Encroachment personnel.

The CONSULTANT will be responsible for providing an initial list of moving and demolition items to the COUNTY for use by the right-of-way agent.

The CONSULTANT will incorporate information obtained during the SUE phase of the project.

The CONSULTANT will provide curb grades around side roads and major driveway radii, where applicable.

The CONSULTANT will establish horizontal and vertical alignments along with cross sections, as needed, in order to study the re-connection of driveways to the roadways. This design data will be shown in the plans in order to convey the extent/impact of the re-configuration of driveways necessary to provide access to the property. Driveways that are level with the roadway will not have a horizontal or vertical alignment set, but will be handled by only showing their connection in the roadway cross section and plan view based on the roadway cross section.

Plan and profile sheets, as necessary, will show information necessary to permit construction stakeout and to indicate and delineate details necessary for construction.

The CONSULTANT will attend the Construction Plans Design Field Review with the COUNTY to review the project design in the field.

A set of Preliminary Construction Plans (95% complete) will be submitted to the COUNTY for review prior to final plan delivery. The preliminary cost estimate will be updated by the CONSULTANT and submitted with the Preliminary Construction Plans for use by the COUNTY.

On or before the contract completion date, the CONSULTANT will deliver to the COUNTY one complete set of Final Construction Plans, an Engineer's Estimate, and "Project Specific" Special Provisions. See Project Special Provisions and Engineer's Estimate for the description of the Engineer's Estimate and "Project Specific" Special Provisions.

The CONSULTANT will provide one half-size (to scale) hard copy (12"x18"), a full size PDF (22"x36") and CADD files (MicroStation format) at each review stage. Additionally, the CONSULTANT will provide one full size (22"x36") set with Final Construction Plan submittals.

Project Special Provisions and Engineer's Estimate – The CONSULTANT will prepare all "Project Specific" Special Provisions and include them in the format compatible with the DEPARTMENT Construction Administration Section. The CONSULTANT will work closely with COUNTY personnel in the COUNTY'S development of the construction document package.

Also, utilizing recent bid data from similar projects in the area, the CONSULTANT will prepare an Engineer's Estimate for construction of this project. The estimate will be based on the final summary of quantities. The CONSULTANT will attend a meeting with the COUNTY to reconcile differences between the CONSULTANT's estimate and the COUNTY's estimate.

Task 5

PAVEMENT MARKING AND SIGNING

Final pavement marking/signing plans will be prepared at a scale of 1"=20' unless otherwise agreed upon. The plans will consist of an itemized listing of estimated quantities; typicals for installation (DEPARTMENT typicals may be used where applicable), details showing lane lines, edge lines, stop bars, symbol and word messages and other appropriate markings and sign designation numbers and locations. The plans will include dimensions sufficient for field layout. The *Manual on Uniform Traffic Control Devices (MUTCD): 2009 Edition* and DEPARTMENT details will be incorporated into the plans.

Task 6

LIGHTING PLAN

A lighting plan will be provided for the roundabout (and approaches, as applicable) and will be prepared at a scale of 1"=20' unless otherwise agreed upon. The lighting plan will also include a photometric analysis. The plans will include dimensions sufficient for field layout. All design aspects will follow the guidelines as required by the *Design Guide for Roundabout Lighting, NCHRP Report 672 Roundabouts: An Information Guide – 2nd edition,* and DEPARTMENT details which will be incorporated into the plans. Lighting design and plan development (including photometric analysis) should not be started until provided direction from the COUNTY to proceed with these services.

Task 7

TRANSPORTATION MANAGEMENT PLAN

Work Zone Traffic Control Plans **–** The design and preparation of one set of Work Zone Traffic Control plans will be accomplished for the roadway project. The plans will include a description of the sequential steps to be followed in implementing the plans, and will be developed at a scale of 1"= 50', unless otherwise agreed upon. The traffic control plans will include lane closures, traffic control devices, temporary lane markings, and construction signing and sequencing notes. The plans will identify lane widths, transition taper widths, and any geometry necessary to define temporary roadway alignments. Also, the plans will address the type of surface to be used for all temporary roadways. Standard traffic control details will be incorporated into the plans for most work activities, but detailed staging plans will be required where impacts upon the normal traffic flow are significant.

Preliminary traffic control plans (and associated pay items and quantities) will be submitted in conjunction with the 95% complete roadway plans, and the final signed and sealed traffic control plans, along with quantities, will be submitted with the final roadway construction plans.

The McNulty Street Improvements project should be assumed an ***"Intermediate"*** project per the DEPARTMENT's *Rule on Work Zone Safety and Mobility.*

Task 8

STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The CONSULTANT conducted preliminary roadway drainage design, stormwater management, and hydraulic design as part of the 30% preliminary design. The task included drainage field reviews/data acquisition, development of drainage design criteria, preliminary major cross-line studies (major cross-lines are designated as cross-line structures including and larger than 48" pipes), preliminary outfall studies, and preliminary studies for FEMA floodplains and jurisdictional stream crossings, if applicable, and preparation of a Preliminary Drainage Summary Report. Detailed ditch design and closed-system stormwater design was not included in the previous scope of work. Additionally, field surveys of drainage structures / cross-lines, etc. were not performed as part of the previous scope of work.

The CONSULTANT will perform the Stormwater Management and Hydraulic Design for the project based on SCDOT Design Guidelines. Design procedures specified by the South Carolina Department of Health and Environmental Control as well as Richland County will be incorporated as needed. Any conflicts in design criteria for the review agencies will be evaluated with the COUNTY to determine the appropriate design procedure for the project. This task includes inspection of the existing drainage structures and roadway drainage.

Roadway Drainage - The roadway drainage design for the project will be completed utilizing design procedures that comply with stormwater management and sediment and erosion control regulations and the NPDES general permit. All drainage calculations will be performed with methods suggested in the DEPARTMENT's *Requirements for Hydraulic Design Studies* dated May 26, 2009 and be made available to the COUNTY for approval.

The CONSULTANT will perform a field review of the project and a visual inspection of the existing drainage systems within the project area. The inspections performed will not include any material testing or structural analysis. The CONSULTANT will document any irregularities in the existing drainage system and provide the data to the COUNTY. If needed, the CONSULTANT will meet with the COUNTY in the field to review and discuss the condition of the existing drainage system prior to reuse in the proposed design. If additional testing or inspection (video pipe inspection) is recommended, the CONSULTANT will prepare the recommendation and submit to the COUNTY for submittal to the DEPARTMENT.

Roadway drainage design for the project is dictated by the project horizontal and vertical geometry. The design will be terminated at available existing outfall locations or at new locations that will

be constructed as a part of the project. Drainage areas will be defined from the existing topography as determined from available mapping and field survey. Design year storms will be established in conjunction with DEPARTMENT guidelines for on-site and off-site runoff. For the design year storm, rainfall intensities appropriate for the project area will be determined and the runoff will be calculated for each drainage area. For each contributing sub-area, a structure will be identified to accept the runoff (inlet, cross-pipe, ditch, etc.). Based on accumulation of runoff, appropriate pipe sizes will be chosen to convey the runoff to the outfall. As part of the project design, alternate pipe designs will be developed as per DEPARTMENT Engineering Directive Memorandum No. 24.

The hydrologic analysis of each watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre- and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with DEPARTMENT and NPDES regulations. If required to control stormwater quality or quantity, water quality or detention basins will be added using a hydraulic routing method. Energy dissipaters may also be utilized based on HEC-14 procedures. Outfall channel protective measures will be based on design methods in HEC-15 and/or HEC-11.

Roadway cross-lines will be designed and analyzed according to the principles given in FHWA's Hydraulic Design Series No. 5. Cross-line pipes will be sized based on DEPARTMENT criteria and possible backwater effects. To reduce backwater, multiple pipes or multiple barrel culverts may be used in lieu of a single structure. Closed storm sewer systems will be analyzed with GEOPAK Drainage or XP-SWMM. Roadway inlets will be located based on FHWA's Urban Drainage Design Manual HEC-22. Any roadway ditches will be sized with Manning's equation, and designed using HEC-15 methodologies.

The storm sewer design for the project will be performed to minimize impacts to existing utilities if possible. Existing utility data will be obtained by the COUNTY from the utility owners within the project area. The CONSULTANT will utilize this data as part of the design for the storm sewer systems. The CONSULTANT will adjust pipe locations and inverts if possible. If conflicts cannot be avoided, the CONSULTANT will evaluate the use of utility conflict boxes or other devices to minimize the need for utility relocations. The CONSULTANT and the COUNTY acknowledge not all utility relocations can be avoided.

The CONSULTANT will evaluate the potential impacts from the project on water quality. If dictated by project permitting, the CONSULTANT will utilize water quality best management practices to provide treatment to pavement runoff prior to entering environmentally sensitive areas.

The location of the storm drainage systems will be shown on the roadway plan sheets or replicated drainage sheets. Additional plan information will include pipe and drainage structure size, location, type and elevation. A Stormwater Management Design Report will be prepared for the project based on SCDOT guidelines and will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

Task 9

SEDIMENT AND EROSION CONTROL/NPDES PERMITTING

Sediment and Erosion Control – The project will include the development of Sediment and Erosion Control Plans as well as the preparation of Supporting Documentation for the Land Disturbance Permit Application.

The erosion control plans will be prepared on replications of the roadway plan sheets at a scale of 1"=20', unless otherwise agreed upon. The erosion control plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment control design will include the temporary placement of sediment ponds, sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the DEPARTMENT's Standard Drawings for Roadway Construction to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed right-of-way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed right-of-way. Quantities for erosion and sediment control items will be calculated based on DEPARTMENT typical drawings. Any required erosion control computations will be completed with approved methods and submitted to the COUNTY.

NPDES Permitting – The project will require the acquisition of a National Pollutant Discharge Elimination System (NPDES) permit for construction activities. The NPDES permit is required by the South Carolina Department of Health and Environmental Control (SCDHEC) for all land disturbing activities in South Carolina. The CONSULTANT shall provide all coordination with SCDHEC for the approval of permits.

The CONSULTANT will assist the COUNTY with the development of the NPDES permit application as well as with the submission of any required supporting data. The Stormwater Management Report for the project will contain all supporting data developed by the CONSULTANT for the project. The CONSULTANT will provide additional calculations and make revisions to the construction plans as required by the permit reviewer. This scope of services does not include redesign of any elements of the roadway design as a result of comments from the NPDES permit reviewer. Any required revisions would be completed under a separate contract modification.

Task 10

GEOTECHNICAL EXPLORATIONS AND ENGINEERING SERVICES

General – The CONSULTANT will perform a final geotechnical exploration for round-about realignment, shared-use path, and shoulder widening. The CONSULTANT will gather samples, conduct tests, and analyze necessary soil and foundation data for roadway realignment for the round-about and shared-use path. The results of the sampling, testing, analysis, and recommendations concerning the design will be compiled into a final report for submittal to the COUNTY. The following design standards will apply:

- 2007 SCDOT Standard Specifications for Highway Construction
- SCDOT Standard Supplemental Specifications and Special Provisions
- 2019 SCDOT Geotechnical Design Manual (GDM), Version 2.0

Field Exploration (Final Subsurface Exploration) – Prior to beginning the final subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed that COUNTY will obtain permission from property owners for CONSULTANT to perform borings outside of the DEPARTMENT and COUNTY right-of-way

CONSULTANT will request an SC811 ticket prior to starting field work for the final exploration.

Final boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed final subsurface exploration plans to the COUNTY prior to initiation of field work for review and acceptance. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The final subsurface exploration plan is to include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Round-about, Shoulder Widening, and Shared-Use Path – Subsurface Exploration

- Roadway soil test borings will be performed as specified in the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that generally cut and fill sections will be three (3) feet or less in height.
- Final soil test borings will be performed at a frequency of approximately 500 feet within the DEPARTMENT's right-of-way, COUNTY right-of-way, or on private property with access permission obtained by the COUNTY.
- Six (6) roadway soil test borings (SPT borings) will be performed up to a depth of 10 feet, or auger refusal (whichever occurs first) inside and/or outside the

DEPARTMENT/COUNTY right-of-way.
- Two (2) bulk samples will be obtained from near surface soils.

Other Field Testing Items

- Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 2 days of lane closures will be necessary.
- At the completion of field work, test locations will be located for latitude and longitude, elevation and station with GPS equipment.

Field Engineering – The CONSULTANT will provide oversight of hand auger borings, drill rig and cone rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (ASTM 2487) will be performed by a field engineer and/or field geologist who will have a minimum of 3-years of experience in supervision of field equipment and field personnel.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing may include, as estimate, the following:

- 20 Natural Moisture Content Tests
- 20 Grain Size Distributions with wash No. 200 Sieve
- 20 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
- 2 Standard Proctor Tests

Final Roadway Geotechnical Engineering Report – The Final Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the final geotechnical subsurface exploration in accordance with the GDM Chapter 7. The final geotechnical engineering report will be written in general accordance with the GDM Chapter 21. The final report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted with the Preliminary Construction Plans.

The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

This scope of services does not include any work or activities associated with geotechnical investigations for the development of pavement designs, cross-line storm drain pipes, retaining walls, or structures like mast-arms and overhead signs. The COUNTY will provide approved pavement design(s) to the CONSULTANT. Retaining walls and other structures are not included in the project.

Task 11

SUBSURFACE UTILITIES ENGINEERING (SUE)

Within 30 days of Notice to Proceed for the contract, the CONSULTANT will provide the COUNTY with a recommendation as to the extent of SUE services to be provided. This should include as much information as can be assembled on utility type, approximate location, owner, and material type. This information will be used to specifically define the limits of the SUE work to be performed.

The CONSULTANT shall perform work in two phases. The first phase consists of designating services (Quality Level B and C). For the purpose of this agreement, "designate" shall be defined as indicating (by marking) the presence and approximate horizontal position of the subsurface utilities by the use of geophysical prospecting techniques. The second phase consists of test hole services (Quality Level A). For the purpose of this agreement, "locate" means to obtain the accurate horizontal and vertical position of the subsurface utilities by excavating a test hole. The CONSULTANT shall provide these services as an aide in the design of right-of-way and construction plans for the project.

Unless specifically stated otherwise, the CONSULTANT shall adhere to the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

Designating shall be estimated on a cost per linear foot basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Locating shall be estimated on a per each basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Traffic control shall be estimated on a per day basis and shown separately. No separate payment will be made for mobilization and should be included in the per linear foot or per each price for designating or locating.

Designating –

A. In the performing of designating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level B information for approximately 37,375 LF of underground utilities.
2. Provide all equipment, personnel and supplies necessary for the completion of Quality Level C information for approximately 3,500 LF of underground utilities.
3. Provide all equipment, personnel, and supplies necessary for the accurate recording of information for approximately 12,125 LF of aerial utilities. *The estimation of aerial utilities is measured from power pole to power pole and is not an estimation of each line attached to the poles*.
4. Conduct appropriate records and as-built plans research and investigate site conditions. Digital copies of records and as-built plans research to be provided to COUNTY.
5. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of way.

6. Designate the approximate horizontal position of existing utilities by paint markings or pin flags in accordance with the APWA Uniform Color Code scheme along the utility and at all bends in the line in order to establish the trend of the line. All utilities shall be designated as well as their corresponding lateral lines up to the point of distribution, existing right-of-way limits, or whichever is specifically requested and scoped for each individual project.
7. Survey designating marks, which shall be referenced to project control provided by the surveyor of record.
8. Draft survey information using DEPARTMENT CADD guidelines for Subsurface Utility Engineering consultants (latest version).
9. Final review and seal of all appropriate work by a professional engineer and/or land surveyor licensed in South Carolina in responsible charge of the project.

B. In the performing of designating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

The above quantities are based on the Level B designation assuming 2,600 feet along McNulty Street and 100 feet along each side road. It is assumed that there will be 11 designated utilities along McNulty Street and 10 designated utilities alongside roads. The CONSULTANT will notify the COUNTY immediately should additional SUE be recommended. The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

Locating –

No locating services (Level A test holes) are included as a direct service associated with this scope of work. Should locating services be deemed necessary during the design and utility coordination services, these services shall be paid for through the project contingency budget on a per Level A test hole cost. CONSULTANT to provide a per test hole cost for future use, should locating services be needed.

The services to be conducted by the CONSULTANT, in the performance of locating services, only as directed and by prior approval by the COUNTY, include the following:

A. In the performance of locating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level A test holes.
2. Conduct appropriate records and as-built research and investigate site conditions. All records and as-built research to be made available to the COUNTY.

3. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of-way.
4. Perform electronic or ground penetrating radar sweep of the proposed conflict and other procedures necessary to adequately "set-up" the test hole.
5. Excavate test holes to expose the utility to be measured in such a manner that insures the safety of excavation and the integrity of the utility to be measured. In performing such excavations, the CONSULTANT shall comply with all applicable utility damage prevention laws. The CONSULTANT shall schedule and coordinate with the utility companies and their inspectors, as required, and shall be responsible for any damage to the utility during excavation.
6. Provide notification to the COUNTY concerning 1) the horizontal and vertical location of the top and/or bottom of the utility referenced to the project survey datum; 2) the elevation of the existing grade over the utility at a test hole referenced to the project survey datum; 3) the estimated outside diameter of the utility and configuration of non-encased, multi-conduit systems; 4) the utility structure material composition, when reasonably ascertainable; 5) the benchmarks and/or project survey data used to determine elevations; 6) the paving thickness and type, where applicable; 7) the general soil type and site conditions; and 8) such other pertinent information as is reasonable ascertainable from each test hole site.
7. When an attempt to locate a utility line over an area where SUE was performed does not provide valid vertical data, the test hole shall not be reimbursable by the COUNTY. In the following cases, test holes shall be reimbursed by the COUNTY regardless of obtaining valid vertical data:
    a. Utility lines buried in materials that cannot be removed by vacuum techniques other than duct banks,

   The CONSULTANT to provide a separate unit cost for "test holes attempted" and any test holes that do not provide valid vertical data, shall be paid at this rate.
8. Provide permanent restoration of pavement within the limits of the original cut. When test holes are excavated in areas other than roadway pavement, these disturbed areas shall be restored as nearly as possible to the condition that existed prior to the excavation.
9. Draft horizontal location and, if applicable, profile view of the utility on the project plans using CADD standards as outlined above. A station and offset distance and/or northing and easting coordinates (State Plane) with elevations shall be provided with each test hole.
10. Test hole information shall be formatted and presented on CONSULTANT's certification form and listed in a test hole data summary sheet.
11. Certification form shall be reviewed and sealed by a professional engineer and/or land surveyor licensed in South Carolina and in responsible charge of the project.

B. In the performance of locating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.

2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

Task 12

UTILITY COORDINATION ASSISTANCE

The CONSULTANT shall coordinate the project development with the COUNTY's Utility Coordinator. Coordination shall involve inviting the COUNTY's Utility Coordinator to necessary project meetings, providing updates to schedule, and providing project files as requested by COUNTY's Utility Coordinator. The CONSULTANT will provide electronic copies and pdf's of the Survey and Subsurface Utility Engineering as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The COUNTY'S Utility Coordinator will handle coordination of the project development with utility companies. The CONSULTANT will anticipate approximately (2) meetings for Utility Coordination.

Task 13

CONSTRUCTION PHASE SERVICES

All necessary construction phase services will be evaluated and negotiated upon completion of the design services tasks and prior to the proposed construction contract. A contract modification will be negotiated for these services.

Services Not Provided

Services not provided by the CONSULTANT include, but are not limited to, the following:

- Electrical plans
- Landscaping and irrigation plans
- Pavement coring or pavement design
- Environmental Assessment Documentation
- No CLOMR/LOMR
- Falling Weight Deflectometer (FWD) testing
- Video Pipe Inspection
- The CONSULTANT shall not be the "responsible engineer" referenced IN 2009-04 who evaluates the structural condition and performs the preliminary inspection of existing pipes and culverts to determine if they can be retained. The DEPARTMENT shall determine if existing pipes and culverts are to be retained due to structural conditions. The CONSULTANT will indicate the retention/extension of all existing pipes/culverts which meet the hydraulic requirements unless otherwise directed by the DEPARTMENT
- Sight-specific Response Analysis study
- Utility relocation design and plans
- Right-of-way acquisition, exhibits, negotiations, or appraisals
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Construction Engineering and Inspection (CEI)
- Location of water and sewer utility services for each utility customer in the project area.
- Payment of fees required by state and / or federal review / approval agencies (without reimbursement)
- All other services not specifically included in this scope of work

Services of the COUNTY

The COUNTY agrees to provide to the CONSULTANT, and at no cost to the CONSULTANT, the following upon request:

- Access to and use of all reports, data and information in possession of the COUNTY which may prove pertinent to the work set forth herein.
- Existing Policies and Procedures of the COUNTY with reference to geometrics, standards, specifications and methods pertaining to all phases of the CONSULTANT's work.
- Eminent Domain advertisement notice.
- Coordinate, advertise, fabricate and erect signs, and approve location for Public Meeting.
- Provide security guard for the public information meeting.
- Payment of fees required by state and federal review/approval agencies.
- Final processing of JD and Wetlands Permit and coordination with the agencies.
- Existing roadway plans.
- Provide existing signalized intersection coordination timing(s), existing interconnect plan, and location of master, if applicable.
- Provide existing utility data provided by Utility Owners within the project area
- Final moving, demolition and reset items list. An initial list will be provided by the CONSULTANT.
- Contract documents (project specific special provisions to be supplied by CONSULTANT)
- Pavement design.
- Right-of-Way acquisition.
- Right-of-Way verification.
- As-built roadway plans.
- Construction Engineering and Inspection (CEI)

Project Deliverables

The CONSULTANT will submit the deliverable items shown below within the time allotted for each phase of work. Delivery may not be in the order shown.

- Monthly status updates
- Meeting agendas and minutes
- Attendance at one (1) public meeting
- Public Information Meeting materials (as detailed in scope of work)
- PDF versions of the Public Meeting displays
- Recommendation for extent of SUE services – 30 days from NTP
- Field Surveys and Project DTM updates
- Full size color plots of U-sheets along with Microstation/PDF electronic files
- CADD files (at all plan / design stages)
- Documentation of areas of new rights-of-way (per parcel)
- Stormwater Management Report
- Preliminary Construction Plans
- Preliminary Construction Plans cost estimate
- Final Construction Plans
- Project-Specific Special Provisions and Engineer's construction cost estimate
- NPDES permit application/Notice of Intent (and supporting documentation)
- Erosion control computations, if necessary
- Geotechnical investigations and roadway report
- SCDOT Encroachment Permit approval

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

Field Surveys …….	2	months from NTP
SUE …….	4	months from NTP
Preliminary Construction Plans …….	5	months from NTP
assume COUNTY review (2 weeks) ……	5.5	months from NTP
assume OET revisions (2 weeks) ……	6	months from NTP
Final Construction Plans ……..	6	months from NTP
assume DEPARTMENT review (6 weeks) ……	7.5	months from NTP
assume OET revisions (2 weeks) …….....	8	months from NTP

The submittal dates include time for COUNTY/DEPARTMENT review as noted.

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE
POLO ROAD (S-2214) WIDENING-Phase 2

Introduction

Cox & Dinkins, Inc. (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for the widening of Polo Road (S-2214) in Richland County, South Carolina. Polo Road is considered an Urban Major Collector by the South Carolina Department of Transportation (DEPARTMENT). The DEPARTMENT holds all public rights-of-way adjacent to the project corridor and assumes all maintenance responsibilities for those said rights-of-way.

The project will consist of widening the existing roadway to three lanes (two lanes with center median) between Two Notch Road (US 1) and Mallet Hill Road (local), for a total length of approximately 1.90 miles. The project is proposed to include bicycle and pedestrian accommodations.

Project Location - The project is located in Richland County, northeast of the City of Columbia. The project will begin approximately 300' southeast of the intersection of Polo Road and Two Notch Road. It will continue to the South until it terminates at the existing traffic signal at Mallet Hill Road. Sesquicentennial State Park is directly adjacent to the existing rights-of-way, southbound, between Sesqui Trail and Mallet Hill Road.

Existing Conditions – Polo Road is an existing 2-lane, earthen shoulder and ditch section roadway for the majority of the alignment that runs from Two Notch Road to Mallet Hill Road. Approaching the Mallet Hill Road intersection (southbound), Polo Road transitions to a three-lane section to provide a dedicated, left turn lane. Polo Road continues as a 2-lane roadway on the opposite side of this intersection.

Polo Road crosses Jackson Creek and associated floodway via a 36-inch, reinforced concrete pipe between Sand Spur Road and Running Fox Road.

Polo Road crosses Jackson Creek Tributary No. 5 and associated floodway via a 48-inch, reinforced concrete pipe approximately 200 feet south of Sesqui Trail.

Proposed Project Scope (Roadway Widening) – Preliminary plans are to be modified to determine final alignment. Upon approval of the updated alignment, Right-of-Way through Final Construction plans will be developed to reflect the implementation of the widening of Polo Road to three lanes with the following;

- 35 mph design speed;
- 12-foot wide travel lanes;
- The addition of a two-way left turn lane along the length of the roadway (assumed 15 foot wide center median);

- The addition of bicycle and pedestrian accommodations along the length of the roadway;
- 10' wide shared-use path with 5' offset from back of curb and gutter section along the right side of the road as heading in a southward direction.
- Retaining walls to reduce environmental/right-of-way impacts, if necessary;
- Hydraulic evaluations of existing FEMA crossings of Jackson Creek & Jackson Creek Tributary to determine appropriate drainage conveyance;
- Review vertical/horizontal and intersection alignments and design, and revise, if necessary, to meet design criteria; and,
- Traffic signal upgrades and / or modifications to existing signals.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 - Project Management
Task 2 - Environmental Services / Permitting
Task 3 - Field Surveys
Task 4 - Roadway Design
Task 5 - Pavement Marking and Signing Design
Task 6 - Traffic Signal Design
Task 7 - Transportation Management Plan
Task 8 - Stormwater Management / Hydraulic Design
Task 9 - Sediment & Erosion Control / NPDES Permitting
Task 10 - Geotechnical Investigations and Engineering Services
Task 11 - Roadway Structures Design and Plans
Task 12 - Subsurface Utilities Engineering (SUE)
Task 13 - Utility Coordination Assistance
Task 14 - Construction Phase Services (*per future Contract Modification*)

Quality Control

The CONSULTANT shall implement all necessary quality control measures to produce plans and reports that conform to COUNTY guidelines and standards. Prior to submittal to the COUNTY, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program as well. The COUNTY reserves the right to request QA/QC documents (red-lines, checklists, etc) from the CONSULTANT with project deliverables.

Task 1

PROJECT MANAGEMENT

The CONSULTANT shall institute a program for conformance with COUNTY requirements for monitoring and controlling project engineering budget, schedule and invoicing procedures. The CONSULTANT's subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the COUNTY. Included in management of the project will be:

- Project meetings between the COUNTY, DEPARTMENT and CONSULTANT for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the COUNTY.

- The CONSULTANT will prepare meeting agenda and meeting materials as well as record the minutes of each meeting in which it participates and distribute to the appropriate COUNTY personnel.

- Prepare monthly invoices, status reports, and schedule updates. Assume an 18 month design schedule which will impact the duration of preparing invoices, status reports, and schedule updates.

  At this time, no assumptions should be made for the preparation of invoices, reports and updates during the construction duration of the project. All *Construction Phase Services* to be negotiated under a future contract modification.

- The CONSULTANT will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume an 18 month design schedule.

- The CONSULTANT will include the COUNTY in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

The CONSULTANT will attend meetings with the COUNTY and stakeholders from various organizations affected by this project in order to incorporate the needs and desires of these organizations into the decision-making process. It is assumed that the CONSULTANT will attend 26 project meetings (2 each month during the first 6 months, 1 per month the last 12 months) and two (2) additional review coordination meetings with the DEPARTMENT, COUNTY and others, as applicable. The CONSULTANT will be in attendance at these meetings and will prepare all necessary display materials, meeting agendas and minutes.

Task 2

ENVIRONMENTAL SERVICES/PERMITTING

The COUNTY will be responsible for the required coordination with Local, State and Federal agencies regarding environmental services to ensure the program is in compliance with appropriate environmental regulations to obtain a Wetlands Permit and Land Disturbance Permit. The CONSULTANT will provide specific documentation, including but not limited to project information, applications and drawings as necessary for acquisition of the required permits.

Permits – The CONSULTANT will coordinate with the COUNTY and may attend coordination meetings with state and federal resource agencies and document all discussions and understandings that are reached.

The COUNTY will perform Jurisdictional Delineations and prepare the Jurisdictional Determination (JD) Request Package. The COUNTY will provide the CONSULTANT a copy of the JD package and the wetland boundaries on a surveyed map for use in preparing the permit documents. A digital wetland boundary file will also be provided.

If applicable, the CONSULTANT shall prepare the Joint Federal and State Permit Application Package in the format specified by the Charleston District Corps of Engineers. The CONSULTANT shall complete all forms, documentation, and drawings as directed by the COUNTY that are part of the permit application package. The COUNTY or DEPARTMENT will execute the application form as the applicant, and may designate the CONSULTANT as the agent in the processing of the permit application, if so desired. It is assumed that any permits would be authorized under the SCDOT General Permit and will be prepared according to current DEPARTMENT standards which include the following:

- Joint Federal and State Application Form
- Permit Drawings: Drawings depicting the proposed impacts to waters of the U.S. on the subject property. The CONSULTANT shall include the surveyed or measured boundaries of jurisdictional waters superimposed on the actual development/grading plans to establish the proposed jurisdictional impacts.
- Pre-construction Notification Form for SCDOT GP and Supplemental Information, which includes, but is not limited to the following:
    - Project Information
    - Proposed impacts to WOUS
    - Alternative Analysis
    - Avoidance & Minimization
    - Hydrology & Hydraulics
    - Section 106 of the National Historic Preservation Act (provided by the COUNTY)
    - Threatened and Endangered Species short form report for No Effects finding.

Mitigation Plan: In accordance with regulatory requirements, the CONSULTANT will develop a conceptual mitigation plan and submit it as part of the application package. It is assumed that any mitigation needed for this project will be acquired from the proposed COUNTY Mitigation Site.

The CONSULTANT shall submit the completed permit application package to the COUNTY for final processing and negotiation with the agencies. The COUNTY will coordinate directly with the DEPARTMENT, USACE, SCDHEC and other federal, state and local regulatory personnel throughout the course of the permit application process, and coordinate the submission of any additional information as requested by the respective agencies in order to facilitate permit review and approval. The CONSULTANT may be asked to assist in the coordination effort, and will not coordinate with the agencies unless directed by the COUNTY.

Technical Reports

Hazardous Waste and Underground Storage Tanks – In assessing the environmental liabilities associated with the proposed new rights of way, the COUNTY may conduct appropriate / applicable elements of a Phase I Environmental Site Assessment in accordance with procedures established by ASTM Designation E 1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". This approach complies with the Standards and Practices for All Appropriate Inquiries (AAI), Final Rule published in 40 CFR Part 312. A Phase 2 Site investigation may be conducted by the COUNTY for those sites recommended for additional study as stated in the Phase 1 ESA. The results / deliverable provided from a Phase 1 ESA and any potential Phase 2 Site Investigations will be provided to the CONSULTANT.

Public Coordination/Public Meeting – One (1) public meeting is proposed for this phase of the project. The meeting is proposed to be conducted following development of the preferred alignment.

The CONSULTANT will develop and provide to the COUNTY a list of property owners and stakeholders such as businesses, schools, shopping centers and home owners associations.

The public meeting will tentatively be scheduled for 5:00 pm to 7:00 pm on a Tuesday or Thursday at a venue along, or near, the project corridor. The CONSULTANT, with input from the COUNTY, will be responsible for procuring the venue and determination of date and time. The CONSULTANT will be responsible for the preparation of public notice letters and draft media release necessary for promoting the meeting. The COUNTY will provide sample documentation from a previous public meeting. Following COUNTY approval of the public notice letter, the CONSULTANT will mail letters to the list of property owners and stakeholders.

The CONSULTANT, with input from the COUNTY, shall prepare necessary public meeting materials, (deliverables would include project design displays, project overview displays, project typical sections and right of way data tables, as applicable). The CONSULTANT will provide necessary boards and display easels. The CONSULTANT shall also be responsible for the development and printing of handouts, comment cards and sign-in sheets for the public meeting. The COUNTY will provide a base template (with language utilized for previous public meetings) for the handout, comment card and sign-in sheets. The CONSULTANT shall provide draft copies of all materials to be used in the public meeting to the COUNTY for review a

minimum of 15 business days prior to printing. The CONSULTANT will also provide the COUNTY with PDF versions of all final deliverables, as stated above, for the public information meeting one week prior to the meeting for posting on the COUNTY website.

The public meeting is assumed to be held as an open-house style meeting. The COUNTY may conduct a brief formal presentation at some time during the public information meeting. The CONSULTANT shall attend the scheduled public meeting and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The CONSULTANT's role at the meeting is to discuss the project alternatives, proposed design and impacts with the public in attendance.

The COUNTY may secure security guards from local law enforcement agencies or private security firms for all public meetings. The COUNTY will also be responsible for fabricating and erecting signs to be placed on the projects as well as any directional signage needed at the public meeting venue.

The CONSULTANT shall prepare a summary of the public meeting comments within seven (7) business days from the close of the public comment period and receipt of the comments from the COUNTY. The COUNTY will provide a sample from a previous public meeting on a similar project. The COUNTY will be responsible for development of public comment responses and individual response letters, at their discretion. The CONSULTANT may be asked to assist with the development of appropriate responses, as necessary.

Assumptions:

- The CONSULTANT will conduct property owner research and develop property owner and stakeholder contact/mailing list in Excel format.
- The CONSULTANT will submit a draft media release to the COUNTY one month prior to the public meeting.
- The CONSULTANT will provide printed and PDF copies of all displays (up to 12 – 36-in x 48-in). Draft copies of the displays shall be submitted to the COUNTY in full size hardcopies 15 days prior to the Public Meeting. The CONSULTANT assumes two (2) rounds of revisions on public meeting materials and displays.
- The COUNTY will prepare and print meeting handouts and comment sheets.
- The CONSULTANT assumes up to 100 comments will be received and included in the public meeting summary.
- Meeting Preparation and Debrief meetings will be held at Richland County Penny Offices in Columbia, SC.
- Participation of four (4) CONSULTANT team members at one (1) Public Meeting

Deliverables

1. Property Owner and Stakeholder list
2. Draft Media Release
3. Attendance at one (1) Public Meeting and preparation of Public Meeting materials (as stated in scope)
4. Public Meeting Summary

5. SCDOT USACE General Permit Application Package, including supplemental documentation.

Task 3

FIELD SURVEY

Aerial Photography and LIDAR Survey and Mapping – The CONSULTANT will use the Aerial Photography and Aerial LIDAR Survey and Mapping obtained in the initial contract for use during the preparation of the Roadway Plans. Mapping was developed to the contour accuracy of 1 foot (one foot contour interval). The aerial mapping was prepared for use in plans developed to a horizontal scale of 1" = 20'.

Field annotation of aerial topography, supplementary topographic surveys, and verification of mapping accuracy will be performed by the CONSULTANT.

Control Surveys – The CONSULTANT will establish the Primary, Main and Secondary Survey Control Points to be used during the supplemental topographic surveys and the construction of this project. All surveys will be in accordance with SCDOT's *Pre-Construction Survey Manual* dated October 2012. The CONSULTANT will notify the COUNTY of any required temporary traffic control measures (e.g. shoulder/lane closures, etc.) within seven (7) days before such closure due to survey activities.

Control survey and information provided on plans shall be consistent with SCDOT Preconstruction Design Memorandum 08 (PCDM-08).

Supplemental Design Surveys **–** Additional field surveys will be performed by the CONSULTANT as necessary during the design phases of the project. All surveys conducted should be adequate for the design, permitting and construction of the project.

Supplemental field surveys, as necessary, will be conducted by the CONSULTANT to obtain all topographic and planimetric data within the project corridor for the design and permitting approval of the project (assume approximately 80 hours for a two-man survey crew)

Field surveys will be performed by the CONSULTANT to establish existing rights-of-way and to locate frontal property boundary monumentation (along each side of the road) for developing property maps per the DEPARTMENT format.

Property-owner data will be obtained from county records (plat and deed research) for use in the property surveys and to incorporate property ownership data into the Right-of-Way Plans. The property monumentation and property-owner data will be used to develop a closed out property drawing.

Level runs between existing primary vertical control points will be performed to establish additional benchmarks to be referenced on the contract drawings.

Periodic cross-sections of the existing pavement and ground surface will be performed for aerial mapping verification. Periodic sections should be performed at approximately 1,500 foot intervals (maximum) along the proposed project route. Assume ten (10) cross sections to be performed. The CONSULTANT should bring to the attention of the COUNTY in the instance any discrepancies found between field surveyed cross-sections (pavements) and those as shown in the aerial survey provided by LIDAR (previously conducted by others).

Survey data will be shown on Reference Data Sheets in the '5 series sheets' of the plans due to lack of room on the 1"=20' scale plan sheets.

The CONSULTANT will locate all drainage, stormwater, sanitary sewer structures and above ground utility structures within 100 ft. of the proposed roadway alignments. For drainage, stormwater and sanitary sewer structures, the pipe size, pipe type, structure type and invert / rim elevations shall be obtained. The CONSULTANT will locate and survey the next connecting structure (if outside the 100 ft. area) in order to determine grades / depths of existing facilities.

The CONSULTANT will horizontally and vertically locate all potential outfall drainage ditches and streams. At these outfalls, cross sections will be obtained 400 feet upstream and downstream at 50-foot intervals, or as necessary to define the channel alignment, from the proposed roadway alignment. All cross sections will be extended from bank to bank of the existing channel plus 10 feet on either side.

The CONSULTANT will obtain field surveyed cross sections for use in the development of the hydraulic models necessary to study the FEMA hydraulic crossing on Jackson Creek & Jackson Creek Tributary – survey of FEMA cross sections should match the scope of outfall drainage ditch surveys as stated above, including any additional topographic survey that may be necessary, specific to channel alignment and proximity to adjacent pavements, etc.

The CONSULTANT shall update the existing project DTM / topo files (prepared by others and provided to the CONSULTANT) with all supplemental field survey data as shown above.

The CONSULTANT will stake and obtain boring elevations for all geotechnical borings performed on the project by the CONSULTANT. The CONSULTANT should assume (34) borings to be surveyed for this project.

The CONSULTANT will stake the proposed and present rights-of-way for parcels to be affected, to assume 50 tracts, upon direction. Right-of-way staking will consist of placing 36-inch stakes (or paint in paved areas) at all proposed right-of-way breaks, sight triangles and spaced at 100-foot intervals in tangents and 50-foot intervals in curves. These stakes shall be placed after Final Right-of-Way Plans have been developed and only after the Project Manager contacts the CONSULTANT when a property owner requests the right-of-way to be staked.

All right-of-way staking services will be separate from the lump sum amount for Task 3 and will be invoiced on a cost plus, fixed not to exceed amount, only when authorized by the COUNTY.

The CONSULTANT should assume multiple trips as the staking may involve one or several parcels.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site. The CONSULTANT will not be responsible for obtaining permissions from property owners for surveys outside of the existing Right-of-Way.

Task 4

ROADWAY DESIGN

The COUNTY will provide the CONSULTANT approved Design Criteria, Project Concept Report, and Preliminary Roadway Plans as well as any review comments. No modifications to the Two Notch Road and the Polo Road intersection or the Mallet Hill and Polo Road intersection are assumed as part of this scope of services.

Design Criteria – Approved Design Criteria will be provided to the CONSULTANT by the COUNTY. The design criteria was developed by the CONSULTANT for the project in accordance with the DEPARTMENT's *Roadway Design Manual 2017*, *Road Design Plan Preparation Guide-2000*, *Standard Drawings for Road Construction*, and all applicable American Association of State Highway Transportation Officials (AASHTO) publications. Any exceptions and/or deviations from established design guides and standards will be identified. The CONSULTANT will notify the COUNTY of any exceptions and/or deviations from the Design Criteria as soon as identified.

Traffic Study & Analysis – A traffic study of the roadway corridor has been performed by the CONSULTANT during the first phase of the contract. The traffic study evaluated operations, capacity (intersection & segmental) and Levels of Service throughout the corridor, turn lane queue evaluation and design storage requirements and recommendations for further traffic signal warrant analyses at specific intersections. The COUNTY will provide the study to the CONSULTANT.

Preliminary Roadway Plans – The Preliminary Roadway Plans were developed during the first phase of the contract.

Design Verification and Refinement – Utilizing the approved design criteria, preliminary roadway plans, traffic study and recommendations, field surveys and site visits, the CONSULTANT will verify the preliminary design. Utilizing comments received to date (as shown in COUNTY / SCDOT comment review matrices) as well as any additional field information including data obtained during the SUE phase of the project, the CONSULTANT will refine the horizontal and vertical design for the project. It is assumed that the profile shown in the preliminary plans should be retained until the proposed and approved pavement design is provided to the CONSULTANT. The CONSULTANT should assume that the approved pavement design would be provided along with approved preliminary plans.

The CONSULTANT should evaluate the design illustrated in the preliminary plans and propose potential design modifications to the typical section and / or horizontal / vertical designs (within approved design criteria requirements and SCDOT & AASHTO standards) in order to provide

the most cost-effective solutions for the project corridor, specific to minimization of utility impacts or rights of way impacts. The CONSULTANT shall present any proposed modifications to the COUNTY for approval prior to implementing the design change in subsequent plan submittals. The CONSULTANT shall evaluate roadway widening and any necessary alignment shifts in order to implement this design while reducing / minimizing adjacent property impacts. The CONSULTANT should assume the existing centerline will be shifted in up to 4 locations along the corridor for a final alignment.

Right-of-Way Plans

Upon approval of the refined Preliminary Roadway Plans design, Traffic Study and SCDOT comments, the CONSULTANT will prepare Final Right-of-Way Plans according to standard DEPARTMENT criteria and format. Plans will be developed to the level of detail of approximately 70% Complete Construction Plans. New right-of-way will be annotated by the station and offset methodology in accordance with standard DEPARTMENT policy and procedures. Right of Way through Construction Plans will be developed at 1"=20' scale (horizontal) with all cross-sections developed at 50 foot intervals.

Right-of-Way Plans will be developed in accordance with the DEPARTMENT's *Road Design Reference Material for Consultant Prepared Plans* dated June 2010, with the following exceptions:

- Moving Items will only be shown on the Moving Items Sheet.
- The owner's name and any needed permissions will not be shown on the Plan Sheets. The only property information shown on the plan sheets will be the Tract Number.

The CONSULTANT will incorporate information obtained during the SUE phase of the project.

The CONSULTANT will establish horizontal and vertical alignments along with cross sections as needed in order to study the re-connection of driveways to the widened / relocated roadways. This design data will be shown in the plans in order to convey the extent/impact of the re-configuration of driveways necessary to provide access to the property. Driveways that are level with the widened roadway will not have a horizontal or vertical alignment set, but will be handled by only showing their connection in the roadway cross section and plan view based on the roadway cross section.

The CONSULTANT will attend the Right-of-Way Plans Design Review with the COUNTY / SCDOT to review the project design. The CONSULTANT will prepare meeting minutes / summary of discussions from the design review. The design review will be scheduled approximately 2 weeks after submittal of the preliminary right-of-way plans to SCDOT (COUNTY to coordinate review). The design review is typically conducted utilizing desktop-level data (review of aerial imagery and plan data) to review the proposed project limits, typical sections, design and impacts. Field visits to specific locations may be scheduled. CONSULTANT should assume 1 field visit with the COUNTY / SCDOT associated with the design review.

The CONSULTANT will be responsible for providing a preliminary list of moving and demolition items to the COUNTY for use by the right-of-way agent. This information shall be shown on the Moving Items / Demo Items sheet and shown with the preliminary right of way plans. The COUNTY will provide a final list of moving and demolition items to be shown in the construction plans.

A set of preliminary Right-of-Way Plans will be submitted to the COUNTY for review and comment. Following the review of the preliminary Right-of-Way Plans, the CONSULTANT will submit final Right-of-Way Plans for review and approval. As applicable, the final Right-of-Way plans will address comments on the preliminary Right-of-Way plans. Following review, comment and approval of each of the plan submittals (preliminary R/W and final R/W), the COUNTY shall provide the plans to the DEPARTMENT for their review, comment and/or concurrence. The CONSULTANT will be responsible for updating all plan deliverables, as applicable and as necessary, per DEPARTMENT reviews. Right-of-way plans as prepared by the CONSULTANT shall be developed to the level of detail necessary of 70% plans and per typical SCDOT plan requirements. The CONSULTANT shall also be responsible for providing responses to all COUNTY and DEPARTMENT comments documented within typical comment matrices.

Electronic media receivables for Right-of-Way Plans will be provided via electronic data storage device or through electronic file transfer and will include the information outlined in the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010.

The CONSULTANT will provide final right-of-way CADD files to the COUNTY for the preparation of the right-of-way exhibits.

During the course of completing the final plans for construction, should changes be necessary which will affect right-of-way; these revisions will be promptly made, documented as revisions on plans, and identified to those implementing right-of-way appraisal and acquisition. The CONSULTANT will provide updated CADD files to the COUNTY to update the right-of-way exhibits.

The CONSULTANT should assume 30% of the tracts shown with new rights-of-way on the final right-of-way plans to require right-of-way revisions. The CONSULTANT shall submit plan changes due to right-of-way revisions per the following schedule (necessary sheets only);

- One (1) full-size
- Eight (8) half-size

The CONSULTANT will develop and provide to the COUNTY an updated cost estimate for the project, to be submitted with the final right-of-way plans.

Final Roadway Design and Plans

Roadway Construction Plans – The construction plans will be a continuation of Right-of-Way Plans. Original Right-of-Way Plans will be retained by the CONSULTANT after appropriate COUNTY reviews and signatures and then developed into construction plans.

Plan and profile sheets will show information necessary to permit construction stakeout and to indicate and delineate details necessary for construction.

The CONSULTANT will provide curb grades for the project as necessary for drainage design and to facilitate construction.

Construction plans shall incorporate all items presented in the Roadway Construction Plans section of the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010.

The CONSULTANT will attend the Final Roadway Plans Design Field Review with the COUNTY to review the project design in the field. The CONSULTANT will prepare meeting minutes / summary of discussions from the design field review. The final design field review will be scheduled approximately 2 weeks after submittal of the preliminary construction plans (COUNTY to coordinate field review).

A set of Preliminary Construction Plans (assumed 95% complete) will be submitted to the COUNTY for review and comment prior to final plan delivery. Following review of the preliminary construction plans, the CONSULTANT shall finalize the plans and submit the Final Construction plans (signed and sealed by a Professional Engineer licensed in the state of South Carolina). As applicable, the final construction plans will address comments on the preliminary construction plans. Following review, comment and approval of each of the plan submittals (preliminary const and final const), the COUNTY shall provide the plans to the DEPARTMENT for their review, comment and/or concurrence. The CONSULTANT will be responsible for updating all plan deliverables, as applicable and as necessary, per DEPARTMENT reviews. The CONSULTANT shall also be responsible for providing responses to all COUNTY and DEPARTMENT comments documented within typical comment matrices.

The Preliminary Construction cost estimate will be updated by the CONSULTANT and submitted with the Preliminary Construction Plans for use by the COUNTY.

On or before the contract completion date, the CONSULTANT will deliver to the COUNTY one complete set of Final Construction Plans, an Engineer's Estimate, and "Project Specific" Special Provisions. See Project Special Provisions and Engineer's Estimate for the description of the Engineer's Estimate and "Project Specific" Special Provisions.

Project Special Provisions and Engineer's Estimate – The CONSULTANT will prepare all "Project Specific" Special Provisions and include them in the format compatible with the DEPARTMENT Construction Administration Section. The CONSULTANT will work closely with COUNTY personnel in the COUNTY'S development of the construction document package.

Also, utilizing recent bid data from similar projects in the area, the CONSULTANT will prepare an Engineer's Estimate for construction of this project. The estimates will be based on the final summary of quantities and will be used in the final bid analysis and award.

The CONSULTANT will provide one full size (22"x36") and two half size sets at each review stage.

For this task and all other tasks contained in this scope, the CONSULTANT will utilize the DEPARTMENT standard drawings, specifications, and design manuals that are current as of the first issuance of the task order scope by the COUNTY to the CONSULTANT.

Task 5

PAVEMENT MARKING AND SIGNING

Final pavement marking/signing plans will be prepared at a scale of 1"=50' unless otherwise agreed upon. The plans will consist of an itemized listing of estimated quantities; typicals for installation (DEPARTMENT typicals may be used where applicable), details showing lane lines, edge lines, stop bars, symbol and word messages and other appropriate markings and sign designation numbers and locations. The plans will include dimensions sufficient for field layout. The *Manual on Uniform Traffic Control Devices (MUTCD): 2009 Edition* and DEPARTMENT details will be incorporated into the plans.

Task 6

TRAFFIC SIGNAL DESIGN

The CONSULTANT shall modify existing traffic signal plans to accommodate necessary signal phasing, signal head arrangement, signal timing, pedestrian signals and appurtenances. All existing traffic signal supports, span wire configuration, signal controller cabinet, and conduit shall be retained. The CONSULTANT shall prepare traffic signal plans at a scale matching the existing traffic signal plan as required for the project. Traffic signal plans shall conform to the *Manual on Uniform Traffic Control Devices (MUTCD): 2009 Edition*, and DEPARTMENT Standard Drawings, SCDOT Traffic Signal Design Guidelines: 2009 edition and SCDOT's latest Traffic Signal Memos. Pedestrian signal features such as pedestrian signal poles, pedestrian signal heads, push-buttons, signs etc. shall be included as per current SCDOT Traffic Signal Design Guidelines. The plans shall also include pedestrian signal timing parameters. The CONSULTANT shall prepare Special Provisions for Traffic Signal Installation based on current DEPARTMENT guidelines.

Traffic Signal modifications shall be prepared for the following signalized intersections:

- Polo Road (S-2214) at Two Notch Road (US-1) – signal timing optimization

- Polo Road (S-2214) at Mallet Hill (Local) – signal timing optimization

The COUNTY will provide existing signal timing and plans, as available from the DEPARTMENT.

For this scope of work, services specific to interconnection of signals is not included. Should these services ultimately be required, a contract modification will be negotiated.

Task 7

TRANSPORTATION MANAGEMENT PLAN

Work Zone Traffic Control Plans **–** The design and preparation of one set of Work Zone Traffic Control plans will be accomplished for the roadway project. The plans will include a description of the sequential steps to be followed in implementing the plans, and will be developed at a scale of 1"= 50', unless otherwise agreed upon. The traffic control plans will include lane closures, traffic control devices, temporary lane markings, and construction signing and sequencing notes. The plans will identify lane widths, transition taper widths, and any geometry necessary to define temporary roadway alignments. Also, the plans will address the type of surface to be used for all temporary roadways. Standard traffic control details will be incorporated into the plans for most work activities, but detailed staging plans will be required where impacts upon the normal traffic flow are significant.

Preliminary traffic control plans will be submitted in conjunction with the 95% complete roadway plans, and the final signed and sealed traffic control plans along with quantities will be submitted with the final roadway construction plans.

The Polo Road Widening project should be assumed an ***"Intermediate"*** project per the DEPARTMENT's *Rule on Work Zone Safety and Mobility.*

Transportation Operations Plan **–** The CONSULTANT will prepare a Transportation Operations Plan which will address the traffic operations within the work zone impact area and strategies for minimizing the impact to traffic operations. Some of the Work Zone Management Strategies for use in the Transportation Operations Plan can be found in Table 5B of the DEPARTMENT's *Rule on Work Zone Safety and Mobility.*

Public Information Plan **–** The CONSULTANT will develop a Public Information Plan in conjunction with the COUNTY which will contain strategies for providing information to the public and other impacted entities. Some Public Information strategies which may be used in the development of the Public Information Plan can be found in Table 5C of the DEPARTMENT's *Rule on Work Zone Safety and Mobility*.

Task 8

STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The CONSULTANT conducted preliminary roadway drainage design, stormwater management, and hydraulic design. The task included drainage field reviews/data acquisition, development of drainage design criteria, preliminary major cross-line studies (major cross-lines are designated as cross-line structures including and larger than 48" pipes), preliminary outfall studies, and preliminary studies for FEMA floodplains and jurisdictional stream crossings, as applicable, and preparation of a Preliminary Drainage Summary Report. Detailed ditch design and closed-system stormwater design was not included in the previous scope of work. Additionally, field surveys of drainage structures / cross-lines, etc. were not performed as part of the previous scope of work.

The CONSULTANT will perform the Stormwater Management and Hydraulic Design for the project based on SCDOT Design Guidelines. Any conflicts in design criteria for the review agencies will be evaluated with the COUNTY to determine the appropriate design procedure for the project, prior to preliminary plan approval. This task includes roadway drainage and hydraulic impact studies for the FEMA floodplain crossings.

Roadway Drainage - The roadway drainage design for the project will be completed utilizing design procedures that comply with stormwater management and sediment and erosion control regulations and the NPDES general permit. All drainage calculations will be performed with methods suggested in the DEPARTMENT's *Requirements for Hydraulic Design Studies* dated May 26, 2009 and be made available to the COUNTY for approval.

The CONSULTANT will perform a field review of the project and a visual inspection of the existing drainage systems within the project area. The inspections performed will not include any material testing or structural analysis. The CONSULTANT will document any irregularities in the existing drainage system and provide the data to the COUNTY. If needed, the CONSULTANT will meet with the COUNTY in the field to review and discuss the condition of the existing drainage system prior to reuse in the proposed design. If additional testing or inspection (video pipe inspection) is recommended, the CONSULTANT will prepare the recommendation and submit to the COUNTY for submittal to the DEPARTMENT.

Roadway drainage design for the project is dictated by the project horizontal and vertical geometry. It is assumed that the proposed closed drainage system will not begin until after approval of a final horizontal and vertical geometry be the COUNTY. The design will be terminated at available existing outfall locations or at new locations that will be constructed as a part of the project. Drainage areas will be defined from the existing topography as determined from available mapping and field survey. Design year storms will be established in conjunction with DEPARTMENT guidelines for on-site and off-site runoff. For the design year storm, rainfall intensities appropriate for the project area will be determined and the runoff will be calculated for each drainage area. For each contributing sub-area, a structure will be identified to

accept the runoff (inlet, cross-pipe, ditch, etc.). Based on accumulation of runoff, appropriate pipe sizes will be chosen to convey the runoff to the outfall.

The hydrologic analysis of each watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre- and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with DEPARTMENT and NPDES regulations. If required to control stormwater quality or peak flow rate, water quality or detention basins will be added using a hydraulic routing method. Energy dissipaters may also be utilized based on HEC-14 procedures. Outfall channel protective measures will be based on design methods in HEC-15 and/or HEC-11.

Roadway cross-lines will be designed and analyzed according to the principles given in FHWA's Hydraulic Design Series No. 5. Cross-line pipes will be sized based on DEPARTMENT criteria and possible backwater effects. To reduce backwater, multiple pipes or multiple barrel culverts may be used in lieu of a single structure. Closed storm sewer systems will be analyzed with GEOPAK Drainage or XP-SWMM. Roadway inlets will be located based on FHWA's Urban Drainage Design Manual HEC-22. Any roadway ditches will be sized with Manning's equation, and designed using HEC-15 methodologies.

The storm sewer design for the project will be performed to minimize impacts to existing utilities if possible. Existing utility data will be obtained by the COUNTY from the utility owners within the project area. The CONSULTANT will utilize this data as part of the design for the storm sewer systems. The CONSULTANT will adjust pipe locations and inverts if possible. If conflicts cannot be avoided, the CONSULTANT will evaluate the use of utility conflict boxes or other devices to minimize the need for utility relocations. The CONSULTANT and the COUNTY acknowledge not all utility relocations can be avoided.

The CONSULTANT will evaluate the potential impacts from the project on water quality. If dictated by project permitting, the CONSULTANT will utilize water quality best management practices to provide treatment to pavement runoff prior to entering environmentally sensitive areas.

The location of the storm drainage systems will be shown on the roadway plan sheets or replicated drainage sheets. Additional plan information will include pipe and drainage structure size, location, type and elevation. A Stormwater Management Design Report will be prepared for the project based on SCDOT guidelines and will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

Hydraulic Analysis – The proposed improvements along Polo Road will likely impact the FEMA-defined Special Flood Hazard Areas associated with Jackson Creek & Jackson Creek Tributary. The project will include a detailed hydraulic study to evaluate the existing and proposed hydraulic structures. The hydraulic study will be completed according to local, DEPARTMENT, and Federal Emergency Management Agency (FEMA) regulations.

The existing hydraulic structure under Polo Road at Jackson Branch is a 36" RCP crossing. Jackson Branch Tributary is a 48" RCP. The stream crossings within the project corridor are designated Zone AE Special Flood Hazard Areas. The Zone AE designation indicates a detailed hydraulic model has been developed for the streams. The CONSULTANT will obtain and verify all existing hydraulic data and use the existing models as the basis of the studies. The existing models will be updated to reflect field survey data of the project areas. The existing hydraulic model will be utilized to evaluate the potential impacts of extending the culverts. If necessary, the existing hydraulic model will be utilized to evaluate potential replacement structures as well. The proposed conditions models will be developed based on the proposed design to analyze the potential impacts of the project. The analysis of the existing hydraulic data will include a review of the watershed and FEMA calculated design flows to ensure their accuracy with existing conditions. The Hydraulic Design and Risk Assessment will include existing and proposed hydraulic models, hydrological analysis, velocity conditions in the vicinity of the crossing, and any recommendations with regard to stabilization of the waterway. The proposed project may impact the existing FEMA study and, therefore, a Conditional Letter of Map Revision (CLOMR) may be required. If the hydraulic modeling indicated the water surface elevations will not be impacted based on the proposed design, a No-Impact Certification will be completed. If required, the CONSULTANT will prepare all necessary documentation and studies for the CLOMR and provide to the COUNTY for approval. The CONSULTANT will also coordinate with the Floodplain Coordinator and FEMA as needed during the preparation of the CLOMR or No-Impact Certification and during the submittal process. For the purposes of this scope assume that a CLOMR will be required.

Task 9

SEDIMENT AND EROSION CONTROL/NPDES PERMITTING

Sediment and Erosion Control – The project will include the development of Sediment and Erosion Control Plans as well as the preparation of Supporting Documentation for the Land Disturbance Permit Application.

The erosion control plans will be prepared on replications of the roadway plan sheets at a scale of 1"=20', unless otherwise agreed upon. The erosion control plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment control design will include the temporary placement of sediment ponds, sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the DEPARTMENT's Standard Drawings for Roadway Construction to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed right-of-way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed right-of-way. Quantities for erosion and sediment control items will be calculated based on DEPARTMENT typical drawings. Any required erosion control computations will be completed with approved methods and submitted to the COUNTY.

NPDES Permitting – The project will require the acquisition of a National Pollutant Discharge Elimination System (NPDES) permit for construction activities. The NPDES permit is required by the South Carolina Department of Health and Environmental Control (SCDHEC) for all land disturbing activities in South Carolina.

The CONSULTANT will assist the COUNTY with the development of the NPDES permit application as well as with the submission of any required supporting data. The Stormwater Management Report for the project will contain all supporting data developed by the CONSULTANT for the project. The CONSULTANT will provide additional calculations and make revisions to the construction plans as required by the permit reviewer. This scope of services does not include redesign of any elements of the roadway design as a result of comments from the NPDES permit reviewer. Any required revisions would be completed under a separate contract modification.

Task 10

GEOTECHNICAL EXPLORATIONS AND ENGINEERING SERVICES

General – The CONSULTANT will perform a preliminary and final geotechnical exploration for embankments, new slopes and/or retaining walls, cross-line pipes, culvert extension and shoulder widening. The CONSULTANT will gather samples, conduct tests, and analyze necessary soil and foundation data for embankments, new slopes and/or retaining walls, culvert extensions, and/or culvert replacement. The results of the sampling, testing, analysis, and recommendations concerning the design will be compiled into preliminary & final reports for submittal to the COUNTY. The following design standards will apply:

- 2007 SCDOT Standard Specifications for Highway Construction
- SCDOT Standard Supplemental Specifications and Special Provisions
- 2019 SCDOT Geotechnical Design Manual (GDM), Version 2.0

Field Exploration (Preliminary Subsurface Exploration) – Prior to beginning the preliminary subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed that COUNTY will obtain permission from property owners for CONSULTANT to perform borings outside of the DEPARTMENT right-of-way.

Preliminary boring locations will be located along or adjacent to the proposed alignments of the roadway, shoulder widening, new slopes, retaining walls, cross-line pipes and culvert extension within the DEPARTMENT's right-of-way and/or outside the DEPARTMENT's right-of-way. The preliminary boring locations will complement the final boring locations. Boring locations in the final exploration may occur outside and/or inside DEPARTMENT right-of-way. The CONSULTANT shall be responsible for providing notification to utility owners prior to geotechnical field work in order to obtain clearance of utilities and marking of utility lines and services. A request for utility marking will be made to the Statewide Utility One-call Service

(SC811) at least 3-days prior to field work. Information obtained in Task 12 will be shared with geotechnical staff prior to field exploration work. Proposed boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed preliminary subsurface exploration plans including the anticipated final boring locations to the COUNTY prior to initiation of field work for review and acceptance. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The preliminary subsurface exploration plan will include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Embankments, New Slopes and/or Retaining Walls, Cross-line Pipes, Culvert Extension– Subsurface Exploration

- Roadway soil test borings will be performed in general accordance with the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that cut and fill sections will be ten (10) feet or less for the majority of the roadway improvements.
- Eleven (11) roadway embankment soil test borings (hand auger borings with dynamic cone penetrometers or Standard Penetration Test (SPT) borings) will be performed up to depths ranging from 5 to 20 feet, auger refusal, or hole collapse (whichever occurs first) inside and outside the DEPARTMENT right-of-way. Preliminary soil test borings will be spaced approximately 1,000 feet along the roadway, shoulder widening and multi-use path.
- Five (5) embankment/retaining wall test SPT borings will be performed to depths ranging from 20 to 25 feet or refusal (whichever occurs first) inside the DEPARTMENT right-of-way.
- Two (2) bulk samples will be obtained for laboratory testing to be used as part of new slope/retaining wall analysis.
- At this time the quantity, location, length and height of the proposed embankment expansion/retaining walls are not generally defined, but retaining walls may be needed due to right-of-way acquisition costs.
- One (1) SPT boring is proposed for culvert extensions. The boring will be extended to a depth of 15 feet or auger refusal, whichever is shallower. Two (2) hand auger borings are also proposed in the channel on each end of the culvert in case culvert extensions are utilized. These borings may be inside or outside the DEPARTMENT's right-of-way. Clearing will likely be needed for access.
- Twenty-four hour water measurements will be made in the SPT and hand auger borings.

Bore holes will be backfilled with auger cuttings. Core holes in the pavement needed for boring access will be backfilled with cold-patch asphalt.

Other Field Testing Items

- Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 5 days of lane closures and 5 days of shoulder closures will be necessary to safely access the boring locations.
- At the completion of field work, test locations will be surveyed for latitude and longitude, elevation and station as part of Task 3.

Field Engineering – The CONSULTANT will provide oversight of hand auger borings and drill rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (ASTM D2487) will be performed by a field engineer and/or field geologist who will have a minimum of 3-years of experience in supervision of field equipment and field personnel.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing for the preliminary exploration will be the following:

- 26 Natural Moisture Content Tests
- 26 Grain Size Distributions with wash No. 200 Sieve
- 26 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
- 2 Remolded Tri-axial Shear Tests (CU) or Direct Shear Tests depending on soil classification
- 2 Standard Proctor Tests.

Preliminary Geotechnical Subsurface Data Report – After the completion of field and laboratory testing, a preliminary Geotechnical Subsurface Data Report (GSDR) will be prepared in general accordance with the procedures outlined in the GDM. The preliminary GSDR shall be written in general accordance with the GDM Chapter 21. The preliminary GSDR will be signed and sealed by a registered SC Professional Engineer.

Preliminary Roadway Geotechnical Engineering Report – The Preliminary Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the preliminary geotechnical subsurface exploration in accordance with the GDM Chapter 7. The preliminary geotechnical engineering report shall be written in general accordance with the GDM Chapter 21. The preliminary report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted at least 7-days prior to the submittal of preliminary right-of-way plans.

Field Exploration (Final Subsurface Exploration) – Prior to beginning the final subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed that COUNTY will obtain permission from property owners for CONSULTANT to perform

borings outside of the DEPARTMENT right-of-way

CONSULTANT will request an updated SC811 ticket prior to starting field work for the final exploration.

Final boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed final subsurface exploration plans to the COUNTY prior to initiation of field work for review and acceptance. The testing locations will be coordinated with the preliminary exploration to avoid testing in the same location. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The final subsurface exploration plan is to include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Embankments, New Slopes and/or Retaining Walls, Culvert Extension – Subsurface Exploration

- CONSULTANT will have determined location and extent of new retaining walls prior to field work for the final geotechnical exploration.
- CONSULTANT will also have determined if the 36" and/or the 48" pipe culverts will be extended or replaced.
- Roadway soil test borings will be performed as specified in the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that generally cut and fill sections will be five (5) feet or less in height for the majority of the improvements.
- Final soil test borings will be performed at a frequency of approximately 1,000 feet within the DEPARTMENT's right-of-way or on private property with access permission obtained by the COUNTY. The combined preliminary and final boring spacing should be approximately 500 feet. Retaining walls require a boring every 150 feet.
- Eleven (11) additional roadway soil test borings (hand auger borings with dynamic cone penetrometers or SPT borings) will be performed up to depths ranging from 5 to 20 feet, auger refusal, or hole collapse (whichever occurs first) inside and/or outside the DEPARTMENT right-of-way.
- We have assumed six (6) pipe culvert cross-ties will be constructed along the project corridor. To evaluate subgrade conditions at these culvert cross-tie locations twelve (12) soil test borings (hand auger borings with dynamic cone penetrometers or SPT borings) will be performed up to depths ranging from 5 to 15 feet, auger refusal, or hole collapse (whichever occurs first) inside and/or outside the DEPARTMENT right-of-way.
- Four (4) embankment/retaining wall soil test SPT borings will be performed to depths

ranging from 20 to 35 feet or refusal (whichever occurs first). Boring may be conducted within the DEPARTMENT's right-of-way and/or on private property.
- Two (2) bulk samples will be obtained for laboratory testing to be used as part of slope stability/retaining wall analysis.
- Two (2) drainage culverts are expected to be extended on end or replaced. One (1) Standard Penetration Test (SPT) boring to a depth of 15 feet is planned to supplement the borings from the preliminary exploration. The SPT boring should accomplish the GDM minimum test frequencies for culvert extensions or culvert replacement when combined with the preliminary exploration. Clearing may be needed for access.
- Twenty-four hour water measurements will be made in the SPT and hand auger borings.

Other Field Testing Items

- Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 5 days of lane closures and 5 days of shoulder closures will be necessary.
- At the completion of field work, test locations will be surveyed for latitude and longitude, elevation and station as part of Task 3.

Field Engineering – The CONSULTANT will provide oversight of hand auger borings and drill rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (ASTM 2487) will be performed by a field engineer and/or field geologist who will have a minimum of 3-years of experience in supervision of field equipment and field personnel.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing may include, as estimate, the following:

- 25 Natural Moisture Content Tests
- 25 Grain Size Distributions with wash No. 200 Sieve
- 25 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
- 2 Remolded Tri-axial Shear Tests (CU) or Direct Shear tests depending on soil classification.
- 2 Standard Proctor tests

Final Geotechnical Subsurface Data Report – After the completion of field and laboratory testing, a final Geotechnical Subsurface Data Report (GSDR) will be prepared in general accordance with the procedures outlined in the GDM. The final GSDR shall be written in general accordance with the GDM Chapter 21. The final GSDR will be signed and sealed by a registered SC Professional Engineer.

Final Roadway Geotechnical Engineering Report – The Final Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the final geotechnical subsurface exploration in accordance with the GDM Chapter 7. The final geotechnical engineering report will be written in general accordance with the GDM Chapter 21. The final report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted with the Preliminary Construction Plans.

The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

This scope of services does not include any work or activities associated with geotechnical investigations for the development of pavement designs. The COUNTY will provide approved pavement design(s) to the CONSULTANT.

Task 11

ROADWAY STRUCTURES DESIGN AND PLANS

General – This task includes design and plan development criteria for potential retaining walls and a culvert extension that may be required due to the proposed improvements along the project corridor. There will be no aesthetic requirements for the retaining walls or culvert. Location and quantities of any temporary shoring required for roadway construction will be included in the roadway structures construction plans; the shoring design and detailing is the responsibility of the contractor. The following design and construction specifications will be used in the design and preparation of retaining wall and culvert plans:

- The 2007 edition of the DEPARTMENT's *Standard Specifications for Highway Construction.*
- AASHTO's *LRFD Bridge Design Specifications*, 6th edition (2012) and the latest Interim Specifications in place at the time of contract execution.
- AASHTO's *LRFD Bridge Construction Specifications,* 3rd edition (2010) and the latest Interim Specifications in place at the time of contract execution.
- The DEPARTMENT's *Geotechnical Design Manual, v. 2.0, 2019*
- Supplemental and Technical Supplemental Specifications as already prepared by the DEPARTMENT for design and/or construction.
- DEPARTMENT's Standard Drawings for Road and Bridge Construction.
- DEPARTMENT's *Roadway Design Manual, 2017.*
- DEPARTMENT's *Road Design Plan Preparation Guide.*
- AASHTO "Guide Specifications" as may be applicable to the project.

Retaining Wall Design and Plans – A retaining wall(s) may be required. The roadway retaining walls are assumed to be cast-in-place, reinforced brick masonry, and/or keystone

retaining walls and will be represented in the plans by plan views, envelope drawings, and associated notes and details. It is assumed that approximately 2,000 linear feet of retaining wall, at up to 5 separate locations from 2' - 10' high, will be required.

Culvert Design and Plans – There are two existing culverts within the project area that are of insufficient length to accommodate the proposed roadway section. The existing hydraulic structure under Polo Road at Jackson Branch is a 36" RCP crossing. Jackson Branch Tributary is a 48"RCP. Per calculations prepared in the preliminary phase of the project, the 48" RCP will need to be replaced. If the existing 36" pipe meets hydraulic design criteria the culvert must be evaluated to determine if it is suitable for extension or if complete replacement will be required. The CONSULTANT will be required to make a recommendation to the COUNTY.

For fee purposes, it is assumed that the culvert will be extended on both ends. The culvert extension will be represented in the plans by plan and elevation views, as well as associated notes and representative details.

Noise wall design is excluded from this scope of services.

Task 12

SUBSURFACE UTILITIES ENGINEERING (SUE)

Within 45 days of Notice to Proceed for the contract, the CONSULTANT will provide the COUNTY with a recommendation as to the extent of SUE services to be provided. This should include as much information as can be assembled on utility type, approximate location, owner, and material type. This information will be used to specifically define the limits of the SUE work to be performed.

The CONSULTANT shall perform work in two phases. The first phase consists of designating services (Quality Level B and C). For the purpose of this agreement, "designate" shall be defined as indicating (by marking) the presence and approximate horizontal position of the subsurface utilities by the use of geophysical prospecting techniques. The second phase consists of test hole services (Quality Level A). For the purpose of this agreement, "locate" means to obtain the accurate horizontal and vertical position of the subsurface utilities by excavating a test hole. The CONSULTANT shall provide these services as an aide in the design of right-of-way and construction plans for the project.

Unless specifically stated otherwise, the CONSULTANT shall adhere to the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

Designating shall be estimated on a cost per linear foot basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Locating shall be estimated on a per-each basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Direct charges for mileage, meals, lodging and reproductions shall be

shown separately. Traffic control shall be estimated on a per day basis and shown separately. No separate payment will be made for mobilization and should be included in the per linear foot or per each price for designating or locating.

Designating –

A. In the performing of designating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of **Quality Level B** information for approximately **88,380** LF of underground utilities.
2. Provide all equipment, personnel and supplies necessary for the completion of **Quality Level C** information for approximately **9,000** LF of underground utilities.
3. Provide all equipment, personnel, and supplies necessary for the accurate recording of information for approximately 27**,840** LF of **aerial utilities**. *The estimation of aerial utilities is measured from power pole to power pole and is not an estimation of each line attached to the poles*.
4. Conduct appropriate records and as-built plans research and investigate site conditions. Digital copies of records and as-built plans research to be provided to COUNTY.
5. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of way.
6. Designate the approximate horizontal position of existing utilities by paint markings or pin flags in accordance with the APWA Uniform Color Code scheme along the utility and at all bends in the line in order to establish the trend of the line. All utilities shall be designated as well as their corresponding lateral lines up to the point of distribution, existing right-of-way limits, or whichever is specifically requested and scoped for each individual project.
7. Survey designating marks, which shall be referenced to project control provided by the surveyor of record.
8. Draft survey information using DEPARTMENT CADD guidelines for Subsurface Utility Engineering consultants (latest version).
9. Final review and seal of all appropriate work by a professional engineer and/or land surveyor licensed in South Carolina in responsible charge of the project.

B. In the performing of designating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

The above quantities are based on the Level B designation assuming 10,000 feet along Polo Road and 100 feet along each side road and 50 feet down each entrance road. It is assumed that there will be 11 utility providers within the project limits. 6 undergound designated utilities along Polo Road, and 3 aerial utilities. Side roads are assumed to be similar to Polo Road

(assuming some utilities have multiple lines). US 1 intersection is not part of the scope of services.

The CONSULTANT will notify the COUNTY immediately should additional SUE be recommended. The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

Locating –

No locating services (Level A test holes) are included as a direct service associated with this scope of work. Should locating services be deemed necessary during the design and utility coordination services, these services shall be paid for through the project contingency budget on a per Level A test hole cost. CONSULTANT to provide a per test hole cost for future use, should locating services be needed.

The services to be conducted by the CONSULTANT, in the performance of locating services, only as directed and by prior approval by the COUNTY, include the following:

A. In the performance of locating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level A test holes.
2. Conduct appropriate records and as-built research and investigate site conditions. All records and as-built research to be made available to the COUNTY.
3. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of-way.
4. Perform electronic or ground penetrating radar sweep of the proposed conflict and other procedures necessary to adequately "set-up" the test hole.
5. Excavate test holes to expose the utility to be measured in such a manner that insures the safety of excavation and the integrity of the utility to be measured. In performing such excavations, the CONSULTANT shall comply with all applicable utility damage prevention laws. The CONSULTANT shall schedule and coordinate with the utility companies and their inspectors, as required, and shall be responsible for any damage to the utility during excavation.
6. Provide notification to the COUNTY concerning 1) the horizontal and vertical location of the top and/or bottom of the utility referenced to the project survey datum; 2) the elevation of the existing grade over the utility at a test hole referenced to the project survey datum; 3) the estimated outside diameter of the utility and configuration of non-encased, multi-conduit systems; 4) the utility structure material composition, when reasonably ascertainable; 5) the benchmarks and/or project survey data used to determine elevations; 6) the paving thickness and type, where applicable; 7) the general soil type and site conditions; and 8) such other pertinent information as is reasonable ascertainable from each test hole site.
7. When an attempt to locate a utility line over an area where SUE was performed does not provide valid vertical data, the test hole shall not be reimbursable by the

COUNTY. In the following cases, test holes shall be reimbursed by the COUNTY regardless of obtaining valid vertical data:

a. Utility lines buried in materials that cannot be removed by vacuum techniques other than duct banks,

The CONSULTANT to provide a separate unit cost for "test holes attempted" and any test holes that do not provide valid vertical data, shall be paid at this rate.

8. Provide permanent restoration of pavement within the limits of the original cut. When test holes are excavated in areas other than roadway pavement, these disturbed areas shall be restored as nearly as possible to the condition that existed prior to the excavation.
9. Draft horizontal location and, if applicable, profile view of the utility on the project plans using CADD standards as outlined above. A station and offset distance and/or northing and easting coordinates (State Plane) with elevations shall be provided with each test hole.
10. Test hole information shall be formatted and presented on CONSULTANT's certification form and listed in a test hole data summary sheet.
11. Certification form shall be reviewed and sealed by a professional engineer and/or land surveyor licensed in South Carolina and in responsible charge of the project.

B. In the performance of locating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

Task 13

UTILITY COORDINATION ASSISTANCE

The CONSULTANT shall coordinate the project development with the COUNTY's Utility Coordinator. Coordination shall involve inviting the COUNTY's Utility Coordinator to necessary project meetings, providing updates to schedule, and providing project files as requested by COUNTY's Utility Coordinator. The CONSULTANT will provide electronic copies and pdf's of the Survey and Subsurface Utility Engineering as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The COUNTY'S Utility Coordinator will handle coordination of the project development with utility companies. The CONSULTANT will anticipate approximately (4) meetings for Utility Coordination. The COUNTY shall coordinate and/or design utility plans sheets outside of this scope of services.

Task 14

CONSTRUCTION PHASE SERVICES

The proposed construction phase services shown below are assumed at this time. All necessary construction phase services will be evaluated and negotiated upon completion of the design services tasks and prior to the proposed construction contract. A contract modification will be negotiated for these services.

Pre-Construction/Partnering Conference – The CONSULTANT will attend the Pre-Construction/Partnering Conference and respond to questions by the CONTRACTOR pertinent to the design and proposed construction methodology. Assume one Pre-Construction/Partnering Conference.

Construction Phase Project Meetings – The CONSULTANT will attend meetings with the COUNTY to discuss construction issues as needed during the construction of this project. Assume xx meetings. The CONSULTANT will not be responsible for agendas, minutes, or other materials for this task.

Construction Phase Assistance - The CONSULTANT will assist COUNTY personnel during the construction phase when problems or questions arise relating to the design and proposed construction methodology. Assume xx hours per month for project construction duration of xx months.

Construction Revisions – The CONSULTANT will make necessary revisions to construction plans that arise during the construction phase of the project. Assume xx construction revisions.

Shop Plans and Working Drawings Review – The CONSULTANT will review the Contractor's shop drawings and working drawings as required by the 2007 Edition of the *Standard Specifications for Highway Construction*, in a timely manner following award of contract and during construction. This includes retaining wall components only.

Geotechnical Design and Construction Services – The CONSULTANT shall also provide geotechnical construction engineering services which shall include the following items:

- General embankment construction troubleshooting
- Written evaluation of soil strength testing on borrow excavation materials
- General retaining wall construction troubleshooting
- Review and approval of the Contractor's MSE shop drawings, if applicable
- The scope of services shall be conducted according to the DEPARTMENT's Standard Specifications, supplemental specifications, and/or plan notes.

The CONSULTANT should anticipate 96 total hours for this task.

As-Built Plans – The CONSULTANT will not be responsible for the development of As-Built Plans for this project.

Services Not Provided

Services not provided by the CONSULTANT include, but are not limited to, the following:

- Lighting and Electrical plans
- Landscaping and irrigation plans
- Pavement coring or pavement design
- No structural design for new bridges
- Environmental Assessment Documentation
- Falling Weight Deflectometer (FWD) testing
- Video Pipe Inspection
- The CONSULTANT shall not be the "responsible engineer" referenced IN 2009-04 who evaluates the structural condition and performs the preliminary inspection of existing pipes and culverts to determine if they can be retained. The DEPARTMENT shall determine if existing pipes and culverts are to be retained due to structural conditions. The CONSULTANT will indicate the retention/extension of all existing pipes/culverts which meet the hydraulic requirements unless otherwise directed by the DEPARTMENT
- Sight-specific Response Analysis study
- Utility relocation design and plans
- Utility coordination, other than previously stated
- Right-of-way acquisition, exhibits, negotiations, or appraisals
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Construction Engineering and Inspection (CEI)
- Location of water and sewer utility services for each utility customer in the project area.
- All other services not specifically included in this scope of work
- Construction Phase Services (proposed contract modification for these services)

Services of the COUNTY

The COUNTY agrees to provide to the CONSULTANT, and at no cost to the CONSULTANT, the following upon request:

- Access to and use of all reports, data and information in possession of the COUNTY which may prove pertinent to the work set forth herein.
- Existing Policies and Procedures of the COUNTY with reference to geometrics, standards, specifications and methods pertaining to all phases of the CONSULTANT's work.
- Eminent Domain advertisement notice.
- Coordinate, advertise, fabricate and erect signs, and approve location for Public Meeting.
- Provide Security guard for the public information meeting.
- Payment of fees required by state and federal review/approval agencies.
- Final processing of JD and Wetlands Permit and coordination with the agencies.
- Existing roadway plans.
- Approved Design Criteria.
- Preliminary Plans and associated CADD and other related files
- SCDOT Comments & Responses to the Preliminary Plans.
- Provide existing signalized intersection coordination timing(s), existing interconnect plan, and location of master, if applicable.
- Section 106 of the National Historic Preservation Act.
- Utility relocation design and plans
- Utility coordination
- Provide Existing utility data provided by Utility Owners within the project area
- Final moving, demolition and reset items list. An initial list will be provided by the CONSULTANT.
- Contract documents (project specific special provisions to be supplied by CONSULTANT)
- Right-of-Way acquisition.
- Right-of-Way verification.
- As-built roadway plans.
- Construction Engineering and Inspection (CEI)
- Phase 1 Environmental Site Assessment
- Approved pavement design
- Approved Traffic Report

Project Deliverables

The CONSULTANT will submit the deliverable items shown below within the time allotted for each phase of work. Delivery may not be in the order shown.

- Monthly status updates
- Meeting agendas and minutes
- Permit Determination Form
- SCDOT USACE General Permit Application Package, including supplemental documentation
- Phase 1 Cultural Resources Surveys (Two (2) NRHP sites)
- Attendance at one (1) public meeting
- Public Meeting displays & documents (hard copies and PDF versions), as stated in scope
- Recommendation for extent of SUE services – 45 days from NTP
- Full size color plots of SUE andSurvey along with Microstation/PDF electronic files, for COUNTY utility coordination and design.
- Design Exception documentation.
- Preliminary Right-of-Way Plans
- Final Right-of-Way Plans
- Final Right-of-Way Microstation files
- Right-of-Way Plans stage construction cost estimates
- Traffic Signal Warrant Studies & Technical Memo
- Preliminary and final traffic signal design
- Transportation Operations Plan and Public Information Plan
- Stormwater Management Report
- If necessary, CLOMR for Polo Road at Jackson Branch and Jackson Branch Tributary.
- Preliminary Roadway Construction Plans
- Final Roadway Construction Plans, project specific specifications, and Engineer's construction cost estimate
- NPDES permit application/Notice of Intent
- Preliminary and final geotechnical roadway reports

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

Field Surveys / Mapping Verification / SUE ……	3	months from NTP
Preliminary Right-of-Way Plans ……	6	months from NTP
assume COUNTY review (2 weeks) ……	6.5	months from NTP
assume SCDOT review (1 month) ……...	7.5	months from NTP
Final Right-of-Way Plans ……..	9	months from NTP
assume COUNTY review (2 weeks) ……...	9.5	months from NTP
assume SCDOT review (1 month) ……	10[illegible]5	**months from NTP**
Preliminary Construction Plans ……...	13.5	months from NTP
assume COUNTY review (2 weeks) ……..	14	months from NTP
assume SCDOT review (1 month) ……...	15	months from NTP
Final Construction Plans ……...	18	months from NTP

The submittal dates include time for COUNTY/DEPARTMENT review as noted. Per the Intergovernmental Agreement between the COUNTY and the DEPARTMENT, the DEPARTMENT has 25 business days for their review.

ATTACHMENT "A"
SCOPE OF SERVICES
SMITH-ROCKY BRANCH SECTION C GREENWAY

Introduction

Introduction
Holt Consulting Company (**CONSULTANT**) has been authorized by Richland County (**COUNTY**) to provide design and engineering services for the Smith-Rocky Branch Greenway Section C in Richland County, South Carolina. This proposed project will consist of:

1. Section C: Approximately two thousand three hundred (2,300) LF of a greenway and trail with boardwalks and supporting facilities that extend on the north side of Rocky Branch from Olympia Avenue near Olympia Park to the Granby Park greenways.

The scope of work for this phase of the Smith-Rocky Branch Greenway project includes surveys, environmental services, preliminary geotechnical and structural design, stormwater, utility and railroad coordination, and development of 70% right-of-way plans for construction of portions of Sections C of the Smith-Rocky Branch Greenway. The Phase 1 Concept Report shall provide design guidance for the development of the Plans. Upon acceptance of the ROW plans, a separate scope will be developed for the completion of construction level plans and appropriate project permitting.

2. **Project Location -** This project will consist of approximately two thousand three hundred (2,300) LF of greenway (14' wide), that meet City standards. The Project will extend on the north side of Rocky Branch from Olympia Avenue near Olympia Park to the Granby Park greenways.

3. **Proposed Project Scope –** Right-of-way Plans will be developed for the implementation of the bicycle and pedestrian accommodations for approximately two thousand three hundred (2,300) LF of a greenway and trail with boardwalks and supporting facilities that extend on the north side of Rocky Branch from Olympia Avenue near Olympia Park to Granby Park greenway facilities. in Section C.

The project will coordinate with the Granby Mills Cottages (West) developer for planned greenway facilities.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 – Project Management
Task 2 – Environmental Services/Public Meeting
Task 3 – Field Surveys
Task 4 – Greenway Design

Task 5 – Storm Water Management
Task 6 – Sediment and Erosion Control
Task 7 – Preliminary Geotechnical Investigation and Engineering Services
Task 8 – Preliminary Structural Services
Task 9 – Utility Coordination Assistance and Railroad Coordination

QUALITY CONTROL

*The **CONSULTANT** shall implement all necessary quality control measures to produce plans and reports that conform to **COUNTY** and **CITY** guidelines and standards. Prior to submittal to the **COUNTY** and **CITY**, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program. The **COUNTY** reserves the right to request QA/QC documents (red-lines, checklists, etc.) from the **CONSULTANT** with project deliverables.*

TASK 1 – PROJECT MANAGEMENT

The **CONSULTANT** shall institute a program for conformance with **COUNTY** requirements for monitoring and controlling project engineering budget, schedule, and invoicing procedures. The **CONSULTANT**'s subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the **COUNTY**. Included in management of the project will be:

- Project meetings between the **COUNTY**, South Carolina Department of Transportation (SCDOT), Mill District community leaders, Granby Mills Developers, City of Columbia, and **CONSULTANT** for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the **COUNTY**. It is anticipated that four (4) such meetings will be necessary. Two (2) of the **CONSULTANT**'s staff shall attend these meetings.

- The **CONSULTANT** will prepare meeting agenda and meeting materials, as well as, record the minutes of each meeting in which it participates and distribute to the appropriate **COUNTY** personnel. The **CONSULTANT** shall provide the **COUNTY** with an agenda two (2) business days prior to any meeting and the minutes of any meeting within three (3) business days.

Prepare monthly invoices, status reports, and schedule updates. Assume a seven (7)-month schedule that will impact the duration of preparing invoices, status reports, and schedule updates.

- The **CONSULTANT** will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume a seven (7) month schedule.

- The **CONSULTANT** will provide a schedule outlining tasks that will be required to complete the scope of work. A Gantt Chart Schedule shall be submitted to the

COUNTY within ten (10) business days of receipt of the Notice-To-Proceed. The schedule shall list each task and its duration.

- The **CONSULTANT** will include the **COUNTY** and stakeholders including, but not limited to, Mill District community leaders, City of Columbia, and other local government agencies in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

Assumptions:

1. Up to four (4) project meetings will be held on-site with the stakeholders and any additional personnel deemed necessary.

Deliverables:

1. Seven (7) monthly status reports and updated schedule.
2. Meeting agendas and meeting minutes covering all project meetings. Meeting agendas are to be provided to the **COUNTY** within two (2) business days prior to all meetings. Meeting minutes are to be provided to the **COUNTY** within three (3) business days after all meetings. Assumed meeting agendas and minutes to be provided for a total of seven (7) monthly progress meetings plus four (4) meetings with stakeholders.

TASK 2 - ENVIRONMENTAL SERVICES

The **CONSULTANT** will review the proposed trail route and make a determination of the environmental and/or navigable waterway permits expected to be required for the subject project within (4) four weeks of the notice to proceed and permission to enter subject properties.

With regards to wetlands delineation and preliminary Jurisdictional Determination (JD), the **CONSULTANT** shall perform a preliminary JD on the project area that shall not exceed five (5) acres (an approximately 50' wide swath centered on the field flagged trail location). The **CONSULTANT** shall attend two (2) site visits with a representative of the USACE to review the waters of the US at their request. Upon acceptance of the ROW plans developed under this scope of services, a separate scope will be developed for the completion of construction level plans and preparation of an ACOE permit package and floodplain development permit.

The trail will be placed to avoid the wetlands wherever practicable knowing that avoidance and alternate analysis are areas the USACOE reviews thoroughly.

Threatened and Endangered Species:

The **CONSULTANT** shall prepare a biological assessment (BA) to include a discussion of potential impacts to each resource. The **CONSULTANT** shall comply with Section 7 of the endangered species act and provide the corresponding BA to the **COUNTY**. Concessions in either the scope of work or construction activities or mitigation will be required prior to **COUNTY** approval.

Cultural Resources:

The **CONSULTANT** shall review publicly available data to determine if the project area contains archeological or historic resources eligible for listing on, or potentially eligible for listings on the national register of historic places. The **CONSULTANT** shall prepare the Section 106 project review form, with all supporting documentation. This information will be prepared for the **COUNTY** to submit to the State Historic Preservation Office for review *(An archaeological survey is not included in this scope of services).*

Water Quality:

The **CONSULTANT** shall utilize SCDHEC's Water Quality Information Tool to determine if sensitive waters including 303(d) listed waters, TMDL watersheds, and outstanding resource waters are located within the project study area. Findings will be documented in the permit application. If applicable, the **CONSULTANT** shall coordinate with the **COUNTY** to determine the necessary stormwater control measures to protect sensitive waters.

Section 404(b)(1): Guidelines and Public Interests review Factors:

The **CONSULTANT** shall use and document how the 404(b)(1) guidelines area used in the selection of the preferred alternative using the USACE Public Interest Review Factors.

Mitigation Plan:

The **CONSULTANT** shall complete the USACE mitigation worksheet to determine the required credits for the regulatory requirements. The **CONSULTANT** will coordinate with the **COUNTY** to determine availability of credits at the proposed Richland County Mitigation Site.
(Development of a detailed compensatory mitigation plan is not included in this scope).

Public Information Meeting **–** Prior to finalizing 70% plans, the **CONSULTANT** will plan and conduct a public information meeting. **CONSULTANT** will prepare public meeting materials and provide draft copies of materials to be used in public meetings to the **COUNTY** for review minimum of 10 business days prior to printing. The **COUNTY** will be responsible for fabricating and erecting signage to be placed on the projects, advertising and coordinating the public information meeting. **CONSULTANT** will be responsible for summarizing comments received by the **COUNTY** during and after the public meeting and preparing resulting recommendations to the **COUNTY**. The **COUNTY** will be responsible for preparing responses to public comments. **CONSULTANT** will provide the **COUNTY** with PDF versions of the displays and handouts for public information meetings 7 business days to the meeting for posting on the **COUNTY** Website.

Assumptions:

1. *Wetlands will be delineated in the field and locations captured using GPS.*
2. *A NEPA Document will not be required and is not part of the project scope.*
3. *The area for proposed delineation will not exceed 5 acres.*

4. *Assumes that a Nationwide Permit will be required due to the impact of the boardwalk installation on the wetlands.* ***CONSULTANT*** *to provide calculations documenting area of impact and confirm if this is required.*
5. *A survey for archeological cultural resources is not included in the scope of services.*
6. *Formal consultation with USFWS is not included in the scope of services.*
7. *Development of a detailed compensatory mitigation plan is not included in this scope of services.*
8. *Submittal of a separate SCDHEC Navigable Waters Permit application or supporting materials is not included in this scope of services.*
9. *All permit fees will be paid for by the County.*
10. *One (1) Open house public meeting with a minimum of (5) consultant technical staff to discuss recommendations and answer questions raised by the public at the meeting.*

Deliverables:

1. *Permit Determination Form*
2. *Preliminary Jurisdictional Determination Request Package*
3. *Rare and Endangered Species Biological Assessment*
4. *Section 106 Project Review Form*
5. *Navigational Determination form will be prepared.*
6. *Meeting materials*
7. *Public Information Meeting Notice (1 digital copy in Microsoft Word format)*
8. *Color Displays (possible routing options, neighborhood connections and trail heads)*
9. *Public Information brochures (150 copies)*
10. *Comment forms (150 copies)*
11. *Sign-In Sheets (150 copies)*
12. *Public Information Meeting Summary*

TASK 3 – FIELD SURVEYS

Property and topographic surveys shall extend approximately two thousand three hundred (2,300) LF on the north side of Rocky Branch from Olympia Avenue near Olympia Park to the Granby Park greenways. Once the preliminary trail location has been approved by **COUNTY** staff, Mill District Community, and the City of Columbia, a survey swath of 50', 25' on either side of the proposed centerline, will be performed.

Control Surveys:

The **CONSULTANT** shall provide all survey for the project in State Plane Coordinates and shall reference the horizontal datum to NAD 83 (2011 adjustment). The vertical control surveys for this project shall be tied to the nearest existing NAVD 88 monument. The survey will serve as the base mapping for the engineering design.

Conventional Total Station locations will be required for tree surveys.

The **CONSULTANT** shall coordinate with SC 811 utility locating service prior to commencement of surveying. Any impacted utilities within the project corridor shall be identified.

The **CONSULTANT** shall provide horizontal and vertical control points along the trail where greenway and drainage features will be constructed. Horizontal control points will also be required where ADA ramps will be required.

Design Surveys:

The **CONSULTANT** will perform field surveys to obtain all topographic and planimetric data within the project corridor. The **CONSULTANT** shall field locate and stake the centerline of the trail location and review with **COUNTY** staff for approval.

Property-owner data will be obtained from county records for use in the property surveys and to incorporate property ownership data into the plans. The property monumentation and property-owner data will be used to develop a property map using the combination of property corners found in the field and plats and deeds obtained from GIS property data and courthouse research.
Level runs between existing primary vertical control points will be performed to establish additional benchmarks to be referenced on the contract drawings. It is anticipated that the **CONSULTANT** will establish three (3) benchmarks for the project.

The **CONSULTANT** will provide Station and Offset information for surveyed topographic features including above ground utility features. The **CONSULTANT** shall be responsible for contacting SC 811 (formerly PUPS) and submit locate tickets along the project area as well as provide a preliminary list of utility owners. The **CONSULTANT** shall review the status of each utility's response to the SC811 locate tickets and compare to any utility markings found as well as any other evidence of the existence of the utility (i.e., above ground structures) to determine if the utility company has completed marking their utilities. Should a utility marking be incomplete, the **CONSULTANT** shall attempt to contact the utility to further coordinate getting the utilities marked. Should coordination with the utility company prove unsuccessful, the **CONSULTANT** shall contact SC811 and submit a "No Show" ticket. The "No Show" ticket will supersede the original locate tickets submitted to SC811. Once utility markings are complete, the **CONSULTANT** shall field survey utility markings as provided by SC811. The survey of the utility markings shall be included in the base survey file with level symbology per SCDOT guidelines.

The **CONSULTANT** will locate all stormwater and sanitary sewer structures and lines/pipes within the project survey boundary and any connecting structures or pipe within 100 ft. of the proposed boundary so that the surveys will provide the inlet and outlet of any pipes found along with the inlet and outlet structure. The pipe size, pipe type, and rim / grate and pipe invert elevations shall be obtained.

The **CITY** Arborist shall identify trees within the 50' surveyed easement to determine health and size of grand trees in fair or better condition. Trees to be surveyed will be verified by the County during the trail flagging exercise. Deliverables will be conveyed to the City in CAD and PDF format.

Survey all trees 12" in diameter trees or larger which fall within the survey swath.

Assumptions:

1. *Trail easement plats are not included as part of the project scope.*
2. *Field surveys for property closures will not be performed.*
3. *Any revisions in the alignment due to property negotiations are not included as part of this scope. If alignment revisions occur due to property negotiations, a contract modification regarding fee shall be obtained.*

Deliverables:

1. *Survey of centerline swath of field flagged trail*
2. *Survey sanitary sewer manholes locations that fall within the 50' wide swath horizontally*
3. *Survey of flood hazard areas, inclusive of on-site flagging that fall within 50' wide swath.*
4. *Survey identifying all trees greater than 12" in diameter within the 50' wide swath. Flagging shall be verified in partnership with the City.*

TASK 4 – GREENWAY DESIGN

This phase of the Smith-Rocky Branch Greenway project includes development of 70% right-of-way plans for construction of portions of Sections C of the Smith-Rocky Branch Greenway. Upon acceptance of the ROW plans, a separate scope will be developed for the completion of construction level plans and appropriate project permitting.

Site Analysis and Review:

The **CONSULTANT** shall access and perform a detailed review of the existing conditions along the planned greenway path via site observations, wetlands delineation, and tree survey, and shall take into account tree protection and health requirements below when delineating the greenway route. The **CONSULTANT** shall use this review to adjust the routes as necessary to minimize wetland impacts, earth work, existing trees, utilities, private property ownership and any special conditions. This work will be done prior to wetland delineation and after property corners are marked.

Tree Protection and Health:

Trees located within the 50' surveyed swath which are in poor condition or which are non-native, invasive species as defined by the Southeast Exotic Pest Plant Council may be marked for removal and if so, should be removed as part of the greenway construction. Grand trees in fair or good condition shall be flagged and protected during construction using best practices. In no case shall any part of the proposed greenway surface, structure, or utility trenching be located within the radius of the structural root zone of any trees to remain on site; where the greenway surface, structure, or utility trenching will encroach into the structural root zone of a tree, the path must be realigned or the tree must be removed prior to construction to prevent future maintenance issues. The structural root zone is defined as the zone of rapid root taper that provides the tree stability against wind throw, and is calculated as follows: Radius of the Structural Root Zone (in feet) = Inches of Diameter at Breast Height (DBH) x 1/3. No utility trenching shall occur in areas where conduit shall be encased beneath concrete pathways.

Design Criteria:

The **CONSULTANT** shall design the trail and boardwalks to meet the current City of Columbia Greenway standards and shall comply with the AASHTO *Guide for the development of Bicycle Facilities 2012 edition* and be ADA compliant. This will include 14' sidewalks and boardwalks with railings within the 14' at a reasonable inset. The **CONSULTANT** will also meet the City of Columbia and SCDOT standards while within the SCDOT Right-of-Way. The **CONSULTANT** shall also provide recommendations for connections to adjacent neighborhoods. The boardwalks will be designed to be a minimum of 12" above the natural high-water level (NHWL) of Rocky Branch. Available LiDAR data (2-ft. Contours) shall be used as the base mapping for the project.

70% Plans:

The **CONSULTANT** shall prepare a set of right-of-way level plans based on the concept report and field conditions. Utilizing input received to date, the design criteria as well as any additional field information, the horizontal and vertical design for the project will be refined. The **CONSULTANT** shall prepare Rights-of-Way and Easement plans and submit them to the **COUNTY** for review. The **COUNTY** will acquire all Rights-of-Way and easements for the project. The Rights-of-Way to be acquired across private property shall be a minimum of twenty (20) feet wide, and the centerline of the Rights-of-Way will align with the centerline of the designed trail surface. Plans will also include bench locations with bump outs. Benches and bump outs shall be located at points of interest and at appropriate intervals. Benches and bump outs shall be anchored to prevent migration during a flood event.

Assumptions:

- *Any revisions in the alignment due to property negotiations are not included as part of this scope And will be addressed in the development of final construction plans.*

Deliverables:

1. *Typical sections and handrail details shall be submitted to City for approval before extensive design services can begin.*
2. The **CONSULTANT** will supply two (2) half size hard copies along with a CD containing PDF's of the 30% and 70% Greenway plans and cost estimates.

TASK 5 – STORMWATER MANAGEMENT

It is assumed that the Rocky Branch Greenway will primarily be at grade with limited elevated boardwalk, thus adding new impervious areas to the project. No new drainage systems are anticipated to be needed for this project.

Even though no new drainage systems are anticipated, a Stormwater Management Report will be required due to the anticipated disturbed area on this project exceeding 1.0-acre.

Hydrologic analysis of the watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre-and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with NPDES regulations.

A Stormwater Management Design Report will be prepared for the project based on the City of Columbia and Richland County guidelines and will be submitted for review with the Final Construction Plans. The report will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

The **CONSULTANT** will also prepare any hydraulic studies required by the United States Army Corps of Engineers as part of the environmental permit. The hydraulic studies will be based on City of Columbia and Richland County requirements and will include an evaluation of the impacts from the proposed construction.

Assumptions:

1. SCDHEC's NOI form will be used for this project.
2. No FEMA impacts.
3. No detention basins will be required.
4. No FEMA modeling to ensure no-rise.
5. Richland County Buffer requirements are not applicable to this project.

Deliverables

1. One (1) Signed and Sealed set of drainage sheets will be provided.
2. One (1) hard copy of the Signed and Sealed Stormwater Management Report.

TASK 6 – SEDIMENT AND EROSION CONTROL

Sediment and Erosion Control

The project will include the development of Erosion and Sediment Control (E&S) Plans as well as the preparation of Supporting Documentation for the National Pollutant Discharge Elimination System (NPDES) Notice of Intent Permit Application.

The E&S Plans will be prepared on replications of the plan sheets and at the same plan scale, unless otherwise agreed upon. The E&S Plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment control design will include the temporary placement of sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the City of Columbia and Richland County standards to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed Rights-of-Way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed Right-of-Way. Quantities for erosion and sediment control items will be calculated based on City of Columbia and Richland County Standards. Any

required erosion control computations will be completed with approved methods and submitted to the **COUNTY**.

NPDES Permitting

Upon acceptance of the ROW plans developed under this scope of services, a separate scope will be developed for the completion of construction level plans and the acquisition of a NPDES permit and development of a Stormwater Pollution Prevention Plan (SWPPP) for construction activities.

Assumptions:

1. One (1) Signed and Sealed set of erosion control sheets will be provided.

TASK 7 – PRELIMINARY GEOTECHNICAL INVESTIGATION AND ENGINEERING SERVICES

General

The **CONSULTANT** shall provide preliminary geotechnical exploration for boardwalks where needed along the project. The exploration will be done by hand auger after the trail centerline is marked and any boardwalk locations identified. A report will be prepared that will outline the necessary information to design boardwalk foundations based on the requirements set forth in the Structural Services Section. It is assumed that no more than three (3) boardwalk sections will be required for the project.

Field Exploration (Preliminary Subsurface Exploration)

Prior to beginning the subsurface field exploration, the **CONSULTANT** will notify the **COUNTY** at least seven (7) days in advance so the **COUNTY** can coordinate with the SCDOT, City, and property owners. The **CONSULTANT** shall comply with all City of Columbia and SCDOT lane closure restrictions, if required.

Boring locations will be located along or adjacent to the proposed alignment of the pathway where boardwalk is planned. The exploration will be performed in one phase. A preliminary exploration is not proposed. Boring locations in the final exploration may occur outside and/or inside SCDOT and/or **COUNTY** Right-of-Way.

Permission to access private property will be obtained by the **COUNTY.**

Clearance of utilities will be the responsibility of the **CONSULTANT**. A request for utility marking will be made to the Statewide Utility One-call Service (SC811) at least three (3) -days prior to field work. The **CONSULTANT** will mark utilities that are not marked by SC811 as part of Task 3. Information obtained in Task 3 will be shared with geotechnical staff prior to field exploration work.

Proposed boring locations will be determined by the **CONSULTANT**. The **CONSULTANT** will provide copies of the proposed subsurface exploration plan to the **COUNTY** prior to initiation of

field work for review and acceptance. The subsurface exploration plan will include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Field Exploration

SCDOT and/or City of Columbia Encroachment Permit – **CONSULTANT** understands that no project specific encroachment permit is required. **CONSULTANT** shall comply with all lane closure restrictions if needed to access the site.
Borings – The boring locations will be located along the proposed project alignment.
Subsurface Exploration – A soil test boring will be performed at identified locations. The following is a summary of the quantity, depth, and procedure proposed.

- No more than three hand auger (3) borings will be performed at planned locations to a depth of ten (10) feet or auger refusal, whichever is shallower.
- Slope stability or settlement calculations for embankments and retaining walls are not included.
- Seismic design for boardwalks, pedestrian bridge, sidewalk, retaining walls and other structures is not included.
- Pavement and embankment design for sidewalk are not included.
- Pavement design for parking lots is not included.
- Clearing will be needed to access some or all of the soil boring locations.

Other Field Testing Items

Traffic control is not anticipated.
At the completion of field work, all test locations shall be surveyed for latitude and longitude, elevation, and station by **CONSULTANT**.

Field Engineering – **CONSULTANT** will provide oversight of operations by a field engineer technician and/or field geologist. Field personnel will consist of one (1) field services supervisor and/or one (1) geologist per drill rig. Soil Classification will be in accordance with USCS (ASTM D-2487). The Field Services Supervisor will have a minimum of three (3) years of experience in supervision of field equipment and field personnel and will coordinate field activities including clearance of underground utilities through South Carolina 811.

Laboratory Testing – **CONSULTANT** shall be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing on selected samples will evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing for the exploration is estimated to include the following: Three (3) natural moisture content tests, three (3) grain size distribution with wash no. 200 sieve, and three (3) moisture-plasticity relationship determinations (Atterberg

Limits).

Boardwalk Geotechnical Engineering Report

The Geotechnical Engineering Report will not be conducted in strict accordance with the procedures outlined in the SDCDOT GDM. This report will cover pedestrian boardwalk foundations and pedestrian bridge foundations which are not contemplated by the SCDOT GDM. The report will include soil parameters for design of concrete-encased wood post foundations for the boardwalk and recommendations for pedestrian bridge foundations.

Assumptions:

1. *Assumes that access to all of the boardwalk locations along alignment will be available.*
2. *Pedestrian bridge, parking lots, and building structures are not included in this phase of the project.*

Deliverables:

1. *Soil parameters for preliminary boardwalk foundation design.*

TASK 8 – PRELIMINARY STRUCTURAL SERVICES

The **CONSULTANT** will develop 30% level preliminary structure plans for the construction of boardwalks where needed along the project. Typical span details will be developed and it is assumed that no more the three (3) boardwalk sections will be required. The scope of work for this phase of the Smith-Rocky Branch Greenway project includes development of 70% right-of-way plans for construction of portions of Sections C of the Smith-Rocky Branch Greenway. Upon acceptance of the ROW plans, a separate scope will be developed for the completion of construction level structural plans and special provisions.

The **CONSULTANT** will provide the following:

Design Basis Statement

The **CONSULTANT** shall design all boardwalk footings, structural decking, beams, piles/pier system in accordance with ACI, AASHTO, ASTM and IBC current to the reviewing agencies with jurisdiction over construction and the standards of the current City of Columbia Greenway Standards. The loading requirements for all bridges and boardwalks shall be as directed by the City of Columbia. All footings/piles will be designed to meet or exceed this loading requirement. Boardwalks shall also be designed to flood. The structural design will include the required calculations to prepare typical cross sections and spans details of the Greenway boardwalk that can used throughout the entire project. For purposes of this scope, it is assumed that the structural design will include the following:

- General Notes
- High Boardwalk typical section with handrail (shall meet ADA compliance)

- Low Boardwalk typical section without handrail unless higher than 30-inches above existing ground (shall meet ADA compliance)
- Preliminary foundation design for up to two (2) different soil types
- One (1) abutment design for transition from boardwalk to concrete path
- Typical span detail for a 7.5-foot span and 15-foot span.
- Live Loading to include pedestrian and City of Columbia Maintenance equipment (Kubota vehicle or similar and Genie GS2632 scissor lift or similar), however no traffic loading is assumed.
- Loading associated with pathway lighting

Structure Plans (30%)

The **CONSULTANT** shall develop 30% preliminary structure plans in sufficient detail and appropriate format to clearly illustrate significant design features, dimensions and clearances.

Prior to submittal to **CITY**, all plans and documents shall be thoroughly reviewed by the **CONSULTANT** for completeness, correctness, accuracy and consistency with the above-referenced requirements.

On Site Meetings

Representatives from the **CITY** and **CONSULTANT** involved in structure design will attend two (2) field review meetings of the project during the plan development. All information gathered during this field investigation will be evaluated and plans revised accordingly. The **CONSULTANT** will provide a summary of each field review.

Deliverables:

1. Two half size sets and one electronic pdf file of 30% structure plans

Assumptions:

1. Handrail details will be the same as those developed for the Gills Creek Greenway Project.
2. No seismic design is required.
3. All typical sections shall be designed in accordance with AASHTO *Guide for the Development of Bicycle Facilities* 2012 – Fourth Edition and meet all ADA criteria.

TASK 9 – UTILITY COORDINATION ASSISTANCE AND RAILROAD COORDINATION

Utility Coordination

The **CONSULTANT** shall coordinate the project development with the **CITY**'s Utility Coordinator. Coordination and assistance shall involve inviting the **CITY**'s Utility Coordinator and SCE&G to necessary project meetings, providing updates to schedule, and providing project

files as requested by **CITY**'s Utility Coordinator. **CONSULTANT** shall identify utility relocations necessary to construct the project and provide those locations to the **CITY** Utility Coordinator. The **CONSULTANT** will provide electronic copies and pdf's of the Survey as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The **CITY**'s Utility Coordinator will handle coordination of the project development with utility companies.

Railroad Coordination

The **CONSULTANT**, at their cost, shall obtain all railroad(s) Right-of-Entry permits which may be required for survey operations. Upon permit approval and as instructed by the railroad(s), the **CONSULTANT** will coordinate with railroad(s) flagman and/or engineering representative, during times when field operations will be occurring within the railroad(s) right-of-way. The **CONSULTANT** will reimburse railroad(s) for required flagging services associated with preconstruction surveys. Also, the **CONSULTANT** will purchase and maintain insurance and pay application and administration fees required by railroad(s) to cover field operations.

Survey/Environmental Right-of-Entry - Railroad right of entry agreements/insurance and flagmen costs will be necessary to obtain survey in the railroad ROW during preliminary design. Assume one (1) railroad flagger day, one (1) railroad protective liability insurance, one (1) railroad general liability insurance and rider, one (1) railroad right-of-entry agreement, and one (1) hour of total standby time for delays in the field associated with train traffic.

The **CONSULTANT** will solicit comments early in the design process from railroad(s) by providing an overview map and description of the project. Information such as train data, passenger operations , Valuation maps (VAL Maps) of railroad(s) right-of-way, future track and utility road requirements, and/or any other special considerations not described in railroad(s) general criteria, etc. will be gathered. The **CONSULTANT** will also submit plans and correspondence to railroad(s) for engineering review and approval. and subsequent development of railroad Force Account Costs.

The **COUNTY** will draft, review, and secure the Preliminary Engineering (PE) Agreements between the **COUNTY** and the railroad(s). The other agreements noted above are negotiated between the **CONSULTANT** and the railroad(s). The **CONSULTANT** will assist the **COUNTY** with development of the project description that will be incorporated into Preliminary Engineering (PE) Agreements. The railroad(s) invoices associated with the PE Agreements will be paid directly by the **COUNTY**.

PROJECT DELIVERABLES

- Monthly reports and invoice submittals
- Meeting Agendas & Meeting minutes – to be submitted to **COUNTY** within three days of meeting.
- Approved Preliminary Jurisdictional Determination
- Right-of-way plans and Engineer's Estimate for review
- Erosion control computations, if necessary

- Stormwater Pollution Prevention Plan
- Stormwater Management Report
- CAD files of all design and survey

SERVICES NOT PROVIDED

The **CONSULTANT** will not be responsible for the following services or deliverables and others not necessarily mentioned in this scope of work.

- Lighting protection System Design
- Electrical/lighting design
- Waterline and water fountain design
- Landscaping and irrigation design
- As-built plans – these will be the responsibility of the Contractor
- Utility relocation design and plans
- Right-of-Way Exhibits
- Right-of-Way acquisition
- Video pipe inspections
- Eminent Domain advertisement notice
- Public Involvement (other than those activities detailed in scope of work)
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Bid documents and preparation (other than those documents specifically mentioned in this scope of work)
- Payment of fees required by state and federal review/approval agencies (without reimbursement for said necessary fees)
- Construction Engineering and Inspection (CEI)
- FEMA permit and LOMAR/CLOMAR permit
- Floodplain Development Permit
- USACOE Navigation Permit
- 100% Final Construction Plans and specifications

SERVICES OF THE COUNTY

The **COUNTY** agrees to provide to the **CONSULTANT**, and at no cost to the **CONSULTANT**, the following upon request:

- Existing Policies and Procedures of the **COUNTY** with reference to geometrics, standards, specifications and methods pertaining to all phases of the **CONSULTANT'**s work
- Eminent Domain advertisement notice
- Contract documents (project specific special provisions to be supplied by the **CONSULTANT**)
- Payment of fees required by state and federal review process
- Right-of-Way acquisition

- Right-of-Way verification
- Moving, demolition and reset items list
- As-built plans
- Preliminary Engineering (PE) agreements with the railroad(s) and payments for all fees and cost associated with railroad preliminary engineering reviews.

SCHEDULE

Below is a summary of significant milestones and anticipated submittal timeframes:

- *Project Management and Coordination:* completed within seven (7) months of NTP.
- *Surveys*: completed within two (2) months of the NTP.
- *Environmental Services:* completed within four (4) months of NTP.
- *Preliminary (65%) Right-of-Way Plans:* completed within 5 months of NTP.
- *Public Meeting:* The COUNTY will hold a public meeting within six (6) months of the NTP.
- *Final Right-of-Way Plans:* Completed within one (1) month from date of public meetings.

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE
CREECH ROAD EXTENSION
BLYTHEWOOD ALTERNATIVE PROJECTS

Introduction

Parrish & Partners, LLC (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for the Creech Road Extension Project in Richland County, South Carolina. All of the project area is located within the municipal limits of the Town of Blythewood (TOWN).

Creech Road is considered an Urban Local from Blythewood Road (S-59) to a dead end approximately 650 feet south of Blythewood Road. The COUNTY holds all public rights-of-way adjacent to the roadway and assumes all maintenance responsibilities for those said rights-of-way. The existing roadway currently provides access for five business/commercial developments and other undeveloped properties. The extension is planned in coordination with future planning and development initiatives by the Town of Blythewood.

Proposed Project Scope – Preliminary and Final Construction plans will be developed to reflect the implementation of the Creech Rd Extension project to include the following;

- 25 mph design speed.
- 2, 12-foot wide travel lanes.
- The addition of a two-way left turn lane along the length of the roadway.
- The addition of bicycle and pedestrian accommodations along the length of the roadway.

The design and plans will be reviewed by DEPARTMENT District Encroachment personnel specific to the areas of encroachment at Blythewood Road and US Route 21.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 - Project Management
Task 2 - Environmental / Public Meeting
Task 3 - Traffic Analysis
Task 4 - Field Surveys
Task 5 - Roadway Design
Task 6 - Pavement Marking and Signing Design
Task 7 - Transportation Management Plan
Task 8 - Stormwater Management / Hydraulic Design
Task 9 - Sediment & Erosion Control / NPDES Permitting
Task 10 - Geotechnical Investigations and Engineering Services
Task 11 - Subsurface Utilities Engineering (SUE)

Task 12 - Utility Coordination Assistance
Task 13 - Construction Phase Services

Quality Control

The CONSULTANT shall implement all necessary quality control measures to produce plans and reports that conform to COUNTY guidelines and standards. Prior to submittal to the COUNTY, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program as well. The COUNTY reserves the right to request QA/QC documents (red-lines, checklists, etc) from the CONSULTANT with project deliverables.

Task 1

PROJECT MANAGEMENT

The CONSULTANT shall institute a program for conformance with COUNTY requirements for monitoring and controlling project engineering budget, schedule and invoicing procedures. The CONSULTANT's subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the COUNTY. Included in management of the project will be:

- Project meetings between the COUNTY, DEPARTMENT, TOWN and CONSULTANT for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the COUNTY.

- The CONSULTANT will prepare meeting agenda and meeting materials as well as record the minutes of each meeting in which it participates and distribute to the appropriate COUNTY personnel.

- Prepare monthly invoices, status reports, and schedule updates. Assume a 10 month design schedule which will impact the duration of preparing invoices, status reports, and schedule updates.

- The CONSULTANT will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume a 10 month design schedule.

- The CONSULTANT will include the COUNTY in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

The CONSULTANT will attend meetings with the COUNTY and stakeholders from various organizations affected by this project in order to incorporate the needs and desires of these

organizations into the decision-making process. It is assumed that the CONSULTANT will attend 12 project meetings (1 each month during the design services) and two (2) additional review coordination meetings with the DEPARTMENT, COUNTY and others, as applicable. The CONSULTANT will be in attendance at these meetings and will prepare all necessary display materials, meeting agendas and minutes.

Deliverables:

1. Ten (10) status reports (approximately monthly) and updated schedule. Two (2) additional meetings may be held specific to miscellaneous coordination efforts.
2. Meeting agendas and meeting minutes covering all project meetings. Meeting agendas are to be provided to the COUNTY within two (2) business days prior to all meetings. Meeting minutes are to be provided to the COUNTY within three (3) business days after all meetings.

Task 2

ENVIRONMENTAL SERVICES/PERMITTING

The CONSULTANT will assist the COUNTY with the required coordination with Local, State and Federal agencies regarding environmental services to ensure the program is in compliance with appropriate environmental regulations to obtain a Wetlands Permit and Land Disturbance Permit. The CONSULTANT will provide specific documentation, including but not limited to project information, applications and drawings as necessary for acquisition of the required permits.

Within two weeks of the date that the COUNTY provides a Notice to Proceed (NTP) for the subject project, and prior to commencement of design, the CONSULTANT shall conduct a brief desktop environmental overview and make a determination of the environmental and/or navigational permits expected to be required for the subject project on a permit determination form. This information will inform the COUNTY of the anticipated permits and will be incorporated in the project schedule to ensure compliance.

Permits – The CONSULTANT will coordinate with the COUNTY and attend coordination meetings with state and federal resource agencies and document all discussions and understandings that are reached.

The CONSULTANT shall perform Jurisdictional Delineations utilizing the three-parameter approach (hydric soils, hydrophytic vegetation and wetland hydrology) set forth in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, and subsequent Regional Supplements. The upland/wetland boundaries will be appropriately flagged in the field and surveyed using sub-meter GPS or survey data. The study corridor will be 100' each side of the existing roadway centerline. The CONSULTANT will plot the wetland boundaries on a surveyed map for inclusion with the JD request. The CONSULTANT shall prepare a request for a preliminary jurisdictional determination (JD) or, at the request of the COUNTY, an approximate JD letter for the project corridor. This submittal will be prepared according to the USACE's

"Information Required for Delineation and Jurisdictional Determination Submittal (February 2015)", or subsequent guidance. The completed request package, including drawings, will be submitted to the COUNTY for final processing and coordination with the agencies.

If applicable, the CONSULTANT shall prepare the Joint Federal and State Permit Application Package in the format specified by the Charleston District Corps of Engineers. The CONSULTANT shall complete all forms, documentation, and drawings as directed by the COUNTY that are part of the permit application package. The COUNTY or DEPARTMENT will execute the application form as the applicant, and may designate the CONSULTANT as the agent in the processing of the permit application, if so desired. It is assumed that any permits would be authorized under the SCDOT General Permit and will be prepared according to current DEPARTMENT standards which include the following:

- Joint Federal and State Application Form
- Permit Drawings: Drawings depicting the proposed impacts to waters of the U.S. on the subject property. The CONSULTANT shall include the surveyed or measured boundaries of jurisdictional waters superimposed on the actual development/grading plans to establish the proposed jurisdictional impacts.
- Impact Assessment Form and Supplemental Information: The CONSULTANT shall include a completed Impact Assessment Form, which includes, but is not limited to the following:
    - Project Information
    - Proposed impacts to WOUS
    - Alternative Analysis
    - Avoidance & Minimization
    - Hydrology & Hydraulics
    - Section 106 of the National Historic Preservation Act
    - Threatened and Endangered Species.

Mitigation Plan: In accordance with regulatory requirements, the CONSULTANT will develop a conceptual mitigation plan and submit it as part of the application package. It is assumed that any mitigation needed for this project will be acquired from the proposed COUNTY Mitigation Site.

The CONSULTANT shall submit the completed permit application package to the COUNTY for final processing and negotiation with the agencies. The COUNTY will coordinate directly with the DEPARTMENT, USACE, SCDHEC and other federal, state and local regulatory personnel throughout the course of the permit application process, and coordinate the submission of any additional information as requested by the respective agencies in order to facilitate permit review and approval. The CONSULTANT may be asked to assist in the coordination effort, and will not coordinate with the agencies unless directed by the COUNTY.

No NEPA documentation services are assumed for this scope of work.

Technical Reports

Hazardous Waste and Underground Storage Tanks – In assessing the environmental liabilities associated with the proposed new rights of way, the COUNTY may conduct appropriate /

applicable elements of a Phase I Environmental Site Assessment in accordance with procedures established by ASTM Designation E 1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". This approach complies with the Standards and Practices for All Appropriate Inquiries (AAI), Final Rule published in 40 CFR Part 312. A Phase 2 Site investigation may be conducted by the COUNTY for those sites recommended for additional study as stated in the Phase 1 ESA. The results / deliverable provided from a Phase 1 ESA and any potential Phase 2 Site Investigations will be provided to the CONSULTANT.

Public Coordination/Public Meeting – The CONSULTANT, with input from the COUNTY, shall prepare related public meeting materials, (deliverables would include plan view displays, project overview maps, typical sections, right of way data tables, etc). The CONSULTANT shall provide draft copies (hard copy and pdf) of all display materials to be used in public meetings to the COUNTY for review, a minimum of 15 business days prior to the meeting. The CONSULTANT will also provide the COUNTY with PDF versions of the displays for the public information meeting one week prior to the meeting for posting on the COUNTY website. The CONSULTANT should assume one (1) meeting with COUNTY staff as a planning session to review the public meeting plan. The meeting would be assumed to be held in conjunction with Preliminary Construction Plans.

The COUNTY may provide security guards from local law enforcement agencies or private security firms for all public meetings. The COUNTY will also be responsible for fabricating and erecting signs to be placed on the projects as well as hard copies of all handouts, comment forms, sign-in sheets, etc. The COUNTY will also procure and bring all other items not specifically mentioned below to be provided by CONSULTANT.

The public meeting is planned as an open-house style meeting. The COUNTY may conduct a brief, formal presentation at some time during the public information meeting. The CONSULTANT shall attend the scheduled public meeting and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The CONSULTANT's role at this meeting is to discuss the project design and impacts with the public in attendance. The CONSULTANT will be responsible for bringing hard copies of the project displays (plan view, typical sections, overview boards, etc) as well as display boards (typical black, foam boards; "GATOR" board, or equivalent) to the meeting; assume three (3) copies of each display to be provided at the meeting. The CONSULTANT will also procure and bring all easels necessary for project display boards.

The public meeting will tentatively be scheduled for 5:00 pm to 7:00 pm on a Tuesday or Thursday at a venue near the project corridor or along the corridor. The COUNTY will be responsible for procuring the venue and determination of date and time.

Upon conclusion of the public comment period, the CONSULTANT will prepare a public meeting summary to include a summary of the public comments received. The CONSULTANT will also prepare and provide a document (Word or Excel), in matrix format, which includes the public comment, citizen name and contact info, and space for COUNTY response to each comment. The COUNTY will be responsible for development of all responses and individual response letters.

Assumptions

1. One (1) public information meeting will be scheduled prior to finalizing Construction plans.

Deliverables

1. Attendance at one (1) Public Meeting and preparation of all meeting materials.
2. Public meeting summary

Task 3

TRAFFIC ANALYSIS

Data Collection – The CONSULTANT will collect data necessary to perform a detailed traffic analysis of existing and future design conditions. The data collection will include the following activities:

Field Investigation – The CONSULTANT will conduct a field visit to examine the existing roadway conditions and adjacent land use characteristics present within the study area, including:

1. Existing roadway speed limits
2. Number of lanes
3. Type and length of turn lanes
4. Traffic control

The field investigation will also identify those locations where horizontal and/or vertical sight distance may be limited at roadway and driveway intersections and identify locations where access management principles may be applied to consolidate driveway curb cuts.

Accident Data Collection – The CONSULTANT will obtain the most recent three years crash data along the study corridor.

Traffic Volume Data Collection – The CONSULTANT will conduct manual turning movement counts in 15 minute intervals during the weekday A.M. peak (7:00 to 9:00 A.M.) and P.M. peak (4:00 to 6:00 P.M.) on either Tuesday, Wednesday or Thursday at the unsignalized intersection of Creech Road and Blythewood Road.

The CONSULTANT will conduct 24-hour bi-directional counts during the mid-week at the intersection of Creech Road and Blythewood Road.

All counts will be conducted while the local public schools are in session.

The CONSULTANT will utilize travel demand models and/or average annual growth rates to

establish design year and background traffic growth.

Development Data Collection – The CONSULTANT will obtain information concerning planned and approved development projects affecting traffic within the corridor area. Information concerning projected land uses, zoning and development planning documents will also be obtained. It is assumed that the TOWN will provide information relative to proposed / planned development within the project corridor.

Traffic Analysis – The CONSULTANT will perform the necessary analyses of the proposed improvement alternatives using the information obtained during the Data Collection task.

Conceptual Analysis – The CONSULTANT will identify the opening year and design year (20 years past opening date) peak hour Levels of Service for roadway segments and intersections within the study area using the procedures and methodologies outlined in the current editions of Special Report 209: Highway Capacity Manual 2000 edition and traffic analysis software, such as Highway Capacity Software (HCS) or Synchro 7.0 or 8.0 SimTraffic. The results of the conceptual design analysis will include:

1. The number and type of lanes on each approach of the study area intersections
2. Length of turn lanes to provide sufficient vehicle storage
3. LOS Tables
4. Opening year ADT and design year ADT

Accident Analysis – The CONSULTANT will identify the existing high crash locations within the corridor and will determine:

1. the total number of crashes, number of fatal crashes and fatalities, number of injury crashes and injuries;
2. the probable cause, time and location of all the fatal crashes;
3. the total number of the property damage crashes;
4. the lighting and pavement condition of all the crash occurrences

The CONSULTANT will summarize the different crash types and determine the primary causes of the existing crashes. The CONSULTANT will identify those locations with frequent and/or severe crash histories that may be able to be addressed through design and traffic control measures implemented as part of this project. The CONSULTANT will evaluate the most recent three years of available crash data.

Report Preparation – The CONSULTANT will prepare a traffic study that will outline the evaluations performed and the recommended improvements along the corridor and comparative analysis of the existing roadway to the post improvement roadway. The results will provide Levels-of-Service for each scenario studied. The CONSULTANT will submit a PDF of the traffic study to the COUNTY. Upon receipt of any comments, the CONSULTANT will revise the study accordingly and submit a PDF and two (2) final copies to the COUNTY for submittal to the DEPARTMENT for review. The CONSULTANT will revise the study as necessary per DEPARTMENT comments for final approval. After approval of the recommended improvements, the CONSULTANT will proceed with the development of preliminary roadway plans the Creech

Road Extension Project.

Traffic Signal Warrant Analysis will not be performed under this scope of work; however, recommended intersections, if applicable, for traffic signal warrant studies will be indicated in the report.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site.

Task 4

FIELD SURVEY/MAPPING

Aerial Photography and LiDAR Mapping – The CONSULTANT secured all necessary Aerial Photography and LiDAR Mapping surveys for use during previous contract. Mapping surveys were prepared to the contour accuracy of 0.5 feet (1-foot contour interval). The aerial LiDAR mapping will be prepared for use in plans developed to a horizontal scale of 1" = 50'.

Field annotation of aerial topography will be performed by the CONSULTANT.

Control Surveys – The CONSULTANT will establish the Primary, Main and Secondary Survey Control Points to be used during the supplemental topographic surveys and the construction of this project. All surveys will be in accordance with SCDOT's *Pre-Construction Survey Manual* dated October 2012. The CONSULTANT will notify the COUNTY of any required temporary traffic control measures (e.g. shoulder/lane closures, etc.) within seven (7) days before such closure due to survey activities.

Control survey and information provided on plans shall be consistent with SCDOT Preconstruction Design Memorandum 08 (PCDM-08).

Design Surveys – Additional field surveys will be performed by the CONSULTANT as necessary during the design phases of the project. All surveys conducted should be adequate for the design, permitting and construction of the project.

Field survey services for the preparation of aerial LiDAR mapping shall include the collection of 2 additional photo ID points – one at the intersection of Blythewood Road and US Route-21 and the second near the new tie-in location of Creech Road and US Route 21. Field survey of the photo ID points will be performed utilizing the South Carolina VRS Network to establish horizontal coordinates referenced to the South Carolina State Plane Coordinate System (NAD 83/2011) for each point. Elevations referenced to the NAVD 88 Vertical Datum will be established for each ID point by performing differential level loops to the accuracy necessary for LiDAR mapping

accuracy. An ASCII or .txt file shall be provided containing the horizontal coordinates and vertical elevations of each ID point. The intent is to utilize the aerial LiDAR surveys conducted in this stage of work (and those deliverables as conducted under previous contract) for all future design services.

Supplemental field surveys will be conducted by the CONSULTANT to obtain all topographic and planimetric data within the project corridor. CONSULTANT to assume 12 hours for supplemental surveys.

Field surveys will be performed by the CONSULTANT to establish existing rights-of-way and to locate frontal property boundary monumentation for developing property maps per the DEPARTMENT format.

Property owner data will be obtained from county records (plat and deed research) for use in the property surveys and to incorporate property ownership data into the roadway plans. The property monumentation and property owner data will be used to develop a closed out property drawing.

Level runs between existing primary vertical control points will be performed to establish additional benchmarks to be referenced on the contract drawings.

Survey data will be shown on Reference Data Sheets in the '5 series sheets' of the plans due to lack of room on the 1"=20' scale plan sheets.

The CONSULTANT will locate all drainage, stormwater, sanitary sewer structures and above ground utility structures within 100 ft. of the proposed roadway alignments. For drainage, stormwater, sanitary sewer structures, the pipe size, pipe type, structure type and invert / rim elevations shall be obtained. The CONSULTANT will locate and survey the next connecting structure (if outside the 100 ft. area) in order to determine grades / depths of existing facilities.

The CONSULTANT will horizontally and vertically locate all potential outfall drainage ditches and streams. At these outfalls, cross sections will be obtained 400 feet upstream and downstream at 50-foot intervals, or as necessary to define the channel alignment, from the proposed roadway alignment. All cross sections will be extended from bank to bank of the existing channel plus 10 feet on either side. Assume 4 outfalls for survey.

The CONSULTANT shall update the existing project DTM / topo files (as prepared under previous contract by CONSULTANT) with all supplemental field survey data as shown above.

The CONSULTANT will stake and obtain boring elevations for all geotechnical borings performed on the project by the CONSULTANT.

The CONSULTANT will stake the proposed and present rights-of-way for approximately 50% of the total parcels to be affected, upon direction – assume 6 tracts for this scope of work. Right-of-way staking will consist of placing 36-inch stakes (or paint in paved areas) at all proposed right-of-way breaks, sight triangles and spaced at 100-foot intervals in tangents and 50-foot intervals in curves. These stakes shall be placed after Final Right-of-Way Plans have been developed and only after the Project Manager contacts the CONSULTANT when a property owner requests the right-of-way to be staked.

All right-of-way staking services will be separate from the lump sum amount for Task 3 and will be invoiced on a cost plus, fixed not to exceed amount, only when authorized by the COUNTY.

The CONSULTANT should assume multiple trips as the staking may involve several parcels.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site. The CONSULTANT will not be responsible for obtaining permissions from property owners for surveys outside of the existing Right-of-Way.

Task 5

ROADWAY DESIGN

For this task and all other tasks contained in this scope, the CONSULTANT will utilize the DEPARTMENT standard drawings, specifications, and design manuals that are current as of the first issuance of the task order scope by the COUNTY to the CONSULTANT.

Develop Design Criteria – The CONSULTANT will prepare the project Design Criteria for the Creech Road Extension project in accordance with the following;

- ***SCDOT Roadway Design Manual (2017 Edition)****;*
- *Applicable* ***Instructional Bulletins****,* ***Preconstruction Advisory Memos*** *and* ***Preconstruction Design Memos****;*
- ***Standard Drawings for Road Construction*** *(latest revisions per Notice to Proceed of this work);*
- *All applicable* ***American Association of State Highway Transportation Officials (AASHTO)*** *publications.*

Any exceptions and/or deviations from established design guides and standards will be identified. The CONSULTANT will notify the COUNTY of any exceptions and/or deviations from the Design Criteria as soon as identified. The COUNTY will coordinate the Design Criteria with the DEPARTMENT for final approval.

Concept Design

The CONSULTANT will prepare a concept design and cost estimate for COUNTY approval for the project to reflect the alignment as proposed by the TOWN and per the following base criteria.

- 25 mph design speed.
- 2, 12-foot wide travel lanes.
- The addition of a two-way left turn lane along the length of the roadway.
- The addition of bicycle and pedestrian accommodations along the length of the roadway.

The concept design should be developed in plan view only, in roll-plot formatting and provided to the COUNTY in hard copy and pdf formats. The designs should be sufficiently detailed to reflect lane lines, edges of pavement, curb, sidewalk / shared-use paths, property and existing r/w lines and proposed new rights-of-way.

The CONSULTANT will prepare / update the cost estimate (from previous concept prepared under original contract) specific to this project to be provided with the concept design. Areas of new rights of way, per parcel, will also be provided to the COUNTY.

Typical Section, Alignment and Intersection Studies - Upon completion of the concept design and estimate and in coordination with the COUNTY and TOWN, the typical section, alignment and intersections will be further evaluated and refined for development of the proposed design. Existing features of the project will be considered during development of the proposed alignment and intersection studies. Environmental constraints, railroads, utilities, businesses, and residences will be considered in the development of the proposed geometry and any localized or segmental modifications to the typical section.

Preliminary Roadway Plans – Following concept design development and approval, traffic study recommendations, and discussions with COUNTY regarding the recommended design approach, the CONSULTANT will prepare Preliminary Roadway Plans. The plans will be developed to the level of detail of approximately 30% Complete Construction Plans. The Preliminary Roadway Plans for the project will be prepared at a scale of 1"=20' scale to illustrate pertinent information associated with roadway design. The plans will be sufficiently developed to illustrate the construction limits and right-of-way requirements of the entire project. The plans will incorporate information obtained during data collection / site visits and any utility information discovered during coordination with utility owners (COUNTY to conduct), and the design will be adjusted where possible to minimize impacts. Additionally, the design will be adjusted to minimize impacts to developed properties and wetlands. Preliminary Plans will include plan, profile and cross-sections of the recommended design, to include (at a minimum) the following;

- Typical Sections
- Horizontal / vertical alignments (mainline)
    - For vertical profile, assume an approximate 4" overlay for areas over existing roadway
- Plan Layout (lane widths, radii, directional arrows, storage, tapers, etc)
- Review of sight distance considerations
- Review of non-standard driveway grades and tie-ins
- Limits of existing rights-of-way, easements and adjacent properties
- Property lines and parcel numbers (from field survey, plat / deed research)
- Preliminary storm drainage plan detailing structure type, pipe size, ditches, etc.
- Anticipated location, type and size of necessary drainage culverts, major cross-lines, outfall improvements, retaining walls, and other miscellaneous roadway structures
- Cross-sections at 100 foot intervals on tangents and 50-foot intervals in curves
- Construction limits

- Proposed rights-of-way and easements
- Labeling (type, size and location) of existing, major utility features

Upon completion of the Preliminary Roadway Plans, the CONSULTANT will submit the plans to the COUNTY for review and comment. The CONSULTANT will be responsible for addressing comments and plans revisions with subsequent roadway plan submittals (per scope below).

A cost estimate will be prepared by the CONSULTANT and submitted along with the Preliminary Roadway Plans for use by the COUNTY. The COUNTY will use this cost estimate in order to determine whether or not the scope of the project needs to be reduced or expanded due to budgetary constraints.

Upon completion of the Preliminary Roadway Plans, the CONSULTANT will provide the COUNTY with two (2) half-sized, hard copy sets of plans along with a PDF (half-size and full size). The CONSULTANT at this time will also provide the COUNTY with preliminary new rights-of-way areas for use in developing an estimated right-of-way cost.

Design Revisions / Modifications – The CONSULTANT should assume that minor revisions and plan adjustments may be necessary, prior to preparation of final design, as a result of coordination with project stakeholders (TOWN, COUNTY). It is assumed that any changes to the typical section or horizontal geometry (alignment) to the Creech Road Extension mainline will be negotiated through a contract modification or contingency authorization.

Final Roadway Design and Plans

Roadway Construction Plans – The construction plans will be a continuation of Preliminary Plans (30% complete) and will address comments from the COUNTY review of the preliminary plans.

Construction Plans will be developed in general accordance with the DEPARTMENT's requirements, with the following exceptions:

- Moving Items will only be shown on the Moving Items Sheet.

- The owner's name and any permissions will not be shown on the Plan Sheets. The only property information shown on the plan sheets will be the Tract Number.

The plans will be reviewed by DEPARTMENT District Encroachment personnel.

The CONSULTANT will be responsible for providing an initial list of moving and demolition items to the COUNTY for use by the right-of-way agent.

The CONSULTANT will incorporate information obtained during the SUE phase of the project.

The CONSULTANT will provide curb grades around side roads and major driveway radii, where applicable.

The CONSULTANT will establish horizontal and vertical alignments along with cross sections, as needed, in order to study the re-connection of driveways to the roadways. This design data will be shown in the plans in order to convey the extent/impact of the re-configuration of driveways necessary to provide access to the property. Driveways that are level with the roadway will not have a horizontal or vertical alignment set, but will be handled by only showing their connection in the roadway cross section and plan view based on the roadway cross section.

Plan and profile sheets, as necessary, will show information necessary to permit construction stakeout and to indicate and delineate details necessary for construction.

The CONSULTANT will attend the Construction Plans Design Field Review with the COUNTY to review the project design in the field.

A set of Preliminary Construction Plans (95% complete) will be submitted to the COUNTY for review prior to final plan delivery. The preliminary cost estimate will be updated by the CONSULTANT and submitted with the Preliminary Construction Plans for use by the COUNTY.

On or before the contract completion date, the CONSULTANT will deliver to the COUNTY one complete set of Final Construction Plans, an Engineer's Estimate, and "Project Specific" Special Provisions. See Project Special Provisions and Engineer's Estimate for the description of the Engineer's Estimate and "Project Specific" Special Provisions.

The CONSULTANT will provide one half-size (to scale) hard copy (12"x18"), a full size PDF (22"x36") and CADD files (MicroStation format) at each review stage. Additionally, the CONSULTANT will provide one full size (22"x36") set with Final Construction Plan submittals.

Project Special Provisions and Engineer's Estimate – The CONSULTANT will prepare all "Project Specific" Special Provisions and include them in the format compatible with the DEPARTMENT Construction Administration Section. The CONSULTANT will work closely with COUNTY personnel in the COUNTY'S development of the construction document package.

Also, utilizing recent bid data from similar projects in the area, the CONSULTANT will prepare an Engineer's Estimate for construction of this project. The estimate will be based on the final summary of quantities. The CONSULTANT will attend a meeting with the COUNTY to reconcile differences between the CONSULTANT's estimate and the COUNTY's estimate.

Task 6

PAVEMENT MARKING AND SIGNING

Final pavement marking/signing plans will be prepared at a scale of 1"=20' unless otherwise agreed upon. The plans will consist of an itemized listing of estimated quantities; typicals for installation (DEPARTMENT typicals may be used where applicable), details showing lane lines, edge lines, stop bars, symbol and word messages and other appropriate markings and sign

designation numbers and locations. The plans will include dimensions sufficient for field layout. The *Manual on Uniform Traffic Control Devices (MUTCD): 2009 Edition* and DEPARTMENT details will be incorporated into the plans.

Task 7

TRANSPORTATION MANAGEMENT PLAN

Work Zone Traffic Control Plans **–** The design and preparation of one set of Work Zone Traffic Control plans will be accomplished for the roadway project. The plans will include a description of the sequential steps to be followed in implementing the plans, and will be developed at a scale of 1"= 50', unless otherwise agreed upon. The traffic control plans will include lane closures, traffic control devices, temporary lane markings, and construction signing and sequencing notes. The plans will identify lane widths, transition taper widths, and any geometry necessary to define temporary roadway alignments. Also, the plans will address the type of surface to be used for all temporary roadways. Standard traffic control details will be incorporated into the plans for most work activities, but detailed staging plans will be required where impacts upon the normal traffic flow are significant.

Preliminary traffic control plans (and associated pay items and quantities) will be submitted in conjunction with the 95% complete roadway plans, and the final signed and sealed traffic control plans, along with quantities, will be submitted with the final roadway construction plans.

The Creech Road Extension project should be assumed an ***"Intermediate"*** project per the DEPARTMENT's *Rule on Work Zone Safety and Mobility.*

Task 8

STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The CONSULTANT will perform the Stormwater Management and Hydraulic Design for the project based on SCDOT Design Guidelines. Design procedures specified by the South Carolina Department of Health and Environmental Control as well as Richland County will be incorporated as needed. Any conflicts in design criteria for the review agencies will be evaluated with the COUNTY to determine the appropriate design procedure for the project. This task includes inspection of the existing drainage structures and roadway drainage.

Roadway Drainage - The roadway drainage design for the project will be completed utilizing design procedures that comply with stormwater management and sediment and erosion control regulations and the NPDES general permit. All drainage calculations will be performed with methods suggested in the DEPARTMENT's *Requirements for Hydraulic Design Studies* dated May 26, 2009 and be made available to the COUNTY for approval.

The CONSULTANT will perform a field review of the project and a visual inspection of the existing drainage systems within the project area. The inspections performed will not include any material testing or structural analysis. The CONSULTANT will document any irregularities in the existing drainage system and provide the data to the COUNTY. If needed, the CONSULTANT will meet with the COUNTY in the field to review and discuss the condition of the existing drainage system prior to reuse in the proposed design. If additional testing or inspection (video pipe inspection) is recommended, the CONSULTANT will prepare the recommendation and submit to the COUNTY for submittal to the DEPARTMENT.

Roadway drainage design for the project is dictated by the project horizontal and vertical geometry. The design will be terminated at available existing outfall locations or at new locations that will be constructed as a part of the project. Drainage areas will be defined from the existing topography as determined from available mapping and field survey. Design year storms will be established in conjunction with DEPARTMENT guidelines for on-site and off-site runoff. For the design year storm, rainfall intensities appropriate for the project area will be determined and the runoff will be calculated for each drainage area. For each contributing sub-area, a structure will be identified to accept the runoff (inlet, cross-pipe, ditch, etc.). Based on accumulation of runoff, appropriate pipe sizes will be chosen to convey the runoff to the outfall. As part of the project design, alternate pipe designs will be developed as per DEPARTMENT Engineering Directive Memorandum No. 24.

The hydrologic analysis of each watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre- and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with DEPARTMENT and NPDES regulations. If required to control stormwater quality or quantity, water quality or detention basins will be added using a hydraulic routing method. Energy dissipaters may also be utilized based on HEC-14 procedures. Outfall channel protective measures will be based on design methods in HEC-15 and/or HEC-11.

Roadway cross-lines will be designed and analyzed according to the principles given in FHWA's Hydraulic Design Series No. 5. Cross-line pipes will be sized based on DEPARTMENT criteria and possible backwater effects. To reduce backwater, multiple pipes or multiple barrel culverts may be used in lieu of a single structure. Closed storm sewer systems will be analyzed with GEOPAK Drainage or XP-SWMM. Roadway inlets will be located based on FHWA's Urban Drainage Design Manual HEC-22. Any roadway ditches will be sized with Manning's equation, and designed using HEC-15 methodologies.

The storm sewer design for the project will be performed to minimize impacts to existing utilities if possible. Existing utility data will be obtained by the COUNTY from the utility owners within the project area. The CONSULTANT will utilize this data as part of the design for the storm sewer systems. The CONSULTANT will adjust pipe locations and inverts if possible. If conflicts cannot be avoided, the CONSULTANT will evaluate the use of utility conflict boxes or other devices to minimize the need for utility relocations. The CONSULTANT and the COUNTY acknowledge not all utility relocations can be avoided.

The CONSULTANT will evaluate the potential impacts from the project on water quality. If dictated by project permitting, the CONSULTANT will utilize water quality best management practices to provide treatment to pavement runoff prior to entering environmentally sensitive areas.

The location of the storm drainage systems will be shown on the roadway plan sheets or replicated drainage sheets. Additional plan information will include pipe and drainage structure size, location, type and elevation. A Stormwater Management Design Report will be prepared for the project based on SCDOT guidelines and will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps. A Preliminary Stormwater Management Design Report will be prepared and submitted with Preliminary Plans. It is assumed that this document will be the basis for the Final Stormwater Management Design Report to be prepared and submitted with Final Construction Plans.

Task 9

SEDIMENT AND EROSION CONTROL/NPDES PERMITTING

Sediment and Erosion Control – The project will include the development of Sediment and Erosion Control Plans as well as the preparation of Supporting Documentation for the Land Disturbance Permit Application.

The erosion control plans will be prepared on replications of the roadway plan sheets at a scale of 1"=20', unless otherwise agreed upon. The erosion control plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment control design will include the temporary placement of sediment ponds, sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the DEPARTMENT's Standard Drawings for Roadway Construction to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed right-of-way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed right-of-way. Quantities for erosion and sediment control items will be calculated based on DEPARTMENT typical drawings. Any required erosion control computations will be completed with approved methods and submitted to the COUNTY.

NPDES Permitting – The project will require the acquisition of a National Pollutant Discharge Elimination System (NPDES) permit for construction activities. The NPDES permit is required by the South Carolina Department of Health and Environmental Control (SCDHEC) for all land disturbing activities in South Carolina. The CONSULTANT shall provide all coordination with SCDHEC for the approval of permits.

The CONSULTANT will assist the COUNTY with the development of the NPDES permit application as well as with the submission of any required supporting data. The Stormwater Management Report for the project will contain all supporting data developed by the

CONSULTANT for the project. The CONSULTANT will provide additional calculations and make revisions to the construction plans as required by the permit reviewer. This scope of services does not include redesign of any elements of the roadway design as a result of comments from the NPDES permit reviewer. Any required revisions would be completed under a separate contract modification.

Task 10

GEOTECHNICAL EXPLORATIONS AND ENGINEERING SERVICES

General – The CONSULTANT will perform a final geotechnical exploration for the new location roadway, shared-use path, and shoulder widening. The CONSULTANT will gather samples, conduct tests, and analyze necessary soil and foundation data for the roadway improvements. The results of the sampling, testing, analysis, and recommendations concerning the design will be compiled into a final report for submittal to the COUNTY. The following design standards will apply:

- 2007 SCDOT Standard Specifications for Highway Construction
- SCDOT Standard Supplemental Specifications and Special Provisions
- 2019 SCDOT Geotechnical Design Manual (GDM), Version 2.0

Field Exploration (Final Subsurface Exploration) – Prior to beginning the final subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed that COUNTY will obtain permission from property owners for CONSULTANT to perform borings outside of the DEPARTMENT and COUNTY right-of-way

CONSULTANT will request an SC811 ticket prior to starting field work for the final exploration.

Final boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed final subsurface exploration plans to the COUNTY prior to initiation of field work for review and acceptance. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The final subsurface exploration plan is to include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

New Location Roadway, Shoulder Widening, and Shared-Use Path – Subsurface Exploration

- Roadway soil test borings will be performed as specified in the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that generally cut and fill sections will be three (3) feet or less in height.
- Final soil test borings will be performed at a frequency of approximately 500 feet within the DEPARTMENT's right-of-way, COUNTY right-of-way, or on private property with access permission obtained by the COUNTY.
- Six (6) roadway soil test borings (SPT borings) will be performed up to a depth of 10 feet, or auger refusal (whichever occurs first) inside and/or outside the DEPARTMENT/COUNTY right-of-way.
- Two (2) bulk samples will be obtained from near surface soils.

Other Field Testing Items

- Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 2 days of lane closures will be necessary.
- At the completion of field work, test locations will be located for latitude and longitude, elevation and station with GPS equipment.

Field Engineering – The CONSULTANT will provide oversight of hand auger borings, drill rig and cone rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (ASTM 2487) will be performed by a field engineer and/or field geologist who will have a minimum of 3-years of experience in supervision of field equipment and field personnel.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing may include, as estimate, the following:

- 20 Natural Moisture Content Tests
- 20 Grain Size Distributions with wash No. 200 Sieve
- 20 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
- 2 Standard Proctor Tests

Final Roadway Geotechnical Engineering Report – The Final Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the final geotechnical subsurface exploration in accordance with the GDM Chapter 7. The final geotechnical engineering report will be written in general accordance with the GDM Chapter 21. The final report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted with the Preliminary Construction Plans.

The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

This scope of services does not include any work or activities associated with geotechnical investigations for the development of pavement designs, cross-line storm drain pipes, retaining walls, or structures like mast-arms and overhead signs. The COUNTY will provide approved pavement design(s) to the CONSULTANT. Retaining walls and other structures are not included in the project.

Task 11

SUBSURFACE UTILITIES ENGINEERING (SUE)

Within 30 days of Notice to Proceed for the contract, the CONSULTANT will provide the COUNTY with a recommendation as to the extent of SUE services to be provided. This should include as much information as can be assembled on utility type, approximate location, owner, and material type. This information will be used to specifically define the limits of the SUE work to be performed.

The CONSULTANT shall perform work in two phases. The first phase consists of designating services (Quality Level B and C). For the purpose of this agreement, "designate" shall be defined as indicating (by marking) the presence and approximate horizontal position of the subsurface utilities by the use of geophysical prospecting techniques. The second phase consists of test hole services (Quality Level A). For the purpose of this agreement, "locate" means to obtain the accurate horizontal and vertical position of the subsurface utilities by excavating a test hole. The CONSULTANT shall provide these services as an aide in the design of right-of-way and construction plans for the project.

Unless specifically stated otherwise, the CONSULTANT shall adhere to the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

Designating shall be estimated on a cost per linear foot basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Locating shall be estimated on a per each basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Traffic control shall be estimated on a per day basis and shown separately. No separate payment will be made for mobilization and should be included in the per linear foot or per each price for designating or locating.

Designating –

A. In the performing of designating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level B information for approximately 25,000 LF of underground utilities.
2. Provide all equipment, personnel and supplies necessary for the completion of Quality Level C information for approximately 3,000 LF of underground utilities.
3. Provide all equipment, personnel, and supplies necessary for the accurate recording of information for approximately 500 LF of aerial utilities. *The estimation of aerial*

utilities is measured from power pole to power pole and is not an estimation of each line attached to the poles.

4. Conduct appropriate records and as-built plans research and investigate site conditions. Digital copies of records and as-built plans research to be provided to COUNTY.
5. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of way.
6. Designate the approximate horizontal position of existing utilities by paint markings or pin flags in accordance with the APWA Uniform Color Code scheme along the utility and at all bends in the line in order to establish the trend of the line. All utilities shall be designated as well as their corresponding lateral lines up to the point of distribution, existing right-of-way limits, or whichever is specifically requested and scoped for each individual project.
7. Survey designating marks, which shall be referenced to project control provided by the surveyor of record.
8. Draft survey information using DEPARTMENT CADD guidelines for Subsurface Utility Engineering consultants (latest version).
9. Final review and seal of all appropriate work by a professional engineer and/or land surveyor licensed in South Carolina in responsible charge of the project.

B. In the performing of designating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

The above quantities are based on the Level B designation assuming 150 LF feet along Blythewood Road (assumed 10 designated utilities), 1000 LF along Creech Rd (assumed 8 designated utilities), 500 LF along US 21 (assumed 8 designated utilities), 1300 LF along transmission easement (assumed 2 designated utilities), 500 LF along dirt road (assumed 6 designated utilities) and 500 LF across the parking lot area behind the Blythewood IGA grocery store (assumed 6 designated utilities). The CONSULTANT will notify the COUNTY immediately should additional SUE be recommended. The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

Locating –

No locating services (Level A test holes) are included as a direct service associated with this scope of work. Should locating services be deemed necessary during the design and utility coordination services, these services shall be paid for through the project contingency budget on a per Level A test hole cost. CONSULTANT to provide a per test hole cost for future use, should locating services be needed.

The services to be conducted by the CONSULTANT, in the performance of locating services, only as directed and by prior approval by the COUNTY, include the following:

A. In the performance of locating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level A test holes.
2. Conduct appropriate records and as-built research and investigate site conditions. All records and as-built research to be made available to the COUNTY.
3. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of-way.
4. Perform electronic or ground penetrating radar sweep of the proposed conflict and other procedures necessary to adequately "set-up" the test hole.
5. Excavate test holes to expose the utility to be measured in such a manner that insures the safety of excavation and the integrity of the utility to be measured. In performing such excavations, the CONSULTANT shall comply with all applicable utility damage prevention laws. The CONSULTANT shall schedule and coordinate with the utility companies and their inspectors, as required, and shall be responsible for any damage to the utility during excavation.
6. Provide notification to the COUNTY concerning 1) the horizontal and vertical location of the top and/or bottom of the utility referenced to the project survey datum; 2) the elevation of the existing grade over the utility at a test hole referenced to the project survey datum; 3) the estimated outside diameter of the utility and configuration of non-encased, multi-conduit systems; 4) the utility structure material composition, when reasonably ascertainable; 5) the benchmarks and/or project survey data used to determine elevations; 6) the paving thickness and type, where applicable; 7) the general soil type and site conditions; and 8) such other pertinent information as is reasonable ascertainable from each test hole site.
7. When an attempt to locate a utility line over an area where SUE was performed does not provide valid vertical data, the test hole shall not be reimbursable by the COUNTY. In the following cases, test holes shall be reimbursed by the COUNTY regardless of obtaining valid vertical data:
    a. Utility lines buried in materials that cannot be removed by vacuum techniques other than duct banks,

    The CONSULTANT to provide a separate unit cost for "test holes attempted" and any test holes that do not provide valid vertical data, shall be paid at this rate.
8. Provide permanent restoration of pavement within the limits of the original cut. When test holes are excavated in areas other than roadway pavement, these disturbed areas shall be restored as nearly as possible to the condition that existed prior to the excavation.
9. Draft horizontal location and, if applicable, profile view of the utility on the project plans using CADD standards as outlined above. A station and offset distance and/or northing and easting coordinates (State Plane) with elevations shall be provided with each test hole.
10. Test hole information shall be formatted and presented on CONSULTANT's certification form and listed in a test hole data summary sheet.

11. Certification form shall be reviewed and sealed by a professional engineer and/or land surveyor licensed in South Carolina and in responsible charge of the project.

B. In the performance of locating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

Task 12

UTILITY COORDINATION ASSISTANCE

The CONSULTANT shall coordinate the project development with the COUNTY's Utility Coordinator. Coordination shall involve inviting the COUNTY's Utility Coordinator to necessary project meetings, providing updates to schedule, and providing project files as requested by COUNTY's Utility Coordinator. The CONSULTANT will provide electronic copies and pdf's of the Survey and Subsurface Utility Engineering as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The COUNTY'S Utility Coordinator will handle coordination of the project development with utility companies. The CONSULTANT will anticipate approximately (2) meetings for Utility Coordination.

Task 13

CONSTRUCTION PHASE SERVICES

All necessary construction phase services will be evaluated and negotiated upon completion of the design services tasks and prior to the proposed construction contract. A contract modification will be negotiated for these services.

Services Not Provided

Services not provided by the CONSULTANT include, but are not limited to, the following:

- Electrical plans
- Landscaping, lighting and irrigation plans
- Pavement coring or pavement design
- No structural design for new bridges
- Environmental Assessment Documentation
- Falling Weight Deflectometer (FWD) testing
- Video Pipe Inspection
- The CONSULTANT shall not be the "responsible engineer" referenced IN 2009-04 who evaluates the structural condition and performs the preliminary inspection of existing pipes and culverts to determine if they can be retained. The DEPARTMENT shall determine if existing pipes and culverts are to be retained due to structural conditions. The CONSULTANT will indicate the retention/extension of all existing pipes/culverts which meet the hydraulic requirements unless otherwise directed by the DEPARTMENT
- Sight-specific Response Analysis study
- Utility relocation design and plans
- Utility coordination
- Right-of-way acquisition, exhibits, negotiations, or appraisals
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Construction Engineering and Inspection (CEI)
- Location of water and sewer utility services for each utility customer in the project area.
- Payment of fees required by state and / or federal review / approval agencies (without reimbursement)
- All other services not specifically included in this scope of work

Services of the COUNTY

The COUNTY agrees to provide to the CONSULTANT, and at no cost to the CONSULTANT, the following upon request, as necessary for the project:

- Access to and use of all reports, data and information in possession of the COUNTY which may prove pertinent to the work set forth herein.
- Existing Policies and Procedures of the COUNTY with reference to geometrics, standards, specifications and methods pertaining to all phases of the CONSULTANT's work.
- Eminent Domain advertisement notice.
- Public Notice Letter
- Approve location and provide road and directions signs for Public Meeting.
- Provide Security guard for the public information meeting.
- Existing roadway plans.
- Provide existing signalized intersection coordination timing(s), existing interconnect plan, and location of master, if applicable.
- Provide Existing utility data provided by Utility Owners within the project area
- Final moving, demolition and reset items list. An initial list will be provided by the CONSULTANT.
- Contract documents (project-specific special provisions to be supplied by CONSULTANT)
- Right-of-Way acquisition.
- As-built roadway plans.
- Construction Engineering and Inspection (CEI)
- Phase 1 Environmental Site Assessment
- Approved pavement design

Project Deliverables

The CONSULTANT will provide to the COUNTY the deliverable items shown below within the time allotted for each phase of work. Delivery may not be in the order shown.

- Monthly Status Updates
- Meeting Agendas and Meeting Minutes
- Photography / Video (project documentation)
- Attendance at (1) public meeting
- Public Information Meeting materials (as detailed in scope of work)
- Field Surveys and Project DTM updates
- Recommendation for extent of SUE services – 30 days from NTP
- Full size color plots of U-sheets along with Microstation/PDF electronic files
- CADD files (at all plan / design stages)
- Documentation of areas of new rights-of-way (per parcel)
- Jurisdictional Determination (approved by agency)
- USACE General Permit (approved by agency)
- Roadway Design Criteria
- Project Traffic Analysis / Study
- Concept Design and Estimate (update)
- Preliminary Plans
- Preliminary Plans construction cost estimate
- Preliminary Construction Plans
- Preliminary Construction Plans construction cost estimate
- Final Construction Plans
- Project-Specific Special Provisions and Engineer's construction cost estimate
- NPDES permit application / Notice of Intent (and supporting documentation)
- Erosion control computations, if necessary
- Stormwater Management Report
- Geotechnical investigations and roadway report
- SCDOT Encroachment Permit approval

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

Concept Designs & cost estimates *…….....	2	months from NTP
SUE ……	4	months from NTP
Preliminary Roadway Plans ……..	5	months from NTP
assume COUNTY review (2 weeks) ……...	5.5	months from NTP
Preliminary Construction Plans ……..	7.5	months from NTP
assume COUNTY review (2 weeks)……	8	months from NTP
assume OET revisions (2 weeks)……..	8.5	months from NTP
Final Construction Plans ……..	8.5	months from NTP
assume DEPARTMENT review (6 weeks) ……	10	months from NTP
*assume OET revisions (2 weeks) …….....	10.5	months from NTP

*(includes supplemental field surveys)

The submittal dates include time for COUNTY/DEPARTMENT review as noted

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE
Broad River Road Corridor
Neighborhood Improvements – Phase 2

Introduction

Parrish & Partners, LLC (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for the Broad River Road Corridor Neighborhood Improvement Projects. This document outlines the Phase 2 scope of services to develop Preliminary and Right of Way Plans for projects that will be implemented for the Broad River Road Corridor Neighborhood. Projects in the current neighborhood master plan that are the focus of this scope involve improvements at three (3) intersections: St. Andrews Road/Broad River Road, Bush River Road/Broad River Road, and Greystone Boulevard/Broad River Road.

Project Location – The projects are located in the Broad River Road Corridor Neighborhood and surrounding roads. The project area is generally defined by the Broad River to the North and East, the Saluda River to the Southeast, I-26/I-126/I-20 to the Southwest and Piney Grove Road/Harbison State Forest to the Northwest. The boundaries of the Broad River Road Corridor are located within the area referred as the St. Andrews Designated Census Area. Projects in the current neighborhood master plan that are the focus of this scope involve intersection improvements.

Proposed Project Scope – The final list of projects and the scope of work for each has been finalized following a public input meeting held by the COUNTY and CONSULTANT on March 7, 2019 at the Virginia Wingard United Methodist Church located on the project corridor.

As currently planned, the potential improvements are:

1. Intersection Improvements at the intersection of St. Andrews Road and Broad River Road.
    - These improvements would encompass new signals, sidewalk repairs and upgrades, signage upgrades, ADA upgrades, pedestrian crossing upgrades, and raised/landscaped medians. These improvements would begin with a detailed traffic study to include traffic turning movements, crash history, updated ADT, etc.
2. Intersection Improvements at the intersection of Bush River Road and Broad River Road.
    - These improvements would encompass new signals, sidewalk repairs and upgrades, signage upgrades, ADA upgrades, pedestrian crossing upgrades, and raised/landscaped medians. These improvements would begin with a detailed traffic study to include traffic turning movements, crash history, updated ADT, etc.
3. Intersection Improvements at the intersection of Greystone Boulevard and Broad River Road.
    - These improvements would encompass new signals, sidewalk -repairs and upgrades, signage upgrades, ADA upgrades, pedestrian crossing upgrades, and

raised/landscaped medians. These improvements would begin with a detailed traffic study to include traffic turning movements, crash history, updated ADT, etc.

4. Incorporation of SCDOT Roadway Safety Audit components in the vicinity of the three intersections as identified in the Final Report dated October 2017 for US-176.

Summary of Anticipated Services - An outline of the services for Phase 2 of the Broad River Corridor Neighborhood Improvement project is shown below.

Task 1 - Project Management
Task 2 - Environmental / Public Meeting
Task 3 - Field Surveys
Task 4 - Traffic Analysis
Task 5 - Roadway Design
Task 6 - Stormwater Management / Hydraulic Design
Task 7 - Sediment & Erosion Control / NPDES Permitting
Task 8 - Geotechnical Investigations and Engineering Services
Task 9 - Subsurface Utilities Engineering (SUE)
Task 10 - Utility Coordination Assistance

Task 1

PROJECT MANAGEMENT

The CONSULTANT shall institute a program for monitoring and controlling project budget, schedule and invoicing procedures. The CONSULTANT's subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted for Phase 2 in this agreement will be negotiated with the COUNTY. It is expected that several internal meetings will be held with the COUNTY during this review. Included in review and coordination of the project will be:

- Project meetings between the COUNTY, the South Carolina Department of Transportation (DEPARTMENT), the City of Columbia, and CONSULTANT for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the COUNTY.

- The CONSULTANT will prepare meeting agenda and meeting materials as well as record the minutes of up to twelve (12) meetings in which it participates and distribute to the appropriate COUNTY personnel. The CONSULTANT shall provide the COUNTY with an agenda two (2) business days prior to any meeting and the minutes of any meeting within three (3) business days.

- Prepare monthly invoices, status reports, and schedule updates. Assume a ten (9) month schedule which will impact the duration of preparing invoices, status reports, and schedule updates.

- The CONSULTANT will provide a schedule outlining tasks that will be required to complete the scope of work. The schedule shall be submitted to the COUNTY within three (3) days of receipt of the Notice To Proceed. The schedule shall list each task and its duration.

- The CONSULTANT will provide coordination with its SUB-CONSULTANTS during the execution of their work.

- The CONSULTANT will include the COUNTY in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

The CONSULTANT will attend meetings with the COUNTY and stakeholders from various municipal and civic organizations affected by this project in order to incorporate the needs and desires of these organizations into the decision-making process. It is assumed that one (1) such meeting will be held and the CONSULTANT will be in attendance at this meeting.

Assumptions:

- Nine (9) month schedule for Phase 2
- Up to twelve (12) internal meetings, one (1) stakeholder meeting may be held.
- The COUNTY will arrange any stakeholder meetings.
- The CONSULTANT will document all meetings.
- Internal meetings and stakeholder meetings will be held at Richland County Penny Offices in Columbia, SC until termination of the Professional Development Team's contract in November. Future meeting location site to be determined.

Task 2

ENVIRONMENTAL / PUBLIC MEETING

Within three (3) weeks of the date that the COUNTY provides a Notice to Proceed (NTP) for the subject project, and prior to commencement of design, the CONSULTANT shall make a determination of the environmental permits expected to be required for the subject project on a Permit Determination Form that will be provided by the COUNTY. This information will inform the COUNTY of the anticipated permits and will be incorporated in the project schedule to ensure compliance. Once the Permit Determination Form is completed, if additional services are needed, a contract modification will be prepared

Public Coordination/Public Meeting – The CONSULTANT, with input from the COUNTY, shall prepare related public meeting materials, (deliverables would include plan view displays, project overview maps, typical sections, right of way data tables, etc). The CONSULTANT shall provide draft copies (hard copy and pdf) of all display materials to be used in public meetings to the COUNTY for review, a minimum of 15 business days prior to the meeting. The CONSULTANT will also provide the COUNTY with PDF versions of the displays for the public information meeting one week prior to the meeting for posting on the COUNTY website. The CONSULTANT should assume one (1) meeting with COUNTY staff as a planning session to review the public meeting plan. The meeting would be assumed to be held in conjunction with Preliminary Construction Plans.

The COUNTY may provide security guards from local law enforcement agencies or private security firms for all public meetings. The COUNTY will also be responsible for fabricating and erecting signs to be placed on the projects as well as hard copies of all handouts, comment forms, sign-in sheets, etc. The COUNTY will also procure and bring all other items not specifically mentioned below to be provided by CONSULTANT.

The public meeting is planned as an open-house style meeting. The COUNTY may conduct a brief, formal presentation at some time during the public information meeting. The CONSULTANT shall attend the scheduled public meeting and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The CONSULTANT's role at this meeting is to discuss the project design and impacts with the public in attendance. The CONSULTANT will be responsible for bringing hard copies of the project displays (plan view, typical sections, overview boards, etc) as well as display boards (typical black, foam boards; "GATOR" board, or equivalent) to the meeting; assume three (3) copies of each display to be provided at the meeting. The CONSULTANT will also procure and bring all easels necessary for project display boards.

The public meeting will tentatively be scheduled for 5:00 pm to 7:00 pm on a Tuesday or Thursday at a venue near the project corridor or along the corridor. The CONSULTANT will be responsible for procuring the venue and determination of date and time.

Assumptions

1. One (1) public information meeting will be scheduled prior to finalizing Construction plans.

Deliverables

1. Attendance at one (1) Public Meeting and preparation of all meeting materials.

Task 3

FIELD SURVEYS

Aerial Photography and Mapping – The CONSULTANT will provide Aerial Photography and Mapping for use during the environmental studies and preparation of the Roadway Plans. Mapping will be developed to the contour accuracy of 0.5 feet (1-foot contour interval). The aerial mapping will be prepared for use in plans developed to a horizontal scale of 1" = 20'.

Field annotation of aerial topography, supplementary topographic surveys, and verification of mapping accuracy will be performed by the CONSULTANT.

Control Surveys – The CONSULTANT will establish the Primary, Main and Secondary Survey Control Points to be used during the supplemental topographic surveys and the construction of this project. All surveys will be in accordance with SCDOT's *Pre-Construction Survey Manual* dated October 2012. The CONSULTANT will notify the COUNTY of any required temporary traffic control measures (e.g. shoulder/lane closures, etc.) within seven (7) days before such closure due to survey activities.

Control survey and information provided on plans shall be consistent with SCDOT Preconstruction Design Memorandum 08 (PCDM-08).

Design Surveys – Additional field surveys will be performed by the CONSULTANT as necessary during the design phases of the project. All surveys conducted should be adequate for the design, permitting and construction of the project.

Supplemental field surveys will be conducted by the CONSULTANT to obtain all topographic and planimetric data within the project corridor.

Field surveys will be performed by the CONSULTANT to establish existing rights-of-way and to locate frontal property boundary monumentation for developing property maps per the DEPARTMENT format.

Property owner data will be obtained from county records (plat and deed research) for use in the property surveys and to incorporate property ownership data into the Right-of-Way Plans. The property monumentation and property owner data will be used to develop a closed out property drawing.

Level runs between existing primary vertical control points will be performed to establish additional benchmarks to be referenced on the contract drawings.

Existing pavement will be cross-sectioned for incorporation into the aerial mapping surface model and periodic ground cross sections will be performed for aerial mapping verification. Field surveys will also be used to supplement the aerial mapping surface model in areas which were obscured due to dense vegetation.

Survey data will be shown on Reference Data Sheets in the '5 series sheets' of the plans due to lack of room on the 1"=20' scale plan sheets.

The CONSULTANT will locate all drainage, stormwater, sanitary sewer structures and above ground utility structures within 100 ft. of the proposed roadway alignments. For drainage, stormwater, sanitary sewer structures, the pipe size, pipe type, structure type and invert / rim elevations shall be obtained. The CONSULTANT will locate and survey the next connecting structure (if outside the 100 ft. area) in order to determine grades / depths of existing facilities.

The CONSULTANT will horizontally and vertically locate all potential outfall drainage ditches and streams. At these outfalls, cross sections will be obtained 400 feet upstream and downstream at 50-foot intervals, or as necessary to define the channel alignment, from the proposed roadway alignment. All cross sections will be extended from bank to bank of the existing channel plus 10 feet on either side. Assume 6 outfalls for survey.

The CONSULTANT will stake and obtain boring elevations for all geotechnical borings performed on the project by the CONSULTANT. The CONSULTANT will provide a copy of the geotechnical report upon its completion.

The CONSULTANT will stake the proposed and present rights-of-way for approximately 50% of the total parcels to be affected, upon direction – assume 21 tracts for this scope of work. Right-of-way staking will consist of placing 36-inch stakes (or paint in paved areas) at all proposed right-of-way breaks, sight triangles and spaced at 100-foot intervals in tangents and 50-foot intervals in curves. These stakes shall be placed after Final Right-of-Way Plans have been developed and only after the Project Manager contacts the CONSULTANT when a property owner requests the right-of-way to be staked.

All right-of-way staking services will be separate from the lump sum amount for Task 3 and will be invoiced on a cost plus, fixed not to exceed amount, only when authorized by the COUNTY.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site. The CONSULTANT will not be responsible for obtaining permissions from property owners for surveys outside of the existing Right-of-Way.

Task 4

TRAFFIC ANALYSIS

Data Collection – The CONSULTANT will collect data necessary to perform a detailed traffic analysis of existing and future design conditions. The data collection will include the following activities:

Field Investigation – The CONSULTANT will conduct a field visit to examine the existing roadway conditions and adjacent land use characteristics present within the study area, including:

1. Existing roadway speed limits

2. Number of lanes
3. Type and length of turn lanes
4. Traffic control

The field investigation will also identify those locations where horizontal and/or vertical sight distance may be limited at roadway and driveway intersections and identify locations where access management principles may be applied to consolidate driveway curb cuts.

Accident Data Collection – The CONSULTANT will obtain the most recent three years crash data along the study corridor.

Traffic Signal Timing Data Plan Collection – The CONSULTANT will obtain existing traffic signal timing information from the DEPARTMENT for the each of the 3 signalized intersections identified for the project.

Traffic Volume Data Collection – The CONSULTANT will conduct manual turning movement counts in 15 minute intervals during the weekday A.M. peak (7:00 to 9:00 A.M.) and P.M. peak (4:00 to 6:00 P.M.) on either Tuesday, Wednesday or Thursday at each of the signalized intersections indicated above.

The CONSULTANT will conduct 24 hour bi-directional counts during the mid-week at each of the signalized intersections indicated above.

All counts will be conducted while the local public schools are in session.

The CONSULTANT will utilize travel demand models and/or average annual growth rates to establish design year and background traffic growth.

Development Data Collection – The CONSULTANT will obtain information concerning planned and approved development projects affecting traffic within the corridor area. Information concerning projected land uses, zoning and development planning documents will also be obtained.

Traffic Analysis – The CONSULTANT will perform the necessary analyses of the proposed improvement alternatives using the information obtained during the Data Collection task.

Conceptual Analysis – The CONSULTANT will identify the opening year and design year (20 years past opening date) peak hour Levels of Service for roadway segments and intersections within the study area using the procedures and methodologies outlined in the current editions of Special Report 209: Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis, and traffic analysis software, such as Highway Capacity Software (HCS) or Synchro 7.0 or 8.0 SimTraffic. The results of the conceptual design analysis will include:

1. The number and type of lanes on each approach of the study area intersections
2. Length of turn lanes to provide sufficient vehicle storage
3. LOS Tables
4. Opening year ADT and design year ADT

Accident Analysis – The CONSULTANT will identify the existing high crash locations within the corridor and will determine:

1. the total number of crashes, number of fatal crashes and fatalities, number of injury crashes and injuries;
2. the probable cause, time and location of all the fatal crashes;
3. the total number of the property damage crashes;
4. the lighting and pavement condition of all the crash occurrences

The CONSULTANT will summarize the different crash types and determine the primary causes of the existing crashes. The CONSULTANT will identify those locations with frequent and/or severe crash histories that may be able to be addressed through design and traffic control measures implemented as part of this project. The CONSULTANT will evaluate the most recent three years of available crash data.

Report Preparation – The CONSULTANT will prepare a traffic study that will outline the evaluations performed and the recommended improvements along the corridor and comparative analysis of the existing roadway to the post improvement roadway. The results will provide Levels-of-Service for each scenario studied. The CONSULTANT will submit a PDF of the traffic study to the COUNTY. Upon receipt of any comments, the CONSULTANT will revise the study accordingly and submit a PDF and two (2) final copies to the COUNTY for submittal to the DEPARTMENT for review. The CONSULTANT will revise the study as necessary per DEPARTMENT comments for final approval. After approval of the recommended improvements, the CONSULTANT will proceed with the development of preliminary roadway plans for each of the 3 intersections.

All signals at each of the 3 intersections will be replaced with mast arm type fixtures. Pedestrian crossing signals will be updated as necessary. Traffic Signal Warrant Analysis will not be performed under this scope of work; however, recommended intersections, if applicable, for traffic signal warrant studies will be indicated in the report.

The CONSULTANT will notify the COUNTY's designated Project Manager prior to performing any work on site.

Task 5

ROADWAY DESIGN

Preliminary Roadway Design and Plans

Following concept design development, traffic study recommendations, and discussions with COUNTY regarding the recommended design approach, the CONSULTANT will prepare Preliminary Roadway Plans. The plans will be developed to the level of detail of approximately 30% Complete Construction Plans. The Preliminary Roadway Plans for the intersections will be prepared at a scale of 1"=20' scale to illustrate pertinent information associated with roadway design. The plans will be sufficiently developed to illustrate the construction limits and right-of-way requirements of the entire project. The plans will incorporate information obtained during data collection / site visits and any utility information discovered during coordination with utility owners (COUNTY to conduct), and the design will be adjusted where possible to minimize impacts. Additionally, the design will be adjusted to minimize impacts to developed properties and wetlands. Preliminary Plans will include plan, profile and cross-sections of the recommended design, to include (at a minimum) the following;

- Typical Sections
- Horizontal / vertical alignments (mainline)
    - For vertical profile, assume an approximate 4" overlay
- Plan Layout (lane widths, radii, directional arrows, storage, tapers, etc)
- Review of sight distance considerations
- Review of non-standard driveway grades and tie-ins
- Limits of existing rights-of-way, easements and adjacent properties
- Property lines and parcel numbers (from Richland County GIS data)
- Preliminary storm drainage plan detailing structure type, pipe size, ditches, etc.
- Anticipated location, type and size of necessary drainage culverts, major cross-lines, outfall improvements, retaining walls, and other miscellaneous roadway structures
- Cross-sections at 100 foot intervals on tangents and 50-foot intervals in curves
- Construction limits
- Proposed rights-of-way and easements
- Labeling (type, size and location) of existing, major utility features

Upon completion of the Preliminary Roadway Plans, the CONSULTANT will submit the plans to the COUNTY for review and comment. The CONSULTANT will be responsible for addressing comments and resubmitting revised Preliminary Roadway Plans. The COUNTY will provide the Preliminary Roadway Plans to the DEPARTMENT for review and comment following receipt of revisions. It is assumed the DEPARTMENT will provide a matrix of comments with their review. The CONSULTANT will be responsible for providing appropriate comment responses; however, no plan changes or plan resubmittals to the DEPARTMENT are assumed at this stage.

A cost estimate will be prepared by the CONSULTANT and submitted along with the Preliminary Roadway Plans for use by the COUNTY. The COUNTY will use this cost estimate in order to

determine whether or not the scope of the project needs to be reduced or expanded due to budgetary constraints.

Upon completion of the Preliminary Roadway Plans, the CONSULTANT will provide the COUNTY with two (2) half-sized, hard copy sets of plans along with a PDF (half-size and full size). The CONSULTANT at this time will also provide the COUNTY with preliminary new rights-of-way areas for use in developing an estimated right-of-way cost.

Right-of-Way Plans

Utilizing the Preliminary Roadway Plans design, Concept Report, Traffic Study, stakeholder coordination and SCDOT comments, the CONSULTANT will prepare Final Right-of-Way Plans according to standard DEPARTMENT criteria and format. Plans will be developed to the level of detail of approximately 70% Complete Construction Plans. New right-of-way will be annotated by the station and offset methodology in accordance with standard DEPARTMENT policy and procedures. Right of Way through Construction Plans will be developed at 1"=20' scale (horizontal) with all cross-sections developed at 50 foot intervals.

Right-of-Way Plans – Right-of-Way Plans will be developed in accordance with the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010, with the following exceptions:

- Moving Items will only be shown on the Moving Items Sheet.
- The owner's name and any needed permissions will not be shown on the Plan Sheets. The only property information shown on the plan sheets will be the Tract Number.

The CONSULTANT will incorporate information obtained during the SUE phase of the project.

The CONSULTANT will provide curb grades for the project as necessary for drainage design and to facilitate construction.

The CONSULTANT will establish horizontal and vertical alignments along with necessary cross sections in order to study the re-connection of driveways to the widened roadways. This design data will be shown in the plans in order to convey the extent/impact of the re-configuration / regrading of driveways necessary to provide access to the property. Driveways that are level with the widened roadway will not have a horizontal or vertical alignment set, but will be handled by only showing their connection in the roadway cross section and plan view based on the roadway cross section.

The CONSULTANT will attend the Right-of-Way Plans Design Review meeting with the COUNTY / DEPARTMENT to review the project design. The CONSULTANT will prepare meeting minutes / summary of discussions from the design review. The design review will be scheduled approximately 2 weeks after submittal of the preliminary right-of-way plans to SCDOT (COUNTY to coordinate review).

The CONSULTANT will be responsible for providing a preliminary list of moving and demolition items to the COUNTY for use by the right-of-way agent. This information shall be shown on the

Moving Items / Demo Items sheet and shown with the preliminary right of way plans. The COUNTY will provide a final list of moving and demolition items to be shown in the construction plans.

A set of preliminary Right-of-Way Plans will be submitted to the COUNTY for review and comment. Following the review of the preliminary Right-of-Way Plans, the CONSULTANT will submit final Right-of-Way Plans for review and approval. As applicable, the final Right-of-Way plans will address comments on the preliminary Right-of-Way plans. Following review, comment and approval of each of the plan submittals (preliminary R/W and final R/W), the COUNTY shall provide the plans to the DEPARTMENT for their review, comment and/or concurrence. The CONSULTANT will be responsible for updating all plan deliverables, as applicable and as necessary, per DEPARTMENT reviews. Right-of-way plans as prepared by the CONSULTANT shall be developed to the level of detail necessary of 70% plans and per typical SCDOT plan requirements. The CONSULTANT shall also be responsible for providing responses to all COUNTY and DEPARTMENT comments documented within typical comment matrices. The CONSULTANT should assume that the DEPARTMENT may conduct a full review of the plans at each submittal (at 65% and 70% complete).

Electronic media receivables for Right-of-Way Plans will be provided on CD (or other electronic data storage device) and will include the information outlined in the DEPARTMENT's *Road Design Reference Material For Consultant Prepared Plans* dated June 2010.

The CONSULTANT will provide final right-of-way CADD files to the COUNTY for the preparation of the right-of-way exhibits.

During the course of completing the final plans for construction, should changes be necessary which will affect right-of-way; these revisions will be promptly made, documented as revisions on plans, and identified to those implementing right-of-way appraisal and acquisition. The CONSULTANT will provide updated CADD files to the COUNTY to update the right-of-way exhibits.

The CONSULTANT should assume 30% of the tracts shown with new rights-of-way (assume 12 tracts total) on the final right-of-way plans to require right-of-way revisions. The CONSULTANT shall submit plan changes due to right-of-way revisions per the following schedule (necessary sheets only);

- One (1) full-size
- Eight (8) half-size

The CONSULTANT will develop and provide to the COUNTY an updated cost estimate for the project, to be submitted with the final right-of-way plans.

Task 6

STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The CONSULTANT will conduct preliminary roadway drainage design, stormwater management, and hydraulic design as part of the 30% preliminary design. The task includes drainage field reviews/data acquisition, development of drainage design criteria, preliminary major cross-line studies (major cross-lines are designated as cross-line structures including and larger than 48" pipes), preliminary outfall studies, and preliminary studies for FEMA floodplains and jurisdictional stream crossings, if applicable, and preparation of a Preliminary Drainage Summary Report.

The CONSULTANT will perform the Stormwater Management and Hydraulic Design for the project based on SCDOT Design Guidelines. Design procedures specified by the South Carolina Department of Health and Environmental Control as well as Richland County will be incorporated as needed. Any conflicts in design criteria for the review agencies will be evaluated with the COUNTY to determine the appropriate design procedure for the project. This task includes inspection of the existing drainage structures and roadway drainage.

Roadway Drainage - The roadway drainage design for the project will be completed utilizing design procedures that comply with stormwater management and sediment and erosion control regulations and the NPDES general permit. All drainage calculations will be performed with methods suggested in the DEPARTMENT's *Requirements for Hydraulic Design Studies* dated May 26, 2009 and be made available to the COUNTY for approval.

The CONSULTANT will perform a field review of the project and a visual inspection of the existing drainage systems within the project area. The inspections performed will not include any material testing or structural analysis. The CONSULTANT will document any irregularities in the existing drainage system and provide the data to the COUNTY. If needed, the CONSULTANT will meet with the COUNTY in the field to review and discuss the condition of the existing drainage system prior to reuse in the proposed design. If additional testing or inspection (video pipe inspection) is recommended, the CONSULTANT will prepare the recommendation and submit to the COUNTY for submittal to the DEPARTMENT.

Roadway drainage design for the project is dictated by the project horizontal and vertical geometry. The design will be terminated at available existing outfall locations or at new locations that will be constructed as a part of the project. Drainage areas will be defined from the existing topography as determined from available mapping and field survey. Design year storms will be established in conjunction with DEPARTMENT guidelines for on-site and off-site runoff. For the design year storm, rainfall intensities appropriate for the project area will be determined and the runoff will be calculated for each drainage area. For each contributing sub-area, a structure will be identified to accept the runoff (inlet, cross-pipe, ditch, etc.). Based on accumulation of runoff, appropriate pipe sizes will be chosen to convey the runoff to the outfall. As part of the project design, alternate pipe designs will be developed as per DEPARTMENT Engineering Directive Memorandum No. 24.

The hydrologic analysis of each watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre- and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with DEPARTMENT and NPDES regulations. If required to control stormwater quality or quantity, water quality or detention basins will be added using a hydraulic routing method. Energy dissipaters may also be utilized based on HEC-14 procedures. Outfall channel protective measures will be based on design methods in HEC-15 and/or HEC-11.

Roadway cross-lines will be designed and analyzed according to the principles given in FHWA's Hydraulic Design Series No. 5. Cross-line pipes will be sized based on DEPARTMENT criteria and possible backwater effects. To reduce backwater, multiple pipes or multiple barrel culverts may be used in lieu of a single structure. Closed storm sewer systems will be analyzed with GEOPAK Drainage or XP-SWMM. Roadway inlets will be located based on FHWA's Urban Drainage Design Manual HEC-22. Any roadway ditches will be sized with Manning's equation, and designed using HEC-15 methodologies.

The storm sewer design for the project will be performed to minimize impacts to existing utilities if possible. Existing utility data will be obtained by the COUNTY from the utility owners within the project area. The CONSULTANT will utilize this data as part of the design for the storm sewer systems. The CONSULTANT will adjust pipe locations and inverts if possible. If conflicts cannot be avoided, the CONSULTANT will evaluate the use of utility conflict boxes or other devices to minimize the need for utility relocations. The CONSULTANT and the COUNTY acknowledge not all utility relocations can be avoided.

The CONSULTANT will evaluate the potential impacts from the project on water quality. If dictated by project permitting, the CONSULTANT will utilize water quality best management practices to provide treatment to pavement runoff prior to entering environmentally sensitive areas.

The location of the storm drainage systems will be shown on the roadway plan sheets or replicated drainage sheets. Additional plan information will include pipe and drainage structure size, location, type and elevation. A Stormwater Management Design Report will be prepared for the project based on SCDOT guidelines and will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

Task 7

SEDIMENT AND EROSION CONTROL/NPDES PERMITTING

Sediment and Erosion Control – The project will include the development of Sediment and Erosion Control Plans as well as the preparation of Supporting Documentation for the Land Disturbance Permit Application.

The erosion control plans will be prepared on replications of the roadway plan sheets at a scale of 1"=20', unless otherwise agreed upon. The erosion control plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment

control design will include the temporary placement of sediment ponds, sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the DEPARTMENT's Standard Drawings for Roadway Construction to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed right-of-way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed right-of-way. Quantities for erosion and sediment control items will be calculated based on DEPARTMENT typical drawings. Any required erosion control computations will be completed with approved methods and submitted to the COUNTY.

NPDES Permitting – The project will require the acquisition of a National Pollutant Discharge Elimination System (NPDES) permit for construction activities. The NPDES permit is required by the South Carolina Department of Health and Environmental Control (SCDHEC) for all land disturbing activities in South Carolina.

The CONSULTANT will assist the COUNTY with the development of the NPDES permit application as well as with the submission of any required supporting data. The Stormwater Management Report for the project will contain all supporting data developed by the CONSULTANT for the project. The CONSULTANT will provide additional calculations and make revisions to the construction plans as required by the permit reviewer. This scope of services does not include redesign of any elements of the roadway design as a result of comments from the NPDES permit reviewer. Any required revisions would be completed under a separate contract modification.

Task 8

GEOTECHNICAL EXPLORATIONS AND ENGINEERING SERVICES

General – The CONSULTANT will perform a final geotechnical exploration for round-about realignment, shared-use path, and shoulder widening. The CONSULTANT will gather samples, conduct tests, and analyze necessary soil and foundation data for roadway realignment for the round-about and shared-use path. The results of the sampling, testing, analysis, and recommendations concerning the design will be compiled into a final report for submittal to the COUNTY. The following design standards will apply:

2007 SCDOT Standard Specifications for Highway Construction
SCDOT Standard Supplemental Specifications and Special Provisions
2019 SCDOT Geotechnical Design Manual (GDM), Version 2.0

Field Exploration (Final Subsurface Exploration) – Prior to beginning the final subsurface field exploration, the CONSULTANT will notify the COUNTY seven (7) days in advance so the COUNTY can coordinate with the DEPARTMENT. The CONSULTANT will comply with published DEPARTMENT lane closure restrictions. CONSULTANT has assumed

that COUNTY will obtain permission from property owners for CONSULTANT to perform borings outside of the DEPARTMENT and COUNTY right-of-way

CONSULTANT will request an SC811 ticket prior to starting field work for the final exploration.

Final boring locations will be determined by the CONSULTANT. The CONSULTANT will provide copies of the proposed final subsurface exploration plans to the COUNTY prior to initiation of field work for review and acceptance. See Chapter 4 of the SCDOT GDM for subsurface exploration guidelines. The final subsurface exploration plan is to include, as a minimum, the following:

Description of the soil or rock stratification anticipated
Description of the proposed testing types
Depth of tests
Location of tests

Shoulder Widening– Subsurface Exploration

Roadway soil test borings will be performed as specified in the SCDOT Geotechnical Design Manual which references the SCDOT Pavement Design Guidelines for boring frequency. The CONSULTANT has assumed that generally cut and fill sections will be three (3) feet or less in height.

Final soil test borings will be performed at a frequency of approximately 500 feet within the DEPARTMENT's right-of-way, COUNTY right-of-way, or on private property with access permission obtained by the COUNTY.

Six (6) roadway soil test borings (SPT borings) will be performed up to a depth of 10 feet, or auger refusal (whichever occurs first) inside and/or outside the DEPARTMENT/COUNTY right-of-way.

Two (2) bulk samples will be obtained from near surface soils.

Other Field Testing Items

Traffic control will be performed in accordance with the latest DEPARTMENT guidelines. It is anticipated that 2 days of lane closures will be necessary.

At the completion of field work, test locations will be located for latitude and longitude, elevation and station with GPS equipment.

Field Engineering – The CONSULTANT will provide oversight of hand auger borings, drill rig and cone rig operations by a field engineer and/or field geologist. Soil Classification in accordance with USCS (Unified Soil Classification System) (ASTM 2487) will be performed by a field engineer and/or field geologist who will be a Registered Professional Engineer with a background in geotechnical engineering or supervised by a Registered Professional Engineer with a background in geotechnical engineering.

Laboratory Testing – The CONSULTANT will be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing will be

performed on selected samples in order to evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing may include, as estimate, the following:

20 Natural Moisture Content Tests
20 Grain Size Distributions with wash No. 200 Sieve
20 Moisture-Plasticity Relationship Determinations (Atterberg Limits)
2 Standard Proctor Tests

Final Roadway Geotechnical Engineering Report – The Final Roadway Geotechnical Engineering Report will be conducted in general accordance with the procedures outlined in the GDM. The report will include a subsurface profile for the final geotechnical subsurface exploration in accordance with the GDM Chapter 7. The final geotechnical engineering report will be written in general accordance with the GDM Chapter 21. The final report will be signed and sealed by a registered SC Professional Engineer. The report will be submitted with the Preliminary Construction Plans.

The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

This scope of services does not include any work or activities associated with geotechnical investigations for the development of pavement designs, cross-line storm drain pipes, retaining walls, or structures like mast-arms and overhead signs. The COUNTY will provide approved pavement design(s) to the CONSULTANT. Retaining walls and other structures are not included in the project.

Task 9

SUBSURFACE UTILITIES ENGINEERING (SUE)

Within 30 days of Notice to Proceed for the contract, the CONSULTANT will provide the COUNTY with a recommendation as to the extent of SUE services to be provided. This should include as much information as can be assembled on utility type, approximate location, owner, and material type. This information will be used to specifically define the limits of the SUE work to be performed.

The CONSULTANT shall perform work in two phases. The first phase consists of designating services (Quality Level B and C). For the purpose of this agreement, "designate" shall be defined as indicating (by marking) the presence and approximate horizontal position of the subsurface utilities by the use of geophysical prospecting techniques. The second phase consists of test hole services (Quality Level A). For the purpose of this agreement, "locate" means to obtain the accurate horizontal and vertical position of the subsurface utilities by excavating a test hole. The CONSULTANT shall provide these services as an aide in the design of right-of-way and construction plans for the project.

Unless specifically stated otherwise, the CONSULTANT shall adhere to the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

Designating shall be estimated on a cost per linear foot basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Locating shall be estimated on a per each basis and shall include all labor, equipment, and materials necessary to provide complete SUE plans. Traffic control shall be estimated on a per day basis and shown separately. No separate payment will be made for mobilization and should be included in the per linear foot or per each price for designating or locating.

Designating –

A. In the performing of designating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level B information for approximately 37,375 LF of underground utilities.
2. Provide all equipment, personnel and supplies necessary for the completion of Quality Level C information for approximately 3,500 LF of underground utilities.
3. Provide all equipment, personnel, and supplies necessary for the accurate recording of information for approximately 12,125 LF of aerial utilities. *The estimation of aerial utilities is measured from power pole to power pole and is not an estimation of each line attached to the poles*.
4. Conduct appropriate records and as-built plans research and investigate site conditions. Digital copies of records and as-built plans research to be provided to COUNTY.
5. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of way.
6. Designate the approximate horizontal position of existing utilities by paint markings or pin flags in accordance with the APWA Uniform Color Code scheme along the utility and at all bends in the line in order to establish the trend of the line. All utilities shall be designated as well as their corresponding lateral lines up to the point of distribution, existing right-of-way limits, or whichever is specifically requested and scoped for each individual project.
7. Survey designating marks, which shall be referenced to project control provided by the surveyor of record.
8. Draft survey information using DEPARTMENT CADD guidelines for Subsurface Utility Engineering consultants (latest version).
9. Final review and seal of all appropriate work by a professional engineer and/or land surveyor licensed in South Carolina in responsible charge of the project.

B. In the performing of designating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

The above quantities are based on the Level B designation assuming 2,600 feet along Broad River Road at each intersection identified and 200 feet along each side road (St. Andrews Rd., Bush River Road, and Greystone Blvd.). It is assumed that there will be 11 designated utilities along

Broad River Road and 10 designated utilities alongside roads. The CONSULTANT will notify the COUNTY immediately should additional SUE be recommended. The CONSULTANT will notify the COUNTY'S designated Project Manager prior to performing any work on site.

Locating –

No locating services (Level A test holes) are included as a direct service associated with this scope of work. Should locating services be deemed necessary during the design and utility coordination services, these services shall be paid for through the project contingency budget on a per Level A test hole cost. CONSULTANT to provide a per test hole cost for future use, should locating services be needed.

The services to be conducted by the CONSULTANT, in the performance of locating services, only as directed and by prior approval by the COUNTY, include the following:

A. In the performance of locating services under this agreement, the CONSULTANT shall,

1. Provide all equipment, personnel and supplies necessary for the completion of Quality Level A test holes.
2. Conduct appropriate records and as-built research and investigate site conditions. All records and as-built research to be made available to the COUNTY.
3. Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow CONSULTANT personnel to work within the existing streets, roads and rights-of-way.
4. Perform electronic or ground penetrating radar sweep of the proposed conflict and other procedures necessary to adequately "set-up" the test hole.
5. Excavate test holes to expose the utility to be measured in such a manner that insures the safety of excavation and the integrity of the utility to be measured. In performing such excavations, the CONSULTANT shall comply with all applicable utility damage prevention laws. The CONSULTANT shall schedule and coordinate with the utility companies and their inspectors, as required, and shall be responsible for any damage to the utility during excavation.
6. Provide notification to the COUNTY concerning 1) the horizontal and vertical location of the top and/or bottom of the utility referenced to the project survey datum; 2) the elevation of the existing grade over the utility at a test hole referenced to the project survey datum; 3) the estimated outside diameter of the utility and configuration of non-encased, multi-conduit systems; 4) the utility structure material composition, when reasonably ascertainable; 5) the benchmarks and/or project survey data used to determine elevations; 6) the paving thickness and type, where applicable; 7) the general soil type and site conditions; and 8) such other pertinent information as is reasonable ascertainable from each test hole site.
7. When an attempt to locate a utility line over an area where SUE was performed does not provide valid vertical data, the test hole shall not be reimbursable by the COUNTY. In the following cases, test holes shall be reimbursed by the COUNTY regardless of obtaining valid vertical data:

a. Utility lines buried in materials that cannot be removed by vacuum techniques other than duct banks,

The CONSULTANT to provide a separate unit cost for "test holes attempted" and any test holes that do not provide valid vertical data, shall be paid at this rate.

8. Provide permanent restoration of pavement within the limits of the original cut. When test holes are excavated in areas other than roadway pavement, these disturbed areas shall be restored as nearly as possible to the condition that existed prior to the excavation.
9. Draft horizontal location and, if applicable, profile view of the utility on the project plans using CADD standards as outlined above. A station and offset distance and/or northing and easting coordinates (State Plane) with elevations shall be provided with each test hole.
10. Test hole information shall be formatted and presented on CONSULTANT's certification form and listed in a test hole data summary sheet.
11. Certification form shall be reviewed and sealed by a professional engineer and/or land surveyor licensed in South Carolina and in responsible charge of the project.

B. In the performance of locating services under this agreement, the COUNTY shall,

1. When requested, provide reasonable assistance to the CONSULTANT in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key DEPARTMENT District personnel concerning the upcoming SUE services to be provided by the CONSULTANT.

Task 10

UTILITY COORDINATION ASSISTANCE

The CONSULTANT shall coordinate the project development with the COUNTY's Utility Coordinator. Coordination shall involve inviting the COUNTY's Utility Coordinator to necessary project meetings, providing updates to schedule, and providing project files as requested by COUNTY's Utility Coordinator. The CONSULTANT will provide electronic copies and pdf's of the Survey and Subsurface Utility Engineering as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The COUNTY'S Utility Coordinator will handle coordination of the project development with utility companies. The CONSULTANT will anticipate approximately (2) meetings for Utility Coordination.

Services Not Provided

Services not provided by the CONSULTANT include, but are not limited to, the following:

- Electrical plans
- Lighting plans
- Landscaping plans
- Irrigation plans
- Pavement coring or pavement design
- Environmental Assessment Documentation
- No CLOMR/LOMR
- Falling Weight Deflectometer (FWD) testing
- Video Pipe Inspection
- The CONSULTANT shall not be the "responsible engineer" referenced IN 2009-04 who evaluates the structural condition and performs the preliminary inspection of existing pipes and culverts to determine if they can be retained. The DEPARTMENT shall determine if existing pipes and culverts are to be retained due to structural conditions. The CONSULTANT will indicate the retention/extension of all existing pipes/culverts which meet the hydraulic requirements unless otherwise directed by the DEPARTMENT
- Sight-specific Response Analysis study
- Utility relocation design and plans
- Right-of-way acquisition, exhibits, negotiations, or appraisals
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Alternate designs for bidding
- Construction Engineering and Inspection (CEI)
- Location of water and sewer utility services for each utility customer in the project area.
- All other services not specifically included in this scope of work

Services of the COUNTY

The COUNTY agrees to provide to the CONSULTANT, and at no cost to the CONSULTANT, the following upon request:

- Access to and use of all reports, data and information in possession of the COUNTY which may prove pertinent to the work set forth herein. These include but are not limited to the August 2010 "Broad River Corridor and Community Master Plan" prepared by the IBI Group, the August 2012 "Broad River Road Corridor and Master Plan Transportation Cost Estimate Report prepared by Dennis Corporation, the April 22, 2010 Opinion of Cost, the October 2017 US 176 Road Safety Audit Final Report prepared by CECS for SCDOT, and

the July 5, 2013 "Transportation Penny Funding Recommendations – Neighborhood Improvement Transportation Projects" prepared by Richland County Planning Department.

- Existing Policies and Procedures of the COUNTY with reference to geometrics, standards, specifications and methods pertaining to all phases of the CONSULTANT's work.
- Existing and available roadway plans.
- Fabricate and erect signs.
- Payment of fees required by state and federal review/approval agencies.

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

Field Surveys …….	2	months from NTP
SUE …….	4	months from NTP
Preliminary R/W Plans …….	5	months from NTP
assume COUNTY review (2 weeks) ……	5.5	months from NTP
assume OET revisions (2 weeks) ……	6	months from NTP
assume DEPARTMENT review (6 weeks) ……	7	months from NTP
Final R/W Plans …….	9	months from NTP

Project Deliverables

Below is a summary of project deliverables for the Phase 2 scope:

- Monthly status and progress reports
- Meeting agenda and minutes for all internal meetings
- Attendance at one (1) public meeting
- Analysis of public meeting comments
- Printed and mounted as well as PDF versions of the public meeting displays
- Updated project cost estimates (updated prior to public meeting)

Water and Sewer Relocation for the Shop Road Widening Project
Engineering Services

HDR is pleased to present this proposal for Professional Engineering Services for the relocation of City of Columbia (CITY) water and sewer infrastructure in relationship with the Shop Road Widening Project as conducted by Richland County (COUNTY) as part of the Richland County Penny Sales Tax Program (PROGRAM). The work does not include any private water or sewer infrastructure or other wet or dry utilities. Generally, the CITY has the following water and sewer infrastructure within the limits of this project:

- Approximately 11,000 LF of 8-inch waterline
- Approximately 11,500 LF of 24-inch waterline
- Approximately 7,000 LF of gravity sanitary sewer

Support Services by Others

The following support services are not included in HDR's proposed scope of services. It is assumed that these services will either not be needed or will be provided by the COUNTY through the PROGRAM. Any other services or project needs, other than those listed below or as detailed in this scope of work, which may be discovered and deemed necessary during the relocation services, will be conducted by the COUNTY and coordinated with the CITY, as necessary.

- Surveying, Subsurface Utility Engineering (SUE), locating private wells and septic systems, etc.
- Acquisition of rights-of-way and easement documents, as necessary.
- Geotechnical, including corrosion and stray current analysis, contaminated soils, etc.
- Environmental studies and design, including archaeological, endangered species, wetland and streams, site assessments, hazardous material removal and mitigation, etc.
- Detailed hydraulic analysis to determine waterline sizing and pressures, sewer capacity requirements, etc.
- Fees required for all permit applications and approvals including all fees and costs required by the railroad.

It is assumed that the CITY's waterlines will be relocated within the areas of new rights-of-way proposed and acquired as included in the development of the Shop Road Widening Project. Should any additional easement acquisitions (outside of the proposed roadway rights of way) are determined to be necessary for the waterline relocations, this work will be conducted by the COUNTY, in coordination with the CITY. In regards to prior rights, for those locations where the CITY may hold existing prior rights, these rights are proposed to be retained / maintained with the relocation efforts as part of the Shop Road Widening project, conducted by the COUNTY and in coordination with the CITY.

30% Design Services

HDR will develop 30% design drawings for the proposed waterline and gravity sanitary sewer relocations. 30% design will be based on the survey data and proposed road widening plans provided by the PROGRAM, no additional survey or existing utility investigation work will be performed. The design will include:

- Up to approximately 11,000 LF of 8-inch waterline along Shop Road. Drawings will include plan view only, no profile view.
- Up to approximately 11,500 LF of 24-inch waterline along Shop Road. Drawings will include plan view only, no profile view.
- Up to approximately 7,000 LF of gravity sanitary sewer along Shop Road. Drawings will include plan view only, no profile view.

The diameters of the proposed waterlines and gravity sanitary sewers will match the existing diameter sizes. HDR will not perform detailed planning or hydraulic analyses to verify if the existing waterlines and gravity sanitary sewer sizes meet current and/or future capacity needs. Re-design of the water or sewer infrastructure required due to changes made to the design of the roadway or other utilities is not included.

Engineering Fee

30% Design Services: $138,000.00 (lump sum)

Schedule

30% Design Services: 12 weeks (following notice-to-proceed)

ATTACHMENT "A"
SCOPE OF SERVICES AND SCHEDULE
Trenholm Acres/ New Castle Neighborhood Improvements – Phase 2

Introduction

Mead & Hunt, Inc. (CONSULTANT) has been authorized by Richland County (COUNTY) to provide engineering services for the Trenholm Acres/ New Castle Neighborhood Improvements. This document outlines the Phase 2 scope of services to develop 70% plans for a public meeting that will be implemented for the Trenholm Acres/ New Castle Neighborhood.

Project Location - The project area boundary is encompassed by Fontaine Rd, Two Notch Rd, Parklane Rd and I-20.

Proposed Project Scope – The **CONSULTANT** shall prepare preliminary through 70% plans for the sidewalk projects noted below. The **CONSULTANT** shall prepare preliminary design plans for the streetscape projects. The improvements for the Phase 2 Scope of Work shall be as follows:

Neighborhood Sidewalk Design:

1. Shakespeare Road Sidewalk

The Shakespeare Road Sidewalk Project consists of constructing a new 5.0 ft. wide 4" thick concrete sidewalk from Fontaine Road to Roof Street. The sidewalk will begin at the intersection of Fontaine Road along the south side of Shakespeare Road. The sidewalk will cross to the north side of Shakespeare Road at, or near the intersection of with Alta Vista Drive, and remain on the north side until tying into the existing sidewalk at Roof Street. The approximate distance for new sidewalk is 6125 feet.

Shakespeare Road Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.
- No landscaping or street trees will be provided along Shakespeare Road
- Survey both sides of the road along Shakespeare Road, 50 feet prior and 50 feet after the intersection with Alta Vista Dive.

2. Claudia Drive Sidewalk

The Claudia Drive Sidewalk Project consists of constructing a new 5.0 ft. wide 6" thick concrete sidewalk along the south side of Claudia Drive between Humphrey Drive and Roof Street. The sidewalk will be placed along the north side of Claudia Drive between Roof Street and Parklane Road. The approximate distance for the sidewalk is 6,100 feet.

Claudia Drive Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.
- No landscaping or street trees will be provided along Claudia Drive.
- Survey both sides of the road along Claudia Drive, 50 feet prior and 50 feet after the intersection with Roof Street.

3. Warner Drive Sidewalk

The Warner Drive Sidewalk Project consists of constructing a new 5.0 ft. wide 4" thick concrete sidewalk along the north side of Warner Drive. This project will begin at the southernmost intersection with Fontaine Road and extend to Westmore Drive for approximately 5,400 feet.

Warner Drive Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.
- No landscaping or street trees will be provided along Warner Drive

4. Westmore Drive Sidewalk

The Westmore Drive Sidewalk Project consists of constructing a new 5.0 ft. wide 6" thick concrete sidewalk along the south side of Westmore Drive. This project will begin at the southernmost intersection with Frontage Road and extend to Humphrey Drive for a distance of approximately 1,800 feet.

Westmore Drive Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.
- No landscaping or street trees will be provided along Westmore drive

5. Humphrey Drive Sidewalk

The Humphrey Drive Sidewalk Project consists of constructing a new 5.0 ft. wide 6" thick concrete sidewalk along the east side of Humphrey Drive. This project will begin at the southernmost intersection with Shakespeare Road and extend to Parkingson Drive for approximately 3,300 feet.

Humphrey Drive Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.
- No landscaping or street trees will be provided along Humphrey Drive
- Survey both sides of the road along Humphrey Drive:
  50 feet prior and 50 feet after the intersection with Claudia Drive
  50 feet prior and 50 feet after the intersection with Westmore Drive/Sprott Street
  50 feet prior and 50 feet after the intersection with Nancy Avenue.

6. Sprott Street Sidewalk

The Sprott Street Sidewalk Project consists of constructing a new 5.0 ft. wide 6" thick concrete sidewalk along the south side of Sprott Street. This project will begin at the southernmost intersection with Humphrey Drive and extend to Hearn Drive for a distance of approximately 1,600 feet.

Sprott Street Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.
- No landscaping or street trees will be provided along Sprott Street

7. Nancy Avenue Sidewalk

The Nancy Avenue Sidewalk Project consists of constructing a new 5.0 ft. wide 6" thick concrete sidewalk along the north side of Nancy Avenue. This project will begin at the southernmost intersection with Humphrey Drive and extend to Roof Street for a distance of approximately 2,800 feet.

Nancy Avenue Assumptions:

- Sidewalk to be constructed behind the ditch where possible.
- Slope easements for driveway work will be obtained by the **COUNTY**.
- Slope permissions will be obtained for any encroachments outside of existing Right-of-Way limits by the **COUNTY**.
- The **COUNTY** will provide existing roadway plans.

- No landscaping or street trees will be provided along Nancy Avenue

Streetscape Design:

8. Two Notch Road Streetscape Study

The Two Notch Road Streetscape Project Study consists of evaluating the potential for new planted medians. This project will begin at Fontaine Road and extend to Parklane Road for a distance of approximately 9,504 feet.

Two Notch Road Streetscape Assumptions:

- The median will consist of a drip line irrigation system.
- The **COUNTY** will provide existing roadway plans.

9. Fontaine Road Streetscape Study

The Fontaine Road Streetscape Project Study consists of evaluating the potential for new planted medians. This project will begin at SC Route 277 and extend to Two Notch Road for a distance of approximately 2,932 feet.

Fontaine Road Streetscape Assumptions:

- The median will consist of a drip line irrigation system.
- The **COUNTY** will provide existing roadway plans.

10. Parklane Road Streetscape Study

The Parklane Road Streetscape Project Study consists of evaluating the potential for new planted medians. This project will begin at Two Notch Road and extend to I-20 for a distance of approximately 3,193 feet.

Parklane Road Streetscape Assumptions:

- The median will consist of a drip line irrigation system.
- The **COUNTY** will provide existing roadway plans.

Summary of Anticipated Services for Streetscape Design - An outline of the initial services for streetscape projects identified in the Trenholm Acres/ New Castle Neighborhood Improvement project is shown below.

Planted Median Study- The CONSULTANT will perform a feasibility study on Two Notch Road, Fontaine Road and Parklane Road. The study shall include the following:

Evaluate the existing conditions.
Evaluate left turn movements and determine areas for planted medians
Attend two (2) meetings with SCDOT.
Provide a typical section, conceptual plan, and cost estimate.

Provide a typical section display and plan view public meeting exhibit

The CONSULTANT will also use the "SCDOT Guide for Planted Medians" as part of the planted median study.

- **Summary of Anticipated Services for Sidewalk Design -** An outline of the initial services for sidewalk projects identified in the Trenholm Acres/ New Castle Neighborhood Improvement project is shown below.
- Task 1 – Project Management
- Task 2 – Environmental Services/Permitting Support
- Task 3 – Public Meeting
- Task 4 - Survey
- Task 5 – Sidewalk Design
- Task 6 – Stormwater Management/Hydraulic Design
- Task 7 – Sediment and Erosion Control
- Task 8 – Structures Design and Plans
- Task 9 – Utility Coordination Assistance

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*The **CONSULTANT** shall implement all necessary quality control measures to produce plans and reports that conform to **COUNTY** guidelines and standards. Prior to submittal to the **COUNTY**, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program. The **COUNTY** reserves the right to request QA/QC documents (red-lines, checklists, etc) from the **CONSULTANT** with project deliverables.*

Task 1

PROJECT MANAGEMENT

The **CONSULTANT** shall institute a program for conformance with **COUNTY** requirements for monitoring and controlling project engineering budget, schedule and invoicing procedures. The **CONSULTANT**'s subconsultants (if any) shall be included in this program. Proposed dates of submittals, completion of Tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the **COUNTY**. Included in management of the project will be:

1.1 Project meetings between the **COUNTY**, Trenholm Acres/ New Castle Neighborhood, and **CONSULTANT** for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the **COUNTY**.

1.2 The **CONSULTANT** will prepare meeting agenda and meeting materials as well as record the minutes of each meeting in which it participates and distribute to the appropriate **COUNTY** personnel.

1.3 Prepare monthly invoices, status reports, and schedule updates. Assume a 15-month design schedule which will impact the duration of preparing invoices, status reports, and schedule updates. Assume a 4-month construction schedule which will impact the duration of invoicing for Construction Phase Services.

1.4 The **CONSULTANT** will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume a 15-month design schedule.

1.5 The **CONSULTANT** will include the **COUNTY** in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

1.6 **CONSULTANT** shall provide a Gantt Chart format design schedule detailing durations, plan submission dates, cost estimate submittals, etc. The schedule shall cover time through final construction document submission.

1.7 The **CONSULTANT** will attend meetings with the **COUNTY** and stakeholders from various municipal organizations affected by this project in order to incorporate the needs and desires of these organizations into the decision-making process. It is assumed that up to two (2) such meetings will be held and the **CONSULTANT** will be in attendance at these meetings and will prepare all necessary display materials.

Assumptions:

1. Two (2) project meetings will be held on-site in Richland County with the **COUNTY**, and any additional personnel deemed necessary.
2. Up to seventeen (17) project status update meetings will be held with the **COUNTY**.

Deliverable:

1. Monthly status reports shall be included with monthly invoices.
2. Meeting agendas and meeting minutes covering all project meetings. Meeting agendas are to be provided to the **COUNTY** within two (2) business days prior to all meetings. Meeting minutes are to be provided to the **COUNTY** within three (3) business days after all meetings.

Task 2

ENVIRONMENTAL SERVICES/PERMITTING SUPPORT

The **COUNTY** will be responsible for the required coordination with Local, State and Federal agencies regarding environmental services to ensure the program is in compliance with appropriate environmental regulations to obtain a Wetlands Permit and Land Disturbance Permit. The **CONSULTANT** will provide specific documentation, including but not limited to project information, applications and drawings as necessary for acquisition of the required permits.

2.1 Initial Field Surveys and Project Initiation

Project Initiation – Within two weeks of the date that the **COUNTY** provides a Notice to Proceed (NTP) for the subject project, and prior to commencement of design, the **CONSULTANT** shall make a determination of the environmental and/or navigational permits expected to be required for the subject project on a permit determination form. This information will inform the **COUNTY** of the anticipated permits and will be incorporated in the project schedule to ensure compliance.

Coordination – The **CONSULTANT** will coordinate with the **COUNTY** and may attend coordination meetings with state and federal resource agencies and document all discussions and understandings that are reached.

Jurisdictional Delineations – The **CONSULTANT** shall perform Jurisdictional Delineations utilizing the three-parameter approach (hydric soils, hydrophytic vegetation and wetland hydrology) set forth in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, and subsequent Regional Supplements. The upland/wetland boundaries will be appropriately flagged in the field and surveyed using sub-meter GPS or survey data. The **CONSULTANT** will plot the wetland boundaries on a surveyed map for inclusion with the JD request.

The **CONSULTANT** shall prepare a request for a preliminary jurisdictional determination (JD) or, at the request of the **COUNTY**, an approximate JD letter for the project corridor. This submittal will be prepared according to the USACE's Request for Corps Jurisdictional Determination/Delineation guidance (effective May 1, 2017). The completed request package, including drawings, will be submitted to the **COUNTY** for final processing and coordination with the agencies.

Assumptions

1. An Approximate-Preliminary is the anticipated type of Jurisdictional Determination requested.
2. A SCDOT USACE General or Nationwide Permit is the anticipated level of USACE permitting required. Mitigation costs, if necessary, are not included.
3. No navigational (State Navigable Waters or US Coast Guard) permitting is anticipated.

4. Detailed cultural resources surveys will not be performed by the **CONSULTANT.** Concurrence from SHPO and THPO will be provided by the County for inclusion in the permit application.
5. Impacts to protected species are not anticipated. Furthermore, informal or formal consultation with the US Fish and Wildlife Service is not anticipated.
6. The **COUNTY** will conduct all agency coordination and permit negotiations; the **CONSULTANT** may be asked to assist as necessary.

7. A National Environmental Policy Act (NEPA) document is not required.

Deliverables

1. Permit Determination Form
2. Jurisdictional Determination Request Package

Task 3

PUBLIC MEETING

The **CONSULTANT**, with input from the **COUNTY**, shall prepare necessary public meeting materials, (deliverables would include project design displays, project overview boards, project typical sections, right of way data tables, etc). The **CONSULTANT** shall provide draft copies of all materials to be used in the public meetings to the **COUNTY** for review a minimum of 15 business days prior to the public meeting. The **CONSULTANT** will also provide the **COUNTY** with PDF versions of all necessary deliverables, as stated above, for the public meetings 14 calendar days prior to the meeting for posting on the **COUNTY** website.

The **COUNTY** may provide security guards from local law enforcement agencies or private security firms for the public meetings. The **COUNTY** will be responsible for fabricating and erecting signs to be placed on the project as well as any directional signage needed at the public meeting venue(s). The **CONSULTANT** will procure and bring all easels (for project display boards, and all other items not specifically mentioned below.

The public meetings are planned as open-house style meetings. The **COUNTY** may conduct a brief formal presentation at some time during the public meetings. The **CONSULTANT** shall attend the scheduled public meetings and have a minimum of four (4) personnel knowledgeable of the project and its impacts in attendance. The **CONSULTANT's** role at the meetings is to discuss the project design and impacts with the public in attendance. The **CONSULTANT** will be responsible for bringing hard copies of the project displays (plan view, typical sections, overview boards, etc.) as well as display boards (typical black, foam boards; "GATOR" board, or equivalent) to the meetings; assume two (2) copies of each display to be provided.

The public meetings will tentatively be scheduled from 5:00 pm to 7:00 pm at a venue near the project or along the project corridor. The **COUNTY** will be responsible for procuring the venue and determination of date and time, media notices, public notices, public meeting directional

signage, coordinating for the presence of public safety officer(s) and general management of the meeting and presentation.

Upon conclusion of the public comment periods, the **CONSULTANT** will prepare public meeting summaries to include a summary of the public comments received. The **CONSULTANT** will also prepare and provide a document (Excel format), in matrix format, which includes the public comments, citizen names and contact info, and space for **COUNTY** responses to each comment. The **COUNTY** will be responsible for development of all responses and individual response letters.

The public meeting is planned to be held prior to finalization of the design and plans under this scope of work. The intent of the meeting is to present detailed design and specific impacts associated with the planned work.

Assumptions

1. One (1) public meeting
2. The **CONSULTANT** will provide an Excel file of the comment summaries including commenter name, contact information and specific comment.
3. The **CONSULTANT** will provide printed and PDF copies of all displays. The **CONSULTANT** assumes two (2) rounds of revisions on public meeting materials and displays.
4. The **CONSULTANT** will ~~print all displays for the public meeting~~ provide printed and PDF copies of all displays (up to 6 – 32 in. x 42 in. or 36 in. x 48 in.) and deliver to the **COUNTY**. The **CONSULTANT** will also provide foam board for the displays.
5. The **CONSULTANT** assumes up to 100 comments will be received and included in the analysis for each meeting.
6. Draft copies of the displays shall be submitted to the **COUNTY** in full size hard copies 15 business days prior to the public meeting.
7. Meeting Preparation and Debrief meetings will be held at Richland County Penny Offices in Columbia, SC with participation of (1) **CONSULTANT** team member.
8. Participation of four (4) **CONSULTANT** team members at the Public Meeting.
9. The **COUNTY** will prepare any handouts, sign in sheets, or power point presentations.

Task 4

FIELD SURVEY

The **CONSULTANT** shall collect all necessary survey data for the purposes of developing preliminary and final construction documents.

Control Surveys

The **CONSULTANT** will establish the Level 1, 2 and 3 Control Points to be used during the supplemental topographic surveys and the construction of these projects. All surveys will be in accordance with SCDOT's *Pre-Construction Survey Manual* dated August 2012. The **CONSULTANT** will notify the **COUNTY** of any required temporary traffic control measures (e.g. shoulder/lane closures, etc.) within seven (7) days before such closure due to survey activities.

Design Survey

Field surveys will be performed by the **CONSULTANT** as necessary during the design phases of the project within the limits described above in the project scope. Topographic surveys will be performed at a minimum 50 feet on one side of the roadway centerline and to the back of curb on the opposite side. In addition, survey both sides of the road in the following locations:

Shakespeare Road: 50 feet prior and 50 feet after the intersection with Alta Vista Dive.

Claudia Drive: 50 feet prior and 50 feet after the intersection with Roof Street.

Humphrey Drive: 50 feet prior and 50 feet after the intersection with Claudia Drive,
50 feet prior and 50 feet after the intersection with Westmore Drive/Sprott Street,
50feet prior and -50 feet after the intersection with Nancy Avenue.

The **CONSULTANT** will establish existing rights-of-way from available plats and deeds. GIS data provided by the County will be utilized to show approximate property lines on the plans.

Property-owner data will be obtained from county records for use in the property surveys and to incorporate property ownership data into the Plans.

Level runs between existing primary vertical control points will be performed to establish additional bench marks to be referenced on the contract drawings. Assume some projects may need additional benchmarks.

The **CONSULTANT** will survey topographic features including above ground utility features. Through the South Carolina 811 (SC811) Utility Locating service, the **CONSULTANT** will call in utility locates and survey marked existing utilities. When utilities have not responded to utility locate requests, the **CONSULTANT** will contact the utility directly to request the utility locate. After direct contact, if the utility still has not been marked, the **CONSULTANT** shall report to SC811 that no response has been made.

The **CONSULTANT** will locate all above ground drainage features. The pipe size, pipe type, and invert elevations shall be obtained.

The boundary of the field surveys shall include the entire roadway width to include the crown point, edges of pavement, curb and gutter and sidewalk and any roadway appurtenances within the corridor (guardrail, signs, etc.) unless noted otherwise.

- **Shakespeare Road Sidewalk-**From Fontaine Road to Roof Street

- **Claudia Drive Sidewalk-** From Humphrey Drive to Parklane Road
- **Warner Drive Sidewalk-** From Fontaine Road to Westmore Drive
- **Westmore Drive Sidewalk-** From Frontage Road to Humphrey Drive
- **Humphrey Drive Sidewalk-**From Shakespeare Road to Parkington Street
- **Sprott Street Sidewalk-** From Humphrey Drive to Hearn Drive
- **Nancy Avenue Sidewalk-** From Humphrey Drive to Roof Street

Traffic Controls and Safety

The **CONSULTANT** will notify the **COUNTY** of any required temporary traffic control measures (e.g., shoulder/lane closures, etc.) within seven (7) days before such closure due to survey activities. Appropriate signage for traffic control purposes will be maintained at all times when working within or near the existing traffic areas.

Assumptions

1. Field surveys for property closures or to locate property monumentation will not be performed.
2. Approximately 25% of the ROW will be staked.

Deliverables

1. The consultant will provide a CD containing all survey files in DGN Format.

Task 5

SIDEWALK/ STREETSCAPES DESIGN

5.1 Preliminary Project Design and Plans

All design and plans will be prepared to the DEPARTMENT's Roadway Design Manual (RDM) 2017 Edition

Preliminary Plans –The plans will be developed to the level of detail of approximately 30% Complete Construction Plans that comply with DEPARTMENT RDM standards for 30% plans. The Preliminary Plans for the project will be prepared at a scale of 1"=20' (unless otherwise noted in the Assumptions portions of the project descriptions) to illustrate pertinent information associated with design. The plans will be sufficiently developed to illustrate the Preliminary limits of construction for each project.

Preliminary Cost Estimate – A cost estimate will be prepared by the **CONSULTANT** and submitted along with the Preliminary Plans for use by the **COUNTY**. The **COUNTY** will use this cost estimate in order to determine whether or not the scope of the project needs to be reduced or expanded due to budgetary constraints.

The **CONSULTANT** will attend the Preliminary Plans Design Field Review with the **COUNTY** to review the project design in the field.

Upon completion of the Preliminary Plans, the **CONSULTANT** will provide the **COUNTY** with two (2) half-size hard copy sets of plans along with a CD containing PDF's (half-size and full size).

For this task and all other tasks contained in this scope, the **CONSULTANT** will utilize the **DEPARTMENT** standard drawings, specifications, and design manuals that are current as of the first issuance of the task order scope by the **COUNTY** to the **CONSULTANT**.

Assumptions

1. **COUNTY** to provide one round of written comments within two (2) weeks after initial submittal.
2. One (1) Design Field Review at the completion of 30% plans will be held.

Deliverables

1. One (1) half-size hard copy set of plans along with a CD containing PDF's (half-size and full size).
2. One (1) electronic pdf copy of preliminary construction costs.

5.2 Right-of-Way Plans

Right-of-Way Plans will be developed in accordance with the **DEPARTMENT's** RDM 2017 Edition with the following exceptions:

- Moving Items will only be shown on the Moving Items Sheet.
- The owner's name and any permissions will not be shown on the Plan Sheets. The only property information shown on the plan sheets will be the Tract Number.

The **CONSULTANT** will incorporate information obtained during the utilities phase of the project.

The **CONSULTANT** will provide curb grades around side roads and major driveway radii, where applicable.

The **CONSULTANT** will show appropriate design data in the plans sufficient to convey the reconnection of driveways to the new sidewalks. Curb grades will be provided for planted medians, around side roads and any major driveway radii, as necessary.

The **CONSULTANT** will attend the Right-of-Way Plans Design Field Review with the COUNTY to review the project design. It is assumed that this review will be held at the Richland County Penny Sales Tax office utilizing desktop-level information (plans and Google Earth imagery).

The **CONSULTANT** will be responsible for providing an initial list of moving and demolition items to the **COUNTY** for use by the right-of-way agent.

A set of preliminary Right-of-Way Plans will be submitted to the **COUNTY** for review and comment. Following the review of the preliminary Right-of-Way Plans, the **CONSULTANT** will submit final Right-of-Way Plans for review and approval. As applicable, the final Right-of-Way plans will address comments on the preliminary Right-of-Way plans.

Electronic media receivables for Right-of-Way Plans will be provided and will include the information outlined in the **DEPARTMENT's** *Road Design Reference Material For Consultant Prepared Plans* dated June 2010.

The **CONSULTANT** will provide final right-of-way CADD files to the COUNTY for the preparation of the right-of-way Exhibit "A".

During the course of completing the final plans for construction, should changes be necessary which will affect right-of-way, these revisions will be promptly made, documented as revisions on plans, and identified to those implementing right-of-way appraisal and acquisition. The **CONSULTANT** will provide updated CADD files to the **COUNTY** to update the right-of-way Exhibit "A".

The **CONSULTANT** assumes twenty (20) right-of-way revisions.

Cost Estimate – The **CONSULTANT** shall update the Preliminary Plans cost estimate and provide with the submittal of the final right-of-way plans. The estimate shall be developed to the level of detail similar to a typical 70% complete project that complies with DEPARTMENT RDM standards for 70% plans.

Assumptions

1. The **CONSULTANT** will not create cross sections at driveways as needed in order to study the re-connection of driveways to the sidewalks. The **COUNTY** will be responsible for securing permissions and determining the driveway limits necessary to provide access to the property during construction.
2. Submittals are as follows:
    a. 30% Plan submittal for **COUNTY** Review and Comment.
    b. 65% Plan submittal for **COUNTY** Review and Comment.
    c. Revised 65% Plan Submittal for **DEPARTMENT** Review and Comment.
    d. 70% Plan submittal for **DEPARTMENT** Review and Comment.
    e. Revised 70% Plan Submittal for **DEPARTMENT** Review and Approval.
3. One full-size (22"x36") PDF at each submittal.
4. One half-size (12"x18") set of plans will be submitted for each **COUNTY** review.

5. One (1) full-size (22”x36”) and half-size (12”x18”) set of plans will be submitted of approved 70%.
6. Maintenance of Traffic Plans will not be required. Contractor will be responsible for adhering to SCDOT Standard Drawings for Traffic Control. Traffic Control and Permanent Construction signs will be included as lump sum quantities.
7. The **COUNTY** will prepare right-of-way exhibits, Exhibit “A”, if necessary. The **CONSULTANT** will provide the CADD files.

Deliverables

1. Plans as detailed above, along with the Preliminary Construction cost estimate, and Right of Way Estimate

Task 6

STORMWATER MANAGEMENT/HYDRAULIC DESIGN

The **CONSULTANT** will perform the Stormwater Management and Hydraulic Design for the project based on **DEPARTMENT** Design Guidelines. Design procedures specified by the South Carolina Department of Health and Environmental Control as well as Richland County will be incorporated as needed. Any conflicts in design criteria from the review agencies will be evaluated with the **COUNTY** to determine the appropriate design procedure for the project. This task includes inspection of the existing drainage structures and roadway drainage.

Storm Drainage Improvements

Storm drainage design will be required in the following areas in order to meet the **DEPARTMENT**, SCDHEC and Richland County regulations:

- **Shakespeare Road Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.
- **Claudia Drive Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.
- **Warner Drive Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.
- **Westmore Drive Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.
- **Humphrey Drive Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage

systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.

- **Sprott Street Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.
- **Nancy Avenue Sidewalk-** It is assumed that new drainage systems will be required and that outfalls exist within the project area with capacity to accept flow from the new drainage systems. Surveys sufficient to verity capacity of existing outfalls will be provided by the **CONSULTANT**.

The roadway and sidewalk drainage design for the improvements will be completed utilizing design procedures that comply with stormwater management and sediment and erosion control regulations and the NPDES general permit. All drainage calculations will be performed with methods suggested in the **DEPARTMENT's** *Requirements for Hydraulic Design Studies* dated May 26, 2009 and be made available to the **COUNTY** for approval.

The **CONSULTANT** will perform a field review of the projects and a visual inspection of the existing drainage systems within the projects areas. The inspections performed will not include any material testing or structural analysis. The **CONSULTANT** will document any irregularities in the existing drainage system and provide the data to the **COUNTY**. If needed, the **CONSULTANT** will meet with the **COUNTY** in the field to review and discuss the condition of the existing drainage system prior to reuse in the proposed design. If additional testing or inspections (video pipe inspection) is recommended, the **CONSULTANT** will prepare the recommendation and submit to the **COUNTY** for coordination with the **DEPARTMENT**.

Drainage design for the projects is dictated by the project horizontal and vertical geometry.

The design will be terminated at available existing outfall locations.

Drainage areas will be defined from the existing topography as determined from available mapping and field survey.

Design year storms will be established in conjunction with **DEPARTMENT** guidelines for on-site and off-site runoff. For the design year storm, rainfall intensities appropriate for the project area will be determined and the runoff will be calculated for each drainage area. For each contributing sub-area, a structure will be identified to accept the runoff (inlet, cross-pipe, ditch, etc.). Based on accumulation of runoff, appropriate pipe sizes will be chosen to convey the runoff to the outfall.

The hydrologic analysis of each watershed will be performed with the appropriate method for the region.

Pre- and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with **DEPARTMENT** and NPDES regulations.

Energy dissipaters may also be utilized based on HEC-14 procedures. Outfall channel protective measures will be based on design methods in HEC-14 and/or HEC-11.

New roadway cross-line pipes are not anticipated to be needed for this project.

Closed storm sewer systems will be analyzed with GEOPAK Drainage or Bentley's StormCAD. Roadway inlets will be located based on FHWA's Urban Drainage Design Manual HEC-22 and SCDOT's most current inlet spacing requirements.

Any roadway ditches will be sized with Manning's equation, and HEC 15 methodologies.

The storm sewer design for the projects will be performed to minimize impacts to existing utilities if possible. Existing utility data will be obtained as part of Field Surveys (Task 4). The **CONSULTANT** will adjust pipe locations and inverts if possible. If conflicts cannot be avoided and the utility cannot be relocated, the **CONSULTANT** will evaluate the use of utility conflict boxes or other devices to minimize the need for utility relocations. The **CONSULTANT** and the **COUNTY** acknowledge not all utility relocations can be avoided.

The **CONSULTANT** will evaluate the potential impacts from the project on water quality. If dictated by project permitting, the **CONSULTANT** will utilize water quality best management practices to provide treatment to pavement runoff prior to entering environmentally sensitive areas.

The location of the storm drainage systems will be shown on the plan sheets or replicated drainage sheets. Additional plan information will include pipe and drainage structure size, location, type and elevation.

A Stormwater Management Design Report will be prepared for the project based on **DEPARTMENT** guidelines and will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

Assumptions

1. No FEMA impacts.
2. No detention basins will be required.
3. No FEMA modeling to ensure no-rise.
4. No geotechnical investigations will be required for the installation of cross line pipes should hydraulic design require their inclusion.

Deliverables

1. Draft Stormwater Management Report to be submitted in electronic format with 70% plan submittal.

Task 7

SEDIMENT AND EROSION CONTROL/Sediment and Erosion Control

Sediment and erosion control Best Management Practices will be included in the 70% plans. The placement of erosion control measures outside proposed rights-of-way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed right-of-way.

Task 8

STRUCTURES DESIGN AND PLANS

It is assumed that there will be no retaining walls or other structures required for the design of this project. Any structure designs determined to be necessary for the project will be added through a contract modification.

Task 9

UTILITY COORDINATION ASSISTANCE

9.1 Utility Coordination

The **CONSULTANT** shall coordinate the project development with the **COUNTY**'s Utility Coordinator. Coordination shall involve inviting the **COUNTY**'s Utility Coordinator to necessary project meetings, providing updates to schedule, and providing project files as requested by **COUNTY**'s Utility Coordinator. The **CONSULTANT** will provide electronic copies and pdf's of the Survey as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The **COUNTY**'S Utility Coordinator will handle coordination of the project development with utility companies.

Assumptions:

1. The **COUNTY** will prepare and combine all existing utility information into one design file. The **COUNTY** will use this file to prepare utility relocation plans.
    i. The **CONSULTANT** will insert County provided information from the design file into the plan sheets which will show lighting and underground telecommunication conduits, as necessary.
2. The **COUNTY** will be responsible for determining lighting and costs for the Project. The **CONSULTANT** shall assist the **COUNTY** with coordination and preparation of this task.
3. The **COUNTY** will be responsible for preparation of all U-Sheets required for the project.

4. No duct banks are required as part of the project.
5. The **CONSULTANT** will attend two (2) utility coordination meetings. The **CONSULTANT** will not be responsible for preparing an agenda or meeting minutes.

Services of the COUNTY

The **COUNTY** agrees to provide to the **CONSULTANT**, and at no cost to the **CONSULTANT**, the following upon request:

- Access to and use of all reports, data and information in possession of the **COUNTY** which may prove pertinent to the work set forth herein.
- Existing Policies and Procedures of the **COUNTY** with reference to geometrics, standards, specifications and methods pertaining to all phases of the **CONSULTANT**'s work.
- Eminent Domain advertisement notice.
- Contract documents (project specific special provisions to be supplied by **CONSULTANT**)
- Payment of fees required by state and federal review/approval agencies.
- Right-of-Way verification.
- Existing roadway and drainage plans
- As-built roadway plans.

Services Not Included

The **CONSULTANT** will not be responsible for the following services or deliverables and others not necessarily mentioned in this scope of work.

1. Lighting and electrical design
2. Construction engineering and inspection (CE&I)
3. Public Involvement (other than those activities detailed in scope of work)
4. Eminent Domain advertisement notice
5. Bid documents and preparation (other than those documents specifically mentioned in this scope of work)
6. Payment of fees required by state and federal review/approval agencies (without reimbursement for said necessary fees)
7. Right-of-Way Exhibits
8. Right-of-Way acquisition
9. As-built plans

Project Deliverables

The **CONSULTANT** will submit the deliverable items shown below if applicable within the time allotted for each phase of work. Delivery may not be in the order shown.

- Monthly status report and invoice submittals
- Meeting agendas and minutes
- Attendance at one (1) public meeting
- PDF versions of the public meeting displays
- Preliminary plans
- Preliminary right of way plans
- Right of way plans
- Streetscape Conceptual Study
- Survey CADD file
- Design CADD files, as requested

Schedule

Below is a summary of significant milestones and anticipated submittal timeframes:

Survey	3	months from NTP
Preliminary Plans	4.5	months from NTP
assume COUNTY review (2 weeks)	5	months from NTP
Preliminary Right-of-Way Plans	6	months from NTP
assume COUNTY review (2 weeks)	6.5	months from NTP
assume CONSULTANT revisions (2 weeks)	7	months from NTP
assume DEPARTMENT review (1 month)	8	months from NTP
Final Right-of-Way Plans	9	months from NTP
assume DEPARTMENT review (1 month)	10	months from NTP
assume CONSULTANT revisions (2 weeks)	10.5	months from NTP
Preliminary Construction Plans	11.5	months from NTP
assume COUNTY review (2 weeks)	12	months from NTP
assume CONSULTANT revisions (2 weeks)	12.5	months from NTP
assume DEPARTMENT review (1 month)	13.5	months from NTP
Public Meeting	14	months from NTP

The submittal dates include time for **COUNTY**/**DEPARTMENT** review as noted. Per the Intergovernmental Agreement between **COUNTY** and the **DEPARTMENT**, the **DEPARTMENT** has twenty-five (25) business days for their review.

ATTACHMENT "A"
SCOPE OF SERVICES
CRANE CREEK GREENWAY SECTION B

Introduction

Introduction
Cox and Dinkins, Inc., (**CONSULTANT**) has been authorized by Richland County (**COUNTY**) to provide design and engineering services for the Crane Creek Greenway in Richland County, South Carolina. This proposed project will consist of approximately four thousand eight hundred and ninety-five (4,895) LF of a greenway, a vehicular/pedestrian bridge over Smith Branch, boardwalks, covered railroad crossing, and trail that extend along the City of Columbia sewer easement from Canal Front Park to S-798 (Mountain Dr.)

The overall scope of work for the Crane Creek Greenway includes; evaluate existing conditions, development of 70% right-of-way plans, final construction plans, and acquirement of all needed permits for construction of Section B of the Crane Creek Greenway.

Project Location - This project will consist of approximately four thousand eight hundred and ninety five (4,895) LF of boardwalk (T.B.D wide), that meet City of Columbia standards. The Project will begin at Canal Front Park and will end at S-798 (Mountain Drive). The trail alignment will generally follow inside of the City of Columbia sewer easement.

Proposed Project Scope –Final Construction Plans will be developed for the implementation of a pedestrian greenway for approximately four thousand eight hundred and ninety-five (4,895) LF from Canal Front Park to S-798 (Mountain Drive).

The **CONSULTANT** will provide construction documents and permitting for the installation of the Crane Creek Greenway. The Phase 1 Concept Report shall provide design guidance for the development of the Plans.

Summary of Anticipated Services - An outline of the services anticipated for this project is shown below.

Task 1 - Project Management
Task 2 - Environmental Services/Permitting
Task 3 – Field Surveys
Task 4 - Greenway Design
Task 5 - Storm Water Management/Hydraulic Design
Task 6 – Sediment and Erosion Control/NPDES Permitting
Task 7 - Geotechnical Investigation and Engineering Services
Task 8 – Structural Services
Task 9 – Electrical Design
Task 10 – Utility Coordination Assistance
Task 11 – Railroad Coordination Assistance

Task 12 – Pre-Bid Services
Task 13 – Construction Phase Services

QUALITY CONTROL

*The **CONSULTANT** shall implement all necessary quality control measures to produce plans and reports that conform to **COUNTY** and **CITY OF COLUMBIA** guidelines and standards. Prior to submittal to the **COUNTY** and **CITY OF COLUMBIA**, all plans and reports shall be thoroughly reviewed for completeness, accuracy, correctness, and consistency. Subconsultants for this project will be required to implement and maintain a stringent quality control program. The **COUNTY** reserves the right to request QA/QC documents (red-lines, checklists, etc.) from the **CONSULTANT** with project deliverables.*

TASK 1 – PROJECT MANAGEMENT

The **CONSULTANT** shall institute a program for conformance with **COUNTY** requirements for monitoring and controlling project engineering budget, schedule, and invoicing procedures. The **CONSULTANT**'s subconsultants shall be included in this program. Proposed dates of submittals, completion of tasks, and final completion of pre-construction services as noted in this agreement will be negotiated with the **COUNTY**. Included in management of the project will be:

- Project meetings between the **COUNTY**, South Carolina Department of Transportation (SCDOT), City of Columbia, and **CONSULTANT** for clarification of scope, discussion of concepts, review of submittals, etc. at the discretion of the **COUNTY**. It is anticipated that four (4) such meetings will be necessary. Two (2) of the **CONSULTANT**'s staff shall attend these meetings.

- The **CONSULTANT** will prepare meeting agenda and meeting materials, as well as, record the minutes of each meeting in which it participates and distribute to the appropriate **COUNTY** personnel. The **CONSULTANT** shall provide the **COUNTY** with an agenda two (2) business days prior to any meeting and the minutes of any meeting within three (3) business days.

- Prepare monthly invoices, status reports, and schedule updates. Assume a six (6)-month design schedule, three (3) month permitting period, six (6) month construction phase services for a total contract time of fifteen (15) months that will impact the duration of preparing invoices, status reports, and schedule updates.

- The **CONSULTANT** will provide coordination with its SUB-CONSULTANTS during the execution of their work. Assume a fifteen (15) month schedule.

- The **CONSULTANT** will provide a schedule outlining tasks that will be required to complete the scope of work. A Gantt Chart Schedule shall be submitted to the **COUNTY** within ten (10) business days of receipt of the Notice-To-Proceed. The schedule shall list each task and its duration.

- The **CONSULTANT** will include the **COUNTY** and stakeholders including, but not limited to, City of Columbia, and other local government agencies in any discussions concerning the project prior to submittal of deliverables if that process has the advantage of expediting the completion of any task of the project.

Assumptions:

1. Up to four (4) project meetings will be held on-site with the stakeholders and any additional personnel deemed necessary.
2. Fifteen (15) month schedule based on the anticipated Army Corps of Engineer permitting approval process.

Deliverables:

1. Fifteen (15) monthly status reports and updated schedule.
2. Meeting agendas and meeting minutes covering all project meetings. Meeting agendas are to be provided to the **COUNTY** within two (2) business days prior to all meetings. Meeting minutes are to be provided to the **COUNTY** within three (3) business days after all meetings. Assumed meeting agendas and minutes to be provided for a total of fourteen (15) monthly progress meetings plus four (4) meetings with stakeholders and SCDOT.

TASK 2 - ENVIRONMENTAL SERVICES/PERMITTING

The **CONSULTANT** shall prepare and deliver to the **COUNTY** all local, state, and federal permitting required to ensure the project is in compliance with the appropriate environmental regulations. The **CONSULTANT** will review the proposed trail route and make a determination of the environmental and/or navigable waterway permits expected to be required for the subject project within (4) four weeks of the notice to proceed and permission to enter subject properties.

With regards to wetlands delineation and preliminary Jurisdictional Determination (JD), the **CONSULTANT** shall perform a preliminary JD on the project area that shall not exceed 5 acres. The **CONSULTANT** shall attend one (1) site visit with a representative of the USACE to review the waters of the US at their request. If there are any proposed wetland impacts, the CONSULTANT shall prepare an ACOE permit package prior to the application of a floodplain development permit. The **CONSULTANT** shall prepare the permit application package for the **COUNTY** to submit all permits to the corresponding agencies.

The trail will be placed to avoid the wetlands wherever practicable knowing that avoidance and alternate analysis are areas the USACOE reviews thoroughly.

Threatened and Endangered Species:

The **CONSULTANT** shall prepare a biological assessment (BA) to include a discussion of potential impacts to each resource. The **CONSULTANT** shall comply with Section 7 of the endangered species act and provide the corresponding BA to the **COUNTY**. Concessions in either the scope of work or construction activities or mitigation will be required prior to **COUNTY** approval.

Cultural Resources:

The **CONSULTANT** shall review publicly-available data to determine if the project area contains archeological or historic resources eligible for listing on, or potentially eligible for listings on the national register of historic places. The **CONSULTANT** shall prepare the Section 106 project review form, with all supporting documentation. This information will be prepared for the **COUNTY** to submit to the State Historic Preservation Office for review *(An archaeological survey is not included in this scope of services).*

Water Quality:

The **CONSULTANT** shall utilize SCDHEC's Water Quality Information Tool to determine if sensitive waters including 303(d) listed waters, TMDL watersheds, and outstanding resource waters are located within the project study area. Findings will be documented in the permit application. If applicable, the **CONSULTANT** shall coordinate with the **COUNTY** to determine the necessary stormwater control measures to protect sensitive waters.

Section 404(b)(1): Guidelines and Public Interests review Factors:

The **CONSULTANT** shall use and document how the 404(b)(1) guidelines area used in the selection of the preferred alternative using the USACE Public Interest Review Factors.

Mitigation Plan:

The **CONSULTANT** shall complete the USACE mitigation worksheet to determine the required credits for the regulatory requirements. The **CONSULTANT** will coordinate with the **COUNTY** to determine availability of credits at the proposed Richland County Mitigation Site.
(Development of a detailed compensatory mitigation plan is not included in this scope).

Agency Coordination:

The **CONSULTANT** shall submit the completed permit application package along with all necessary documentation to the **COUNTY** for final processing and negotiations with the pertinent agencies.

Assumptions:

1. *Wetlands will be delineated in the field and locations captured using GPS.*
2. *A NEPA Document will not be required and is not part of the project scope.*
3. *The area for proposed delineation will not exceed 5 acres.*
4. *Assumes that a Nationwide Permit will be required due to the impact of the boardwalk installation on the wetlands.* ***CONSULTANT*** *to provide calculations documenting area of impact and confirm if this is required.*
5. *All permit fees will be paid for by the county.*
6. *A survey for archeological cultural resources is not included in the scope of services.*
7. *Formal consultation with USFWS is not included in the scope of services.*

8. *Development of a detailed compensatory mitigation plan is not included in this scope of services.*
9. *Submittal of a separate SCDHEC Navigable Waters Permit application or supporting materials is not included in this scope of services.*

Deliverables:

1. *Permit Determination Form*
2. *Preliminary Jurisdictional Determination Request Package*
3. *USACE Nationwide Permit Application Package, including supplemental documentation*
4. *Rare and Endangered Species Biological Assessment*
5. *Section 106 Project Review Form*

TASK 3 – FIELD SURVEYS

Sewer Easement and property surveys shall begin at Canal Front Park and extend to Mountain Drive. Topo (horizontal only) location surveys shall include at the proposed Smith Branch Bridge Crossing and the Norfolk Southern Rail R/W. A detailed trestle and R/W survey of the Norfolk Southern Railroad R/W and trestle shall also be included.

Control Surveys:

The **CONSULTANT** shall provide all survey for the project in State Plane Coordinates and shall reference the horizontal datum to NAD 83 (2011 adjustment). The vertical control surveys for this project shall be tied to the nearest existing NAVD 88 monument. The survey will serve as the base mapping for the engineering design.

The **CONSULTANT** shall coordinate with SC 811 utility locating service prior to commencement of surveying. Any impacted utilities within the project corridor shall be identified. The location of the locating services shall be from Canal Front Park to Mountain Drive only.

The **CONSULTANT** shall provide horizontal control points along the trail where boardwalks, drainage features, will be installed. Horizontal control points will also be required where ADA ramps will be required.

Vertical control will only be required for the detailed bridge survey.

Design Surveys:

The **CONSULTANT** shall field locate and stake the centerline of the trail location and review with **COUNTY** staff for approval. Once the trail location has been approved by **COUNTY** staff, and the City of Columbia, a survey of the sewer easement and manholes, will be performed.

The **CONSULTANT** shall survey the full sewer easement include manhole locations.

A detailed survey of the Norfolk Southern Railroad trestle over Smith Branch shall also be required. Surveys shall extend from edge to edge of Norfolk Southern Railroad R/W and include a cross section of the channel in these areas.

A detailed survey of the proposed Smith Branch crossing shall also be required. Surveys shall extend 50' from each edge of bank. Survey to include a cross section of the channel in these areas.

Assumptions:

1. *Trail easement plats are not included as part of the project scope.*
2. *Any revisions in the alignment are not included as part of this scope. If alignment revisions occur, a contract modification regarding fee shall be obtained.*

Deliverables:

1. *Survey of full sewer easement from Canal Front Park to Mountain Drive.*
2. *Survey sanitary sewer manholes locations.*
3. *Survey of flood hazard areas, inclusive of on-site flagging.*

TASK 4 – GREENWAY DESIGN

Site Analysis and Review:

The **CONSULTANT** shall access and perform a detailed review of the existing conditions along the planned greenway path via site observations and wetlands delineation. The **CONSULTANT** shall use this review to adjust the routes as necessary to minimize wetland impacts, earth work, existing trees, utilities, private property ownership and any special conditions. This work will be completed and approved by the COUNTY and The CITY OF COLUMBIAprior to wetland delineation and after property corners are marked but prior to the remainder of tasks 2 and 3.

Design Criteria:

The **CONSULTANT** shall design the trail and boardwalks to meet the current City of Columbia Greenway standards and and be ADA compliant. This will include (T.B.D) sidewalks and boardwalks with railings within the (T.B.D) at a reasonable inset. The **CONSULTANT** will also meet the City of Columbia and SCDOT Greenway standards while within the SCDOT Right-of-Way.

70% Plans:

The CONSULTANT shall prepare a set of right-of-way level plans based off the concept report and field conditions. Utilizing input received to date, the design criteria as well as any additional field information, the horizontal and vertical design for the project will be refined. The **CONSULTANT** shall prepare Rights-of-Way and Easement plans and submit them to the **COUNTY** for review. The **COUNTY** will acquire all Rights-of-Way and easements for the project. The Rights-of-Way to be acquired across private property shall be a minimum of twenty (20) feet wide, and the centerline of the Rights-of-Way will align with the centerline of the designed trail surface. Plans will also include bench locations with bump outs. Benches and bump outs shall be located at points of interest and at half-mile intervals. Benches and bump outs shall be anchored to prevent migration during a flood event.

Final Greenway Plans:

After review, approval and right-of-way and/or easement acquisitions are acquired, the **CONSULTANT** shall deliver the final construction plans. The **CONSULTANT** shall maintain a copy of the marked up 70% plans and specifications. Construction drawings and specifications will be completed to include plan and profile sheets of all boardwalk stream crossings that will provide sufficient detail to support the development of permit drawings for the joint permit applications. The **CONSULTANT** will review the final set of construction plans and specifications as well as final cost estimate with the **COUNTY** for approval. Plans shall include locations of trash receptacles which meet the City of Columbia Greenway standards or an acceptable alternative standard to be approved by the City of Columbia. The City of Columbia will waive the fee for the meters for the water fountains.

Agency Coordination:

The **CONSULTANT** shall submit the completed permit application package to the **COUNTY** for final processing and negotiations with the pertinent agencies.

Assumption:

- *Any revisions in the alignment are not included as part of this scope. If alignment revisions occur, a contract modification regarding fee shall be obtained.*

Deliverables:

1. *Typical sections and handrail details shall be submitted to City of Columbia for approval before extensive design services can begin.*
2. *70% construction drawings and specifications and cost estimate.*
3. *Final construction drawings, specifications and cost estimate*
4. *SCDOT, Norfolk Southern, and City of Columbia encroachment permits*

TASK 5 – STORMWATER MANAGEMENT/HYDRAULIC DESIGN

Stormwater Management Report will be required due to the anticipated disturbed area on this project exceeding 1.0-acre.

Hydrologic analysis of the watershed will be performed with the appropriate method for the Sandhills physiographic region. Pre-and post-construction peak discharges will be computed at each outfall. Outfalls will be evaluated in accordance with NPDES regulations.

A Stormwater Management Design Report will be prepared for the project based on the City of Columbia and Richland County guidelines and will be submitted for review with the Final Construction Plans. The report will include a project description, drainage approach and methodology, design calculations, soils descriptions, and location maps.

The **CONSULTANT** will also prepare any hydraulic studies required by the United States Army Corps of Engineers as part of the environmental permit. The hydraulic studies will be based on City of Columbia and Richland County requirements and will include an evaluation of the impacts from the proposed construction.

FEMA Floodplain Analysis and Permitting

The **CONSULTANT** will perform a preliminary analysis of the hydrologic/hydraulic characteristics of the existing Floodplain and proposed greenway using the one-dimensional computer program HEC-RAS. The **COUNTY** shall provide the original flood study model from FEMA; it is assumed that the available flood study model will be in HEC-RAS format and accurately reflect the information provided in the Effective Dec. 21, 2017 FIS (45079CV001B - 45079CV004B) and FIRM (45079C0376L – Dec. 21, 2017).

The greenway is located in a FEMA Zone AE with Base Flood Elevations and a defined floodway. The floodplain will be assessed to determine the impacts of the project. If feasible, improvements will be designed to achieve the required No Impact. **CONSULTANT** will coordinate with the local floodplain manager as necessary. Should a CLOMR/LOMR become necessary, the **CONSULTANT** shall notify the County immediately.

Assumptions:

1. SCDHEC's NOI form will be used for this project.
2. FEMA No Impact anticipated for this project.
3. No detention basins will be required.
4. FEMA modeling to ensure no impact will be achieved.
5. No CLOMR/LOMR is included as part of the scope.
6. The **COUNTY** shall provide FEMA model data and COUNTY LiDAR data at no cost to **CONSULTANT**.
7. Richland County Buffer requirements are not applicable to this project.

Deliverables

1. .
2. One (1) hard copy of the Signed and Sealed Stormwater Management Report to include a No-Impact model/report.

TASK 6 – SEDIMENT AND EROSION CONTROL/NPDES PERMITTING

Sediment and Erosion Control

The project will include the development of Erosion and Sediment Control (E&S) Plans as well as the preparation of Supporting Documentation for the National Pollutant Discharge Elimination System (NPDES) Notice of Intent Permit Application.
The E&S Plans will be prepared on replications of the plan sheets and at the same plan scale, unless otherwise agreed upon. The E&S Plans will reflect a proposed design for minimizing erosion and off-site sedimentation during construction. The erosion and sediment control design will include the temporary placement of sediment dams, silt basins, inlet structure filters, sediment tubes, silt ditches, and diversion dikes at specific locations along the project. The plans will reference the City of Columbia and Richland County Greenway standards to assist the contractor with the construction of these items. The plans will also identify the need to maintain, clean, and relocate these erosion control measures as the project progresses and address the removal of temporary erosion control devices following construction. The placement of erosion control measures outside proposed Rights-of-Way through the use of temporary easements will be investigated as a possibility if they will not fit within proposed Right-of-Way. Quantities for erosion and sediment control items will be calculated based on City of Columbia and Richland County Standards. Any required erosion control computations will be completed with approved methods and submitted to the **COUNTY**.

NPDES Permitting

The project will require the acquisition of a NPDES permit for construction activities. The NPDES permit is required by the South Carolina Department of Health and Environmental Control (SCDHEC) for all land disturbing activities in South Carolina.

The **CONSULTANT** will develop the NPDES permit application as well as the submittal of any required supporting data and submit to the **COUNTY** and **CITY OF COLUMBIA**, where applicable. The Stormwater Management Report for the project will contain all supporting data developed by the **CONSULTANT** for the project.

The **CONSULTANT** will provide additional calculations and revise the construction plans as required by the permit reviewer.

Deliverables:

1. One (1) Signed and Sealed set of erosion control sheets will be provided for inclusion in the Final Construction Plans
2. One (1) hard copy of the Signed and Sealed Stormwater Pollution Prevention Plan (SWPPP)
3. NPDES Permit

TASK 7 – GEOTECHNICAL INVESTIGATION AND ENGINEERING SERVICES

General

The **CONSULTANT** shall provide geotechnical exploration as needed base on alignment. The exploration will be done by hand auger and/or drill-rig after the trail centerline is marked. A report will be prepared that will outline the necessary information to design boardwalk foundations along the section of greenway trail based on the requirements set forth in the Structural Services Section.

Field Exploration (Final Subsurface Exploration)

Prior to beginning the subsurface field exploration, the **CONSULTANT** will notify the **COUNTY** at least seven (7) days in advance so the **COUNTY** can coordinate with the SCDOT, City of Columbia, and property owners. The **CONSULTANT** shall comply with all City of Columbia and SCDOT lane closure restrictions.

Boring locations will be located along or adjacent to the proposed alignment of the pathway where boardwalk is planned. The exploration will be performed in one phase. A preliminary exploration is not proposed. Boring locations in the final exploration may occur outside and/or inside SCDOT and/or **COUNTY** Right-of-Way.

Permission to access private property will be obtained by the **COUNTY.**

Clearance of utilities will be the responsibility of the **CONSULTANT**. A request for utility marking will be made to the Statewide Utility One-call Service (SC811) at least three (3) -days prior to field work. The **CONSULTANT** will mark utilities that are not marked by SC811 as part of Task 3. Information obtained in Task 3 will be shared with geotechnical staff prior to field exploration work.

Proposed boring locations will be determined by the **CONSULTANT**. The **CONSULTANT** will provide copies of the proposed subsurface exploration plan to the **COUNTY** prior to initiation of field work for review and acceptance. The subsurface exploration plan will include, as a minimum, the following:

- Description of the soil or rock stratification anticipated
- Description of the proposed testing types
- Depth of tests
- Location of tests

Field Exploration

SCDOT and/or City of Columbia Encroachment Permit – **CONSULTANT** understands that no project specific encroachment permit is required. **CONSULTANT** shall comply with all lane closure restrictions if needed to access the site.
Borings – The boring locations will be located along the proposed boardwalk alignment.
Subsurface Exploration – A soil test boring will be performed at (300) foot intervals along the boardwalk alignment. The following is a summary of the quantity, depth, and procedure proposed.

- Ten (10) borings will be performed along the alignment of planned boardwalk to a depth of ten (10) feet or auger refusal, whichever is shallower. The borings will be either Standard Penetration Test borings and/or Hand Auger borings depending on access.
- Slope stability or settlement calculations for embankments and retaining walls are not included.
- Seismic design for boardwalks, pedestrian bridge, sidewalk, retaining walls and other structures is not included.
- Pavement and embankment design for sidewalk are not included.
- Pavement design for parking lots is not included.
- Clearing will be needed to access some or all of the soil boring locations.

Other Field Testing Items

Traffic control is not anticipated for this phase of the project.
At the completion of field work, all test locations shall be surveyed for latitude and longitude, elevation, and station by **CONSULTANT**.

Field Engineering – **CONSULTANT** will provide oversight of drill rig operations by a field engineer technician and/or field geologist. Field personnel will consist of one (1) field services supervisor and/or one (1) geologist per drill rig. Soil Classification will be in accordance with USCS (ASTM D-2487). The Field Services Supervisor will have a minimum of three (3) years of experience in supervision of field equipment and field personnel and will coordinate field activities including clearance of underground utilities through South Carolina 811.

Laboratory Testing – **CONSULTANT** shall be AASHTO certified in the anticipated laboratory testing outlined below and/or any additional testing that may be required. See Chapter 5 of the SCDOT GDM for AASHTO and ASTM designations. The laboratory testing on selected samples will evaluate the types of soils encountered, confirm visual classifications, and estimate engineering properties for use in design. Laboratory testing for the exploration is estimated to include the following: Ten (10) natural moisture content tests, ten (10) grain size distribution with wash no. 200 sieve, and ten (10) moisture-plasticity relationship determinations (Atterberg Limits).

Boardwalk Geotechnical Engineering Report

The Geotechnical Engineering Report will not be conducted in strict accordance with the procedures outlined in the SDCDOT GDM. This report will cover pedestrian boardwalk foundations and pedestrian bridge foundations which are not contemplated by the SCDOT GDM. The report will include soil parameters for design of concrete-encased wood post foundations for the boardwalk and recommendations for pedestrian bridge foundations.

Assumptions:

1. *Assumes that a drill rig will not be able to access some or all of the boardwalk alignment.*

Deliverables:

1. *Soil parameters for boardwalk foundation design.*

TASK 8 – STRUCTURAL SERVICES

The **CONSULTANT** will develop structural plans to construct boardwalks as detailed in the Crane Creek Greenway Concept Report. The **CONSULTANT** will provide the following:

Design Basis Statement

The **CONSULTANT** shall design all boardwalk footings, structural decking, beams, piles/pier system in accordance with ACI, AASHTO, ASTM and IBC current to the reviewing agencies with jurisdiction over construction and the standards of the current City of Columbia Greenway Standards. The loading requirements for all bridges and boardwalks shall be as directed by the City of Columbia. All footings/piles will be designed to meet or exceed this loading requirement. Boardwalks shall also be designed to flood. The structural design will include the required calculations to prepare typical cross sections and spans details of the Greenway boardwalk that can used throughout the entire project.

Structure Plans (95%)

The **CONSULTANT** shall develop 95% structure plans in sufficient detail and appropriate format to clearly illustrate significant design features, dimensions and clearances. The 95% structure plans will be approved by the **CITY OF COLUMBIA** prior to beginning final structure plans and will be submitted concurrently with the Final Greenway Plans if possible. It is assumed that the boardwalk elevations and a final profile will be developed prior to structural design commencing.

Comments made by the **CITY OF COLUMBIA** on the 95% structure plans shall be incorporated into the 100% Final Structure Plans (discussed below) and a response to each comment shall be provided in a comment matrix for submittal.

Final Structure Plans (100%)

The **CONSULTANT** will develop final structure plans. The final structure plans for the structure(s) will be based upon the approved 95% structure plans. The final structure plans will be prepared as follows:

> Prepare in conformity with current practices of the **CITY OF COLUMBIA** with regard to method of presentation, scales, billing of pay items, special drawings and summaries thereof. Standard drawings of the **CITY OF COLUMBIA** shall be used to the extent feasible and shall be furnished by the **CITY OF COLUMBIA** to be modified by the **CONSULTANT** to fit the particular needs of the project. Construction drawings shall be on sheets of the size, and with standard markings utilized by the **CITY OF COLUMBIA**. Scale of drawings and lettering size shall be such as to provide clear and legible reproductions when reduced to half size. The construction plans shall bear the **CONSULTANT's** seal and signature as a registered professional engineer, in the State of South Carolina, on each plan sheet.

The **CONSULTANT** will prepare special provisions concerning items of construction not covered by the City of Columbia's standard specifications, supplemental specifications or standard

structure special provisions, as well as special treatments during construction. Special Provisions provided by the **CONSULTANT** shall include a cover sheet listing all special provisions provided by the **CONSULTANT** for this project. The cover sheet shall be sealed and signed by a registered professional and sealed by the engineer of record for the project. An electronic copy of the special provisions shall also be provided to the **CITY OF COLUMBIA**.

Prior to submittal to **CITY OF COLUMBIA**, all plans and documents shall be thoroughly reviewed by the **CONSULTANT** for completeness, correctness, accuracy and consistency with the above- referenced requirements.

On Site Meetings

Representatives from the **CITY OF COLUMBIA** and **CONSULTANT** involved in structure design will attend two (2) field review meetings of the project during the plan development. All information gathered during this field investigation will be evaluated and plans revised accordingly. The **CONSULTANT** will provide a summary of each field review.

Deliverables:

1. Two half size sets and one electronic pdf file of 95% structure plans
2. One full size set and one electronic pdf file of final signed and sealed Final Structure Plans
3. One hard copy and one electronic copy of detailed quantities
4. One hard copy and one electronic Microsoft Word copy of Special Provisions
5. One hard copy and Microsoft Word copy of list of required Supplemental Specifications
6. Hard copies of design quantity calculations if requested by the City of Columbia
7. A copy of all deliverables to be conveyed to the **CITY OF COLUMBIA** as part of the greenway conveyance

Assumptions:

1. Handrail details will be approved by the **CITY OF COLUMBIA** in a timely manner.
2. The level of details provided in the plans for this project will be similar to those in the Three Rivers Greenway Boardwalk Bridge Plans.
3. No seismic design is required.
4. All typical sections shall be designed in accordance with and meet all ADA criteria.

TASK 9 – ELECTRICAL ENGINEERING SERVICES

The CONSULTANT will provide electrical engineering design services along the new greenway from Canal Front Park to Mountain Drive. Electrical engineering design shall consist of the below.

1. Lighting Design
    a. Exterior Lighting – Lights are to be chosen and/or approved by the City of Columbia.

a. Photometric calculations based on the requirements of IBC, City of Columbia, Richland County and the Illuminating Engineering Society of North America (IESNA) (where site conditions allow).
b. Specification and layout of an LED lighting fixture per City of Columbia selection (LED Granville or similar) including flood proof fixtures where required. Lighting shall be directionally focused down and along the greenway surface and shall provide a minimum footcandle rating of 0.5 footcandles along the greenway surface.
c. Specification, Quantity and Layout of Emergency Call Boxes with required circuiting.
d. Lighting controls for energy-efficient use of lighting
e. Circuiting and conduit for Camera placement with layout of Camera at Trailhead.
f. Pull-Boxes for conduit at a maximum interval of 500'

2. Power Distribution system including:
   a. Service and utility coordination
   b. Electrical circuiting, risers and panel schedule
   c. Electrical load calculations
3. Code Compliance:
   a. National Electric Code (NFPA 70), latest version
   b. International Building Code (FBC), latest version
   c. Richland County Building Department
   d. National Fire Alarm Code (NFPA 72), latest version
   e. City of Columbia
4. Technical Specifications

TASK 10 – UTILITY COORDINATION ASSISTANCE

Utility Coordination

The **CONSULTANT** shall coordinate the project development with the **CITY OF COLUMBIA**'s Utility Coordinator. Coordination and assistance shall involve inviting the **CITY OF COLUMBIA**'s Utility Coordinator and SCE&G to necessary project meetings, providing updates to schedule, and providing project files as requested by **CITY OF COLUMBIA**'s Utility Coordinator. **CONSULTANT** shall identify utility relocations necessary to construct the project and provide those locations to the **CITY OF COLUMBIA** Utility Coordinator. The **CONSULTANT** will provide electronic copies and pdf's of the Survey as well as a listing of the utilities that exist within the project limits as soon as the information becomes available so that early coordination with utility companies can begin. The **CITY OF COLUMBIA**'s Utility Coordinator will handle coordination of the project development with utility companies.

TASK 12 – RAILROAD COORDINATION ASSISTANCE

The **COUNTY** shall provide all railroad coordination during surveying, design, and construction phase services.

TASK 12 – PRE-BID SERVICES

The **CONSULTANT** shall assist the **COUNTY** in certain pre-bid services as follows:

- Prepare draft bid specifications for review by the **COUNTY**
- Attend a mandatory pre-bid conference held by the **COUNTY**
- Provide bid instruction and answer questions, as needed, at and following the pre-bid conference
- Schedule and coordinate on-site pre-bid reconnaissance of the project area
- Assist in bid analysis as desired by the **COUNTY**
- The **COUNTY** shall provide the general conditions to the **CONSULTANT.**

TASK 13 – CONSTRUCTION PHASE SERVICES

Pre-Construction/Partnering Conference

The **CONSULTANT** will attend the Pre-Construction/Partnering Conference and respond to questions by the **CONTRACTOR** pertinent to the design and proposed construction methodology. Assume there will be one (1) Pre-Construction/Partnering Conference. Two (2) of the **CONSULTANT**'s staff shall attend this meeting.

Construction Phase Project Meetings

The **CONSULTANT** will attend meetings with the **COUNTY** to discuss construction issues as needed during the construction of this project. Assume there will be two (2) Construction Phase Project Meetings. One (1) of the **CONSULTANT**'s staff shall attend these meetings.

Construction Phase Assistance

The **CONSULTANT** will assist **COUNTY** personnel during the construction phase when problems or questions arise relating to the design, layout, and proposed construction methodology. Assume four (4) hours per week for project construction duration of six (6) months or 26 weeks.

Construction Revisions

The **CONSULTANT** will make necessary revisions to construction plans that arise during the construction phase of the project. Assume three (3) construction revisions and eight (hours) per revision.

Shop Drawing Review:

The **CONSULTANT** shall review the Contractor's Shop Drawings in a timely manner following the award of the contract and during construction.

As-Built Plans:

The **CONSULTANT** will not be responsible for the development of as-built drawings of the greenway trail.

PROJECT DELIVERABLES

- Monthly reports and invoice submittals
- Meeting Agendas & Meeting minutes – to be submitted to **COUNTY** within three days of meeting.
- Approved Preliminary Jurisdictional Determination
- Approved USACOE Nationwide Permit
- Right-of-way plans and Engineer's Estimate for review
- Right-of-way plans, Special Provisions and updated Engineer's Estimate
- Preliminary construction plans and Engineer's Estimate
- Final construction plans, project specific specifications, and Engineer's Estimate
- NPDES permit application/Notice of Intent
- Erosion control computations, if necessary
- Stormwater Pollution Prevention Plan
- Stormwater Management Report
- CAD files of all design and survey
- No impact statement
- HEC-RAS study and necessary FEMA permit

SERVICES NOT PROVIDED

The **CONSULTANT** will not be responsible for the following services or deliverables and others not necessarily mentioned in this scope of work.

- Lighting protection System Design
- Waterline and water fountain design
- Landscaping and irrigation design
- As-built plans – these will be the responsibility of the Contractor
- Utility relocation design and plans
- Right-of-Way Exhibits
- Right-of-Way acquisition
- Video pipe inspections
- Eminent Domain advertisement notice
- Public Involvement (other than those activities detailed in scope of work)
- Administering or advertising the bid process
- Fabricating or erecting signs for public meetings
- Public Meetings
- Alternate designs for bidding
- Bid documents and preparation (other than those documents specifically mentioned in this scope of work)
- Payment of fees required by state and federal review/approval agencies (without reimbursement for said necessary fees)
- Construction Engineering and Inspection (CEI)
- FEMA permit and LOMAR/CLOMAR permit
- Floodplain Development Permit
- USACOE Navigation Permit

SERVICES OF THE COUNTY

The **COUNTY** agrees to provide to the **CONSULTANT**, and at no cost to the **CONSULTANT**, the following upon request:

- Existing Policies and Procedures of the **COUNTY** with reference to geometrics, standards, specifications and methods pertaining to all phases of the **CONSULTANT'**s work
- Eminent Domain advertisement notice
- Contract documents (project specific special provisions to be supplied by the **CONSULTANT**)
- Payment of fees required by state and federal review process
- Payment of fees for advertising for bid
- Right-of-Way acquisition
- Right-of-Way verification
- Moving, demolition and reset items list
- As-built plans
- LiDAR surveys
- FEMA model

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Agenda Briefing

To:	Chair of the Committee and the Honorable Members of the Committee
Prepared by:	Michael A. Niermeier, Director
Department:	Richland County Transportation
Date Prepared:	May 23, 2019 **Meeting Date:** May 28, 2019

Legal Review	N/A	**Date:**	
Budget Review	N/A	**Date:**	
Finance Review	N/A	**Date:**	
Other Review:	N/A	**Date:**	
Approved for Council consideration:	Assistant County Administrator	John Thompson, Ph. D	

Committee Subject: Penny Projects Inside SCDOT Rights-Of-Way

Background Information:

Many projects included in the Penny Program fall with in South Carolina Department of Transportation's (SCDOT) Rights-Of-Way. Projects in two of the major categories, Neighborhood Improvement Projects and Sidewalks, propose the installation of certain features that SCDOT has stated they will not maintain, meaning the County would be responsible for maintenance within SCDOT's ROW in perpetuity.

Some of these features are landscaped medians, street lighting, mast arm traffic lights, and shared use paths (SUPs). Council has already approved the installation of SUPs in several locations, which would be a shared maintenance responsibility between the County and SCDOT (see attachment 1Clemson Rd. Maintenance Agreement as an example.)

Further, County Ordinance Section 21-12 states that the County shall not install street lighting until funds are appropriated to provide that service countywide (see attachment 2). The funding required would be for the installation, maintenance and monthly electric bill.

Recommended Action:

Staff requests Council to provide guidance on whether or not to proceed with including these project features in future projects.

Motion Requested:

None

Request for Council Reconsideration: ☐Yes

Fiscal Impact:

1. SUP\Vegetated Buffer Maintenance (Labor and Materials) – approximately $11,100\mile - annually
2. Mast Arm Signals (Labor and Materials) – approximately $26,000 to replace
3. Landscaped Medians (Labor Only) – approximately $5,460\quarter mile – annually
4. Street Lighting (Including Energy & Maintenance) – approximately $49,200\mile – annually

Estimates are derived from Public Works Roads & Drainage labor and materials costs, City of Columbia labor costs and from PDT research.

Motion of Origin:

This request did not result from a Council motion. This was a request for information originating out of the Dirt Road Ad Hoc Committee and Transportation Ad Hoc Committee

Council Member	N/A
Meeting	N/A
Date	N/A

Discussion:

Maintaining these items in SCDOT's ROW would mean the County would incur the maintenance costs, but it also means the County shares in the liability for any incidents that may arise involving these project features.

To incur these maintenance responsibilities, an increase in the Public Works Roads & Drainage budget would be necessary.

Attachments:

1. Clemson Rd. Maintenance Agreement
2. Street Lighting Ordinance Section 21-12
3. Street Lighting Cost Estimates

Maintenance Items by Project

Transportation Ad Hoc Committee

May 28, 2019

Existing Maintenance Agreements

1. Clemson Road Widening – Shared Use Path (Existing Agreement)
2. Southeast Richland Neighborhood Improvements – Shared Use Path (Existing Agreement)
3. Polo Road Sidewalk – Shared Use Path (Existing Agreement)

Maintenance to be Performed by Others

1. North Main Street Widening – Landscape Median, Mast Arms, Lighting (City to Maintain)
2. Blythewood Road Widening – Shared Use Path (Town of Blythewood to Maintain)
3. Blythewood Road Phase 2 (Creech Connector) – Shared Use Path (Town of Blythewood to Maintain, to be confirmed during design)

Maintenance Under Consideration for Richland County

1. Bluff Road Phase II Improvements – Shared Use Path
2. Lower Richland Boulevard Widening – Shared Use Path
3. Pineview Road Improvements – Shared Use Path
4. Polo Road Widening – Shared Use Path
5. Shop Road Widening – Shared Use Path
6. Spears Creek Church Road Widening – Unknown
7. Bull Street/Elmwood Avenue Intersection – Mast Arms (5)
8. Clemson Road/Sparkleberry Lane Intersection – Shared Use Path
9. Broad River Corridor Neighborhood Improvements – Mast Arms (10), Landscaped Medians (750’)
10. Crane Creek Neighborhood Improvements – Landscaped Medians along Monticello Road (1000’)

11. Decker/Woodfield Neighborhood Improvements – Shared Use Path, Landscaped Medians (1000'), Lighting (1 mile), Mast Arms (8)

12. Trenholm Acres/Newcastle Neighborhood Improvements – Landscaped Medians (1000')

(c) The developer of any new subdivision constructed within the jurisdiction and authority of the county is responsible for the initial installation of all necessary traffic control devices in accordance with an approved signage plan. The department of public works shall maintain the devices after acceptance of the streets.
(Code 1976, § 8-1005; Ord. No. 005-03HR, § I, 1-21-03; Ord. No. 052-05HR, § I, 7-12-05; Ord. No. 046-07HR, § I, 5-15-05)

Sec. 21-12. Street lighting.

The county shall not provide street lighting on any highway, street or road until such time as sufficient funds are appropriated to provide that service county-wide. Homeowners or homeowner's associations may obtain street lighting through contractual arrangements with the electric utility serving their area.
(Ord. No. 005-03HR, § I, 1-21-03)

Sec. 21-13. Emergency maintenance of roads.

(a) No work may be performed on any roadway not already maintained by the county unless the county administrator determines that access to such roadway is necessary for the performance of one or more public functions, and the following conditions exist:

(1) Such a roadway is the only access for one (1) or more property owners or residences, and

(2) Emergency medical services, sheriff department vehicles and other county vehicles cannot, in the lawful performance of their duties, gain full and immediate access to at least one (1) residence unless road scraping is performed, and

(3) At least one (1) of the properties to be accessed is used as a primary residence.

(b) Any work pursuant to this section will be done on a one-time basis only. In such cases, the county department of public works is limited to the minimum improvements that will allow full and immediate access to the affected residences. Crusher-run, gravel, pipe or other materials will not be routinely provided.
(Code 1976, § 8-1007; Ord. No. 1846-89, § I, 3-21-89; Ord. No. 2372-93, § I, 11-16-93; Ord. No. 005-03HR, § I, 1-21-03; Ord. No. 032-13HR, § I, 7-2-13)

Sec. 21-14. Abandonment of public roads and right-of-ways.

(a) Any person or organization wishing to close an existing public street, road, or highway in the county to public traffic shall petition a court of competent jurisdiction in accordance with section 57-9-10, et seq. of the state code of laws. The petition shall name the county as a respondent (unless the county is the petitioner). The county attorney shall advise the court with regard to the county's concurrence or opposition after consultation with the county's planning, public works, and emergency services departments, and after consideration by county council. It shall be the responsibility of the petitioner to physically close the roadway if a petition is successful. The county attorney may submit such petition on behalf of the county if so directed by county council.

(b) Any person or organization wishing the county to abandon maintenance on an existing county-maintained street, road or highway shall submit to the public works department a petition to do so signed by the owners of all property adjoining the road and by the owners of all property who use the road as their only means of ingress/egress to their property. The petition shall state that the property owners release and indemnify the county from any duty to maintain the road. At the recommendation of the county engineer, the county administrator shall have the authority to act on a petition that involves a dead-end road; county council shall have the authority to approve petitions

Lighting Cost Estimate 5/13/2019

15 Year Term Prepayment Option	Cost / Mile		Total for 15-yr Lease / mile	
	Pedestrian Connector[1]	4 or 5-Lane Rdwy[2]	Pedestrian Connector[1]	4 or 5-Lane Rdwy[2]
Monthly (Energy Only) Prepayment (Full)	$200.00 $408,000.00	$520.00 $485,000.00	$444,000.00	$578,600.00
Monthly (Energy + Maintenance) Prepayment (Zero)	$3,170.00 $0.00	$4,100.00 $0.00	$570,600.00	$738,000.00

1. Assumes Acorn-style LED lighting with new poles
2. Assumes Acorn-style LED lighting with new poles with Cobrahead LED lighting mounted on existing wood poles.

Acorn-Style Lighting

Cobrahead Lighting

Monthly Cost/Mile		
Pedestrian Connector1	4-Lane Rdwy	5-Lane Rdway
$197.47	$519.07	$484.93
$407,742.11	$462,093.00	$484,514.00
$3,165.00	$3,932.00	$4,095.00
$0.00	$0.00	$0.00

APPENDIX 1 – MAINTENANCE PARTNERSHIP AGREEMENT

2/17/00

THIS AGREEMENT is entered this 15th day of June, 2015 by and between Richland County, hereinafter referred to as County, and the South Carolina Department of Transportation, hereinafter referred to as SCDOT.

WHEREAS, in accordance with Sections 57-3-110 (1) and (10), 57-3-650, 57-23-10, 57-23-800(E), 57-25-140, and the SCDOT's Policy of Vegetation Preservation on SC Highways, SCDOT is authorized to allow landscaping and beautification efforts on SCDOT right of ways;

WHEREAS, the County has previously obtained a Cooperative Intergovernmental Agreement (IGA) for the coordination of the Richland County Sales Tax Transportation Program to access SCDOT's right of way for construction and/or improvement of transportation facilities. Said IGA is described as follows:

IGA Number: 25-14 Date Issued: February 7, 2014

Location: Clemson Road from Old Clemson Road to Sparkleberry Crossing Road;

WHEREAS, SCDOT and the County are desirous of entering into this Agreement to grant a continuous license to the County to enter the SCDOT's right of way to conduct routine maintenance of landscaping, beautification and/or enhancements permitted by the aforesaid IGA;

NOW THEREFORE, in consideration of mutual promises, SCDOT and the County agree to the following:

1) SCDOT grants the County a license to enter onto the SCDOT right of way at the area defined by the intergovernmental agreement. The purpose of the license to enter is limited to routine maintenance of the intergovernmental agreement area. Such entry will be limited to the scope of the work identified in the intergovernmental agreement. No additional encroachment beyond that contemplated by the original intergovernmental agreement is allowed. If additional maintenance, enhancement and/or beautification efforts, different from the original scope of work identified in the intergovernmental agreement, is requested, the County will be required to submit a new intergovernmental agreement identifying the new scope of work. Entry onto SCDOT right of way pursuant to this agreement may be without notice to the SCDOT.

2) The County agrees to post all necessary traffic control devices and take all necessary precautions in conformance with SCDOT traffic control standards and as required by the SCDOT, along the SCDOT right of way prior to and during the performance of any routine maintenance, enhancement and/or beautification efforts.

3) SCDOT agrees to accept maintenance responsibilities for the shared use path concrete structure not to include cleaning or hazardous weather maintenance of the surface.

4) The County agrees to accept maintenance responsibilities for maintenance of the shared use path's surface to include cleaning and hazardous weather maintenance of the surface.

5) The County agrees to maintain the vegetation zone located between the edge of roadway and the shared use path as well as the vegetation zone on the outside shoulder of the path. This maintenance includes, but is not limited to, mowing and clearing/limbing vegetation management.

6) The County agrees to be responsible for all claims or damages arising from the work performed by the County, its employees or agents, but only within the limits of the SC Tort Claims Act. In addition, should the County use a contractor for performance of the work, the County shall insert a hold harmless and indemnification clause in its contract with all contractors and subcontractors which requires the contractor and subcontractor to indemnify and hold

harmless the County and the State of South Carolina, specifically the SCDOT, from any liability, claims or damages which may arise from the performance of the work on SCDOT right of way. . Nothing in this Agreement shall be construed to expand County liability for its actions in SCDOT's right of way beyond the limits of the S. C. Tort Claims Act. Further, the County agrees that they are subject to S. C. Code Section 57-5-140, which provides that SCDOT shall not be liable for damages to property or injuries to persons, as otherwise provided for in the Torts Claims Act, as a consequence of the negligence by a municipality in performing such work within the State highway right of way.

7) This Agreement shall not be modified, amended or altered except upon written consent of the parties. Neither party shall assign, sublet, or transfer its interest in this Agreement without the written consent of the other.

8) This Agreement may be terminated upon thirty days' written notice to the other party; however, in cases where the County is not performing in accordance with this Agreement, SCDOT shall give written notice to the County of the failure in performance and, if the County does not correct or cure the performance within three days of receipt of the notice, SCDOT shall have the option to terminate this license immediately, and shall, thereafter, give written notice of such termination to the County.

IN WITNESS HEREOF, the above parties have hereunto set their hands and seals.

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

By: Robert C. Dickman

Its: DEA

Recommended by: _____

RICHLAND COUNTY

By: _____

Its: _____

Sandra Yudice, Ph.D
Assistant County Administrator

Richland County Attorney's Office

_____

Approved As To LEGAL Form Only.
No Opinion Rendered As To Content.

TRANSPORTATION PROGRAM

Date: March 9, 2018

To: Dr. John Thompson, Ph.D.
Director of Transportation

From: David Beaty, PE
Program Manager

RE: Shared-Use Paths
Recommendation for Moving Forward

Recent guidance and receipt of maintenance agreements from SCDOT has concluded that they will accept maintenance of the shared-use paths, providing applicable design standards have been met, concrete construction of all shared-use paths and that all paths are constructed within SCDOT rights-of-way. The agreements state that SCDOT will not accept maintenance responsibilities for the vegetative buffer areas on either side of the shared-use path(s). A maintenance agreement is to be drafted and approved for each project identifying the entity responsible for the maintenance of buffer areas; SCDOT has provided these agreements for the Clemson Rd Widening project, Polo Rd Shared-Use Path project and the Southeast Richland Neighborhood Improvement (SERN) project.

Recommendation:

County enter into individual project agreements with SCDOT stating SCDOT will maintain shared-use paths while County, or other entity, will maintain all vegetated buffers / areas.

Analysis:

The 2012 Richland County Penny Sales Tax initiative included provisions specific to accommodations for bicycle and pedestrian traffic on all roadway widening and bicycle / pedestrian-specific projects. Concept Reports were developed for all widening projects, which included public involvement to solicit input on options for providing bicycle and pedestrian accommodations on each project. The accommodations provided in current design plans are per these previous public meetings and comments and engineering reviews / analyses specific to safety, project impacts and continuity with projects within the same vicinity.

Typical SCDOT practice for providing these accommodations includes the use of paved, on-street bike lanes (directly adjacent to motorist traffic) with curb and gutter and sidewalk directly behind the curb; see Exhibit A for typical section.

A majority of the roadway widening projects (capacity projects, see Table 1 for listing of currently active projects) within the Richland County program reflect the use of offset, shared-use paths to provide bicycle and pedestrian accommodations. The proposed typical section for these shared-use pathways include grassed buffers (minimum three (3) feet) between the back of curb and the edge of the pathway (for a total minimum offset from the travel-way of five (5) feet, including the width of curb and gutter); see Exhibit B for typical section of offset, shared-use paths utilized on roadway widenings.

Exhibit C reflects typical sections of the shared-use paths proposed for the bicycle / pedestrian-specific projects (non-capacity projects, see Table 1 for listing of currently active projects). These projects include the construction of a shared-use pathway with varying widths of grassed buffers between the edge of travel-way and the edge of pathway. In project-specific instances, and as reflected in Exhibit C, the pathway design is independent of the roadway alignment and outside of the existing rights-of-way.

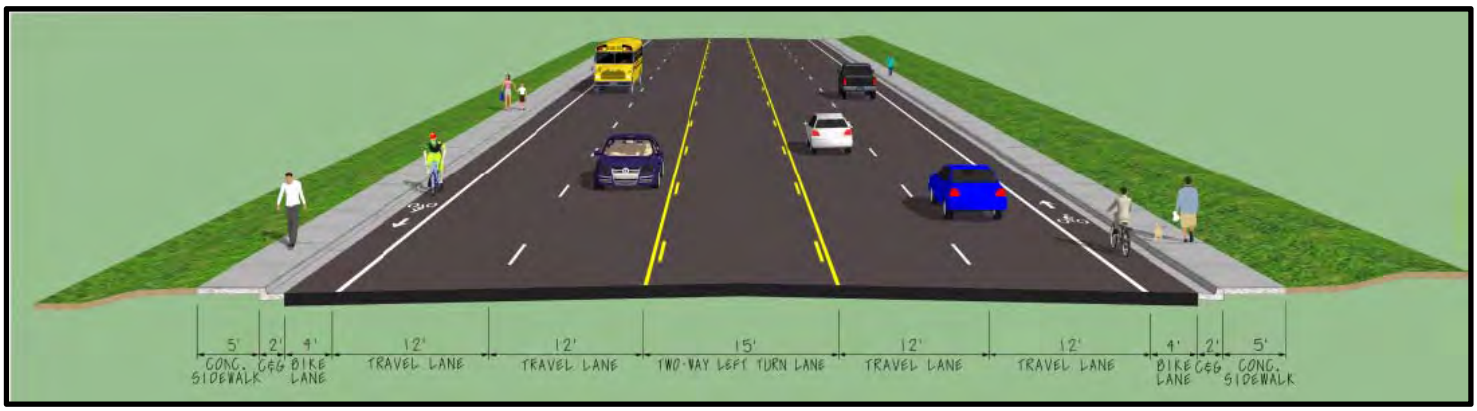

Exhibit A: Standard SCDOT typical section for providing bicycle and pedestrian accommodations

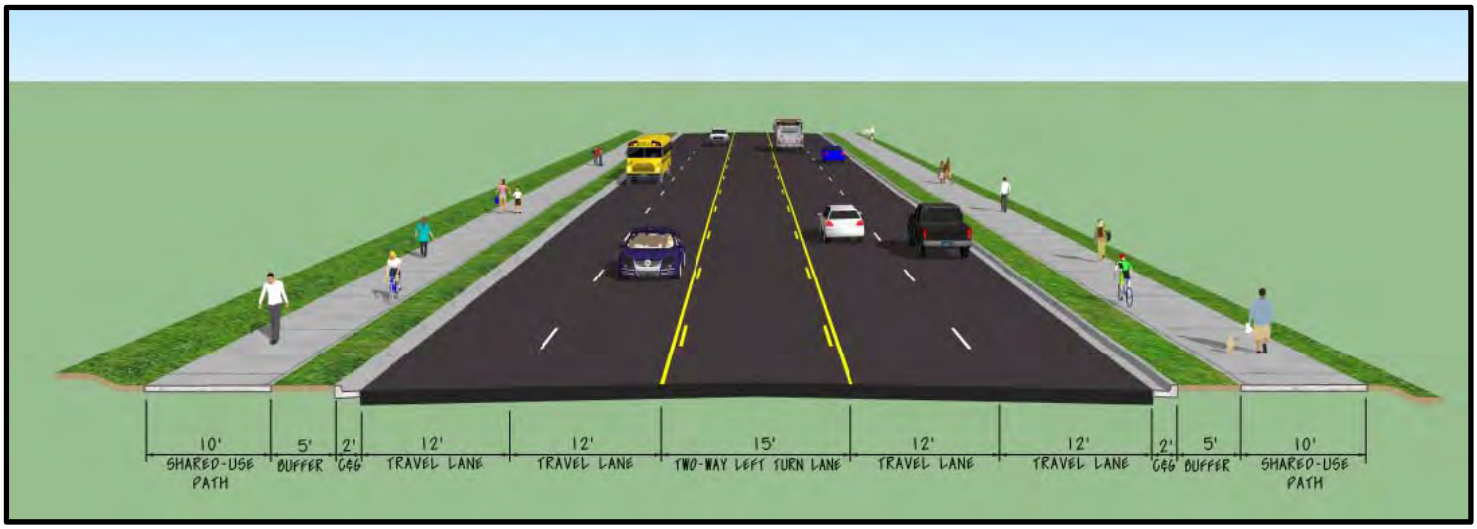

Exhibit B: Shared-Use Path Typical Section on Widening Project (Roadway Capacity Project)

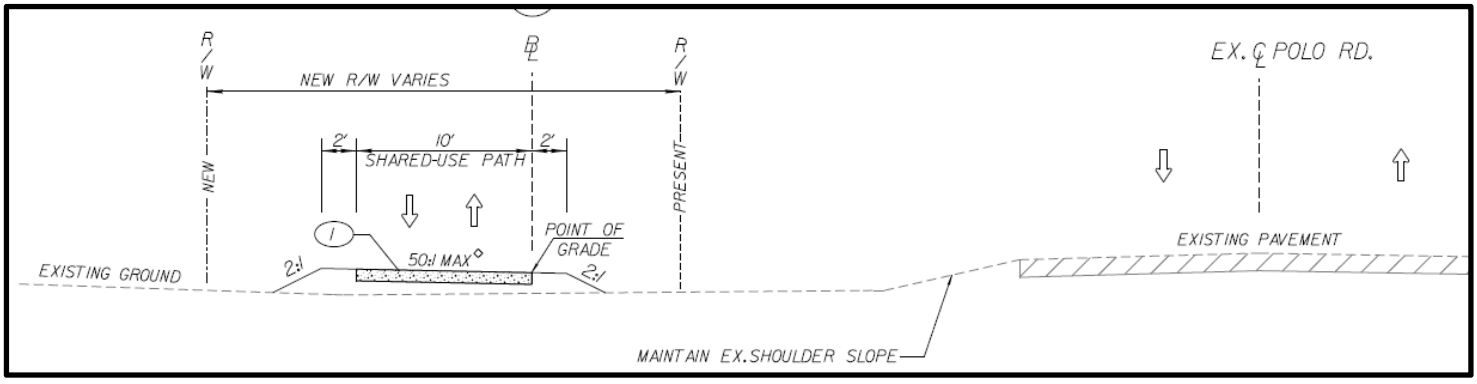

Exhibit C: Shared-Use Path Typical Section (Bicycle / Pedestrian Specific Project; Non-Capacity Project)

Table 1: Listing of currently active Capacity and Non-Capacity projects

Capacity Projects

Project	Limits
Bluff Rd Widening – Phase 2	National Guard Rd to S. Beltline Blvd
Shop Rd Widening	George Rogers Blvd to S. Beltline Blvd
Pineview Rd Widening	Bluff Rd to Garners Ferry Rd (SUP from Bluff Rd to Shop Rd)
Clemson Rd Widening	Sparkleberry Crossing to Old Clemson Rd
Blythewood Rd Widening – Phase 1	I-77 to Syrup Mill Rd
Southeast Richland Neighborhood (SERN)	New location roadway / improvements

Non-Capacity Projects

Project	Limits
Polo Rd	Alpine Rd to Mallet Hill Rd
Clemson Rd	Old Clemson Rd to Village at Sandhills
Assembly St	Blossom St to Rosewood Dr

Potential future shared-use pathways could be utilized on Polo Road Widening, Lower Richland Road Widening, and Spears Creek Church Road Widening. Design studies for these 3 roadways have not yet begun.

Negotiations have recently concluded that SCDOT would maintain all shared-use pathways and all typical roadway elements (asphalt, curb and gutter, concrete, etc) while the County would be responsible for maintaining the buffer areas between the curb and shared-use pathway, providing that minimum design standards have been met, concrete construction of all shared-use paths, and all shared-use paths are constructed within SCDOT rights-of-way. SCDOT has stated that a maintenance agreement will be required for each project to identify the entity responsible for maintenance of buffer areas.

In order to align the non-capacity, pedestrian / bicycle-specific projects with typical SCDOT accommodations, assuming 4 feet of pavement for a bike lane, curb and gutter and closed drainage system (along both sides of the road), would be cost-prohibitive to the referendum values attributed to these projects. An approximate cost per mile to construct the non-capacity projects to reflect these typical SCDOT accommodations would equal upwards of $1.35 million. This approximate cost includes paving to develop bike lanes, curb and gutter and closed-drainage systems (pipes, catch basins). This cost does not include the potential for any right-of-way or utility impacts. Additional design

costs would be incurred and project schedules would be impacted anywhere from 6 to12 months for both Capacity and Non-Capacity projects.

Therefore, the following options exist for the treatment of buffer areas for roadway widening and non-capacity, pedestrian / bicycle-specific projects with the Richland County Program.

(1) Enter into individual project agreements with SCDOT stating SCDOT will maintain shared-use paths while County (or other entity) will maintain vegetatedbuffers / areas. County staff would direct OET and PDT to designate buffers to be planted with low-growth, low, to no maintenance vegetation (meeting SCDOT / AASHTO requirements), or, in-fill of buffer areas with brick pavers or colored concrete (*see Table 2 below for approximate costs for example buffer treatments*).

(2) Re-design projects to standard SCDOT typical (see Exhibit A), specific to Roadway Widenings (Capacity Projects).

(3) Eliminate project(s) from Program.

Table 2: Approximate Costs for Buffer Treatments (assumes 4 foot buffer width)

	Buffer Treatment	Approx. Cost (per mile)	Approx. Annual Maintenance Cost
1.	Grassing / Sodding	$1,630.00	$11,100 [2]
2.	Ground Cover [1]	$30,200.00	$0 [3]
3.	Colored Concrete	$151,000.00	$0 [3]
4.	Brick Pavers	$380,160.00	$0 [3]

[1] Ground Cover assumes low-growth vegetation (shrubs) with little / no maintenance

[2] Approx. Annual Maintenance Cost for grassing / sodding treatment assumes the following;

- 3-person weed-eater crew x $15/man-hour x 2.0 multiplier x 8 hours/day x 5 days/week = $3,600 / week, plus,
- Traffic control – assume $1,500 / day for 5 days = $7,500.
- Total maintenance cost = $3,600 + $7,500 = $11,100

However, for those projects fully within, or sections of the project limits within, the incorporated boundaries of the City of Columbia, there would be no maintenance requirement for the County. Specified within the City of Columbia's Code of Ordinances, Section 8-331, individual property owners are responsible for the maintenance of vegetation / grassing that may exist between the right-of-way line and the roadway gutter.

For example, of those projects listed in Table 1 above, Assembly St is wholly within the incorporated limits of the City of Columbia; therefore, per the city ordinance stated above, property owners adjacent to the roadway would be responsible for the maintenance of any vegetative or grassed buffer areas between the shared-use paths and the roadway curb line. Bluff Rd Widening, Shop Rd Widening and Clemson Rd Widening all have sections within their proposed limits that would also be covered by the city ordinance; Bluff Rd (0.20 of 2.06 miles), Shop Rd (0.37 or 2.42 miles) and Clemson Rd (0.30 or 1.85 miles). For those projects outside of the incorporated boundary of the City of Columbia, maintenance responsibilities and associated costs would be incurred by the County. The following projects are examples of those that would require full County maintenance responsibilities; Blythewood Rd Widening, Pineview Rd Widening, SERN, Polo Rd shared-use path and Clemson Rd shared-use path.

Attachments:

1. Letter from SCDOT, dated May 20, 2016 regarding concrete construction and maintenance requirements
2. Email from SCDOT, dated January 18, 2018, regarding specific guidance / requirements for shared-use paths
3. City of Columbia Ordinance Section 8-331, "Sidewalk Maintenance – Duties of property owners"
4. Clemson Rd Widening – Draft Maintenance Agreement
5. Polo Rd Shared Use Path – Draft Maintenance Agreement
6. Southeast Richland Neighborhood (SERN) – Draft Maintenance Agreement

Attachment #1

South Carolina
Department of Transportation

Acting Deputy Secretary for Engineering
Leland D. Colvin, P.E.
Phone: (803) 737-7900 Fax: (803) 737-5053

May 20, 2016

Mr. Tony McDonald
Richland County Government
Office of the County Administrator
Post Office Box 192
Columbia, South Carolina 29202

RE: Richland Penny Bikeway Projects on SCDOT Maintained Routes

Dear Mr. McDonald

Thank you for your letter requesting clarification on South Carolina Department of Transportation (SCDOT's) maintenance responsibilities in regards to Richland County's bikeway projects on SCDOT maintained routes. I appreciate you and your staff's willingness to partner with SCDOT on implementing the Richland County Transportation Penny Program as evidenced by the established Intergovernmental Agreement (IGA) with Richland County and the collaborative effort to advance projects thus far. As always, we look forward to assisting any governmental body that has taken up the challenge to improve not only their own but also roadways on the State's system. Please accept this letter in response to your request for clarification concerning SCDOT maintenance of bikeway projects.

The IGA between SCDOT and Richland County does not establish a precise scope of work for each project nor does it specify each item that SCDOT will maintain. Section V Item B identifies considerations during the planning stage for each project, and I consider this the appropriate time to begin discussion of maintenance responsibilities. The exact maintenance responsibilities cannot be finalized until the precise scope of work is established and adequate plan details are provided in support of the scope. In compliance with the IGA, SCDOT will accept responsibility for all normal maintenance activities.

SCDOT recognizes and appreciates the huge effort on the part of Richland County in improving infrastructure needs. Establishing a $1.07 billion dollar program, with $736 million in infrastructure improvements, including 69 bikeway projects, is a large undertaking and will require extensive maintenance resources to ensure the long term success of these projects. SCDOT stands ready to support Richland County's maintenance efforts by providing all normal maintenance activities on these projects.

As discussed with Richland County Director of Transportation Rob Perry, SCDOT prefers that shared use paths be constructed of concrete. Any plantings along these paths would need SCDOT approval and maintenance by the County. Again, SCDOT will provide its normal maintenance and level of service along these shared use paths.

The maintenance responsibility for shared lane markings is clearly addressed within SCDOT Traffic Engineering Guidelines #24 as being a responsibility of the local entity; therefore, SCDOT does not consider maintenance of shared lane markings to be a normal maintenance activity. Please know that adherence to this policy in no way prohibits Richland County from implementing shared lane markings provided that an entity other that SCDOT maintains them.

Both parties will benefit by having future discussions concerning maintenance responsibilities, which will yield a clearer understanding of the funding and resources that Richland County has established to maintain items constructed in this program that fall outside of SCDOT's normal maintenance activities.

I trust that this letter clarifies this topic and allows plan review and implementation to move forward. Please let me know if I can assist you further, and again thank you and your staff for your efforts to improve infrastructure in Richland County.

Sincerely,

Leland D. Colvin, P.E.
Acting Deputy Secretary for Engineering

LDC:thm
ec: John N. Hardee, SCDOT Commissioner
Andrew T. Leaphart, Chief Engineer for Operations
Randall Young, P.E., Acting Chief Engineer for Project Delivery
cc: Torrey Rush, Chairman, Richland County Council
Rob Perry, P.E., Director of Transportation, Richland County
File: DSE/RLY

Attachment #2

Ben Lewis

From: David Beaty
Sent: Thursday, January 18, 2018 10:36 AM
To: Kevin Sheppard; Robert Pratt; Raven Gambrell; Perry Mayhew; Ben Lewis; Aaron Marshall
Subject: FW: Richland Penny Shared Use Paths

David Beaty, PE
Program Manager
Richland Penny Program
201 Arbor Lake Drive | Columbia, SC 29223
T: 1-844-RC PENNY | M: 803-261-7942 | D: 803-726-6159
www.richlandpenny.com

TRANSPORTATION PROGRAM

From: McIntyre, Joey [mailto:McIntyreJD@scdot.org]
Sent: Thursday, January 18, 2018 10:33 AM
To: David Beaty
Cc: Roger Sears; Boylston, John D.
Subject: RE: Richland Penny Shared Use Paths

David,

SCDOT is willing to accept the physical shared use path assuming it is constructed of concrete, located on SCDOT ROW and meets the minimum design criteria outlined in AASHTO's Guide for the Development of Bicycle Facilities (1999 or 2012 edition). Projects that are currently in the development stage that are using the 2003 Highway Design Manual may use the 1999 or 2012 AASHTO Guide for the Development of Bicycle Facilities. All future projects will be developed under the 2017 Roadway Design Manual and will have to meet the requirements of the 2012 AASHTO Guide for the Development of Bicycle Facilities exclusively. As with any projects, any deviation from the design criteria outlined in these design guides will need to be discussed on a case by case basis and may require a design variance or a design exception. While SCDOT will accept the physical shared paths, District One will not maintain the vegetation between the travel way and shared use path. District One Maintenance will prepare a maintenance agreement that will identify the entity responsible for maintenance of the vegetation.

In addition, some projects may have specific items (retaining walls, specialized drainage structures, etc.) that the Department may elect to not accept into the state system. When these items are identified during the review process, a draft maintenance agreement will be prepared by SCDOT and provided to Richland County for review.

I was hoping to be able to provide the maintenance agreements for Clemson, SERN and Polo with this response, but it will be Thursday or Friday of this week before I receive those from District One. Once I receive them, I will forward to you for review.

Joey McIntyre, PE
Midlands RPG 3
SC Department of Transportation
803-737-1842 O
mcintyrejd@scdot.org

Celebrating 100 years of service to South Carolina!

From: David Beaty [mailto:dbeaty@richlandpenny.com]
Sent: Tuesday, January 16, 2018 1:53 PM
To: McIntyre, Joey
Subject: RE: Richland Penny Shared Use Paths

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hello Joey,
I am just following up on your e-mail below from 1-8-18 hoping you'd be able to get some guidance on Shared Use Paths. Thanks very much.

David Beaty, PE
Program Manager
Richland Penny Program
201 Arbor Lake Drive | Columbia, SC 29223
T: 1-844-RC PENNY | M: 803-261-7942 | D: 803-726-6159
www.richlandpenny.com

From: David Beaty
Sent: Monday, January 08, 2018 8:42 AM
To: 'McIntyre, Joey'
Subject: RE: Richland Penny Shared Use Paths

Hello Joey,
Thanks very much, and of course feel free to call me anytime if we ever need to discuss anything. I really do appreciate your effort.

David Beaty, PE
Program Manager
Richland Penny Program
201 Arbor Lake Drive | Columbia, SC 29223
T: 1-844-RC PENNY | M: 803-261-7942 | D: 803-726-6159

TRANSPORTATION PROGRAM

From: McIntyre, Joey [mailto:McIntyreJD@scdot.org]
Sent: Monday, January 08, 2018 8:38 AM
To: David Beaty
Subject: RE: Richland Penny Shared Use Paths

Good Morning David,

I wanted to touch base and let you know I didn't forget about responding to your email. I have been trying to coordinate with everyone involved before responding. I hope to have something final to you before the end of the day. I apologize for the delay.

Joey McIntyre, PE
Midlands RPG 3
SC Department of Transportation
803-737-1842 O
mcintyrejd@scdot.org

Celebrating 100 years of service to South Carolina!

From: David Beaty [mailto:dbeaty@richlandpenny.com]
Sent: Friday, December 29, 2017 10:55 AM
To: McIntyre, Joey
Cc: Kevin Sheppard
Subject: RE: Richland Penny Shared Use Paths

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hello Joey,

Thanks in advance for helping get some clarity on this subject. The Richland Penny Program has two general categories involving Shared-Use Paths (SUP). The first one involves roadway widening projects such as Clemson Road, Shop Road, Bluff Road and Blythewood Road, among potentially others. As a result of public input, SUP were chosen to accommodate bicyclists and pedestrians. Variable buffers between the back of curb and SUP are shown from 3' to 5'. Previous correspondence from SCDOT indicated the preference would be for the SUP to be concrete instead of asphalt for ease of maintenance, so all SUP have been designed as concrete.

The second general category is where the Richland Penny Program is not adding any capacity to a roadway, but accommodating bicyclists/pedestrians through SUP. These projects that are in various stages of development include Clemson Road from Old Clemson to Village at Sandhills, Ft. Jackson Blvd., and Polo Road, among potentially others.

We are requesting clarity on what SCDOT is willing to accept into the state system and maintain. We would request SCDOT consider accepting both the SUP and buffer for both widening projects and non-widening projects. To help us keep projects moving forward I would request 1) a general direction to guide the Program as new projects and design criteria are developed so that projects aren't developed to some point and then have to be changed. Simultaneously I would request 2) specific guidance on a project-by-project basis for the projects we are currently developing.

There are 3 time sensitive projects we would like guidance on due to their schedules.

- Clemson Road Widening – SUP, plan to request construction authorization early 2018
- Southeast Richland Neighborhood – SUP, plan to request construction authorization early 2018
- Polo Road – SUP only, currently put R/W acquisition on hold pending this issue

Other Widening/Intersection projects that we are proposing SUP are:

- Bluff Road 2 Widening
- Blythewood Road 1 Widening
- Pineview Road Widening
- Shop Widening Widening
- Clemson/Sparkleberry Intersection

Other projects only providing SUP are:

- Clemson Road from Old Clemson Road to Village at Sandhills
- Ft. Jackson Blvd.
- Assembly Street from George Rogers to near Blossom
- Other projects have been identified as candidates for SUP, but no work has begun (shown at top of attachment to this e-mail).

Our first order of priority is clarity on Clemson Road Widening, SERN, and Polo Road. Then I think we need some type of general answer on both widenings and non-widening projects so that Richland County can adjust accordingly, as many projects are in various stages of design. Depending on the detail of this general letter, then additional individual maintenance agreements may not be necessary, but obviously that is at the discretion of SCDOT. Please feel free to call to help clarify the issues and projects. Thanks again for your help.

David Beaty, PE
Program Manager
Richland Penny Program
201 Arbor Lake Drive | Columbia, SC 29223
T: 1-844-RC PENNY | M: 803-261-7942 | D: 803-726-6159
www.richlandpenny.com

TRANSPORTATION PROGRAM

From: McIntyre, Joey [mailto:McIntyreJD@scdot.org]
Sent: Tuesday, December 19, 2017 3:28 PM
To: David Beaty
Subject: Richland Penny Shared Use Paths

Good Afternoon David,

I spoke with Chris Kelly this morning and he was updating me on the maintenance agreements for the proposed projects with shared use paths. In the conversation he told me you requested a general letter that would outline SCDOT's position on the on the proposed SUP's. I apologize if there has been confusion, in our previous discussions I was under the impression that the PDT was wanting the specific maintenance agreements for each project. I spoke with John Boylston, and if possible, could you provide me with a written request of what issues need to be addressed? I do not

believe it will be an issue getting the official letter, we just want to make sure we are providing the information you are requesting.

Joey McIntyre, PE
Midlands RPG 3
SC Department of Transportation
803-737-1842 O
mcintyrejd@scdot.org

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Sec. 8-331. - Duties of property owners.

Attachment #3

(a) It shall be the duty of all owners of property in the city upon which sidewalks have been laid to keep such walkways clean and free from obstruction. Owners of property shall report defective conditions in sidewalks to the city manager or director of public services.

(b) All persons who own real estate in the city which abuts upon any street right-of-way shall be required to keep that portion of the right-of-way which lies between the property line and the street side of the gutter of the adjoining street free from unsightly vegetation or other things which would mar or detract from the beauty and cleanliness of the street upon which their property abuts. Any owner of business or institutional property who shall place or allow grass to grow upon the portion of the right-of-way lying between the property line and the curbline of the street upon which his real estate abuts shall keep such grass properly mowed and free from rubbish of all kinds. If such owners are not in the possession of their property, then this section shall apply to their tenants or those who have possession or control of the property.

(Code 1979, § 9-3030)

Attachment #4

APPENDIX 1 – MAINTENANCE PARTNERSHIP AGREEMENT

2/17/00

THIS AGREEMENT is entered this _____ day of _____, 20__, by and between Richland County, hereinafter referred to as County, and the South Carolina Department of Transportation, hereinafter referred to as SCDOT.

WHEREAS, in accordance with Sections 57-3-110 (1) and (10), 57-3-650, 57-23-10, 57-23-800(E), 57-25-140, and the SCDOT's Policy of Vegetation Preservation on SC Highways, SCDOT is authorized to allow landscaping and beautification efforts on SCDOT right of ways;

WHEREAS, the County has previously obtained a Cooperative Intergovernmental Agreement (IGA) for the coordination of the Richland County Sales Tax Transportation Program to access SCDOT's right of way for construction and/or improvement of transportation facilities. Said IGA is described as follows:

IGA Number: 25-14 Date Issued: February 7, 2014

Location: Clemson Road from Old Clemson Road to Sparkleberry Crossing Road;

WHEREAS, SCDOT and the County are desirous of entering into this Agreement to grant a continuous license to the County to enter the SCDOT's right of way to conduct routine maintenance of landscaping, beautification and/or enhancements permitted by the aforesaid IGA;

NOW THEREFORE, in consideration of mutual promises, SCDOT and the County agree to the following:

1) SCDOT grants the County a license to enter onto the SCDOT right of way at the area defined by the intergovernmental agreement. The purpose of the license to enter is limited to routine maintenance of the intergovernmental agreement area. Such entry will be limited to the scope of the work identified in the intergovernmental agreement. No additional encroachment beyond that contemplated by the original intergovernmental agreement is allowed. If additional maintenance, enhancement and/or beautification efforts, different from the original scope of work identified in the intergovernmental agreement, is requested, the County will be required to submit a new intergovernmental agreement identifying the new scope of work. Entry onto SCDOT right of way pursuant to this agreement may be without notice to the SCDOT.

2) The County agrees to post all necessary traffic control devices and take all necessary precautions in conformance with SCDOT traffic control standards and as required by the SCDOT, along the SCDOT right of way prior to and during the performance of any routine maintenance, enhancement and/or beautification efforts.

3) SCDOT agrees to accept maintenance responsibilities for the shared use path concrete structure not to include cleaning or hazardous weather maintenance of the surface.

4) The County agrees to accept maintenance responsibilities for maintenance of the shared use path’s surface to include cleaning and hazardous weather maintenance of the surface.

5) The County agrees to maintain the vegetation zone located between the edge of roadway and the shared use path as well as the vegetation zone on the outside shoulder of the path. This maintenance includes, but is not limited to, mowing and clearing/limbing vegetation management.

6) The County agrees to indemnify and hold harmless the SCDOT from any and all claims, damages and liability arising or resulting from the County’s presence on and use of the SCDOT right of ways for routine maintenance, enhancement and/or beautification. The County agrees to be responsible for all claims or damages arising from the work performed within the limits of the SC Tort Claims Act. In

addition, the County shall insert a hold harmless and indemnification clause in its contract with all contractors and subcontractors which requires the contractor and subcontractor to indemnify and hold harmless the County and the State of South Carolina, specifically the SCDOT, from any liability, claims or damages which may arise from the performance of the work on SCDOT right of way. Further, the County agrees that they are subject to S. C. Code Section 57-5-140, which provides that SCDOT shall not be liable for damages to property or injuries to persons, as otherwise provided for in the Torts Claims Act, as a consequence of the negligence by a municipality in performing such work within the State highway right of way.

7) This Agreement shall not be modified, amended or altered except upon written consent of the parties. Neither party shall assign, sublet, or transfer its interest in this Agreement without the written consent of the other.

8) This Agreement may be terminated upon thirty days' written notice to the other party; however, in cases where the County is not performing in accordance with this Agreement, SCDOT shall give written notice to the County of the failure in performance and, if the County does not correct or cure the performance within three days of receipt of the notice, SCDOT shall have the option to terminate this license immediately, and shall, thereafter, give written notice of such termination to the County.

IN WITNESS HEREOF, the above parties have hereunto set their hands and seals.

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

By: _____
Its: _____
Recommended by: _____

RICHLAND COUNTY

By: _____
Its: _____

Attachment #5

APPENDIX 1 – MAINTENANCE PARTNERSHIP AGREEMENT

2/17/00

THIS AGREEMENT is entered this _____ day of _____, 20__, by and between Richland County, hereinafter referred to as County, and the South Carolina Department of Transportation, hereinafter referred to as SCDOT.

WHEREAS, in accordance with Sections 57-3-110 (1) and (10), 57-3-650, 57-23-10, 57-23-800(E), 57-25-140, and the SCDOT's Policy of Vegetation Preservation on SC Highways, SCDOT is authorized to allow landscaping and beautification efforts on SCDOT right of ways;

WHEREAS, the County has previously obtained a Cooperative Intergovernmental Agreement (IGA) for the coordination of the Richland County Sales Tax Transportation Program to access SCDOT's right of way for construction and/or improvement of transportation facilities. Said IGA is described as follows:

IGA Number: 25-14 Date Issued: February 7, 2014

Location: Polo Road from Alpine Road to Mallet Hill Road;

WHEREAS, SCDOT and the County are desirous of entering into this Agreement to grant a continuous license to the County to enter the SCDOT's right of way to conduct routine maintenance of landscaping, beautification and/or enhancements permitted by the aforesaid IGA;

NOW THEREFORE, in consideration of mutual promises, SCDOT and the County agree to the following:

1) SCDOT grants the County a license to enter onto the SCDOT right of way at the area defined by the intergovernmental agreement. The purpose of the license to enter is limited to routine maintenance of the intergovernmental agreement area. Such entry will be limited to the scope of the work identified in the intergovernmental agreement. No additional encroachment beyond that contemplated by the original intergovernmental agreement is allowed. If additional maintenance, enhancement and/or beautification efforts, different from the original scope of work identified in the intergovernmental agreement, is requested, the County will be required to submit a new intergovernmental agreement identifying the new scope of work. Entry onto SCDOT right of way pursuant to this agreement may be without notice to the SCDOT.

2) The County agrees to post all necessary traffic control devices and take all necessary precautions in conformance with SCDOT traffic control standards and as required by the SCDOT, along the SCDOT right of way prior to and during the performance of any routine maintenance, enhancement and/or beautification efforts.

3) SCDOT agrees to accept maintenance responsibilities for the shared use path concrete structure not to include cleaning or hazardous weather maintenance of the surface.

4) The County agrees to accept maintenance responsibilities for maintenance of the shared use path’s surface to include cleaning and hazardous weather maintenance of the surface.

5) The County agrees to maintain the vegetation zone located between the edge of roadway and the shared use path as well as the vegetation zone on the outside shoulder of the path. This maintenance includes, but is not limited to, mowing and clearing/limbing vegetation management.

6) The County agrees to accept maintenance responsibilities for all retaining wall structures, handrails, and associated drainage items constructed as part of the project.

7) The County agrees to indemnify and hold harmless the SCDOT from any and all claims, damages and liability arising or resulting from the County’s presence on and use of the SCDOT right of

ways for routine maintenance, enhancement and/or beautification. The County agrees to be responsible for all claims or damages arising from the work performed within the limits of the SC Tort Claims Act. In addition, the County shall insert a hold harmless and indemnification clause in its contract with all contractors and subcontractors which requires the contractor and subcontractor to indemnify and hold harmless the County and the State of South Carolina, specifically the SCDOT, from any liability, claims or damages which may arise from the performance of the work on SCDOT right of way. Further, the County agrees that they are subject to S. C. Code Section 57-5-140, which provides that SCDOT shall not be liable for damages to property or injuries to persons, as otherwise provided for in the Torts Claims Act, as a consequence of the negligence by a municipality in performing such work within the State highway right of way.

8) This Agreement shall not be modified, amended or altered except upon written consent of the parties. Neither party shall assign, sublet, or transfer its interest in this Agreement without the written consent of the other.

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IN WITNESS HEREOF, the above parties have hereunto set their hands and seals.

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

By: _____
Its: _____
Recommended by: _____

RICHLAND COUNTY

By: _____
Its: _____

Attachment #6

APPENDIX 1 – MAINTENANCE PARTNERSHIP AGREEMENT

2/17/00

THIS AGREEMENT is entered this _____ day of _____, 20__, by and between Richland County, hereinafter referred to as County, and the South Carolina Department of Transportation, hereinafter referred to as SCDOT.

WHEREAS, in accordance with Sections 57-3-110 (1) and (10), 57-3-650, 57-23-10, 57-23-800(E), 57-25-140, and the SCDOT's Policy of Vegetation Preservation on SC Highways, SCDOT is authorized to allow landscaping and beautification efforts on SCDOT right of ways;

WHEREAS, the County has previously obtained a Cooperative Intergovernmental Agreement (IGA) for the coordination of the Richland County Sales Tax Transportation Program to access SCDOT's right of way for construction and/or improvement of transportation facilities. Said IGA is described as follows:

IGA Number: 25-14 Date Issued: February 7, 2014

Location: Rabbit Run from Rabbit Run Connector to Lower Richland Boulevard;

WHEREAS, SCDOT and the County are desirous of entering into this Agreement to grant a continuous license to the County to enter the SCDOT's right of way to conduct routine maintenance of landscaping, beautification and/or enhancements permitted by the aforesaid IGA;

NOW THEREFORE, in consideration of mutual promises, SCDOT and the County agree to the following:

1) SCDOT grants the County a license to enter onto the SCDOT right of way at the area defined by the intergovernmental agreement. The purpose of the license to enter is limited to routine maintenance of the intergovernmental agreement area. Such entry will be limited to the scope of the work identified in the intergovernmental agreement. No additional encroachment beyond that contemplated by the original intergovernmental agreement is allowed. If additional maintenance, enhancement and/or beautification efforts, different from the original scope of work identified in the intergovernmental agreement, is requested, the County will be required to submit a new intergovernmental agreement identifying the new scope of work. Entry onto SCDOT right of way pursuant to this agreement may be without notice to the SCDOT.

2) The County agrees to post all necessary traffic control devices and take all necessary precautions in conformance with SCDOT traffic control standards and as required by the SCDOT, along the SCDOT right of way prior to and during the performance of any routine maintenance, enhancement and/or beautification efforts.

3) SCDOT agrees to accept maintenance responsibilities for the shared use path concrete structure not to include cleaning or hazardous weather maintenance of the surface.

4) The County agrees to accept maintenance responsibilities for maintenance of the shared use path’s surface to include cleaning and hazardous weather maintenance of the surface.

5) The County agrees to maintain the vegetation zone located between the edge of roadway and the shared use path as well as the vegetation zone on the outside shoulder of the path. This maintenance includes, but is not limited to, mowing and clearing/limbing vegetation management.

6) The County agrees to accept maintenance responsibilities for all handrails constructed as part of the project.

7) The County agrees to indemnify and hold harmless the SCDOT from any and all claims, damages and liability arising or resulting from the County’s presence on and use of the SCDOT right of

ways for routine maintenance, enhancement and/or beautification. The County agrees to be responsible for all claims or damages arising from the work performed within the limits of the SC Tort Claims Act. In addition, the County shall insert a hold harmless and indemnification clause in its contract with all contractors and subcontractors which requires the contractor and subcontractor to indemnify and hold harmless the County and the State of South Carolina, specifically the SCDOT, from any liability, claims or damages which may arise from the performance of the work on SCDOT right of way. Further, the County agrees that they are subject to S. C. Code Section 57-5-140, which provides that SCDOT shall not be liable for damages to property or injuries to persons, as otherwise provided for in the Torts Claims Act, as a consequence of the negligence by a municipality in performing such work within the State highway right of way.

8) This Agreement shall not be modified, amended or altered except upon written consent of the parties. Neither party shall assign, sublet, or transfer its interest in this Agreement without the written consent of the other.

9) This Agreement may be terminated upon thirty days' written notice to the other party; however, in cases where the County is not performing in accordance with this Agreement, SCDOT shall give written notice to the County of the failure in performance and, if the County does not correct or cure the performance within three days of receipt of the notice, SCDOT shall have the option to terminate this license immediately, and shall, thereafter, give written notice of such termination to the County.

IN WITNESS HEREOF, the above parties have hereunto set their hands and seals.

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

By: _____
Its: _____
Recommended by: _____

RICHLAND COUNTY

By: _____
Its: _____

Scope Alignment Summary

Transportation Ad Hoc Committee Meeting

May 28, 2019

- March 6, 2018 PDT Memorandum
  - Program Development Team (PDT) provided a Memorandum titled "Widening Categorical Recommendations to Align Program with Available Funding"
  - Memorandum summarized the 14 Widenings detailing 2012 Referendum amount, 2012 Referendum scope, updated cost estimates and 3 scenarios to maximize project delivery within available funds
  - Memorandum provided a recommendation (scenario #3) that Richland County recognize savings of I-20/Broad River Interchange, indefinitely delay Bluff Road Widening Phase 2 and Pineview Road Widening, and modify the termini of Spears Creek Church Road.

- March 29, 2018 Transportation Ad Hoc Committee Meeting
  - PDT staff presented the March 6, 2018 Memorandum and further explained that the current Program cost estimates were approximately $140 Million above the 2012 Referendum amount and that the recommended changes would result in saving that amount, allowing the other projects to be constructed in very close alignment with the original scopes/termini.

- May 10, 2018 Transportation Ad Hoc Committee Meeting
  - PDT staff presented the March 6, 2018 Memorandum again and additional conversation was had with members of the Committee, staff, and PDT.
  - Mr. Livingston moved, and Mr. C. Jackson seconded that the recommendation to approve scenario #3 from the Memorandum. The vote was in favor.

- May 15, 2018 Transportation Work Session
  - A major topic of the Transportation Work Session was the PDT March 6, 2018 Memorandum and the Transportation Ad Hoc Committee's recommendation to move forward with scenario #3.
  - Discussion included providing bicycle/pedestrian accommodations and resurfacing of Bluff Road Phase 2 and Pineview Road.

- May 31, 2018 Transportation Ad Hoc Committee Meeting
  - The PDT March 6, 2018 Memorandum was discussed with most of the conversation focused on Pineview Road and Bluff Road Phase 2.

- Discussion involved providing bicycle/pedestrian accommodations and resurfacing of Bluff Road Phase 2 and Pineview Road.
- Mr. Livingston moved, seconded by Mr. N. Jackson, to forward to Council with a recommendation to move forward with proposal, to include shared use pathways for Pineview Road and Bluff Road, and also look at adding safety measures on Longwood Road. The vote in favor was unanimous.

- June 5, 2018 County Council Regular Session
  - A report of the Transportation Ad Hoc Committee was made by Mr. C. Jackson.
  - Approval for resurfacing and analyzing Shared Use Paths for Pineview Road and Bluff Road Phase 2 – The committee's recommendation, in order to continue to try to balance the budget and the bond, is to approve the resurfacing and analyzing the Shared-Use Path for Pineview Road and Bluff Road Phase 2 to keep those projects on the list of projects.
  - The motion passed with those in favor including Pearce, Rose, McBride, N. Jackson, Dickerson, Livingston, Myers, C. Jackson, and Manning. Those opposed included Malinowski.

History of Widening Memorandum Agenda Item

Transportation Ad Hoc Committee: May 10, 2018 – "Mr. Livingston moved, seconded by Mr. C. Jackson, to forward to Council with a recommendation to approve scenario #3 to defer the Bluff Road Widening Phase 2 and Pineview Road Widening, and to reduce the project termini on Spears Creek Church Road Widening. The vote was in favor."

Regular Session: May 15, 2018 – "Mr. C. Jackson stated the committee recommended deferring this item until the June 5th Council meeting. The vote in favor was unanimous."

Transportation Ad Hoc Committee: May 31, 2018 – "Mr. Livingston moved, seconded by Mr. N. Jackson, to forward to Council with a recommendation to move forward with proposal, to include the shared use pathways for Pineview Road and Bluff Road, and also look at adding safety measures on Longwood Road. The vote in favor was unanimous."

appropriate place given all of the traffic involved if the Judicial Center is located on Hampton Street.

Mr. Beaty stated his opinion is that it would be still be a good candidate. Again, we are not adding any pavement, so we are staying within the width of the existing Hampton Street.

Mr. C. Jackson stated he was parked a building down below the AT&T Building on Hampton and lost my side mirror while he was inside.

Mr. Beaty stated what they are asking the committee to do, and what City staff is asking City Council, is if they can move forward with this approach and conduct a public meeting. Then after the public meeting, they will give you the results of the public meeting and ask if we can take the next step.

Mr. Livingston moved, seconded by Mr. Malinowski, to forward to Council with a recommendation to move forward with this approach and conduct a public meeting. The vote in favor was unanimous.

10. **Widening Memorandum** – Mr. Beaty stated the total referendum amount, excluding the COMET, is approximately $767 million. The PDT updates the estimate quarterly and right now the estimate is approximately $140 – 143 million. The current estimates are over the $767 million. The PDT's recommendation is to construct all of the projects, with the exception of the widenings, within their referendum amounts. The 15 intersections were lumped in as a group. The widenings are the high dollar projects. If we are approximately $140 million over the referendum amount, how do we make up that difference?

The recommendation has four legs to the stool, if you will. As the SCDOT constructs "Malfunction Junction (Carolina Crossroads)", which is fully funded by the legislature, they are going to have to construct the I-20/Broad River Road interchange. That project is in the referendum at $52.5 million. That could be recognized as a savings to Richland County.

Bluff Road Phase I has been partially constructed. Bluff Road Phase II would go from National Guard Armory, on the other side of Williams-Brice, to about South Beltline. Bluff Road Phase II currently has 4 lanes of traffic. And at the lights, it has left turn lanes. To improve that, and add the continuous 2 way left turn lanes and shared use path, would cost $40 million. You would not be adding any traffic capacity and would only safety more by spending the $40 million.

Pineview Road, coincidentally, the cost estimate is right at $40 million. However, when Shop Road Phase II is constructed to Garners Ferry that will act as essentially a bypass. So, people coming from the Sumter area would get off on Shop Road Extension to come into Columbia. They will quit traveling down Garners Ferry to turn left onto Pineview and then turn right on Shop. That traffic model has been prepared by the Central Midlands Council of Government.

If we were to recognize the savings of the I-20 Broad River Road interchange, indefinitely defer Bluff Road Phase II and Pineview. We are approaching that $140 million mark. We will recognize a little bit of savings on Spears Creek Road. Spears Creek Road really goes from Percival over to Two Notch. If we began the Spears Creek Road project on the other side of I-20 instead of Percival, and did not replace the interstate bridge, we are right at $140 million. If we recognize those savings, all of the other widenings could be constructed to their referendum amount. So, Lower Richland Boulevard, Polo Road and Spears Creek Church Road, etc. get built. The thought is that SCDOT is going to take care of I-20/Broad River Road interchange. You will actually lose traffic on Pineview. In 20 years there will be less cars on Pineview than there are today. Why spend $40 million when traffic is decreasing?

Dr. Thompson requested Mr. Beaty to quantify the amount of traffic today and in the future.

Mr. Beaty stated traffic today is approximately 16,400. When Shop Road Phase II is built it will decrease to about 16,000.

Mr. Beaty stated the PDT's memo include other options. Another option is to cost constrain each project. There is not enough money on a number of these projects to do a meaningful project. You could not build ½ of a project. It would not have logical termini. There is not enough money in the referendum for Atlas and Pineview to stay within the budget and build anything. If you took that approach on Atlas or Pineview, and started at Garners Ferry, they could not even get over to Shop.

Mr. Livingston stated we would have roads to nowhere.

Mr. Beaty said you could do spot improvements, but you would be getting little return on your investment. He reminded Mr. Malinowski that Broad River Road has had its termini shortened.

Mr. N. Jackson inquired about what was recommended for Pineview Road.

Mr. Beaty stated it was recommended to be 5 lanes from Garners Ferry to Shop Road, and then, 3 lanes from Shop Road to Bluff Road. During the first public meeting, the public wanted it further reduced, so the plan was to only improve Pineview Road from Bluff Road up until Metal Park Drive as a 2 lane, and then, go to 3 lanes from Metal Park Drive up to Shop Road.

Mr. N. Jackson stated, for clarification, from Garners Ferry Road to Shop Road would be 3 lanes.

Mr. Beaty stated it was proposed to be 5 lanes, but in this scenario they would build nothing on Pineview.

Mr. N. Jackson stated there are a lot of factories on Pineview Road and the tractor trailers are turning.

Mr. Beaty stated there is a lot of existing 3 lanes in that part.

Mr. N. Jackson stated the other part he talked about was Wildcat Road, which Ft. Jackson had approved. The entire length had to have a secure fence. At the time, it was $3 million for the fence and bridges. He would like for the PDT to look into this.

Mr. Beaty stated they are going to look at the STIP for the Shop Road Extension monies and they will inquire with the SCDOT about the potential to bring the Wildcat Road project back to life.

Mr. N. Jackson stated that he and Ike McLeese met with Garrison Commander at Ft. Jackson and they agreed to do it. We just did not have the funding to do it. He feels it would be a tremendous help for the area and provide a connection to the National Cemetery.

Mr. Malinowski inquired if Mr. Beaty is saying because of the other projects there is no longer a need to do any widening on Pineview Road and Bluff Road because traffic will be reduced greatly and what is there will accommodate the traffic.

Mr. Beaty stated, in so many words, the answer is yes. Today, Bluff Road has 4 lanes, so you would not be greatly benefitting traffic capacity or safety by improving Bluff Road. And, the same thing with Pineview Road. Pineview Road traffic is going to be decreasing. Obviously, this will be a Council action to re-prioritize these 2 projects.

Mr. Malinowski inquired if the PDT was going to do any public meetings on the deferral of Pineview Road and Bluff Road. He stated he does not know how many people voted for the referendum because they saw these projects in there and now we are going to say, "Hey, forget it."

Mr. Beaty stated he had not planned to, or thought of that, to be honest. He would offer that this falls under Council's purview of re-prioritize. Council prioritized to begin with. Council can re-prioritize. Again, he does not think we will have the money to get there, but we might. There are opportunities for Federal grants. They are working on a Build Grant now. All of the estimates include a 10% contingency in construction, so $20 million of the $140 million is a contingency. There is a chance that a portion of them can be built.

Mr. Livingston stated, for clarification, the scenario that was recommended was scenario #3.

Mr. Beaty responded in the affirmative.

Mr. Livingston moved, seconded by Mr. C. Jackson, to forward to Council with a recommendation to approve scenario #3 to defer the Bluff Road Widening Phase 2 and Pineview Road Widening and to reduce the project termini on Spears Creek Church Road Widening. The vote was in favor.

11. **Release the $250 Million Bond Proceeds from Escrow** – Ms. Heizer stated the County was approaching a deadline to issue the debt pursuant to the authorization in the referendum and the Supreme Court decision was pending. We were particularly concerned about the mandamus issue and whether SCDOR could potentially hold the distribution of the penny. One thing that was good in the Supreme Court opinion is that they upheld the mandamus, which clearly indicates the SCDOR cannot withhold the penny from distribution. The County is now free to move the money from escrow. She stated she would be glad to do a resolution and recite why the funds were held in escrow and the reason has been eliminated.

Moving the funds from escrow means it is available to be spent, but none of the money is spent until Council authorizes it pursuant to a budget and appropriation. The County Treasurer will continue to hold funds, but he will be notified that the hold on them has been terminated.

Mr. Livingston moved, seconded by Mr. N. Jackson, to forward to Council to authorize the release of the $250 bond proceeds from escrow. The vote in favor was unanimous.

12. **PDT Reimbursement Policy** – Mr. Smith stated the County and the PDT have been in discussions regarding a portion of the PDT contract that relates to reimbursable items. Both sides have exchanged correspondence, as it relates to that, and Council has been privy to the correspondence. The attorney for the PDT, Keith Babcock, and Mr. Smith have been in discussions about a way to move this issue forward. They have agreed a way to move this forward is by way of mediation. Mr. Babcock has presented the County Legal Department with names of mediators. The Legal Department is in the process of reviewing that and getting back to him. What he anticipates will occur at this point, is we are going to make a decision about the mediator. Then we will determine when we will schedule a date, time and place to conduct the mediation.

Mr. Livingston inquired about how long it will take to get to the mediation.

Mr. Smith responded he does not know how long it will be. They have not had a discussion about the timeline.

Richland County Council
Transportation Ad Hoc Committee
May 31, 2018 – 1:30 PM
Council Chambers
2020 Hampton Street, Columbia 29204

COMMITTEE MEMBERS PRESENT: Calvin "Chip" Jackson, Chair; Paul Livingston, and Norman Jackson

OTHER COUNCIL MEMBERS PRESENT: Dalhi Myers

OTHERS PRESENT: Michelle Onley, Tony Edwards, Nathaniel Miller, John Thompson, Trenia Bowers, and Quinton Epps

1. **Call to Order** – Mr. C. Jackson called the meeting to order at approximately 1:33 PM

2. **Approval of the Minutes**

   a. May 10, 2018 – Mr. Livingston moved, seconded by Mr. N. Jackson, to approve the minutes as submitted. The vote in favor was unanimous.

3. **Adoption of the Agenda** – Mr. Livingston moved, seconded by M. N. Jackson, to approve the agenda as published. The vote in favor was unanimous.

4. **Widening Memorandum** –Dr. Thompson stated this item was discussed at the last ad hoc meeting. It is being brought back before you at the request of Councilwoman Myers. She has requested a study of a Shared Use Path for Bluff Road and Pineview Road, as well as repaving the road.

   Ms. Myers stated, to the extent, that we are looking at the widening category, and eliminating the widening for Pineview, Bluff Road Phase 2 and a portion of Spears Creek Church Road. Her concern was how we got to the conclusion that was the best way to get to where we needed to be with the Penny. She raised these questions in the meeting, as to who it was that had come up with this as a way forward. Mr. Beaty was good enough to tell her it was him and his team. Her concern was, have we gotten clarity from SCDOT and the CMCOG as to the assumption we have made on the new direction. The answer was, "Yes, but", so she went and talked to the CMCOG and SCDOT to get an understanding of what they understood. The CMCOG's analysis is based on all these projects being done, not some of them not being done. They even analyzed the Pineview traffic based on all the roadway projects, as stated being done. That is different from us modifying, and not widening Pineview, and not completing the widening for Bluff Road Phase 2. In the meeting, we discussed rather than widening Bluff Road, on Phase 2, we could resurface and add Shared Use Paths. And, do the same thing on Pineview. Look to the Procurement Department, and discuss, buying in bulk asphalt and concrete, comparable to SCDOT, rather than waiting year to year as the prices go up and up. She now has an answer back on what the SCDOT has in their annual resurfacing budget, which is between $50 - $200 million annually. She was concerned with scrapping the projects, in their entirety,

without any public input, and without an analysis from SCDOT, as the roads specialist. They have said they would never do an analysis 23 years out. A 23-year analysis that says the traffic on Pineview will be less than what it is today is not an analysis that would come out of SCDOT. Their analysis is e more in the 3 to 5-year category, and would be based exclusively on roadway projects underway and current traffic patterns. She was concerned with some of the underpinning of where we are, as well as the fact that the suggestion came exclusively from a committee of the PDT, rather than any input from the experts. Her concerns were, obviously, that we look at alternative means, and making sure we do fulfill our referendum obligations. Obviously, if you do not need a widening, there is no need to do it, but if the need, or lack thereof, for that widening comes from an analysis that has some claws in it, we need to look at it too.

Mr. N. Jackson stated he knows when the PDT made the recommendations they took into account the Shop Road Extension to come to the Air Base Road area. Also, he is not sure where it is on the STIP, or where the funding is for that. Mr. N. Jackson inquired as to the level of service of Pineview and the projected traffic level of service. If it is B or C, then they have a good point. He is not sure what was the projected level of service, and when that road would be built. He is not sure where the Highway Transportation Bill is. He has been hearing people in Congress saying they are pushing for it, and it is supposed to be done but he is not sure where it is.

Mr. Beaty stated he does not have the level of service at the tip of his tongue, but the Coates model does include all of the projects being constructed, as Ms. Myers said. Under that scenario, with Pineview widening, Shop Extension built all the way out to Garners Ferry, and all of the Penny projects constructed, Pineview Road, between Shop and Garners Ferry, where there is more traffic, the current traffic is 16,700. If everything were built, 20 years in the future, the traffic would decrease to 16,000. He stated he will defer to Councilman N. Jackson, but 16,000 – 17,000 on a 5-lane road is probably a level service "B". Even on a 2 and 3-lane road it is probably a "C". In fairness to Ms. Myers, he just sent her an email with some additional information, which she obviously has not had a chance to look at. He provided some research, and it is not fully complete, but he wants to have a conversation with Ms. Myers and Dr. Thompson. He stated they have looked into buying in bulk, and the pros and cons. As a part of that email, he got, from the SCDOT, when they would resurface Bluff Road. They predicted it would be 5 to 7 years before they resurfaced Bluff Road, and the same thing for Pineview. From Shop Road to Garners Ferry Road would be 5 to 7 years, and from Bluff Road to Shop Road would be 6 to 8 years.

Mr. C. Jackson inquired, in the scope of the overall Penny project prioritization listing, where do these projects fall on that list.

Mr. Beaty stated the prioritization had them in the middle.

Mr. C. Jackson inquired if that would be in the next 3 – 5 years, 5 – 7 years...

Mr. Beaty stated the Pineview plans have been developed. It is taking about 2 years of development to get them to the point where we could start buying the right-of-way. That would take about a year/year and a half. If we continue with Pineview, it could not go to construction for a year and a half. Bluff is pretty much in the exact same spot. If Bluff were to continue, we are at the right-of-way stage now where we could begin paying right-of-way. That would also take about a year and a half, maybe 2 years. There are some more permitting requirements.

Mr. Livingston stated he is trying to understand the resurfacing and shared used pathways. What is the projected costs for Pineview and Bluff, as opposed to what is in the referendum?

Mr. Beaty stated he is fairly confident the construction costs of each, Bluff Phase 2 and Pineview, are both

right at $40 million each. The costs in the referendum was approximately $17 - $18 million.

Mr. C. Jackson stated the Bluff Phase 2 was $16.7 million and Pineview was $18.2 million.

Mr. Beaty stated the Bluff Road number included Phases 1 and 2.

Mr. Livingston stated we do not have enough money to complete those, based on the referendum. Those are not the only ones. There are other ones too.

Mr. Beaty stated that is correct. That does apply to most of the widenings.

Mr. Livingston stated he actually likes, if he's hearing what Ms. Myers is saying. If you cannot do them all, if we can do some resurfacing and shared use that may be compromise, if we have enough money to do it. Are we looking at what that would cost?

Mr. Beaty stated, at Ms. Myers' suggestion, they did a preliminary cost estimate, and he has asked the On-Calls to back check their number. They can build shared use paths on Bluff Road Phase 2, on both sides, for approximately $4 million. On Pineview, if we built it on one side, it would be approximately $2.5 million. To resurface each was less than $2 million.

Ms. Myers stated when they had their meeting, the piece the community wanted was the shared use paths, and certainly resurfacing, because what you have now with one part of Bluff being done by the stadium and the other half needing resurfacing. So, making the road, an integrated road, so that it has all gotten resurfaced, at the same time, and adding the shared use paths all the way down, that makes the communities more livable, is a good trade off, if we are running out of money. She is not backing away from that. She thinks it is great for the community, and it creates an alternate bath for bikers, and gets them off the road and keeps the traffic moving. We agreed the same thing would be great for Pineview, and the numbers that were brought back were excellent. The only outstanding issue is with the addition of the Jushi plant, which SCDOT is saying is a factor that was not in their earlier analysis, you have on the backside of Shop Road, Longwood Road, which was never in any plan. If you do not widen Pineview, you have forced more traffic onto Longwood, which leads back to Garners Ferry. That road is dead center in the Millcreek Community. They have, even now, gotten more truck traffic, so she was also asking them to look at maybe "CTIP" funding, or other funding, to add some safety measures to Longwood, so that community does not get dumped onto with a bunch of 18-wheeler traffic from Jushi leading out to Garners Ferry. She thinks those compromises would be great. If that is where we are with the funding, she would happy to discuss it with the community.

Mr. C. Jackson stated the reason we delayed this, last Council meeting, was to allow the opportunity to have the conversation Ms. Myers has had with the PDT, as well as, from that conversation a conversation with the community. He thinks it is appropriate to move towards that. Obviously, that will not happen before this coming Tuesday's Council meeting.

Ms. Myers stated she has a scheduled meeting with them on Saturday.

Mr. N. Jackson stated the shared use pathway in the residual area, that's great. He would hate to see a shared use pathway in an industrial area where it is seldom, or not really used. On Bluff Road, when USC has events it is used. Pineview is more of a commercial corridor, and to put a shared use pathway where there are only industries. He has seen sidewalks in some areas that grass grows over it, and it is not used. He wants to make sure when you put shared use pathways or sidewalks, it is there to be used, and not just here because we are doing the widening. As for Longwood Road, we just had a meeting the other night

about trucks going through neighborhoods, and we could prevent no through trucks in that neighborhood also. The condition of the turning is more of a headache for tractor trailers to use.

Ms. Myers stated she thinks they would love it if there were posted signs that made it illegal for those trucks to go through their neighborhood. If that is the fix this committee recommends, and we get it marshalled through, she thinks they would love it and its low cost. As to the shared use path on Pineview, there is some concern with the residents, who are there, with the level of traffic, even now.

Mr. N. Jackson stated back to Bluff he can understand, but not from Shop to Garners Ferry.

Mr. Livingston stated one of the reasons he was okay with Pineview is because Mr. Beaty stated the shared use path would only be on one side.

Ms. Myers stated, even on one side, that makes Pineview a lot safer than it would be. One side is absolutely fine, and the costs is something that could be accommodated within the budget, so long as the communities understand the modifications going forward. And, we make them aware this is not selling them out, but is providing a reasonable fix that gets the program in a space where everybody is moving on the same track, at the same time.

Mr. C. Jackson stated the conversation we had last time, that dealt with the no through trucks signage, also had attached to it enforcement as well. The signs, in and of themselves, would probably not be sufficient. He does not want us to lose that piece of it when we say the signage is good because part of the conversation was to include the enforcement.

Mr. Livingston moved, seconded by Mr. N. Jackson, to forward to Council with a recommendation to move forward with proposal, to include the shared use pathways for Pineview Road and Bluff Road, and also look at adding safety measures on Longwood Road. The vote in favor was unanimous.

Mr. C. Jackson inquired if there is any additional information regarding the STIP. Are we pursuing that?

Mr. Beaty stated he reached out to the CMCOG and has not gotten a response back. At one point, there was an earmark, that Mr. N. Jackson referenced, for Shop Road. He does not know what has happened to that earmark, so he has inquired, with the CMCOG.

Mr. N. Jackson stated, usually, if it is in the STIP, it is supposed to stay there unless there is a recommendation to take it out. As we built Phase 1, it was still in the STIP. That money is supposed to come back to the Penny Tax Program.

Ms. Myers stated we also talked in the meeting about savings from bulk purchases through our Procurement team. She wanted to follow-up to see if the Transportation Department had been supplied with any number on how much actual asphalt and concrete we purchased for the program last year, so they would have some numbers to run to see if that is worth the effort.

Mr. Beaty stated they just got finished compiling all that information, and it was provided to Ms. Myers and Dr. Thompson this morning.

Dr. Thompson stated Clemson Road is a good project to figure out the costs, as we move forward, and to also trend the costs in prior years.

Michelle Onley

From: EDEN LOGAN
Sent: Friday, June 1, 2018 1:55 PM
To: Michelle Onley
Subject: Updated RE: Agenda Items and Supporting Documents

1)Approval for resurfacing and analyzing Shared Use Paths for Pineview Road and Bluff Road Phase 2
2)Approval for studying and installing safety measures to Longwood Road
3)Approval for staff to draft a letter to SCODT for Council's review regarding the $52.5 million for the I-20/Broad River Interchange (No supporting documents)
4)Approval of the Bluff Road Phase 1 Final Change Order (Bluff Road Change Order Attachment)
5)Approval of the Gills Creek Greenway Section A Final Design (Gills Creek Construction Scope and Gills Creek Service Order)6)Approval for staff to pursue the 2018 BUILD Grant Application for Shop Road Extension Phase 2 (BUILD and Fed Attachments)
6)Approval of the 2017 Annual Report (2017 Annual Report Attached)
7)Approval of the PDT managing the Dirt Road Program (No supporting documents)

Eden Logan, MBA
Administrative Coordinator
Richland County Transportation Penny Program
P 803-216-4905 F 803-576-1549
Logan.Eden@richlandcountysc.gov

2000 Hampton St.
Suite 3014
Columbia, SC 29204
richlandcountysc.gov

From: EDEN LOGAN
Sent: Friday, June 01, 2018 1:49 PM
To: Michelle Onley <Onley.Michelle@richlandcountysc.gov>
Subject: Agenda Items and Supporting Documents

Hi Michelle,
Below you will find the agenda items for the County Council meeting and the attached supporting documents. If you have any questions or concerns, please let me know.

1) Widening Memorandum (Widening Memo and Widenings Cost Alignment)
    a. Approval for resurfacing and analyzing Shared Use Paths for Pineview Road and Bluff Road Phase 2

b. Approval for adding studying and installing safety measures to Longwood Road

2) Staff to draft a letter to SCODT for Council's review regarding the $52.5 million for the I-20/Broad River Interchange (No supporting documents)
3) Approval of the Bluff Road Phase 1 Final Change Order (Bluff Road Change Order Attachment)
4) Approval of the Gills Creek Greenway Section A Final Design (Gills Creek Construction Scope and Gills Creek Service Order)
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6) Approval of the 2017 Annual Report (2017 Annual Report Attached)
7) Approval of the PDT managing the Dirt Road Program (No supporting documents)

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SERVICE ORDER MODIFICATION

Project No./Name: Years 3-4 Dirt Road Paving
Service Order No.: HotI#12
Modification No.: 2
Consultant: Holt Consulting
Modification Type: ☑ Contingency Authorization ☐ Other

RICHLAND COUNTY
Department of Transportation
P.O. Box 192
2020 Hampton St.
Columbia, S.C. 29201

DESCRIPTION:

This service order modification is to perform sewer force main relocation design services as part of the Tall Oaks Drive dirt road paving project (project included in the original contract). Per previous coordination with RCU, any of their facilities under dirt roads will require relocation outside of pavement area; the OET has already peformed coordination with RCU staff to determine the necessary work associated with utility relocation for this road. The OET contract and scope of work does not include utility relocation design services (only coordination); therefore, this work would be considered contingent to the typical services.

SERVICE ORDER BUDGET SUMMARY	Amount
Consultant Compensation	$578,073.00
Contingency	$57,807.30
Total Service Order Budget	**$635,880.30**

CONTINGENCY AUTHORIZATIONS	
Contingency Budget	$57,807.30
Authorized Contingency	$23,909.00
Available Contingency	**$33,898.30**

MODIFICATION DETAILS

Mod. No.	Description	Contingency Authorization	Other
1	Wetland Delineations, JD & Wetland Permitting (Tall Oaks Dr)	$6,400.00	
2	Richland County Utilities Gravity Sewer Relocation (Tall Oaks Dr)	$17,509.00	
3			
4			
5			
6			
7			
8			
9			
10			
		$23,909.00	

Accepted by: Richland PDT Project Manager (Signature) — Date: 5/8/19

Accepted by: Authorized Richland County Management (Signature) — Date

HOLT

April 30, 2019

Ben Lewis, PE
Project Manager
Richland Penny Program
201 Arbor Lake Drive
Columbia, SC 29223

RE: **Dirt Road Paving – Tall Oaks Drive**
Sanitary Sewer Force Main Relocation

Dear Mr. Lewis:

This letter is to serve as justification for an increase in the scope of work for the above referenced project. During design, plan development, and coordination with Richland County Utilities (RCU), it has been determined an existing 2" sanitary sewer force main is located on-site and would be located under the proposed pavement of the roadway. Per typical understanding, and from discussion with RCU, the existing sanitary sewer is not to be located under pavement and will need to be relocated outside of the proposed pavement for approximately 900LF.

The **CONSULTANT** will perform and complete the following tasks as would be required to complete the relocation plans for the sanitary sewer force main.

Survey – The **CONSULTANT** will survey the flagging and paint, which was marked by RCU staff, along Tall Oaks Drive which mark the approximate locations of the existing sewer line. The **CONSULTANT** shall attempt to locate existing valve boxes which tie in to the existing residences along the project. The approximate location of the sewer line and valve boxes are based off the Eleazer Estates site plan dated 2/12/1997 and provided by RCU.

Construction Plans and Cost Estimate – The **CONSULTANT** will prepare construction plans for the relocation of the existing 2" force main along Tall Oaks Drive. Construction plans will adhere to the Richland County Utilities Department Public Sanitary Sewer & Water Regulations and Specifications Manual (July 2016) and the South Carolina Department of Health and Environmental Control Standards for Wastewater Facility Construction (R.61-67), with exception of the requirement for a 4" minimum pipe size (see Assumptions). The **CONSULTANT** will utilize electronic survey and design files associated with the Tall Oaks Dirt Road Paving Project, to prepare the following construction plan sheets:

- Cover (1 sheet)
- General Construction Notes (1 sheet)
- Plan & Profile (2 sheets)

- Details (up to 2 sheets)

Richland County Utilities Review/Approval – Draft electronic construction plans will be submitted to the **COUNTY /** RCU for review and comment. The **CONSULTANT** will make the associated revisions to the construction based off the draft submittal. This scope includes up to two rounds of review/revisions necessary to achieve final approval from the **COUNTY /** RCU.

Assumptions

1. SCDHEC Wastewater Construction Permitting is not required.
2. Separate SCDHEC Construction Stormwater permit coverage is not required (assumes coverage under permit associated with dirt road paving project).
3. No FEMA impacts.
4. SCDOT encroachment permit, if needed, will be attained by the **CONSULTANT**.
5. No geotechnical investigations will be required.
6. Richland County Utilities easement acquisition, if necessary, will be performed by others.
7. All survey data required to complete construction plans will be provided by the **CONSULTANT**.
8. Construction plans will be prepared using AutoCAD.
9. The **COUNTY /** RCU will accept the installation of new 2" force main piping to match existing pipe size.
10. Force main relocation will start at connection to the existing 12" force main on Eleazer Road and terminate at the existing 2" force main's termination point.
11. Design flow calculations for the new force main piping will not be required.
12. Technical specifications will not be required (construction plans will refer to Richland County Utilities Department Public Sanitary Sewer & Water Regulations and Specifications Manual)
13. An Engineer's Opinion of Cost will not be required.
14. Scope includes up to two rounds of review by the **COUNTY /** RCU and associated plan revisions.
15. Any permitting fees shall be the responsibility of the **COUNTY**.

Deliverables

1. Draft Construction Plans necessary for all reviews – full size PDFs
2. Final Construction Plans and Cost Estimate- 1 half-size hard copy, full-size hard copy, full-size PDFs and AutoCAD files

Anticipated Schedule

Preliminary Construction Plans	2	months from NTP
assume COUNTY / RCU review (2 weeks)	2.5	months from NTP
Final Construction Plans	3	months from NTP
assume COUNTY / RCU review (2 weeks)	3.5	months from NTP

The submittal dates include time for **COUNTY /** RCU review as noted.

Due to the addition of the sanitary sewer line relocation, the **CONSULTANT** anticipates needing an additional **$17,509.00** to perform the additional work mentioned above:

- DESA (DBE) - $14,509.00
- CSS (DBE) - $750.00
- Holt Consulting - $1,800.00

The Team estimates 3 months to complete the services as described above.

Please feel free to contact me should you have any questions or comments concerning this submittal.

Sincerely,

Daniel Atkinson

Daniel Atkinson, PE
Project Manager