

**CITY OF FAYETTEVILLE
WORK AUTHORIZATION
FOR
PROFESSIONAL SERVICES
BY
ARCADIS G&M OF NORTH CAROLINA, INC.**

In accordance with the General Services Agreement (Agreement) dated April 29, 2022 and presented as Exhibit B, between the CITY OF FAYETTEVILLE (hereinafter called OWNER) and ARCADIS G&M OF NORTH CAROLINA, INC. (hereinafter called CONSULTANT), OWNER hereby authorizes CONSULTANT to proceed and CONSULTANT agrees to perform in accordance with the terms of the Agreement and this Work Authorization, the following services for the following Project:

I. PROJECT

This Work Authorization is for professional services related to functional design of the Russell-Person St Bridge and Stream Improvement project. It is the first of a multi-phase project to design and construct one bridge replacement at Person Street (City owned bridge), three bridge replacements at Russel Street (two NCDOT and one CSX bridge) and perform stream restoration and enhancement of approximately 4,000 lineal feet of Blounts Creek in downtown Fayetteville. The primary elements of this contract include the following:

- Project Management
- Data Gathering and Analysis
- Field Review Meeting
- Conceptual Design
- Planning & Environmental
- Stream Stabilization & Restoration Design

The project will be funded by the Stormwater Enterprise Fund. See attached Exhibit A for a detailed Scope of Services.

II. AGREEMENT & SCOPE OF SERVICE

The terms of the Agreement, attached as Exhibit B, are hereby incorporated by reference as if written herein and the parties confirm that its terms are a part of this Work Authorization.

The Scope of Services to be provided by CONSULTANT, in connection with this Authorization, is provided as Exhibit A and includes planning and conceptual design for four bridge replacements and 4,000 lineal feet of stream restoration and enhancement.

The CONSULTANT shall request written confirmation and or execute an additional Work Authorization describing any scope change before performing any work beyond the scope specified in this Work Authorization. The confirmation shall identify any change in compensation and/or delay in completion which the scope changes entails and must be approved by the City Manager or his designee.

III. RESPONSIBILITIES

The responsibilities of the OWNER and CONSULTANT, in addition to those provided in the Agreement which are specific to this Project, are provided in Exhibit A.

IV. COMPENSATION

OWNER shall compensate CONSULTANT for providing the services set forth herein in accordance with the terms of the Agreement.

In the absence of a lump sum fee agreement, it is understood and agreed that:

1. CONSULTANT will perform under this Agreement on a best effort, not-to-exceed ceiling price basis and will notify OWNER when the ceiling price will be exceeded.
2. The not to exceed compensation (including travel) for this Work Authorization is \$692,000. This is not a guaranteed maximum amount but CONSULTANT shall not continue performing work in excess of this amount without further specific authorization. OWNER will be billed only for actual time worked and identified expenses.

Payment shall be made in accordance with the terms of the above referenced Agreement.

V. SCHEDULE

All tasks under this Work Authorization shall begin in April 2023 and be completed by December 2023.

VI. MISCELLANEOUS

1. The terms in this Work Authorization shall have the same meaning as provided in the Agreement.
2. As mandated by N.C. Gen. Stat. § 147-86.59(a), CONSULTANT certifies that it is not listed on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C. Gen. Stat. § 147-86.58. CONSULTANT further certifies that, in accordance with N.C. Gen. Stat. § 147-86-59(b), it shall not utilize any subcontractor found on the State Treasurer's Final Divestment List. CONSULTANT certifies that the signatory to this Work Authorization is authorized by CONSULTANT to make the foregoing statement.
3. E-Verify – CONSULTANT acknowledges that “E-Verify” is the federal E-Verify program operated by the U.S. Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. CONSULTANT further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with N.C. Gen. Stat. § 64-26(a). CONSULTANT pledges, attests and warrants through execution of this contract that CONSULTANT complies with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by CONSULTANT shall comply with any and all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Work Authorization.
4. Force Majeure – Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by an act of war, hostile foreign actions, adverse governmental actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.
5. Morality Clause – If, in the sole opinion of the City of Fayetteville, at any time CONSULTANT or any of its owner(s) or employee(s) or agent(s) (collectively

referenced as an “Actor”) engages in any one or more actions that bring disrepute, contempt, scandal, or public ridicule to the Actor or subject the Actor to prosecution or offend the community or public morals or decency or denigrate individuals or groups in the community served by the City of Fayetteville or are scandalous or inconsistent with community standards or good citizenship or may adversely affect the City of Fayetteville’s finances, public standing, image, or reputation or are embarrassing or offensive to the City of Fayetteville or may reflect unfavorably on the City of Fayetteville or are derogatory or offensive to one or more employee(s) or customer(s) of the City of Fayetteville, the City of Fayetteville may immediately upon written notice to CONSULTANT terminate this Agreement, in addition to any other rights and remedies that the City of Fayetteville may have hereunder or at law or in equity.

6. Venue and Forum Selection – The Parties expressly agree that if litigation is brought in connection with this contract and (1) the litigation proceeds in the Courts of the State of North Carolina, the parties agree that the appropriate venue shall be in Cumberland County (Twelfth Judicial District of North Carolina); or (2) the litigation proceeds in a federal court, the parties agree that the appropriate venue shall be the United States District Court for the Eastern District of North Carolina
7. Termination for Cause – In the event of substantial failure by CONSULTANT to perform in accordance with the terms of this contract, City of Fayetteville shall have the right to terminate CONSULTANT upon ten calendar (10) days written notice in which event CONSULTANT shall have neither the obligation nor the right to perform further services under this contract nor shall the City of Fayetteville be obligated to make any further payment for work that has not been performed.
8. Termination for Convenience – Upon thirty (30) calendar days’ written notice to CONSULTANT, the City of Fayetteville may, without cause and without prejudice to any other right or remedy legally available to the City of Fayetteville, terminate this Contract. Upon such notice, CONSULTANT shall have neither the obligation nor the right to perform services under this contract nor shall the City of Fayetteville be obligated to make any further payment for work that has not been performed in accordance with the terms stated herein. In such case of termination, CONSULTANT shall be paid for the completed and accepted work executed in accordance with this Contract prior to the written notice of termination. Additionally, upon mutual agreement, CONSULTANT may be paid for any completed and accepted work which takes place in order to achieve a specifically identified item in the scope of services or a milestone of the Contract, between the written notice of termination and the effective date of termination. Unless otherwise stated or agreed upon, the effective

date of termination shall automatically occur 30 days' after the written notice is sent by the City of Fayetteville.

9. Protest – Protest related to this procurement must be addressed to the Purchasing Manager for City of Fayetteville, 433 Hay St, Fayetteville, NC 28301 and shall be received, in writing, within 2 calendar days of bid award. Responses will be in writing by email and first-class mail not later than (7) calendar days following receipt of said protest by the Purchasing Manager.
10. To the extent permitted by law, CONSULTANT agrees to defend, indemnify, and hold harmless the City of Fayetteville and its elected officials, employees, agents, successors, and assigns, from any and all liability and claims for any injury or damage caused by any act, omission or negligence of CONSULTANT, its agents, servants, employees, contractors, licensees, or invitees. Indemnification of the City by CONSULTANT does not constitute a waiver of the City's governmental immunity in any respects under North Carolina law.
11. **CITY'S TERMS SUPERSEDE:** To the extent a conflict exists between the terms of this Agreement and the terms and conditions in any of the attachments to the Agreement, the terms of this Agreement shall govern.
12. Survival of Terms – All warranties, covenants, and representations contained within this contract and all applicable work authorizations, if any, shall continue in full force and effect for three (3) years after the execution and delivery of the final product, act, or service taken in furtherance of this contract. Survivability shall not be impacted, or otherwise shall not be rendered null or void, by the termination or natural expiration of this contract or other applicable work undertaken in furtherance of this contract.

CONSULTANT ACCEPTANCE:

ARCADIS G&M OF NORTH CAROLINA, INC.

BY: 

TITLE: Vice President

DATE: March 14, 2023

AUTHORIZATION BY:

CITY OF FAYETTEVILLE

BY: _____

TITLE: _____

DATE: _____

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

Jody Picarella
Chief Financial Officer

EXHIBIT A



Russell Street/Person Street Improvements

1. *Replacement of Bridges 220 & 221 on Russell Street over Blounts Creek*
2. *Replacement of CSX Bridge over Blounts Creek*
3. *Replacement of Bridge 160 on Person Street over Blounts Creek*
4. *Stream Stabilization, Enhancement, and Restoration of Blounts Creek*

Scope of Services

Arcadis Project Number: 30157333

Version 3.0

03/08/2023

Table of Contents

1.0 GENERAL.....	1
1.1 Project Background and Description	1
1.1.1 Project Area Description	1
1.2 Assumptions	2
1.3 Project Administration	2
1.3.1 Project Schedule.....	3
1.3.2 Monthly Meetings	3
1.3.3 Progress Reports.....	3
1.3.4 Quality Assurance/Quality Control (QA/QC).....	3
1.3.5 Invoice Template.....	3
2.0 MILESTONE A: ESTABLISH PURPOSE & NEED	3
2.1 Existing Conditions.....	4
2.1.1 Summary of Past Reports/Investigations	4
2.1.2 Existing Photos of Problem Area/Drainage Issues	4
2.1.3 Existing Level of Service (LOS)	4
2.2 Project Justification	4
2.2.1 Benefit/Cost Analysis (BCA)	4
2.2.2 Value Provided	5
2.2.3 Proposed Level of Service (LOS)	5
2.3 Project Benefit Statement	5
2.4 Deliverables.....	6
3.0 MILESTONE A: FIELD REVIEW MEETING	6
3.1 Purpose of Meeting	6
3.2 Deliverables.....	6
4.0 MILESTONE A: CONCEPTUAL DESIGN.....	6
4.1 Data Collection	6
4.2 Environmental Features Mapping.....	7
4.3 Conceptual Designs and Quantities.....	7

4.3.1	Horizontal Concepts	7
4.3.2	Vertical, Slope Stakes, Right of Way, Maintenance of Traffic.....	8
4.3.3	Conceptual Design Maps.....	8
4.3.4	Quantities.....	8
4.4	Cost Estimates & Mapping Limits.....	9
4.4.1	Construction, Utilities & ITS.....	9
4.4.2	Right of Way.....	9
4.4.3	Initial Mapping Limits.....	9
4.5	Conceptual Design Submittal Package.....	9
4.5.1	Express Design Screening Checklist (Project Initiation Form).....	9
4.5.2	Preliminary Structure Design Report - Type Size & Location (TS&L) Report	9
4.6	Conceptual Design Review Meeting	10
4.7	Deliverables.....	10
5.0	MILESTONES A & B: PLANNING & ENVIRONMENTAL (FINAL DESIGN)	10
5.1	Preliminary Planning Activities	10
5.1.1	Data Collection (CE Document).....	11
5.2	Early Railroad Coordination (Russell Street Bridge).....	11
5.3	Community Impact Assessment	11
5.4	Public Involvement.....	11
5.4.1	Local Officials Meeting	12
5.4.2	Public Meetings.....	12
5.4.2.1	Meeting Location Coordination.....	12
5.4.2.2	Meeting Announcement.....	12
5.4.2.3	Notice for Publication	12
5.4.3	Stakeholder Meetings.....	12
5.5	Environmental Documentation	12
5.6	Deliverables.....	13
6.0	MILESTONE B: FIELD SURVEY SERVICES (ENHANCING SURVEY)	13
6.1	Field Verification	13
6.2	Survey Requirements	13

6.3	Survey Notifications.....	14
6.4	Field Survey Project Administration	14
6.5	Survey Submittal	14
7.0	MILESTONES B & C: UTILITY COORDINATION SERVICES	15
7.1	PWC.....	15
7.1.1	Water & Sewer Design	15
7.1.2	Water & Sewer Permitting	15
7.2	Electrical/Communications and Other Utilities.....	15
7.3	Field Meetings	15
8.0	MILESTONE B: GEOTECHNICAL INVESTIGATIONS & SUBSURFACE UTILITY ENGINEERING SERVICES	15
8.1	Geotechnical Investigations.....	15
8.2	Subsurface Utility Engineering	16
9.0	MILESTONES A, B, C: STREAM STABILIZATION, ENHANCEMENT, AND RESTORATION DESIGN	16
9.1.1	Define Project Goals	16
9.1.2	Watershed Definition	16
9.1.3	Develop Conceptual Restoration Design	17
9.1.4	Site Investigations.....	17
9.1.5	Modeling	17
9.1.6	Design.....	18
9.1.6.1	Existing Conditions.....	18
9.1.6.2	Stream Restoration Design	18
9.1.6.3	Erosion Control/Bank Stabilization Design.....	18
9.1.6.4	Native Planting Plan.....	18
9.1.7	Deliverables	19
10.0	MILESTONE B: FUNCTIONAL DESIGN FOR BLOUNTS CREEK PRIMARY SOLUTION	19
10.1	Functional Design.....	20
10.2	Deliverables.....	20
11.0	MILESTONE C: FINAL DESIGN ENGINEERING SERVICES FOR PERSON STREET, RUSSELL STREET AND CSX BRIDGE REPLACEMENTS	20
11.1	Roadway Design.....	20

11.1.1	Right-of-Way (temporary and permanent)	21
11.1.2	Easements	21
11.1.3	Submittals	21
11.2	Hydraulic Design	21
11.3	Drainage / H&H Model Evaluation	22
11.3.1	Hydrologic and Hydraulic (H&H) Model Development	22
11.3.2	Existing and Proposed Improvements Analysis for Current and Buildout Conditions.....	22
11.3.3	Model Validation	22
11.3.4	H&H Model Technical Memorandum	23
11.4	Sediment & Erosion Control	23
11.5	Signing and Delineation & Pavement Marking	23
11.6	Traffic Management Plans (TMP)	24
11.7	Structural Design	24
11.7.1	Bridge Preliminary General Drawings	24
11.7.2	Final 90% Bridge Design	25
11.7.3	Final 100% Bridge Design.....	25
11.8	Railroad Corridor, Bridge, and Track Design	26
11.8.1	Coordination with CSX Transportation	26
11.8.2	Rail & Structure Preliminary Design	26
11.8.3	Rail & Structure Final Design (90% and 100% Final Design).....	27
11.9	Deliverables.....	27
11.9.1	Design Plans.....	28
11.9.2	30% Final Design Submittal	29
11.9.3	60% Final Design Submittal Plans (R/W Plans)	29
11.9.4	90% Final Design Submittal Plans	29
11.9.5	100% Final Design Submittal Plans.....	30
11.9.6	Cost Estimate	30
12.0	MILESTONE C: PERMITTING	30
12.1	Erosion & Sediment Control	30
12.2	Environmental	30

13.0	MILESTONE C: CONTRACT PREPERATION AND BID PHASE SERVICES.....	31
13.1	Contract Document Preparation	31
13.2	Prepare Bidding/Proposal Documents.....	31
13.3	Bid Phase Services	31

1.0 GENERAL

Arcadis G&M (Arcadis) has been selected by the City of Fayetteville (City) to provide the planning and design services for improvements along the Russell Street bridges and Person Street bridge along with stream restoration and improvements Blounts Creek.

The following document is a general overview of the scope of services for the whole project. The document is broken up into three (3) major milestones. At these milestones, Arcadis will discuss with the City and key stakeholders the key aspects of the project at these decision making points in order to proceed forward with the project. These major milestones are assumed to be combined into 3 task orders. The scope of work for each of these task orders will be submitted for the City's review/acceptance and will include a more refined scope and revised fee estimate based off the level of effort required to complete the given work.

1.1 Project Background and Description

Improvements included in this scope of work were identified by the Blounts Creek Watershed Masterplan. These improvements include:

- a) Replacement of Bridges 220 & 221 on Russell Street over Blounts Creek
- b) Replacement of CSX Bridge over Blounts Creek
- c) Replacement of Bridge 160 on Person Street over Blounts Creek
- d) Stream Stabilization, Enhancement, and Restoration of Blounts Creek

1.1.1 Project Area Description

The proposed improvements to the Blounts Creek Watershed are between Person Street to S. Cool Spring Street.



Figure 1: Project Area

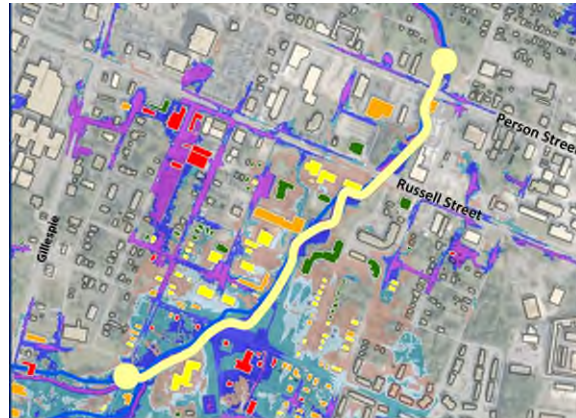


Figure 2: Stream Improvement Limits

This project involves four primary components:

- The replacement of the Russell Street bridges (EB and WB; NCDOT Bridge # 220 & 221) with a longer bridge and roadway approaches.
- The replacement of the CSX railroad bridge that runs between the Russell Street bridges with a longer structure.
- The replacement of the Person Street bridge (NCDOT Bridge # 160) over Blounts Creek with a longer bridge and roadway approaches. This will include providing a tie-in to the proposed roundabout project under design and construction at the intersection of Old Wilmington Street and Person Street
- Stream enhancements for floodplain management and stream restoration along Blounts creek for approximately 4000 feet starting approximately 300' downstream of the Person Street crossing and ending at the downstream side of South Cool Spring Street. A map of the project area is provided as Exhibit 1.

1.2 Assumptions

Arcadis shall perform the Scope of Services in accordance with the latest edition of applicable published City Standards.

Other standards that shall be considered during the project include:

- Applicable published PWC Standards
- NCDOT Roadway Design Manual, April 2022
- NCDOT 2018 Standard Drawings
- AASHTO Roadside Design Guide, 2011
- NCDOT 2018 Standard Specifications for Roads and Structures
- NCDOT Guidelines to be used by Consultants for producing Roadway Plans, October 2015
- NCDOT Standard Specifications for Roads and Structures
- NCDENR Erosion and Sediment Control Planning Design Manual
- Manual on Uniform Traffic Control Devices (MUTCD)
- CSX Standard Specifications for the Design and Construction of Private Sidetracks
- CSX Public Project Manual
- American Railway Engineering & Maintenance of Way Association Manual for Railway Engineering 2022 (AREMA)
- NCDOT Guidelines for Drainage Studies and Hydraulic Design, August 2022 (NCDOT Hydraulics Manual)
- NCDOT Structures Management Unit Design Manual, November 2022 (NCDOT SMU Manual)
- American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications, 8th Edition (AASHTO LRFD)

Arcadis will provide a list of design assumptions with each milestone design deliverable. Any required updates to the list of design assumptions will be provided with each milestone tasks per scope of work.

1.3 Project Administration

Arcadis shall manage the project in a manner that is responsive to the needs and schedule of the City and assure the quality of the product. The following project management efforts shall be conducted in coordination with the City.

1.3.1 Project Schedule

Arcadis shall prepare and submit a project schedule for review and approval by the City's Project Manager. The schedule shall be broken down by work tasks and milestone events. This schedule shall be used as a project control system for Arcadis and as a basis for status reporting.

1.3.2 Monthly Meetings

Arcadis shall conduct monthly meetings with the City and subconsultants to:

- Update progress and bring critical issues to the City's attention for timely action and decision
- Establish meeting dates, times and attendees with the City and notify attendees
- Prepare and distribute agenda in advance of the meeting and conduct the meeting
- Prepare/distribute meeting minutes following the meeting

1.3.3 Progress Reports

Arcadis shall prepare and submit a progress report to update the project schedule, list milestones achieved, provide current status of each major task, support and document schedule changes, update project costs and justify any changes to the schedule or proposed budgets. Progress reports shall be provided at the end of each month and shall accompany each invoice.

1.3.4 Quality Assurance/Quality Control (QA/QC)

Arcadis shall coordinate and conduct QA/QC including reviews at key stages of the project, independent project quality control reviews to assess conformance to project scope, data collection, methodologies, model output, budget, schedule, and prepare QA/QC documentation.

1.3.5 Invoice Template

Arcadis shall utilize the City provided invoicing templates for all services rendered in association with the project.

2.0 MILESTONE A: ESTABLISH PURPOSE & NEED

Arcadis shall engage with City staff and other key stakeholders to gather existing information pertinent to the project. Data previously acquired through the Watershed Masterplan Project for Blounts Creek watershed will be utilized as necessary. This information may include, but is not limited to, the following:

- Spatial/Geographic Information System (GIS) data such as soil types, land use, rights-of-way, easements, property lines, anticipated development, utilities, open channel systems, closed conveyance systems, flood protection measures/structures, SCMs and stormwater management facilities, etc.
- Boundary survey, topography and benchmarks
- Land use, including public lands (parcels)
- Stream flow records and water quality data
- FEMA floodplain data
- LiDAR data
- Summaries of previous depth or flow monitoring within local stormwater systems

- Previous reports and planning documents, including Detailed Watershed Plans, Structure, Rail, and Roadway plans
- Regulatory documents
- Existing ordinances and policies
- Environmental/ecological documents
- Maps and drawings of drainage system components including shop drawings, etc.
- Staff interviews
- Historic problem information (flooding and water quality), high water marks, citizen complaint records, and other relevant data

2.1 Existing Conditions

Arcadis shall review the site conditions and provide the City with documentation of existing conditions for the City's records.

2.1.1 Summary of Past Reports/Investigations

Arcadis shall identify and provide summaries of past reports, field investigations, citizen complaints, existing stormwater control measures (SCMs) and other readily available information on the notable features and drainage history of the project area. Most of this information shall be obtained from the Blounts Creek Watershed Study being undertaken by Arcadis.

2.1.2 Existing Photos of Problem Area/Drainage Issues

Arcadis shall develop a photolog to be included as an Appendix that documents flooding and other drainage issues, past damage, high water marks, and other relevant information within the project area.

2.1.3 Existing Level of Service (LOS)

Arcadis shall provide estimated level of service of existing drainage system based on existing modeling information or field/desktop estimates.

2.2 Project Justification

Based off the initial review of the project, a Benefit/Cost Analysis (BCA) shall be developed to determine value provided to the project and proposed Level of Service (LOS).

2.2.1 Benefit/Cost Analysis (BCA)

A simplified BCA shall be performed to determine the relative merit of the project and prepare for potential funding opportunities if warranted. The BCA shall compare the Net Present Value (NPV) Benefits of the project to NPV Costs of the project. A project is considered to be cost-effective when the ratio is greater than or equal to 1.0, indicating that the net benefits exceed total project costs. An exposure analysis to determine the expected building and content losses from extreme events shall be completed in accordance with FEMA's Benefit Cost Analysis Reference Guide document:

[\[https://www.fema.gov/media-library/assets/documents/18870\]](https://www.fema.gov/media-library/assets/documents/18870)

Project lifecycle costs incorporated into the BCA should include capital costs for the project and operations and maintenance (O&M) costs over the project's useful life. **Note that an initial BCA has**

been performed for this project as part of the Blounts Creek Watershed Study, however, the BCA shall be updated as costs are better defined through the design phase.

2.2.2 Value Provided

Arcadis shall provide compelling information on the value provided by the proposed improvements. This may include new infrastructure's ability to better manage stormwater runoff; reduction in yard and street flooding; minimization of future damage to structures; reduction in flood insurance; inclusion of a community amenity; co-benefits such as a reduction in displacement and health issues; etc.

2.2.3 Proposed Level of Service (LOS)

Drainage infrastructure in the project area shall be designed for compliance at minimum with the below table:

Classification	LOS Design Standard (yr)	Freeboard Requirement
Secondary System (closed-pipe drainage)		
Conduits & On-Grad Inlets	10	Throat of inlet or edge of pavement
Inlets at Sag Locations - City/Private - DOT	25 50	Edge of Roadway
Major Trunk Lines ¹	25	Throat of inlet or edge of pavement
Road Crossings²		
Bridges - City/Private - NCDOT - CSX	50 50 50	Low Chord of Bridge Existing or Improve
Essential Facilities³ - Tier 1 - Tier 2	100 50	
Emergency Spillway	Varies	Meet Dam Safety requirements and discuss with City .
Habitable Structures	10	0.75 feet above LAG

1-In secondary system locations where pipe sizes and flows increase significantly to collect drainage from smaller localized networks, the higher LOS requirements that are typically applicable to city/private culver crossings should be followed to ensure adequate performance in these critical locations

2-Private roadways should follow the same LOS standards as public roadways.

3-Tier 1 essential facilities include hospitals, police and fire stations, emergency shelters, FEMA disaster Points of Distributions and other government entities, as well as water and wastewater treatment plants. Tier 2 facilities include those with high vulnerability and limited ability to evacuate during emergency situations, such as schools, daycares, assisted living facilities, and jail.

As alternative analysis for projects, use of vacant land for SCMs (now and in the future) and property buyouts should be evaluated.

2.3 Project Benefit Statement

Arcadis shall provide compelling information on the impact of the proposed improvements to the community. This may include new infrastructure's ability to better manage stormwater runoff; reduction in yard and street flooding; minimization of future damage to structures; reduction in flood insurance; inclusion of a community amenity; co-benefits such as a reduction in displacement and health issues; etc.

2.4 Deliverables

Arcadis will provide an existing conditions report detailing:

- Documentation of existing conditions which includes information gathered from the key stakeholders, a summary of past reports and investigations of the project area and existing photos showing areas of concern (included as an appendix to the report)
- Project justification which includes an estimated LOS of the existing & proposed drainage systems, benefit/cost analysis and value provided by the proposed solutions

3.0 MILESTONE A: FIELD REVIEW MEETING

All key representatives from Arcadis, City, NCDOT, City of Fayetteville's Project Management Consultant (PMC), City of Fayetteville Public Works Commission (PWC) and CSX will visit the proposed project site to evaluate the existing conditions and determine potential alternatives to consider for further review.

3.1 Purpose of Meeting

During this meeting, all key members will review the existing site and determine potential areas of concern that will need to be addressed within our designs. Arcadis will discuss potential alternatives to be considered for conceptual design. Prior to the conclusion of the meeting, Arcadis and all key stakeholders will come to a consensus on determining which alternatives to develop in the next phase of design (no more than three alternatives for each site).

Arcadis will send up to eight personnel to the meeting. Subject matter experts in Roadway, Structures, Hydraulics, Rail, Environmental, and Planning will be in attendance to discuss the project with key stakeholders.

3.2 Deliverables

Arcadis will develop and submit Field Review Agenda/Minutes/Summary to the meeting attendees and submit a finalized version to the City.

4.0 MILESTONE A: CONCEPTUAL DESIGN

Arcadis will provide an initial evaluation of up to three design alternatives for review. Arcadis will provide a preliminary environmental review of each of the project sites and identify/evaluate any potential impacts for each alternative under consideration. Arcadis will also investigate no more than three conceptual design options per each site and prepare a high-level preliminary cost estimate to assist with the selection of each site. Arcadis will compile all the documentation developed in this phase into three individual technical reports: one (1) for the Person Street Bridge, one (1) for the site of the Russell Street bridges (the dual structures carrying Russell Street and the CSX bridge) and one (1) for the Stream restoration.

4.1 Data Collection

Arcadis will collect readily available data, including GIS data layers, local plans, and project history. Data collected may include the information noted in the list below.

- Traffic Estimates
- GIS data

- DTM
- Comprehensive Transportation Plan (CTP)
- Adjacent Project CADD Files and Parcel Information, County or Municipal Bicycle/Pedestrian Plans
- Crash Data
- Digital Orthoimagery
- Other Local Plans of note (such as future land use plan, area plans, economic development plans)
- Structure Reports

Arcadis will make all necessary request for this data to NCDOT and other agencies if not available through public means.

4.2 Environmental Features Mapping

Arcadis will prepare environmental features mapping (EFM) using existing GIS data. The EFM should include, at a minimum, roads and parcels on aerial photography. As appropriate, other features shown should include county/municipal boundaries, railroads, community resources, major hydrography and wetlands, federal and state lands, historic properties, and other managed areas or notable features.

Additional datasets may be available from the local or County website. A preliminary check of the local GIS open data site will be evaluated before starting EFM.

4.3 Conceptual Designs and Quantities

Based on decisions from the kickoff meeting and input from preliminary coordination with key stakeholders, Arcadis will develop conceptual design option(s) for each project. These designs are intended to identify and avoid fatal flaws and generate high-level cost estimates. The designs are also intended to provide a starting place for later planning and design phases.

4.3.1 Horizontal Concepts

Arcadis shall prepare horizontal concepts for options agreed upon in the field review meeting.

Horizontal concepts should be developed with adequate detail to allow for an accurate cost estimate and Right of Way impact assessment. Specific consideration should be given to the following:

- Minimize lateral encroachment into FEMA floodplain
- Avoid impacts to FEMA floodway (strategies include bridges and walls)
- Determine if existing stormwater BMPs may require future replacement (label existing stormwater BMPs that are impacted on conceptual designs)
- Avoid impacts to largescale utilities, such as transmission lines, towers, substations, or other notable utility features

The concepts should include:

- Typical sections for the L line and major Y lines
- Centerlines for the L line, ramps, and Y lines
- Conceptual design of intersections or interchanges
- Turn lanes, access control, or other issues that would affect Right of Way limits or cost estimation

4.3.2 Vertical, Slope Stakes, Right of Way, Maintenance of Traffic

For the selected options, Arcadis will prepare vertical concepts and slope stakes for major alignments necessary for identification of fatal flaws, impacts, or cost estimation. The design shall set proposed Right of Way and control of access for the proposed designs including any areas necessary for constructability or maintenance of traffic.

All work should be included inside of proposed Right of Way (temporary and permanent easements should be considered Right of Way at this time).

Conceptual designs should consider constructability of the project and note on-site or off-site detours as necessary for construction. Arcadis will prepare a brief maintenance of traffic narrative summarizing the high-level constructability and maintenance of traffic needs for the project.

4.3.3 Conceptual Design Maps

Each conceptual design option will be overlaid on the environmental features mapping to create the conceptual design maps. All necessary information necessary to portray the conceptual design and its impacts, including but not limited to existing parcels and Right of Way, proposed Right of Way and control of access, and major L line stationing. In addition, Arcadis will label key features that aid in identifying the project location and constraints to the design or unique features. The maps will include the following:

- Main roads
- Landmarks
- Major businesses
- Community resources

The concept designs will include typical sections with design speeds listed for key alignments on the maps. The scale of the conceptual design map should be set based on size of the project and features to be shown and can vary by project.

Once reviewed by the City and other stakeholders, it will be determined whether additional concepts are required because of comments received. If the additional design evaluations exceed the three options for the site, a supplemental agreement will be required prior to the start of the new design evaluation.

4.3.4 Quantities

Upon verification of the conceptual design map(s) by the City, Arcadis will calculate quantities for the selected design option for each site. Quantities should include, but are not limited to, the following:

- Clearing and grubbing
- Earthwork
- Drainage (by length and typical section; note assume all existing drainage is to be replaced)
- Pavement removal
- Fine grading
- New pavement or Resurfacing (by area, -L-, -Y-, Ramp/Loop)
- Curb & Gutter, Sidewalk, Monolithic Island
- Guardrail, guiderail, and barrier
- Erosion Control

- Traffic control (by length, typical section)
- Pavement markings (by length, typical section)
- Traffic Signals
- Structures (bridges, culverts, retaining walls)

Arcadis will include additional quantities to accommodate constructability or maintenance of traffic, such as temporary pavement, additional earthwork quantities, or temporary bridging (if necessary). Additional items that may have a major influence on the overall cost of the project shall be included in quantities for the design option.

4.4 Cost Estimates & Mapping Limits

Arcadis will develop estimated quantities to the City as noted in the sections below to obtain cost estimates for various components of the project, including construction, utilities, ITS, and Right of Way.

4.4.1 Construction, Utilities & ITS

Arcadis will provide construction, utilities, and ITS cost estimates, as appropriate. The City will determine with Arcadis which estimates are needed.

4.4.2 Right of Way

The Right of Way cost estimate will be prepared by Arcadis and provide CADD files (in .dgn format) that represents project Right of Way limits. Right of Way limits should reflect all proposed permanent or temporary easements including any temporary impacts needed for constructability or maintenance of traffic.

4.4.3 Initial Mapping Limits

Arcadis shall develop initial mapping limits based on the conceptual designs for each site. These limits are to be used as an aide in the next phase of design for the City.

4.5 Conceptual Design Submittal Package

Arcadis will compile key information into the following documents as part of the conceptual design submittal package.

4.5.1 Express Design Screening Checklist (Project Initiation Form)

Arcadis shall provide a completed Screening Checklist. The Screening Checklist is intended to be a screening based on available data to identify issues that have the potential to substantially impact project cost or schedule. It will be updated throughout the design of the project.

4.5.2 Preliminary Structure Design Report - Type Size & Location (TS&L) Report

Arcadis shall provide a Type, Size and Location (TS&L) Report to discuss the structural aspects of the conceptual designs presented. The TS&L report summarizes the conceptual design of the bridge types, foundation types, lengths, and locations of each of the 4 proposed bridges within the project limits. This report also details the design parameters, superstructure and substructure assumptions, and major relevant details regarding the sites.

4.6 Conceptual Design Review Meeting

Arcadis will set up a design review meeting with the City and all involved stakeholders within NCDOT and CSX to outline the design options for each bridge site as shown in the report. After the meeting, the City in collaboration with all stakeholders and Arcadis will determine the best alternatives for Person Street and Russell Street bridge sites to proceed forward to final design.

4.7 Deliverables

The final deliverables will result in a conceptual design technical report for Person Street and Russell Street (dual bridges and CSX bridge) sites that include:

- An executive summary of the environmental impacts, preliminary roadway, preliminary bridge, preliminary drainage, and preliminary hydraulic designs detailing within the technical report
- Environmental screening checklists
- Environmental features mapping
- A preliminary environmental review
- Conceptual Maintenance of Traffic Narratives
- Up to three conceptual designs on plan sheets
- Proposed typical roadway and bridge sections for each alternative
- A conceptual review of the bridges for each alternative under consideration (TS&L report)
- A preliminary schedule for each alternative
- High-level cost estimates which include cost of construction, Right of Way, utilities, and ITS (if applicable)
- A conceptual report of the conceptual design of the stream restoration portion of the project as described in Sections 9.1.1 through 9.1.3.

The conceptual design technical reports will be submitted to the City for review. These documents will be signed and sealed.

5.0 MILESTONES A & B: PLANNING & ENVIRONMENTAL (FINAL DESIGN)

The proposed bridge replacement projects are not anticipated to induce significant or foreseeable alterations in land use, planned growth, travel patterns, the natural environment, the human environment, or the cultural resources. Background research, field investigation, and coordination with the appropriate local, state, and federal agencies will provide the basis for assessing the effects of the projects on the aforementioned issues.

It is anticipated that Environmental document for the project will qualify as a "Categorical Exclusion"(CE) Technical information, methodologies, and results of analysis will be assembled and summarized in the environmental document. A single CE document with Federal Highway Administration (FHWA) as lead federal agency is assumed.

5.1 Preliminary Planning Activities

Following the field review and conceptual design report, Arcadis will provide planning and environmental investigations of each bridge site to determine project and key stakeholder needs as well as public input from the general public and local stakeholders.

5.1.1 Data Collection (CE Document)

The following information will be obtained/verified for inclusion in the CE document:

- Federal and State functional classification of the roadway
- The existing land use in the vicinity of the project and the topographic features
- The existing bridges and approach roadway will be inventoried, including such items as length, width, clearance, date, and type of construction, load restrictions, sufficiency rating, roadway geometrics, posted speed limit and the existing utilities in the project study area.
- A history of major repairs, closings, and any public concern or controversy will be discussed

5.2 Early Railroad Coordination (Russell Street Bridge)

Due to the proximity of these bridges to existing CSX Railroad, early coordination with all key stakeholders including CSX and NCDOT will be necessary. Arcadis will follow the railroad's public projects processes and procedures.

Arcadis will follow the procedures listed below to successfully complete the project with full approval from CSX Railroad:

- Notify Public Projects Group/Engineer
- Provide project info
- Attend meetings (as needed)
- Review site with railroad or designated GEC
- Assist in the development and execution of the Right of Entry agreement, which is required for access to the railroad right of way for investigative activities including surveying, environmental or geotechnical sampling

5.3 Community Impact Assessment

Arcadis will prepare a bridge Community Impact Assessment (CIA) Short Form using the most recent guidance from the NCDOT Community Studies Team. Arcadis will submit to City for review.

5.4 Public Involvement

Two public meetings for each bridge site and two stakeholders meetings for business owners located in downtown Fayetteville will be held. Arcadis will send up to four (4) people to each meeting. Tasks associated with the Public Meetings include:

- Pre-Workshop Meetings: Arcadis will send two staff members to a meeting to discuss the public meetings. Arcadis will prepare a pre-workshop meeting summary.
- Handouts and Display Boards: Arcadis will prepare a 6-page color handout that will include general project information, project schedule, project map, description of alternatives, Title VI form, and a comment form for each public meeting. No PowerPoint presentation will be prepared for the meetings. Arcadis will prepare up to four (4) display boards for each public meeting.
- Public Meeting Summary: Arcadis will summarize each public meeting, including comments received at the meeting and during the public comment period immediately following the meeting. All key

stakeholders for NCDOT as well the City and Fayetteville MPO will be sent the summary for their review and approval.

5.4.1 Local Officials Meeting

The local officials meeting for each bridge replacement project will be held immediately prior to the Public Meeting. Arcadis will prepare and distribute the invitations to the local officials meeting. The handouts and display boards for the public meeting will also be used for the Local Officials Meeting.

5.4.2 Public Meetings

Arcadis will coordinate with the City to locate and arrange the meeting facility and prepare a notice for publication in applicable newspapers. Arcadis will prepare all meeting materials, including sign-in sheets, meeting handouts and display boards. No PowerPoint presentation will be prepared. The Arcadis Team will send up to four people to the meeting.

5.4.2.1 Meeting Location Coordination

Arcadis will identify a recommended meeting facility/location, develop a station/meeting layout plan, and provide to the City for confirmation of available dates and coordination of schedules for necessary staff and reservation of the facilities.

5.4.2.2 Meeting Announcement

Arcadis will develop a newsletter announcement for the City to review (assume 1 concurrent Division and PI review cycle) and coordinate the newsletter mailing.

5.4.2.3 Notice for Publication

Arcadis will coordinate with the City to prepare a Notice for Publication in applicable newspapers in the area of the project, have the meeting advertised on radio if airtime available and have notice and information of the meeting posted on the City of Fayetteville website.

5.4.3 Stakeholder Meetings

Arcadis will meet with small groups, as necessary, to discuss the project. Up to two (2) stakeholder meetings are assumed for each bridge replacement project in this milestone. Arcadis will prepare information and materials for these meetings. Arcadis will coordinate with the City to make the arrangements for the meetings. Arcadis will prepare meeting summaries.

5.5 Environmental Documentation

It is anticipated that each bridge project will meet the criteria for a federal "Categorical Exclusion" or State Minimum Criteria Determination Checklist. However, for consistency, the federal Type III CE Checklist from the FHWA-NCDOT 2019 Documentation Requirements will be used, regardless of funding source, as a guide to the level of environmental documentation required.

5.6 Deliverables

Arcadis will provide the following deliverables related to the planning and environmental tasks:

- A memorandum of the data collected of the existing features and structures
- A PDF of the vicinity features, study area and quad maps
- A memorandum of the start of study letter notifying all the key local, state and federal agencies of the project
- A design package of the traffic and crash analyses
- A memorandum of the architectural and archeological surveys within the project limits
- A memorandum of the A PDF of the Natural Resources Technical Report
- A PDF of the CIA for each bridge site
- A PDF of the mailing list of all stakeholders within the project limits
- A PDF of the newsletter for distribution
- All documentation required for the public meetings including sign-in sheets, meeting handouts, display boards, etc
- A memorandum of meeting minutes for each of the meetings with local officials, public meetings as well as the stakeholder meetings at each bridge site
- A PDF of the Categorical Exclusion for each bridge

6.0 MILESTONE B: FIELD SURVEY SERVICES (ENHANCING SURVEY)

6.1 Field Verification

Arcadis shall field verify the existing drainage system, structures, and stream limits shown in Exhibit 1 and determine all survey requirements. Proper judgement shall be used in determining appropriate limits for the project and Arcadis shall clearly define where the existing drainage problem(s) is located and the limits of survey necessary to address critical areas and potential downstream impacts. The City shall furnish to Arcadis any available recent topographic and storm water infrastructure inventory data relative to the project. Arcadis shall review the field survey previously obtained as part of the City Watershed Masterplan to utilize as much of this data as possible.

6.2 Survey Requirements

Upon completion of the field verification task, Arcadis shall perform a detailed survey of the project area. All horizontal surveys shall be tied to the North Carolina State Plane Coordinate System (North American Datum 1983) and all vertical surveys shall be based on the National American Vertical Datum of 1988. The survey shall comply with the standards for a Class A survey as detailed in the Standards of Practice for Land Surveying in North Carolina, Amended August 1, 2000, or latest revision.

The survey shall include sufficient data to produce a digital topographic corridor strip map with contours at a minimum of 1' intervals. Survey points shall include the following:

- Channel information including low point (thalweg), toe and top of bank elevation, any major change in slope of bank at locations (minimum every 50 feet) such that an accurate channel plan view and profile can be generated (all major changes in slope, cross-section, and direction of the channel must be

- captured). Each channel cross-section shall have at least five points within and inclusive of the channel banks and shall have a minimum of two points outside the channel banks on each side of the channel
- Elevations along the road centerlines, edge of pavement, and curb lines (left and right) adequate to produce profiles suitable for accurate design
 - Locations of storm sewer pipes and structures including sizes, wingwall angles, inlet conditions (e.g., beveled), shapes, material, condition, invert elevations, and rim/grate elevations
 - Locations of sanitary sewer pipes, structures, including sizes, materials, invert elevations, and rim elevations, horizontal locations of clean-outs if they are visible and within the survey corridor
 - Horizontal locations of all underground non-gravity utilities including valves, hydrants, meters, etc.; and overhead utilities including poles, lines, guys, boxes, etc. Vertical clearance of overhead utilities shall be measured in areas where construction equipment may impact the overhead utilities
 - Vertical locations of underground utilities such as water, sewer, gas, electric, telephone, cable, fiber optic, etc. that may impact the design (see Section 7 for more details)
 - Building corners of all structures, finished floor elevations, vent opening elevations, HVAC unit location and elevations, crawl space door elevations, and spot elevations at the lowest adjacent grade to the permanent structure
 - Locations of other physical features which may be affected by construction of possible alternatives including walkways and driveways (type), fences (type, height/material), walls (type), signs, planters, sheds, brick or stone mailboxes, rock outcroppings, etc.
 - Locations of all trees greater than or equal to 6" diameter labeled with size and variety, ornamental trees of any size, any landscaped areas within the projected work area
 - Description, book, and page number of the official registry of all properties affected by the Project, including current property owner name(s), tax parcel identification number, street address, existing property acquisitions, rights-of-way, and all existing recorded easements associated with the Project from the Register of Deeds

6.3 Survey Notifications

Arcadis shall not commence the survey until the City provides them with written authorization and provides survey notifications to citizens in the project area. Arcadis shall provide the City with a list of property owners that should be notified. If additional survey is required, Arcadis will notify the City and provide survey notifications to pertinent stakeholders.

6.4 Field Survey Project Administration

Prior to acceptance and use of the survey, Arcadis shall perform a field review of the survey to verify that it is complete and accurate.

6.5 Survey Submittal

Arcadis shall provide the survey data to the City in an electronic AutoCAD format, version 2018 or higher (latest version), and in ASCII format.

7.0 MILESTONES B & C: UTILITY COORDINATION SERVICES

7.1 PWC

The following tasks shall be performed with the review and approval of the City's Project Manager. The engineer shall track water & sewer related costs separately. The City will in turn invoice directly to PWC based upon an agreed reimbursable agreement. PWC shall provide guidance on improvements to existing utilities and/or utility conflicts.

7.1.1 Water & Sewer Design

Arcadis shall coordinate with the City and PWC to include water and sewer design in the project area per PWC standards. Water and Sewer Design shall include the following tasks:

- Identification of any existing water and sewer lines attached to or aligned within the footprint of the proposed bridge replacements.
- Design of replacement water and sewer system for the bridge replacements.
- Relocation or reinforcement of existing water or sewer lines to be impacted by any stream stabilization or restoration of Blounts Creek.

7.1.2 Water & Sewer Permitting

Arcadis shall complete permit applications for permitting of the new water and sewer lines as necessary to comply with PWC requirements. All permitting documents shall be submitted directly to PWC.

7.2 Electrical/Communications and Other Utilities

Arcadis shall be required to lead & coordinate potential impacts to electrical primary and secondary feed lines, streetlights, telephone/cable lines, gas lines, and other utilities with the respective utility companies. Coordination, review, and approval of all work shall involve the City's Project Manager. The City's PM will provide local utility contacts as necessary. Arcadis will provide a utility coordination plan for review based off any potential construction phasing due to the method of construction of the bridges.

7.3 Field Meetings

Arcadis shall coordinate field meetings at the 35% and 70% design stage with all affected utility companies to identify possible conflicts and prevent potential impacts to project design or construction.

8.0 MILESTONE B: GEOTECHNICAL INVESTIGATIONS & SUBSURFACE UTILITY ENGINEERING SERVICES

Arcadis shall investigate the geotechnical and subsurface utility conditions within each design element area within the project limits prior to the start of the final design phase.

8.1 Geotechnical Investigations

Arcadis shall start off the project with a desktop assessment. This assessment shall be completed following the Conceptual Design process and look at readily available geologic and soils information and/or soil borings data to determine physical limitations that may affect the cost of, or the feasibility of various

alternatives. Based on the assessment during the functional design process, Arcadis shall determine need and desired locations for additional geologic/soils information and soil/pavement borings to support the design of the bridge replacements, pavement design for roadway approaches, and stream improvements. Arcadis shall retain the services of a City approved Geotechnical Engineering firm to provide these services.

8.2 Subsurface Utility Engineering

Subsurface utility engineering (SUE) shall be performed as required to identify depth and location of existing utilities. Arcadis shall retain the services of a City approved SUE firm to provide these services.

Arcadis shall coordinate SUE needs with the City and incorporate survey from the SUE into the design plans. SUE services may consist of "Quality Level A" services, vacuum excavations or soft dig, or "Quality Level B" horizontal subsurface utility location data. Upon completion of the Conceptual Design phase, Arcadis will provide a more detailed scope of work if these services are needed.

Utility location designations shall be accomplished via electromagnetic methods for conductive lines and Ground Penetrating Radar (GPR) for non-conductive lines. Locations of utilities for other areas of the project shall be based on surface accessible structures or designations by the utility owner or NC811.

9.0 MILESTONES A, B, C: STREAM STABILIZATION, ENHANCEMENT, AND RESTORATION DESIGN

Arcadis shall provide stream restoration and stabilization designs for a portion of Blounts Creek approximately 4000 feet in length starting approximately 300' downstream of the Person Street crossing and ending at the downstream side of South Cool Spring Street.

9.1.1 Define Project Goals

Before we attempt to solve a problem, we believe it is critical to fully define the problem, concerns, and goals for the project. This task will involve directly working with City of Fayetteville staff to ensure at this early stage that we clearly define both the problem and metrics for success. This task includes the following:

- Meeting with City of Fayetteville to understand the background / history regarding this project.
- Review available background documents relevant to the site and watershed.
- Site visit to gain a full understanding of the issues and site constraints.
- Document concerns from key stakeholders
- Preparation of summary memorandum.

9.1.2 Watershed Definition

After defining overall project goals, the project team must define the cause of the stream degradation/instability by analyzing historic and current aerial photography with existing modeling results and limited ground truthing to determine changes in the watershed that may be influencing channel characteristics. These watershed changes can alter the stable form of the stream. It is important to consider current and future watershed characteristics when designing a channel for long-term stability. Additionally, the broad level longitudinal profile evaluated during the primary system modeling work will be captured to define the position and context with which the restoration site lies within the entire

system. This basic piece of information can be extremely valuable when considering gradient, adjustment and upstream to downstream sediment transport.

9.1.3 Develop Conceptual Restoration Design

Following the definition of project goals and developing a better understanding for watershed conditions that will affect the restoration project, the project team will develop a conceptual restoration design for proposed stream reach. To accomplish this, Arcadis will conduct the preliminary engineering analysis necessary to identify project options, evaluate water quality benefits, cost-effectiveness, establish permit requirements, and anticipate any potential needs of impacted stakeholders. This preliminary analysis may be supported by the field investigations identified in Task 6 (below) that will facilitate a better characterization of site conditions.

The result of our analysis will result in 30% level conceptual design for the proposed stream reach. The 30% level design will provide draft plan views, conceptual cross sections, and a list of potential plants to be included in the design to be reviewed with the City of Fayetteville and any pertinent stakeholders.

9.1.4 Site Investigations

A wide variety of field activities or site surveys may be required in addition to those conducted during the Blounts Creek Watershed Master Plan to support the project. Arcadis will provide the following investigations as required to support the project development:

- Site topographic surveys. This will focus on longitudinal profiles and cross sections of the channel banks at pre-determined locations.
- Mapping of in stream aquatic features within the project area (i.e., runs, riffles, pools, glides).
- Mapping of plant diversity and communities throughout the riparian corridor.
- Wetland / waters delineation to support future regulatory permitting.
- Soil sampling to support any necessary slope stability analysis.
- Channel bed assessment (i.e., pebble counts)
- Phase 1 & Phase 2 Environmental Assessments, including research of historical site use.

A licensed surveyor (as a subconsultant to Arcadis or through a current contract with the City) will need to conduct a detailed survey and analysis of the restoration site. Site survey will focus on a longitudinal profile for the entire project reach, in addition to strategic cross sections. Cross sections will be selected in areas to capture important morphologic features and through a range of morphologic characteristics. Design constraints will also be identified and surveyed as required. The site survey will provide foundation for a base plan map to demonstrate existing conditions.

In parallel with the topographic survey, the Arcadis team will map all aquatic features within the project area as well as complete a formal waters and wetlands delineation necessary to support future regulatory permitting. Federal and state requirements will be followed. The Arcadis team will also be responsible for mapping plant diversity and plant communities, collecting any necessary soil samples, and completing pebble count surveys as needed.

9.1.5 Modeling

A critical project component is developing water surface profile models of the site for existing and proposed conditions. Arcadis will modify the existing HEC-RAS primary system model as needed and

use the refined model to determine potential changes to flood elevations and validate shear stress calculations for the existing and proposed reaches.

9.1.6 Design

After locking-in the project constraints and scope through the development of the conceptual plan, detailed design development will begin.

9.1.6.1 Existing Conditions

The existing conditions site plan will be prepared to illustrate all topographic surveys, the wetland delineation, and any pertinent habitat characterization necessary to support the restoration design. The existing conditions plan will provide the basis for all cross section8.4s and longitudinal profiles.

9.1.6.2 Stream Restoration Design

The cumulative results of the site investigations and modeling will facilitate the creation of final grading plans and associated construction details. These plans will address impairments and instability identified in the existing conditions assessment. Proposed stream morphology will be derived from a combination of local meander geometry analysis and proposed Bank full dimensions. Grading will also account for targeted riparian planting areas to realize additional ecological benefits.

9.1.6.3 Erosion Control/Bank Stabilization Design

Bank erosion is often identified as a concern if it threatens some type of infrastructure (i.e., a bridge). A common cause of this condition in urban streams is lateral channel migration and incision resulting from increased runoff from impervious surfaces within the watershed. The increased erosion can result in taller banks as the bed lowers in elevation, which tend to erode due to their steep slopes and lack of vegetation.

Bank grading and revegetation is an integral part of the bank stabilization. The streambank above the structure is graded to flatter slope and planted with trees, shrubs and herbaceous species. When space is available, a bench floodplain can be created to disperse flows and reduce stresses on the streambank. It is recognized there is commonly not sufficient room in urban streams. As such, the channel banks will be laid back to the maximum extent possible and planted. Vegetation will provide bank protection on the slope where velocities are lower than the main channel. In some situations, vegetation alone is adequate bank protection based upon modeling results of expected shear stress.

9.1.6.4 Native Planting Plan

The design team will develop a native planting plan that provides aesthetic benefits, as well as directly addresses ecological functions within the riparian ecosystem. The native planting plan will be based upon existing species located within the project area, as well as reference communities in less disturbed riparian corridors. The planting plan will specify species and container sizes that are commercially available within the region.

9.1.7 Deliverables

Our approach to this phase is to provide deliverables to City of Fayetteville at the 60%, 90% and 100% final design phases. Prepared design documents will include:

- Design report
- Drawings
- Specifications
- Cost estimate
- Construction schedule

This scope of work assumes a decreasing level of comments and/or edits from City of Fayetteville as the team works towards final (100%) Design Plans. Arcadis will be responsible for developing the following drawing sheets:

- Cover. Assumed 1 sheet.
- Estimated quantities and notes. Assumed 1 sheet.
- Existing conditions site plan; inclusive of topography, habitats, and wetland delineation. Assumed 1 sheet.
- Plan sheets and cross sections to support proposed design. Assumed to include 6 sheets (3,000 ft @ 500 ft/ per sheet) specific to discrete site areas.
- Grading plan to support proposed earth work. Assumed 6 sheets.
- Construction details to support design features. Assumed 2 sheets.
- Supporting landscape cross sections based upon final grading plan. Assumed 1 sheet.
- Sediment and erosion control plan, details, and notes. Assumed 2 sheets.
- Planting plan, details, and notes. Assumed 2 sheets.

For the purpose of this scope of work, it is assumed the plans will include 22 sheets. The following provides additional details regarding design sheets.

10.0 MILESTONE B: FUNCTIONAL DESIGN FOR BLOUNTS CREEK PRIMARY SOLUTION

The proposed overall solution for the Blounts Creek primary system is a complex solution. It will require the replacement of the single structure at Person Street, the dual roadway structures at Russell Street and the replacement of the CSX railroad bridge at Russell Street. The purpose of this task is to provide the City and other stakeholders with a functional design and technical data to validate the feasibility of the project prior to moving forward with design.

10.1 Functional Design

The functional design will contain but not be limited to the following:

- Structural Design: Up to two basic alternatives per structure will be presented representing recommendations from the TSL report. The designs for the railroad bridge at Russell Street will include considerations required by consultation with CSX.
- Roadway Design: The functional design will highlight the design of roadway approaches for alternative structure solutions. In addition, recommendations shall be made as to how the approaches will tie into existing smart streets and the proposed roundabout design on Person Street.
- Hydraulic Design: Utilizing the Blounts Creek HEC-RAS models from the watershed masterplan study, Arcadis shall run a simplified model of the functional structural alternatives to determine the best solution to meet hydraulic design criteria.
- A functional design review meeting will be held with the City, NCDOT, PWC, and CSX to select an alternative to move forward into the design phase.

10.2 Deliverables

Arcadis will prepare Functional Design submittal package for the agreed upon alternative(s) to the City for their review and approval.

The functional design plan sheet should include Anticipated Design Data, Anticipated Design Exceptions (maximum two exceptions), Bridge Typicals, Roadway Typicals, Horizontal and Vertical Alignments, Super Elevations, Curve Data, Edge of Pavements, Anticipated Bridge lengths, Slope Stakes, North Arrow, and Scale.

Arcadis will submit Functional Designs for review to the City.

11.0 MILESTONE C: FINAL DESIGN ENGINEERING SERVICES FOR PERSON STREET, RUSSELL STREET AND CSX BRIDGE REPLACEMENTS

Arcadis will provide the final design tasks for the following engineering services:

11.1 Roadway Design

Arcadis will be responsible for the roadway design of Russell Street and Person Street approaches for the proposed bridge replacements. Final right-of-way and construction plans will be prepared according to the "Guidelines to be used by Consultants for Producing Roadway Plans". Arcadis shall consider in its design complete streets concepts if applicable. For Person Street, roadway plans will be submitted for review and comment to the City. Russell Street will be submitted to the City and NCDOT for review and comment. The deliverables include field inspection plans submittal, right of way plan submittal and final design roadway plans submittal.

11.1.1 Right-of-Way (temporary and permanent)

Arcadis shall provide a plan view drawing which shows all property lines, rights-of-way, and temporary and permanent easements. All street rights-of-way and easement widths shall be clearly labeled.

11.1.2 Easements

Arcadis shall provide design plans which include designation of all easements needed for inspection and emergency maintenance of stormwater management facilities. Easement limits and effected parcel information (including table of properties with land & structure value information) shall be developed and provided for City review at the 30% design stage. At a minimum, easements shall be compliant with City of Fayetteville Standards and have the following characteristics:

- Minimum 20-foot permanent maintenance access easement from a public or private right-of-way to all stormwater management facilities
- Minimum 10-foot permanent drainage easement around the perimeter of all stormwater management facilities (any fences constructed around such facilities shall be outside of the 10-foot permanent drainage easement)
- Minimum 20-foot easement for closed pipe systems
- Adequate access to all parts of the public drainage system and structures

Arcadis shall prepare the necessary number of easement plats including metes and bounds descriptions for each permanent drainage easement. Plats shall meet the City's Planning Department, Cumberland County and State of North Carolina requirements for preparing and recording easement plats. Applicable review and recording fees shall be paid by the City. The City shall provide Arcadis with a standard form of agreement from the City Real Estate Division to be used in preparing easement documents.

11.1.3 Submittals

Arcadis will provide the following deliverables: PDFs of the 30%, 60% and 90% plans submittal packages; PDF of signed and sealed final roadway plans; roadway quantities; Microstation DGN files of the Roadway plans.

11.2 Hydraulic Design

Arcadis will provide the following hydraulic design tasks in accordance with the 2022 NCDOT Guidelines for Drainage Studies and Hydraulic Design and City of Fayetteville guidelines:

- Field review and data collection
- Hydraulics Engineer to submit statement at Functional design stating that either grade works hydraulically or is not hydraulically controlled
- Bridge Survey Report (BSR) for the (2) bridge structures in the project limits. One BSR for Russell Street and one for Person Street
- Approach drainage to be included in PGDs.
- Spread Analysis
- Development of Permit Drawings

- Development of Special Floodplain Compliance (SFC) documentation in accordance with NCDOT guidance including a FEMA no-rise analysis (Note: a CLOMR may be required for Blounts Creek, not due to increases in base flood elevations, but due to the need to adjust floodway boundaries from the bridge and stream enhancement work)

Deliverables: PDF of signed and sealed approved BSR; PDF of drainage summary; Microstation DGN files

11.3 Drainage / H&H Model Evaluation

Drainage infrastructure in the project area (as shown in Exhibit 1) shall be evaluated for compliance based off the table provided in Section 2.2.3 Proposed Level of Service (LOS). The portions of the drainage system not meeting City design standards shall be identified and a proposed functional plan shall be developed to improve the systems' level of service.

11.3.1 Hydrologic and Hydraulic (H&H) Model Development

Arcadis shall develop a H&H model to evaluate the hydraulic performance of pipes & inlets within the project area. This shall include modeling of peak flows for various storm events and street/bridge spread analysis. This analysis will be based on the InfoWorks ICM secondary system models completed for the Blounts Creek Watershed Study, using that methodology/data and adapted as needed to meet NCDOT design standards in addition to those of the City.

11.3.2 Existing and Proposed Improvements Analysis for Current and Buildout Conditions

Utilizing the HEC-RAS models completed under the Blounts Creek Watershed Analysis as a base model, Arcadis shall evaluate and determine water surface profiles for at minimum the 2-, 10-, 25-, 50-, 100-, and 500-year design events. These storm events will be modeled for the following land use and rainfall scenarios: (Existing Conditions, Existing Conditions Rainfall), (Existing Conditions, Future Rainfall (6% increase)), (Proposed Solution, Existing Rainfall), (Proposed Solution, Future Rainfall (6% increase)). A scenario will also be run for existing and proposed conditions based on the use of City provided GARR (Gage Adjusted Radar Rainfall) data. Starting water surface elevations (WSELs) shall be based on either the slope area method or analysis of the Blounts Creek gage data, published WSELs developed by FEMA, Army COE, or others means if available. Selection of the appropriate starting WSEL shall be discussed and agreed upon with the City, based on Arcadis' recommendation, prior to finalizing the modeling and shall be documented in the Conceptual Design Report. 2D maps based upon topographic data and modeling results shall be provided indicating the approximate extent of street and structure flooding in the project area for the various storm events. Potential structure flooding shall be assessed based on available topographic data. Street spread shall be evaluated for the existing flood prone areas per City design standards. Infrastructure improvements shall be evaluated based upon the built-out conditions. The model extents shall extend upstream and downstream to a point where there is no increase in the water surface elevation. Backup data on flood depth and velocity and street spread for the various design storms shall be provided in an Appendix to the Model Technical Memorandum.

11.3.3 Model Validation

The base model to be used has been validated previously under the Blounts Creek Watershed Study. However, the model will be re-validated with the implementation of this primary system solution due to

use of additional survey and other source data. The HEC-HMS and HEC-RAS models will be validated against known highwater marks from historical flooding such as Matthew and Florence and data collected from the USGS gage and new flood monitoring gages. With the recording period of the USGS gage having increased since the original watershed models were developed, a frequency analysis of the gage data could yield new flow data that would need to be considered and calibrated as an update.

11.3.4 H&H Model Technical Memorandum

Arcadis shall develop and provide the City with a Technical Memorandum that documents the H&H model development process and summarizes the conclusions and recommendations of the H&H evaluation. The technical memorandum shall include all relevant data used including information on the stormwater system, sub-basin delineation/connectivity, soils, land use, curve numbers, hydrographs, channel storage/routing, rainfall, roughness coefficients, energy loss coefficients, model assumptions, model results for scenarios listed under 8.2, model validation, etc. Draft model runs shall be provided to the City at the 30% design stage submittal, and final model runs submitted at the end of project.

11.4 Sediment & Erosion Control

Arcadis shall design and specify erosion control measures that minimize erosion and prevent off-site sedimentation during construction of the Project. The design shall be in accordance with the requirements of the North Carolina Department of Environment and Natural Resources (NCDENR), Erosion and Sediment Control Planning Design Manual and the NCDOT Erosion & Sediment Control Design & Construction Manual. Arcadis shall show erosion control measures and details on the plans starting with the 90% submittal.

The Sediment and Erosion Control Design for the project elements will include the following:

- Project Site Visit (assume 2 people)
- Attend Field Inspections (Assume 1 each for Russell Street bridge, Person Street Bridge, CSX bridge, and for the stream design)
- Clearing and Grubbing Phase Erosion Control Design
- Intermediate Phase Erosion Control Design
- Final Phase Erosion Control Design
- Construction Phasing for the stream stabilization and restoration work
- Erosion Control Quantities
- Erosion Control Title Sheet, Details, Notes, and Special Provisions

All sediment and Erosion and sediment control plans shall be submitted to the City for review; however, additional review may be necessary from the NCDOT Roadside Environmental Unit for the Russell Street bridge replacement, and CSX review for its bridge.

11.5 Signing and Delineation & Pavement Marking

Arcadis will prepare signing, delineation and pavement marking plans in accordance with the current standards and specifications of the NCDOT and the City. Signage for the CSX railroad elements will be in accordance with CSX standards and specifications. The scope of services will include project investigation, one site visit, signing plans, pavement marking plans, quantity calculations, and special provisions.

11.6 Traffic Management Plans (TMP)

Arcadis will prepare traffic management plans to indicate the temporary traffic control patterns and devices that are to be implemented during construction. The plans will include construction phasing, road closures, general notes, and lane closures necessary to construct the project. The construction phasing will be discussed with the design team, City staff, CSX, and NCDOT Division 6 to develop a construction sequence that minimizes impacts on the local business and residents. The traffic management plans will be prepared in accordance with the Traffic Management Plan Guidelines, and current standards and specifications of NCDOT and the MUTCD. The scope of services also includes traffic control quantity estimates and calculations, intermediate contract times and project special provisions.

Arcadis will investigate the need for temporary shoring along project and, if it is determined that temporary shoring is needed, coordinate a Temporary Shoring Meeting with the City, CSX, NCDOT Division 6, Work Zone Traffic Control Section (WZTC), Geotechnical Unit, Roadway Design Unit, Hydraulic Section to present temporary shoring findings.

Special consideration will need to be given to the construction sequencing for the construction of each bridge and how they will be phased. It is anticipated that Person Street will need to be closed for the duration of the bridge replacement. It is also anticipated that the Russell Street bridge construction will require closure of one structure and switching traffic to the other bridge. This traffic management will be critical as it requires shifting traffic across the existing CSX rail line and reversing the pattern to replace the other bridge.

11.7 Structural Design

Arcadis will prepare the design for the replacement of the Russell Street bridges (NCDOT owned) and the Person Street bridge (City owned) as outlined below. The CSX bridge replacement details are in Section 10.7.

11.7.1 Bridge Preliminary General Drawings

The preferred alternative selected will be developed in accordance with the structure recommendations from the Roadway plans, the SMU Design Manual revised June 2018, and the latest AASHTO LRFD Bridge Design Specifications for the preparation of the Preliminary General Drawings (PGDs). During the development of the PGDs, Arcadis will consider such features as roadway geometry, drainage, constructability, and preliminary structure recommendations to further define the project limits and impacts and finalize the structure type and bridge geometry. Preliminary design will begin to a point where geotechnical loads can be calculated and the appropriate information, noted below, can be added to the PGDs.

An assumed sheet list for the PGDs are as follows:

- Plan and Section view with the relevant information as defined in Sections 4.1.2.1, 4.2.1.2, 4.1.3 (Stream Crossings), 4.1.4 (Railroad Overhead), 4.1.5 (Grade Separations) and 4.1.6 (Widenings) of the SMU Design Manual
- Location View, Notes and Typical Section as defined in Sections 4.1.2.4, 4.1.2.5 and 4.1.2.6 of the SMU Design Manual
- Long Chord Layout as defined in Chapter 5.1.2.4 of the SMU Design Manual

The PGDs will also be prepared consistent with the following:

- PGD plans will be prepared using MicroStation.
- Design Assumptions will be revised at this time if necessary and approved prior to beginning designs.

Arcadis will provide one submission of PDFs via email of the PGDs, and Preliminary Header Elevations (if required) to NCDOT and the City for review. Arcadis will address all comments from the NCDOT and City review of the PGDs and Preliminary Header Elevations during the Final 90% Bridge Design task to follow. Arcadis assumes that an additional submission of PGDs or Preliminary Header Elevations to address comments will not be required.

11.7.2 Final 90% Bridge Design

The PGDs will be advanced to Final 90% Bridge Design Plans that will include structural design and detailing. The plans will be updated to incorporate appropriate changes to the design details as a result of comments received from NCDOT and the City during the preliminary design phase. Arcadis will complete the bridge design to draft 90% plans for SMU and City review in accordance with the latest AASHTO LRFD Bridge Design Specifications and SMU Design Manual. Specific tasks to be completed during this phase of the project include:

- Coordination with NCDOT SMU regarding roadway, geotechnical, hydraulics, maintenance of traffic, and other disciplines related to the bridge project
- General Drawings and Notes in accordance with Chapter 5 of the SMU Design Manual
- Bridge superstructure design and detailing: concrete or steel beams with concrete deck; end and interior bent bearings; reinforcing steel schedules for approach slabs and deck
- Bridge substructure design and detailing: end bents and wingwalls; interior bent and drilled piers; bridge seat elevations; reinforcing steel schedules for end bent, interior bent, and drilled piers
- Bridge load rating for HL-93, HS-20 and all North Carolina's notional legal trucks
- Quantity calculations
- Preparation of Project Special Provisions
- Bridge Construction Sequence
- Bridge Stage Construction Details for superstructure and substructure

Arcadis will provide one submission of PDFs via email of the draft Final 90% Bridge Design Plans and Project Special Provisions for review. The Final 90% Bridge Design Plans and draft Project Special Provisions will not be signed and sealed for this submission.

11.7.3 Final 100% Bridge Design

Upon the completion of the City and SMU's review of the Final 90% Bridge Design Plans and draft project special provisions, the draft 90% plans and draft special provisions will be updated to incorporate appropriate changes to the design details and notes as a result of comments received from NCDOT and the City during Final 90% Bridge Design phase. Arcadis will complete the bridge design to 100% plans in accordance with the latest AASHTO LRFD Bridge Design Specifications and SMU Design Manual. All sealed plans and documents will be signed via an electronic signature.

Specific tasks to be completed during this phase of the project include:

- Bridge Construction Quantity Calculations
- Preparation of the Construction Elevations calculations and sketches as detailed in Chapter 6.2.2.9 of the SMU Design Manual

During this phase, Arcadis will submit:

- A revised signed and sealed set of PDFs of the Final 100% Bridge Design Plans
- A revised signed and sealed set of individual PDFs of the Final 100% Bridge Design Plans
- A signed and sealed PDF of the Final Design Calculations
- A signed and sealed PDF of the Construction Elevations calculations and sketches
- A revised signed and sealed PDF of the Project Special Provisions
- CADD design files of the final plans without the PE seals
- A PDF of the completed Lump Sum Quantity Sheet

11.8 Railroad Corridor, Bridge, and Track Design

Arcadis will prepare designs for the CSX bridge and trackwork between the dual roadway and structures on Russell Street as outline below:

11.8.1 Coordination with CSX Transportation

Arcadis will discuss connectivity and operations of the existing line with CSX to determine design and construction constraints. A preliminary meeting will be held with the City and CSX before beginning alternative analysis to discuss the following design and construction criteria:

- Railroad operational constraints, freight traffic
- Viability of maintaining the single-track during construction
- Options if single track needs to be out of service for a period of time
- Superstructure types
- Substructure types
- Track layout – horizontal & vertical alignment & layout
- Bridge phasing, excavation support criteria, slide-in option

Arcadis will use the information from the site visit and coordination meeting to advance alternative development for up to four (4) options for replacement of the bridge.

11.8.2 Rail & Structure Preliminary Design

The preferred alternative will be refined for the preliminary general drawings (PGD). During the development of the PGD, Arcadis will develop features such as track geometry, drainage and erosion control, and preliminary bridge geometry to further define project limits and impacts. There will be up to three (3) preliminary design review meetings with the City, CSX, and NCDOT, as needed. The PGD for Rail will consist of the following:

- Preliminary general drawing plans prepared using Bentley MicroStation or Open Roads Designer (ORD).
- Preliminary drawing plans will be prepared using MicroStation.

- Preliminary designs will be prepared on final surveys furnished by the City or a City approved survey sub-consultant to Arcadis. The final surveys will include existing R/W, utilities, parcel names, and property lines.
- The plans will show floodplains, wetland boundaries, buffers, and historic sites.
- Design Assumptions will be revised if necessary and approved prior to beginning designs.
- Track and bridge design will be in conformance with the American Railway Engineering and Maintenance-of-Way Associations' (AREMA) Manual for Railway Engineering and CSX design criteria.
- Typical sections of the proposed bridge including bridge phasing.
- Permanent and temporary rail alignments and profiles will be further developed for the preferred alternative.
- Track cross-sections will be generated.
- Construction limits with cut/fill designations will be determined.
- Match or exceed existing Vertical Clearance.
- A traffic maintenance plan.
- Visualizations will be prepared for the preliminary plan alternative.
- Preliminary Quantities will also be provided at this stage.

11.8.3 Rail & Structure Final Design (90% and 100% Final Design)

The PGD will be advanced to final design including the structural design and detailing of the bridge. Plans will be updated to incorporate comments previously received from the City, CSX, and NCDOT. Arcadis shall complete the bridge and track designs to 100% and the final plans shall be prepared in accordance with the latest AASHTO LRFD Bridge Design Specifications, AREMA guidance, CSX design criteria, and the NCDOT Structures Management Unit Design Manual. Specific tasks to be completed include but are not limited to:

- Bridge superstructure design and detailing: beams and deck
- Bridge superstructure design and detailing: abutment and pier bearings
- Bridge substructure design and detailing: abutments and wingwalls
- Bridge substructure design and detailing: pier
- Bridge load rating
- Bridge seat elevation calculations
- Reinforcing steel schedules
- Lateral ditches and details for ditches
- Rail construction shall be included in the plans, including horizontal and vertical alignments, temporary and permanent.
- Quantity calculations
- General Drawing Notes
- Temporary Structure Details/ Bridge Phasing
- Construction Cost Estimate
- Preparation of Special Provisions

11.9 Deliverables

Arcadis shall submit design drawings at the 30%, 60%, 90%, and 100% completion stages for the proposed improvements. Design plans shall include independent design drawings and contract documents for the

Person Street bridge replacement, the Russell Street Bridge replacements, the CSX Rail Bridge replacement at Russell Street, and for the Blounts Creek Stream Restoration/Stabilization. The final construction plans and contract documents shall include, but not be limited to, the following:

11.9.1 Design Plans

Design plans shall include but may not be limited to the following:

- Existing conditions, including roadway, planimetric features, structures, vegetation and utilities, as determined by field survey
- Existing property lines; existing and proposed right-of-way lines; existing easements as provided by the City; and proposed storm drainage easements, proposed temporary construction easements, and permanent conservation easements. Fee simple, right-of-way and/or easements shall be sufficient to encompass all improvements, including landscaping
- Location (plan and profile) of proposed storm drainage features (channels, culverts, pipes, manholes, drop inlets, etc.)
- Location (plan, profile, and cross sections) of proposed roadway and bridge replacements at Person and Russell streets
- Location (plan, profile, and cross sections) of the proposed CSX bridge replacement;
- Location (plan and profile) of identified existing utilities and proposed utilities and shall indicate proposed underground and overhead utilities to be reconstructed and/or relocated as part of the Project
- Location of construction work areas and indication of which existing features may be impacted by construction (fences, trees, sheds, etc.) indicating the party responsible for removal and/or re-establishment
- Typical sections for roadway and structure layouts
- Summary of Quantities sheets
- Standard Details
- Typical cross sections of open channels showing restoration, armoring or stabilization techniques
- Recommendation of construction materials to be used
- For each property, the City tax code designation, the deed book and page number, parcel number, and street address as well as names of property owners per tax records
- Structural Design Plans
- Erosion control plans
- Traffic Control Plans
- Utility relocation or Utility by Other (UBO) Plans
- Signing and Pavement Marking Plans

Arcadis shall prepare plans on 22" x 34" plan and profile sheets at a scale of 1"= 20' horizontal and 1"=4' vertical or as directed by the City. Arcadis shall furnish 1 full sized set of hard copy prints, 1 half sized set of hard copy prints and one digital version in PDF format to the City's Project Manager for review and approval at each stage of completion. The City's Project Manager shall return to Arcadis all pertinent comments summarized on a single hard copy set of plans or in an itemized Word document. Arcadis shall revise the plans as required by the City's Project Manager in conformance with the review comments. Arcadis shall use City standard details to the extent possible. NCDOT standard details shall

be used if there is not an appropriate City standard. Due to the nature of the project, Arcadis may utilize NCDOT standards and specifications for construction drawing production.

11.9.2 30% Final Design Submittal

Separate 30% packages will be prepared for each individual project listed in the SOW will be prepared and submitted to NCDOT, CSX, the City, and PWC for review and approval. This submittal shall include the development of Preliminary Drawings Set including:

- Cover Sheet with overall location plan
- Legend
- General Notes and Standard Details
- Easement limits and effected parcel information
- Plan and Profile sheets of proposed improvements (Roadway, Structures, Rail, and Stream) that show water bodies, wetlands, parcel lines, structures, graveyards, railroads, etc.
- Roadway & Structural Typical Sections
- Cross Sections (For Roadway and the Stream improvements)
- NCDOT encroachments
- Utility Plan
- Pavement and Marking Plan
- Water & sewer relocation design
- Custom structures
- Construction sequence in a narrative form

11.9.3 60% Final Design Submittal Plans (R/W Plans)

Preliminary/Functional drawings shall be further developed into a materially complete plan set. Plans shall be submitted for review by the City, PWC, CSX, and NCDOT. The submission shall include those items listed in the 30% Submittal above and the following:

- Proposed R/W and Easement Plats
- Opinion of probable Construction cost in Excel format
- Draft specifications for anticipated Project Special Provisions

11.9.4 90% Final Design Submittal Plans

Following 60% Design approval by NCDOT, CSX, the City, and PWC, the plans shall be updated, and submissions shall be made to the City and PWC. The submission shall include those items in the 60% Submittal above and the following:

- Erosion Control Plan
- Construction Traffic Control Plan
- Landscape Plan, as required;
- Opinion of probable Construction cost in Excel format
- Draft specifications and bid tab, as required

11.9.5 100% Final Design Submittal Plans

Upon final approval from NCDOT, CSX, the City, and PWC, Arcadis shall prepare the final submission. The submission shall include the following (in electronic format):

- Half size design drawings in PDF format
- Full size design drawings in PDF format
- Design drawings in DWG format
- Specifications in Word format
- Construction cost in Excel format
- Updated Technical Report that provides final design calculations and modeling data in PDF format;
- Stakeout file for construction in CAD or as ascii file

11.9.6 Cost Estimate

Arcadis shall develop an Opinion of Probable Cost for each design submittal including quantity take-offs using the City's CIP Cost Tool. The Tool was developed utilizing recent bid tab and available construction cost data to aid in developing and delivering probable construction costs for drainage improvement projects. Cost opinions shall be provided in both Excel and PDF format.

12.0 MILESTONE C: PERMITTING

In today's regulatory climate, obtaining permits and documenting regulatory compliance can be the single greatest hurdle to implementing a capital improvement project. Our permitting team will work closely with the design team from the early phases to ensure that the proposer design steps are being incorporated to facilitate the most efficient permitting process. The associated cost does not include any site meetings, and assumes all meetings are remote.

Several permits are required for the construction of the proposed improvements. Final determination of permitting requirements and application preparation shall begin following the 60% milestone submittal. Permits included in this Scope of Services are summarized below:

12.1 Erosion & Sediment Control

Arcadis shall prepare submittals and approvals required for NCDENR erosion control permits and NPDES permits for construction activities. Erosion Control permit submittals shall be prepared and submitted upon completion of the 90% design drawings. Arcadis shall respond to permitting agency comments and incorporate comments into design documents if feasible.

12.2 Environmental

Arcadis shall assess whether modifications to open channel drainage features shall require jurisdictional determinations. Where required, USACOE 401/404 permitting shall be included in the Scope of Services for the proposed improvements.

13.0 MILESTONE C: CONTRACT PREPERATION AND BID PHASE SERVICES

13.1 Contract Document Preparation

Arcadis shall review the City's Technical Specifications and confirm their adequacy for the project. If necessary, the Engineer shall prepare Project Special Provisions for items not addressed in the City's Technical Specifications and provide a draft copy of these provisions with the 60% submittal to the City.

13.2 Prepare Bidding/Proposal Documents

Arcadis will prepare Contract Documents including Division 00 Procurement and Contracting Requirements, Division 01 General Requirements including measurement and basis for payment, technical specifications, and appendices including federal requirements. Contract Documents will utilize EJCDC documents provided by the City.

13.3 Bid Phase Services

After completion of the 100% submittal to the City, Arcadis shall provide bid period services that include:

- Administering distribution of Specifications and Construction Drawings to contractors and to plan rooms
- Attendance at pre-bid conference with the project team and respond to questions from prospective bidders
- Response to Bidder questions or RFIs
- Prepare addenda as necessary and provide to Owner
- Evaluate and determine the acceptability of "or equals" and substitute materials and equipment proposed by prospective contractors prior to award
- Evaluate and tabulate bid results
- Award recommendation letter based on the bid review; and

Assist owner with bidders or proposes related to technical and engineering issues that arise during negotiations (if required)

DRAFT Arcadis Task Order & Overall Engineering Progress Matrix	TO 1	TO 2	TO 3	Totals for all Phases
Duration Estimate	6 mo	9 mo	9 mo	24 mo
Project Administration	Milestone A	Milestone B	Milestone C	
Estimated Overall Project % Complete	25%	50%	90% - 100%	
Project Administration	\$ 57,965	\$ 75,000	\$ 75,000	\$ 207,965
Establish Purpose & Need	\$ 101,200	\$ -	\$ -	\$ -
Conceptual Design	\$ 227,572	\$ -	\$ -	\$ 227,572
Planning & Environmental (Single CE Document for all projects)	\$ -	\$ 100,000	\$ -	\$ 100,000
Field Survey Services	\$ 100,000	\$ -	\$ -	\$ 100,000
Utility Coordination	\$ 21,195	\$ 125,000	\$ 50,000	\$ 196,195
Geotechnical Investigations & Subsurface Utility Engineering	\$ -	\$ 300,000	\$ -	\$ 300,000
Stream Stabilization, Enhancement and Restoration Design	\$ 104,068	\$ 200,000	\$ 200,000	\$ 504,068
Functional Design Engineering (Russell St, CSX & Person St Bridges including track)	\$ 80,000	\$ -	\$ -	\$ 80,000
Final Design Engineering (Russell St, CSX & Person St Bridges including track)	\$ -	\$ -	\$ 1,000,000	\$ 1,000,000
Permitting	\$ -	\$ -	\$ 100,000	\$ 100,000
Contract Preparation and Bid Phase Services	\$ -	\$ -	\$ 75,000	\$ 75,000
Estimated Totals by Task Order	\$ 692,000	\$ 800,000	\$ 1,500,000	\$ 2,890,800
10% Contingency				\$ 289,080
Total Estimate				\$ 3,179,880

Exhibit A
Russell-Person Street Bridges and Stream Improvement Project
Detailed Hours & Fee Estimate

Task	Principal Engineer/Scie ntist/Architect 2	Principal Engineer/Scie ntist/Architect 2	Principal Engineer/Scie ntist/Architect 2	Principal Engineer/Scie ntist/Architect 2	Project Engineer/Scie ntist/Architect	Principal Engineer/Scie ntist/Architect 1	Project Engineer/Scie ntist/Architect	Principal Engineer/Scie ntist/Architect 2	Project Engineer/Scie ntist/Architect	Principal Engineer/Scie ntist/Architect 2	Project Engineer/Scie ntist/Architect	Technician/Pr oject Assistant II	Combined Totals (CT)			
	\$249	\$318	\$208	\$268	\$146	\$217	\$99	\$113	\$128	\$163	\$206	\$195				
	Engr/Sci Grade 11	Engr/Sci Grade 11	Engr/Sci Grade 11	Engr/Sci Grade 11	Engr/Sci Grade 8	Engr/Sci Grade 10	Engr/Sci Grade 8	Engr/Sci Grade 11	Engr/Sci Grade 8	Engr/Sci Grade 11	Engr/Sci Grade 8	Tech/Proj Asst Grade 5&6	Hours	Labor	Exp/Sub	TOT
1 Project Management	74.0	50.0	0.0	16.0	0.0	16.0	0.0	16.0	0.0	16.0	0.0	48.0	236.0	\$55,862	\$2,103	\$57,965
2 Data Gathering and Analysis	0.0	112.0	144.0	40.0	32.0	0.0	104.0	88.0	0.0	0.0	0.0	0.0	520.0	\$101,200	\$0	\$101,200
3 Field Review Meeting	8.0	8.0	16.0	8.0	24.0	8.0	8.0	8.0	8.0	8.0	8.0	0.0	112.0	\$20,920	\$275	\$21,195
4 Conceptual Design	208.0	148.0	0.0	200.0	136.0	200.0	28.0	304.0	460.0	48.0	60.0	0.0	1792.0	\$331,900	\$0	\$331,900
5 Planning & Environmental	16.0	16.0	0.0	0.0	0.0	40.0	80.0	0.0	0.0	0.0	0.0	0.0	152.0	\$25,672	\$0	\$25,672
6 Field Survey Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
7 Utility Coordination Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
8 Geotechnical Investigations & SUE Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
9 Stream Stabilization/Restoration Design	0.0	198.0	438.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	636.0	\$154,068	\$0	\$154,068
10 Functional Design Engineering	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
11 Final Design Engineering	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
12 Permitting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
13 Contract Preparation & Bid Phase Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0
TOTAL	306	532	598	264	192	264	220	416	468	72	68	48	3,448	\$689,622	\$2,378	\$692,000

EXHIBIT B

GENERAL SERVICES AGREEMENT FOR CONSULTING SERVICES BETWEEN

**CITY OF FAYETTEVILLE
FAYETTEVILLE, NORTH CAROLINA**

AND

ARCADIS G&M OF NORTH CAROLINA, INC.

APRIL 29, 2022

**STATE OF NORTH CAROLINA
COUNTY OF CUMBERLAND**

**GENERAL SERVICES AGREEMENT
FOR CONSULTING SERVICES**

THIS AGREEMENT, effective the day of November 19, 2021 by and between **THE CITY OF FAYETTEVILLE, NORTH CAROLINA** (hereinafter referred to as **CITY**), with principal business offices at Fayetteville, North Carolina, and **ARCADIS G&M OF NORTH CAROLINA, INC.** (hereinafter referred to as **CONSULTANT**), a corporation with principal business offices at 5420 Wade Park Blvd, Suite 350, Raleigh, NC 27607.

WITNESSETH:

WHEREAS, **CITY**, is engaged in the operation and maintenance of facilities and services which from time to time require revision, renovation and extension of existing facilities, and the construction of new facilities and other related projects; and

WHEREAS, the professional services of engineers, architects, surveyors and others will from time to time in the future be needed by the **CITY** in the renovation of existing facilities, and in the construction of new facilities and other related projects; and

WHEREAS, pursuant to N.C.G.S. 143-64.31 it is the public policy of this State that municipalities announce all requirements for architectural, engineering and surveying services, to select firms qualified on the basis of demonstrated competence and qualification and to negotiate contracts for services at a fair and reasonable fee with the best qualified firm; and

WHEREAS, **CONSULTANT** provides professional consulting services of the nature required by the **CITY** and employs trained and experienced engineering, technical and/or other personnel possessing adequate knowledge, skills and experience to provide professional services to the **CITY**; and

WHEREAS, the **CITY** proposes to announce to various competing firms its need for professional consulting services in the future by requesting Proposals and the subsequent acceptance of proposals and the issuance of written authorizations to proceed, which together with this Agreement shall constitute a contract between the **CITY** and the **CONSULTANT**; and

WHEREAS, the parties contemplate that the services of **CONSULTANT** will be performed in various stages in accordance with separate authorizations to be issued by **CITY**, and the parties desire to set forth the basic terms of their agreement in this General Services Agreement rather than in separate authorizations to be issued by **CITY**.

NOW THEREFORE, IN CONSIDERATION of the premises and the mutual covenants herein contained, the parties hereto do hereby contract and agree as follows:

ARTICLE 1 - REQUEST FOR PROPOSAL-SUBMITTAL OF PROPOSAL: As the need for consulting services arise, **CITY** will request a Proposal for said services from **CONSULTANT** which shall describe the scope of work, program, estimated schedule and **CITY'S** requirements. If **CONSULTANT** has the qualified personnel to meet **CITY'S** requirements to perform the

consulting services requested by the CITY, CONSULTANT will submit to CITY within the time specified a written Proposal describing the necessary engineering, technical and/or other services, guidance, opinions and advice to be provided. The Proposal shall set forth in general terms CONSULTANT'S recommendations to carry out the work. CONSULTANT shall list the background and experience of CONSULTANT'S personnel to be assigned to the project. Said Proposal shall contain a fee schedule setting forth fees for services of the various categories of personnel to be assigned to CITY'S project.

ARTICLE 1.1 - ACCEPTANCE OF PROPOSAL. CITY and CONSULTANT contemplate certain discussions, negotiations and possible changes to the Proposal submitted by CONSULTANT. Upon a meeting of the minds, CONSULTANT shall submit the final Proposal which shall set forth the agreement of the parties. If said Proposal is acceptable, the CITY shall accept same in writing. CONSULTANT'S fee schedule shall remain in effect during the term of this Agreement, unless modified by the parties in writing. CITY shall provide CONSULTANT with a specific written Authorization to Proceed for each Proposal accepted by CITY.

ARTICLE 2 - TERM OF AGREEMENT. The term of this General Services Agreement for Consulting Services shall be for three (3) years from the date it is effective. The Agreement may be extended thereafter by mutual written agreement of the parties.

ARTICLE 2.1 - ASSIGNMENT. It is the intent of this Agreement to secure the personal services of the CONSULTANT and failure of the CONSULTANT for any reason to make the personal services available to the CITY for the purposes described in this Agreement shall be cause for termination of this Agreement. The CONSULTANT shall not assign, sublet, or transfer any rights under or interest in (including, but without limitation, monies that may become due or monies that are due) this Agreement without the written consent of CITY. Nothing contained in this paragraph shall prevent CONSULTANT from employing such independent consultants, associates, and sub-contractors as it may deem appropriate to assist CONSULTANT in the performance of services rendered.

ARTICLE 3 - COMPENSATION. CONSULTANT shall submit to CITY monthly invoices for services performed during that month, computed on the basis of the Proposal accepted by CITY. CITY agrees to pay CONSULTANT'S monthly invoice within thirty (30) days after said invoice is received by the CITY. Adjustments to an invoice for billing errors may extend the time for payment. For clarity, compensation to CONSULTANT shall be based upon Task and/or Work Authorizations that are provided to and agreed upon by the CITY. The Signing of this General Services Agreement does not bind or obligate the CITY to pay CONSULTANT any compensation.

ARTICLE 3.1 - VERIFICATION OF INVOICES. CITY has the right to require the CONSULTANT to produce for inspection all CONSULTANT'S time records, salaries of personnel and charges for direct expenses for which cost-plus compensation is provided. CONSULTANT agrees to provide CITY with said records on a timely basis and cooperate with CITY to verify the accuracy of all invoices.

ARTICLE 3.2 - COSTS AND EXPENSES. CONSULTANT will invoice CITY for all travel and living expenses of its employees assigned to a project which said expenses shall be at actual cost, unless said costs or expenses are specifically set forth and included in a fixed price contract. Accommodations for CONSULTANT'S employees shall be arranged by CONSULTANT. Living expenses for CONSULTANT'S employees shall be the usual and customary expenses for accommodations to which CONSULTANT'S employees are accustomed, and which are prevailing in Cumberland County, North Carolina.

ARTICLE 3.3 - NON APPROPRIATION. Notwithstanding any other provisions of this Agreement, the parties agree that payments due hereunder from the CITY are from appropriations and monies from the City Council and any other governmental entities. In the event sufficient

appropriations or monies are not made available to the CITY to pay the terms of this agreement for any fiscal year, this Agreement shall terminate immediately without further obligation of the CITY.

ARTICLE 4 - PROFESSIONAL STANDARDS AND DUTIES OF CONSULTANT.

CONSULTANT shall be held to the same standard and shall exercise the same degree of care, skill and judgment in the performance of services for **CITY** as is ordinarily provided by a similar professional under the same or similar circumstances at the time in Cumberland County, North Carolina.

ARTICLE 4.1 - CONSULTANT NOT RESPONSIBLE FOR CONSTRUCTION MEANS OR SAFETY. A **CONSULTANT** for general construction projects shall not be responsible for any general contractor's or other project participant's failure to fulfill their contractual responsibilities to the **CITY**, nor shall **CONSULTANT** be responsible for construction means, methods, techniques, sequences, or procedures. Neither shall **CONSULTANT** be responsible for a project safety program or safety precautions unless **CONSULTANT'S** Proposal sets forth a safety program which is accepted by **CITY** and becomes a part of the agreement between the parties.

ARTICLE 4.2 - CONSULTANT AS CONSTRUCTION MANAGER. In the event the **CITY** contracts with the **CONSULTANT** to provide Construction Management Services, the **CONSULTANT** shall be responsible for determining that each construction contractor provides work to the quality level specified and in accordance with the plans and specifications. In no event shall **CONSULTANT** be responsible for any contractor's, subcontractor's, vendor's, or other project participant's failure to comply with federal, state or local laws, ordinances, regulations, rules, codes, orders, criteria, or standards unless it has contracted with the **CITY** to do so.

ARTICLE 5 - ESTIMATES OF COST AND TIME. Although **CONSULTANT** has no control over the cost of labor, materials, equipment or services furnished by others, or over contractor's, sub-contractor's, or vendor's methods of determining prices, or over competitive bidding or market conditions, nevertheless **CONSULTANT'S** cost estimates and time estimates shall be made on the basis of current labor and material prices and the **CONSULTANT'S** experience and qualifications, and **CONSULTANT'S** estimates shall represent its best judgment as an experienced and qualified professional familiar with electric, water and sewer utility projects, or other projects for which **CONSULTANT** is employed. Although **CONSULTANT** has no control over the resources provided by contractors to meet contract schedules, nevertheless **CONSULTANT'S** estimates or forecast of schedules shall be made on the basis of its experience and qualifications and shall represent **CONSULTANT'S** best judgment as an experienced and qualified professional familiar with electric, water and sewer utility projects, or other projects for which **CONSULTANT** is employed. **CONSULTANT** does not guarantee that project costs and schedules will not vary from the estimates and schedules given to **CITY**.

ARTICLE 6.0 - LIABILITY, INDEMNIFICATION AND INSURANCE.

6.1 - GENERAL. The **CITY** and **CONSULTANT** have considered the risks and potential liability that may exist during the performance of services by **CONSULTANT**, and have agreed to allocate such liabilities in accordance with this Article. During the performance of services under this Agreement, **CONSULTANT** shall purchase and maintain insurance coverage as hereinafter set forth, without lapse or changes contrary to the requirements of this section. Words and phrases used in this Article shall be interpreted in accordance with customary insurance industry usage and practice.

6.2 - INDEMNITY AND PROFESSIONAL LIABILITY. To the extent permitted by law, **CONSULTANT** agrees to defend, indemnify and hold harmless the **CITY** and its elected officials, employees, agents, successors, and assigns, from any and all liability and claims for any injury or damage caused by any negligent or tortious act, omission or negligence of **CONSULTANT**, its agents, servants, employees, contractors, licensees, or invitees. Indemnification of the **CITY** by **CONSULTANT** does not

constitute a waiver of the **CITY'S** governmental immunity in any respects under North Carolina law. **CONSULTANT** agrees to purchase and maintain professional liability insurance (errors and omissions insurance) in the amount of \$1,000,000 coverage for each claim, with a general aggregate of \$2,000,000. Said insurance coverage shall be underwritten by an insurance company authorized to do business in the State of North Carolina by the North Carolina Department of Insurance, with an A.M. Best rating of not less than A-VII.

6.3- LIABILITY INSURANCE. **CONSULTANT** agrees to indemnify and hold the **CITY**, its servants, agents and employees, harmless from and against all liabilities, claims, demands, suits, losses, damages, costs and expenses (including attorney's fees) for third party bodily injury to or death of any person, or damage to or destruction of any third party property, to the extent caused by the negligence of the **CONSULTANT**, Consultant's employees, and Consultant's subcontractors, for whom **CONSULTANT** is legally responsible during the performance of services under this Agreement. **CONSULTANT** shall purchase and maintain at all times during performance of services under this Agreement Commercial General Liability Insurance with combined single limits of \$1,000,000.00 coverage for each occurrence with a general aggregate of \$2,000,000.00, designating the **CITY** as an additional insured and which said insurance provides **CONSULTANT** with insurance for contractual liability which **CONSULTANT** has assumed pursuant to the terms of this Article 6.

6.4- OTHER INSURANCE. In addition to professional liability insurance and commercial general liability insurance set forth above, **CONSULTANT** further agrees to purchase and maintain at all times during the performance of services under this Agreement insurance coverage as follows:

- (a) Worker's Compensation Insurance as provided by North Carolina law which said policy shall also afford coverage to **CONSULTANT** for employer's liability.
- (b) Automobile liability insurance with \$1,000,000.00 combined single limit for each accident covering bodily injury and property damage.
- (c) The CGL policy required above shall include independent contractor liability coverage.
- (d) The CGL policy required above shall provide **CONSULTANT** with products and completed operations insurance, said coverage to be written on an occurrence basis, with coverage extended for such a period of time that suits can be filed before the running of the statute of limitations on any claim for injury to person or property due to negligence of **CONSULTANT** in the design of any building designed by the **CONSULTANT** under the terms of this Agreement.

ARTICLE 7 - INDEPENDENT CONTRACTOR. **CONSULTANT** is an independent contractor and shall undertake performance of the services pursuant to the terms of this Agreement as an independent contractor. **CONSULTANT** shall be wholly responsible for the methods, means and techniques of performance. **CITY** shall have no right to supervise methods and techniques of performance employed by **CONSULTANT**, but **CITY** shall have the right to observe such performance.

ARTICLE 8 - COMPLIANCE WITH LAWS. **CONSULTANT** agrees that in performing services pursuant to this Agreement to comply with all applicable regulatory requirements including federal, state and local laws, rules, regulations, orders, codes, criteria, and standards. **CONSULTANT** shall be responsible for procuring all permits, certificates, and licenses necessary to allow **CONSULTANT** to perform services under this Agreement. **CONSULTANT** shall not be responsible for procuring permits required for the construction of any building, unless such responsibility is specifically agreed to by **CONSULTANT**.

ARTICLE 9 - CITY'S RESPONSIBILITIES. **CITY** will furnish to **CONSULTANT** all of **CITY'S** requirements for the project, including, but not limited to, scope of work, program, time

constraints, schedule milestones, financial constraints, design objectives and design constraints, which are available to the **CITY** or which the **CITY** can reasonably obtain to furnish to **CONSULTANT** to enable **CONSULTANT** to make a Proposal to **CITY**. Additionally, the **CITY** shall also be responsible for the following:

- (1) Make final decisions utilizing information supplied by **CONSULTANT**.
- (2) Designate personnel to represent **CITY** in matters involving the relationship between **CITY**, **CONSULTANT** and third parties.
- (3) Provide such accounting, independent cost estimating, and insurance counseling services as may be required by the project.
- (4) Provide such legal services as **CITY** may require or **CONSULTANT** may reasonably request with regard to legal issues pertaining to the project, including those which may be raised by contractors, subcontractors, vendors or other project participants.
- (5) Enter into contracts for the purchase, construction, or other services with contractors, subcontractors, and vendors.
- (6) Provide financing for the project and make all payments in accordance with the terms of the contract.

ARTICLE 10 - OWNERSHIP OF DOCUMENTS. All documents, including drawings and specifications prepared by **CONSULTANT** pursuant to this **AGREEMENT**, are instruments of service in respect of the Project. They are not intended or represented to be suitable for reuse by **CITY** or others on extensions of the Project or on any other project. Any reuse without written verification or adaption by **CONSULTANT** for the specific purpose intended will be at **CITY'S** sole risk and without liability to **CONSULTANT**. Any such verification or adaptation will entitle **CONSULTANT** to further compensation at rates to be agreed upon by **CITY** and **CONSULTANT**.

ARTICLE 11 - TERMINATION OF CONTRACT FOR CAUSE. In the event of substantial failure by **CONSULTANT** to perform in accordance with the terms of this contract, **CITY** shall have the right to terminate **CONSULTANT** upon ten calendar (10) days written notice in which event **CONSULTANT** shall have neither the obligation nor the right to perform further services under this contract nor shall the **CITY** be obligated to make any further payment for work that has not been performed.

ARTICLE 12 - TERMINATION OF CONTRACT FOR CONVENIENCE. Upon thirty (30) calendar days' written notice to **CONSULTANT**, **CITY** may, without cause and without prejudice to any other right or remedy legally available to the **CITY**, terminate this Contract. Upon such notice, **CONSULTANT** shall have neither the obligation nor the right to perform services under this contract nor shall the **CITY** be obligated to make any further payment for work that has not been performed in accordance with the terms stated herein. In such case of termination, **CONSULTANT** shall be paid for the completed and accepted work executed in accordance with this Contract prior to the written notice of termination. Additionally, upon mutual agreement, **CONSULTANT** may be paid for any completed and accepted work which takes place in order to achieve a specifically identified item in the scope of services or a milestone of the Contract, between the written notice of termination and the effective date of termination. Unless otherwise stated or agreed upon, the effective date of termination shall automatically occur 30 days after the written notice is sent by the **CITY**.

ARTICLE 13 - NONDISCLOSURE OF PROPRIETARY INFORMATION. **CONSULTANT** shall consider all information provided by **CITY** and all drawings, reports, studies, calculations, plans, specifications, and other documents resulting from the **CONSULTANT'S** performance of the **SERVICES** to be proprietary, unless such information is

available from public sources. **CONSULTANT** shall not publish or disclose proprietary information for any purposes other than the performance of the **SERVICES** without the prior written authorization of **CITY**. **CONSULTANT** shall not make any written or verbal statement to any press or news media concerning the Project without the written authorization of **CITY**.

ARTICLE 14 - NOTICE. Any formal notice, demand, or request required by or made in connection with this agreement shall be deemed properly made if delivered in writing or deposited in the United States mail, postage prepaid, to the address specified below.

TO CITY: **CITY OF FAYETTEVILLE**
 ATTENTION: DOUGLAS J. HEWETT
 CITY MANAGER
 433 HAY STREET
 FAYETTEVILLE, NORTH CAROLINA 28301

TO CONSULTANT: **ARCADIS G&M OF NORTH CAROLINA, INC.**
 ATTENTION: JEREMY MCCALL, PE, CDT, CFM
 SENIOR WATER ENGINEER
 7029 ALBERT PICK ROAD, SUITE 101
 GREENSBORO, NC 27409

Nothing contained in this Article shall be construed to restrict the transmission of routine communication between representatives of **CONSULTANT** and **CITY**.

ARTICLE 15 – FORCE MAJEURE. Neither party shall be deemed to be in default of its obligations hereunder if and *so long as* it is prevented from performing such obligations by an act of war, hostile foreign actions, adverse governmental actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

ARTICLE 16 - GOVERNING LAW. This Agreement shall be governed by the laws of the State of North Carolina.

ARTICLE 17 - MISCELLANEOUS.

17.1 NONWAIVER FOR BREACH. No breach or non-performance of any term of this Agreement shall be deemed to be waived by either party unless said breach or non- performance is waived in writing and signed by the parties. No waiver of any breach or non- performance under this Agreement shall be deemed to constitute a waiver of any subsequent breach or non-performance and for any such breach or non-performance each party shall be relegated to such remedies as provided by law.

17.2 PRECEDENCE. In the event of any conflict or discrepancy between the terms of this Agreement and the specific written authorization to proceed pursuant to this Agreement, then the written authorization to proceed shall be given precedence over this Agreement in resolving such conflicts or discrepancies. If any conflict or discrepancy is discovered by either party hereto, then the written authorization to proceed, or this Agreement, shall be modified or amended, as necessary.

17.3 SEVERABILITY. The invalidity, illegality, or un-enforceability of any portion or provision of this Agreement shall in no way affect the validity, legality and/or enforceability of any other portion or provision of this Agreement. Any invalid, illegal or unenforceable provision of this Agreement shall be deemed severed from this Agreement, and the balance of the Agreement shall be construed and enforced the same as if the Agreement had not contained any portion or

provision which was invalid, illegal or unenforceable. Provided, however, this section 17.3 shall not prevent this entire Agreement from being void in the event any portion or provision of this Agreement which is of the essence of this Agreement shall be deemed void as provided by law or as determined by a court of competent jurisdiction.

ARTICLE 18 - INTEGRATED AGREEMENT. The CITY'S request for Proposal, the CONSULTANT'S written Proposal, the CITY'S authorization to proceed and this General Services Agreement for Consulting Services shall be integrated into and shall become the integrated agreement between the parties. CONSULTANT and CITY agree that all prior negotiations, representations, proposals, letters, agreements, understandings, or other communications between them, whether written or oral, are hereby merged into the Agreement and that the Agreement supersedes all such prior negotiations, contracts and/or agreements. This Agreement shall not be modified unless such modifications are evidenced in writing, signed by both CONSULTANT and CITY.

ARTICLE 19 - BENEFITS LIMITED TO PARTIES. Nothing herein shall be construed to give any right or benefits hereunder to anyone other than CITY and CONSULTANT.

19.1 LIMITATIONS. CONSULTANT's total liability to CITY under each authorization shall not exceed the total compensation paid under the authorization, or \$1,000,000, whichever is greater; any portion of liability determined to be consequential damages under this per authorization limit, shall not exceed the compensation paid under the authorization. In no event shall CONSULTANT's total liability in the aggregate, for all services under this agreement, exceed \$4,000,000. limits set forth in this agreement shall apply notwithstanding any and all causes whatsoever including, but not limited to negligence (of any degree), errors, omissions, warranty, indemnity, strict liability or breach of contract, provided, however, that the foregoing limitation shall not apply to any indemnity obligations of consultant with respect to third party personal injury and death or damage to third party property.

ARTICLE 20 – VENUE AND FORUM SELECTION. The Parties expressly agree that if litigation is brought in connection with this contract and (1) the litigation proceeds in the Courts of the State of North Carolina, the parties agree that the appropriate venue shall be in Cumberland County (Twelfth Judicial District of North Carolina); or (2) the litigation proceeds in a federal court, the parties agree that the appropriate venue shall be the United States District Court for the Eastern District of North Carolina.

ARTICLE 21 - E-VERIFY. CONSULTANT acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. CONSULTANT further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS §64-26(a). CONSULTANT pledges, attests and warrants through execution of this contract that CONSULTANT complies with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by CONSULTANT shall comply with any and all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this contract.

ARTICLE 22 – MORALITY CLAUSE. If, in the sole opinion of the CITY, at any time CONSULTANT or any of its owner(s) or employee(s) or agent(s) (collectively referenced as an "Actor")

engages in any one or more actions that bring disrepute, contempt, scandal, or public ridicule to the Actor or subject the Actor to prosecution or offend the community or public morals or decency or denigrate individuals or groups in the community served by the CITY or are scandalous or inconsistent with community standards or good citizenship or may adversely affect the CITY'S finances, public standing, image, or reputation or are embarrassing or offensive to the CITY or may reflect unfavorably on the CITY or are derogatory or offensive to one or more employee(s) or customer(s) of the CITY, the CITY may immediately upon written notice to CONSULTANT terminate this Contract, in addition to any other rights and remedies that the CITY may have hereunder or at law or in equity.

ARTICLE 23 – PROTEST. Protest related to this procurement must be addressed to the Purchasing Manager for City of Fayetteville, 433 Hay St, Fayetteville, NC 28301 and shall be received, in writing, within 2 calendar days of bid award. Responses will be in writing by email and first-class mail not later than (7) calendar days following receipt of said protest by the Purchasing Manager.

ARTICLE 24 - IRAN DIVESTMENT ACT CERTIFICATION. As mandated by N.C.G.S. 147-86.59(a), CONSULTANT hereby certifies that it is not listed on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.58. CONSULTANT further certifies that in accordance with N.C.G.S. 147-86.59(b) that it shall not utilize any subcontractor found on the State Treasurer's Final Divestment List. CONSULTANT certifies that the signatory to this General Services Agreement is authorized by the CONSULTANT to make the foregoing statement.

ARTICLE 25 - CITY'S TERMS SUPERSEDE: To the extent a conflict exists between the terms of this Agreement and the terms and conditions in any of the attachments to the Agreement, the terms of this Agreement shall govern.

[Signature page to follow]

IN WITNESS WHEREOF, the parties have executed this Agreement by their duly authorized representatives effective the day and year first above written.

DATE: 5/31/2022

CITY OF FAYETTEVILLE,
NORTH CAROLINA

BY: *Douglas J. Hewett*
Douglas J. Hewett, ICMA-CM
City Manager

ATTEST:

Pamela J. Megill
CITY CLERK

DATE: 4/29/2022



BY: *Jeremy L. McCall*
Jeremy L. McCall, PE
TITLE: Senior Water Engineer

FAYETTEVILLE NORTH CAROLINA, INC.

CITY OF FAYETTEVILLE

This instrument has been pre-audited in the manner
Required by the Local Government Budget and Fiscal
Control Act.

[Signature]

Chief Financial Officer