

Agenda Item: 10a

Town of Lake Lure Lake Lure Green Line Project Update



March 8, 2016

Existing WWTP Timeline

- 1927 - Original 12.5 miles gravity sewer installed
- 1969 – 0.35 mgd activated sludge WWTP installed
- 1991 – WWTP converted to 0.995 mgd physical chemical
- 2007 – Special Order by Consent issued to reduce I/I
- 2009 – Town received \$3,000,000 ARRA grant to seal
25% of collection system joints
- 2011 – Repairs completed reducing I/I

Existing WWTP Issues

- Ongoing NPDES Permit violations for ammonia nitrogen, total suspended solids and fecal coliform
- Low influent BOD₅ - Difficult to sustain biological treatment
- Influent temperature at ~ 8 degree C (reduced biological treatment)
- Excessive solids inventory due to inadequate provisions for dewatering solids
- High iron concentration in influent wastewater / interferes with treatment
- Limited space at existing site for WWTP upgrade
- Constant speed influent pumps cycle on/off at high flow rate producing flow surges to WWTP

Existing WWTP Issues (cont.)

- New NPDES permit w/ better permit limits
- WWTP is still struggling to meet the ammonia-nitrogen permit limit & continues to violate this parameter
- The Town is still receiving NOV's - fines since 2006 to 7/2014 are approx. \$30,982.00 [4 more since July 2014] {approx. 5 pending before that w/ \$19,781.50 outstanding}
- Previously, the Town has requested deferment of the fines & requested a compliance schedule / agreement
- Initially, this has been handled at the local level (Swannanoa) but has been "kicked up" to Raleigh and remains in limbo

Alternatives Evaluation for Future Wastewater Treatment

- No action
- Optimize or Upgrade the existing WWTP
- Regionalized treatment @ Town of Spindale
- Regionalized treatment @ Town of Rutherfordton

*(*As outlined in the 2010 Comprehensive Sewer Study by Brown Consultants & developed further by WK Dickson in 2015)*

Opinion of Probable Costs

<u>Alternative</u>	<u>Probable Capital Cost</u>	<u>Projected O&M Cost¹</u>	<u>Present Value (Worth) Cost²</u>
Upgrade WWTP	\$11,188,345	\$5,007,431	\$18,502,847
Spindale	\$12,002,882	\$5,017,254	\$18,280,260
Rutherfordton	\$11,622,163	\$17,332,349 ³	\$29,819,726 ³

¹ Over 20 years

² Present Value (Worth) is the discounted present value of future cash flows over a period of 20 years.

³ Rutherfordton O&M cost is based on an assumed user fee of \$8.91/1000 gallons

Potential Long Term Savings at Various Interest Rates

Years	Rate	Capital Costs	Annual Debt	Total Cost	Savings
20	0%	\$12,002,882.00	(\$600,144.10)	\$12,002,882.00	\$0
20	2%	\$12,002,882.00	(\$734,056.87)	\$14,681,137.42	\$2,678,255.42
30	0%	\$12,002,882.00	(\$400,096.07)	\$12,002,882.00	\$0
30	2%	\$12,002,882.00	(\$535,927.75)	\$16,077,832.46	\$4,074,950.46
40	2.75%	\$12,002,882.00	(\$498,497.87)	\$19,939,914.65	\$7,937,032.65
40	3.5%	\$12,002,882.00	(\$562,062.34)	\$22,452,493.73	\$10,479,611.73

Monthly Sewer Rates in Comparable Communities

Entity	Rate
Town of Lake Lure (present)	\$38.50
Rutherfordton	\$33.06
Columbus	\$34.47
Buncombe County	\$35.52
Statewide Median	\$38.42
Spindale	\$38.60
Statewide Median (for 1,000 to 2,499 population)	\$39.07
Brevard	\$39.97
Beech Mountain	\$45.00
Tryon	\$46.51
Saluda	\$51.85
Rumbling Bald Resort	\$52.49
Bald Head Island	\$59.16
Southport	\$57.50
Town of Lake Lure (Proposed / to qualify for 0%)	\$60.00
Town of Lake Lure (Proposed / after interconnect)	\$64.49
Beaufort	\$78.25
Kill Devil Hills	\$88.90

Current & Proposed Rates

Bimonthly Sewer Rates	Sewer Inside Rate (If also a Water Customer)	Sewer Only Inside Rate	Sewer Outside Rate
Current			
Residential User	\$65.00	\$77.00	\$154.00
Comm.- Small User	\$105.00	\$105.00	\$210.00
Comm.-Medium User	\$210.00	\$210.00	\$420.00
Comm.- Large User	\$330.00	\$330.00	\$660.00
Comm.- X Large User	\$725.00	\$725.00	\$1,450.00
Comm.- XX Large User	\$1,450.00	\$1,450.00	\$2,900.00

Bimonthly Sewer Rates	Sewer Inside Rate	Sewer Outside Rate
Proposed		
Residential User	\$120.00	\$240.00
Comm.- Small User	\$140.00	\$280.00
Comm.-Medium User	\$280.00	\$560.00
Comm.- Large User	\$440.00	\$880.00
Comm.- X Large User	\$965.00	\$1,930.00
Comm.- XX Large User	\$1,930.00	\$3,860.00

Sewer Customer Structure

Customer Type	Customer Count	Proposed Bi-Monthly Rate
Residential	448	\$120.00
Commercial Small	48	\$130.00
Commercial Medium	23	\$260.00
Commercial Large	17	\$410.00
Commercial X-Large	1	\$910.00
Commercial XX-Large	1	\$1,800.00
RBR - Residential	430	\$120.00
RBR - Commercial Small	6	\$130.00
RBR - Commercial Medium	11	\$260.00
RBR - Commercial Large	5	\$410.00
RBR - Large Outside User	1	\$820.00

Total	991
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Ingles

Lake Lure Inn

Apple Valley RV Park

August 2014 Counts

Key Points

- Out of necessity, the Town is going to build the Green Line to Spindale & decommission its WWTP. The Town can **save approx. \$2.5 million** on the project if we can qualify for assistance from the state. To qualify, our current sewer rates are too low. The proposed residential rate (\$60/month) is the minimum rate needed based on our community's median household income. It's X% of a typical household's income in Lake Lure.
- The Town needs to replenish its capital reserves, which were depleted in the late 2000's.
Rate = operating cost + debt service + capital investment
- If the Town does not raise the rates & address its WWTP challenges, it runs the risk of the state taking over & raising the rates for us.
- The rate change needs to be put in place before the application deadline of April 29, 2016.

What are the next steps for the Town of Lake Lure?

- Consider raising sewer rates to \$60/month to adjust the Town's potential application scoring in order to enable the Town to qualify for principal forgiveness or a 0% loan
- Submit an NCDEQ CWSRF application for April 2016
- Draft an inter local agreement between Lake Lure and Spindale or Rutherfordton
- Investigate "partners" for the project
- Determine who will own, operate, and maintain the line (current scenario is with Lake Lure initially)

What are the next steps for the Town of Lake Lure? (cont.)

- Complete / Approve the Engineering Report (including the Environmental Component)
- *Execute a Contract with Brown Consultants & WK Dickson to complete the Environmental Component of the ER, prepare a CWSRF application, prepare design plans and specifications for permitting and approval by NCDENR for the selected option*
- Continue to apply for additional grants as the proposed project approaches construction
- Continue to allow Brown & WK Dickson to investigate other funding opportunities as they arise

Questions?

Agenda Item: 10b



PARKS & RECREATION BOARD

POLICY AND PROCESS FOR THE NAMING OF LAKE LURE, NORTH CAROLINA TOWN PARKS, RECREATIONAL AREAS AND FACILITIES

Purpose:

This policy establishes standard processes and guidelines for naming and renaming parks, recreational areas and facilities owned and/or operated by the Town of Lake Lure, North Carolina. This policy will guide name recognition and establish uniform application. The Lake Lure Town Council is responsible for naming Town Parks, recreational areas and facilities. The Town Council will accept recommendations from the Lake Lure Parks and Recreation Board, consider alternatives and make the final decisions.

Objectives:

- Establish a positive sense of community pride and engagement which will encourage use of town parks, recreational areas and facilities.
- Ensure that Town Parks, recreational areas and facilities are properly identified and easy to locate.
- Acknowledge the values and characteristics of the Town of Lake Lure and its brand when naming town parks, recreational areas and facilities.
- Consider strength and vitality of the name to ensure that its long-term significance will remain obvious to citizens of and visitors to the Town of Lake Lure.
- Encourage public participation in the naming process to create civic enthusiasm for Town Parks, recreational areas and facilities.
- Provide an objective process for recognizing individuals or groups responsible for donations of real property, equipment, other physical assets, and financial support.

Criteria for Qualifying Names: (A potential name does not have to meet all of these criteria).

- Geographical locations which are descriptive of the Town Park, recreational area or facility.
- Significant physical feature associated with the Town Park, recreational area or facility.
- Historical significance of an event, deceased individual, group of people, cultural activity, or physical place.
- Contribution to the acquisition of the Town Park, recreational area or facility by a group or deceased person.
- Memorial recognition of exceptional service in the interest of the Town of Lake Lure and its Parks and Recreational amenities.



Town of

Lake Lure

est. 1927

North Carolina

- Honoring a living individual whose gift or contribution is of an extraordinary nature to the Town of Lake Lure.
- Consideration for naming may be based on the provision of substantial funding which underwrites the cost of construction or renovation of property of the Town of Lake Lure.
 - Underwriting is broadly defined as significant financial contributions enabling the projects such as parks, building or property acquisition.
 - Monetary gifts which leverage grants or federal, state or local funding; and donation of entire parcels of land are actions which may be recognized.
- Deed restrictions by a donor may determine the name of a Town Park, recreational area or facility; but must be acknowledged and approved by the Lake Lure Town Council.
- Conflicts with grant funding policies of federal, state or local grant programs must be avoided when selecting names for Town Parks, recreational areas and facilities.

Exclusions:

- Naming associations with tobacco, alcohol, contraceptives, religious organizations, political candidates or parties, and adjudicated felons are prohibited.
- Memorial or honoraria dedication of small park amenities with identifiable "life spans" such as benches, tables, trees and walkways, are addressed in separate policies.

Renaming:

By the adoption of this policy and process, the naming of town parks, recreational areas and facilities is intended to emphasize permanent recognition. Renaming of Town Parks, recreation areas and facilities which have originally been named based on these guidelines is discouraged. Recommendations to change the name of a Town Park, recreation area or facility will be critically scrutinized to ensure that the original intent and justification for naming is not compromised or discounted. Parks named for locations, features, or historical significance, i.e., not named for living or deceased people, may be changed only if the current name is ineffectual or has become inappropriate or irrelevant.

Procedure:

- Citizens of Lake Lure, Lake Lure Town Staff Members, community leaders and organizations may propose names for Town Parks, recreational areas and facilities by submitting written or electronic recommendations to the Chair of the Lake Lure Parks and Recreation Board for further consideration by the sitting board at its next monthly meeting. The decision of the quorum of the sitting board will be delivered to the Lake Lure Town Council by the Town Council Liaison to the Parks and Recreation Board. The proposal must describe in detail the merits and qualifications of the proposed name.
- Recommendations to name town parks, recreational areas or facilities for living people must be accompanied by written, signed permission of the person or people to be



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North Carolina

honored; and recommendations to memorialize deceased people must be approved by the nearest known next-of-kin of the person recommended.

- The Lake Lure Town Council will consider recommendations from the Lake Lure Parks and Recreation Board, and may solicit public comment and discussion if that is deemed appropriate or necessary.
- The Lake Lure Town Council will confirm the names of Town Parks, recreational areas and facilities by formal resolution.
- The Lake Lure Town Council has the final approval authority for any naming or renaming recommendations, and may reject any request, or ask the Parks and Recreation Board for further consideration or refinement.

DRAFT

Agenda Item: 10c



TOWN OF LAKE LURE
Lake Operations Department

MEMORANDUM

TO: Mayor & Town Council

FROM: Lake Operations Department

DATE: March 4, 2016

RE: Request from Greg Gardner to Quitclaim Accreted Lake Property

Mr. Gardner owns Lot 6 in Firefly Cove which is a lakefront lot. There is a 0.02 acre piece of accreted land that is part of the lake parcel owned by the Town that adjoins Mr. Gardner's lot. Mr. Gardner was under the belief when he purchased the property that the entire lot was lakefront. When Mr. Gardner came to Lake Operations to request a Lake Structure Permit, we discovered that he did not have as much lake frontage as he thought and that in order to build at least a two slip boathouse he would need to see if the Town would allow him to quitclaim the accreted land.

Mr. Gardner is requesting that he be allowed to quitclaim this 0.02 acre portion of the lake property and he has provided the Town with a survey and a quitclaim deed. These forms are included in your packet.

Thanks.

RESOLUTION 16-03-08

WHEREAS, Gregory S. Gardner and wife, Debra Milstein Gardner are the owners of a 0.70 acre tract or parcel of land located in the Town of Lake Lure, which tract or parcel of land is known as Lot 6, Firefly Cove, Plat Book 28, Page 285, Rutherford County Registry; and

WHEREAS, 692 square feet of sedimentation has accreted to the shoreline of Lot 6 over many years as shown by the attached Plat attached as Exhibit A and by the proposed Quit Claim Deed attached hereto as Exhibit B, which description is incorporated herein by reference as if fully set forth; and

WHEREAS, Gregory S. Gardner and wife, Debra Milstein Gardner have requested the Town of Lake Lure to Quit Claim any interest of the town to them for the 692 square feet of accreted shoreline as shown on Exhibit A; and

WHEREAS, the property of John W. Moore abounds on the North side of the property of Gregory S. Gardner and wife, Debra Milstein Gardner and as a Commissioner of the Town of Lake Lure has no objection to this action by the Board of Commissioners; and

WHEREAS, a Quit Claim Deed of Conveyance has already been prepared by the Town Attorney; and

WHEREAS, Gregory S. Gardner and wife, Debra Milstein Gardner also agree simultaneously with any recording of this Quit Claim Deed to file a Deed of Consolidation consolidating the boundaries of the 692 square foot tract with their Lot 6 so that of record there will be one description;

NOW, THEREFORE, the Board of Commissioners of the Town of Lake Lure hereby resolves to execute and thereby convey the tract or parcel of land set forth in the proposed Quit-Claim Deed to Gregory S. Gardner and wife, Debra Milstein Gardner on the condition that prior to recording said QuitClaim Deed they have prepared and execute a Deed of Consolidation so that the Deed of Consolidation be recorded immediately after the Quit Claim Deed.

Unanimously adopted this _____ of March, 2016.

Mayor

Attest:

Town Clerk

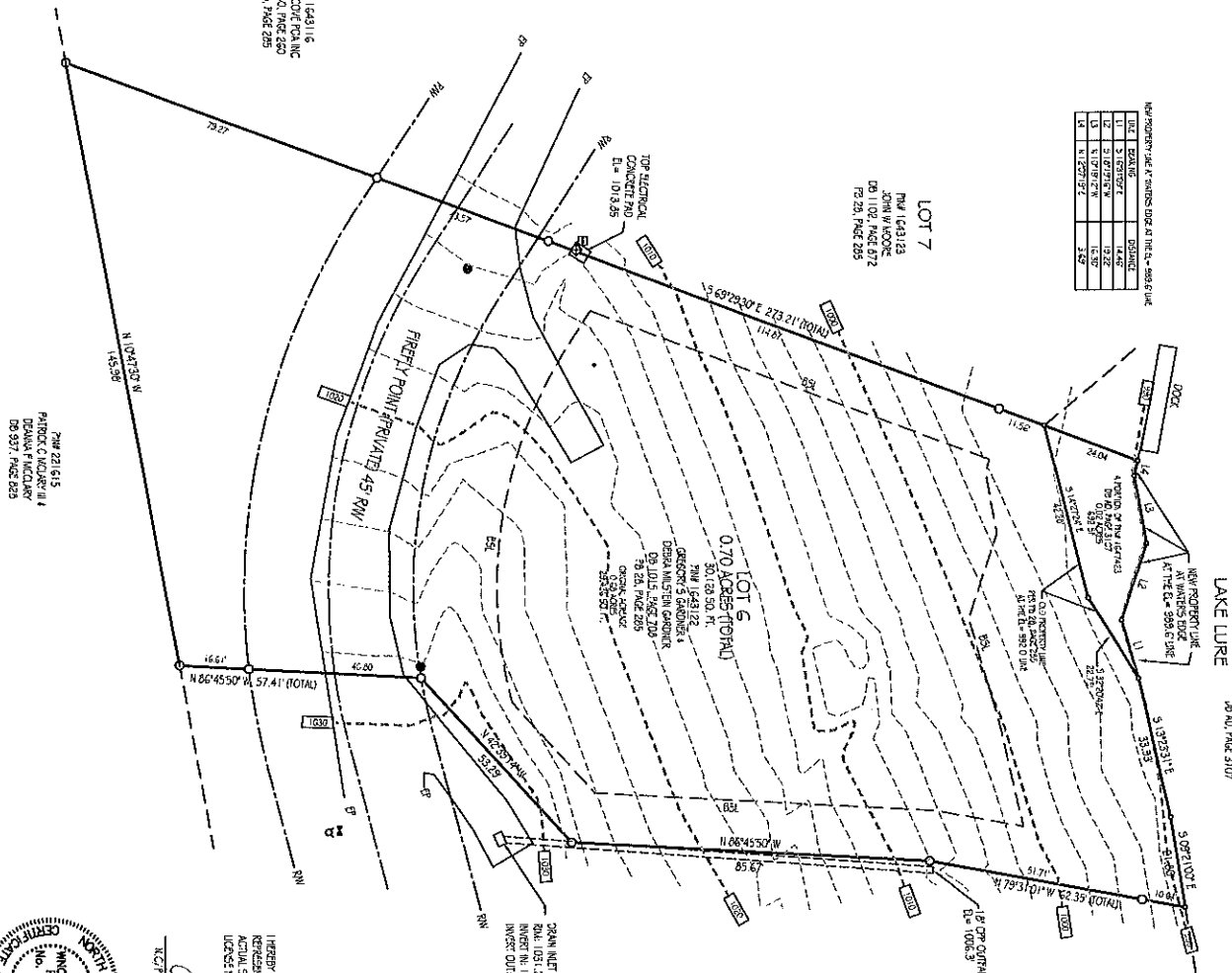
Approved as to form:

Town Attorney

NOW PROPERTY OF A TRUSTS EDGE AT THE \$1,989.6 UNIT



1095 HENDRICKHILL RD. SUITE 52, ASHFORTH, NC 28606
Japanica@earthlink.net (828)304-1480
 103 ARCADE ST. SUITE 201, CARRS FORT, NC 28745
thorn@earthlink.net (828)325-5140



THE TOP OF LAST YEAR OWNS TO AN ELEVATION OF 992. THE 1100 YEAR ACFD LAST BASE FLOOD ELEVATION IS 992.1. AS SHOWN ON THRU MAP NUMBER 5710064201, 5710063301 WITH ZONED PREPARATION DATE OF JULY 06, 2007. THIS ELEVATION IS EQUAL TO 41' ABOVE THE TOP OF THE DAM. BOTH THE 992 AND THE 992.65 CONTINUES AS SHOWN ON THIS PLAT WERE ESTABLISHED BY FIELD MEASUREMENTS.

NOTES:
 1. TRUE CRIMINALS ARE ALL SENSITIVE BARBER CELLARS

* ALL AREAS CALCULATED BY COORDINATE COMPUTATION METHOD.

OF TIME SHOULD BE REFERRED TO AN ATTORNEY AT LAW.

1-800-368-7622, 10 AM-5 PM EST, DCEMAIL@DOJ.

• **מחיר** – מחיר המכירה הנמוך ביותר

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AREAS. IT IS THE OWNERSHIP HOLDERS RESPONSIBILITY TO HAVE THE AREAS

REPORT SUBMITTED TO THE MILITARY.

DIFFERENCE NOTED.

I HEREBY CERTIFY THAT THIS DRAWING IS A TRUE, ACCURATE, AND CORRECT REPRESENTATION OF THE AREA SHOWN, AND WAS PREPARED FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION. WITNESSES MY SIGNATURE, LICENSE NUMBER, AND SEAL THIS 29TH DAY OF DECEMBER, A.D., 2015.

RECOMBINATION SURVEY OF
GREG & DEBRA GARDNER

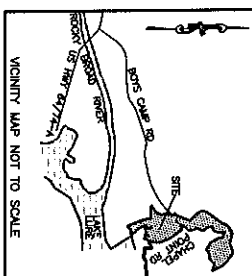
REFERENCES

PLAT BOOK 28, PAGE 2A5

TOWN OF LAKE WIRE, BUTTERFORD COUNTY, N.

103#151206 CHECKED BY: J. SPENCER

Figure 1. Schematic diagram of the experimental setup.



Excise Tax: \$00.00

Recording Time, Book and Page

Tax Lot No _____ Parcel Identifier No. _____

Verified by _____ County on the _____ day of _____, 2015

By: _____

Mail after recording to: Grantee

This instrument was prepared by: **J. Christopher Callahan, P. O. Box 108, Rutherfordton, NC 28139**

Brief description for the Index

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QUITCLAIM DEED

THIS DEED made this 9th day of February, 2016, by and between:

GRANTOR

**TOWN OF LAKE LURE, A MUNICIPAL
CORPORATION**

2948 Memorial Highway
Lake Lure, NC 28746

GRANTEE

**GREGORY S. GARDNER AND WIFE,
DEBRA MILSTEIN GARDNER**

3679 Ashley Way
Owings Mills, MD 21117

WITNESSETH, that Grantor, for a valuable consideration, receipt of which is hereby acknowledged, by these presents does give, grant, convey, release and forever quit-claim unto Grantee, and to their heirs and assigns forever, all the claims, rights and interest in the following parcel of land:

Situate, lying and being in the Town of Lake Lure, Chimney Rock Township, Rutherford County, North Carolina, and being all of that particular 0.02 acre tract which is described in a new revised plat of survey, entitled "Recombination Survey of Greg & Debra Gardner" dated December 23, 2015, by Jason D. Spencer, Registered Land Surveyor, which 0.02 acre tract of land is more particularly described by courses and distances as follows:

Beginning at a calculated point shown as the northeast corner of Lot 6 on a survey by WNC Land Surveyors, PLLC, entitled "Subdivision Plat of Firefly Cove" as recorded in Plat Book 28, Page 285, Rutherford County Registry; which calculated point is South 69 deg. 29 min. 30 sec. East 11.56 feet from an iron pin which is a common corner with Lot 7 and is shown on said Plat Book 28, Page 285; thence from said beginning point, which is the northeast corner of Lot 6, the following two courses and distances along the Eastern boundary of Lot 6: (1) South 14 deg. 27 min. 24 sec. East 42.38 feet, and (2) South 32 deg. 20 min. 42 sec. East 22.75 feet to a corner in the eastern line of Lot 6; thence a new line, North 16 deg. 31 min. 09 sec. West 14.46 feet, North 18 deg. 19 min. 16 sec. East 19.22 feet, North 10 deg. 19 min. 12 sec. West 16.30 feet, and North 12 deg. 07 min. 19 sec. East 3.69 feet to a point, which point is the Northeast corner of the 0.02 acre tract herein conveyed; thence a new line North 69 deg. 29 min. 30 sec. West 24.04 feet back to the point and place of beginning, and containing 0.02 acres, more or less.

TO HAVE AND TO HOLD, the same together with all and singular the appurtenances thereunto belonging or in anywise appertaining, and all the estate, right, title, interest and claim whatsoever of the Grantor either in law or equity, to the only proper use, benefit and behalf of the Grantee, and their heirs and assigns forever.

IN WITNESS WHEREOF, the Grantor has hereunto caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Commissioners, the day and year first above written.

Town of Lake Lure (SEAL)

By: _____ (SEAL)
Mayor

ATTEST:

TOWN CLERK (AFFIX TOWN SEAL TO RIGHT)

SEAL - STAMP

STATE OF NORTH CAROLINA COUNTY OF RUTHERFORD

I, _____, a Notary Public of the County and State aforesaid, certify that _____ personally came before me this day and acknowledged that she is Town Clerk of the Town of Lake Lure, a municipal corporation, and that by authority duly given and as the act of the

corporation, the forgoing instrument was signed in its name by its Mayor, sealed with its corporate seal and attested by Andi Calvert as its Town Clerk. Witness my hand and official stamp or seal, this _____ day of FEBRUARY, 2016.

My Commission Expires:

Notary Public

The foregoing Certificate(s)

of _____

is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

_____,

Agenda Item: 10d



Office of the Town Manager

TO: Mayor and Commissioners
FROM: Chris Braund
DATE: March 3, 2016
RE: Greenline Sewer Interconnect – Initial Expenditures

We're moving forward on the sewer interconnect project. A couple of things require your approval.

- 1) Sewer Rate Increase (subject of a separate presentation from the Utility Advisory Board). Needs to be adopted by the April council meeting.
- 2) Engineering Contract (attached) – Brown Consultants have prepared a contract for engineering services and a sub-contract for services by W.K. Dickson & Co. At this point, the project is estimated to last through 2019 and incur \$1,700,500 in fees between the two firms. Included in the contracts is a breakdown of responsibilities between the firms. Some of this work will occur prior to the award of any grants or loan assistance, but will be reimbursable under those programs (if awarded).
- 3) Aerial Survey Contract (attached) – In order to create the detailed engineering plans for the 18-mile pipeline to Spindale, Brown Consultants recommend an aerial survey of the line, which needs to happen soon before the leaves come back. The \$31,420 cost is less than the cost of a ground survey.

Sam will create a budget amendment to appropriate funds as needed for these efforts.

Suggested Motion: Town Council hereby authorizes the Town Manager to execute engineering contracts and the aerial survey contract for the sewer interconnect projects.

Thanks –

Chris 

Cc: Sam Karr, Finance Director
Harlow Brown, Brown Consultants
Jeffrey Brown, Brown Consultants
Brian Tripp, W.K. Dickson & Co.



WES COLE LAND SURVEYING, PA

1328D PATTON AVENUE • ASHEVILLE, NC 28806

OFFICE: 828.251.7025 • WWW.WESCOLESURVEYING.COM

LICENSED IN NORTH CAROLINA, SOUTH CAROLINA AND TENNESSEE
CERTIFIED FLOODPLAIN SURVEYOR

February 24, 2016

Client:

Brown Consultants, PA
30 Ben Lippen School Road
Asheville, NC 28806

Re: Aerial Survey for Lake Lure to Spindale Forecmain

Scope of Services

- Wes Cole Land Surveying, PA will provide ground control and targets for the aerial survey to be performed by Independent Mapping Consultants, Inc. (IMC).
- 53 control panels will be painted on existing paved roads or plastic secured on the ground. As some targets will likely be on private property we will obtain permission prior to placing targets on apparent privately owned property.
- After the fly over is complete, we will utilize GPS and traditional surveying methods to provide northing, easting, and elevations for the targets. Survey will be based on NC Grid NAD 83 (NSRS 2011) and NAVD 88
- See attached proposal from IMC for breakdown of aerial survey fee and the portion that is included in this proposal
- Deliverable: there will be no deliverable at this time, only capturing existing data to be processed at a later date

Fee:	Aerial Survey	\$10,220.00 (Lump Sum)
	Control Panels	\$21,200.00 (Lump Sum)
	Total	\$31,420.00 (Lump Sum)

Sincerely,

Wes Cole, PLS
President
828-545-9078 (cell)
wes@wescolesurveying.com

Upon acceptance of this proposal please sign below and return.

Agreed By: _____ **(Client Signature)**

(Please Print Name)

Notice to Proceed on: _____ **(Date)**

By signing above the Client agrees to the following legally binding agreement:

Wes Cole Land Surveying, PA (WCLS) will provide professional land surveying services as described above. Invoices shall be considered PAST DUE if not paid within 60 days after the invoice date and may, without waiving any claim or right against the Client, and without liability whatsoever to the Client, terminate the performance of the service. Client or WCLS may terminate this agreement at any time and must be done in writing. Client is responsible for payment of all work performed if this agreement is terminated after services begin. A service charge will be assessed at 2% per month on the unpaid balance. In the event any portion or all of an account remains unpaid for 60 days after billing, the client shall pay the cost of collection, including the attorney's fees.

Until signed by Client, this proposal is valid for 60 days from the date shown.

Mailing Address: PO Box 6268, Asheville, NC 28816



INDEPENDENT MAPPING CONSULTANTS, INC.

Innovative and Accurate Geospatial Solutions

February 24, 2016

CONTACT:

I# P16013W-REV

Mr. Wes Cole, PLS
Wes Cole Land Surveying, P.A.
P.O. Box 6268
Asheville, NC 28806

IMC#

Email:
wes@wescolesurveying.com

PROJECT: Lake Lure to Spindale Forcemain, 1' contours

Dear Wes,

Independent Mapping Consultants, Inc. (IMC) greatly appreciates this opportunity to provide you with our proposal to perform mapping services for the above mentioned project. The following proposal is based on our understanding of the scope of work. This proposal can be individually modified to meet your requirements, upon request. Our proposed Scope of Work is as follows:

SCOPE OF SERVICES

Aerial Photography:

IMC will obtain Color aerial photography to cover the mapping area.

The aircraft will be equipped with a precise aerial camera fitted with a 6" focal length lens cone.

The photography will be flown at 60% forward overlap, and will not contain any excessive tip, tilt, crab or cloud cover.

Digital Aerial Imagery set will be supplied to you, and the aerial film will become your property upon receipt of final payment.

The aerial photography will be flown at 1800' AMT providing a negative scale of 1" = 300'.

Ground Control -53 panels needed

We understand that you will provide sufficient horizontal and vertical control at no cost to IMC. Paneled points prior to the flying may be used or photo identifiable ones may be obtained given sufficient detail exists.

Mapping

Map compilation will be completed at 1" = 50' scale with 1' Contour Intervals using our Softcopy Stereo Plotters. The digital data will be interactively captured and stored during the compilation process. Operators will compile down the centerline of the road and out to at least 30' from each shoulder as shown on the attached KMZ file.

IMC will compile the digital data in our standard layer structure. However, you may request another one prior to mapping compilation commencing.

Physical features obscured by vegetation, dark shadows, vehicles, etc. will not appear on the map. IMC does not guarantee that 100% of all features can be captured by photogrammetry.

Accuracy

Production procedures for photogrammetric mapping surveys shall be in accordance with the standards established by the Federal Geographic Data Commission (FGDC) Geospatial Positioning Accuracy standard and applicable extensions and revisions.

Horizontal

95% of all visible planimetric features will be within 1/40th of an inch, at map scale, of their correct coordinate positions, and no such well defined features shall be in error by more than 1/20th of an inch.

Vertical

95% of all contours on clear unobscured ground will be correct to within ½ of the contour interval. The remaining 5% will not exceed an error by more than the contour interval.

Dashed-line contours shall have be accurate with respect to true elevation of one contour interval or one-fourth the average height of the ground cover, whichever is greater.

90% of all spot elevations on clear unobscured ground will be correct to within twenty-five percent of the specified contour interval, and none will be in error by more than fifty percent of that contour interval.

Analytical Aerial Triangulation

Using the horizontal and vertical control survey data, IMC shall precisely perform automatic digital aerial triangulation using our Trimble Inpho Match-AT software. Automatic and manual tie point matching shall be done on the entire set of imagery to best contribute to the strength and quality of the block.

DELIVERABLES

2D & 3D Digital data files in AutoCAD format and also a 0.25' pixel color orthophoto covering the site.

DELIVERY SCHEDULE

The photogrammetric mapping data will be delivered 30 days after receipt of the ground control or completion of the aerial photography, whichever is the latter. Please call us if an earlier delivery is required. We will work with you to accommodate your schedule.

INDEPENDENT MAPPING CONSULTANTS, INC.

508 West 5th Street, Suite 150, Charlotte, NC 28202

Tel. 704-540-0087

Fax 704-540-3050

www.imcmapping.com

FEES

Aerial photography @ 1"=300' scale (11 lines, 106 exposures).....	\$5,450.00
Photogrammetric Scanning 106 exposures @ 12 microns_\$20.00 each	\$2,120.00
Digital Aerial Triangulation- Inpho Match-AT 106 frames @ \$25.00 each	\$2,650.00
Total	\$10,220.00

Optional at a Later Date

1' contour mapping	\$15,400.00
CAD	\$3,220.00
Color Digital Orthophotos	\$2,800.00

PAYMENT TERMS

IMC will invoice monthly in accordance with percent complete. Payment terms are 60 days. IMC reserves the right to charge 1½ percent per month on all past due accounts. It is understood that this agreement is between IMC and the addressee and payment is not contingent on payment from a third party unless other written agreements or guarantees are agreed to by both parties and attached hereto.

We appreciate the opportunity of submitting this proposal and look forward to working with you on this project. If you wish to discuss this proposal in more detail or have any questions regarding our approach to this project, please do not hesitate to call me.

If acceptable, a space is provided for an authorized signature. We will consider the return of the signed original letter as our legal contract and Notice to Proceed.

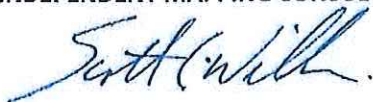
By signing below I APPROVED AND ACCEPTED this letter as a legal contract and I have read and agreed to the payment terms as set forth above.

By: _____ Date: _____
(Authorized Signature)

_____ Title: _____
(Typed or printed name)

Sincerely,

INDEPENDENT MAPPING CONSULTANTS, INC.



Scott C Williams, PLS, PPS
Vice President/Project Manager

INDEPENDENT MAPPING CONSULTANTS, INC.

508 West 5th Street, Suite 150, Charlotte, NC 28202

Tel. 704-540-0087

Fax 704-540-3050

www.imcmapping.com



February 29, 2016

Mr. Chris Braund, Town Manager
Town of Lake Lure
2948 Memorial Highway
Lake Lure, NC 28746

**RE: Contract for Services
Lake Lure Green Line Regional Sewer Interconnection
Lake Lure, North Carolina**

Dear Chris:

Enclosed are two (2) executed copies of our Contract for Services for the above referenced project. Please sign both copies, retain one for your file, and return one copy to us. The enclosed rates and terms are valid for thirty (30) days from the date of this letter.

If you have any questions, please feel free to call us. We look forward to working with you on this project.

Sincerely,

Brown Consultants, P.A.

Jeffrey T. Brown, PE

Enclosures

CONTRACT FOR SERVICES

This CONTRACT for Lake Lure Green Line Regional Sewer Interconnection by and between the Town of Lake Lure, hereinafter called the OWNER, and Brown Consultants, P.A., hereinafter called the CONSULTANT;

The parties hereto do mutually agree as follows:

1. Employment of CONSULTANT. The OWNER hereby engages the CONSULTANT and the CONSULTANT hereby agrees to perform the professional services hereinafter set forth.
2. Scope of Services. The CONSULTANT shall perform, in a professional manner, the services set forth in Attachment A, Scope of Services, which attachment is incorporated herein.
3. Additional Services. The CONSULTANT shall provide additional services, not specifically called for in Attachment A, Scope of Services, upon written authorization of the OWNER.
4. Time of Performance. The CONSULTANT will commence work on or as soon as practicable after the date of execution of this Contract and receipt of written Notice to Proceed. All work as set forth in the Scope of Services shall be completed as shown in the Project Schedule in Attachment A, assuming: (i) the timely submission of all required data and the scheduling of all meetings and reviews by the OWNER; (ii) no other impacts or delays caused by third parties, including the contractor(s) or its subcontractors; or (iii) other delays beyond CONSULTANT's control.

If the OWNER requests modifications to the Scope of Services of the Project, or if CONSULTANT's services extend past the completion date above, through no fault of the CONSULTANT, the CONSULTANT's compensation shall be paid as an additional service as set forth in Attachment B, Basis of Compensation, and CONSULTANT's time of performance shall be extended appropriately.

CONSULTANT's services under this Contract, and each phase of services, if the Scope of Services is so divided, shall be considered complete at the earlier of (1) the date when the submissions for that phase have been accepted by the OWNER or (2) thirty days after the date when such submissions are delivered to the OWNER.

5. Compensation. The CONSULTANT agrees to perform the services provided for in the Scope of Services, and the OWNER agrees to compensate the CONSULTANT for such services as set forth in Attachment B, Basis of Compensation, which attachment is incorporated herein. Compensation for additional services shall also be as set forth in Attachment B, Basis of Compensation.

Payment by the OWNER to the CONSULTANT shall be due and payable on the 25th day of the month following the date of the invoice. Payments not received by the CONSULTANT by said 30th day of the month following the date of the invoice shall be overdue. A service charge of one and one-half (1½) percent per month shall be added to all overdue amounts. OWNER agrees to pay CONSULTANT's cost of collection of all amounts due and unpaid including court costs and reasonable attorney fees. CONSULTANT shall not be bound by any provision wherein

CONSULTANT waives any rights to a mechanic's lien, or any provision implying payment to CONSULTANT is contingent upon payment to OWNER by a third party. A failure by OWNER to pay CONSULTANT on a timely basis shall entitle CONSULTANT at its election, to stop work on the Project until such time as payment has been made, or upon seven days' notice and OWNER's failure to pay all amounts then due, to terminate this contract. Such suspension or termination shall be deemed for cause.

6. Personnel. The CONSULTANT represents that he has, or will secure at his own expense, all personnel required to perform the services under this Contract and that such personnel will be fully qualified to perform such services.
7. Subsurface Investigations. In soils, foundation, groundwater, and other subsurface investigations, the actual characteristics may vary significantly between successive test locations and sample intervals and at locations other than where observations, exploration, and investigations have been made. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that could affect total project cost and/or execution. These unforeseen conditions are not the responsibility of the CONSULTANT, and CONSULTANT does not make any opinions or representations regarding, or assume any liability for, conditions outside the actual locations or areas tested, observed or explored.
8. CONSULTANT's Personnel at Construction Site. The presence or duties of CONSULTANT's personnel at a construction site, whether as onsite representatives or otherwise, do not make CONSULTANT or CONSULTANT's personnel in any way responsible for those duties that belong to OWNER and/or the construction contractors or other entities, and do not relieve the construction contractors or any other entity of their obligations, duties, and responsibilities, including, but not limited to, all construction methods, means, techniques, sequences, and procedures necessary for coordinating and completing all portions of the construction work in accordance with the construction Contract Documents and any health or safety precautions required by such construction work. CONSULTANT and CONSULTANT's personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with their work or any health or safety precautions and have no duty for inspecting, noting, observing, correcting, or reporting on health or safety deficiencies of the construction contractor(s) or other entity or any other persons at the site except the CONSULTANT's own personnel.

The presence of CONSULTANT's personnel at a construction site is for the purpose of providing to OWNER a greater degree of confidence that the completed work will conform generally to the Contract Documents and that the integrity of the design concept as reflected in the Contract Documents has been implemented and preserved by the construction contractor(s). CONSULTANT neither guarantees the performance of the construction contractor(s) nor assumes responsibility for construction contractor's failure to perform their work in accordance with the Contract Documents.

9. Responsibilities of the OWNER. It is agreed that the OWNER will have the following responsibilities under this Contract:

- a. The timely provision of all available information, data, reports, records, and maps to which the OWNER has access and which are needed by the CONSULTANT for the performance of the services provided for herein.
- b. Providing assistance and cooperation for the CONSULTANT in obtaining any other needed material which the OWNER does not have in its possession.
- c. Making available the services of the OWNER as may be necessary to obtain information as needed to perform the work program set forth in the Scope of Services.
- d. The designation of a single representative who will be authorized to make necessary decisions required on behalf of the OWNER and will serve to provide the necessary direction and coordination for the project.
- e. Bear all costs for permitting, reviewing, recording and advertising for the project.
- f. Provide access to all affected private property for CONSULTANT to perform all necessary surveying, engineering and inspections.
- g. Provide a "Clear Site Certification" from legal counsel that OWNER has legal right to undisturbed use of the total project site for the entire life of the project.

All such OWNER responsibilities shall be conducted in a timely manner and without undue delay so as not to delay the CONSULTANT in the performance of his services.

10. Opinion of Probable Construction Costs. CONSULTANT's opinion of probable construction costs, if rendered as a service under this Agreement, is based on assumed labor costs and approximate quantities of material and equipment, and therefore is of a conditional character. CONSULTANT cannot and does not guarantee the cost of work to be performed by others since market or bidding conditions can change at any time and changes in the scope or quality of the project may affect estimates. OWNER waives and releases CONSULTANT from any loss, liability or claim arising out of or in any way related to CONSULTANT's opinion of probable construction costs.
11. Ownership of Documents. All documents prepared or furnished by CONSULTANT pursuant to this Agreement are instruments of CONSULTANT's professional service, and CONSULTANT shall retain an ownership and property interest therein, including all copyrights. CONSULTANT grants OWNER a license to use instruments of CONSULTANT's professional service for the purpose of constructing, occupying or maintaining the project. Reuse or modification of any such documents by OWNER, without CONSULTANT's written permission, shall be at OWNER's sole risk, and OWNER agrees to indemnify and hold CONSULTANT harmless from all claims, damages and expenses, including attorneys' fees, arising out of such reuse by OWNER or by others acting through OWNER. Documents are defined as reports, drawings, specifications, record drawings, plats and other deliverables defined in the scope of work whether in printed or electronic format.
12. Use of Electronic Media. Copies of documents that may be relied upon by OWNER are limited to the printed copies (also known as hard copies) that are signed or sealed by CONSULTANT. Files in

electronic formats, or other types of information furnished by CONSULTANT to OWNER such as text, data or graphics, are only for convenience of OWNER. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. When transferring documents in electronic formats, CONSULTANT makes no representations as to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems or computer hardware differing from those in use by CONSULTANT at the beginning of this project.

13. Changes. The OWNER or the CONSULTANT may, from time to time, request modifications or changes in the Scope of Services. Such changes, including any increase or decrease in the amount of the CONSULTANT's compensation or time of performance, which are mutually agreed upon by and between the OWNER and the CONSULTANT, shall be incorporated in written amendments (Attachment C), and compensated for as additional services as set forth in Attachment B.
14. Termination of Contract. This Contract may be terminated by either the OWNER or the CONSULTANT, with or without cause, upon 7 calendar days written notice. In the event of a termination by OWNER for cause or by CONSULTANT without cause, copies of all finished or unfinished plans, specifications and reports prepared by the CONSULTANT shall, at the option of the OWNER, be made available, provided CONSULTANT is paid in full for all services provided and expenses incurred through the date of termination and otherwise as provided for in paragraph 11. If termination is by CONSULTANT for cause, the license granted OWNER pursuant to paragraph 11 shall terminate, and no rights for continued use or copies of documents shall inure to OWNER, but the CONSULTANT shall be entitled to receive compensation for work accomplished including reimbursable expenses incurred prior to termination.
15. Assignability. This Contract shall not be assigned or transferred by either the CONSULTANT or the OWNER without the prior written consent of the other. Notwithstanding the foregoing, however, the CONSULTANT shall not be prohibited from contracting with qualified sub-consultants or from assigning to a bank, trust company, or other financial institution any claims for compensation due, or to become due, without such prior written consent.
16. Insurance. CONSULTANT shall provide and maintain at a minimum the following coverage and limits during the life of the contract:
 - a. Statutory Workers Compensation Insurance, a minimum of \$500,000 or greater amount if required by the state(s) in which the work is to be performed.
 - b. Commercial General Liability Insurance, including coverage for premises and operations, products and completed operations, independent contractors, and contractual liability. Such insurance shall be not less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate.
 - c. Automobile Liability Insurance for all owned, hired and non-owned automobiles in the minimum amount of \$1,000,000 per occurrence.
 - d. Professional Liability Insurance of \$1,000,000 per claim.

17. Indemnification. CONSULTANT and OWNER each agree to indemnify and hold the other harmless, and their respective officers, employees, agents and representatives, from and against liability for all claims, losses, damages and expenses, including reasonable attorneys' fees, to the extent such claims, losses, damages, or expenses are caused or alleged to have been caused by the indemnifying party's negligent acts, errors or omissions. In the event claims, losses, damages or expenses are caused by the joint or concurrent negligence of CONSULTANT and OWNER, they shall be borne by each party in proportion to its negligence.
18. Liability and Standard of Care. CONSULTANT shall perform services for OWNER using that degree of care and skill ordinarily exercised by consultants practicing in the same or similar locale as the project, on projects of a similar scope and nature. CONSULTANT's liability to OWNER for any damages arising in any way out of performance or breach of this contract or breach of CONSULTANT's standard of care, is limited to the net proceeds recoverable under CONSULTANT's Professional Liability Insurance policy identified in paragraph 16d, "net proceeds recoverable" being defined as the proceeds payable under the policy after deductions for expenses, attorney's fees or other claims paid under such policy. In no event shall either OWNER or CONSULTANT be entitled to consequential damages.

OWNER acknowledges that the CONSULTANT is a Corporation and agrees that any claim made by the OWNER arising out of any act or omission of any director, officer or employee of the CONSULTANT in the execution or performance of this agreement shall be made against the CONSULTANT and not against such director, officer, or employee and OWNER waives any claim against all of CONSULTANT's directors, shareholders, officers and employees.

19. Dispute Resolution. If a dispute greater than \$10,000 arises out of or relates to this contract, or the breach thereof, and if this dispute cannot be settled through negotiation, the parties agree first, prior to litigation or any other form of dispute resolution, to try in good faith to settle the dispute by mediation. The parties shall first attempt to select a mutually acceptable mediator, and if the parties agree upon a mediator, the mediation shall be conducted in accordance with the North Carolina Rules Implementing Statewide Mediated Settlement Conferences in Superior Court Civil Actions, then in effect, or as the parties may otherwise agree. If the parties cannot agree upon a mediator, the selection of a mediator and the mediation process shall be conducted by the American Arbitration Association under its then current Construction Industry Arbitration Rules and Mediation Procedures. The venue for the mediation shall be in Charlotte, North Carolina, unless the parties otherwise agree.

20. Miscellaneous Provisions. The following miscellaneous provisions shall apply:

- a. This Agreement shall be binding upon the successors and assigns of the parties.
- b. Interpretation and enforcement of this Agreement shall be pursuant to the law of the State of North Carolina. Venue for any litigation under or related to this Agreement shall be in the courts of Mecklenburg County, North Carolina.

- c. This Agreement constitutes the entire contract between the parties, and it shall be modified or amended only in a writing signed by both parties.

IN WITNESS WHEREOF, the CONSULTANT and the OWNER have executed this Contract as of the date written below.

OWNER:

TOWN OF LAKE LURE

By: _____

Title: _____

Date: _____

CONSULTANT:

BROWN CONSULTANTS, P.A.

By: _____

Title: _____

Date: _____

This instrument has been preaudited in the manner required by the "Local Government Budget and Fiscal Control Act".

By: _____

Finance Officer

Date: _____

Address for giving notices:

Address for giving notices:

Designated Representative:

Name: _____

Title: _____

Phone: _____

E-mail: _____

Designated Representative:

Name: _____

Title: _____

Phone: _____

E-mail: _____

ATTACHMENT A

SCOPE OF WORK

PROJECT DESCRIPTION

This project involves providing Professional Engineering & Surveying Services related to the Planning & Project Management, Field Surveys & Base Mapping, Geotechnical Investigation, Design Services, Permitting, Easement Acquisition / Platting, Bidding Assistance, Community Outreach Meetings, Construction Administration / Construction Observation, As-Built Surveys, Record Drawings & Final Submittals, Certification, Loan Administration Assistance, and User Charge Assistance of the Lake Lure Wastewater Pump Station and Force Main Project for the Town of Lake Lure.

The proposed force main alignment shall follow the alignment in attached diagram and as described below. This project will include approximately seventeen (17) miles of 12 inch force main from the Town of Lake Lure WWTP along US Hwy 64 to Ruth. In Ruth, the force main shall follow US Alt. 74 adjacent to the Thermal Belt Rail-Trail. From US Alt. 74 the force main will then follow Whitesides Road until it terminates in a manhole in the Town of Spindale system on an existing 16" gravity line.

PROPOSED SCOPE OF SERVICES

The CONSULTANT proposes to provide the following scope of services for the fees listed under "Basis of Compensation".

1.0 Planning & Project Management

The CONSULTANT will perform planning, project management and administration activities throughout design of project. The following will be included:

1.1 Project Formulation

1.1.1 The CONSULTANT will evaluate and coordinate the activities associated with efficient execution of the project including project development and scoping.

1.1.2 The CONSULTANT shall develop a conceptual plan showing the proposed alignment specific to the side of the road where the force main will be aligned for the OWNER's review and approval;

1.2 Kick-Off Meeting

1.2.1 The CONSULTANT will conduct Kick-Off Meeting with OWNER to discuss the Project objectives and assess viable Project alternatives.

1.2.2 The CONSULTANT will issue meeting minutes summarizing Kick-off Meeting.

1.3 Meetings

- 1.3.1 The CONSULTANT will meet with OWNER'S representative on a quarterly basis, not to exceed 15 meetings, to review the general status of Project. These meetings are in addition to any project specific technical meetings. The CONSULTANT will set agenda and prepare meeting minutes.
- 1.3.2 The CONSULTANT will update OWNER'S staff monthly via teleconference or email to present findings, design criteria and decisions and review the status of the project budget and schedule.
- 1.3.3 The CONSULTANT will meet with OWNER'S representative at the conclusion of Preliminary (35% Submittal), at 60% Submittal, at Final Design (90%) and at Constructability Review (100%) to review the Project. The CONSULTANT will issue meeting minutes after each of these meetings.
- 1.3.4 The CONSULTANT will meet with NCDOT to verify right-of-way access for Encroachment Agreement as well as plan details.
- 1.3.5 The CONSULTANT will participate in six (6) meetings with the OWNER and necessary property owners to address issues and concerns, share conceptual layout, discuss impacts, and gain support/cooperation from property owner(s). Additional meetings will be conducted as an additional expense and require prior approval of the OWNER.
- 1.3.6 The CONSULTANT will meet with OWNER'S representative at the conclusion of Final Design to review the Project.

1.4 Project Tracking

- 1.4.1 The CONSULTANT shall prepare monthly invoices for its services in a format acceptable to OWNER.
- 1.4.2 The CONSULTANT shall maintain a project cost accounting system throughout the life of the Project.
- 1.4.3 The CONSULTANT shall maintain a project filing system throughout life of the Project to use for storage and retrieval of project documents.
- 1.4.4 The CONSULTANT shall maintain a detailed project schedule for scope of services such that actual progress versus the anticipated schedule can be tracked easily. Initial construction schedule will estimate expected duration of construction while detailing general functions such as show drawing submittals and reviews, construction mobilization, construction (to substantial completion), final construction completion and project closeout that begin after contract award. Project schedule will, at a minimum, be updated upon completion of the Preliminary Engineering Evaluation and upon completion of the Final Design and concurrently

with the preparation of the Opinion of Probable Cost. After the project is bid, the Contractor will then be responsible for maintaining the schedule.

2.0 Field Surveys and Base Mapping

2.1 The CONSULTANT will provide field surveying and base mapping activities. The survey limits shall be as shown on the Project Map for production of the base mapping shall be suitable for design of the proposed force main and pump stations.

2.1.1 From the Lake Lure WWTP to a Town of Spindale manhole on a 16" line located off Whitesides Road; where easement is not easily defined, the width of the limits shall be no more than 50 feet or 25 feet off centerline of the force main, either side.

2.2 The survey shall include sufficient data to produce a digital topographic corridor base map with contours at a minimum of one (1) foot intervals. The base mapping will include the following data and/or parameters:

2.2.1 Horizontal datum based on NAD 83 and vertical datum will be based on NAVD 88. Base mapping will use available project control points which are tied to local published NC datum. In the event existing control points are not available, a baseline with inter-visible points will be established within the mapping limits of the project by using Static or similar GPS technology. The baseline points will have northing, easting and elevation data.

2.2.2 Elevations along roadway centerlines, edge of pavement, and curb lines (left and right) adequate to produce profiles suitable for accurate design.

2.2.3 Locations of storm drain pipes and structures including sizes, wing walls, shapes, material, condition, invert elevations and rim/grate elevations.

2.2.4 Locations of existing sanitary sewer pipes, structures, including sizes, materials, invert elevations, and rim elevations, horizontal locations and inverts of clean-outs if they are visible.

2.2.5 Locations of water mains, structures, including sizes, materials, valves, blowoffs, horizontal locations and inverts of clean-outs if they are visible.

2.2.6 Horizontal locations of all underground utilities and overhead utilities including poles, lines, boxes, fiber optic lines and existing utility easement boundaries, etc. The CONSULTANT shall contract with an on-call underground utility locating service to ensure accurate locations.

- 2.2.7 Elevations of major underground utilities that may impact or conflict with the design will be obtained on an as-needed basis and as directed by the OWNER. These nondestructive excavations will be an additional service.
- 2.2.8 Horizontal locations of all underground non-gravity utilities within the proposed sewer line corridor (right-of-way). The CONSULTANT will attempt to obtain copies of as-built surveys for existing utilities prior to beginning surveying. The OWNER will assist in obtaining utility as-built drawings.
- 2.2.9 Location of existing physical features which may be affected by the design including driveways (type), fences (type and height), walls (type and height), signs, planters, sheds, brick or stone mailboxes, rock outcroppings, etc.
- 2.2.10 Locations of flagged or delineated wetlands and jurisdictional streams.
- 2.2.11 Delineate streams and wetlands within the project boundary including the Broad River, Cove Creek and Mountain Creek and their tributaries that cross US Hwy 64, Alt. Hwy 74, and Whitesides Road in the project corridor.
- 2.2.12 Locations of property lines to the extent necessary for purposes of locating the road right-of-ways. Surveys required for easement plat preparation will be additional services.
- 2.2.13 When crossing existing roads or driveways, the CONSULTANT shall show the road name and number, rights-of-way widths (if known or applicable), located monuments, types of surfaces, width of surfaces, and angle relationships to the proposed alignment.
- 2.2.14 Establish typical sections of existing facilities (sewer lines, storm drains, water lines, gas lines, etc) as necessary to supplement plan drawings.
- 2.3 Necessary office computations and mapping to construct baseline drawings of survey field data suitable for preparation of design plans including existing property lines, rights-of-way, easements, etc.

The CONSULTANT will be responsible for contacting North Carolina One Call and for following up with any utilities known to be in the area to ensure utilities are marked in advance of conducting field survey. The Contract include fees associated with contracting with a utility locating company for field marking of existing utilities.

3.0 Geotechnical Investigation

The CONSULTANT will subcontract with a qualified geotechnical firm to perform a subsurface investigation for the proposed force main and pump station sites. The subsurface investigation will include borings at select intervals along the proposed force main alignment and at select bore and jack / directional drilling locations. Borings will extend to 15 feet below the existing ground surface along the force main corridor. The majority of borings are anticipated to be located such that lane closures will not be necessary. However, it is estimated that up to ten (10) boring may require lane closure.

Soils at the borings will be sampled using standard penetration test procedures. Samples will be analyzed using grain size laboratory testing for soil classifications, shoring and dewatering recommendations. An engineering report will be prepared and submitted summarizing all findings, conclusions, and recommendations relative to design and construction of the proposed lines, including groundwater depths, depth to rock and weathered rock. Boring logs and recommendations for directional drilling will be provided in the contract documents.

The CONSULTANT will be responsible for contacting North Carolina One Call and for following up with any utilities known to be in the area to ensure utilities are marked in advance of conducting field survey. The Contract include fees associated with contracting with a utility locating company for field marking of existing utilities.

4.0 Design Services

4.1 Preliminary Design (35% Submittal): utilizing the finalized surveying and mapping, the CONSULTANT will develop preliminary plans and details for the proposed project as follows:

- 4.1.1 Prepare conceptual layout to define service area and scope of project using best available data. Meet with the OWNER to confirm project design requirements.
- 4.1.2 Evaluate roadway repair options of permanent patch or temporary patch with overlay and include in Engineer's Opinion of Probable Construction Costs.
- 4.1.3 Prepare preliminary horizontal and vertical geometry. Plans shall not include profiles for the alignments unless specific obstacles warrant an exploded view for the area (35% Submittal).
- 4.1.4 The CONSULTANT shall submit one (1) copy of the Preliminary Design on 22" x 34" [modify if desired] sized paper. The OWNER shall have 14 days to complete review and provide comments. The CONSULTANT shall meet with the OWNER to discuss Preliminary Design at the time of plan submittal.

- 4.2 Design – 60% Complete: Using the Preliminary Design drawings and comments provided by the OWNER, the CONSULTANT will develop 60% plans for the proposed project as follows:
- 4.2.1 Prepare 60% complete plan sheets for the sewer line at 1" = 40' scale or larger.
 - 4.2.2 Prepare 60% complete construction detail sheets and cover sheet.
 - 4.2.3 Prepare preliminary quantity and construction cost opinions.
 - 4.2.4 Submit three (3) copies of the 60% Submittal on 22" x 34" sized paper. The OWNER shall have 14 days to complete review and provide comments. The CONSULTANT shall meet with the OWNER to discuss 60% Submittal at the time of plan submittal in order to discuss easement or other issues related to the proposed alignment.
- 4.3 Final Design – 90%/100% Submittals: Using the 60% Submittal and comments provided by the OWNER, the CONSULTANT will develop plans and specifications for the proposed project as follows:
- 4.3.1 Finalize horizontal and vertical geometry.
 - 4.3.2 Prepare final design plan sheets including Cover Sheet, Plan and Profile Sheets of the sewer lines (horizontal scale at 1:40 and vertical scale at 1:4).
 - 4.3.3 Prepare final construction documents showing the proposed collection system including:
 - a) Location of above ground visible obstructions which are within the street and other public or private rights-of-way,
 - b) Location of known existing water, sewer and storm drain lines within these rights-of-way which may be determined from existing maps and visible field features. The CONSULTANT will not be required to locate existing underground water and sewer services except those which can be readily identified from visible meter boxes and/or cleanouts.
 - c) The CONSULTANT shall endeavor to locate and shall show on the design drawings underground utilities, as marked or located by the appropriate utility company.
 - d) The CONSULTANT shall identify from existing maps and visible field data, existing water and sewer lines, cleanouts and meter boxes within the area in which the new sewer lines are to be installed.

- e) The CONSULTANT shall survey private wells within 100 feet of new sewer lines.
- 4.3.4 Prepare final standard sewer line details in accordance with the OWNER'S standards, erosion control details, and street restoration details in accordance with prescribed criteria from the OWNER/NCDOT standards (90% Submittal and 100% Submittal). Prepare revisions based on markups from the OWNER'S comments at 90% Submittal and 100% Submittal.
- 4.3.5 Prepare erosion and sedimentation control plan.
- 4.3.6 Development of project sequencing and phasing.
- 4.3.7 Prepare final quantity take-off, Bid Schedule, and the CONSULTANT'S Opinion of Probable Construction Cost. The CONSULTANT'S Opinion of Probable Construction Cost will be submitted with the 90% Submittal and updated prior to the Bid Opening.
- 4.3.8 Prepare plans, specifications including technical specifications suitable for permitting, and Special Conditions and assist the OWNER with preparation of other related documents for inclusion in the project specifications. The specifications shall adhere to the OWNER standard contract documents and technical specifications.
- 4.3.9 Forward plans and specifications to the OWNER for review and meet with OWNER to obtain final comments prior to permitting submittal. For the 90% Submittal, the CONSULTANT will submit one (1) copy. For the 100% Submittal (Contract), the CONSULTANT will submit one (1) reproducible set, one (1) digital set and four (4) paper copies. The CONSULTANT shall provide four (4) sets of contract documents and plans at the bidding stage to the OWNER.
- 4.4 Miscellaneous
 - 4.4.1 Video tape (DVD format) all easements and construction routes, with a narrative identifying location and significant features/points of concern and provide a copy to the OWNER.
 - 4.4.2 Traffic Control Plans including road detours is not anticipated. Traffic Control Plans are anticipated to be lane closures in accordance with NCDOT standards and the Manual of Uniform Traffic Control (MUTCD) and will be provided to the OWNER if needed for the encroachment submittal.

5.0 Permitting

Utilizing the final design plans, the CONSULTANT will prepare and submit applications for the permits necessary to allow for construction of the project. The CONSULTANT cannot guarantee any regulatory approval or a timeframe in which that approval might be granted. The OWNER should be aware that significant delays can occur during regulatory review, and those delays may impact project schedule and scope of work. No such delays are currently anticipated, but should any materialize, the CONSULTANT will present to the OWNER the most feasible alternatives for addressing the matter causing the delay.

The CONSULTANT shall be available to answer inquiries made by the various regulatory agencies during their reviews of the project. This shall include but not be limited to notification and/or application to [select applicable]:

5.1 DOT for Encroachment –

5.1.1 The CONSULTANT shall submit a complete encroachment agreement application to NCDOT (and/or the municipality and/or County as necessary). All correspondence and work necessary to process the permit shall be the CONSULTANT'S responsibility.

5.2 Environmental Reviews.

5.2.1 The SUBCONSULTANT shall complete work necessary to complete an NCDEQ Environmental Report and obtain a Categorical Exclusion (CE) and/or a Finding of No Significant Impact (FONSI). The State Environmental Policy Act (SEPA) standards apply.

5.3 NCDEQ – Land Resources - Erosion and Sediment Control Permit

5.3.1 The CONSULTANT will prepare a cover letter, application form, check-list, narrative with pertinent design calculations, construction sequencing and details and submit the items to the Regional Office for review and approval. All correspondence with NCDEQ – Land Resources required to process the permit shall be the CONSULTANT'S responsibility.

5.4 Jurisdictional Waters and Wetland Permitting

5.4.1 The scope of work includes Jurisdictional Water and Wetlands delineation for the sewer lines and obtaining necessary regulatory permits for the project.

5.4.2 The CONSULTANT will conduct preliminary evaluations of existing environmental conditions throughout the proposed force main corridor to determine the routes with the least impact to USACE and DWQ jurisdictional wetlands and waters. Upon

approved preliminary alignment selection, the CONSULTANT will:

- a) Conduct formal wetland and waters delineations throughout the proposed force main corridor using criteria of the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and supplementary technical literature for hydric soil, hydrology, and hydrophytic vegetation indicators.
- b) Identify non-wetland stream channels using USACE and DWQ field indicators, including the latest version of DWQ's stream rating form for determining origins of intermittent and perennial streams.
- c) Prepare USACE wetland determination data sheets and Jurisdictional Determination forms to support and formalize their findings.
- d) Flag beaver ponds and man-made impoundments that qualify as jurisdictional waters at the edge of "normal pool" based on vegetation or other appropriate indicators.

5.5 USACE for Stream Crossing(s)

5.5.1 The CONSULTANT shall complete a permit application for the utility construction of a force main across waters of the state in accordance with the requirements of the US Code, USACE, and the NCDEQ. All correspondence with the USACE and NCDEQ and other necessary work to process the permit shall be the CONSULTANT'S responsibility. Other fees and other required legal documentation shall be provided by OWNER.

5.6 DOT for Driveway Application --

5.6.1 The CONSULTANT shall submit a complete driveway application to NCDOT. All correspondence and work necessary to process the permit shall be the CONSULTANT'S responsibility.

5.7 NCDEQ DWQ Fast Track Application for Gravity Sewers, Pump Stations, and Force Mains --

5.7.1 The CONSULTANT will prepare a cover letter, application form, check-list, narrative with pertinent design calculations, construction plans and details and submit the items to the Regional Office for review and approval. All correspondence with NCDEQ -- DWQ required to process the permit shall be the CONSULTANT'S responsibility.

Permit fees shall be submitted by the CONSULTANT and reimbursed by OWNER through reimbursable expenses.

6.0 Easement Acquisition/Platting

Utilizing the final design plans, the CONSULTANT will prepare permanent pump station and force main easement acquisition plats and descriptions suitable for acquisition and recordation and submit to the OWNER in accordance with the OWNER'S standards. This scope assumes that easements required will be for parcels less than one (1) acres in size and the unit rate assumes that at least ten (10) easements will be needed. Any additional easements required will be provided at a cost of \$2,000 per easement as an additional service.

The CONSULTANT shall submit proposed easement maps and metes and bounds description to the OWNER at 60% design level (if not sooner). This item shall include but not be limited to:

- 6.1 The CONSULTANT shall prepare plats showing all existing and proposed metes and bounds, as determined by actual survey or from acceptable deeds and recorded maps, for each easement to be acquired. Such plats and descriptions shall be in accordance with the OWNER provided standards using the easement widths required. All metes and bounds for easement acquisitions, (temporary and permanent) shall be shown on the parcel plats and shall be consistent with the construction data shown on the final design plans. Metes and bounds description will also be provided in a MS-Word format for use by OWNER.
- 6.2 In addition to the information shown on the design plans, the following data will be shown on the plats:
 - 6.2.1 The total area of the parcel (deed area), the area to be acquired, area currently maintained (if applicable), and the area of the parcel remaining shall be shown on each individual plat in square feet to the nearest square unit and in acres.
 - 6.2.2 The total area of permanent easements being acquired shall be shown to the nearest square foot and in acres. The temporary easement area shall be calculated and shown on the plats.
 - 6.2.3 The proposed right-of-way width shall be shown.
 - 6.2.4 All dimensions shall be in English units
 - 6.2.5 All easement plats shall identify any jurisdictional boundaries and provide an appropriate place on the easement plat for approval signature of the governing body.
- 6.3 The general requirements for easement plats shall be as follows:

- 6.3.1 Descriptions and map(s) shall be identified by owner name, deed or map book and page number, and tax parcel number.
- 6.3.2 Easement Plats shall be an exhibit to the easement.
- 6.3.3 Easement plats shall be prepared on 8 1/2" x 14" standard sheets and shall have parcel numbers assigned to each piece of property for reference to a written instrument.
- 6.3.4 All easement plats shall have a general vicinity map which shall clearly identify the general location of the parcels where the easements shall be obtained.
- 6.3.5 All easement plats shall have distinct line types for the easement boundary, which will define the easement location on each parcel.
- 6.3.6 All easement plats shall have distinct line types for the permanent and/or temporary easement location on each parcel.
- 6.3.7 Each plat shall conform to the Standards of Practice of Land Surveying in North Carolina, [NC – Section 1600], and meet the requirements of NC GS47-30.
- 6.3.8 A reproducible Mylar and two (2) copies of the easement plats and descriptions showing the improvements, property lines, and other relevant information in sufficient form, size, and scale to be recorded by the OWNER.
- 6.3.9 An AutoCAD file will be provided to the OWNER for use in obtaining and filing the easements.
- 6.3.10 All easement plats shall be sealed by a Professional Surveyor licensed in North Carolina.
- 6.4 The OWNER shall review the proposed easement plats for satisfaction that the plats are adequate for attachment to an OWNER easement agreement and recording at the associated County Register of Deeds.
- 6.5 The OWNER shall negotiate and record plats and return one (1) copy of the recorded plats to the CONSULTANT for our records.
- 6.6 The OWNER shall advise the CONSULTANT if easement is being acquired through condemnation. In addition to the requirements above, the following is required for condemnation plats:
 - 6.6.1 A legal description of the entire tract or tracts affected by the taking sufficient for the identification thereof (can be lot and block description).
 - 6.6.2 A legal description of each area taken (permanent, and/or temporary easements) sufficient for the identification thereof, (can

refer to the parcel on the recorded map or to an attached exhibit plat).

- 6.6.3 All of the above descriptions can be on the same page and shall be in English units.

7.0 Bidding Assistance

As noted previously, the Project is anticipated to bid as one Contract. The CONSULTANT shall coordinate advertisement in accordance with NC General Statute Chapter 143, Article 8 and bid opening date; conduct Pre-Bid Meeting and issue Pre-Bid Meeting Agenda and Minutes; and conduct bid opening. The CONSULTANT shall prequalify products submitted in accordance with bidding documents for "Or-equal" status. Pre-qualification is limited to three (3) additional major equipment items beyond that specified. The OWNER'S Purchasing Department shall conduct background check of the most responsive Bidder and recommend and issue Notice of Award.

The CONSULTANT will provide bidding assistance including the following:

- 7.1 Furnish prequalification documents, review submittals, and make recommendations for rejection of contractors from prequalification submittals.
 - 7.2 Maintain Planholders' List and distribute plans and Bid Documents to interested Bidders and preferred planhouses (Dodge, AGC, etc).
 - 7.3 Attend Pre-Bid Meeting
 - 7.4 Provide Addenda as appropriate to clarify, correct, or change the Bid Documents. The CONSULTANT has assumed a maximum of two (2) addenda for establishing a budget.
 - 7.5 Provide plan interpretations to the OWNER to clarify prospective Bidder questions. The OWNER will provide in writing those Bidder questions that require clarification.
 - 7.6 Prepare, certify and issue bid tabulation.
 - 7.7 Provide six (6) original sets of final documents (with addenda and other annotations) to the OWNER after bids are received and prior to construction award.
 - 7.8 The CONSULTANT shall provide assistance in connection with Bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services.
 - 7.9 The CONSULTANT shall prepare Notice to Proceed for execution by OWNER and provide to Contractor(s) at the pre-construction conference.
 - 7.10 The CONSULTANT shall accept and review for compliance with specifications all shop drawings or other submittals.
- 8.0 Community Outreach Meetings

The OWNER anticipates conducting three (3) neighborhood meetings during the Design Phase and prior to commencing construction. The intent of the meeting(s) is to make the impacted citizens, residents and property owners aware of the Project, its layout, impact and schedule. The OWNER will be responsible for notifying residents and property owners of the date, time and location and purpose of meetings and arranging the facility to hold the meeting. The OWNER will preside over the meeting and will be responsible for preparing and conducting the meeting and summarizing comments and issues that may require adjustments to design and or construction.

The CONSULTANT will attend three (3) meetings and be prepared to assist in responding to questions and comments at the OWNER'S direction. The CONSULTANT may also be requested to prepare meeting exhibits to illustrate project location, alignment and work outside right of way.

The OWNER also anticipates meeting individually with each impacted property owner to review the location of easements and discuss easement acquisition. The CONSULTANT will attend six (6) meeting(s) with the OWNER for each impacted property owner. While more than one meeting may occur on the same trip, the CONSULTANT has budgeted for six (6) separate trips to support the OWNER with easement acquisition. The CONSULTANT will furnish a competent representative familiar with the design and easement to be onsite one hour for each meeting.

9.0 Construction Administration / Observation

The CONSULTANT is anticipated to provide construction administration for the project. The scope is anticipated to be one contract. The total anticipated construction period for the contract is estimated to be 360 calendar days. The CONSULTANT is anticipated to provide a Construction Observer or Inspector on a full-time basis to monitor construction activities (start of construction is defined by Notice to Proceed date to contractor). The intent of the CONSULTANT'S role in the construction of the project is to provide a reasonable level of service to issue acceptance that the project was constructed in accordance with the approved plans and specifications. The CONSULTANT'S explicit responsibilities are defined below:

- 9.1 The CONSULTANT'S Project Manager and Contract Administrator or Observer shall attend the Pre-Construction Conference.
- 9.2 The CONSULTANT is responsible for scheduling, conducting, and providing minutes for monthly construction progress meeting(s). Meetings shall be held at the site and include representatives from the OWNER, the CONSULTANT, and the Contractor. Twelve (12) progress meetings have been estimated to establish the budget.
- 9.3 The CONSULTANT shall review and determine the acceptability of Contractor's project schedule.
- 9.4 The CONSULTANT shall accept, review and provide recommendations to the OWNER for payment. The CONSULTANT shall also accept and

- confirm associated documentation that may be required for payment approval due to the requirements of the funding sources for this project.
- 9.5 The CONSULTANT shall accept and address Contractor's questions during construction.
- 9.6 The CONSULTANT shall recommend change orders and work change directives to the OWNER, as appropriate, and prepare change orders and work change directives as required.
- 9.7 The CONSULTANT shall review inspection reports and testing reports provided by OWNER for the purpose of determining that the results certified indicate compliance with the Contract Documents.
- 9.8 The CONSULTANT shall assist the OWNER with decisions on submitted issues relating to acceptability of Contractor's work or the interpretation of the requirements of the Contract Documents.
- 9.9 The CONSULTANT shall accept and address questions from NCDOT, other utility owners, and other impacted parties during construction.
- 9.10 The CONSULTANT shall issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of the Work and only upon request of the OWNER. Clarifications will be returned to the OWNER, who will issue to Contractor. The CONSULTANT has estimated twelve (12) clarifications to establish the budget.
- 9.11 The CONSULTANT shall prepare operation and maintenance manuals from manufacturer's submittals and provided operation manuals.
- 9.12 The CONSULTANT shall visit the project to determine if the work is substantially complete and develop a punch list for Contractor.
- 9.13 The CONSULTANT'S Observer shall participate in final inspection and/or acceptance. Three 8-hour work days have been budgeted for final inspection.
- 9.14 The CONSULTANT shall review maintenance and operating instructions, schedules, guarantees, bonds, and certificates required by the Contract Documents to obtain final payment.
- 9.15 Contract Execution and Review – The CONSULTANT shall prepare and distribute conforming copies of the construction contract documents. The CONSULTANT will issue "Notice to Proceed" to Contractor.
- 9.16 Pre-Construction Conference – The CONSULTANT shall be responsible for organizing and facilitating the Pre-Construction Conference and recording and distributing minutes to attendees and within their organization.

- 9.17 Shop Drawing Review – The CONSULTANT shall review and approve or take other appropriate action with respect to Shop Drawings, samples and other data which Contractor is required to submit, but only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents.
- 9.18 Final Inspection – The OWNER shall participate in final inspection and/or acceptance.
- 9.20 Project Closeout – Following completion of construction and Final Acceptance by the OWNER, the CONSULTANT shall provide project close out services.
- 9.21 Warranty Period – At the eleventh month (prior to end of the warranty period), the CONSULTANT will conduct a warranty inspection and advise the Contractor of any warranty items to be corrected. The CONSULTANT will assist the OWNER in resolving unanticipated warranty or operational situations during the one-year warranty period.

10.0 As-Built Surveys, Record Drawings and Final Submittals

Upon completion of the project, the CONSULTANT shall provide mapping services including As-Built Surveys and Record Drawings in accordance with the OWNER'S standards. Services shall include the following:

- 10.1 As the work progresses and sections of the Project are completed, the CONSULTANT will collect as-built information to be used for final certification.
- 10.2 Upon completion of the project, the OWNER will provide the CONSULTANT with a complete set of field red-line markup-ups from the Contractor indicating the specific details of the installation.
- 10.3 The as-built location of each above ground appurtenance will be collected. The CONSULTANT shall make all changes listed and the OWNER shall be provided with three (3) complete sets of plans in hard copies and digital pdf formats indicating the drawings as "Record Drawings – Information provided by the OWNER/Contractor."
- 10.4 Record Drawings will be in AutoCAD format with changes clearly noted.
- 10.6 The CONSULTANT shall provide the OWNER with complete set of Easement Plat files drawn using AutoCAD in pdf format.
- 10.7 The CONSULTANT shall provide the OWNER as part of Final Submittal any special details drawn specifically for this project.

11.0 Certification

During and after construction, all testing shall be coordinated with the CONSULTANT through the OWNER'S Inspector. Upon completion of all testing, the OWNER shall

provide the CONSULTANT with all necessary field test reports for the force main as per NC Statute and Administrative Code. Certifications for all contracts shall be provided within twenty-one (21) days of receipt of the final test reports. The CONSULTANT will provide the Engineer's Certification of Construction, as required by NCDEQ, once the project is satisfactorily completed.

12.0 Pre Bid & Post Bid Loan Administration

The CONSULTANT shall provide for the OWNER loan administration to include the following list of services:

- 12.1 Assistance with preparation of a CWSRF application
- 12.2 Assistance with the completion/update of LGC Forms
- 12.3 Necessary coordination with LGC
- 12.4 Necessary coordination with NCDEQ Division of Water Infrastructure (DWI)
- 12.5 Completion of reimbursement documentation to DWI
- 12.6 Assistance with NC Sales Tax documentation
- 12.7 Completion of final project close-out package in compliance with NCDEQ DWI

The actual scope of this work will be further defined as potential NCDEQ DWI requirements are identified as well as any necessary construction phase services. Therefore, the allowance for this task, included in Attachment B, Basis of Compensation shall be adjusted accordingly with OWNER's written approval.

13.0 User Charge Assistance

The CONSULTANT shall assist the OWNER with the development of proposed User Charges to include the following:

- 13.1 Review financial goals and policy objectives. Review current budgets, existing debt obligations, capital improvement plans, and proposed loan payments.
- 13.2 Prepare a five-year financial plan and determine annual revenue requirements for the water and sewer department.
- 13.3 Examine the future impact of issuing new long-term debt related to potential water and wastewater improvements.
- 13.4 Recommend water and wastewater rates and prepare rate schedules for implementation two (2) times including a interim rate step and final rate step upon project completion.
- 13.5 Present preliminary recommendations to the Town Council to review the assumptions and conclusions from the financial plan and rate analyses.

- 13.6 Prepare a water and wastewater rate study letter report to document the analyses performed during the study.
- 13.7 Assist the Town in preparing a public notice of proposed water and wastewater rate increases.
- 13.8 Present final water and wastewater rate recommendations during a public hearing(s) to adopt new rates. The CONSULTANT has budgeted for two (2) public hearings.

The actual scope of this work will be further defined as necessary based on any needs of the OWNER. Therefore, the allowance for this task, included in Attachment B, Basis of Compensation shall be adjusted accordingly with OWNER's written approval.

14.0 Additional Services

Engineering services described in this Contract do not include certain categories of work, which are usually referred to as "Additional Services." The CONSULTANT will provide Additional Services only upon receipt of written authorization from the OWNER. Additional services shall be rendered in accordance with the CONSULTANT'S standard hourly rates unless otherwise agreed to by both parties. Additional Services include:

- 14.1 Engineering evaluations required in connection with determining the financial feasibility of the project or multiple alternatives aside from the initial study.
- 14.2 Services in making revisions to drawings and specifications for the acceptance of substitute materials or equipment other than "or equal" items and services after the award of the construction contract in evaluating and determining the acceptability of a substitution.
- 14.3 Services resulting from significant changes in the scope, extent, or character of portions of the project designed or specified by the CONSULTANT or its design requirements including, but not limited to, changes in size, complexity, the OWNER'S schedule, character of construction or method of financing and revising previously accepted studies, reports, drawings, specifications, or Contract Documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes, standards, or orders enacted subsequent to the Effective Date of this Contract or are due to any other causes beyond the CONSULTANT'S control.
- 14.4 Provide construction surveys and staking to enable Contractor to perform its work and providing other special field surveys.
- 14.5 Environmental Assessments (EA).
- 14.6 Environmental Impact Statements (EIS).

- 14.7 Formal protected species surveys.
- 14.8 Wetlands, stream and protected species mitigation services.
- 14.9 Additional drawings and documents as necessary for the receipt of Alternate Construction bids or multiple contracts.
- 14.10 Evaluate an unreasonable claim or an excessive number of claims submitted by Contractor or others in connection with the work.
- 14.11 Review a Shop Drawing more than three times, as a result of repeated inadequate submissions by the Contractor.
- 14.12 Renderings or models of the project or parts thereof.
- 14.13 Extended services required during construction that are made necessary by (1) work damaged by fire or other cause during construction, (2) prolongation of the contract time, and (3) Contractor's defaults.
- 14.14 Serving as a CONSULTANT or witness for any legal proceeding.
- 14.15 Archeological services.
- 14.16 Work associated with bidding assistance if the OWNER elects not to award the project immediately but to bid the Project again at a later date or split the Project into multiple contracts. Should this situation occur, the OWNER and the CONSULTANT will then agree to appropriate compensation for the CONSULTANT'S additional work.
- 14.17 Determining the acceptability of substitute materials and equipment proposed during the Bidding or Negotiating Phase when substitution prior to the award of contracts is allowed by the Bidding Documents.
- 14.18 Title Searches or Abstracting
- 14.19 Other professional services related to the Project, but not specifically described in the Scope of Services, which are identified and authorized in writing by the OWNER'S authorized representative.
- 14.20 Other services performed or furnished by the CONSULTANT not otherwise provided for in the CONSULTANT'S Scope of Basic Services.

SCHEDULE

The tentative schedule for completion, considering an authorization to proceed date of February 9, 2016, is as follows:

Task	Completion Date
Planning & Project Management	
- Planning	September 30, 2016
- Project Management	November 2019 (estimated)
Design Surveys & Mapping	November 30, 2016
Engineering Design	September 2017
Permitting (estimated at 45 days)	January 2018
Construction Bidding	May 2018
Construction	June 2018
Construction Completion	<i>November 2019 (estimated)</i>

ATTACHMENT B

BASIS OF COMPENSATION

1. Basic Services. The OWNER shall pay the CONSULTANT for services set forth in Attachment A, Scope of Services, a Lump Sum Fee, on an hourly plus expenses basis, or on an hourly basis as detailed below and in the attached rate schedule.

Task	Unit	Fee
Planning & Project Management	Lump Sum	\$95,000
Field Surveys & Base Mapping	Lump Sum	\$225,000
Geotechnical	NTE	\$50,000
Design Services	Lump Sum	\$442,000
Permitting	Lump Sum	\$244,000
Easement Acquisition / Platting	Lump Sum	\$51,000
Bidding Assistance	Lump Sum	\$36,000
Community Outreach Meetings	Lump Sum	\$26,000
Construction Administration	Lump Sum	\$150,000
Construction Observation	NTE	\$245,000
As-Built Survey, Record Drawings & Final Submittals	Lump Sum	\$50,000
Certification	Lump Sum	\$9,000
Pre Bid & Post Bid Loan Administration	NTE	\$60,000
User Charge Assistance	NTE	\$16,500
Permit Fees	NTE	<u>\$1,000</u>
Total		\$1,700,500

For Lump Sum work, a percentage of the Lump Sum Fee will be billed on the last day of each month. The percentage billed will be the percentage of work estimated to be completed as of the day of billing.

For hourly plus expenses basis work, the CONSULTANT will bill the OWNER on the last day of each month for the labor and expenses incurred during that month.

For hourly work, the CONSULTANT will bill the OWNER on the last day of each month for the labor incurred during that month.

2. Additional Services. The OWNER shall pay the CONSULTANT for additional services, which are not specifically called for in Attachment A, Scope of Services, in accordance with the CONSULTANT's standard rates.
3. Premium Rate Adjustment. Should OWNER request an accelerated schedule requiring CONSULTANT to work overtime hours, then a 1.25 premium rate adjustment shall be applied to current hourly rates or lump sum fees as appropriate. Accelerated schedule and

premium rate adjustment shall be approved as part of compensation at time of contract execution or by written amendment.

ATTACHMENT C

ADDITIONAL SERVICES AUTHORIZATION

The following additional services to the contract for Lake Lure Green Line Regional Sewer Interconnection dated February 9, 2016 between the Town of Lake Lure (OWNER) and Brown Consultants (CONSULTANT) are authorized.

1. SCOPE OF SERVICES. CONSULTANT shall provide additional services to include:

2. TIME OF PERFORMANCE. CONSULTANT's time of performance for the above additional services shall be extended calendar days. The new completion date for the overall contract is revised from to .

3. COMPENSATION. CONSULTANT shall provide the above Additional Scope of Work for a lump sum fee of \$. The total contract lump sum is increased/decreased from \$ to \$.

OR

CONSULTANT shall provide the above Additional Scope of Work on an hourly plus expenses basis not-to-exceed \$. The total contract not-to-exceed fee is increased from \$ to \$.

All services and associated compensation shall be in accordance with the above referenced Contract for Services.

OWNER:

TOWN OF LAKE LURE

By: _____

Title: _____

Date: _____

CONSULTANT:

BROWN CONSULTANTS, P.A.

By: _____

Title: _____

Date: _____

SUBCONSULTANT AGREEMENT FOR PROFESSIONAL SERVICES

This Agreement, made and entered into by and between Brown Consultants, P.A., hereinafter referred to as CONSULTANT, and W.K. Dickson & Co., Inc., hereinafter referred to as SUBCONSULTANT.

WHEREAS, CONSULTANT has entered into an agreement with the Town of Lake Lure, hereinafter referred to as OWNER, for the Lake Lure Green Line Regional Sewer Interconnection hereinafter referred to as the Prime Agreement.

NOW, THEREFORE, for and in consideration of the agreements of the parties and for other good valuable considerations, it is hereby agreed between the parties that SUBCONSULTANT will perform the following Scope of Services in support of the project:

1. Scope of Services. The SUBCONSULTANT shall provide support services to the CONSULTANT as follows:

PROJECT DESCRIPTION

This project involves the SUBCONSULTANT providing Professional Engineering Services related to the Planning & Project Management, Environmental Report, Design Services, Permitting, Bidding Assistance, Community Outreach Meetings, Construction Administration / Construction Observation, As-Built Surveys, Record Drawings & Final Submittals, Certification, Loan Administration Assistance, and User Charge Assistance of the Lake Lure Green Line Regional Sewer Interconnection Project for the Town of Lake Lure.

The proposed force main alignment shall follow the alignment in attached diagram and as described below. This project will include approximately seventeen (17) miles of 12 inch force main from the Town of Lake Lure WWTP along US Hwy 64 to Ruth. In Ruth, the force main shall follow US Alt. 74 adjacent to the Thermal Belt Rail-Trail. From US Alt. 74 the force main will then follow Whitesides Road until it terminates in a manhole in the Town of Spindale system on an existing 16" gravity line.

The SUBCONSULTANT proposes to provide the following scope of services for the fees listed under "Compensation".

1.0 Planning & Project Management

The SUBCONSULTANT will perform planning, project management and administration activities throughout design of project. The following will be included:

1.1 Project Formulation

- 1.1.1 The SUBCONSULTANT will assist with evaluating and coordinating with the CONSULTANT and the OWNER the activities associated with efficient execution of the project including project development and scoping.
- 1.1.2 The SUBCONSULTANT shall assist with the development a conceptual plan showing the proposed alignment specific to the side of the road where the force main will be

aligned for the SUBCONSULTANT's portion of the work for the CONSULTANT and the OWNER's review and approval;

- 1.2 Kick-Off Meeting - The SUBCONSULTANT will attend a Kick-Off Meeting with the CONSULTANT and the OWNER to discuss the Project objectives and assess viable Project alternatives.

- 1.3 Meetings

- 1.3.1 The SUBCONSULTANT will meet with the CONSULTANT and OWNER'S representative on a quarterly basis, not to exceed 15 total meetings, to review the general status of Project. These meetings are in addition to any project specific technical meetings. The SUBCONSULTANT will assist the CONSULTANT with setting the agenda and assist with preparing the meeting minutes.
 - 1.3.2 The SUBCONSULTANT will update the CONSULTANT and the OWNER'S staff as necessary monthly via teleconference or email to present findings, design criteria and decisions and review the status of the project budget and schedule.
 - 1.3.3 The SUBCONSULTANT will meet with the CONSULTANT and the OWNER'S representative at the conclusion of Preliminary (35% Submittal), at 60% Submittal, at Final Design (90%) and at Constructability Review (100%) to review the Project. The SUBCONSULTANT will assist the CONSULTANT with issuing meeting minutes after each of these meetings.
 - 1.3.4 The SUBCONSULTANT will meet with NCDOT to verify right-of-way access for Encroachment Agreement as well as plan details.
 - 1.3.6 The SUBCONSULTANT will meet with OWNER'S representative at the conclusion of Final Design to review the Project.

- 1.4 Project Tracking

- 1.4.1 The SUBCONSULTANT shall prepare monthly invoices for its services in a format acceptable to the CONSULTANT.
 - 1.4.2 The SUBCONSULTANT shall maintain a project cost accounting system throughout the life of the Project.
 - 1.4.3 The SUBCONSULTANT shall maintain a project filing system throughout life of the Project to use for storage and retrieval of project documents.
 - 1.4.4 The SUBCONSULTANT shall maintain a detailed project schedule for scope of services such that actual progress versus the anticipated schedule can be tracked easily. Initial construction schedule will estimate expected duration of construction while detailing general functions such as show drawing submittals and reviews, construction mobilization, construction (to substantial completion), final construction completion and project closeout that begin after contract award. Project schedule will, at a minimum, be updated upon completion of the Preliminary Engineering Evaluation and upon completion of the Final Design and concurrently with the preparation of the Opinion of Probable Cost. After the project is bid, the Contractor will then be responsible for maintaining the schedule.

2.0 Design Services

2.1 Preliminary Design (35% Submittal): utilizing the finalized surveying and mapping provided by the CONSULTANT, the SUBCONSULTANT will develop preliminary plans and details for the proposed project as follows:

2.1.1 Scope:

4.1.1.1 Upgrading the existing Town of Lake Lure WWTP triplex influent PS to three (3) 320 gpm, 10 HP pumps.

4.1.1.2 Converting a portion of the existing Town of Lake Lure WWTP into the 1st force main PS with a capacity of 900 gpm at 259' TDH.

4.1.1.3 Design of the force main from PS # 1 to PS # 2.

4.1.1.4 Design of the 2nd force main PS with a capacity of 900 gpm at approximately 153' TDH.

2.1.2 Prepare conceptual layout to define service area and scope of project using best available data. Meet with the CONSULTANT and the OWNER to confirm project design requirements.

2.1.3 Evaluate roadway repair options of permanent patch or temporary patch with overlay and include in Engineer's Opinion of Probable Construction Costs.

2.1.4 Prepare preliminary horizontal and vertical geometry. Plans shall not include profiles for the alignments unless specific obstacles warrant an exploded view for the area (35% Submittal).

2.1.5 The SUBCONSULTANT shall submit one (1) copy of the Preliminary Design on 22" x 34" sized paper. The CONSULTANT and the OWNER shall have 14 days to complete review and provide comments. The SUBCONSULTANT shall meet with the CONSULTANT and the OWNER to discuss Preliminary Design at the time of plan submittal.

2.2 Design – 60% Complete: Using the Preliminary Design drawings and comments provided by the CONSULTANT and the OWNER, the SUBCONSULTANT will develop 60% plans for the proposed project as follows:

2.2.1 Prepare 60% complete plan sheets for the sewer line at 1" = 40' scale or larger.

2.2.2 Prepare 60% complete construction detail sheets and cover sheet.

2.2.3 Prepare preliminary quantity and construction cost opinions.

2.2.4 Submit three (3) copies of the 60% Submittal on 22" x 34" sized paper. The CONSULTANT and the OWNER shall have 14 days to complete review and provide comments. The SUBCONSULTANT shall meet with the CONSULTANT and the OWNER to discuss 60% Submittal at the time of plan submittal in order to discuss easement or other issues related to the proposed alignment.

2.3 Final Design – 90%/100% Submittals: Using the 60% Submittal and comments provided by the OWNER, the SUBCONSULTANT will develop plans and specifications for the proposed project as follows:

- 2.3.1 Finalize horizontal and vertical geometry.
- 2.3.2 Prepare final design plan sheets including Cover Sheet, Plan and Profile Sheets of the sewer lines (horizontal scale at 1:40 and vertical scale at 1:4).
- 2.3.3 Prepare final construction documents showing the proposed collection system including:
 - a) Location of above ground visible obstructions which are within the street and other public or private rights-of-way,
 - b) Location of known existing water, sewer and storm drain lines within these rights-of-way which may be determined from existing maps and visible field features. The SUBCONSULTANT will not be required to locate existing underground water and sewer services except those which can be readily identified from visible meter boxes and/or cleanouts.
 - c) The SUBCONSULTANT shall endeavor to locate and shall show on the design drawings underground utilities, as marked or located by the appropriate utility company.
 - d) The SUBCONSULTANT shall identify from existing maps and visible field data, existing water and sewer lines, cleanouts and meter boxes within the area in which the new sewer lines are to be installed.
 - e) The SUBCONSULTANT shall survey private wells within 100 feet of new sewer lines.
- 2.3.4 Prepare final standard sewer line details in accordance with the OWNER'S standards, erosion control details, and street restoration details in accordance with prescribed criteria from the OWNER/NCDOT standards (90% Submittal and 100% Submittal). Prepare revisions based on markups from the CONSULTANT and the OWNER'S comments at 90% Submittal and 100% Submittal.
- 2.3.5 Prepare erosion and sedimentation control plan.
- 2.3.6 Development of project sequencing and phasing.
- 2.3.7 Prepare final quantity take-off, Bid Schedule, and the SUBCONSULTANT'S Opinion of Probable Construction Cost. The SUBCONSULTANT'S Opinion of Probable Construction Cost will be submitted with the 90% Submittal and updated prior to the Bid Opening.
- 2.3.8 Prepare plans, specifications including technical specifications suitable for permitting, and Special Conditions and assist the CONSULTANT and the OWNER with preparation of other related documents for inclusion in the project specifications. The specifications shall adhere to the OWNER standard contract documents and technical specifications.
- 2.3.9 Forward plans and specifications to the CONSULTANT and the OWNER for review and meet with the CONSULTANT and the OWNER to obtain final comments prior to permitting submittal. For the 90% Submittal, the

SUBCONSULTANT will submit one (1) copy. For the 100% Submittal (Contract), the SUBCONSULTANT will submit one (1) reproducible set, one (1) digital set and four (4) paper copies. The SUBCONSULTANT shall provide four (4) sets of contract documents and plans at the bidding stage to the CONSULTANT and the OWNER.

2.4 Miscellaneous

- 2.4.1 Traffic Control Plans including road detours is not anticipated. Traffic Control Plans are anticipated to be lane closures in accordance with NCDOT standards and the Manual of Uniform Traffic Control (MUTCD) and will be provided to the OWNER if needed for the encroachment submittal.

3.0 Permitting

Utilizing the final design plans, the SUBCONSULTANT will prepare and submit applications for the permits necessary to allow for construction of the project. The SUBCONSULTANT cannot guarantee any regulatory approval or a timeframe in which that approval might be granted. The CONSULTANT and the OWNER should be aware that significant delays can occur during regulatory review, and those delays may impact project schedule and scope of work. No such delays are currently anticipated, but should any materialize, the SUBCONSULTANT will present to the CONSULTANT and the OWNER the most feasible alternatives for addressing the matter causing the delay.

The SUBCONSULTANT shall be available to answer inquiries made by the various regulatory agencies during their reviews of the project. This shall include but not be limited to notification and/or application to:

3.1 DOT for Encroachment –

- 3.1.1 The SUBCONSULTANT shall submit a complete encroachment agreement application to NCDOT (and/or the municipality and/or County as necessary). All correspondence and work necessary to process the permit shall be the SUBCONSULTANT'S responsibility.

3.2 Environmental Report –

- 3.2.1 The SUBCONSULTANT shall complete work necessary to complete an NCDEQ Environmental Report and obtain a Categorical Exclusion (CE) and/or a Finding of No Significant Impact (FONSI). The State Environmental Policy Act (SEPA) standards apply.
 - a) Preliminary Field Evaluation - To ensure that the project's scoping letters accurately describes known environmental resources along the proposed alignments, and to most efficiently organize and conduct subsequent detailed field evaluation and mapping, a preliminary evaluation will be conducted by the SUBCONSULTANT.
 - b) Formal Scoping – The SUBCONSULTANT will prepare and submit a formal scoping letter and map depicting the existing and proposed wastewater facilities, construction areas, and approximate extents of existing natural resources. The scoping document will be sent to the US Fish and Wildlife Service (USFWS), United States Army Corps of

Engineers (USACE), North Carolina State Historical Preservation Office (SHPO), and the State Clearinghouse for their formal review and comment regarding the proposed project's natural and cultural resource impacts.

- c) Formal Environmental Report - Findings and information obtained during the scoping process will be incorporated into the ER document. The ER will address in detail the components necessary to document the environmental due diligence used both in site design and implementation.
- d) Project Need and Alternatives – The SUBCONSULTANT will incorporate the design alternatives and selection criteria detailed in the Preliminary Engineering Report to summarize and document the selected alternative.
- e) Existing Environment and Project Impacts – The SUBCONSULTANT will review existing data, conduct detailed field investigations consistent with standard methods and/or agency requirements, and prepare the ER according to SRF guidelines, supplemented by regulatory agency comments and responses thereto. Phase 1 environmental site assessment is not anticipated and therefore has been excluded.

Issues to be addressed include land use, soils, important farmlands, scenic and recreational resources, archaeological and historic resources, air quality, noise levels, groundwater and surface water resources, water quality impacts, fish and aquatic habitats, wildlife and terrestrial habitats, forestry resources, jurisdictional wetlands, federal and state protected species, and introduction of toxic substances. Specific methods for some of this environmental data collection are described in subsequent sections.

The ER will discuss direct impacts of project construction and operation and indirect and cumulative impacts, including the impacts of induced growth, based on the approved Secondary Cumulative Impact Mitigation Program (SCIMP) language. Emphasis will be placed on how that language will avoid and minimize secondary and cumulative impacts.

- f) Water Quality - The ER will summarize DWQ water quality classifications and published water quality data for water bodies served by the project. Documented water quality problems, if any, and anticipated benefits of the project will be discussed.

The SUBCONSULTANT will summarize local land use plans, programs, ordinances and enforceable provisions that protect water quality and riparian corridors from adverse impacts from urban development, with particular attention to:

- Critical habitat protection
- Wildlife corridor protection and maintenance
- Floodplain protection
- Open space protection
- Stormwater management
- Low-impact development
- Forest restoration
- Native species revegetation
- Invasive/exotic species control
- Aquatic life passage
- Utility location
- Construction site sediment management
- Disturbance stabilization
- Stream impact mitigation
- Stream stabilization
- Conservation easement establishment

- g) Aquatic and Terrestrial Habitat – The CONSULTANT will review the most up to date aerial photographs and soils and wetland maps of the expansion and service areas. The ER will describe and map land uses such as developed land, agricultural land, wetlands, and forests, and describe stream characteristics relevant to habitat quality.

The ER will assess impacts of the project on prime and unique farmland, forestry resources, fishery and wildlife resources, terrestrial and aquatic communities, and other important land values. In accordance with the newly released North Carolina Department of Environment and Natural Resources (NCDENR) Guidance for Preparing SEPA Documents and Addressing Secondary and Cumulative Impacts, the EA will summarize measures detailed in the approved SCIMP for avoiding and minimizing impacts, and for post-construction restoration and land management where impacts are unavoidable.

- h) Cultural Resources - Using the offices of the State Clearinghouse, a scoping letter will be sent to the SHPO, which is both a state and federal agency under Sec. 106 of the National Historic Preservation Act. SHPO may decide that this project is not in an area likely to affect cultural resources and reply with a "No Comment" indicating that no cultural resource investigations are necessary. If, however, the SHPO declares that the project may disturb previously unsurveyed areas within a general area of known archaeological resources, the SHPO may request a Phase 1 Archaeological Survey or an investigation of a nearby historic site.

Should SHPO request an investigation, the SUBCONSULTANT and our licensed archaeological sub-contractor will address this issue as an additional service upon the CONSULTANT's authorization.

3.3 NCDEQ – Land Resources – Erosion and Sediment Control Permit

- 3.3.1 The SUBCONSULTANT will prepare a cover letter, application form, checklist, narrative with pertinent design calculations, construction sequencing and details and submit the items to the Regional Office for review and approval. All correspondence with NCDEQ – Land Resources required to process the permit shall be the SUBCONSULTANT'S responsibility.

3.4 Jurisdictional Waters and Wetland Permitting

- 3.4.1 The scope of work includes Jurisdictional Water and Wetlands delineation for the sewer lines and obtaining necessary regulatory permits for the project.
- 3.4.2 The SUBCONSULTANT will conduct preliminary evaluations of existing environmental conditions throughout the proposed force main corridor to determine the routes with the least impact to USACE and DWQ jurisdictional wetlands and waters. Upon approved preliminary alignment selection, the SUBCONSULTANT will:
- a) Conduct formal wetland and waters delineations throughout the proposed force main corridor using criteria of the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and supplementary technical literature for hydric soil, hydrology, and hydrophytic vegetation indicators.
 - b) Identify non-wetland stream channels using USACE and DWQ field indicators, including the latest version of DWQ's stream rating form for determining origins of intermittent and perennial streams.
 - c) Prepare USACE wetland determination data sheets and Jurisdictional Determination forms to support and formalize their findings.
 - d) Flag beaver ponds and man-made impoundments that qualify as jurisdictional waters at the edge of "normal pool" based on vegetation or other appropriate indicators.

Upon receipt of the project's NEPA documentation (e.g. Finding of No Significant Impact), the SUBCONSULTANT will use the results of the Wetland Delineation to complete and submit a PreConstruction Notification (i.e. permit application) to the COE. It is assumed that the project will be permitted under Nationwide Permit 12 (Utility Line Activities). Should it be requested, the SUBCONSULTANT will conduct a site visit with COE staff to verify/adjust the extent and location wetlands/waters.

The SUBCONSULTANT will recommend measures to avoid and minimize adverse impacts and comply with regulatory agency guidelines. If the project involves construction in jurisdictional waters or wetlands, the SUBCONSULTANT will recommend strategies for complying with USACE's Nationwide Permitting Program and NC DWR's Section 401 General Water Quality Certification Program and list the relevant permit conditions that must

be met.

3.5 USACE for Stream Crossing(s) –

3.5.1 The SUBCONSULTANT shall complete a permit application for the utility construction of a force main across waters of the state in accordance with the requirements of the US Code, USACE, and the NCDEQ. All correspondence with the USACE and NCDEQ and other necessary work to process the permit shall be the SUBCONSULTANT'S responsibility. Other fees and other required legal documentation shall be provided by OWNER.

3.6 DOT for Driveway Application –

3.6.1 The SUBCONSULTANT shall submit a complete driveway application to NCDOT. All correspondence and work necessary to process the permit shall be the SUBCONSULTANT'S responsibility.

3.7 NCDEQ DWQ Fast Track Application for Gravity Sewers, Pump Stations, and Force Mains –

3.7.1 The SUBCONSULTANT will prepare a cover letter, application form, check-list, narrative with pertinent design calculations, construction plans and details and submit the items to the Regional Office for review and approval. All correspondence with NCDENR – DWQ required to process the permit shall be the SUBCONSULTANT'S responsibility.

Permit fees shall be submitted by the SUBCONSULTANT and reimbursed by the CONSULTANT via the OWNER through reimbursable expenses.

4.0 Bidding Assistance

As noted previously, the Project is anticipated to bid as one Contract. The CONSULTANT shall coordinate advertisement in accordance with NC General Statute Chapter 143, Article 8 and bid opening date; conduct Pre-Bid Meeting and issue Pre-Bid Meeting Agenda and Minutes; and conduct bid opening. The CONSULTANT shall prequalify products submitted in accordance with bidding documents for "Or- equal" status. Pre-qualification is limited to three (3) additional major equipment items beyond that specified. The OWNER'S Purchasing Department shall conduct a background check of the most responsive Bidder and recommend and issue Notice of Award.

The SUBCONSULTANT will provide bidding assistance including the following:

- 4.1 Review submittals and make recommendations for rejection of contractors from prequalification submittals should the CONSULTANT and the OWNER elect to prequalify contractors.
- 4.2 Attend Pre-Bid Meeting
- 4.3 Provide Addenda as appropriate to clarify, correct, or change the Bid Documents. The SUBCONSULTANT has assumed a maximum of two (2) addenda for establishing a budget.
- 4.4 Provide plan interpretations to the CONSULTANT and the OWNER to clarify prospective Bidder questions. The CONSULTANT and/or the OWNER will provide in writing those Bidder questions that require clarification.

4.5 The SUBCONSULTANT shall accept and review for compliance with specifications all shop drawings or other submittals.

5.0 Community Outreach Meetings

The OWNER anticipates conducting three (3) meetings during the Design Phase and prior to commencing construction. The intent of the meeting(s) is to make the impacted citizens, residents and property owners aware of the Project, its layout, impact and schedule. The OWNER will be responsible for notifying residents and property owners of the date, time and location and purpose of meetings and arranging the facility to hold the meeting. The OWNER will preside over the meeting and will be responsible for preparing and conducting the meeting and summarizing comments and issues that may require adjustments to design and or construction.

The SUBCONSULTANT will attend three (3) meetings and be prepared to assist in responding to questions and comments at the CONSULTANT's and the OWNER'S direction. The SUBCONSULTANT may also be requested to prepare meeting exhibits to illustrate project location, alignment and work outside right of way.

The OWNER also anticipates meeting individually with each impacted property owner to review the location of easements and discuss easement acquisition. The SUBCONSULTANT will attend up to six (6) meeting(s) with the OWNER for impacted property owners. While more than one meeting may occur on the same trip, the SUBCONSULTANT has budgeted for six (6) separate trips to support the OWNER with easement acquisition. The SUBCONSULTANT will furnish a competent representative familiar with the design and easement to be onsite one hour for each meeting.

6.0 Construction Administration / Observation

The SUBCONSULTANT is anticipated to provide limited construction administration for the project. The scope is anticipated to be one contract. The total anticipated construction period for the contract is estimated to be 360 calendar days. The SUBCONSULTANT is anticipated to provide a Construction Observer or Inspector on an as needed basis to monitor construction activities (start of construction is defined by Notice to Proceed date to contractor). The SUBCONSULTANT'S explicit responsibilities are defined below:

- 6.1 The SUBCONSULTANT shall accept and address Contractor's questions during construction when directed by the CONSULTANT.
- 6.2 The SUBCONSULTANT shall recommend change orders and work change directives to the CONSULTANT and the OWNER, as appropriate, and assist with the preparation of change orders and work change directives as required.
- 6.3 The SUBCONSULTANT shall assist the CONSULTANT and the OWNER with decisions on submitted issues relating to acceptability of Contractor's work or the interpretation of the requirements of the Contract Documents.
- 6.4 The SUBCONSULTANT shall accept and address questions from NCDOT, other utility owners, and other impacted parties during construction.
- 6.5 The SUBCONSULTANT shall issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of the Work and only upon request of the CONSULTANT and/or the OWNER. Clarifications will be returned

to the OWNER, who will issue to Contractor. The SUBCONSULTANT has estimated two (2) clarifications to establish the budget.

- 6.6 Shop Drawing Review – The SUBCONSULTANT shall review and approve or take other appropriate action with respect to Shop Drawings, samples and other data which Contractor is required to submit, but only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents.

7.0 Loan Administration

The SUBCONSULTANT shall assist the CONSULTANT with providing the OWNER with loan administration to include the following list of services:

- 7.1 Necessary coordination with LGC
- 7.2 Necessary coordination with NCDEQ Division of Water Infrastructure (DWI)
- 7.3 Completion of final project close-out package in compliance with NCDEQ DWI

The actual scope of this work will be further defined as potential NCDEQ DWI requirements are identified as well as any necessary construction phase services. Therefore, the allowance for this task, included in Attachment B, Basis of Compensation shall be adjusted accordingly with OWNER's written approval.

8.0 User Charge Assistance

The SUBCONSULTANT shall assist the CONSULTANT and the OWNER with the development of proposed User Charges to include the following:

- 8.1 Review financial goals and policy objectives. Review current budgets, existing debt obligations, capital improvement plans, and proposed loan payments.
- 8.2 Prepare a five-year financial plan and determine annual revenue requirements for the water and sewer department.
- 8.3 Examine the future impact of issuing new long-term debt related to potential water and wastewater improvements.
- 8.4 Recommend water and wastewater rates and prepare rate schedules for implementation two (2) times including a interim rate step and final rate step upon project completion.
- 8.5 Present preliminary recommendations to the Town Council to review the assumptions and conclusions from the financial plan and rate analyses.
- 8.6 Prepare a water and wastewater rate study letter report to document the analyses performed during the study.
- 8.7 Assist the Town in preparing a public notice of proposed water and wastewater rate increases.
- 8.8 Present final water and wastewater rate recommendations during a public hearing(s) to adopt new rates. The SUBCONSULTANT has budgeted for two (2) public hearings.

The actual scope of this work will be further defined as necessary based on any needs of the OWNER. Therefore, the allowance for this task, included in Attachment B, Basis of Compensation shall be adjusted accordingly with OWNER's written approval.

9.0 Additional Services

Engineering services described in this Contract do not include certain categories of work, which are usually referred to as "Additional Services." The SUBCONSULTANT will provide Additional Services only upon receipt of written authorization from the CONSULTANT and/or the OWNER. Additional services shall be rendered in accordance with the SUBCONSULTANT'S standard hourly rates unless otherwise agreed to by both parties. Additional Services include:

- 9.1 Engineering evaluations required in connection with determining the financial feasibility of the project or multiple alternatives aside from the initial study.
- 9.2 Services in making revisions to drawings and specifications for the acceptance of substitute materials or equipment other than "or equal" items and services after the award of the construction contract in evaluating and determining the acceptability of a substitution.
- 9.3 Services resulting from significant changes in the scope, extent, or character of portions of the project designed or specified by the SUBCONSULTANT or its design requirements including, but not limited to, changes in size, complexity, the OWNER'S schedule, character of construction or method of financing and revising previously accepted studies, reports, drawings, specifications, or Contract Documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes, standards, or orders enacted subsequent to the Effective Date of this Contract or are due to any other causes beyond the SUBCONSULTANT'S control.
- 9.4 Provide construction surveys and staking to enable Contractor to perform its work and providing other special field surveys.
- 9.5 Environmental Assessments (EA).
- 9.6 Environmental Impact Statements (EIS).
- 9.7 Formal protected species surveys.
- 9.8 Wetlands, stream and protected species mitigation services.
- 9.9 Additional drawings and documents as necessary for the receipt of Alternate Construction bids or multiple contracts.
- 9.10 Evaluate an unreasonable claim or an excessive number of claims submitted by Contractor or others in connection with the work.
- 9.11 Review a Shop Drawing more than three times, as a result of repeated inadequate submissions by the Contractor.
- 9.12 Renderings or models of the project or parts thereof.
- 9.13 Extended services required during construction that are made necessary by (1) work damaged by fire or other cause during construction, (2) prolongation of the contract time, and (3) Contractor's defaults.
- 9.14 Serving as a SUBCONSULTANT or witness for any legal proceeding.
- 9.15 Archeological services.
- 9.16 Geotechnical investigation.

- 9.17 Work associated with bidding assistance if the OWNER elects not to award the project immediately but to bid the Project again at a later date or split the Project into multiple contracts. Should this situation occur, the OWNER and the SUBCONSULTANT will then agree to appropriate compensation for the SUBCONSULTANT'S additional work.
 - 9.18 Determining the acceptability of substitute materials and equipment proposed during the Bidding or Negotiating Phase when substitution prior to the award of contracts is allowed by the Bidding Documents.
 - 9.19 Title Searches or Abstracting
 - 9.20 Easement Acquisition / Platting.
 - 9.21 Field Survey and Base Mapping.
 - 9.22 As-Built Survey or Record Drawings.
 - 9.23 Other professional services related to the Project, but not specifically described in the Scope of Services, which are identified and authorized in writing by the OWNER'S authorized representative.
 - 9.23 Other services performed or furnished by the SUBCONSULTANT not otherwise provided for in the SUBCONSULTANT'S Scope of Basic Services.
2. Terms of the Prime Agreement. The CONSULTANT has a prime agreement with the OWNER which contains terms and conditions defining the prime agreement between the OWNER and the CONSULTANT. The terms and conditions of the prime agreement are hereby made a part of this Agreement between the CONSULTANT and SUBCONSULTANT by reference, and any terms referring to the CONSULTANT, architect, architect-engineer or similar terms, when used in the prime agreement are construed to also mean the SUBCONSULTANT except as noted in Item 8 of this SUBCONSULTANT Agreement.
3. Schedule. SUBCONSULTANT shall expeditiously execute its Scope of Services consistent with the OWNER/CONSULTANT Agreement so as not to cause any delay or disruption in CONSULTANT'S services, the services of other consultants retained by CONSULTANT, or to the Project.

<u>Task</u>	<u>Estimated Completion Date</u>
Planning & Project Management	
- Planning	September 30, 2016
- Project Management	November 2019
Design Surveys & Mapping	April 30, 2016
Engineering Design	May 2017
Permitting (estimated at 45 days)	July 2017
Construction Bidding	November 2017
Construction	February 2018
Construction Completion	February 2019

4. Coordination. SUBCONSULTANT shall coordinate its services with CONSULTANT. Coordination with the OWNER will be the responsibility of the CONSULTANT, and the SUBCONSULTANT

shall not contact the OWNER directly unless so authorized by the CONSULTANT. The SUBCONSULTANT shall designate a Project Manager to coordinate day-to-day activities with the CONSULTANT. SUBCONSULTANT shall not change the assigned Project Manager without prior consent of the CONSULTANT.

5. Compensation. Payments to the SUBCONSULTANT will be made by the CONSULTANT for services set forth in above in a Lump Sum Fee, on an hourly plus expenses basis, or on an hourly basis as detailed below and in the attached rate schedule.

ITEM	DESCRIPTION	UNIT	WK DICKSON
1	Planning & Project Management		
1.1	Project Formulation & Development	Lump Sum	\$13,000
1.2	Kick Off Meeting	Lump Sum	\$3,000
1.3	Meetings	Lump Sum	\$15,000
1.4	Project Tracking / Management	Lump Sum	\$4,000
2	Environmental		
2.1	Wetlands Delineation	Lump Sum	\$30,000
2.2	Environmental Report	Lump Sum	\$56,000
2.3	USACE - Jurisdictional Waters / Wetlands Permitting	Lump Sum	\$16,000
3	Engineering Design		
3.1	35% Design	Lump Sum	\$112,000
3.2	60% Design	Lump Sum	\$55,000
3.3	90% Design	Lump Sum	\$55,000
3.4	100% Design	Lump Sum	\$51,000
3.5	Specifications	Lump Sum	\$26,000
3.6	QA/QC	Lump Sum	\$11,000
4	Permitting		
4.1	NCDOT Encroachment	Lump Sum	\$48,000
4.2	NCDOT Traffic Control Plans	Lump Sum	\$24,000
4.3	PS Driveway	Lump Sum	\$6,000
4.4	NCDEQ - Land Resources	Lump Sum	\$20,000
4.5	NCDEQ - DWR	Lump Sum	\$14,000
4.6	USACE - Stream Crossings	Lump Sum	\$22,000
5	Bidding	Lump Sum	\$15,000
6	Community Outreach Assistance & Meetings	Lump Sum	\$12,000
7	Construction Administration	Lump Sum	\$10,000
8	Construction Observation	NTE	\$20,000
9	Post Construction		
9.1	Record Drawings	Lump Sum	\$1,000
9.2	Certification	Lump Sum	\$1,000
9.3	Pre Bid & Post Bid Loan Administration Assistance	NTE	\$10,000
9.4	User Charge Assistance	NTE	\$14,000
10	Permit Fees	NTE	\$1,000
	Subconsultants		
11	Electrical Design	Lump Sum	\$32,000
12	Electrical Bidding	Lump Sum	\$1,000
13	Electrical CA/CO	Lump Sum	\$15,000
19	Total		\$713,000

All payments are contingent upon the SUBCONSULTANT's work being acceptable to the CONSULTANT, satisfactory invoicing to the CONSULTANT, and upon payment by the OWNER

to the CONSULTANT for the work so performed. CONSULTANT will pay SUBCONSULTANT for additional services approved in advance in writing which are not part of the Scope of Services.

Payments to the SUBCONSULTANT for services rendered under this Agreement will be made by the CONSULTANT based upon invoices submitted to the CONSULTANT for the amount and value of the work and services performed by the SUBCONSULTANT. The SUBCONSULTANT will bill CONSULTANT prior to the 25th day of each month for work completed during that month. Payment to the SUBCONSULTANT will be due within 15 calendar days after payment has been received by the CONSULTANT from the OWNER.

For Lump Sum work, a percentage of the Lump Sum Fee will be billed on the last day of each month. The percentage billed will be the percentage of work estimated to be completed as of the day of billing.

For hourly plus expenses basis work, the CONSULTANT will bill the OWNER on the last day of each month for the labor and expenses incurred during that month.

For hourly work, the CONSULTANT will bill the OWNER on the last day of each month for the labor incurred during that month.

6. Accuracy of Work. SUBCONSULTANT's services shall be performed consistent with the standard of care ordinarily exercised by consultants practicing in the same or similar locale as this project, on projects of similar scope and nature. The SUBCONSULTANT shall be responsible for the accuracy and completeness of its work and shall promptly make necessary revisions or corrections resulting from errors and omissions on the part of the SUBCONSULTANT without additional compensation. Acceptance of the work by the CONSULTANT will not relieve the SUBCONSULTANT of the responsibility for subsequent correction of any such errors or omissions and the clarification of any ambiguities.
7. Acceptability of Work. Acceptability of services performed under this Agreement shall be determined by the CONSULTANT.
8. Indemnification. CONSULTANT and SUBCONSULTANT each agree to indemnify and hold the other harmless, and their respective officers, employees, agents and representatives, from and against liability for claims, losses, damages and expenses, including reasonable attorneys' fees, to the extent such claims, losses, damages, or expenses are caused or alleged to have been caused by the indemnifying party's negligent acts, errors or omissions. In the event claims, losses, damages or expenses are caused by the joint or concurrent negligence of CONSULTANT and SUBCONSULTANT, they shall be borne by each party in proportion to its negligence.
9. Claim for Liens. As a separate, independent Contractor, the SUBCONSULTANT shall hold the CONSULTANT harmless from any and all claims for liens for labor, services or materials furnished to the SUBCONSULTANT in connection with the performance of his obligations under this Agreement.

10. Compliance with Laws. The SUBCONSULTANT shall comply with, and will be responsible for, any and all fees and procurements regarding applicable federal, state, and local laws, ordinances, and licensing requirements in carrying out the provisions of this Agreement.
11. Nondiscrimination. The SUBCONSULTANT shall comply with the provisions of federal, state, and local laws in regard to nondiscrimination. Any failure to comply shall be the sole fault of the SUBCONSULTANT, it being understood that the CONSULTANT cannot assume responsibility for the SUBCONSULTANT's compliance.
12. Subletting, Assignment or Transfer. Except as agreed at the time of execution of this Agreement, neither this Agreement nor any portion thereof shall be assigned, transferred or subcontracted without the prior written consent of the CONSULTANT. SUBCONSULTANT shall be fully responsible to CONSULTANT for any work subcontracted including negligent acts and/or omissions of the Subcontractor. SUBCONSULTANT is responsible for insuring that Subcontractor complies with all applicable provisions of this agreement and maintains minimum levels of insurance as outlined herein.
13. Termination. This Agreement may be terminated by mutual agreement between CONSULTANT and the SUBCONSULTANT. In addition, CONSULTANT, with 7 calendar days notice, may terminate this Agreement (i) for convenience; (ii) if the Prime Agreement is terminated; or (iii) for cause in the event SUBCONSULTANT fails to perform any of its duties, obligations or services called for in this Agreement and does not remedy the failure or provide a plan for remedy acceptable to the CONSULTANT within ten (10) days from the date of delivery of a written notice to SUBCONSULTANT. In the event of termination, with or without cause, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports prepared by the SUBCONSULTANT shall, at the option of CONSULTANT, become its property. The SUBCONSULTANT shall be entitled to receive only compensation for services performed and reimbursements incurred prior to termination; provided, in the event of termination for cause, CONSULTANT may withhold payment until completion of the Project in order to determine the costs of completing SUBCONSULTANT's services as well as other costs or damages caused by SUBCONSULTANT, which CONSULTANT may offset against amounts otherwise due SUBCONSULTANT.
14. Insurance. The following coverage and limits shall be provided during the life of the contract:
 - a. Workers Compensation Insurance, \$500,000/each accident, \$500,000/disease each employee and \$500,000/disease -- policy limit or greater amount if required by the state(s) in which the work is to be performed.
 - b. Commercial General Liability Insurance, including coverage for premises and operations, products and completed operations, independent contractors, and contractual liability. Such insurance shall be \$1,000,000 per occurrence and \$2,000,000 in the aggregate, and CONSULTANT shall be named as additional insured. Coverage shall be primary and non-contributory with any coverage maintained by the CONSULTANT.

- c. Automobile Liability Insurance for all owned, hired and non-owned automobiles in the amount of \$1,000,000 per occurrence. Coverage shall be primary and non-contributory with any coverage maintained by the CONSULTANT.
- d. Professional Liability Insurance of \$1,000,000 aggregate/\$1,000,000 per claim. Coverage shall be maintained for 3 years beyond completion of work.
- e. Aviation Insurance is required if SUBCONSULTANT utilizes a plane for the project. A smooth limit of \$1,000,000 (no sub-limits accepted) is required. Additional limit amounts could be required if SUBCONSULTANT will be carrying passengers or flying in a congested area. CONSULTANT shall be named as additional insured.

SUBCONSULTANT shall provide certificates of insurance to CONSULTANT prior to commencement of work. SUBCONSULTANT and their insurance carrier agree to waive their rights of subrogation against CONSULTANT. Providing and maintaining adequate insurance as defined above is a material obligation of the SUBCONSULTANT and is of the essence in this contract. If CONSULTANT is damaged by the failure of the SUBCONSULTANT to purchase and maintain the required insurance, the SUBCONSULTANT shall bear all reasonable costs attributable thereto.

15. E-Verify Affidavit. SUBCONSULTANT shall provide a signed affidavit verifying they comply with applicable state and federal laws concerning verification of their employee's eligibility to work in the United States before providing any services for the CONSULTANT. Furthermore, the SUBCONSULTANT will ensure and obtain the affidavit from any additional SUBCONSULTANT they retain to perform services for the CONSULTANT under this agreement. Please refer to Attachment A for the Affidavit.
16. Publication and Publicity. Articles, papers, bulletins, reports, or other material reporting the plans, progress, analyses, or results and findings of the work conducted under this Agreement shall not be presented publicly or published without prior approval in writing by the CONSULTANT.
17. Ownership of Materials: It is agreed that upon receipt of final payment, all final documents, studies, surveys, drawings, maps, models, photographs and reports prepared by the SUBCONSULTANT under this Agreement, shall be considered the property of the CONSULTANT/OWNER. The SUBCONSULTANT may retain such copies thereof as they desire. Any reuse by CONSULTANT/OWNER other than for this project shall be at CONSULTANT/OWNER's sole risk and without liability or legal exposure to SUBCONSULTANT.
18. Dispute Resolution. If a dispute greater than \$10,000 arises out of or relates to this contract, or the breach thereof, and if this dispute cannot be settled through negotiation, the parties agree first, prior to litigation or any other form of dispute resolution, to try in good faith to settle the dispute by mediation. The parties shall first attempt to select a mutually acceptable mediator, and if the parties agree upon a mediator, the mediation shall be conducted in accordance with the North Carolina Rules Implementing Statewide Mediated Settlement Conferences in Superior Court Civil Actions, then in effect, or as the parties may otherwise agree. If the parties cannot agree upon a mediator, the selection of a mediator and the mediation process shall be conducted by the American Arbitration Association under its then current Construction Industry Arbitration Rules

and Mediation Procedures. The venue for the mediation shall be in Charlotte, North Carolina, unless the parties otherwise agree.

In the event CONSULTANT is required to arbitrate or mediate any dispute which arises out of transactions, occurrences, issues or facts related to the SUBCONSULTANT's performance of their obligations under this agreement, then at CONSULTANT's election, any claim, dispute or other matter related to this Agreement may be joined in and consolidated with such other arbitration or mediation proceeding.

In the event CONSULTANT agrees or is otherwise required to assist OWNER in the prosecution or defense of any claim arising out of the Project, and neither CONSULTANT nor SUBCONSULTANT are parties to such dispute, at CONSULTANT's request, SUBCONSULTANT shall provide assistance as well, and without compensation, unless payment for such services has been negotiated by CONSULTANT with OWNER, or such services are otherwise by contract, or at law. In no event shall CONSULTANT be obligated to compensate SUBCONSULTANT for such services unless the parties agree to payment in writing.

19. Successors and Assigns. This Agreement shall be binding upon the successors and assigns of the respective parties hereto.
20. Governing Law and Venue. Interpretation and enforcement of this SUBCONSULTANT Agreement shall be pursuant to the law of the state of North Carolina. Venue for any litigation under or related to this contract shall be in the courts of Mecklenburg County, North Carolina.
21. Entire Agreement. This Agreement constitutes the entire contract between the parties, and it shall be modified or amended only in a writing signed by both parties.

IN WITNESS WHEREOF, the parties hereto have signed their respective names to duplicate counterparts hereof on the date first below written.

CONSULTANT:

BROWN CONSULTANTS, P.A.

By: _____

Title: _____

Date: _____

Address for giving notices:

SUBCONSULTANT:

W.K. DICKSON & CO., INC.

By: _____

David Pond, PE

Title: COO, Senior Vice President

Date: _____

Address for giving notices:

616 Colonnade Drive
Charlotte, NC 28205

Designated Representative:

Name: _____

Title: _____

Phone: _____

E-mail: _____

Designated Representative:

Name: Brian L. Tripp, PE, BCEE

Title: Vice President

Phone: (704) 334-5348

E-mail: btripp@wkdickson.com

ATTACHMENT A

AFFIDAVIT of COMPLIANCE

With State E-Verify Statutes

STATE OF _____

COUNTY OF _____

I, _____ (hereinafter the "Affiant"), duly authorized by and on behalf of _____ (hereinafter the "Employer") after being first duly sworn deposes and says as follows:

1. I am the _____ (President, Manager, CEO, etc.) of the Employer and possess the full authority to speak for and on behalf of the Employer identified above.
2. Employer understands that "E-Verify" means the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law.
3. _____ Employer employs 25 or more employees in the state, and is in compliance with the provisions of state statutes. Employer has verified the work authorization of its employees through E-Verify and shall retain the records of verification for a period of at least one year.

_____ Employer employs fewer than 25 employees and is therefore not subject to the provisions of state statutes.
4. All subcontractors engaged by or to be engaged by Employer have or will have likewise complied with the provisions of state statutes.
5. Employer shall keep W.K. Dickson & Co., Inc. informed of any change in its status.

This the _____ day of _____, 20____.

Signature of Affiant

Print or Type Name: _____

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me, this the _____ day of _____, 20____.

Notary Public

My commission expires: _____

[SEAL]

W.K. DICKSON & CO., INC
Community Infrastructure Consultants
616 Colonnade Drive
Charlotte, NC 28605
Phone (704) 334-5348 Fax (704) 334-0078



Opinion of Probable Engineering Costs

Project: Lake Lure Pump Station & Force Main Project
Prime - Brown, Sub - WK Dickson; Total Revenue
Brown - 1/3 FM, CA/CO; WK Dickson - 2 PS & 2/3 FM, Env

WK Dickson No: Final
Page: One (1)

Owner: Town of Lake Lure

Date: 02/08/16

ITEM	DESCRIPTION	WK DICKSON	BROWN	
1	Planning & Project Management			
1.1	Project Formulation & Development	\$13,000	\$13,000	
1.2	Kick Off Meeting	\$3,000	\$3,000	
1.3	Meetings	\$15,000	\$29,000	
1.4	Project Tracking / Management	\$4,000	\$15,000	
2	Environmental			
2.1	Wetlands Delineation	\$30,000	\$1,000	
2.2	Environmental Report	\$56,000	\$1,000	
2.3	USACE - Jurisdictional Waters / Wetlands Permitting	\$16,000	\$1,000	
3	Engineering Design			
3.1	35% Design	\$112,000	\$33,000	
3.2	60% Design	\$55,000	\$21,000	
3.3	90% Design	\$55,000	\$21,000	
3.4	100% Design	\$51,000	\$14,000	
3.5	Specifications	\$26,000	\$4,000	
3.6	QA/QC	\$11,000	\$7,000	
4	Permitting			
4.1	NCDOT Encroachment	\$48,000	\$1,000	
4.2	NCDOT Traffic Control Plans	\$24,000	\$1,000	
4.3	PS Driveway	\$6,000		
4.4	NCDEQ - Land Resources	\$20,000	\$1,000	
4.5	NCDEQ - DWR	\$14,000	\$1,000	
4.6	USACE - Stream Crossings	\$22,000	\$1,000	
5	Bidding	\$15,000	\$20,000	
6	Community Outreach Assistance & Meetings	\$12,000	\$14,000	
7	Construction Administration	\$10,000	\$125,000	
8	Construction Observation	\$20,000	\$225,000	
9	Post Construction			
9.1	Record Drawings	\$1,000	\$24,000	
9.2	Certification	\$1,000	\$8,000	
9.3	Pre Bid & Post Bids Loan Administration Assistance	\$10,000	\$50,000	
9.4	User Charge Assistance	\$14,000	\$2,500	
	Permit Fees	\$1,000		
10	Subtotal	\$665,000	\$636,500	
	Subconsultants			
11	Electrical Design	\$32,000		
12	Electrical Bidding	\$1,000		
13	Electrical CA/CO	\$15,000		
14	Design Survey		\$225,000	
15	Easement Acquisition / Platting / Maps		\$51,000	
16	As-Built Survey		\$25,000	
17	Geotechnical		\$50,000	
18	Subtotal	\$48,000	\$351,000	
19	Total	\$713,000	\$987,500	\$1,700,500
			\$10,625,311	16.00%

Division of Responsibilities
Lake Lure Green Line Regional Sewer Interconnection
Town of Lake Lure, North Carolina
(February 4, 2016)

- 1 Planning & Project Management
 - 1.1 Project Formulation & Development – Split between Brown and Dickson.
 - 1.2 Kick Off Meeting – Split between Brown and Dickson.
 - 1.3 Meetings – Brown to take lead with secondary support by Dickson.
 - 1.4 Project Tracking / Management – Brown to take lead with secondary support by Dickson.
- 2 Environmental
 - 2.1 Wetlands Delineation – Dickson to delineation wetlands for the entire project.
 - 2.2 Environmental Report – Dickson to prepare the ER.
 - 2.3 USACE - Jurisdictional Waters / Wetlands Permitting – Dickson to prepare wetlands permitting package.
- 3 Engineering Design – Dickson – designs 2 PS and 1st 2/3rd's of FM. Brown – designs final 3rd of FM.
 - 3.1 35% Design
 - 3.2 60% Design
 - 3.3 90% Design
 - 3.4 100% Design
 - 3.5 Specifications – Dickson to prepare project specifications with input from Brown.
 - 3.6 QA/QC
- 4 Permitting
 - 4.1 NCDOT Encroachment – Dickson to take lead with support / input by Brown.
 - 4.2 NCDOT Traffic Control Plans – Dickson to take lead with support / input by Brown.
 - 4.3 PS Driveway Permit – Dickson to permit.
 - 4.4 NCDEQ - Land Resources – Dickson to take lead with support / input by Brown.
 - 4.5 NCDEQ – DWR - Dickson to take lead with support / input by Brown.
 - 4.6 USACE - Stream Crossings - Dickson to take lead with support / input by Brown.
- 5 Bidding – Brown takes lead with support / input by Dickson.
- 6 Community Outreach Assistance & Meetings – split efforts between Dickson and Brown with Brown taking the lead.
- 7 Construction Administration – Brown takes the lead / manages construction. Dickson to provide minimal assistance / support / input.
- 8 Construction Observation – Brown takes the lead / manages construction. Dickson to provide minimal assistance / support / input.
- 9 Post Construction
 - 9.1 Record Drawings – Brown prepare record drawings for the project with input / support from Dickson. Dickson to provide CAD design files to Brown for their

use in preparing the record drawings. Final record drawings to be sealed by Brown.

- 9.2 Certification – Brown takes lead for certification with minimal assistance/ support / input from WK Dickson.
- 9.3 Loan Administration Assistance – Brown takes lead with loan administrative assistance with secondary support by Dickson.
- 9.4 User Charge Assistance – Dickson provides user charge assistance support.

Subconsultants (All proposed subconsultant costs are placeholders, final value TBD).

- 11 Electrical Design – Electrical subconsultant will be under WK Dickson.
- 12 Electrical Bidding – Electrical subconsultant will be under WK Dickson.
- 13 Electrical CA/CO – Electrical subconsultant will be under WK Dickson.
- 14 Design Survey – Survey subconsultant will be under Brown.
- 15 Easement Maps – Survey subconsultant will be under Brown.
- 16 As-Built Survey – Survey subconsultant will be under Brown.
- 17 Geotechnical – Geotechnical subconsultant will be under Brown.

W.K. DICKSON & CO., INC.

2016 RATE SCHEDULE

LABOR

2016

Principal	\$ 205.00/hr.
Senior Project Manager	\$ 180.00/hr.
Project Manager	\$ 156.00/hr.
Senior Technical Manager	\$ 180.00/hr.
Technical Manager	\$ 156.00/hr.
Senior Project Engineer	\$ 146.00/hr.
Project Engineer	\$ 128.00/hr.
Senior Scientist	\$ 125.00/hr.
Scientist	\$ 110.00/hr.
Senior Designer	\$ 115.00/hr.
Designer	\$ 102.00/hr.
Senior Construction Observer	\$ 125.00/hr.
Construction Observer	\$ 97.00/hr.
Administrative Assistant	\$ 65.00/hr.

EXPENSES

Reproduction:	
♦ Xerox	Cost
♦ Blacklines	Cost
♦ Mylars	Cost
♦ Sepias	Cost
Mileage	IRS Rate (currently \$0.54/mile)
Telephone, Postage	Cost
Travel (Meals/Lodging)	Cost
Subconsultants	Cost + 10%

Note: The above rates are effective January 1, 2016. WK Dickson reserves the right to revise to reflect inflationary increases.

